



QUALITY ASSURANCE REQUIREMENTS

The Pacific Scientific Energetic Materials Co. ("Buyer") Quality Assurance Requirements, as listed herein, shall be made part of the Purchase Agreement when referenced on the Purchase Order. Only those codes listed on the Purchase Order shall apply. The latest revision or amendments of all specifications, drawings, standards, or instructions in effect at the time of award of the Purchase Order shall apply (unless specifically noted otherwise on the Purchase Order). In the event of inconsistency between these Requirements and the General Terms and Conditions, these Requirements shall take precedence.

GENERAL QUALITY ASSURANCE REQUIREMENTS (applicable to all Purchase Orders)

Inspection

Buyer has the right to perform inspection at a Buyer facility or the Seller's facilities, or those of Seller's subcontractors and suppliers with prior coordination with Seller, during the period of manufacture and final inspection prior to shipment. Neither surveillance, inspection, acceptance, and/or tests made by Buyer or its representatives or representatives of Buyer's customer (non-Government) or representatives of the Government at either Seller's or Buyer's facility, nor Seller's compliance with all applicable Quality Assurance requirements shall relieve supplier of the responsibility to furnish items which conform to the requirements of the Procurement Document.

Survey

Acceptance of delivered material by Buyer is contingent upon Buyer approval of the Seller's quality system. Quality system approval may be accomplished either by the Seller's submission of the survey form provided by Buyer or by an on-site survey conducted by Buyer personnel. Failure to complete and submit a survey form, when requested by Buyer may result in returned material at the Seller's expense.

Corrective Action

Upon receipt, the Seller, or the Seller's sub-tier suppliers, shall respond to Buyer's request for corrective action within the timeframe and take timely and effective action to eliminate the root cause underlying the deficiencies.

Re-submittal of Rejected Items

Items rejected by Buyer and subsequently re-submitted to Buyer for acceptance shall be clearly identified on the Seller's shipping document as re-submitted items.

Process Changes

The Seller shall notify Buyer of any pending changes to process(es), inspection techniques, test methods, materials, or design change(s) prior to incorporation. This requirement may be supplemented by additional requirements herein that have been identified on the Purchase Order.

Facility Change

The Seller shall notify Buyer if there is a change or a pending change to the facility location. This requirement may be supplemented by additional requirements herein that have been identified on the Purchase Order.

Material Traceability

The Seller shall provide and maintain a system of traceability for all materials and components. This requirement may be supplemented by additional requirements herein that have been identified on the Purchase Order.

Record Retention

The Seller shall retain a set of all records required to fulfill the requirements of the Purchase Order, either specifically or by reference. The records shall be retained on file for a period of not less than ten (10) years from the time of completion or termination of the Purchase Order. These records shall be made available to Buyer representatives and/or its' customer or Government representatives upon request.

1.0 QUALITY ASSURANCE SYSTEMS

- A. The Seller's shall provide and maintain a quality system that complies with MIL-Q-9858.
- B. The Seller's shall provide and maintain a quality system that complies with MIL-I-45208.
- C. The Seller's shall provide and maintain a quality system that complies with NHB5300.4(1C).
- D. The Seller's shall provide and maintain a quality system certified to ISO-9001.
- E. The Seller's shall provide and maintain a quality system certified to ISO-9002.
- F. The Seller's shall provide and maintain a quality system certified to ISO-9003.
- G. The Seller's shall provide and maintain a quality system certified to AS9100.
- H. The Seller's shall provide and maintain a quality system certified to QS9000.
- J. The Seller's shall provide and maintain a calibration system that complies with MIL-STD-45662.
- K. The Seller's shall provide and maintain a calibration system that complies with ANSI/NCSL Z-540-1.
- L. The Seller's shall provide and maintain a calibration system certified to ISO10012.
- M. Program Specific Quality Requirements.

2.0 Quality Program Plan

The seller shall prepare and submit a Quality Program Plan to Buyer. Contents of the plan used to implement requirements of the purchase order are subject to disapproval by Buyer. The seller's Quality Program Plan shall include, as a minimum, the following:

- A. A description or organizational chart showing the quality Control Organizational relationship to other functional organizations (i.e. Engineering, Purchasing, Manufacturing, etc.).
- B. A detailed definition of the seller's method for assuring product quality at all phases of inspection and test from procurement through receiving, fabrication, assembly, testing, acceptance, preservation, packaging, and shipping
- C. Flowcharts indicating the inspection and test verification points through receiving, fabrication, assembly, and shipping sequences shall be provided. Inspection test equipment and test documentation shall be identified.

3.0 Federal Acquisition Regulations

- A. FAR Clauses apply to this purchase order. Details will be provided with the purchase order as an attachment.
- B. The Seller shall comply with the requirements of DFAR 252.225-7014, Alternate 1, **Preference for Domestic Specialty Metals** for items provided to the buyer on this order. In addition, this requirement shall be flowed down to the seller's sub-tier supplier(s).

4.0 PROCUREMENT CLASSIFICATION

Procurements on this order are classified to the requirements of MIL-STD-1535 as follows:

- A. **Group I.** This group includes (a) Purchase of products or services that are either complex or have critical application, and for which conformance to contract requirements cannot or should not , for economical reasons, be fully determined upon receipt, and (b) Purchase requiring direct shipment to the Government.
- B. **Group II.** This group includes purchases for supplies when conformance to contract requirements may be adequately determined upon receipt.
- C. **Group III.** This group includes items purchased for products or services for which there are no contractual quality requirements specified.

5.0 Configuration

- A. **Configuration Management.** The requirements of Mil-Std-483/973 or equivalent apply to this purchase order. Additional requirements are outlined separately. Failure to comply with the requirements may render the seller liable for any costs incurred by Buyer.
- B. **Drawing Control.** When the design is the seller's responsibility, the seller shall not implement any changes in design, materials, processes, or control without written approval by Buyer Purchasing prior to supplying services and/or material. The seller is also responsible for sub-tier supplier compliance.

6.0 FLOWDOWN

- A. The Seller shall flow the requirements contained within this purchase order to their sub-tier suppliers, including any key characteristics of performance parameters identified, as applicable. The flow down shall be contingent upon the nature of the product or process being provided by the sub-tier source. The flow down does not relieve the Seller of the responsibility for exercising those control measures necessary to ensure that work performed by sub-tier sources is in accordance with the purchase order requirements.
- B. Items must be purchased from sources specified on drawings or prints supplied with this purchase order.

7.0 SOURCE INSPECTION/RIGHT OF ENTRY

A. Buyer Source Inspection. Buyer inspection and/or Buyer's customer representative shall perform inspection/test of product/services at the Seller's facility prior to each shipment. Buyer reserves the right to conduct surveillance of work in progress, inspection and/or test at points selected by Buyer or Buyer's quality representative. Buyer and/or Buyer's customer representative also reserves the right to conduct final inspection and/or tests, as necessary, at source and/or destination to determine conformance to the purchase order. The Seller shall furnish reasonable access to relative contract, design and specification data, and the necessary equipment and space to perform such inspections or tests. When product is returned to the Seller, copies of any and/or all rejection forms shall be presented to Buyer's source inspector at the time the items are presented for acceptance. Evidence of source inspection shall accompany each shipment to Buyer. Buyer reserves the right to waive source inspection at any time, however, such waiver shall have no affect whatsoever on the Seller's requirement to fully comply with the specifications and all of the terms and conditions of the contract/purchase order.

These inspections shall include, but not be limited to the following:

1. Pre-cover or Pre-encapsulation inspection.
2. In-process inspection.
3. Final inspection/test or acceptance.

Seller shall notify the Buyer at least 72 hours in advance of material readiness for inspection.

B. Government Source Inspection (General). Government source inspection is required prior to shipment from your plant. Upon receipt of this order, promptly notify and furnish a copy (not to exceed 48 hours) to the Government representative who normally services your plant so that appropriate planning for Government inspection can be accomplished. If a Government representative does not service your plant, contact the nearest Defense Contracts Management Command (DCMC) office. If you cannot locate the DCMC office, notify the Buyer immediately. If the Government performs inspections or tests on the premises of the Seller, the Seller shall furnish and require sub-contractors to furnish, without additional costs, all reasonable facilities and assistance for the safe and convenient performance of these duties.

C. Government Inspection (General). The Government has the right to inspect any or all of the work included in this order at the Seller's plant. If the Government performs inspections or tests on the premises of the Seller, the Seller shall furnish and require sub-contractors to furnish, without additional costs, all reasonable facilities and assistance for the safe and convenient performance of these duties.

D. Government Source Inspection (NASA). Government source inspection is required prior to shipment from your plant. Upon receipt of this order, promptly notify and furnish a copy (not to exceed 48 hours) to the Government representative or the representative that has been delegated **NASA** Quality Assurance functions, as specified on the purchase order, who normally services your plant. If a Government representative does not service your plant, send a copy to the nearest Army, Navy, Air Force, or Defense Supply Agency Office so that appropriate planning for Government inspection can be accomplished.

If you cannot locate an office, notify the Buyer immediately. If the Government performs inspections or tests on the premises of the Seller, the Seller shall furnish and require sub-contractors to furnish, without additional costs, all reasonable facilities and assistance for the safe and convenient performance of these duties.

E. Buyer Resident Inspection. Buyer reserves the right to place Quality Assurance representatives, including those of Buyer's customers, in the Seller's facilities, as deemed necessary to assure conformance to contract requirements.

F. Right of Entry. Buyer shall have the right of entry into the Seller's facility or any area necessary to determine compliance with this purchase order. The Seller shall provide reasonable facilities and assistance to expedite any visits. Buyer may also, at Buyer's option, by prior written notice from an authorized Buyer Purchasing representative, extend such rights to their customers.

8.0 CERTIFICATIONS/ANALYSIS

A. General Certificate of Compliance. The Seller shall furnish with each shipment a "Certificate of Compliance" that certifies compliance to all purchase order requirements including specifications, drawings, and standards. It shall **separately and specifically** state compliance to all applicable drawing notes (i.e. special processes or materials) and referenced Standards. It shall state that tests, reports, and inspection records are on file at the Seller's or manufacturer's facility and are available for Buyer, their customer, and/or Government review. The records shall be retained by the Seller for a period of ten (10) years. The certification shall contain the authorized signature along with the position and/or title of the individual from the Seller's Quality department. The certificate shall contain, as a minimum, the following:

1. Seller's name and Address
2. Buyer Purchase Order Number
3. Part Number (including dash number and revision letter)
4. Part Name
5. Quantity

6. Lot Number and Serial Numbers, if applicable.
7. Material Type, if applicable
8. If the Seller's activity includes only resale of a standard catalog product, specify that supplier is a "distributor".
9. If the certification is for material produced by a manufacturer other than the seller, the name and address of the manufacturer shall be included.

The Seller shall maintain records at his facility, which indicate the material's conformance to the drawing and/or specification requirements. Electronic (computer generated) certifications, without written signature, is acceptable.

B. Certificate of Material Conformance (Buyer Furnished Material). The Seller shall furnish with each shipment a signed Certificate of Conformance which certifies that the purchase order items were produced from materials furnished by Buyer. The certificate shall contain the following as a minimum:

1. Seller's name and Address
2. Buyer Purchase Order Number
3. Part Number (including dash number and revision letter).
4. Part Name
5. Quantity
6. Lot Number and Serial Numbers, if applicable.
7. Material traceability documentation as furnished by Buyer.

C. Certificate of Qualified Products. The Seller shall furnish with each shipment a Certificate of Conformance that identifies the materials as qualified to the required specification and listed on an official Qualified Products List (QPL). When material is qualified but not included in the QPL, the certification shall reflect the qualifying test report number. Approved vendor listings issued by prime contractors will be utilized when required by contract.

D. Physical and Chemical Analysis. The items or services being shipped or performed against this order require copies of actual chemical and physical test results showing actual readings taken and conformance to applicable specifications. As applicable, the certification shall identify the material specification and revision, including applicable grade, type, class, etc.; mfg's lot, batch, heat, or serial number identity, and the quantity of material covered. These documents must be identifiable to the items they represent and shall be included with each shipment. This documentation must be signed by an authorized representative of the agency performing the tests. The Seller shall retain a copy of these records for a period of ten (10) years.

E. Process Certifications. Seller's or their sub-contractors who perform any of the special processes listed in the purchase order or its attachments or references, must be approved by

Buyer and be included in the Buyer Approved Vendors List (AVL) for all processes to be performed in compliance with this order.

Each shipment shall be accompanied by a copy of a Certificate of Conformance that identifies the processes performed to specification. The certificate shall include as a minimum:

1. Seller's Name and Address.
2. Buyer Purchase Order Number.
3. Part Number, including dash and revision letter.
4. Part Name.
5. Quantity Processed.
6. Lot Number and Serial Number, if applicable.
7. Process Name.
8. Process Specification Number with Type and Class.
9. Name and Address of the agency that performed the process if other than the seller.

Objective evidence of the Process Certification shall be retained and made available to Buyer and/or its customers or the Government for a period of ten (10) years.

F. Ozone Depletion Chemicals. Specific Certificate of Conformance. The Seller shall furnish with each shipment a "Certificate of Compliance" that certifies that no Class I Ozone Depleting Chemicals (ODC) were used in the design, manufacture, test, operation, or maintenance of any system, subsystem, item, component or process for the items provided to Buyer. Class I ODC items have been identified as:

1. Halons 1211, 1301, and 2402.
2. Chlorofluorocarbons (CF): CFC-11, CFC-12, CFC-13, CFC-111, CFC-112, CFC-113, CFC-114, CFC-115, CFC-211, CFC-212, CFC-213, CFC-214, CFC-215, CFC-216, and CFC-217.
3. Other controlled substances such as: carbon tetrachloride, methyl bromide, and methyl chloroform.

The Seller should review the requirements specified in the purchase order to determine whether any Class I ODC are required or used in or with the delivered goods. If it is determined that Class I ODC has or will be used, contact the Buyer immediately.

Any authorized use of ODC shall further comply with section 611 of the Clean Air Act which requires a manufacturer to provide written warning statements to their customers for products manufactured with or containing certain ODC's. Further, on imported goods, the importer, whether the importer is also a user, must determine whether the product was manufactured with ODC's.

G. Independent Physical and Chemical Analysis. This Analysis must be independent of the

manufacturer's test results. The items or services being shipped or performed against this order require copies of actual chemical and physical test results showing actual reading taken and conformance to applicable specifications. As applicable, the certification shall identify the material specification and revision, including applicable grade, type, class, etc. These documents must be identifiable to the items they represent and shall be included with each shipment. This documentation must be signed by an authorized representative of the agency performing the test. The Seller shall retain a copy of these records for a period of ten (10) years.

H. Process Certifications. Seller's or their sub-contractors who perform any of the special processes listed in the purchase order or its attachments or references must provide a Process certification with each shipment. The process certificate shall include as a minimum:

1. Seller's Name and Address.
2. Seller's Purchase Order Number.
3. Part Number, including dash and revision letter.
4. Part Name
5. Quantity Processed.
6. Lot Number and Serial Number, if applicable.
7. Process Name
8. Process Specification Number with Type and Class.
9. Name and Address of the company that performed the process if other than the seller.

Process Certification shall be retained and made available to Buyer and/or its customers or the Government for a period of ten (10) years.

9.0 TRACEABILITY

Ammo Data Cards (ADC). An Ammo Data Card, per MIL-STD-1168, is required to be provided with each shipment on this order.

10.0 First Article/Qualifications

A. Raw Material for Analysis. The Seller, at no charge, shall furnish a sample of material representing, and identified to, material used on this order. The sample shall be furnished to Buyer, or as directed on this order, for chemical and mechanical analysis. Any election to fabricate parts prior to analysis and material approval shall be at the Seller's risk.

B. Test Specimens and Coupons. The Seller will furnish test specimens or coupons to Buyer with each production lot in accordance with the requirements of the applicable process specification and/or the purchase order.

Traceability of Test Specimens and coupons shall be maintained by serializing, marking, stamping or other permanent means that will not degrade the test samples.

C. First Article. The Seller is required to perform 100% inspection and recording of variables (actual) data for the first piece (or randomly selected if required by the PO) of this order, unless the quantity specified in the purchase order indicates otherwise. The Seller shall notify the Buyer seventy-two (72) hours in advance of the inspection. Buyer reserves the right to witness the first article inspection.

The First Article (FA) shall be performed to verify each note, feature and call out on the drawing. The FA report shall have actual measurement data (PASS/FAIL data is not acceptable), material/test certifications, or reports provided to show compliance to the drawing, material or test requirements. The FA shall record the measurement tool(s) used for each feature, and these tools shall be traceable in the supplier's calibration system. The FA report shall record the planning documentation number with revision level (i.e. production traveler, build records, inspection/test procedures, etc.) used to manufacture the FA item(s).

The first article item(s), when submitted to Buyer, shall be accompanied by the Seller's first article report. First articles shall be tagged, bagged, or otherwise identified as first articles and show the tool number, tool serial number, cavity number, etc. When more than one tool number or cavity, etc., is used, first articles for each must be submitted.

Upon receipt of the first article part and report from the Seller, Buyer shall approve the first article by inspecting the dimensions specified by Quality Engineering and Engineering.

The first article is rejected by the Buyer, the vendor shall provide corrective action for the non compliance. A new or Delta First Article shall be performed at no additional cost.

Production shipment shall not be made until the first article inspection has been successfully completed and approval has been received from Buyer in WRITTEN form. This approval must be included with the first production order of parts at Buyer's facility.

11.0 Age Controls/Perishable Material

Certificate of Age Sensitive Material. Each shipment shall be accompanied by a Seller Certificate of Conformance for limited shelf life items. The material must have a minimum of 80% of the rated shelf life (if shelf life is established) remaining at the time of receipt.

The document shall provide the following information:

1. Seller's name and address.
2. Buyer Purchase Order Number.
3. Part Number, including dash and revision letter (if applicable).
4. Material Identification or Type.

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5. Quantity.
6. Material lot or Batch Number.
7. Cure Date (when applicable).
8. Shelf Life/Expiration date.
9. Date of Manufacture.
10. Storage environment or requirements.

In addition, materials purchased under this order shall include a copy of the manufacturer's technical bulletin describing its use and precautions, if applicable.

When MIL-STD-1523 is applicable, the Seller shall mark the cure date per MIL-STD-1523 on all shippers, containers, and parts or raw stock. Assemblies shall be marked with the cure date of rubber parts contained therein.

12.0 Inspection/Test Data

- A. Manufacturer's Data Sheet.** The Seller shall furnish a standard "catalog" product specification or data sheet.
- B. Physical Test Reports.** Each shipment shall be accompanied by a copy of the actual test data from the physical tests conducted on materials submitted to Buyer. The reports must contain the material lot number, specification, material type, and signature of an agency representative attesting to conformance to specification requirements.
- C. Chemical Test Reports.** Each shipment shall be accompanied by a copy of the actual test data from the chemical tests conducted on materials submitted to Buyer. The reports must contain the material lot number, specification, material type, and signature of an agency representative attesting to conformance to specification requirements.
- D. Acceptance Test Data.** Items/articles shipped against this order must be accompanied by evidence of the Seller's compliance with acceptance test requirements contained in the referenced documents and/or drawings. Such evidence shall include a copy of actual data from acceptance tests performed by the Seller identifiable to the serial numbers and/or lot number of items supplied.

In the event that tests were conducted at an independent laboratory, the test reports will note the laboratory name, address, purchase order, part number, date of tests, serial numbers and lot numbers, when applicable. All test data, qualifications, and acceptance test reports, as applicable, are to be on file at the Seller's facility for a minimum of ten (10) years.

- E. Inspection Data (SPC).** The Seller shall supply objective evidence that all attributes for the items supplied on this purchase order have been inspected. This evidence may be in a data sheet or inspection checklist format, wherein each attribute is listed and accepted by the Seller's Quality Assurance Department.

1. SPC Results (As specified in the purchase order).
2. Variable Results (As specified in the purchase order).
3. Attribute Results (As specified in the purchase order).
4. Sampling Levels/AQL (Can be stated on the Seller's C of C).

F. Inspection and Documentation. Articles defined in this purchase order are subject to inspection when received and will not be accepted if the seller fails to provide the certification, test data, reports, or other documentation and items specified in the purchase order and Quality Clauses.

G. Inspection Plan and Report. The Seller shall complete, sign and date the supplied Inspection Plan & Report (IP&R) to the specified AQL, or submit his documentation, which includes all the requirements of the supplied IP&R. Unless otherwise specified, the requirements is for a full inspection to Level II.

Note: Fill in "Actual/Span" blanks only when a characteristic is found to be out of tolerance.

13.0 Special Process Control/Approval

- A. Process Changes (General).** The Seller shall notify Buyer of any proposed changes to processes, or inspection/testing methods and techniques. This includes facility changes. Buyer approval is required prior to implementation of proposed changes.
- B. Customer Approved Sources (General).** The use of Buyer customer approved sources shall be established with Buyer Purchasing prior to supplying services and/or materials. The Seller is responsible for compliance by the seller's sub-contractors. Buyer will provide applicable customer lists, as required.
- C. Process/Manufacturing Procedure Approval.** The Seller shall furnish one copy of his written special process and/or manufacturing procedures covering the manufacture of items to be furnished on this order. Procedures shall address the process, process equipment, personnel, and any other considerations pertinent to the applicable specification. Special processes shall include, but not be limited to welding, heat treating, cleaning, plating, anodizing, chemical film, brazing, soldering, passivation, anodizing, painting, electro-polish, and non-destructive testing.

The written procedure shall be submitted to Buyer for review and approval a minimum of two weeks prior to the start of processing. Once approved, no changes shall be made to the documents without prior written approval by Buyer.

- D. Homogeneous Requirements.** All parts supplied under this purchase order shall be from one lot,

homogeneous and identical. A homogeneous lot is defined as that which is processed at one time in a continuous production run using identical constituents and can be identified as one run, batch, lot set-up or process, as applicable. There shall be no change in material, process, design, or method of manufacture by the seller unless such change is approved, and such change is indicated by a change in lot number(s).

- E. Manufacturing Lot or Batch Number.** All parts, materials, and/or applicable documents shall be identified by a manufacturing lot or batch number by the seller, which shall include heat number, heat code, heat lot number, or melt number. Where it is not practical to mark the part, the smallest container packaged shall be marked with the above data. All applicable documents (chemical and physical reports, certifications, etc.) shall include the above required identification, as well as a reference to the Buyer purchase order number.
- F. Deleted**
- G. Inspection Plans, Instruction, and Methods.** Descriptions of inspection tools, equipment, methods and specifications shall be forwarded to Buyer for review and coordination of the inspection methods to be used. Once established, this criteria shall not be changed, nor any substitutions of inspection be conducted without prior written approval of Buyer's Quality Assurance Department.
- H. Lot Numbering.** The seller shall include the lot and/or batch number(s) on the Certificate of Conformance.
- J. Serialization.** The seller shall identify each component, subassembly, or assembly by serial number in accordance with the purchase order, drawing, and/or specification requirements. Unless otherwise specified, it is the seller's responsibility to assign serial numbers. The seller's serialization system shall preclude the possibility of duplication of serial numbers. The seller's Quality Control System shall provide for traceability of all serialized supplies to the source.
- K. Special Process Approval (AES).** All special processes (welding, heat treating, plating, cleaning, etc.) on this order, require the use of vendors previously approved by Allied Signal, Aerospace Electrical Systems, and contained on the most recent version of the AES Approved Processing Source List (APSL). The failure to use a special process or sub-contractor on the current list at the time of order will result in rejection of the contracted items.
- L. Special Process Control (Boeing).** The seller shall use Boeing approved process sources in accordance with DI-4426, which along with information on Boeing approved processors and the User Instructions for the document, can be obtained from the Boeing web site at:

http://www.boeing.com/companyoffices/doingbiz/index_quality.html

- M. Special Process Approval (Lockheed-Martin).** The Seller and any sub-tier contractor engaged in special processes (i.e. soldering, cleaning, X-Ray, welding, magnetic particle and penetrant inspection, heat treating, plating, etc.) shall have special process approval by Lockheed-Martin or his system to control his sub-tier's special processes shall have been approved by Lockheed-Martin. Approval of special process sub-tier contractors does not relieve the Seller of the responsibility for exercising those control measures necessary to ensure that work performed by sub-tier contractors is in accordance with specification requirements. The Seller shall have records of his approval on file available for review by the Buyer and/or Lockheed-Martin QA representative. The Seller shall identify any sub-tier contractor(s) that performed special processes, by process specification, and supply this information to Buyer with each shipment. A list of Lockheed-Martin approved special processors can be found on the CPS Supplier Gateway via the internet at: <http://www.Supplier.External.LMCO.com>.
- N. Single Heat Lot Control (USA/NASA).** The Seller shall furnish the entire lot on this order from the same heat lot. The Seller shall indicate the heat lot number on the Certificate of Conformance and flow down the heat lot requirement to all sub-tier processors. Sub-tier processors shall record the heat lot number on all certifications submitted to the Seller.
- P. Special Process Control (USA/NASA).**
1. Special process procedures must be submitted to Buyer for approval prior to processing.
 2. The approved special process procedure number/revision, the specification(s) pertaining to the process and revision, shall be on the Certificate of Conformance, and any sub-tier C of C. For traceability, the Material Lot Number and Serial Numbers (if individually serialized) are to be listed on each certificate.
- R. Process Change Restriction.** Seller agrees to maintain strict controls that neither any design, material, part process, procedure, tooling, test equipment or facility shall be altered, redesigned or replaced by any other design, material, part, process, procedure, tooling, test equipment or facility without prior written approval of the Buyer. Notwithstanding the above, Seller agrees that the item(s) to be supplied hereunder will conform to all applicable procurement specifications and drawings, as amended. This requirement shall be flowed down to the Seller's sub-tier supplier(s)

14.0 Special Tool Qualification and Control

Tool qualification shall be accomplished on all Buyer authorized, seller furnished tools manufactured or acquired for use on this order by

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the seller's Quality department. The seller shall not manufacture or modify any such tooling unless authorized by a tool order. Objective evidence of proper control and maintenance shall be maintained by the seller and subject to audit by Buyer.

15.0 Printer Wiring Boards/Assemblies

A. PWB Design Services. Artwork shall be supplied to Buyer for approval in electronic format that is readable with free viewers. Fabrication of the PWB shall not proceed prior to artwork approval by the Buyer. If no changes are made to the design, the final artwork shall be supplied to Buyer for documentation purposes.

B. Printed Wiring Board Assembly (PWBA) Requirements Flow Down/ Revision Control. PWBA supplier shall assure complete flow down of all requirements to all sub-tier suppliers. The Printed Wiring Board (PWB) supplier shall be provided the original Buyer PWB drawing (or the required revision), all Quality Assurance Provisions and any other requirements stated in the Purchase Order that are applicable to the PWB or sub-tier supplier. If the PWBA supplier has additional requirements, they may be provided to the PWB supplier in attachments.

C. PWB Testing. PWB's on this order shall be tested to the requirements of MIL-P-50884, Group A and B prior to delivery. Copies of test data shall accompany each shipment of PWB's.

D. Coupons and Micro-sections. The PWB supplier shall incorporate coupons on the fabrication panel that are representative of all the technology in the PWB including the worse case condition of such features (e.g. annular rings, etc.). These coupons shall be designed to meet all applicable specifications on the PWB drawing.

Micro-sections shall be performed on a read and record basis with data included in the PWB certification. One additional set of coupons shall be provided to Buyer with each lot of PWB's.

E. PWBA Certifications. The PWBA supplier shall provide a complete certification package including a separate certification by each supplier of a special process. All suppliers of special processes shall be a Buyer and/or Buyer's customer approved supplier. Each certification shall include the supplier's name, address, and Buyer Purchase Order number. The following shall also be on the certification: part number, dash number and revision, quantity processed, lot date code or batch number, process name, specification (with revision), and type and class. Special processes shall include wire bonding, soldering, plating, PWB manufacture, adhesive bonding, etc. Certifications shall include the lot date codes or lot numbers for all components used in the assembly including those supplied by Buyer.

F. Packaging for ESD Sensitive Electronics. Products shall be packaged in heat sealed, static

shielding bags with desiccant. A label containing the part number, revision, lot date code or lot number, supplier name, and ESD handling requirements shall be affixed to the bag. Assemblies shall be packaged using static safe materials inside and outside of the heat sealed bag to prevent damage during shipping.

16.0 CFM/CFE, GFM/GFE

Buyer or Government Material and/or Tooling. Buyer or Government furnished material and/or special tooling specified by the purchase order shall be utilized by the Seller on this order. The Seller shall be responsible for the proper use, accountability, preservation, identification, calibration and maintenance of all items for the entire period of the custodianship.

Buyer or Government furnished materials shall not be used for any other jobs or production not specifically directed by the procurement documents. The use of tooling and special gages or materials for jobs other than specified on the purchase order shall require prior written approval from Buyer.

17.0 Calibration

A. Certification of Calibration for Calibrated Items. The Seller shall furnish a Certificate of Calibration indicating that their system and the standards employed to perform measuring and calibration activities conform to the requirements of MIL-STD-45662, ANSI/NCSL Z540-1 or ISO 10012. Calibration procedures must provide sufficient information for periodic calibration of measuring and test equipment (M&TE). The Certificate of Calibration shall, as a minimum, contain the following information:

1. Date of Calibration.
2. Specification to which calibrated.
3. Identification number or serial number of the item to which the report pertains.
4. Identification information for the equipment used for the calibration.
5. Evidence of traceability of the equipment used for the calibration to the National Institute of Standards and Technology (NIST).
6. Name of agency performing the calibration(s) if other than the Seller.
7. A statement indicating whether the instrument was within tolerance(s) in the as received condition.
8. A statement indicating whether the instrument was within tolerance(s) upon completion of the calibration.
9. Results of calibration(s) performed including the initial (as received) and (as returned) measurements. The data shall include a statement of uncertainties (tolerances) or accuracy of standards used, including data for an out-of-tolerance conditions found.

10. As applicable, relevant environmental or other conditions under which the calibration was obtained and for which the stated tolerances are valid.
11. As applicable, corrections which must be applied if standard conditions of temperature, gravity, air buoyancy, etc. are not met or differ from those at the time and place of the calibration.
12. The signature of a responsible representative of the calibrating agency.

B. MIL-STD-45662, ANSI/NCSL Z-540-1, ISO 10012 Calibration System Requirements. The Seller and his sub-contractors shall meet and maintain a calibration system that is in conformance with the Calibration System Requirements of MIL-STD-45662, ANSI/NCSL Z-540-1, or ISO 10012.

18.0 Facilities, Management, and Changes

A. Control, Facilities, Management. Any changes to controlled design, parts, material, fabrication methods, processes, and inspection or test techniques shall be approved by Buyer prior to incorporation.

Buyer shall be notified in writing prior to any facility relocation. In addition, any major management reorganization shall be reported to Buyer.

B. Facility Survey. The process or processes to be performed by the Seller for this purchase order has been designated as critical by Buyer's customer. IF Buyer has not conducted an on-site survey of the Seller's facility within the past 24 months, the Seller shall notify Buyer Purchasing within 10 working days of receipt of a purchase order.

19.0 Nonconforming Material

The Seller shall establish and maintain a positive system of identification and segregation to ensure that non-conforming material is not intermingled with accepted material. The Seller is not authorized to perform material review action on non-conforming material, with the intent of delivering such non-conforming material, without the express written authorization of Buyer. The Seller shall notify Buyer Purchasing of the non-conforming material and its potential impact on performance and delivery. Buyer will assess the impact of the non-conformance and advise the Seller of its decision. Disposition of any departures from drawings, specifications, or other purchase order requirements must be approved by Buyer QA.

Previous dispositions shall not be considered as precedence. Buyer may request the Seller to submit cause and corrective action on discrepancies related to this order.

Any material rejected by Buyer, and subsequently resubmitted by Seller, shall be identified as re-submitted material and must reference the Buyer

original rejection document and detail all actions taken to correct the discrepancy as well as the root cause.

20.0 Ship to Stock/Supplier Certification Program

A. Ship to Stock. This part number/supplier has been certified Ship to Stock in accordance with Buyer procedures. Specific written authorization from the head of the Buyer site QA Department is required prior to placing an order with a non-certified supplier.

B. Supplier Certification Program. This order is being placed with a supplier participating in the Buyer Supplier Certification Program qualification process. Notify Buyer Purchasing and Quality Engineering upon delivery.

21.0 Preservation, Packaging, and Shipping

A. Protective Packaging. The individual component containers (packages) shall provide protection from contamination, moisture, oxidation, or other physical damage. Materials shall be packaged to withstand customary transit conditions without degradation or physical damage to the product. Containers shall, when required, note any special handling or shipping instructions, labels and marking.

B. Packaging of Springs. Packaging shall be that the items do not become inter-twined, tangled or damaged. The use of tubes or rods for packing springs shall be employed.

C. Quantity of Parts Limitation. Small items such as screws, nuts, bolts, washers, etc., shall not exceed 250 pieces per bag, 10 bags per box/container.

D. Plated/Coated Items Packaging. Items shall be packaged in a manner to prevent scratching, rubbing, or abrasion of parts within containers.

E. Electro-Static Discharge (ESD) Sensitive Items. Items shall be identified and packaged to provide electro-static discharge protection in accordance with the applicable procurement specifications.

F. Special Shipping Instructions. Material ordered on this purchase order is to be shipped to a designation other than Buyer for further processing. All quality data and certifications required by this purchase order shall accompany the shipment and copies of such data shall be mailed to Buyer Purchasing.

G. MSDS Requirement. US Department of Labor, Form "OSHA-20" (Material Safety Data Sheet) shall be provided to Buyer prior to or with the shipment or any materials classified as dangerous and/or hazardous.