



SUPPLIER QUALITY MANUAL

AURORA PROPRIETARY

Effective Date:
8/2/2017

Number/Rev:
SQA-01/H

Supplier Quality Manual

Approved by:

Jeff Tillery,
Vice President, Quality

AURORA PROPRIETARY

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Foreword

Competing in today's global market requires that products and services must be of high quality and delivered on time, increasingly within short lead times and at a competitive cost.

In order for Aurora Flight Sciences to be successful and meet the needs of our customers, we must have a process in place that encourages, supports and ensures that our suppliers meet quality performance expectations.

To ensure this, the role played by our suppliers is crucial to our future success and it is our intention to involve suppliers as partners in our plans.

The objective of this manual is to define the basic system requirements that we will use and expect our suppliers to use to ensure that our mutual responsibilities for product and service quality are understood and implemented.

We look forward to your support as our partner and believe that by working together we can develop our supply chain to the benefit of all.

Jeff Tillery
Vice President, Quality
Aurora Flight Sciences Corporation



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Introduction

Aurora Flight Sciences' goal is to develop a strong supplier base to become a leader in our chosen market fields. To ensure we achieve this target, Aurora has developed specific strategies that include:

- Long term relationships with fewer suppliers,
- Close interaction among manufacturing, engineering, purchasing and quality personnel of Aurora Flight Sciences and our suppliers, and
- Assuring compliance of market specific requirements, such as ISO 9001, AS9100 and other customer and regulatory standards.

To assist in the implementation of our objectives, Aurora Flight Sciences utilizes a Supplier Quality Assurance (SQA) manual to communicate to all suppliers the expectations from Aurora to the supplier to obtain and maintain the high-quality standard required.

The development of Supplier Quality Assurance requires a close collaboration between Aurora and the supplier, and this necessarily involves an in-depth knowledge of the organization and methods employed by the supplier. It equally involves the supplier being familiar with the requirements when conducting business with Aurora.

This manual details the facilities and features of the supplier's quality system that will be assessed by Quality Management representatives of Aurora prior to placing of new orders, and the procedures to be followed by the supplier after orders have been placed.

It will also be used as a standard for the development of existing relationships between Aurora Flight Sciences and its current approved supplier base. It is applicable to all suppliers of manufacturing materials (*e.g.*, raw materials, components, assemblies) or processing services (*e.g.*, plating, heat treatment, NDT, *etc.*) for Aurora Flight Sciences' facilities at:

Aurora Flight Sciences (Virginia)
9950 Wakeman Dr.
Manassas, VA 20110
Tel: 703-369-3633
Fax: 703-369-4514

Aurora Flight Sciences (West Virginia)
3000 East Benedum Industrial Dr.
Bridgeport, WV 26330
Tel: 304-842-8100
Fax: 304-842-8116

Aurora Flight Sciences (Mississippi)
200 Aurora Way
Columbus, MS 39701
Tel: 662-328-8227
Fax: 662-328-8971

Aurora Flight Sciences (Massachusetts)
90 Broadway, Suite 11
Cambridge, MA 02142
Tel: 617-500-4800
Fax: 617-500-4810



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Revision History

Rev	Author	Summary of Changes	Revision Date
-	D. Hendrix	Original issue	8/31/06
A	R. Robinson	Updated Supplier Quality System Requirements (Section 2) and Supplier Assessment (Section 3)	10/20/06
B	D. Hendrix	Added clarification for definition of cut-off ratings and what actions to take at various degrees of supplier performance.	6/13/07
C	D. Hendrix	Added clarifications for supplier ratings and Scorecard	1/11/08
D	D. Hendrix	Clarified Supplier documentation requirements	9/9/08
E	D. Hendrix	Added clarification for supplier corrective action	11/14/08
F	L. Bryant	Added reference to AVA Scorecard and process.	5/5/09
G	T. McGovern	Updated AVA requirements to reflect current practice.	1/23/12
H	V. Delacruz	Updated to reflect current best practices	8/2/17



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1. General Requirements

The following are mandatory General Requirements we expect our suppliers to fulfill.

Right of Access

Suppliers shall provide access to their premises and facilities for Aurora Flight Sciences, our customers and regulatory authorities for cooperation on product, process and business issues.

Notification of Organizational Changes

Changes to the supplier's organization that may affect quality and/or finance shall be communicated to Aurora, preferably in advance. These changes may include: company ownership, company name, manufacturing location, quality approvals, and/or significant changes to process or inspection techniques.

Applicability

All suppliers are to fully comply with the stated requirements of this manual. Individual waivers on certain elements may be granted at the discretion of Aurora's Quality Department. Application for dispensation for any element of this manual is to be made in writing and presented to the appropriate Quality Department, which will action the request internally with the relevant function.

Purchase Order Requirements

The supplier shall adhere to all Purchase Order Terms & Conditions, plus stated special instructions. The Purchase Order (PO) is the controlling document and will communicate any deviations to the requirements stated within this manual authorized to the supplier. Specific Quality requirements are dictated by Aurora's "Purchase Order Supplier Quality Requirements."

Protection of Aurora's & Their Customer's Proprietary Information

Any information the supplier receives from Aurora Flight Sciences must be kept confidential and never disclosed to any third party without the prior written agreement of Aurora Contracts. The proprietary information can include, but is not limited to all versions of electronic data, drawings and documentation, tooling and materials. Under no circumstance is the supplier to make a direct approach to Aurora's customers in relation to agreed business dealings.

Code of Conduct

This code is applicable to Aurora's entire supplier base and outlines the essential need for suppliers, their employees and sub-contractors to operate to the highest standards of business integrity in their relationship with Aurora Flight Sciences.

Aurora wishes to work collaboratively with all suppliers to ensure proper understanding and compliance with this code of conduct. It is recognized that there are different legal and cultural environments in the countries in which Aurora's supply base operates; however, this code of conduct sets forth the minimum requirements that all suppliers should meet in doing business with Aurora.

Suppliers must comply with all national and other applicable laws and regulations relating to the respective country of operation. This includes ensuring that business transactions with Aurora are fully reported/recorded, and ensuring that their employees are aware and properly trained to meet the requirements.

Aurora expects its suppliers to make proper provision for the health, safety and welfare of its people, visitors, contractors, customers and those in the community who may be affected by their activities.

Employees within the Aurora supply base are expected to deal with Aurora in a manner that avoids conflict between personal interests and those of their employer and Aurora. This requirement applies equally to business relationships and personal activities.

2. Supplier Quality System Requirements

Aurora Flight Sciences requires all suppliers to acknowledge and retain total ownership for the quality of their products and to develop Quality Assurance Systems that ensure that the requirements of the purchase order are fully met.

The development of the quality system should provide for continuing improvement in product quality, leading to the attainment of zero defects, while also providing speedy and effective corrective action in the event of defective products being delivered to Aurora.

All suppliers to Aurora Flight Sciences shall meet the minimum requirements of this section, which is based on ISO 9001 Quality System standard. It is a requirement of Aurora that all suppliers are to be ISO 9001 or AS/EN9100 certified/compliant, except as specified in the Purchase Order. Suppliers that are not ISO 9001 or AS/EN9100 certified/compliant are required to be evaluated and approved on an individual merit based on the product/service they supply. Non-ISO compliant organizations shall be expected to demonstrate an adequate quality management system and process controls that satisfy Aurora's minimum requirements.

Quality Management System

The supplier shall establish and maintain a clearly documented quality system that provides a means of ensuring that products conform to specified requirements.

Records

This system shall control the issue of drawings, specifications, procedures, etc. Provisions shall be made for the control of obsolete copies and their subsequent archiving and disposition. All records pertaining to the fulfillment of quality requirements for purchased product(s) shall be stored and maintained in a legible form and be readily retrievable for a minimum of 3 years unless otherwise specified by contract. Specific projects, programs and/or regulatory bodies may require longer records retention periods (e.g. 10 years). Additional requirements for record retention shall be flowed down to suppliers as part of the individual purchase orders.

Management Responsibility

The supplier shall identify a primary Point of Contact (POC) to Aurora Flight Sciences who will have the necessary authority to assume responsibility for product quality. It is expected that the named person will provide evidence of the supplier's commitment to the development and implementation of the quality management system, continually improving its effectiveness, and resolve all topics regarding product quality to Aurora's satisfaction.

Resource Management

The supplier shall determine and provide the resources needed to maintain the quality system and continually improve its effectiveness, and enhance customer satisfaction by meeting Aurora's requirements.

Personnel performing work affecting product quality shall be demonstrably competent on the basis of appropriate education, training, skills and experience.

The supplier shall determine, provide and maintain the infrastructure needed to achieve conformity to product requirements.

Product Realization

Customer Related Processes (Contract Review)

Orders or contracts shall be formally reviewed by the supplier to ensure that the supplier has the technical and logistical capabilities to meet the requirements. Any discrepancies or questions shall be resolved before the order or contract is accepted. Amendments to orders or contracts shall be formally reviewed. Records of contract review shall be maintained.

Design and Development

If design activities are undertaken for Aurora Flight Sciences by the supplier, then design inputs and outputs shall be adequately specified (e.g., by relevant specifications). Formal documented reviews shall be held at appropriate stages of design. Designs shall be checked by verification (theoretical check) and validation (practical check). All design changes shall be documented and approved by Aurora authorized personnel before implementation.

Purchasing

Suppliers shall be responsible for the flowdown of all customer requirements to their subcontractors for any work awarded by Aurora and the subsequent quality/acceptability of product. When sub-contracting is used, the supplier shall ensure where applicable that special process requirements (e.g., welding, NDT, chemical processing, NMSE) are performed by sub-contractors that have been approved for special processes as dictated by the purchase order.

The supplier shall ensure that subcontractors are evaluated and selected on their ability to meet specified requirements. A list of approved subcontractors shall be maintained. Purchasing documents shall clearly describe the relevant drawings and specifications, including issue status and the Supplier Quality Requirements to be applied.

Production and Service Provision

Any product supplied by Aurora Flight Sciences for incorporation into assemblies by the supplier shall be suitably verified and controlled. If any Aurora property is lost, damaged or otherwise found to be unsuitable for use, this shall be reported to Aurora with a Root Cause Analysis and Corrective Action Plan.

The status of material and product shall be clearly identified by suitable means throughout product realization.

The supplier shall preserve the conformity of product during internal processing and delivery. This preservation shall include identification, handling, packaging, storage and protection. Manufacturing processes shall be defined by documented procedures. Criteria for quality shall be defined in a clear and practical manner. Where processes cannot be verified by subsequent inspection or testing, such processes shall be performed by qualified operators or have suitable process control parameters established.

The supplier shall provide a Certificate of Conformity for all deliveries to Aurora Mississippi (AMS) and Aurora West Virginia (AWV). Certificates of Conformity for deliveries to Aurora Virginia (AVA) and Aurora Massachusetts (AMA) are required if so noted on the purchase

orders and preferred for all others. The Certificate of Conformity indicates that the supplier has manufactured and delivered the product in accordance with Aurora's requirements stated on the purchase order.

The signatory on the Certificate is stating on behalf of the supplier that the product meets Aurora's requirements. This responsibility shall, therefore, be delegated by the supplier to suitably qualified, experienced and competent personnel within the organization.

Control of Monitoring and Measuring Devices

All inspection measuring and test equipment (IM&TE) used to demonstrate conformance of product shall be calibrated with reference to international or national standards. Such equipment shall be clearly marked with identification of its calibration status, including expiration date. Records of calibrated equipment shall be maintained. IM&TE used for product acceptance that is found to have an out-of-tolerance condition that exceeds five (5) times the assigned calibration tolerance shall be reviewed and documented for product impact, and Aurora shall be formally notified of said out-of-tolerance condition with the part numbers and serial numbers or lot numbers of the product supplied to Aurora which may be affected by said condition (also known as a disclosure).

Measurement, Analysis and Improvement

Monitoring and Measurement of Product

The supplier shall monitor and measure the characteristics of the product to verify that the product requirements have been met. This shall be carried out at appropriate stages of the product realization process in accordance with the planned arrangements.

Control of Nonconforming Product

The supplier shall ensure that products not conforming to product requirement are identified and controlled to prevent their unintended use or delivery. The controls and related responsibilities and authorities for dealing with nonconforming product shall be defined in a documented procedure. Nonconforming products that are received by Aurora will be processed by our rejection procedure and the supplier will be liable for nonconformance administration. The supplier accepts the principle of such reasonable administration costs and the processing of a concession (e.g. credit, refunds, and field repair cost coverage) where nonconforming goods are identified after invoices have been paid. Suppliers must immediately notify Aurora of materials/product that is found to be nonconforming. No product will be authorized for shipment prior to an assessment and disposition of the nonconforming material/product. Any concessions or acceptance of the dispositioned materials will be communicated in writing. Suppliers must provide written notification and full disclosure of any nonconforming material or product that has been delivered to Aurora.

Corrective Action

In the event of a non-conformance, Root Cause Analysis shall be conducted to determine the cause of the non-conformance. Action shall be taken to eliminate the non-conformance and corrective actions established in order to prevent recurrence.

Aurora maintains a system for the recording, monitoring and measurement of supplier corrective actions. This system applies to both internally and externally generated concerns. The supplier is, therefore, required to complete a response to the request for Corrective Action or assist in completing customer Root Cause Analysis and Corrective Action when requested. The supplier shall complete the sections as required and return to Aurora Quality Engineering within a reasonable time frame as agreed upon, but not to exceed thirty (30) calendar days of the date of issue.

Preventive Action

The supplier shall determine action to eliminate the causes of potential nonconformities in order to prevent their occurrence.

3. Supplier Assessment

Method of Assessment

Suppliers to Aurora Flight Sciences are required to conform to one of the following basic controls.

All potential new suppliers must complete the Supplier Quality System Survey (SQSS) and/or provide evidence of third-party certification. The SQSS form will be forwarded to potential suppliers by Aurora's Quality Department (or expedited by Purchasing) upon request from Aurora Central Purchasing.

The purpose of the survey is to give an initial overview of the supplier's organization. After the completed survey, has been evaluated by Aurora's Quality Department, a decision will be made as to the level of approval to be granted. Further assessment of the supplier's quality system may be required prior to approval.

Controls

- The supplier has completed Aurora's Supplier Quality System Survey (SQSS), (minimum Page 1), and provided to Aurora copies of their third party accreditation(s) for the applicable ISO/AS Standards, Nadcap or Customer process requirements for which they are being considered. Aurora Quality Department has reviewed and approved the Supplier's documentation.
- The supplier has completed an SQSS form and demonstrated acceptable compliance to applicable ISO/AS Standards, Nadcap or Customer process requirements, and has an ISO/AS compliant Quality Management System in place. Aurora's Quality Department has reviewed and approved the Supplier's documentation.
- The supplier has completed an SQSS form, but does not have a Quality System in place that is ISO/AS compliant. Supplier shall submit appropriate supporting documentation for review by Aurora's Quality Department to determine if supplier is qualified for limited/restricted use for a specific project/program. A supplier site visit may also be required prior to approval.

Supplier Audits

On-site audits of the supplier may be conducted by Aurora or its designee. Notification of the audit will be given in advance.

As part of Aurora's Supplier Development program and Supplier Control process, all approved suppliers may be subject to an on-going supplier verification audit. Selected suppliers will be audited as necessary to verify product conformance. These audits may be made up of a cross-functional team, consisting of Quality, Procurement and Production personnel. The purpose of a cross-functional team is to substantiate the effectiveness of the supplier's administration, manufacturing and quality system.

Approved Supplier List

Aurora operates controlled "Approved Supplier List" databases in Aurora's ERP system. Suppliers are classified by the table below. Approval is granted in accordance with the

classification code assigned and appropriate reviews will be conducted either by audit, questionnaire, and/or previous performance data analyzed to assess the applicability for continued business.

Definitions of Supplier Qualification Classification

NUMBER	SUPPLIER SCOPE	QUALITY SYSTEM REQUIREMENTS*
1	Manufacturer with Design	ISO 9001, AS/EN9100, AS/EN9000 compliant
2	Manufacturer (Build-to-Print) or Value Added Distributor	ISO 9001, AS9100, FAR Part 145 compliant
3	Pass-Thru Distributor	ISO 9001, AS9120, ASA 100 compliant
4	Processor/Services	ISO 9001, ISO 10012-1, ISO 17025, AS9003, Nadcap, AC7004, ANSI-Z540-1, AS9110 compliant
5	Commercial Items (COTS)	Per applicable Statement of Work or assigned Supplier Quality Requirements
6	Tooling	ISO 9001, AS/EN9100, Purchase Order Requirements, assigned Supplier Quality Requirements.
7	Customer Approved or Sole Sources of specific (proprietary) part number or Direct Source of Supply	Customer recognized Quality System imposed, unless otherwise required by Program Statement of Work or requirements listed in applicable terms and conditions apply.
8	Restricted Supplier (Program Specific)	Aurora recognized Quality System imposed that does not meet all customers' requirements. Restricted to specific program use as defined on the Approved Supplier List under "RESTRICTIONS/LIMITATIONS/REMARKS" and assigned Supplier Quality Requirements, if applicable.
9	Professional Services	Aurora assessment of: technical capability/experience, engineering capability/experience, or past performance on other Aurora programs or other company references

**Suppliers may be required to be compliant with or certified to a minimum of one Quality System Requirement.*

4. Vendor Monitoring & Measurement

Aurora Flight Sciences monitors and measures the performance of all manufacturing resource suppliers. The process allows Aurora to communicate with its supplier base recognizing both high performance suppliers, as well as low performing suppliers. Periodic performance reports may be reviewed and may be issued to suppliers as deemed necessary by Aurora based on: performance, criticality of supply, expenditure, and/or newly approved suppliers.

Supplier Rating System

Supplier ratings are generated by Program Management and these are communicated periodically to the rest of the organization during Program Reviews. Program Management shall utilize the standard Supplier Risk Assessment template to communicate and evaluate critical suppliers based upon the following risk factors

- Technical
- Cost
- Delivery

Supplier Ratings will range from Low risk to High risk and this shall include a comparison between current and previous reporting periods. Program Management shall provide Mitigation Plan and Status for each of the reported supplier as they deemed necessary.

A special evaluation by Quality may be requested for any supplier deemed critical to the production effort. The Director of Supply Chain Management, functional equivalent, or his/her designee should approve results of the special evaluation prior to use.

Only suppliers listed on the ASL and approved for use for a customer on the day a purchase order is released may be used by Purchasing for Direct Materials.

Supplier Scorecards shall be provided to suppliers as needed.

Approved Supplier

A supplier who is in good standing, satisfying all quality system requirements. Approved for all contracts at the Aurora Flight Sciences facility for which approval is sought.

Conditional Supplier

A supplier with a part, process or customer usage limitations. Limitations, restrictions and/or customer specific approvals must be listed on the Approved Supplier List.

Disqualification and Requalification of a Supplier

A supplier that fails to satisfy quality system requirements or does not respond to a SCAR, and/or the cause and Corrective Action has not been accepted by Aurora Quality may be disqualified on the Approved Supplier List. Former Suppliers desiring to re-qualify shall provide to Aurora a Corrective Action Plan addressing the deficiencies. Once the supplier Corrective Action Plan has been accepted by Aurora Quality, the supplier may be re-qualified.

Inactive Supplier

Aurora's Quality Department may periodically review their respective Approved Supplier List for supplier activity. A supplier that has not had any active purchase orders or any Scorecards issued to them for a period of twelve (12) consecutive months may be deemed inactive. An inactive supplier may be reinstated to an active status upon request by Aurora's Procurement Department and after review and approval by Quality.

5. First Article Inspection Report (FAIR)

The supplier shall provide a First Article Inspection Report (FAIR). This is required for the first batches produced from a new or modified drawing, after a change of the manufacturing process, or as directed by an Aurora Flight Sciences purchase order. A First Article Inspection (FAI) is a representative sample from the batch, and shall be 100% inspected for conformance to mechanical and/or performance requirements.

For Aerospace Products: AS9102 FAI paperwork format required.
For Non-Aerospace Products: Supplier standard paperwork format accepted.

6. Forms

Form C146 Purchase Order Supplier Quality Requirements
Form C224 Supplier Quality System Survey

7. Databases

ERP Approved Suppliers List