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The Quality Assurance (QA) Clauses referenced on the purchase order by clause number are listed below. These clauses impose the supplemental quality requirements which are an integral part of the contract. In the event any requirement cannot be met, notify the Genesis Engineering Solutions (GES) Procurement/Purchasing Department immediately. Failure will result in the rejection and possible return of the materials delivered. GES inspection and acceptance of material at an approved supplier facility does not relieve the supplier of the responsibility for compliance with the requirements of the purchase order, drawing, and applicable specifications.

QA01. Government Source Inspection

All work on this order is subject to inspection and testing by the Government at any time and place. The Government quality representative has been delegated quality assurance functions on this procurement but doesn't remove any GES requirements. GES Quality Assurance shall be notified 2 days (Local) and 7 days (Non-Local) in advance of the time articles or materials are ready for inspection and/or test. GES Quality Assurance is responsible for all communications with Government quality representatives on matters related to this order.

QA02. GES Source Inspection

All work performed under this order is subject to GES inspection and or/test verification at the supplier's facility. Acceptance at the facility still needs to meet all requirements. Notify GES Quality Assurance at least 2 days (Local) and 7 days (Non-Local) prior to when the item is ready for inspection.

QA03. Part Identification

All items supplied under this order shall be identified with complete nomenclature and part numbers as specified by the applicable drawing, specification, catalog, P.O., etc.

QA03A. Spaceflight Part Identification

All items supplied under this order identified as spaceflight shall be identified as such with the term "Spaceflight" on the outside of the packaging and the shipping documentation (including C of C).

QA04. Certificate of Compliance – Flight Hardware

The supplier must submit a Manufacture's Certificate of Compliance (C of C) to certify that the materials and processes used in the parts supplied on this order meet all drawing, specification, and contract requirements. The C of C must include the following:

1. Suppliers' Name, Address & Cage Code (if one is assigned)
2. Supplier Cage code (if applicable)
3. GES purchase order number
4. Part number as specified on the GES P.O.
5. The As-Built revision level, when applicable
6. Serial, lot number, and or Date Code
7. Date of the manufacturer for each enclosed item, when applicable
8. Quantity
9. Certifying signature, title, and date.
10. Statement of Resubmission of Reworked Material -All items rejected by GES and subsequently resubmitted to GES for acceptance shall be indicated on C of C.



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QA05. Certificate of Compliance – General Compliance

The supplier shall provide a Certificate of Compliance or Certificate of Conformance to the effect that all materials, processes, and/or finished items supplied under this order are as specified in the order. Part of material marking in accordance with military, commercial, or catalog requirements as called out on this Purchase Order will be considered as a General Compliance Certificate if the marking complies with the requirement.

QA06. Material and Process Certifications

The supplier shall provide certifications for all materials, components, and specified processes used in the manufacture of this product. The certifications shall, as a minimum, include the following:

1. Suppliers' Name, Address & Cage Code (if one is assigned)
2. Cage Code (if available)
3. Part number and revision level, when applicable
4. Material composition
5. Lot number(s), batch, heat or melt number(s)
6. Mechanical properties, as applicable
7. Traceability to GES purchase order number
8. Certifying signature, title, and date.

QA07. Certificate of Analysis (C of A)

The supplier must submit a Certificate of Analysis (C of A) to certify that the material supplied on this order meets all the specification requirements. The C of A must, as a minimum, include the following:

1. Suppliers' Name, Address & Cage Code (if one is assigned)
2. GES purchase order number
3. Part number and revision level
4. Serial or lot number(s), when applicable
5. Batch, heat, or melt number(s), when applicable
6. Chemical analysis of composition, by percentage
7. Mechanical properties, as applicable
8. Certifying signature, title, and date.

QA08. Certificate of Compliance for Plating and/or Solder

Items supplied to this Purchase Order specifically DIS-ALLOW the use of pure tin and require no less than 3 percent lead Composition in any PLATING OR SOLDER PROCESS. The supplier must submit a Certificate of Compliance (C of C), in the supplier's format, to certify that the Items supplied meet this requirement. The C of C must also include the following:

1. Suppliers' Name, Address & Cage Code (if one is assigned).
2. GES purchase order number
3. Part number as specified on GES P.O.
4. The As-Built revision level, when applicable
5. Serial or number(s) and/or Date Code, when applicable
6. Quantity
7. Certifying signature, title, and date



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QA09. Inspection and Test Data / Reports

The supplier shall submit an inspection report and, if applicable, a functional test data/report with actual results demonstrating conformance to the applicable test plan or procedure for items shipped under this order.

QA10. Shelf Life Data

The supplier shall state, in writing, the starting date, shelf life, and expiration date for all limited shelf life items supplied under this order. All items shall have **75%** or more of their shelf life remaining at the time of shipment to GES.

QA11. Inspection and Test Plan

An inspection and test plan for control of articles furnished in accordance with this Purchase Order shall be prepared and specifically written to outline the product flow from receipt of materials through fabrication, assembly, and test operations. The plan shall define the inspection points throughout the manufacturing sequence and describe what, where, and when the inspection will be implemented to control the product. A general description of the procedures and records used will be adequate. Two copies of the plan shall be forwarded to the buyer within 30 days after the date of order unless otherwise specified.

QA12. Quality Manual

A copy of the supplier's Quality Manual or equivalent document shall be submitted for review within 10 days after the date of order unless otherwise specified.

QA13. Quality Management System

The supplier's quality system shall be compliant with ISO 9001, AS9100, or an applicable quality system that has been flowed down per the SOW.

QA14. Quality Standards – ISO9001

The Supplier shall provide and maintain a Quality System that is registered to ISO9001.

1. Supplier shall demonstrate compliance to these requirements by having an ISO9001 Certification from an accredited registrar.
2. GES reserves the right to conduct an assessment of the Supplier's Quality System.

QA14A. Quality Standards – AS9100

The Supplier shall provide and maintain a Quality System that is registered to AS9100.

1. Supplier shall demonstrate compliance to these requirements by having an AS9100 Certification from an accredited registrar.
2. GES reserves the right to conduct an assessment of the Supplier's Quality System.

QA15. Calibration System

The supplier shall maintain a calibration system compliant with ANSI/NCSL Z540.1, Z540.3, or ISO 10012 latest standard. When calibrations compliant with either of those standard are not available, original equipment manufacturers (OEM) may provide calibrations for their Measuring and Test Equipment. In such cases, evidence of traceability and documented test data shall be obtained from the Original Equipment Manufacturer.

GES reserves the right to conduct a survey of the supplier's facilities to determine the adequacy of the calibration system. Items submitted for calibration on this Purchase Order shall be evaluated



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for acceptability before any repairs or adjustments are made. Records of the as-received findings and the as-retained findings (adjustment post-adjustment or repair, if applicable) shall be clearly stated on the calibration report along with an indication as to whether or not the individual findings were acceptable. The report shall identify the standards used in calibration actions and shall give the applicable NIST report number to which accuracy is traceable.

QA15A. Calibration Report

Articles delivered per this purchase order shall be accompanied by a Certification of Calibration which meets the requirements of ANSI/NCCL Z540.1, Z540.3, or ISO/IEC 17025.

The certificate shall contain the following:

1. Calibration date and expiration
2. Standards Used
3. Traceability to applicable ANSI or ISO requirements

QA16. Workmanship

All items must conform to workmanship requirements as specified on applicable drawings, specifications, or on Purchase Order. If there is a conflict, please notify GES Procurement. If no workmanship is specified, the items shall be fabricated and finished to industry-acceptable standards.

QA17. Electrostatic Discharge Controls (ESD)

A supplier must have an ESD program compliant with the Seller shall provide and maintain a program for electrostatic discharge control for applicable ESD-sensitive hardware items to be furnished on this procurement. Buyer requirements are as specified in the Purchase Orders. The Seller's electrostatic discharge control program is subject to review and approval by the GES. **As a minimum, THE SUPPLIER SHALL HAVE AN ESD PLAN COMPLIANT WITH ANSI/ESD S20.20.** All Electrical parts will be placed in conductive or static-dissipative SHIELDING packages, tubes, carriers, conductive bags, etc., for shipment. The packaging must be clearly labeled to indicate that it contains sensitive electrostatic-sensitive goods. Electrical parts that may be used or shipped in conjunction with ESD sensitive parts shall be treated as ESD sensitive." Packaging techniques using MIL-B-81705 Type I, or Type II barrier material or equivalent shall be used in device shipment. A label identifying that the parts are static sensitive shall be attached to the OUTSIDE OF THE package.

QA18. Product Nonconformance

Items, products, or materials known to be not in conformance to the requirements of this Purchase Order, or associated referenced documents, shall not be shipped to GES without the prior written approval of GES Quality Assurance. The supplier is not authorized to conduct Material Review Board (MRB) actions (use as is, scrap, or repair) on GES products manufactured within their facilities. GES procurement must be notified of the nonconformance via e-mail and or by submitting a **GES-FORM-00111 (Problem Report)** form which can be obtained through the buyer. Requests for approval for shipment must be directed to the GES Purchasing Department. If the supplier discovers any nonconformance post-delivery, they shall notify GES Procurement.

QA19. Configuration Control

The supplier agrees not to make any changes to controlled documentation supplied by GES in

support of this order. In the context of this section, a document is defined as "Information which, independent of the medium on which the information is recorded, describes methods to be followed, articles to be produced, specifications to adhere to, objectives to be achieved, information to be aware of, policies which apply, and other similar information". A document may also be a format, such as a form or a database, which has been designed to facilitate the input and/or accumulation of information. No variances from supplied documentation that affect physical, functional, or interchangeability characteristics, reliability, or repair, and maintenance operations, are permitted.

QA20. First Article Inspection

The supplier shall conduct a First Article Inspection (FAI). FAI shall be conducted in accordance with the requirements of Aerospace Standard AS9102 or equivalent. The data submitted shall be parametric data to show compliance with drawing requirements. A range of data results and "go/no-go" results (except for pure attribute data) are not acceptable. **Hardware shall be uniquely identified so that the parametric inspection results can be matched with the hardware inspected.** The data shall consist of, as a minimum, each variable measured, its tolerance, drawing zone, and the actual measurement for each item.

QA21. In-Process Inspection

Items covered by this Purchase Order are to be inspected in process at your facility by a GES Quality representative, at control points stipulated by GES. You must give the GES Buyer 2 days (Local) and 7 days (Non-Local) advance notice, for source inspection coverage.

QA22. Pre-Cap Inspection

Electronic devices on this Purchase Order shall be subject to precap inspection at your facility by a GES, Project Engineer, or Government Quality Assurance Representative. You must give the GES Buyer 2 days (Local) and 7 days (Non-Local) advance notice for source inspection coverage.

QA23. 100% Inspection Data

The supplier shall submit 100% parametric data on each part to show compliance with drawing requirements (all dimensions and notes). A range of data results and "go/no-go" results (except for pure attribute data) are not acceptable. **Hardware shall be uniquely identified so that the parametric inspection results can be matched with the hardware inspected.** The data shall consist of, as a minimum, each variable measured, its tolerance, drawing zone, the actual measurement for each item, as well as the tools, verification methods, and results used. If the evaluation is to take place at the supplier's facility, the supplier is to notify GES 2 days (Local) and 7 days (Non-Local) before the item is ready for the first article evaluation. If the first article evaluation is to take place at a GES facility, the supplier shall ship the item(s), and associated documentation, to the point designated by the Purchase Order as the delivery location.

QA24. PWB Test Coupons

The supplier shall supply, with the delivery, test coupons for evaluation in accordance with one or more of the following requirements, as applicable:

1. Drawing
2. IPC-6012



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The vendor shall add Coupons to the artwork IAW IPC-2221B. Coupons shall be traceable to the boards fabricated on the same panel, provide panel mapping for coupon /PWB Serialization matching, and be delivered with boards. All Traceability markings of the PWB and Coupons shall be non-conductive white epoxy base ink or etched copper with the part number, affected serial numbers, date code, and panel traceability number.

QA24A. Solder Sample

The supplier shall ship a solder sample with the shipment.

QA25. Component Radiographs

The electronic/electrical components/parts must be radiographed and the images interpreted in accordance with the applicable component drawing requirements. One (1) complete set of radiographs and one (1) copy of the radiographic inspection report shall accompany the components/parts submitted to GES.

QA26. Process Data

Annealing, heat treating, or stress relief requirements of the drawing must be documented with furnace time and temperature charts. These charts must be kept on file, subject to GES review unless specified otherwise on the drawing or Purchase Order that a copy of the data shall be supplied with the shipment.

QA27. Process Control

The supplier shall obtain GES approval for all manufacturing and inspection processes used in the performance of this order. The supplier shall maintain objective evidence of process qualification and control in accordance with applicable specifications.

QA28. Electrical, Electronic, or Electromechanical (EEE) Fight Parts

All Electrical, Electronic, or Electromechanical (EEE) parts procured from the Original Component Manufacturer (OCM) or an OCM's authorized distributor shall have been manufactured within three (3) years from the delivery date for Plastic Encapsulated Microcircuits (PEMs) and five (5) years for all others.


Items supplied under this Purchase Order shall be from a single date code and/or lot code. This shall include all sub-assemblies of the article being procured. The date/lot code shall be recorded on the packing list, certification, and other applicable documents.

Any deviation from this requirement shall be in the form of written authorization from the procuring agency before delivery, and the authorization shall be included with each shipment.

QA29. Counterfeit Parts Prevention

The Seller shall establish and maintain an acceptable counterfeit electronic part detection and avoidance system per the applicable Aerospace Standard listed below:

- OCM (Original Component Manufacture) / OEM (original equipment manufacturer) / Users of Electronics per SAE AS5553
- OCM/OEM/Users of Materiel (other than electronics) per SAE AS6174 (applies to any material besides electronics relating to the Genesis Order)
- Authorized Distributors of Electronics per SAE AS6496
- Independent Distributors/Brokers of Electronics per SAE AS6081

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- Test Laboratories of Electronics per SAE AS6174

Failure to maintain an acceptable counterfeit electronic part detection and avoidance system **and/or Assuring the Acquisition of Authentic and Conforming Material** as defined in this clause, may result in disapproval in Genesis Engineering’s purchasing system and/or withholding of payments and affect the allowability of costs of counterfeit electronic parts or suspect counterfeit electronic parts and the cost of rework or corrective action that may be required to remedy the use or inclusion of such parts per DFARS 231.205-71. Parts suspected as counterfeit by the procuring activity will not be returned to the supplier. Parts suspected as counterfeit shall be quarantined and dispositioned. Destruction or confiscation of parts verified to be counterfeit does not relieve the supplier of the financial responsibility.

QA30. Traceability

Suppliers of items furnished on this order shall supply records sufficient to permit traceability of delivered items from the delivered item back through its manufacture and inspection to the procurement records on its constituent parts and materials, such as lot and date code information and similar data. These records shall be sufficient to prove conformance to all applicable specifications and drawings and shall provide means for identifying all like items.

QA31. Packaging and Shipping

The Supplier shall package parts in accordance with the purchase order and all applicable drawings and specifications. If not specified, the Boxes or containers, as applicable, should be selected to the extent necessary to protect from physical and environmental damage during shipping and handling. Cushioning materials shall be applied, as required, to protect and restrict the movement of the item(s) without the use of “Pink Poly” Bubble Wrap and any color “peanut” packaging. EEE components shall be kept from direct contact with cardboard and other paper products. Electrostatic Discharge sensitive components shall be packaged per ANSI/ESD S20.20. Perishable items or those with limited shelf life must be handled/preserved in accordance with the recommendations of the manufacturer. Each container shall be identified on the outside with the GES Purchase Order number. Failure to do this will result in payment delay and possible return of the delivery. Each sub-package shall be identified with the applicable part number. If stated on the Purchase Order / SOW, any shipment of material against this purchase shall be made with the use of form DD1149 or other shipping documents specified by the contract. Copies of completed and signed forms must be submitted to the GES Procurement and Quality Assurance office, within five (5) working days of delivery.

QA32. Hazardous Materials

Hazardous Materials shall be delivered by applicable Department of Transportation regulations. Each shipment of material with a finite shelf life shall be accompanied by documentation to determine the expiration date based on the Manufactures method for determining useful life (date of manufacture, date of shipment, or expiration date as applicable). The latest SDS/MSDS for all Chemicals shall be supplied to GES when delivered.

QA33. Wire

Each spool of wire on this order shall be legibly and permanently identified with the following:



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1. Wire Gauge
2. Cure Date (as applicable)
3. Manufacturer
4. Manufacturer Part Number
5. Military Specification number (as applicable)
6. Purchase Order Number.

QA34. Final Acceptance

All items on this order shall be processed through GES Receiving Inspection operations for final acceptance.

QA35. Changes in Product or Process Definition

The supplier shall notify GES of any changes in product or process definitions, supplier changes, or changes in manufacturing facilities locations and shall not proceed under this order, or deliver a product incorporating such changes under this order, until receiving written consent from GES.

QA36. Right of Access

GES, its customer(s), and regulatory authorities shall not be denied access to any facilities involved in this order, and any applicable records involved in this order.

QA37. Procurement Documentation

The GES Purchase Order, and items of officially released documentation that may be supplied with this order by the GES Purchasing Department, are the sole governing document(s) for determination of the acceptability of purchased items or services. Supplemental unreleased documents or computer files which may from time to time be provided by the GES Purchasing Department to suppliers for information or convenience shall not be used for product or service inspection, or other verification purposes unless it is flowed down via Purchase Order.

QA38. Raw Material Identification

All raw materials, including plates, bar extrusions, sheets, etc., must be identified in accordance with the applicable material specification. Identification to the GES Purchase Order is also required.

QA39. Lot Control

Items supplied under this Purchase Order shall be from a single date code and/or lot code. The date/lot code shall be recorded on the packing list, certification, and other applicable documents.

QA40. Specialty Metals

The items/components contained in this Purchase Order are in support of a Government Contract and have been identified as having the potential to contain "Specialty Metals" pursuant to DFARS 252.225-7009. Acceptance of this P.O. requires the Seller to conform to the requirements of DFARS 252.225-7009. Evidence of conformance demands that the Seller shall provide a (C of C) certifying that the items/components provided conforms to DFARS 252.225-7009 requiring items/components be melted or produced in the United States, its outlying areas, or a qualifying country.



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QA41. NASA Conformal Coating

Parts supplied to this order shall meet the requirements of NASA-STD-8739.1, "Requirements for Staking and Conformal Coating Application." The supplier shall provide and maintain an inspection system that meets this standard. All personnel performing associated tasks shall be trained and certified to this standard in accordance with stated requirements.

QA42. NASA Soldering

Parts supplied to this order shall meet the requirements of NASA-STD-8739.3, "Requirements for Surface Mount Technology" or IPC J-STD-001 (Space Addendum for Flight work). The supplier shall provide and maintain an inspection system that meets this standard. All personnel performing associated tasks shall be trained and certified to this standard in accordance with stated requirements.

QA43. NASA Cable, Crimp and Harness

Parts supplied to this order shall meet the requirements of NASA-STD8739.4, "Requirements for Interconnecting Cables, Harness and Wiring." The supplier shall provide and maintain an inspection system that meets this standard. All personnel performing associated tasks shall be trained and certified to this standard in accordance with stated requirements.

QA44. NASA Fiber Optics

Parts supplied to this order shall meet the requirements of NASA-STD-8739.5, "Requirements for Fiber Optic Termination." The supplier shall provide and maintain an inspection system that meets this standard. All personnel performing associated tasks shall be certified to this standard in accordance with stated requirements.

QA45. Don't Use Pink Poly Bubble Wrap and Peanut Packaging

"Pink Poly" Bubble Wrap and any color "peanut" packaging shall not be used for any item supplied under this purchase order.

QA99. Special Instructions and/or Requirements

Any special instructions or requirements shall be called out under this clause with directions for the requirement for proof of conformance if required. Special Instruments and/or requirements must be specified on the Purchase order or procurement ordering method. This can be used to document any exceptions to the listed clauses.