
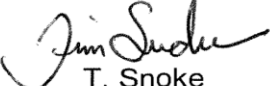


**TITLE: STANDARD QUALITY CLAUSES**

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**ISSUE SUMMARY**

Issue	Date	Prepared by	Division Approvals	Purpose of Issue/ Sections Changed
P	6/3/2016	 5/25/16 K. Partain	 T. Snoke	Table 4-1-2 (Corrected Quality clause number #39 for heat treatment)

### ISSUE HISTORY

Issue	Date	Prepared by	Division Approvals	Purpose of Issue/ Sections Changed
A	7/1/1974	R. Hendrickson	A.E. Dohan	Initial Use
B	11/23/1976	W. Leonard	R. W. Perusse	General Update
C	4/8/1977	W. Leonard	R.W. Perusse	To Add "N" Certificate verification requirements to Exhibit E
D	3/14/1980	J.E. Lauen	F. D. Carpenter	General Update includes latest ASME Code Designation
E	12/30/1982	J. G. Kelly	F.D. Carpenter	Revised to remove PO review aspects now covered in QDI 4-2.
F	12/12/1984	W. J. Leonard	R. G. Patterson	Provide for the use of the Supplier's disposition request (SDR) form, delete 10CFR21 clause.
G	1/7/1986	S. A. Dunlap	R.G. Patterson	Incorporates new standard title and reviewed GA form
H	2/7/1986	S. A. Dunlap	T.R. Colandrea	Change for address differences on ASL
I	2/19/1987	B. L. Coleman	T. R. Colandrea	Clarification of quality clause 14.
J	1/27/1989	C. C. Dryer	T. R. Colandrea	Add Clauses 15 & 47. Revise clauses 1, 16, 22
K	3/17/1983	M. G. Dunlap	B. L. Coleman	Revise clauses 1. N, 1.S,7,8,10,14,16,47,18,21,31,34, add clauses 1 T, 1U, 1V, 48
L	2/8/2001	D. Pettycord	M. G. Dunlap	General Update
M	5/17/2011	D. Pettycord	M. G. Dunlap	General Update
N	10/17/2014	K. Partain	T. Snoke	Add Clause 19 Counterfeit material mitigation.



*QUALITY DIVISION INSTRUCTION*

**TITLE: STANDARD QUALITY CLAUSES**

Document No. QDI 4-1

Issue P

Page 3 of 23

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## ACRONYMS

ANSI	American National Standards Institute
ASL	Approved Suppliers List
ASME	American Society of Mechanical Engineers
CFR	Code of Federal Regulations
DCMA	Defense Contract Management Agency
GA	General Atomics
GSI	Government Source Inspection
IEC	International Electrotechnical Commission
ISO	International Standards Organization
NB	ASME Code Section NB
NC	ASME Code Section NC
NCA	Nuclear and Chemical Agency
NCSL	National Conference Standards Laboratories
NF	ASME Code Section NF
NG	ASME Code Section NG
NIST	National Institute of Standards and Technology
NQA	Nuclear Quality Assurance
PDR	Purchaser's Designated Representative
PO	Purchase Order
PR	Purchase Requisition
QA	Quality Assurance
QAR	Quality Assurance Representative
QE	Quality Engineer
RIP	Receiving Inspection Plan
SAP	Systems, Applications and Products (an Enterprise Resource Program)
SDR	Supplier Disposition Request
SIP	Source Inspection Plan
SN	Serial Number
SQA	Software Quality Assurance
SQAP	Software Quality Assurance Plan
SQC	Standard Quality Clauses
U.S. N.R.C.	United States Nuclear Regulatory Commission

## 1. PURPOSE

This instruction supplements QP-4, of the GA Nuclear Quality Procedures Manual by documenting Standard Quality Clauses (SQC). These SQCs may be used in developing the QA requirements of a procurement specification, or may be directly cited in or attached to a procurement package (Purchase Requisition (PR), Purchase Order (PO), or Subcontract within the SAP Resource Program).

## 2. APPLICATION

This instruction provides an efficient method whereby quality requirements are consistently stated in procurement documents.

## 3. APPLICABLE FORMS and QUALITY ASSURANCE PROCEDURES (QPs).

The applicable forms referenced in this QDI are:

GA Form No.	Title	Section Reference
None		

Related QP(s): QP- 4, "Procurement Document Control"

## 4. REQUIREMENTS

SQCs are provided to standardize QA requirements and more effectively communicate those requirements to the supplier. As a need for revision of an existing, or the addition of a new SQC is identified, the concerned organization documents a proposed revision/addition and submits it to the Manager, Quality Systems, or designee.

Specific SQCs contained in this instruction are grouped by seven major categories, as seen in Table 4-1-1.

Table 4-1-1  
Major Categories for Standard Quality Clauses

- I. Quality Program
- II. Source Evaluation/Surveillance
- III. Control of Nonconforming Items
- IV. Control of Measuring and Test Equipment
- V. Handling, Storage, and Shipping
- VI. Documentation
- VII. Hardware Provisions

Table 4-1-2, Standard Quality Clause List, includes the standard quality clauses that are available for application to procurements. To indicate that a standard clause is invoked for procurement, the responsible Quality Engineer (QE) identifies the clause in the procurement document or by attachments.

Table 4-1-2  
Standard Quality Clause List

<b>I. Quality Program</b>	
(1)	Quality Assurance Program
(5)	Sub-tier Requirements
(6)	ASME Code Certification
(7)	Other than ASME Code Certification
(53)	Software Quality Assurance Plan
<b>II. Source Evaluation/Surveillance</b>	
(8)	Pre-Award Evaluation
(9)	Mandatory Hold Points
(10)	Notification Points
(11)	Right of Access
(12)	Source Inspection Prior to Shipment
(13)	Work Release Prior to Shipment
(45)	First Article Inspection
(52)	Quality Assurance Representative
<b>III. Control of Nonconforming Items</b>	
(14)	Supplier-Initiated SDR
(15)	10CFR21
<b>IV. Control of Measuring and Test Equipment</b>	
(16)	ANSI/NCSL Z540.3, ANSI/ISO/IEC 17025
(47)	Calibration Lab Requirements for Reporting Out-of-Tolerance Conditions
(48)	Calibration Lab Requirements for 10CFR21 Reporting
(55)	Certificates of Calibration
<b>V. Handling, Storage, and Shipping</b>	
(17)	NQA-1, Part II, Subpart 2.2
<b>VI. Documentation</b>	
(18)	Documented System
(20)	Document Legibility
(21)	INFORMATION ISSUED” and “RELEASED” Stamps
(22)	Supplier Data Transmittal Form
(23)	Certificate of Conformance
(24)	Test results
(25)	Pressure/Leak Test Results
(26)	Chemical Test Results
(27)	Mechanical Test Results
(28)	Documented Inspection and Test Instructions

Table 4-1-2 (Continued)  
Standard Quality Clause List

VI. Documentation (continued)	
(29)	Period of Useful Life
(30)	Assembly Parts List
(31)	Supplier Documents for RIP Development
(32)	Limited Shelf Life/Rubber Parts
(50)	Documentation Requirements
(54)	Test Plan/Procedure
VII. Hardware Provisions	
(33)	Special Processes
(34)	Heat Treating Notification and Checklist
(35)	ASME Code Section IX
(36)	Welding Method Submittal
(37)	Data Report Submittal
(38)	Ferrite Requirements
(39)	Heat Treatment Certifications
(40)	Radiographic Inspection Submittal
(41)	Nondestructive Examination
(42)	Nondestructive Examination Reports
(43)	Serialization
(44)	Lot/Fabricated Part Identification
(45)	First Article Inspection
(46)	Quality Degradation Due to Age
(47)	Hydrostatic Testing Requirements
(49)	Counterfeit Material Mitigation

#### 4.1 Standard Quality Clauses Descriptions

Section 4.1 documents the actual standard quality clauses to be considered for application to procurements.

The use of the Standard Quality Clause List and the individual clauses is preferred for major procurements. For small orders, the applicable Standard Quality Clause(s) may be extracted from this instruction and placed directly to the Purchase Requisition and later, the Purchase Order.



## I. QUALITY PROGRAM

### (1) Quality Assurance Program

The supplier shall establish, document, implement, and maintain a Quality Assurance (QA) Program that complies with the requirements of:

A. ANSI/ISO/Q9001 (ISO 9001 International) Quality Management Systems Requirements. 2008 Edition or later.

B. ANSI/ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories.

C. ASME Code, Sec. III, NCA-3800, "Metallic Material Organization's Quality System Program"

D. ASME Code, Sec. III, NCA-4000, "Quality Assurance Requirements"

E. ASME Code, Sec. VIII, Div 1, Appendix 10, "Quality Control System"

F. 10CFR50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants"

G. 10CFR71, Subpart H, "Quality Assurance Criteria for Packaging and Transportation of Radioactive Material"

H. ASME NQA-1-2008 and NQA-1a-2009 Addenda, Part I, "Quality Assurance Program Requirements for Nuclear Facility Applications" (or later edition, as applicable)

I. U.S.N.R.C. Regulatory Guide 1.28, Revision 4, "Quality Assurance Program Requirements (Design and Construction)"

J. ANSI/NCSL Z540-1-1994, "Calibration Laboratories and Measuring and Test Equipment General Requirements"

K. ASME NQA-1-2008 and NQA-1a-2009 Addenda, Part II, Subpart 2.7, "Quality Assurance Requirements for Computer Software for Nuclear Facility Applications" (or later edition, as applicable)

L. ASME NQA-1-2008 and NQA-1a-2009 Addenda, Part II, Subpart 2.14, "Quality Assurance Requirements for Commercial Grade Items and Services" (or later edition, as applicable)

M. SAE AS5553, "Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition" as imposed by DFARS 252.246.7007, IDEA-STD-1010-B and AS608.1

**(5) SUB-TIER REQUIREMENTS**

Supplier shall establish in his/her sub-tier procurement documents those requirements necessary to assure that each item delivered has been controlled, manufactured, and inspected in compliance with the requirements of this Purchase Order. A copy (may be unpriced) of each sub-tier procurement order shall be available for review by Purchaser's Designated Representative (PDR). Relocation of this work to a division, affiliate, or subsidiary of the Seller's company shall also be reported in writing to Purchaser prior to relocation of the work.

**(6) ASME CODE CERTIFICATION**

This Purchase Order requires compliance with various sections of the ASME Boiler and Pressure Vessel Code. Prior to award of contract or initiation of any activity concerning this contract (cross out N/A phrase), Supplier shall submit to GA's Quality Assurance Representative, a copy of his/her ASME Certificate of Authorization to perform necessary activities in accordance with the requirements of the specified code.

**(7) OTHER THAN ASME CODE CERTIFICATION**

Material Manufacturers and Material Suppliers who are qualified by parties other than the ASME shall list the revisions and dates of their written quality programs to which the material was manufactured and/or supplied, on the documentation which accompanies the material as equivalent actions to meet the requirements of ASME Section III, NCA-3842. Suppliers qualified by the ASME shall include with the documentation their Quality System Certification number and expiration date. Purchase orders placed with material Manufacturers and Suppliers of ASME Code material shall identify the name and address of the Material Manufacturer or Supplier which has been approved by the Purchaser. The address on the purchase order should agree with the Supplier's address on the Approved Suppliers List (ASL). When the Supplier's address differs from the ordering house/distributor address, both addresses shall be so designated on the purchase order and/or the ASL.

**(53) SOFTWARE QUALITY ASSURANCE PLAN**

The Subcontractor shall develop a Software Quality Assurance Plan (SQAP) specific to the software project requirements and scope of work.

The Subcontractor shall provide a copy of the appropriate documentation that describes the Subcontractor's Quality Management System for software (e.g., Software Development Plan, Software Configuration Management Plan, etc.) for General Atomics SQA review and approval.

Validation/verification of software shall be witnessed and approved by a General Atomics representative prior to acceptance.

**II. SOURCE EVALUATION/ SURVEILLANCE**

**(8) PRE-AWARD EVALUATION**

Supplier shall grant Purchaser a right of access to perform an evaluation of Supplier's capability to provide the items or services in accordance with the requirements of the procurement documents. Such evaluation may include a review of historical data evidencing Supplier's capability of providing a satisfactory product, a review of Supplier's quality assurance program, manual, and procedures, and an evaluation of facilities and personnel. This evaluation will be performed prior to placement of a GA Purchase Order.

**(9) MANDATORY HOLD POINTS**

Items covered by this Purchase Order are subject to mandatory hold points which require witnessing by Purchaser's Designated Representative (PDR). Such hold points shall be clearly indicated on Supplier's work sequence document. Work shall not proceed beyond a mandatory hold point without either actual inspection by the PDR, or written authorization of the PDR. Supplier shall provide no less than \_\_\_\_\_ days advance notice of approaching hold points to permit scheduling of the PDR.

Mandatory hold points are as follows:

**(10) NOTIFICATION POINTS**

Items covered by this Purchase Order are subject to notification points which may require witnessing by Purchaser's Designated Representative (PDR). Such notification points shall be clearly indicated on Supplier's work sequence document. Work shall not proceed beyond a notification point without notice to, and authorization by, the PDR. Supplier shall provide no less than \_\_\_\_\_ days advance notice of approaching notification points to permit scheduling of the PDR.

Notification points are as follows:

**(11) RIGHT OF ACCESS**

Purchaser shall have the right, at reasonable times and upon advance notice, to enter the facilities of the Supplier and his/her sub-tier Suppliers for the purpose of verifying compliance with the requirements of GA's procurement documents. Verification may include such activities as witnessing operations in progress, witnessing inspections and tests, performing product inspections, reviewing quality assurance documents and records, and performing audits. Upon request, Supplier shall provide Purchaser's Designated Representative (PDR) any and all quality information, documents, and records as required.

**(12) SOURCE INSPECTION PRIOR TO SHIPMENT**

Items covered by this Purchase Order are subject to source inspection by Purchaser's Designated Representative (PDR) prior to shipment. Shipment shall not be made without either actual inspection by the PDR or written authorization by the PDR. Such inspection or authorization by the PDR does not relieve Supplier of his/her obligation to provide items which are in compliance with the requirements of the procurement documents.

**(13) WORK RELEASE PRIOR TO SHIPMENT**

Items covered by this Purchase Order shall be inspected and released by Purchaser's Designated Representative (PDR) prior to shipment. As evidence of the PDR's release of the items and all related documentation, a Work Release document shall be completed and signed. A copy of the Work Release shall accompany each shipment. Execution of a Work Release does not relieve Supplier of his/her obligation to provide items which are in compliance with the requirements of the procurement documents.

**(52) QUALITY ASSURANCE REPRESENTATIVE**

The GA Quality Assurance Representative (QAR) for this order is:

Name:

Mail Stop:

Telephone:

Fax:

E-mail:

The QAR may designate (in writing) another person to act for him/her.

**III. CONTROL OF NONCONFORMING ITEMS****(14) SUPPLIER-INITIATED SDR**

All items and services delivered against this Purchase Order shall conform to the requirements of the procurement documents. However, Purchaser may consider design modifications that would significantly reduce cost. On an exception basis only, Purchaser may consider certain nonconformances for acceptance in a repaired or use-as-is condition. With Purchaser's approval, nonconformances and design modification requests may be documented and submitted for consideration using Purchaser's Form GA 2329, "Supplier's Disposition Request" (SDR). Blank SDR forms may be obtained from the Purchaser's Designated Representative (PDR). Completed SDR forms are to be returned to the PDR. In no circumstances shall nonconforming items or services be shipped without Purchaser's written authorization.

## (15) 10CFR21

This procurement is for a basic component, or design for a basic component, or for materials, supplies or hardware and safety-related items which will be used in a nuclear facility or transportation cask licensed by the U.S. Nuclear Regulatory Commission (NRC). The provisions of Title 10 Code of Federal Regulations, Part 21 (10CFR21) shall apply to this order and are hereby incorporated by reference with the same force and effect as if fully recited herein.

**IV. CONTROL OF MEASURING AND TEST EQUIPMENT**

## (16) ANSI/NCSL Z540.3, ANSI/ISO/IEC 17025

Supplier's system for control and calibration of measuring devices used for inspection, test, and product acceptance shall conform to ANSI/NCSL Z540.3 or ANSI/ISO/IEC 17025. Standards used for calibration shall have accuracies of at least four times the accuracy of equipment being calibrated, unless limited by the state of the art, and shall be traceable to the National Institute of Standards and Technology (NIST).

## (47) CALIBRATION LAB REQUIREMENTS FOR REPORTING OUT-OF-TOLERANCE CONDITIONS

Supplier shall notify the Purchaser immediately if an item's calibration is out-of-tolerance upon receipt.

## (48) CALIBRATION LAB REQUIREMENTS FOR 10CFR21 REPORTING

Title 10 Code of Federal Regulations, Part 21 (10CFR21) applies to the calibration services the Supplier is providing to the Purchaser. Among other requirements noted in 10CFR21, the Supplier shall notify the Purchaser's Director of Quality Assurance immediately by telephone at \_\_\_\_\_ if the Supplier becomes aware that there is, or may be, a problem (defect) in a delivered item that resulted from a deficiency in the Supplier's QA Program.

## (55) CERTIFICATES OF CALIBRATION

Certificates of Calibration for M&TE and standards calibrated by commercial facilities shall certify that all standards used in obtaining results are traceable to NIST standards. Calibration reports and certificates reporting the results of calibrations shall include the information and data necessary for interpretation of the calibration results and verification of conformance to applicable requirements. M&TE and reference standards submitted for calibration shall be checked and the results recorded on the Certificate of Calibration before any required adjustments or repairs are made.

**V. HANDLING, STORAGE, AND SHIPPING**

## (17) NQA-1 PART II, SUBPART 2.2

Where specific packaging, storage, and/or handling instructions, or American Society of Mechanical Engineers Standard ASME NQA-1, Part II, Subpart 2.2, are designated on the drawings and/or specifications referenced in this Purchase Order, Supplier shall document and submit for the Purchaser's approval, prior to implementation, those measures and methods to be implemented to achieve compliance with the applicable drawing or specification. Implementation of such measures shall be inspected for compliance.

**VI. DOCUMENTATION**

## (18) DOCUMENTED SYSTEM

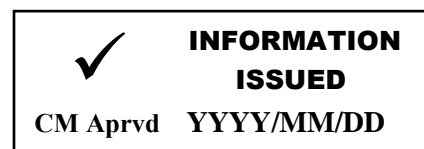
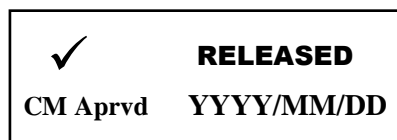
Supplier shall have a system for the collection and maintenance of quality assurance records. A document describing such system shall be submitted to Purchaser (for information or approval) prior to beginning work. Quality assurance records shall be adequately protected from deterioration or damage, and shall be made available for Purchaser's inspection on reasonable notice. Supplier shall maintain all quality assurance records pertaining to this Purchase order for a period of (\_\_\_\_) years. Purchaser's written approval shall be required for destruction of the records or shipment to General Atomics.

## (20) DOCUMENT LEGIBILITY

All documents submitted by Supplier shall be legible, and of a quality and type which is capable of being reproduced.

## (21) INFORMATION ISSUED AND RELEASED STAMPS

Purchaser's design documents will contain one or the other of the following marks:



Documents stamped "INFORMATION ISSUED" were prepared to disseminate preliminary data and can be used for preliminary design, cost estimating, planning, and analysis. They shall not be used by the Supplier for purchasing, fabrication, installation, or testing. Documents stamped "RELEASED" are final, approved, and controlled design documents which shall be used for purchasing, fabrication, installation, and testing.

**(22) SUPPLIER DATA TRANSMITTAL FORM**

Certain Supplier documents must be submitted to Purchaser in accordance with requirements stated in the procurement documents. Such documents shall not be used, nor shall any related fabrication or inspection operations be performed, until a Supplier's Data Transmittal form (GA Form 2514), or equivalent, has been received, which has been signed by the Purchaser's Designated Representative (PDR) and has a status of "1", "3", or "6" for the subject document (Ref. QDI-7-7).

**(23) CERTIFICATE OF CONFORMANCE**

With each lot of items shipped against this Purchase Order, Supplier shall provide a Certificate of Conformance with the requirements of Purchaser's procurement documents. The certificate shall specifically identify the purchased material or equipment shipped and the procurement requirements (codes, standards, specifications, etc.) met by the purchased items. The certificate, in the form of an affidavit, shall include a statement to the effect that all of the items shipped conform to all of the requirements of the procurement documents, and shall be signed by a person whom Supplier has made responsible for this quality assurance function.

**(24) TEST RESULTS**

Each unit shipped shall be accompanied by copies of reports of actual test results, indicating part, serial, and test specification/procedure numbers, as applicable. Test results shall not be averaged, deleted, nor omitted from the record, unless specifically required by the test specification. These reports must contain the signature of a responsible representative of the agency performing the test and must assure conformance to specified requirements. The specifications must be listed, including the specification revision letter, or revision number.

**(25) PRESSURE/LEAK TEST RESULTS**

Each unit shipped shall be accompanied by copies of reports of actual pressure or leak test results, indicating part, serial, and test specification/procedure numbers, as applicable. These reports must contain the signature of a responsible representative of the agency performing the test and must assure conformance to specified requirements. The specifications must be listed, including the specification revision letter or revision number.

**(26) CHEMICAL TEST RESULTS**

The Supplier shall provide copies of the results of chemical tests required by the applicable specification for the materials used or delivered to this Purchase Order. These reports must be authenticated by a responsible representative of the agency performing the tests and must be clear, objective evidence of conformance to the requirements of the applicable specification.

**(27) MECHANICAL TEST RESULTS**

The Supplier shall provide certified copies of the results of the mechanical tests required by the applicable specification for the materials used or delivered to this Purchase Order. These reports must be traceable to the Lot/Heat No. and authenticated by a responsible representative of the agency performing the tests and must be clear, objective evidence of conformance to the requirements of the applicable specification.

**(28) DOCUMENTED INSPECTION AND TEST INSTRUCTIONS**

The Supplier shall prepare and maintain written instructions for inspections and tests performed on this Purchase Order. The instructions shall include identification of the item to be inspected or tested, measuring and test equipment to be used, details of inspection and test operations to be performed, and the criteria for determining conformance or nonconformance to procurement document requirements. A list of these instructions shall be submitted in time to permit Purchaser's review to identify documents requiring Purchaser's approval prior to use on this Purchase Order.

**(29) PERIOD OF USEFUL LIFE**

With each shipment of an assembly incorporating a limited shelf-life material, which does not require age control, Supplier shall furnish a certification stating the period of useful life of the assembly. The certification shall be identified to the Purchase Order and the assemblies to which it applies, and shall be signed by a responsible representative of the Supplier.

**(30) ASSEMBLY PARTS LIST**

With each delivered unit, Supplier shall furnish copies of an assembly parts list for information and record, giving the part number and serial or lot control number of each part incorporated, including Purchaser-furnished parts.

**(31) SUPPLIER DOCUMENTS FOR RIP DEVELOPMENT**

A copy of either the specification, drawing, installation, operation and maintenance instructions, and/or catalogue, suitable for Purchaser's receiving inspection procedure development, shall accompany the initial shipment of material or item.

**(32) LIMITED SHELF LIFE/ RUBBER PARTS**

Supplier shall identify each item of limited shelf-life material with the cure or manufacture date, expiration date, and special storage and handling conditions, in addition to the normal identification requirements of name, part, or code number, specification number, type, size, quantity, etc. This identification, including special handling conditions, shall be recorded on certification and shipping documents for the material. Supplier shall furnish cure date, assembly date, part name and number, compound number, and manufacturer's identification (if different



from part number) for rubber parts (synthetic or natural) installed in assemblies delivered under this Purchase Order. This information shall be identifiable with the assembly and, when applicable, with component parts within the assembly to which it applies.

#### (50) DOCUMENTATION REQUIREMENTS

Supplier shall prepare a Quality Assurance Data Package for each unit and submit two copies to Purchaser for review and approval. Data packages shall be collated and contain a table of contents listing all documents within the package. Data package contents, as applicable to the order, shall be as follows:

- Supplier's Certificate of Conformance
- Purchaser's QA Work Release
- DCMA Release after GSI (if applicable)
- Completed manufacturing plan, traveler, routing etc., detailing the manufacturing operation performed, the operator's acceptance including date and inspection point with associated inspection acceptance signatures and dates
- In-process and final inspection records (recorded actual critical & major characteristics)
- Weld Records
- Test Reports
- Certificate of Conformance
- Chemical Analysis Rest Report(s) (including weld filler materials, when applicable)
- Mechanical/Physical Test Report(s) (including weld filler materials, when applicable)
- Shelf Life Item Identification
- Nondestructive Examination Reports
- Radiographic Film with Technique Sheets and Reports
- First article inspection report for dimensional and visual characteristics
- Special process certification(s) (Nondestructive Examination, heat treat, welding, etc.)
- Certificates of Calibration
- Purchaser approved SDRs, as applicable to order
- Any documentation substantiating the quality of the hardware
- Other documentation required as a condition of the order

#### (54) TEST PLAN/PROCEDURE

One copy of the Supplier's Test Plan/Procedure shall be designated for each unit tested and marked "Test Copy". Any required changes shall be documented in a manner such that the test methods and procedures actually used are clear at the conclusion of the test. When such markups are used, the changes shall be signed and dated by the Purchaser's Design/Test Engineer and Quality Engineer, and the Supplier's Test Engineer. The Supplier shall maintain the "Test Copy" of the Procedure/Plan with his original test log data, and provide a copy to the Purchaser.

**VII. HARDWARE PROVISIONS****(33) SPECIAL PROCESSES**

This Purchase Order requires the use of special processes which must be performed by qualified personnel, procedures, and equipment. Measures to accomplish such qualification shall comply with the requirements of the applicable codes and standards. If procurement document quality requirements exceed those of the codes or standards, or if no applicable codes or standards exist, Supplier shall document the qualification requirements and submit them to Purchaser for approval prior to implementation.

**(34) HEAT TREATING NOTIFICATION AND CHECKLIST**

Supplier shall notify Purchaser \_\_\_\_\_ hours prior to commencing heat-treating operations. The Supplier of heat treatment services shall submit heat treatment procedures for approval by the Purchaser's Designated Representative (PDR) prior to heat treatment. The heat treatment procedure and supporting documentation shall include the following:

- A. PO number
- B. Component/part identification
- C. Name and address of company performing heat treat
- D. Type of material and applicable material specification
- E. Nominal thickness
- F. Quantity
- G. Purpose of heat treat (material properties/stress relief)
- H. Heating rate
- I. Heat treat temperature and tolerance
- J. Time at temperature (minimum)
- K. Means of temperature control
- L. Cooling rate
- M. Cooling medium
- N. Description of cooling equipment, if applicable (tank size, medium flow)

- O. Time interval between removal from furnace to start of quench, in minutes, if applicable
- P. Material surface temperature after end of each quench, below \_\_\_\_\_ °F, if applicable
- Q. Material surface temperature rise after end of quench, in °F, if applicable
- R. Temper temperature (minimum), if applicable
- S. Actual time at temperature, in minutes, if applicable
- T. Cooling rate from temper temperature and how controlled, if applicable
- U. Any additional information considered germane
- V. Certification of the heat treating record by a responsible representative of the heat treating supplier

(35) ASME CODE SECTION IX

Welding performed on items to be delivered under this Purchase Order shall comply with the requirements of Section IX of the ASME Boiler and Pressure Vessel Code. All weldments of austenitic stainless steel, welded to the requirements of the ASME Code, Section III, Division I, Subsections NB-Class 1, NC-Class 2, ND-Class 3, NF-Component Supports and NG-Core Support Structures shall exhibit 5% minimum delta ferrite.

(36) WELDING METHOD SUBMITTAL

Supplier shall provide, for the approval of Purchaser prior to the start of welding, a documented description of the methods he will employ to control and verify the percent of ferrite existing in welds of austenitic materials. All weldments of austenitic stainless steel, welded to the requirements of ASME Code Section III, Division 1, Subsections NB-Class 1, NC-Class 2, ND-Class 3, NF-Component Supports and NG-Core Support Structures, shall exhibit 5% minimum delta ferrite.

(37) DATA REPORT SUBMITTAL

The Supplier shall provide with each delivered article a copy of the data report confirming to Code requirements for ASME Code Symbol Stamp holders.

(38) FERRITE REQUIREMENTS

Welding filler materials to be used on austenitic stainless steels for weldments complying with the requirements of ASME Code Section III, Division 1, Subsections NB-Class 1, NC-Class 2, ND-Class 3, NF-Component Supports and NG-Core Support Structures shall be limited to a range of 5% minimum delta ferrite and 12% maximum delta ferrite.

Determination for delta ferrite shall be made on undiluted weld metal deposits or in chemical tests of the filler material and predicted on a Schaeffler, modified Schaeffler, or De Long Diagram.

Results of the delta ferrite determination shall be included in the Certified Materials Test Report and submitted to the Purchaser.

(39) HEAT TREATMENT CERTIFICATIONS

With each shipment of items on which welding, heat treating, plating, nondestructive examination or similar processes have been performed, the Supplier shall include certification stating that the process performed complied with an identified specification. Heat treat certifications shall be accompanied by time/temperature charts or a summary description of the heat treat time temperature data indicating the furnace and heat treat number. Certification shall indicate the name of the processor, date of processing, and be signed by a responsible representative of the processor.

(40) RADIOGRAPHIC INSPECTION SUBMITTAL

Items requiring radiographic inspection shall be filmed and processed in accordance with requirements specified in the procurement documents. A method of identifying and cross-referencing the films, the items filmed, and interpretive reports shall be provided. The reports shall include the procedure number and summary of techniques used, the name and qualifications of the film reader, and the signature of a responsible representative of the performing agency.

(41) NONDESTRUCTIVE EXAMINATION

Nondestructive examinations performed on items to be delivered under this Purchase Order shall comply with the applicable requirements of Section V of the ASME Boiler and Pressure Vessel Code. Acceptance criteria shall meet the requirements of the applicable ASME Code, e.g., Section I, III, or VIII.

(42) NONDESTRUCTIVE EXAMINATION REPORTS

With each shipment of items, on which nondestructive examination has been performed, the Supplier shall submit nondestructive examination reports, which shall include: procedure number and revision used; a summary of the technique, equipment and materials used; the test results; the name and signature of persons performing and authenticating the test; the qualification level (e.g., I, II or III) of persons interpreting the results; the part/drawing numbers, item serial numbers, lot number, heat number, etc., or other appropriate identification. When liquid penetrant (L.P.) materials having low halogen content are otherwise required, the L.P. test report shall include the material manufacturer's lot/batch number used and a certification of chemical analysis showing the actual halogen content for the applicable lot/batch.

**(43) SERIALIZATION**

The Supplier shall sequentially serialize each deliverable end item identified by the same Purchaser drawing number using serial numbers assigned by the Purchase Order. Serial numbers shall consist of the item drawing number and dash number, if any, followed by the prefix "SN" and a four digit serial number (e.g., 12345-001 SN-0001).

**(44) LOT/FABRICATED PART IDENTIFICATION**

Materials used must be identifiable by lot number, material type, specification and applicable change letter or number, heat number, etc., and traceable to records of acceptance. Parts fabricated by the Supplier shall be identified with the lot of material used. When two (2) or more parts are joined in an assembly, Supplier shall prepare an assembly parts list identifying each part in the assembly by part number and serial number and the lot of material from which fabricated when fabricated by Supplier; or lot control number when the part is a standard purchased part. Traceability records shall be available for review by Purchaser's Designated Representative (PDR).

**(45) FIRST ARTICLE INSPECTION**

A first article inspection shall be performed by the Supplier on the first item produced (or a representative item from the first run) for delivery. The inspection shall verify compliance with the requirements of the procurement documents. First article inspection shall be witnessed by the Purchaser's Designated Representative (PDR), or verified by documentation review, at his option. Acceptance of the first article inspection results shall be obtained prior to shipment. The PDR shall be notified at least \_\_\_\_ days (at least \_\_\_\_ hours if PDR is on site) in advance of the first article inspection.

**(46) QUALITY DEGRADATION DUE TO AGE**

Material or articles having characteristics susceptible to quality degradation with age shall be marked to indicate the date at which the critical life was initiated and when the useful life will be expended. Handling and storage of these items shall be in accordance with Manufacturer's specifications.

**(47) HYDROSTATIC TESTING REQUIREMENTS**

Hydrostatic testing shall be performed to detailed written procedures by qualified personnel. Procedures and personnel qualification records shall be submitted to Purchaser for review and approval prior to use.

**(49) COUNTERFEIT PARTS PREVENTION**

The Seller shall have a counterfeit detection process that meets the intent of SAE standard AS5553, Counterfeit Electronic Parts, Avoidance, Detection, Mitigation, and Disposition.

Seller shall have a counterfeit parts program plan to ensure it does not receive counterfeit parts into inventory, use them in manufacturing, or inadvertently sell them to other parties. The plan shall meet the intent of AS5553 paragraph 4.1 and all appendices.

All electrical, electronic, electro-mechanical and electro-optical component parts delivered and/or used in the manufacture of deliverable products shall be from the Original Component Manufacturer (OCM)/ Original Equipment Manufacturer (OEM) or franchised distributors or Authorized Aftermarket Manufacturer (AAM).

All non-electrical standard parts, like fasteners, nuts, washers, springs, O-rings, inserts, and pins, must have a certification from the Original Component Manufacturer (OCM)/ Original Equipment Manufacturer (OEM) or Authorized Aftermarket Manufacturer (AAM) or authorized distributor.

OEM/ AAM shall be provided. The Certification shall clearly identify the name and location of all of the supply chain intermediaries from the original manufacturer to the final source of the product delivered to the Buyer.

Parts shall not be used or reclaimed and misrepresented as new.

In the event a part is not directly available from the OCM/ OEM/ AAM or franchised distributors (electronics) or authorized distributor (non-electronics), purchase from independent distributors may be made but the evidence of supply chain traceability (chain of custody) back to the OCM/ Component part suppliers delivering directly to the Buyer shall provide the OCM/OEM/AAM certification with each lot/ shipment. The certificate shall include as a minimum: manufacturer name and address, manufacturer and/or buyer's part number and dash number, batch identification for the item(s) such as date codes, lot codes, heat lot, serializations, or other identifications, Signature or stamp with title of seller's authorized personnel signing the certificate.

NOTE: Distributors shall, in addition to the above, include their company's certification for each part number shipped.

Seller shall flow this requirement down to all their sub-tier suppliers to prevent the inadvertent use of counterfeit parts and materials. Component certifications from the OCM/ OEM/ AAM must be readily retrievable and made available upon request.

If evidence of supply chain traceability (chain of custody) to the OCM/ OEM/ AAM is not available, the Seller must request Buyer to evaluate the risk of using material without a pedigree - suspect counterfeit, by submitting a Supplier Disposition Request (SDR) (GA Form – GA 2329) and contact the Buyer's Authorized Representative to obtain a copy of the SDR Form. The SDR provides a tracking system that ensures issue resolution. If Seller has Design Authority, a technical assessment and recommended disposition shall be provided, and any other accompanying documentation shall be attached to the SDR. If the Buyer elects to accept the material as-is or requests additional risk mitigation tests or inspections, the Seller shall mark the material/ packaging and final shipping documentation with the SDR document number for tracking purposes.

NOTE: Definitions of OCM/OEM/AAM and Franchised Distributor can be found in AS5553.

OCM and OEM are considered interchangeable in this document.

#### Inspection Requirements for Broker Procurements

Independent Brokers shall use IDEA-STD-1010-B and AS6081 to establish counterfeit detection processes and procedures. Reports for all parts received by GA shall include documentation and a summary listed in Table 1 (Inspection Requirements), as applicable.

**Table 1. Inspection Requirements**

Item	Quantity	Comments
Certificate of Conformance	For each date code/lot code	From the original manufacturer, when possible,
Visual and X-ray	100% on all parts being provided, as required	X-ray will be commodity dependent and defined by GA in the RFQ
Decapsulation	1 piece per date code/lot code	
Date/lot code verification	For each date code/lot code	1) Verification against GIDEP counterfeit report database 2) Verified with OCM, when possible
Marking permanency test	1 piece per date code/lot code	1) Solvent testing (Acetone/Dynasolve) 2) Scrape test
X-ray Fluorescence (XRF)	1 piece per date code/lot code	Plating composition confirmation
Solderability	1 piece per date code/lot code	Minimum 95% coverage
Electrical testing	Based on GA engineering requirements	
Verification of proper packaging	Each reel and box	Per JEDEC STD-033B