



QUALITY ASSURANCE CLAUSES

- Q1 **QUALITY SYSTEM** - The contractor's quality system shall conform to the following requirements (as specified by the purchase order) and is subject to review and approval at all times by Gavial.
- | | |
|--------------------------|---|
| A) Documented QA Program | D) SAE AS9100-1999 |
| B) ANSI/ASQ Q9001:1994 | E) ASME NQA-1-1997 (10CFR50 Appendix B) |
| C) ANSI/ASQ Q9002:1994 | F) Other (as specified by purchase order) |
- Q2 **CALIBRATION SYSTEM** - The contractor's calibration system shall conform to the requirements of ANSI/NCSL Z540-1-1994 or ISO 10012-1:1992 and is subject to review and approval at all times by Gavial.
- Q3 **RIGHT OF ACCESS** - During the performance of this order, Gavial and its customers reserve the right to review, verify and participate in the contractor's quality assurance systems and associated manufacturing processes including inspection and testing of any work related to this contract. This activity will be performed in such a manner to not disrupt normal processing and shall be conducted on a non-interference basis.
- Q4 **SOURCE SURVEILLANCE** - Source surveillance shall be conducted by Gavial at the contractor's facilities or where designated in this contract prior to shipment. Inspection/test of the articles defined in this contract shall be performed by the contractor and shall be subject to witness by Gavial quality representative. The contractor shall contact the Gavial source representative prior to the start of fabrication so that mandatory in-process inspection/test points can be agreed upon. The contractor shall have available and present upon request, documented evidence of his inspection/test performance including in-process and/or final test. Required documentation for shipment must be completed and signed by the contractor's authorized quality representative and available for the Gavial quality representative's review.
- Q5 **SPECIAL PROCESS CERTIFICATION** - When the Gavial purchase order requires special processing in accordance with specifications designated by Gavial, the contractor and any sub-tier contractor performing special processes (i.e. soldering, cleaning, non-destructive examinations, plating, welding, brazing, etc.) shall utilize qualified procedures, personnel and equipment to do the work. The contractor shall provide Gavial with certification that they utilized qualified procedures, personnel and equipment to perform the special process in accordance with the applicable special process specification. This certification shall be legible and shall include the number and revision of the applicable special process specification.
- Q6 **SPECIAL PROCESS APPROVAL** - When the Gavial purchase order requires special processing in accordance with specifications designated by Gavial, the contractor and any sub-tier contractor performing special processes (i.e. soldering, cleaning, non-destructive examinations, plating, welding, brazing, etc.) shall have special process approval, in writing, by Gavial. Gavial approval of special process sub-tier contractors does not relieve the contractor of the responsibility for exercising those control measures necessary to ensure that work performed by sub-tier contractors is in accordance with specification requirements.
- Q7 **CERTIFIED MATERIAL TEST REPORTS** - One legible copy of test reports indicating chemical composition and/or actual physical properties identifiable to each lot, batch or heat treat lot shall accompany each shipment, and shall be validated by an authorized contractor's representative, by either an inspection stamp or signature and title.
- Q8 **TEST REPORTS** - Actual functional test reports referencing contract number, contractor's name and address and/or independent laboratories' name and address, part number, part name, serial number if applicable, date and run time if applicable, must accompany each shipment to be delivered. These reports shall be legible and shall be validated by an authorized contractor's representative, by either an inspection stamp or signature and title.
- Q9 **CERTIFICATE OF CONFORMANCE** - The contractor shall submit with each shipment a Certificate of Conformance that shall be dated and bear the signature and title of an authorized contractor's representative. The certificate shall be legible and shall reference the contract number, part number and quantity of the items certified. It shall state that the materials furnished are in conformance with applicable requirements of the contract, drawings and specifications and that supporting documentation is on file and will be made available to Gavial upon request.
- Q10 **MATERIAL TRACEABILITY** - The contractor shall establish a system for the identification, traceability and control of materials, parts and assemblies from acquisition through fabrication, assembly, test and delivery. The system shall provide for the ready identification of suspect lots when individual items are found discrepant.
- Q11 **FIRST PIECE INSPECTION** - Using measuring equipment calibrated in accordance with Clause Q2, the contractor shall inspect all drawing characteristics for the first piece of hardware through each operation of a single production lot and shall record actual measurements. This shall be done prior to processing the remainder of the lot through each operation. The contractor shall supply a complete First Piece Inspection Report to Gavial with the hardware. The report shall be legible and shall be validated by an authorized contractor's representative, by either an inspection stamp or signature and title.

- Q12 FIRST ARTICLE INSPECTION** – Using measuring equipment calibrated in accordance with Clause Q2, the contractor shall inspect all drawing characteristics for the first article of the first production lot of hardware. The contractor shall record actual measurements and supply a First Article Inspection Report to Gavial with the first shipment of hardware. The report shall be legible and shall be validated by an authorized contractor's representative, by either an inspection stamp or signature and title. The contractor shall repeat this first article inspection when the part undergoes a change in engineering configuration, has not been in production within the last twelve months, or new/reworked dies or molds are used for production.
- Q13 CRITICAL CHARACTERISTIC INSPECTION** – The contractor shall perform 100% inspection of critical/key characteristics identified on applicable engineering documents. The contractor shall record actual measurements and supply a Critical Characteristic Inspection Report to Gavial with the shipment of hardware. The report shall be legible and shall be validated by an authorized contractor's representative, by either an inspection stamp or signature and title.
- Q14 TIME AND TEMPERATURE SENSITIVE MATERIAL** – Time sensitive material shall be identified with cure date, manufacturing date, expiration date, shelf life, etc. The outer most shipping box of temperature sensitive material must be marked to indicate temperature storage range. Time and temperature storage conditions must be attached to the packing sheet and accompany each shipment to be delivered hereunder.
- Q15 ELECTROSTATIC SENSITIVE DEVICES** – Devices delivered under this contract are electrostatic sensitive. The contractor shall assure that devices delivered are identified and packaged to provide electrostatic protection.
- Q16 NONDESTRUCTIVE EXAMINATION** – The contractor shall ensure that all nondestructive examination is performed by qualified inspectors and shall supply the following (as specified by the purchase order):
- | | |
|--------------------------------------|------------------------------------|
| A) Penetrant Inspection Reports | D) Radiographs |
| B) Penetrant Material Certifications | E) Ultrasonic Inspection Reports |
| C) Radiographic Inspection Reports | F) Inspector Certification Records |

All inspection reports shall be legible and shall be validated by an authorized contractor's representative, by either an inspection stamp or signature and title.

- Q17 FOREIGN OBJECT DAMAGE (FOD) PREVENTION** – The contractor shall maintain a FOD control program assuring work is accomplished in a manner preventing foreign objects or material from entering and remaining in deliverable items. Maintenance of the work area and control of tools, parts and material shall preclude the risk of FOD incidents. Prior to closing inaccessible or obscured areas and compartments during assembly the contractor shall inspect for foreign objects/materials. The contractor shall document and investigate all FOD incidents assuring elimination of the root cause.
- Q18 CALIBRATION REPORT** – The contractor shall provide a calibration report/certification supporting the calibration services performed. The report/certification shall be legible and shall contain as a minimum:
- Measurement data.
 - Statement certifying traceability to National Standards.
 - Listing of standard(s) used to perform test(s) with last calibration performed date(s) and next calibration due dates.
 - Name of contractor performing calibration of the standard(s) used in performance of test(s).
 - Statement of measurement uncertainty and ambient environmental conditions (i.e., ambient temperature and humidity) at time of test(s).
- Q19 NUCLEAR SAFETY RELATED ITEMS** – Items on this purchase order are classified nuclear safety related. The applicable provisions of 10CFR Part 21 ("Reporting of Defects and Noncompliances") apply to this procurement. If the contractor reports any defects to the NRC under Part 21, the contractor shall concurrently furnish Gavial with a copy of the report. All materials /parts purchased by the contractor for use in contractor's safety related component must meet one of the following conditions:
- Item was purchased as safety related material from a qualified safety related supplier under the provisions of 10CFR21 and NQA-1; or
 - Item was purchased as commercial grade material and dedicated using methods comparable to those described in EPRI NP-5652/NCIG 07.