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Revision E

ELECTROMAGNETIC SYSTEMS DIVISION

EMS STANDARD QUALITY CLAUSES

Contractor: General Atomics
Address: PO Box 85608
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GA PROJECT 09492



Title: EMS Standard Quality Clauses	Number: 09492L00008	Revision: E
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REVISION HISTORY

Revision	Date	Description of Change
A	06JUN08	Initial Release
B	19FEB09	See Windchill
C	02DEC10	Revised per CR029402/CN033596: Update Quality Clauses.
D	16DEC10	CN034276
E	22NOV11	Update Quality Clauses; Added Standard Quality Clause Index

POINT OF CONTACT

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1 INTRODUCTION

Appendix "A" of this document contains the standard quality clauses that are specified by clause number in the procurement document provided to the supplier by the General Atomics (GA) purchasing agent (buyer). Please read and comply with those clauses specified in that particular procurement document. If you have any questions, please contact the GA buyer.

EMS Standard Quality Clauses per GA-EMS 09492L00008 at the date of the purchase order release are in effect. The EMS Standard Quality Clauses may also be viewed in PDF format at General Atomics' website: <http://www.ga.com/purchasing/index.php> "Terms and Conditions" or you may obtain a copy by contacting the buyer.

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APPENDIX A. STANDARD QUALITY CLAUSES

A.1 QUALITY PROGRAM

(201) Quality Assurance Program

The Supplier shall establish, document, implement, and maintain a Quality Assurance (QA) Program that complies with the applicable requirements of American National Standard ANSI/ISO/ASQ Q9001-Latest Revision, "Quality Management System – Requirements", as they are appropriate for the work to be performed to this order. ISO 9001 certification is required and shall be maintained throughout the duration of this order. A copy of the Supplier's ISO Quality Policy Manual and ANSI/ISO/ASQ Q9001: Latest Revision certificate shall be provided to Purchaser.

(202) Quality Assurance Program Acceptance

Purchaser shall conduct an evaluation of the Supplier's QA Program, which may include on-site verification. The Supplier shall implement the Purchaser-accepted QA Program throughout the duration of the order. Subsequent changes to Supplier's QA Program shall be provided to Purchaser for review prior to implementation on this order.

(203) Subcontracting

Supplier shall not subcontract for the design, fabrication, or procurement of the whole or any substantial or significant portion of work specified in the procurement document without Buyer's prior written approval. Prior customer approval shall include, but not limited to; required inspection witnessing by General Atomics and/or Government Representative(s), special processes that require certification, qualification or testing where the resulting output cannot be verified by subsequent monitoring or measurement, (examples include; software qualification, welding, material testing and nondestructive testing).

This limitation does not apply to Supplier's purchase of standard commercial supplies or raw material.

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.

(204) Sub-Tier Supplier Requirements

Supplier shall establish in his 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 un-priced) of each sub-tier procurement order shall be available for review by Purchaser's Designated Representative.

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(205) ASME Certificate of Authorization

This order requires compliance within relevant section(s) of the ASME Boiler and Pressure Vessel Code. Prior to initiation of any activity concerning this order, Supplier shall submit to GA's Quality Assurance Representative a copy of its ASME Certificate of Authorization to perform necessary activities in accordance with the requirements of the specified Code.

(206) Quality Assurance Program (ISO Equivalent)

The supplier shall establish, document, implement, and maintain a Quality Assurance (QA) program that complies with the applicable requirements of American National Standard ANSI/ISO/ASQ Q9001: Latest Revision, "Quality Management System – Requirements" or a GA evaluated equivalent, as determined appropriate for the scope of work to be performed to this order. ISO 9001 certification is not required. A copy of the Supplier's Quality Policy Manual shall be provided to Purchaser.

(207) Quality Plan

The Supplier shall develop a Quality Plan specific to the procurement document requirements and scope of work. The Quality Plan shall:

- Identify and invoke project applicable requirements of the supplier's documented Quality Assurance Manual (QAM), and other manuals, instructions, or documents used in implementing the Quality Assurance (QA) program.
- Provide a method for documenting the unique quality assurance requirements for the project (Purchaser requirements that may differ from the Supplier's documented program) and for prescribing implementation of these activities. It is neither necessary, nor desirable, to repeat the requirements already stated in the Supplier's QAM.
- Identify the personnel and organizations responsible for defining, approving, and implementing the QA program for the project. This is accomplished through the use of an organizational chart.

The Quality Plan shall be reviewed and approved by the Purchaser prior to start of work.

(208) 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 Software 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.

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(209) Software Quality Management System

- 1) The Subcontractor shall maintain a quality system for software that meets the intent of ISO 9001 and the guidelines of ISO 9000-3 (ISO IEC 90003:2004).
- 2) The Subcontractor shall maintain an SEI Capability Maturity Model Integration (CMMI) Level 2 (through Standard CMMI Appraisal Method for Process Improvement (SCAMPI)).
- 3) The Subcontractor shall maintain an SEI Capability Maturity Model Integration (CMMI) Level 3 (through SCAMPI) or achieve CMMI Level 3 during the course of the project.

The Subcontractor shall propose a software quality system that must be evaluated by General Atomics as acceptable prior to commencement of any subcontractor software development activities.

A.2 SOURCE EVALUATION / INSPECTION

(211) 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.

(212) Right of Access

Purchaser shall have access to the facilities of the supplier and its sub-tier suppliers for the purpose of verifying compliance with the requirements of GA's procurement documents. Verification may include, but not be limited to, such activities as witnessing operations in progress, 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. Personnel representing the U.S. Navy shall be accorded similar rights when accompanied by a PDR.

(213) Critical Safety Items / Critical Application Items

All attributes/characteristics identified on the design documents as Critical Safety Items (CSI), Critical Application Items (CAI), and as a major characteristic require 100% inspection/verification, by GA Personnel with actual results of each CSI attribute/characteristic recorded, documented, and provided to the Purchaser.

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(213a) Critical Safety Items - Process and Operation Sheets

The Supplier shall submit Process and Operation Sheets to the responsible GA Buyer for approval prior to the start of manufacturing. The Process and Operations Sheets shall identify a detailed step-by-step account of the procedures necessary in the proper sequence to manufacture the subject item. The sheets must indicate operation number, description, tolerance (specification), location, and subtier Suppliers, etc. necessary to control manufacturing operations. The completed sheets shall be signed /stamped off by an in-process operator and/or inspector and delivered with the shipment of the item(s). Process and Operation Sheets may also include the Inspection Method Sheets noted in Clause 213b.

(213b) Critical Safety Items - Inspection Method Sheets

The Supplier shall submit Inspection Method Sheets to the responsible GA Buyer for approval prior to start of manufacturing. The Inspection Method Sheets shall identify the Critical Safety Item (CSI) characteristics to be inspected, special instructions, item, drawing zone, acceptability limits, inspection tooling/method, and frequency. The completed Inspection Method Sheets shall have the actual results recorded and inspector's stamp/signature and date. Inspection Method Sheets may be included as an integral part of the Process and Operation Sheets noted in Clause 213a.

(213c) Critical Safety Items - Material Identification Code (MIC) Mark

This purchase order is for the procurement of articles with CAI/CSI characteristics that require MIC Marking.

The MIC Mark will be in the form of QA-xx-xxxxx and will be issued after the local DCMA inspection of the CSI feature has been accepted. The supplier and their local DCMA personnel will submit all CSI documentation associated with the identified CSI feature to NAVAIR Lakehurst QA for review and acceptance. NAVAIR will review the applicable data package and upon acceptance issue the MIC Mark.

The MIC Mark will then be applied to the item. The location and method of the MIC Mark shall be near the part number using the same method of part marking indicated on the applicable drawing. Once the MIC Mark has been applied to the item local DCMA personnel will need to verify the MIC Mark.

NOTE: The MIC Marking applied to the parts must also be identified on all associated item paperwork.

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(214) Source Surveillance

Items covered by this 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 five (5) business days advance notice, to GA Purchasing and QA of approaching notification points to permit scheduling of the PDR.

Hold Points

As evidence of the PDR’s release of the items and all related documentation, a QA Work Release document shall be completed and signed by the PDR. A copy of the Work Release shall accompany each shipment. Execution of the Work Release does not relieve supplier of his obligation to provide items which are in compliance with the requirements of the procurement documents.

(215) Government Source Inspection

Defense Contract Management Agency (DCMA) surveillance/inspection will be required on this order. GSI may include product reviews of Critical Safety Items (CSIs)/Critical Application Items (CAIs) at hardware receiving, storage, in-process, and final inspection areas. DCMA’s intention is to perform GSI on a noninterference basis and in conjunction with Purchaser’s source inspections / surveillances, whenever possible. Prior to shipment from your facility, GSI will be performed on all items/products containing CSI/CAI characteristics. Inspection of these products could include: visual inspection, dimensional inspection, material verification, data package review, packaging requirements, and identification marking of inspected and accepted parts. Indication of government inspection/surveillance is required on shipping documentation of CSIs / CAIs prior to shipment of material/product from your facility.

The DCMA QA Representative assigned to General Atomics will issue a Letter of Delegation (LOD) to the appropriate DCMA QA Representative who services the Supplier or the geographical area where the Supplier is located. The DCMA QA Representative who receives the LOD will make contact with the Supplier providing contact information. The LOD will provide guidance as to what will be inspected.

The Supplier is responsible for notifying the applicable General Atomics Quality Assurance, Purchasing and DCMA QA Representatives a minimum of five (5) business days to arrange for an inspection visit.

If the supplier has any questions on the applicability of GSI, contact the General Atomics Buyer for clarification.

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(216) Source Inspect Prior to Shipment

Items covered by this order are subject to 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 its obligation to provide items which are in compliance with the requirements of the procurement documents.

(217) Work Release Prior to Shipment

Items covered by this 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 its obligation to provide items which are in compliance with the requirements of the procurement documents.

(218) First Article Inspection – First Lot Produced

First Article Inspection (FAI) requirements apply to the first item(s) of the first lot produced. A first article inspection is not required with subsequent orders of the same item or for minor changes of the item (drawing clarification or changes that do not affect form, fit, or function of the item). FAI requirements within clause 218 are applicable to clauses 218a - 218e.

(218a) First Article Inspection – Fabrication of Additional Deliverable Items

General Atomics-EMS shall conduct a First Article Inspection on the product prior to fabrication of additional deliverable items. The supplier shall notify the appropriate GA-EMS Purchasing and Quality Assurance personnel five (5) business days prior to the date of the inspection to ascertain location (supplier or GA-EMS) of this inspection.

(218b) First Article Inspection – Dimensional, Functional and Nondestructive Testing

The supplier shall conduct and submit a First Article Inspection and Report that shall include all dimensional, functional and nondestructive test results required by applicable specifications.

(218c) First Article Inspection – GA Witness Fabrication of Additional Deliverable Items

General Atomics-EMS shall witness First Article Inspection on the product prior to fabrication of additional deliverable items. The supplier shall notify the appropriate GA-EMS Purchasing and Quality Assurance personnel five (5) business days in advance of the First Article Inspection.

(218d) First Article Inspection – GA Witness First Article Inspection

General Atomics-EMS shall witness the supplier's First Article Inspection. The supplier shall notify the appropriate GA-EMS Purchasing and Quality Assurance personnel five (5) business days in advance of the First Article Inspection.

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(218e) First Article Inspection – AS9102 Inspection Report Format

First Article Inspection (FAI) shall be performed per the requirements of AS9102, "Aerospace First Article Inspection Requirement," latest revision, and prior to product acceptance and shipment to General Atomics-EMS. The following optional fields in the AS9102 FAI Report Form 1 are considered mandatory by GA-EMS: 11, 12, 21, 22, 23 and 24.

A.3 CONTROL OF PRODUCT CONFIGURATION

(221) Control of Nonconforming / Modified Items

All items and services delivered against this order shall conform to the requirements of the procurement documents. However, Purchaser may consider design modifications that would significantly reduce cost. Also, on an exception basis only, Purchaser may consider certain nonconformances for acceptance in a repaired or use-as-is condition. Nonconformances and design modification requests may be documented and submitted for consideration using Purchaser's form GA 2329, "Supplier's Disposition Request" (SDR). SDR forms (electronic version available in MS Word) may be obtained from the Purchaser's Designated Representative. Completed SDR forms are submitted to the Purchaser's Quality Assurance Representative. Under no circumstances shall nonconforming or modified items or services be shipped without Purchaser's written authorization.

A.4 CONTROL OF MONITORING, MEASURING, AND TEST EQUIPMENT

(230) Certificate of Calibration

Supplier shall provide with each unit a Certificate of Calibration in compliance with ISO 10012 and traceable to NIST. The certificate shall include Instrument Type, Supplier Part Number, Serial Number, or Supplier Acceptance/Calibration Procedure Number, Date of Calibration, and Date next Calibration is due.

(231) Calibration of Items

Supplier's system for control and calibration of measuring devices used for inspection, test, and product acceptance shall conform to ANSI/NCSL Z540.3, ISO 10012-1, or 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).

(232) Reporting Out-of-Tolerance Items

Supplier shall notify the Purchaser within one (1) business day if an item's calibration is out-of-tolerance upon receipt.

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A.5 PACKAGING, STORAGE, AND HANDLING

(241) Submittal of Procedure

Where specific packaging, storage, handling, protection, and/or identification instructions are designated on the drawing and/or specification referenced in this order, Supplier shall document and submit for the Purchaser's acceptance, 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.

(242) Packaging and Shipping Requirements

The Supplier is responsible for packaging and preparation for shipping, and shall prepare a procedure for Purchaser's review and approval. The procedure shall include, as appropriate, cleanliness inspections prior to packaging; use of preservatives and coatings; descriptions of specially designed shipping containers; lifting, handling, and rigging procedures; sketches; final inspection; and method of shipping.

A.6 DOCUMENTATION

(251) Quality Assurance Records System

Supplier shall have a system for the collection and maintenance of quality assurance records. A documented procedure describing such system shall be submitted to Purchaser 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 order for a period of seven (7) years. Purchaser's written approval shall be required for destruction of the records or shipment to Purchaser.

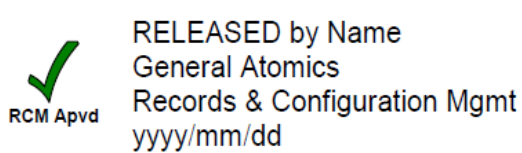
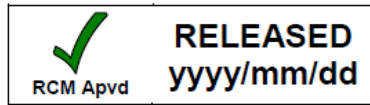
(252) Document Legibility / Reproducibility

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

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(253) Released Design Documents

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



cn=RELEASED by Blayne Monen,
 o=Records & Configuration Mgmt,
 ou=General Atomics,
 email=Blayne.monen@GAt.com,
 c=US
 2011.01.27 09:30:17 -08'00'

Documents thusly marked are final, approved, and controlled design documents which shall be used for purchasing, fabrication, inspection, and testing. Documents not bearing such a mark shall not be used by the supplier for purchasing, fabrication, inspection, testing or any other quality affecting work activity. Legacy Navy equipment drawings referenced on Purchaser approved drawings are excluded from this requirement.

(254) Supplier Data List and Transmittals

Certain Supplier documents must be submitted to Purchaser in accordance with requirements stated in the procurement documents, e.g., Supplier Data List, form GA 2513. Such documents shall not be used, nor shall any related fabrication or inspection operations be performed, until a Supplier's Data Transmittal, form GA 2514, has been received from the Supplier; has been signed by the Purchaser's Designated Representative; and has a status of "1," "3," or "6" for the subject document.

(255) Certificate of Conformance

With each lot of items shipped against this order, Supplier shall provide a Certificate of Conformance with the requirements of GA'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.

(256) 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 allowed by the test specification. These reports must contain the printed or typed name and signature of a responsible representative of the agency performing the test and must assure conformance to

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specified requirements. The specifications must be listed, including the specification revision letter or revision number.

(257) 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, single line-thru changes shall be initialed 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 and data, and provide a copy to the Purchaser.

(258) 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.

(259) Material Test Reports – Chemical and Physical Properties

Mill Test Reports (MTRs) shall be provided with this order along with certification by the mill or testing facility performing tests certifying compliance to specific ASME or ASTM standards. The MTRs shall provide both chemical and physical properties that include lot/heat/melt number and actual inspection and test values. Any subsequent heat treatment processes shall require test reports and certifications from the testing facility which shall include physical properties for the as delivered condition. All test reports shall include the typed name, signature, authority or title and shall be dated.

All documentation provided by the supplier shall be legible, and to a resolution capable of being reproduced (by dry process), and scanned for electronic storage.

Positive material traceability shall be maintained throughout the manufacturing processes with appropriate records maintained. Traceability records shall be available for review by Purchaser's Designated Representative.

(260) Material Test Reports – Mechanical Properties

Quality Clause 260 Superseded by Quality Clause 259

(261) Inspection and Test Instructions

The Supplier shall prepare and maintain written instructions for inspections and tests performed on this 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

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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 acceptance prior to use on this order.

(262) Period of Useful Life

With each shipment of an assembly incorporating a limited shelf-life material which does require age control, Supplier shall furnish a certification stating the period of useful life of the assembly. The certification shall be identified to the order and the assemblies to which it applies, and shall be signed by a responsible representative of the Supplier. Items having a limited shelf life must have a minimum of 75% shelf life remaining upon receipt.

(263) 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 order. This information shall be identifiable with the assembly and, when applicable, with component parts within the assembly to which it applies.

(264) Assembly Parts Lists

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.

(265) Supplier Documents for Inspection Plan Development

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

(266) Control of Limited Shelf Life Materials

Materials with limited shelf life (epoxy, paint, adhesives, etc.) shall indicate the date of manufacture, expiration date, lot number and applicable specification on the container. At a minimum, product receipt shall not have less than 75% of its shelf life remaining.

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(267) Material Traceability / Control

Materials used in components must be identifiable by lot number, material type, specification and applicable change letter or number, heat number, etc., and traceable to records of acceptance.

(268) Quality Assurance Data Package Requirements

Supplier shall prepare a Quality Assurance Data Package for each unit and shall submit to Purchaser for review and approval prior to shipping. 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
- 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
- Material Test Reports – Chemical & Physical Properties (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.)
- Purchaser approved SDRs, as applicable to order
- Any documentation substantiating the quality of the hardware
- Other documentation required as a condition of the order
- Purchaser’s QA Work Release

NOTE: GA will prepare the QA Work Release and issue to the supplier prior to the supplier finalizing the data package.

(269) Documentation Authenticity / Legibility

All documents submitted to the Purchaser by the Supplier shall have been previously examined and annotated by the Supplier to indicate, as appropriate, approval, acceptance, or certification.

All documentation provided by the supplier shall be legible, and to a resolution capable of being reproduced (by dry process), and scanned for electronic storage.

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(270) Records Retention

Supplier is required to provide and adequately maintain documented quality records for a minimum of seven (7) years after delivery of the procured item(s). Prior to disposing of quality records, supplier must notify Buyer, or alternatively forward all quality records to buyer upon completion of the contract.

A.7 HARDWARE PROVISIONS

(271) Special Processes

This 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 applicable codes, standards and specifications.

(272) ASME Welding Requirements

Welding performed on items to be delivered under this order shall comply with the requirements of Section IX of the ASME Boiler and Pressure Vessel Code.

(273) AWS Welding Requirements

Welding performed on items to be delivered under this order shall comply with the requirements of AWS D1.1, D1.2, D1.3, and/or D1.6 as appropriate for the materials involved.

(274) ASME or AWS Welding Requirements

Welding performed on items to be delivered under this order shall comply with the requirements of either ASME B&PV Code Section IX or, as appropriate for the materials involved, AWS D1.1, D1.2, D1.3, and/or D1.6.

(275) Welding Requirements for Procedures, Repairs, and Material Records

a) Weld Procedures

Weld procedures and welding personnel shall be qualified in accordance with the requirements of the specification identified on the engineering drawing and/or Statement of Work, as applicable. Supplier shall submit copies of all weld procedures, weld procedure qualification records, and welder performance qualification records to be employed on this order.

b) Weld Repairs

Weld repair procedures for the removal or repair of material defects or weld metal defects shall be reviewed and approved by the Purchaser, prior to making such repairs.

c) Weld Material Records

Weld filler materials shall be certified to the applicable specification and contain the actual results of the chemical and mechanical tests and identifiable to the specification

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and material supplied.

(276) ASME Data Report Submittal

The Supplier shall provide with each delivered article a copy of the data report conforming to B&PV Code requirements for ASME Code Stamp holders.

(277) Special Process 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 industry specification. Heat treat certifications shall be accompanied by time/temperature charts and a summary description of the heat treat time and temperature data indicating the furnace and heat treat lot number. Certification shall indicate the name of the processor, date of processing, and the printed or typed name and signature of the responsible representative of the processor.

(278) Radiographic Inspection Submittals

Items requiring radiographic inspection shall be examined and processed in accordance with requirements specified in the procurement documents. A method of identifying and cross-referencing the films, the items examined, and the film interpretation reports shall be provided.

The reports shall include the procedure number, the techniques used, the typed name, signature and NDE certification level of persons performing the examination, and the typed name, signature and NDE certification level of the film reader, and the signature of a responsible representative of the performing agency.

(279) ASME Nondestructive Examination Requirements

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, IV, or VIII.

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(280) Nondestructive Examination (NDE) Requirements

a) Procedures

All nondestructive examinations shall be performed in accordance with detailed written procedures and meet the requirements of the applicable specifications called out on the Purchaser's released drawings. General NDE procedures for each method and part specific Technique Sheets shall be submitted to Purchaser for review and approval fifteen (15) business days prior to use.

b) Personnel Qualifications

All nondestructive examination processes (Penetrant (PT), Magnetic Particle (MT), Ultrasonic (UT), Radiographic (RT), Leak (LT), etc.) shall be performed and interpreted by personnel qualified/certified in accordance with the requirements of SNT-TC-1A or equivalent. Recommended practices of SNT-TC-1A are mandatory as modified by specifications. Supplier's written practice and NDE personnel certification and qualification records, including Visual Testing (VT) shall be submitted to Purchaser for review and approval fifteen (15) business days prior to use.

c) Nondestructive Examination Reports

1) With each shipment of items, on which nondestructive examination has been performed, the Supplier shall submit nondestructive examination reports, which shall include: company name/identifier, procedure number and revision used; the method used, the technique used, equipment and materials used; the test results; the typed name, signature and NDE certification level of persons performing and authenticating the test; the typed name, signature and NDE certification level of persons interpreting the test results; and the part/drawing numbers, part description, part revision (including Engineering Change Numbers, if applicable), item serial numbers, lot number, heat number, etc., or other appropriate identification and indication of acceptance by General Atomics and DCMA representatives, if applicable.

2) Low Halogen Penetrant Materials – additional requirements

When liquid penetrant materials having low halogen content are required, the 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.

(281) Nondestructive Examination Reports

Quality Clause 281 Superseded by Quality Clause 280

(282) Nondestructive Examination Reports Low Halogen Penetrant Materials

Quality Clause 282 Superseded by Quality Clause 280

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(283) Visual Inspection of Welds

Supplier shall prepare and submit for buyer review and approval, a visual inspection procedure(s) compiling with the requirements of the specifications identified on buyer's drawings. All welds shall be visually inspected per drawing requirements, and the results of such inspection shall be documented on an inspection report. The report shall identify the procedure number and revision, the part number and revision, the location of the weld inspected, the serial number or other unique identification, the typed name, signature and Visual Testing (VT) certification level identifying the qualified person inspecting the welds, and the results of the weld inspection.

(284) 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.

(285) Serialization

Quality Clause 285 has been deleted. Refer to contract for applicable requirements.

(286) 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 Representation.

(287) Foreign Object Damage

The supplier shall establish and maintain an effective Foreign Object Damage (FOD) Program to reduce FOD using National Aerospace Standard (NAS) 412 or other industry recognized standard as a guideline. The program shall be proportional to the sensitivity of the design of the product(s) to FOD, as well as, to the FOD generating potential of the manufacturing methods. The supplier will document and investigate, determine root cause, and eliminate repetitive nonconformances related to FOD incidences. The written procedures developed by the Supplier shall be subject to review and auditing by the Purchaser.

(288) Part Identification (Revision + Change Notice)

The identification method of marking a part shall be as described in the drawing notes. In addition to the marking requirements described in the drawing notes all parts will be identified

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with the revision Letter, and all applicable Change Notice (CN) Numbers as referenced in the GA purchase order.

A.8 CONTACTS

(291) Quality Assurance Representative

The GA's Quality Assurance Representative (QAR) for this order is as follows:

- Name:
- Mail Stop:
- Phone:
- Fax:
- E-mail:

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

A.9 ELECTRONIC ASSEMBLIES

(295) Printed Wiring Boards

Printed Wiring Boards (PWBs) on this purchase order (PO) shall comply with IPC-6011 or IPC-6012, as applicable. PWBs with more than two layers shall be net list tested and documentation of net list shall accompany the PWBs upon delivery. Coupons and/or cross-section coupons shall be available and will be provided upon request.

PWBs supplied on this PO shall comply with the requirements of Institute for Interconnecting and Packaging Electronic Circuits (IPC) IPC A-600 entitled "Acceptability of Printed Boards."

(296) Solder Workmanship – IPC-A-610

Workmanship for items supplied on this purchase order shall comply with the requirements of the Institute for Interconnecting and Packaging Electronic Circuits (IPC) IPC A-610, entitled "Acceptability of Electronic Assemblies", and shall meet the requirements specified on the assembly drawing.

(297) Electrostatic Discharge Sensitive Devices

For electrical and electronic parts susceptible to damage from electrostatic discharge (ESD), the supplier is responsible to establish and implement an ESD Control Program per JEDEC625-A, latest revision, or equivalent. The supplier shall take the necessary precautions to ensure that static susceptible devices are adequately protected from ESD damage during manufacturing, test, inspection, packaging, and shipping. Packaging shall be marked with an ESD cautionary note or symbol.

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(298) Solder Workmanship – IPC J-STD-001; Class 2

Workmanship for items supplied on this purchase order shall comply with the requirements of Institute for Interconnecting and Packaging Electronic Circuits (IPC) IPC J-STD-001; Class 2 entitled “Requirements for Soldered Electrical and Electronic Assemblies”.

(299) Solder Workmanship – IPC J-STD-001; Class 3

Workmanship for items supplied on this purchase order shall comply with the requirements of Institute for Interconnecting and Packaging Electronic Circuits (IPC) IPC J-STD-001; Class 3 entitled “Requirements for Soldered Electrical and Electronic Assemblies”.



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