

# New Phoenix Aerospace









# A new beginning with a world wide potential

# QUALITY SYSTEM STANDARD

New Phoenix Aerospace 175 Southport Drive, Suite 200 Morrisville, NC 27560 www.npaero.com 919 380 8500



Document No. 00-00

# Subject: QUALITY SYSTEM STANDARD

Revision: (B) Date Issued: May 2005

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#### **PREFACE**

Written By: NPA Quality

This quality system standard provides the quality policy for New Phoenix Aerospace Operations in directing the system application of ISO 9001.

Conthia 3a	
Shilm - J	5/1/2005
Signature Cynthia Ezami President and CEO	Date
Ale Fyni	
	5/1/2005
Signature Ali Ezami General Manager	Date
Paul Suri	5/1/2005
	3/1/2003
Signature Paul Swain	Date
Acting Quality Manager	

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#### **QUALITY POLICY STATEMENT**

Written By: NPA Quality

New Phoenix Aerospace, Inc. is committed to establishing and maintaining a tradition of customer satisfaction through technical excellence, quality, ethics, and integrity.

We strive for quality in our products, employees, technology, financial results, management processes, and relationships with our customers.

We respond effectively to our customers' needs by pursuing continuous improvement, encouraging innovation, meeting our commitments, and valuing our suppliers.

We promote an atmosphere that empowers all employees and emphasizes teamwork, personal growth, achievement, and recognition.

We demonstrate respect for the environment and our neighbors by meeting our responsibilities as citizens and operating our facilities in a safe and environmentally responsible manner.

We maintain the highest standards of integrity and ethics in our relationships with all of our employees: including customers, suppliers, financial institutions, and the public.

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#### 1.0 INTRODUCTION

New Phoenix Aerospace, Inc. is a start-up company that was formed in 2004 to satisfy customer and market requirements for electromechanical products for use in aerospace and space applications. Capabilities have been added to the company to offer both build to print and design and manufacture services. This Quality Management System relates to the full range of company activities

#### 2.0 SCOPE

- 2.1 This standard establishes the requirements for New Phoenix Aerospace's Quality System. It defines the company quality policy and identifies procedures and practices employed to ensure compliance with the requirements of ISO 9001. This standard includes ISO 9001 quality management system requirements and specific additional requirements for a quality management system for the aerospace industry AS9100.
- 2.2 It is emphasized that the quality management system requirements specified in this standard are complementary (not alternative) to contractual and applicable law and regulatory requirements.

#### 3.0 POLICY and OBJECTIVES

- 3.1 New Phoenix Aerospace quality policy is to achieve sustained, profitable growth by providing services which consistently satisfy the needs and expectations of its customers. This level of quality is achieved through adoption of a system of procedures that reflect the competence of the Company to existing customers, potential customers, and independent auditing authorities.
- 3.2 Achievement of this policy involves all staff, who is individually responsible for the quality of their work, resulting in a continually improving working environment for all. This policy is provided and will be explained to each employee by management.
- 3.3 To achieve and maintain the required level of assurance the Quality Manager retains responsibility for the Quality management System and routine operation.

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#### 4.0 MANAGEMENT RESPONSIBILITY

The responsibility, authority, and interrelation of personnel who manage, perform, and verify work affecting quality shall be defined in functional procedures. Additionally:

All employees shall have the freedom and authority to initiate, recommend, or provide solutions relating to product, process, and quality system nonconformance. All employees involved in the performance of a process shall have the responsibility and authority to suspend an operation if the process becomes out of control.

#### 4.1.1 NEW PHOENIX AEROSPACE

- 4.1.2 The New Phoenix Aerospace structure illustrates the line of authority of each department to ensure quality of products and services are provided. The General Manager is responsible for delegation of authority and responsibilities for quality, and the efficient operations of New Phoenix Aerospace functions.
- 4.1.3 A chart is shown in Figure 1, New Phoenix Aerospace Structure. Descriptions of the responsibilities and authority of management shall be documented in the appropriate functional procedures.

#### 4.1.4 MANAGEMENT RESPONSIBILITIES

- 4.1.5 Quality Manager shall have the responsibility and authority to ensure the implementation and maintenance of the quality system. The management representative shall periodically report to the management team on the performance of the quality system as described in documented procedures documented in the appropriate functional procedures manuals.
- 4.1.6 Management shall identify and plan resource requirements, provide adequate resources, and ensure that trained personnel are available for performance of work. Work assignments include verification activities and the performance of internal quality audits. Resources include personnel, equipment, hardware, software, facilities, training, and budget.

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#### 4.1.7 DEPARTMENTAL RESPONSIBILITIES

- 4.1.8 General Manager is responsible for:
  - ➤ Ensuring that a quality system is implemented and maintained in accordance with ISO 9001 and the Quality Assurance Manual.
  - > Allocate appropriate resources and trained personnel to perform the work.
  - Appoint a management representative to monitor the Quality System.
  - Conduct Management Review
  - Oversee Project Management
  - Contract Management & Control
- 4.1.9 Finance is responsible for:
  - > Financial
  - Employee payroll
  - Coordination on all pricing (RFQ, RFP)
- 4.1.10 Human Resources are responsible for:
  - Conduct Employee Training
  - > Employee benefits
  - > Employee records
  - Personnel policies
  - > Safety polices and processes
  - > Environmental compliance
- 4.1.11 Quality Manager is responsible for: (ISO9001Management Representative)
  - Conduct regular management reviews to ensure the health of the quality system.
  - Approval of the Quality Assurance System
  - Internal Audit

- Resolution of Quality Assurance System Discrepancies
- Control & Maintenance of the Quality Assurance System
- Documentation & Change Control (Quality System Documents)
- Identifying training requirements
- Defining requirements for inspectors
- Scheduling inspections
- Receiving inspections
- Government/Customer coordination on quality matters

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4.1.12 Marketing is responsible for:

- Marketing functions
- Proposal management
- Research and Development
- Issuing Quotations
- Management & Co-ordination of Sales and Support Functions
- Contract Review
- Sales Database Administration
- Control of Contract Documentation

# 4.1.13 Operations are responsible for:

- Manufacturing of product
- Production planning

#### 4.1.14 Materials & Purchasing is responsible for:

- Control of Stock
- Replenishment Recommendation
- Protection and Preservation of Stock
- Receiving Inspection
- Packaging and Dispatch
- New Product Identification & Evaluation
- Administration Order Processing Clerk
- Supplier Selection & Purchasing
- Allocation of Order Reference Numbers
- Planning and Scheduling
- Control of Production and Measuring Equipment
- Processing of Sales Orders
- Purchasing
- Supplier Selection

#### 4.1.15 Engineers are responsible for:

- > Planning & Performance of Installation, Technical Assistance
- Repairs, Testing and Maintenance Activities
- Design Control
- Control of Equipment
- Design control
- System Design

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#### 4.1.16 Contracts are responsible for:

- Contracts negotiations
- Contractual review and acceptance
- Sales order generation

# **NEW PHOENIX AEROSPACE, INC.**

New Phoenix Aerospace Organizational Chart

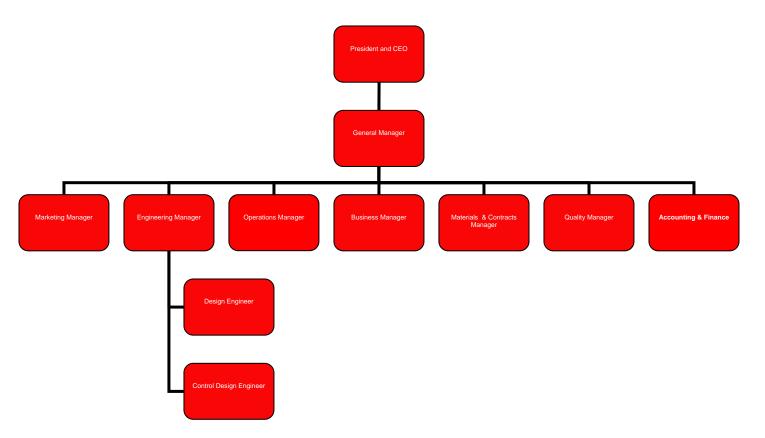


Figure 1 New Phoenix Aerospace Chart

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#### 4.1.17 MANAGEMENT REVIEW

4.1.18 Senior management shall review the New Phoenix Aerospaceal quality management system at planned intervals, to ensure it's continuing suitability, adequacy and effectiveness. This review shall include assessing opportunities for improvement and the need for changes to the quality management system, including the quality policy and quality objectives.

4.1.19 Management Review Meetings are conducted to determine the suitability and effectiveness of the quality system in satisfying the requirements of the ISO 9001 standard and the Quality Policy Policies. Beginning in 2005, management review meetings will be conducted in January and July each calendar year.

4.1.20 The input to management review shall include information on:

- > Results of an audit
- Customer feedback
- Process performance and product conformity,
- > Status of preventative and corrective actions,
- > Follow-up actions from previous management reviews,
- Changes that could effect the quality management system

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#### 4.2 QUALITY MANAGEMENT SYSTEM

4.2.1 The New Phoenix Aerospace shall establish, document, implement and maintain a quality management system and continually improve its effectiveness in accordance with the requirements of this standard.

The Quality objectives shall be both measurable and consistent with the Quality policy

- 4.2.2 The New Phoenix Aerospace Operations quality policy sets the direction for quality values throughout the company. Management has defined the quality policy, relevant to our business needs, in the quality policy statement. This message shall be communicated by providing this standard to all employees, by staff awareness training, and by orientation for new employees. The effectiveness of the quality system shall be measured by prescribed performance goals and associated key measurements.
- 4.2.3 New Phoenix Aerospace quality policy is to achieve sustained, profitable growth by providing services which consistently satisfy the needs and expectations of its customers. Achievement of this policy involves all staff, who is individually responsible for the quality of their work, resulting in a continually improving working environment for all.
- 4.2.4 The quality system has been established to ensure that products and services meet all specified requirements.
- 4.2.5 The New Phoenix Aerospace shall
  - > Identify the processes needed for the quality management system and their application throughout the New Phoenix Aerospace.
  - Determine the sequence and interaction of these processes,
  - > Determine criteria and methods needed to ensure that both the operations and control of these processes are effective,
  - > Ensure the availability of resources and information necessary to support the operations and monitoring of these procedures,
  - Monitor, measure and analyze these processes, and
  - > Implement actions necessary to achieve planning results and continual improvement of these processes.
- 4.2.5 These processes shall be managed by the New Phoenix Aerospace in accordance with the requirements of this Quality System Standard.

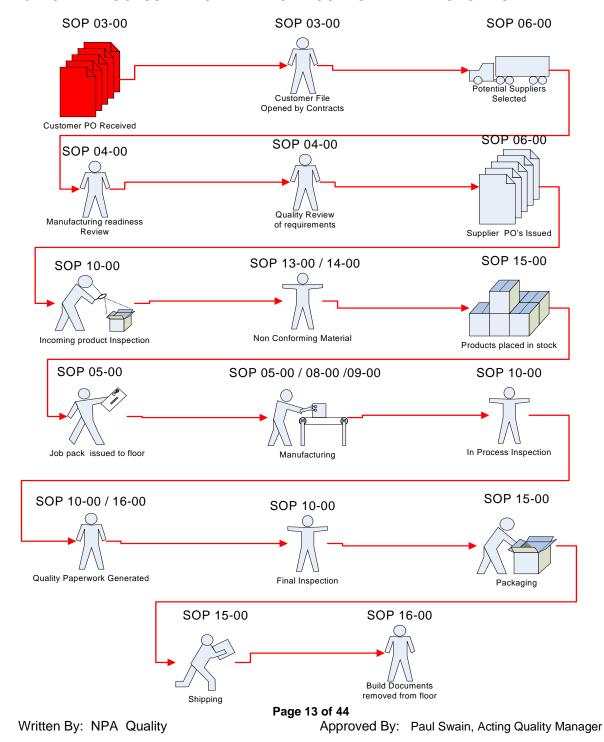
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4.2.6 The effectiveness of these policies will be subject to regular review and evaluation for suitability and fitness for purpose. These periodic meetings will be the forum for discussing and recommending change if appropriate.

- 4.2.7 The review meetings will be conducted every 3 months at a minimum or as frequent as deemed appropriate.
- 4.2.8 Meetings will review as a minima and document;
- 4.2.9 Customer satisfaction metrics
- 4.2.10 Delivery performance metrics
- 4.2.11 In house and customer product problem metrics
- 4.2.12 Manufacturing efficiency metrics
- 4.2.13 Cost of Quality metrics



#### 4.2.9 WORK PROCESS AND OPERATING PROCEDURE RELATIONSHIPS





4.2.8 Where an New Phoenix Aerospace chooses to outsource any process that affects product conformity with requirements, the New Phoenix Aerospace shall ensure control over such process. Control of such outsource processes shall be identified within the quality management system. Processes needed for the quality management system referred herein should include processes for management activities, provision of resources, product realization and measurement.

#### 4.2.9 QUALITY PLAN

Written By: NPA Quality

As a standard practice, the Quality System Standard will serve as the Quality Plan

#### 4.2.10 IMPLEMENTING PROCEDURES

NPA SOP	02-01	Instructions for Developing Standard Operating Procedures
NPA SOP	02-02	Instructions for Developing Work Instructions
NPA SOP	02-03	Quality System Standard Document Control

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#### 4.3 CONTRACT REVIEW

- 4.3.1 The Company offers both standard products and specialist services to meet each customer's needs. Specialist service requirements differ from one customer to another (and from one contract to another); therefore each tends to be quoted for the specific contract.
- 4.3.2 Once a proposal is accepted by the customer, or an order is placed, it is recorded and reviewed to establish that the requirements of the order are adequately defined and documented, any differences from the proposal are resolved, and the Company is capable of fully satisfying the customers requirements.
- 4.3.3 The Company operates on a computerized order processing system to ensure rapid fulfillment of customer orders.
- 4.3.4 Proposals shall be prepared by cross functional teams. Proposals, contracts, and contract amendments shall be reviewed and coordinated throughout the company according to documented procedures.
- 4.3.5 Customer requirements shall be reviewed by a cross functional proposal team to ensure that each functional New Phoenix Aerospace understands the customer's requirements and has the capability and capacity to meet them. When applicable, subcontract solicitations shall be used to support the proposal process.
- 4.3.4 Any differences between the customer's technical requirements or business terms and the proposal shall be provided to the customer in writing. These differences shall then be resolved through direct negotiations with the customer.
- 4.3.5 Before the acceptance of a contract or contract amendment, the contractual documents shall be reviewed to ensure that they properly reflect the agreement between the parties reached during negotiations.



- 4.3.11 Contract amendments shall be reviewed to ensure that each affected functional New Phoenix Aerospace understands and has the capability and capacity to meet the customer's requirements.
- 4.3.12 The contracts manager has the responsibility for coordinating contract reviews of customer orders. All contracts must ensure that:
  - a. Any requirements differing from those in the original quote are resolved.
  - b. New Phoenix Aerospace has the capabilities to meet contractual obligations.
  - c. All requirements are clearly defined and achievable.
- 4.3.13 Records of proposal and contract reviews shall be maintained as described in documented procedures. The Company operates on a computerized order processing system to ensure r rapid fulfillment of customer orders. Any change must be reviewed and agreed to with the customer.

#### 4.3.14 IMPLEMENTING PROCEDURES

Written By: NPA Quality

NPA SOP 03-00 Quote Process Procedures
NPA WI 03-01 Control of Contract Documentation
NPA SOP 03-02 Contract Review

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#### 4.4 **DESIGN CONTROL**

- 4.4.1 All Design activities are strictly controlled to ensure that the design output information complies with customer/ contract requirements, and all design input data.
- 4.4.2 Design activities are planned and normally executed by specialists and are subject to regular management, review and verification by the Marketing Manager, and where relevant, agreement with the Customer.
- 4.4.3 The design input and output items are documented. All items of design documentation and notes are recorded in a design project file. Design output documentation is produced and reviewed to ensure that it:
  - Meets the design input

  - References the design input or appropriate criteria
     Identifies all of the characteristics which are critical to the safe and effective operation of the system(s).
- 4.4.4 Design output is reviewed and approved by Engineering. Validation of the design is achieved during commissioning of the system to confirm compliance to the customer's requirements. All changes to the design criteria, input or output are subject to strict review and documentation control procedures.

#### 4.4.5 Design Input

Customer and supplier design inputs shall be formally reviewed, managed, and tracked in accordance with each program's contractual requirements.

#### 4.4.6 Design Output

Written By: NPA Quality

Deliverable and quality-critical design outputs shall be formally reviewed and verified against design input requirements before release and shall be managed in accordance with documented procedures.

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## 4.4.7 Design Reviews

Design reviews shall be conducted as required by contract. The design shall be reviewed by representatives of all functions involved in the design stage being reviewed. The extent of customer involvement in design reviews shall be identified in the contract or the program management plan. Records of these reviews, resulting action items, and action item closures shall be maintained.

# 4.4.8 Design Verification

Design verification shall be performed at appropriate stages of design to ensure that the design output meets the design input requirements. Design verification may include performance of alternative calculations, comparisons with existing designs, tests and demonstrations, and review of design documentation. The results shall be documented and reviewed as required by the contract.

#### 4.4.9 Design Validation

Design validation tasks such as critical component, subsystem, and system tests and inspections shall be conducted in accordance with contractual requirements. The results shall be documented and reviewed as required by the contract.

#### 4.4.10 Design Changes

All proposed design changes shall be documented by the originator and then reviewed by the Program Manager or the equivalent. Only approved changes shall be incorporated into the design.

#### 4.4.11

Documented procedures shall be maintained for the control of all documents and data, including documents of external origin, that relate to product quality or to the operation of this quality system. Documents and data are stored on a variety of media. Our objective is to use electronic media wherever possible.

#### 4.4.11 Document and Data Approval and Issue

Documents and data shall be reviewed for adequacy and approved by authorized personnel prior to issue. A master list or equivalent document control system shall ensure that the revision status of documents is readily available to preclude the use of invalid or obsolete documents.

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#### 4.4.12 IMPLEMENTING PROCEDURES

NPA FORM 04-00-01 Design Review Checklist
NPA FORM 04-00-04 Manufacturing Readiness Review Checklist

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Approx

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#### 4.5 DOCUMENT AND DATA CONTROL

4.5.1 New Phoenix Aerospace maintains procedures and operating instructions to identify and control documents and data, including documents and data provided by customers or other sources. Such documentation typically includes:

- Specifications
- Customer Orders
- Plans/ Drawings
- Quality Manual
- Operating Procedures
- 4.5.2 All documentation utilized within the Company related to the management system itself, or to the execution of individual customer contracts is controlled to ensure that it is issued to the appropriate personnel, under the correct level of authority, is revised and reissued as necessary, and all obsolete versions are removed from the point of use.
- 4.5.3 The Quality System Standard, Standard Operating Procedures and Work Instructions are maintained by the Quality Manager who ensures that the appropriate items, at the correct revision levels, are issued to all who need them within the Company.
- 4.5.4 All changes to documents are reviewed and approved by the person responsible for the original issue and, where appropriate, the nature of the change is indicated on the document. Master copies of the revised documents are retained as records of the changes and renewed as necessary to ensure clarity.
- 4.5.5 Each contract has a file which contains all relevant information. Information is also held on the company's computer system for ease of access and manipulation.
- 4.5.6 The document control system shall ensure that:

- ➤ The appropriate issues of documents are available at locations where activities essential to the effective functioning of the quality system are performed.
- > Invalid and obsolete documents are promptly removed from all points of issue or use, or otherwise assured against unintended use.
- > Obsolete documents retained for legal or knowledge-preservation purposes are suitably identified.

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# 4.5.7 Document and Data Changes

Changes to documents and data shall be reviewed and approved by the same functional New Phoenix Aerospace that performed the original review and approval. All employees involved in the approval process shall have access to pertinent background information upon which to base their review and approval.

#### 4.5.8 IMPLEMENTING PROCEDURES

05.00 Quality System Document Control
05-01 Quality System Document Review Process
05-02 Engineering Change Order
05-03 Control, Maintenance, and Security of Controlled Documents
05-04 Canceling or Superseding Documents
05-05 Design Document Requirements and Format
05-07 Issue of Controlled Documents
05-08 System Incorporation of Documents
05-11 Engineering Specification
05-12 Material Processes
05-16 Use of Controlled Documents and material for Reference Only
05-00-01 Quality System Document Review

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#### 4.6 PURCHASING

- 4.6.1 The New Phoenix Aerospace shall ensure that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product shall be dependent upon the effect of the purchased product on subsequent product realization or the final product.
- 4.6.2 The New Phoenix Aerospace shall be responsible for the quality of all products purchased from suppliers, including customer-designated sources.
- 4.6.3 The New Phoenix Aerospace shall evaluate the supplier based on their ability to supply product in accordance with the New Phoenix Aerospace's requirements. Criteria for selection, evaluation and re- evaluation shall be established. Records of the results of evaluations and any necessary actions arising from the evaluation shall be maintained.

#### 4.6.4 **RESPONSIBILITY**

- 4.6.5 The Purchasing Department shall:
  - Maintain a register of approved suppliers that includes the scope of the approval;
  - Periodically review supplier performance; records of these reviews shall be used as a basis far establishing the level of control at is implemented
  - Defines the necessary actions to take when dealing with suppliers that do not meet requirements
  - ➤ Ensure where required that both the New Phoenix Aerospace and all suppliers use customer- approved special process sources
  - > Ensures that the function having responsibility for approving supplier quality systems has the authority to disapprove the use of sources.
- 4.6.6 Suppliers of products, materials and services, where unspecified by a customer contract, are selected on their ability to meet the company's requirements given due consideration to the quality, statutory obligations, timescale and cost.
- 4.6.7 Verification of Purchased Product:

Written By: NPA Quality

The New Phoenix Aerospace shall establish and implement the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements.

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## 4.6.8 Verification activities may include

- obtaining objective evidence of the quality of the product from suppliers (e.g., accompanying documentation, certificate of conformity, test reports, statistical records process control),
- inspection and audit at supplier's premises,
- > review of the required documentation,
- > inspection of products upon receipt, and
- > delegation of verification to the supplier or supplier certification
- 4.6.9 Purchased product shall not be used or processed until it has been verified as conforming to specified requirements.
  - Where the New Phoenix Aerospace utilizes test reports to verify purchased product, the data in those reports shall be acceptable per applicable specifications.
  - Where the New Phoenix Aerospace delegate's verification activities to the supplier, the requirements for delegation shall be defined.
  - Where the New Phoenix Aerospace or its customer intends to perform verification at the supplier's premises, the New Phoenix Aerospace shall state the intended verification arrangements and method of product release in the purchasing information.
  - Where specified in the contract, the customer or the customer's representative shall be afforded the right to verify at the supplier's premises and the New Phoenix Aerospace's premises that subcontracted product conforms to specified requirements.

Verification by the customer shall not be used by the New Phoenix Aerospace as evidence of effective control of quality by the supplier and shall not absolve the New Phoenix Aerospace of the responsibility to provide acceptable product, nor shall it preclude subsequent rejection by the customer.



# **4.6.10 IMPLEMENTING PROCEDURES**

NPA SOP	06-00	Purchasing Process
NPA SOP	06-01	Supplier Quality Control Requirements
NPA SOP	06-04	Supplier Management
NPA WI	06-05	Supplier Deviation Request
NPA WI	06-06	Supplier Nonconformance and Supplier Action Request
NPA FORM	06-00-01	Supplier Quality Survey Report Form
NPA FORM	06-00-02	Quality Special process Survey Report
NPA FORM	06-00-03	Purchase Request
NPA FORM	06-00-04	Supplier Deviation Request

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#### 4.7 CONTROL OF CUSTOMER SUPPLIED PRODUCT

4.7.1 The system for storage, verification, and maintenance of customer-supplied product shall be controlled in accordance with documented procedures. Lost or damaged product, or product otherwise unsuitable for its intended use, shall be recorded and reported to the customer. Records pertaining to customer-supplied product shall be maintained in compliance with implementing procedures.

#### 4.7.2 IMPLEMENTING PROCEDURES

Written By: NPA Quality

NPA SOP 07-00 Control of Government/Customer Property
NPA FORM 07-00-01 Report of Loss or Missing Customer and Government

Property

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#### 4.8 IDENTIFICATION AND TRACEABILITY

- 4.8.1 Identification and traceability of the product throughout its life cycle shall be maintained in accordance with documented procedures. Where traceability is a requirement, the New Phoenix Aerospace shall control and record the unique: identification of the product.
- 4.8.2 The level of traceability required by contract, regulatory, or other established requirement shall provide for an identification to be maintained throughout the product life, the products manufactured from the same batch of raw material or from the same manufacturing batch to be traced, as well as the destination (delivery, scrap) of all products of the same batch, for an assembly, the identity of its components and those of the next higher assembly to be traced; for a given product, a sequential record of its production (manufacture, assembly, inspection) to be retrieved.
- 4.8.3 New Phoenix Aerospace shall exercise care with customer property while it is under New Phoenix Aerospace's control or being used by the New Phoenix Aerospace. New Phoenix Aerospace shall identify, verify, protect and safeguard customer property provided for use or incorporation into the product. If any customer property is lost, damaged or otherwise found to be unsuitable for use, this shall be reported to the customer and records maintained.
- 4.8.4 Customer property can include intellectual property, including customer furnished data used for design, production and/or inspection.

#### 4.8.5 **INCOMING MATERIALS**

Written By: NPA Quality

Receiving inspection maintains records identifying materials by part number, and their corresponding purchasing documentation to include specification, inspection requirements, acceptance criteria, and any other pertinent data requirements.

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#### 4.8.6 **IN-PROCESS MATERIALS**

All items are identified by part number and drawing revision

#### 4.8.7 **FINISHED PRODUCTS**

All finished products may be identified by part number, serial number and other required contract requirements by each specific contract.

#### 4.8.8 TRACEABILITY

Written By: NPA Quality

Build to print records are maintained for each finished product.

#### 4.8.9 IMPLEMENTING PROCEDURES

NPA SOP	08-01	Display and Engineering Use Item
NPA SOP	08-02	Traceability
NPA SOP	08-03	Serialization Log

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#### 4.9 PROCESS CONTOL

- 4.9.1 All production work is planned and undertaken in accordance with the company's procedures, and any specific documents agreed for individual contracts (e.g. contract specifications).
- 4.9.2 Work instructions are developed to insure the product conforms to the agreed contract specifications provided by the contract and any documents referenced therein, alternatively work is performed in accordance with nationally accepted codes of practice.
- 4.9.3 For Build to Print activities New Phoenix Aerospace shall utilize customer approved suppliers for calibration, testing, and other controls as required and therefore, shall not perform on-site surveys for vendor approval. For all other activities New Phoenix Aerospace shall utilize New Phoenix Aerospace approved suppliers for calibration, testing, and other controls as required and will perform surveys for vendor approval.
- 4.9.4 If satisfactory service is not maintained by the vendor, that vendor shall be summarily replaced.
- 4.9.5 Processes shall be controlled by:
  - Documented procedures or work instructions that define the manner of production, installation, and servicing.
  - Monitoring and control of process parameters and product characteristics during the production phase (e.g., process checks, inspections, tests, etc.).
  - Approval of processes and equipment prior to use, as appropriate.
  - > The conformance to workmanship criteria, as stipulated by work instructions and visual aids.
  - ➤ Planned maintenance, verification of equipment, and calibration records that are maintained for qualified processes, equipment, and personnel.

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#### 4.9.6 **SPECIAL PROCESS (IN House)**

For Special Processes, work instructions shall be developed and maintained by the affected functional New Phoenix Aerospace. Operators shall receive specific training as deemed necessary and be certified for the special processes. Records of the Special Processes shall be retained.

#### 4.9.7 IMPLEMENTING PROCEDURES

Written By: NPA Quality

NPA SOP 09-03 Special Processes



#### 4.10 INSPECTION AND TEST

4.10.1 Documented procedures shall be maintained to ensure that deliverable product is inspected and tested, with results recorded, to ensure that all specified requirements are met. Documented procedures shall also be maintained to ensure the positive recall of conditionally released material in the event of nonconformity to specified requirements.

#### 4.10.2 RECEIVING INSPECTION AND TESTING

Purchased product shall be subjected to source inspection or receiving inspection, or both as determined by Quality and or the customer. In accordance with documented procedures, before being released for use. All storage areas are maintained as secure as practical.

- 4.10.3 All items received by the Company are identified and verified in accordance with the requirements of the Delivery Note and Purchase Order, and are inspected for correct identity, quantity and any signs of damage.
- 4.10.4 All goods received are documented and, in the event of non-conformance, the items are placed in a reject area or labeled to ensure identification. The extent of the non-conformance is noted and subject to disposition review by nominated personnel.

#### 4.10.5 IN-PROCESS INSPECTIONS AND TESTING

- 4.10.6 Inspection and testing is carried out on completion of build activities, with results being documented. Should items not be acceptable against the agreed contract criteria they will be repaired, replaced or identified for a subsequent evaluation All repaired items are subject to a re-inspection to ensure acceptability.
  - 4.10.7 In-process product inspections and tests shall be conducted and recorded as defined in the shop traveler or other documented instructions. Products shall be held until the required inspections and tests have been completed and verified
  - **4.10.8** Nonconforming material shall be documented, controlled, and disposition in accordance with documented procedures.

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#### 4.10.9 FINAL INSPECTION AND TESTING

Final inspections and tests shall be performed and recorded as defined in documented procedures or instructions. Final inspection and test documentation shall ensure that all specified inspections and tests, including those performed either upon receipt of product or in process, have been carried out and that the results meet specified requirements. No product shall be dispatched or delivered until all activities specified in the documented instructions have been satisfactorily completed and the associated data are approved and available.

#### 4.10.10 INSPECTION AND TEST RECORDS

Completed and approved inspection and test records shall be controlled and maintained in accordance with contractual requirements and documented procedures. Inspection and test records are objective evidence of product conformance to specified requirements.

#### 4.10.11 IMPLEMENTING PROCEDURES

Written By: NPA Quality

NPA SOP	10-00	In-Process Inspection
NPA SOP	10-01	Receiving Inspection
NPA WI	10-02	Receiving Inspection Template
NPA SOP	10-05	First Article Inspection
NPA SOP	10-06	End Item First Article Inspection
NPA SOP	10-08	Final/Buvoff Inspection

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## 4.11 CONTROL OF INSPECTION, MEASURING, AND TEST EQUIPMENT

4.11.1 Documented procedures shall be maintained for the maintenance, control, and calibration of inspection, measuring, and test equipment (including test software). Inspection, measuring, and test equipment shall be used in such a manner that the measurement uncertainty is known and is consistent with the required accuracy

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- 4.11.2 Where test software or comparative references such as test hardware are used as suitable forms of inspection, they shall be checked to prove that they are capable of verifying the acceptability of product before use and shall be rechecked at regular intervals. The extent and frequency of such checks shall be in accordance with documented procedures. Records shall be retained as evidence of control.
- 4.11.3 Where the availability of technical data pertaining to the measurement equipment is a specified requirement, such data shall be made available to the customer (or representative) for verification that the measuring equipment is functionally adequate.
- 4.11.4 The measurements to be made and the accuracy required shall be determined and the appropriate inspection, measuring, and test equipment, capable of the necessary accuracy and precision, shall be identified.
- 4.11.5 Inspection, measuring, and test equipment, used to verify specified processes and requirements, shall be periodically calibrated against controlled standards that have a valid relationship to national standards (where applicable standards exist). Where no such standards exist, the basis used for calibration shall be documented.
- 4.11.6 The processes employed for the calibration of inspection, measuring, and test equipment shall be defined. The processes shall include details of equipment type, unique identification, location, and frequency of calibration, calibration method, acceptance criteria, and the action to be taken when results are unsatisfactory. Calibration records shall be used in determining calibration intervals.
- 4.11.7 Inspection, measuring, and test equipment shall be identified with calibration labels that indicate the calibration status, calibration due date, and the employee or service provider who performed the calibration.

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- 4.11.8 Records of the calibration of inspection, measuring, and test equipment shall be maintained.
- 4.11.9 Documented procedures shall be maintained for the reporting of out-of-tolerance conditions found during calibration to assess the validity of previous testing or inspection and to determine any actions that need to be taken.
- 4.11.10 Calibrations, inspections, measurements, and tests shall be performed under suitable environmental conditions.
- 4.11.11 Inspection, measuring, and test equipment shall be handled; preserved, and stored in a manner that ensures its accuracy and fitness for use.
- 4.11.12 Inspection, measuring, and test equipment shall be safeguarded from adjustments that would invalidate the calibration settings.

#### 4.11.13 IMPLEMENTING PROCEDURES

NPA SOP 11-00 Control of Inspection Measuring and Testing Equipment

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#### 4.12 INSPECTION AND TEST STATUS

Written By: NPA Quality

4.12.1 The test status of all products must be identified through all phases of production. The test status indicates whether the product has passed or failed inspection. Production and measuring equipment held is maintained in good condition, and capable of safe and effective operation within a specified tolerance of accuracy. Test and measuring equipment is regularly inspected or calibrated to ensure that it is capable of accurate operation, by comparison with external sources traceable back to National Standards.

- 4.12.2 Upon receipt, Receiving Inspection shall examine the material as follows:
  - > Examine for transit damage
  - > Examine for quantity and type
  - > Examine for proper identification
- 4.12.3 If applicable, the material shall be functionally tested to insure proper operation before installation.
- 4.12.4 Customer furnished material shall be stored in a manner to prevent damage when not in use. Material used in product shall be identified as customer supplied and segregated in material control until issued, identification shall remain with material until assembled in product.
- 4.12.5 Any damage or malfunction will be reported to the Government/Customer as it is detected, including probable cause.
- 4.12.6 Material shall be returned to Government/Customer when no longer required in accordance with contractual agreements.

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# 4.12.8 Government and customer furnished Test Equipment

Calibration of Government Test Equipment shall be maintained by NPA'S Quality Control. Calibration of customer furnished Test Equipment shall be the responsibility of the customer, however, NPA shall notify them if the equipment is near due or out of calibration.

#### **4.12.9 IMPLEMENTING PROCEDURES**

NPA SOP 12-01 Inspection Stamp Control

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#### 4.13 CONTROL OF NONCONFORMING PRODUCT

- 4.13.1 Any nonconforming product must be properly identified and segregated. The type and extent of non-conformity is documented in order to establish trends and identify possible areas for improvement.
- 4.13.2 The corrective action required to prevent recurrence is evaluated, documented, and its effective implementation is monitored. All rectification is subsequently reinspected to ensure complete customer satisfaction.
- 4.13.3 All employees are encouraged to suggest improvements in methods, materials, suppliers, and sub-contractors. The Company has established procedures for review of all activities in order to identify and evaluate all possible improvements in methods/ materials and its procedures.

#### 4.13.4 IMPLEMENTING PROCEDURES

Written By: NPA Quality

NPA SOP 13-00 Non-Conforming Material Quality Control and Review

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#### 4.14 CORRECTIVE AND PREVENTIVE ACTION

- 4.14.1 Documented procedures shall be maintained for the analysis and correction of product nonconformities. Nonconformities detected at any time during the product life cycle, by inspection, test, audit, or customer complaint, shall be subjected to investigation for possible corrective action.
- 4.14.2 Noncompliance with procedures or processes shall be subjected to investigation and corrective action when warranted by the significance of the noncompliance.
- 4.14 3 Any employee becoming aware of the need for possible corrective action, whether in a manufactured or purchased product or in noncompliance with a procedure or process, may initiate the corrective action process.
- 4.14.4 Two types of corrective action shall occur: the corrective action for a specific deficiency, and the corrective action for the root cause of that deficiency.
- 4.14.5 The management representative shall review a summary of the corrective actions taken, to objectively verify the effective operation of the quality system Preventive Action
- 4.14.6 Preventive action shall be accomplished as part of the corrective action system. All employees shall be encouraged to initiate preventive action or process improvement whenever they become aware of the need. Candidate situations for possible preventive action may involve procedures, work instructions, audit results, quality records, service reports, and customer complaints. The preventive actions identified shall be subjected to the same self-escalating, self tracking system as corrective actions thereby ensuring investigation and verifying incorporation of changes that will improve product quality and reduce the risk of nonconformance. The management representative shall review a summary of the preventive actions taken, to objectively verify the effective operation of the quality system.

Written By: NPA Quality Approved By: Paul Swain, Acting Quality Manager

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# 4.14.7 IMPLEMENTING PROCEDURES

NPA SOP 14-00 Corrective and Preventive Action Process.NPA WI 14-01 Submitting a Corrective Action Request

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#### 4.15 HANDLING, STORAGE, PACKAGING, PRESERVATION AND DELIVERY

4.15.1 The identification of materials/ equipment, where it is not obvious, is confirmed by the presence of a manufacturers/ suppliers part number or description label, or other marking for each item.

4.15.2 Materials and goods received, whether the property of the company or others, will, as far as practicable, be protected and their quality preserved until such time as they are transferred to a customer, or disposed of to a third party.

#### 4.15.5 Storage

Written By: NPA Quality

Pending use or delivery, products shall be stored in designated areas or stock rooms, in accordance with documented procedures or contractual specifications Specific storage areas for hazardous, sensitive, or limited shelf-life products shall be clearly identified.



#### 4.15.6 Preservation

The preservation, segregation, and integrity of products shall be maintained in accordance with documented procedures, contractual specifications, or shop order instructions

# 4.15.7 Delivery

Product delivery shall be controlled by documented procedures or contract-specific

#### 4.15.8 IMPLEMENTING PROCEDURES

NPA SOP	15-00	<b>Production Material Storage</b>
NPA SOP	15-01	Product Packaging
NPA SOP	15-05	Product Delivery

Written By: NPA Quality Approved By: Paul Swain, Acting Quality Manager



#### 4.16 **CONTROL OF QUALITY RECORDS**

- 4.16.1 Documented procedures shall be maintained for the identification and disposition of all company quality records
- 4.16.2 Quality records shall be maintained as objective evidence to demonstrate. Conformance to specific requirements and the effectiveness of the quality system.
- 4.16.3 Quality records shall be legible and shall be retained in facilities that provide a suitable environment to prevent damage, deterioration, or loss.
- 4.16.4 Quality records shall be retained in such a way that they may be readily retrieved.
- 4.16.5 Product quality records shall be retained until instructions for destruction are received in writing from the customer. Retention times of all other quality records shall be established and documented in documented procedures.
- 4.16.6 Where records are maintained on computer magnetic media, and these are subject to "back-up" at regular intervals, with the "back-up" information being stored in a protected location to ensure security from loss/ damage of active data

#### 4.16.7 IMPLEMENTING PROCEDURES

NPA SOP	16-00	Record Management
NPA FORM	16-00-01	Record Storage Authorization
NPA FORM	16-00-02	Record Destruction Authorization



#### 4.17 INTERNAL QUALITY AUDITS

- 4.17.1 Internal quality audits shall be performed to verify compliance with and the effectiveness of, the quality system. An audit plan, including a detailed schedule, shall be developed at least annually. The plan shall be based on the status and importance of the area to be audited. It shall be updated quarterly to schedule additional audits as warranted. The plan shall ensure a yearly review of each element of the quality system.
- 4.17.2 Auditors shall be trained before performing internal audits. Auditors shall be selected to ensure that they are independent of the individual having direct responsibility for the area being audited.
- 4.17.3 Noncompliance shall be documented and submitted to the affected area for concurrence with the findings. The audit report shall be submitted to the audited area functional management and a summary report of audits shall be provided to the management representative. Corrective and preventive action needs determined by audit shall be processed through the corrective action system to ensure timely response and verification of implementation. Follow-up audits shall be performed to verify the effectiveness of the corrective action.
- 4.17.4 The audit plan, quarterly updates to the plan, and the results of each audit shall be recorded and controlled as quality records.

#### 4.17.5 RESPONSIBILITIES

The Quality manager is responsible for ensuring that internal audits are performed by appointing a designated auditor. These responsibilities are described in SOP.

#### 4.17.6 IMPLEMENTING PROCEDURES

Written By: NPA Quality

NPA SOP 17-00 Internal Quality Audit

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#### 4.18 TRAINING

- 4.18.1 The policy of the company is to ensure that all personnel are trained and experienced to the extent necessary to undertake their assigned activities and responsibilities effectively. The company generally procures and recruits employees capable of meeting the technical, skill, experience and educational requirements of the company's activities.
- 4.18.2 The training policy will address the Identification of training needs, the qualification of personnel assigned to perform quality task, effectiveness of training and training records. All staff and employees are responsible for recommending the training needs of others and for ensuring that all employees allocated specific tasks are suitably qualified and experienced to execute those tasks.
- 4.18.3 Once training needs are identified these are provided to Human Resources for implementation. Documented procedures shall be maintained for identifying training needs and for providing training of all personnel performing activities affecting product quality.
- 4.18.4 Training records for all employees shall be maintained. Records are maintained of all training undertaken by employees.

#### 4.18.5 **RESPONSIBILITIES**

- 4.18.6 The Human Resources Manager is responsible for:
  - > Ensuring all new hires receive quality awareness education
  - > Identify knowledge and skills required for each specific job task, or position description.
  - Maintain appropriate training records on all employees

#### 4.18.7 IMPLEMENTING PROCEDURES

NPA SOP	18-00	Training Program Requirements
NPA SOP	18-01	Solder Training Certification
NPA WI	18-02	Operator Training
NPA FORM	18-00-01	Inspector- Production Training Checklist
NPA FORM	18-00-02	Solder Certificate
NPA FORM	18-00-03	Certificate Solder Card



# **CHANGES**

Proposed changes shall be reviewed and approved by the General Requirements Manager.

**REVISION HISTORY DATA** 

Written By: NPA Quality

REVISION SUMMARY OF CHANGE DATE OF ISSUE
A- Original Initial issue August 2004
B- Revised AS9100 alignment initiated, ERP references embodied, May 2005

Business flow chart added.