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## Quality Commitment



## Quality Management System Manual

# N&P Precision Machine Inc.

## Quality Management System Manual

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## **I. Introduction**

This Quality Manual defines the Quality Management System implemented at N&P Precision. The objective of this system is continuous, permanent quality improvement to prevent defects, reduce waste, improve product quality, exceed customer expectations, and sustain a successful business.

The Quality Management System described herein is designed to meet various customer requirements for AS9100 Based Quality Systems including the following specifications:

1. AS9100 Rev B
2. ISO9001:2008

The N&P Precision's President is the designated authority, and has responsibility for implementing and maintaining the Quality Management System.

This Quality Manual is directed at assuring N&P Precision compliance with customer contract requirements through the application and monitoring of a structured management system. Monitoring the effectiveness of the N&P Precision Quality Management System through planned management reviews and internal audits is emphasized.

The entire management team along with each N&P Precision employee recognizes the importance of effectively building "Quality" into every product and service we provide.

## **II. Quality Policy**

N&P Precision is committed to providing the highest quality and service to meet and exceed all of our customer and regulatory requirements. This is achieved through continual improvement of our Quality Management System, and monitoring of our Measurable Quality Objectives.

### III. Quality Manual Logistics

APPROVAL:

President: Walter Prodan  
Vice President: Danny Nguyen

CONTROL:

Document and Data Control maintains the currency of the Quality Manual electronically.

### IV. Quality Manual Revision Record

| DATE    | REV.<br>LETTER | DESCRIPTION OF CHANGE(S) | Approval<br>Date |
|---------|----------------|--------------------------|------------------|
| 3/20/11 | A:             | New Quality Manual       | 5.5.11           |
|         |                |                          |                  |
|         |                |                          |                  |
|         |                |                          |                  |
|         |                |                          |                  |
|         |                |                          |                  |

## 1. Company Service

N&P Precision Machining offers a full range of manufacturing processes and techniques for every production run, from castings and forgings, to solid stock. N&P is proud to serve the following industries:

- Aerospace
- Military
- Defense
- Commercial

## 2. Purpose

This Quality Manual describes the Quality Management Systems and serves as a guide for employees whose functions affect the quality and reliability of our processes. Through adherence to the documented system, there resides the highest degree of assurance that no compromise will take place in the meeting of our customers' expectations. The Quality Management Systems itself is complete and responsive to all requirements of the ISO 9001:2008 and AS9100 rev. B Standard.

The Quality Manager for the Quality System has full responsibility and authority for its establishment, implementation, and maintenance. This includes control of the Quality Manual and other documentation comprising the Quality System: Procedures, Work Instructions, Forms, and Reference Documents. In addition, the Management Representative ensures that Internal Quality Audits are properly scheduled and conducted to verify compliance of quality-related activities and overall effectiveness of the Quality Management System.

As a document itself, this Quality Manual is updated, as necessary, to reflect changes in the Quality Management System and improvements in the organization. Since its purpose is to help ensure both the quality and reliability of our products, any suggestions for modification to its content are always welcome.

### 3. Scope

The scope of this Quality Manual is a description of the capability of N&P Precision's Quality Management System to meet the requirements of the ISO 9001:2008, and AS9100 rev. B Standard.

As the focus of these requirements is that of achieving customer satisfaction through the prevention of non-conformances, this top-level document addresses the manner in which N&P Precision accomplishes this through all stages of its processes.

In terms of layout and coverage, the Quality Manual provides confirmation of adherence to each of the necessary provisions of the Standard. It does this through the use of the same clause numbering system of the ISO 9001:2008 and AS9100 rev. B Standard.

This approach provides for a most comprehensive coverage of all of the requirements, serving also as a checklist for internal auditing purposes.

Lists of Applicable Procedures, Work Instructions, Forms, and Reference Documents are maintained electronically. Consistent with the layout of the Quality Manual, these documents are numbered and grouped for easy identification with the individual clause of the ISO 9001:2008 and AS9100 rev. B Standard to which they pertain.

#### Scope of Registration

The Registration covers the Quality Management System for close tolerance machining, of casting, forging and solid stock components for the aerospace, military, defense and commercial industries.

#### \*\*\*Exclusions\*\*\*

**Manufacturing is the sole function of N&P Precision. For this reason, N&P Precision has excluded the following sections of the standard:**

- 7.3 Design and Development-N&P Precision does not design or develop any parts or components, all product is produced to customer specifications.

#### Non-Applicable

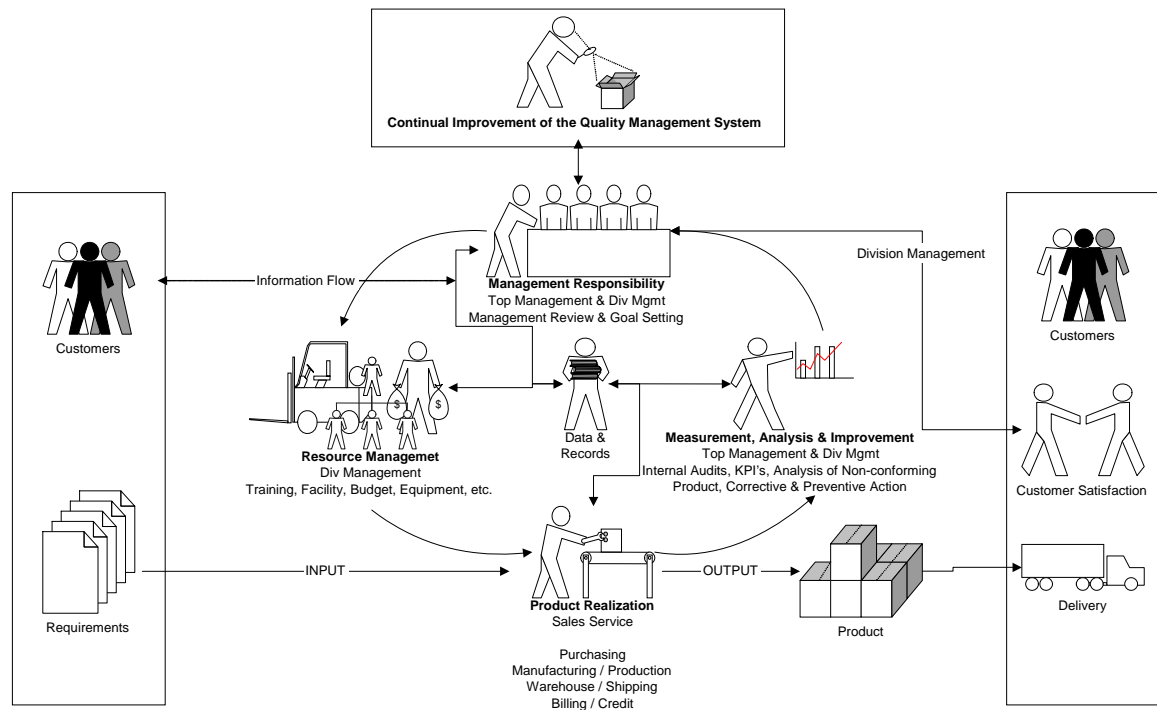
- 7.5.1.5-Service-N&P Precision does not provide aftermarket/warranty service with their product.
- 7.5.2-Validation of special processes-N&P Precision does not validate any special processes.

## 4. Quality Management System

### 4.1 General Requirements

N&P Precision has established, documented, implemented and maintained a quality management system and continually improve its effectiveness in accordance with the requirements of ISO 9001:2008, and AS9100 rev. B. N&P Precision has:

- Identified the processes needed for the quality management system and their application throughout the organization,
- Determine the sequence and interaction of these processes,



- Determined criteria and methods needed to ensure that both the operation and control of these processes are effective,
- Ensured the availability of resources and information necessary to support the operation and monitoring of these processes,
- Monitored, measured and analyzed these processes, and
- Implemented actions necessary to achieve planned results and continual improvement of these processes.

These processes will be managed by N&P Precision in accordance with the requirements of ISO 9001:2008 and AS9100 rev. B.

Where N&P Precision chooses to outsource any process that affects product conformity with requirements, N&P Precision will ensure control over such processes. Control of such outsourced processes will be identified within the quality management system.

## 4.2 Documentation Requirements

### 4.2.1 General

The Quality Management System documentation includes:

- Documented statements of a Quality Policy and Quality Objectives defined at specific levels of the organization.
- A Quality Manual consistent with the requirements of the ISO 9001:2008 International Standard.
- Documented Procedures describing the specific manner in which the organization performs necessary activities or processes.
- Documents needed by the organization to ensure the effective planning, operation, and control of its processes according to the nature and complexity of sound business practices and their interactions, and the competence of personnel. Such documents include, but are not limited to, work instructions, workmanship standards, technical specifications, operating documents, training references, and defined competencies. Documentation exists in hard copy and/or electronic format.
- Quality Records required for compliancy with the International Standard (see 4.2.4).
- **Quality system requirements imposed by the applicable regulatory authorities.**

**N&P Precision ensures that personnel have access to quality management system documentation and are aware of relevant procedures. Customer and/ or regulatory authorities' representatives shall have access to quality management system documentation.**

### 4.2.2 Quality Manual

This Quality Manual is established to meet the requirements of the ISO 9001:2008 and **AS9100 rev. B** Standard and includes:

- The scope of the Quality Management System, with any exclusion fully identified.
- Reference to Procedures and/or Work Instructions, as a separate set of documents.
- **When referencing the documented procedures, the relationship between the requirements of ISO 9001:2008, AS9100 rev. B, and the documented procedures is clearly shown.**
- Interactions between the processes of the Quality Management System as described in flowcharted and/or written text Procedures.

### 4.2.3 Control of Documents

Documents required by the Quality Management System are controlled by Electronic Uploaded date.

Any document printed from the system is considered an “uncontrolled” copy.

A documented procedure is established to define the controls needed

- To approve documents for adequacy prior to issue,
- To review and update as necessary and re-approve documents,
- To ensure that changes and the current revision status of documents are identified.
- To ensure that relevant versions of applicable documents are available at points of use,
- To ensure that documents remain legible and readily identifiable,
- To ensure that documents of external origin are identified and their distribution controlled, and
- To prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose.

**N&P Precision coordinates document changes with customers and/or regulatory authorities in accordance with contract or regulatory requirements.**

#### 4.2.3-01 Control of Documents Procedure

#### **4.2.4 Control of Records**

N&P Precision establishes and maintains records that contain data and information resulting from the implementation of processes. These records provide evidence of conformity to requirements and of the effective operation of the Quality Management System and are either electronic or hard copy format, both of which are legible, readily identifiable, and fully retrievable.

Responsibility, authority, and associated activities regarding records are documented in a Procedure, which further defines the controls for their identification, storage, protection, retrieval, retention time, and method of disposition.

**The documented procedure defines the method for controlling records that are created by and /or retained by suppliers.**

**Records will be available for review by customers and regulatory authorities in accordance with contract or regulatory requirements.**

#### 4.2.4-01 Control of Records Procedure

### **4.3 Configuration Management**

**N&P Precision has established, documented and maintained a configuration management process appropriate to the product.**

**Company will have a minimum but not limited to the following:**

- 1) Purchase Order
- 2) Any Changes from Customer (emails, ECO's, etc)
- 3) Any Drawing Specifications and REV levels
- 4) Any Key Measurements
- 5) Any Special Process Certifications

- 6) Any Inspection Data
- 7) Any MRB Details
- 8) Any Shipping Information

## **5 Management Responsibility**

### **5.1 Management Commitment**

- Top management has provided evidence of its commitment to the development and implementation of the quality management system and continually improving its effectiveness by
- Communicating to the organization the importance of meeting customer as well as statutory and regulatory requirements,
- Establishing the quality policy,
- Ensuring that quality objectives are established,
- Conducting management reviews, and
- Ensuring the availability of resources.

### **5.2 Customer Focus**

N&P Precision establishes systems to understand its customers' needs in order to consistently meet requirements and to strive to meet customer expectations. Key process characteristics are determined, measured, and monitored for customers. Customer needs and expectations take into consideration product conformity, dependability, availability, delivery, and environmental impact.

In addition to customers, N&P Precision identifies and provides planned arrangements to meet needs and expectations of people in the organization, owners, suppliers, and the third party registrar that certifies the Quality Management System, as well as any facet of the public affected by the company and its products.

N&P Precision demonstrates responsibility for the health and safety of its employees and the public through compliance with safety and environmental regulations.

### **5.3 Quality Policy**

Top management has ensured that the quality policy:

- Is appropriate to the purpose of N&P Precision ,
- Includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system,
- Provides a framework for establishing and reviewing quality objectives,
- Is communicated and understood within N&P Precision , and
- Is reviewed for continuing suitability.

### **5.4 Planning**

#### **5.4.1 Quality Objectives**

N&P Precision' business process planning and Quality Policy provide a framework for establishing Quality Objectives. Measurable Quality Objectives are determined by process owners and top management in support of organizational performance improvements and maintenance of the Quality Management System. Metrics are compiled and documented in the form of statistical data to facilitate effective and efficient review by management. Objectives take into consideration, as necessary, results of the following activities:

- Current and future needs of the organization and the markets served.
- Relevant findings from management reviews.
- Current product and process performance.
- Levels of satisfaction of interested parties.
- Self-assessment results.
- Benchmarking, competitor analysis, and opportunities for improvement.
- Resources needed to meet objectives.

Quality Objectives are communicated internally in such a way that people in the organization can contribute to their achievement. They are systematically and mutually reviewed by management, as well as process owners, and revised as necessary.

#### **5.4.2 Quality Management System Planning**

Top management ensures that:

- The planning of the quality management system is carried out in order to meet the requirements given in 4.1, as well as the quality objectives, and
- The integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

### **5.5 Responsibility, Authority, and Communication**

#### **5.5.1 Responsibility and Authority**

Management has defined delegated responsibility and authority in Job Descriptions, Procedures, and an Organizational Chart in order to implement and maintain an effective and efficient Quality Management System. Process owners are enabled to contribute to the achievement of Quality Objectives and to establish their involvement, motivation, and commitment.

#### **5.5.2 Management Representative**

Top management has appointed Quality Control (a member of management) who, irrespective of other responsibilities, has responsibility and authority that includes

- Ensuring that processes needed for the quality management system are established, implemented and maintained,
- Reporting to top management on the performance of the quality management system and any need for improvement,
- Ensuring the promotion of awareness of customer requirements throughout the organization, and

- The organizational freedom to resolve matters pertaining to quality.

### **5.5.3 Internal Communication**

Management provides for effective and efficient communication of the Quality Policy, requirements, Quality Objectives, and accomplishments through formal and informal meetings involving individual process owners and/or all employees and through documented memoranda and training, as appropriate.

Internal communications are also accomplished through planning documents, internal audits, and corrective actions, as well as through the review of initiatives pertaining to human resource motivation, support, and effective and efficient personnel performance.

## **5.6 Management Review**

### **5.6.1 General**

Top management reviews the organization's quality management system, annually to ensure its continuing suitability, adequacy and effectiveness. This review will include assessing opportunities for improvement and the need for changes to the quality management system, including the quality policy and quality objectives.

Records from management reviews are maintained (see 4.2.4).

### **5.6.2 Review Input**

Management reviews are conducted according to an established agenda, with records of meetings being maintained, including supporting data and information. At a minimum, management reviews consider inputs to evaluate the efficiency and effectiveness of the Quality Management System. In addition, reviews address the following, as applicable:

- Status and results of Quality Objectives and improvement activities
- Status of management review action items
- Results of audits and self-assessments of the organization
- Status of Corrective and Preventive Actions
- Feedback on the satisfaction of interested parties
- Opportunities for improvement
- Control of process and product nonconformities
- Other factors which may impact the organization, such as financial, social or environmental conditions, as well as relevant statutory and regulatory changes

### **5.6.3 Review Outputs**

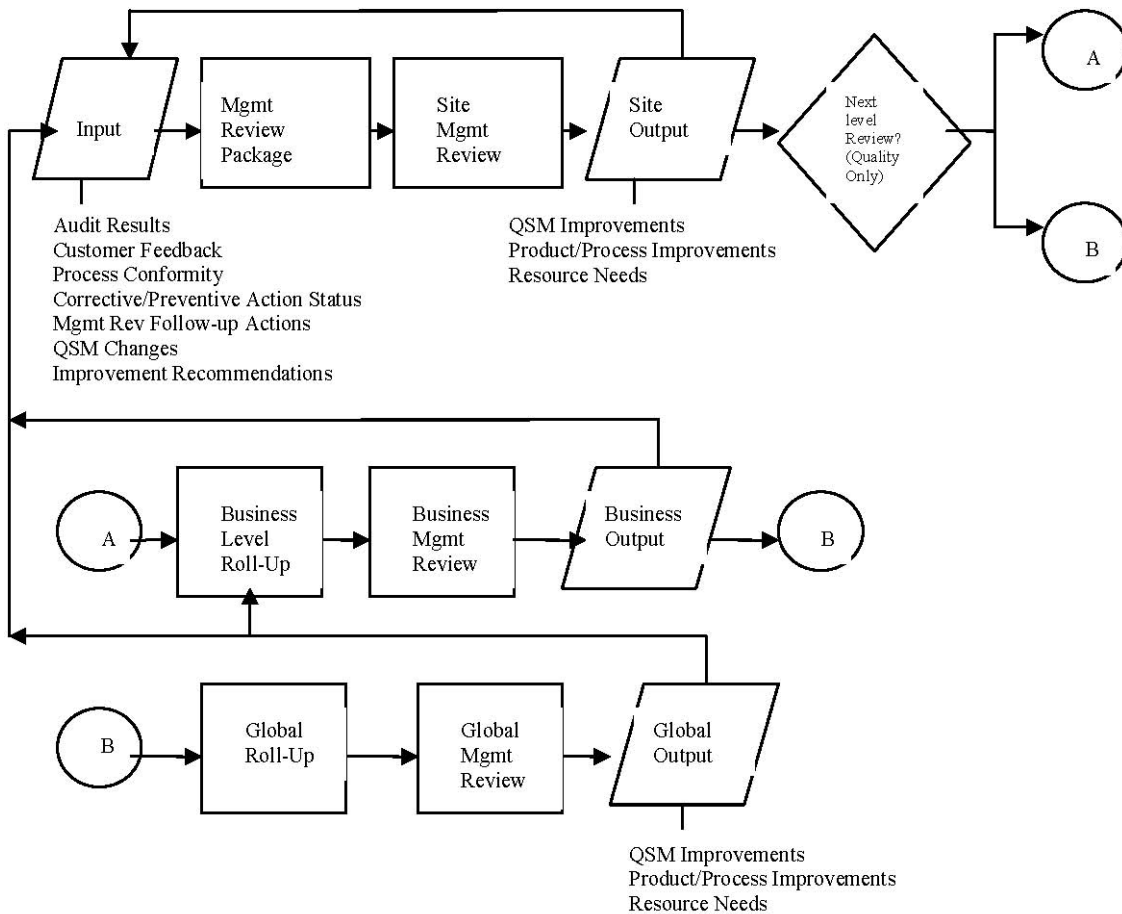
The output from the management review includes decisions and actions related to:

- improvement of the effectiveness of the Quality & Environmental framework and its processes;

- improvement of product and processes related to customer requirements; and
- Resource needs.

Results of management reviews are to be recorded and maintained.

**Figure 5.6 - Management Review Process**



## 6. Resource Management

### 6.1 Provision of Resources

N&P Precision has determined and provided the resources needed

- To implement and maintain the quality management system and continually improve its effectiveness, and
- To enhance customer satisfaction by meeting customer requirements

### 6.2 Human Resources

#### 6.2.1 General

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

### **6.2.2 Competence, Awareness and Training**

N&P Precision has:

- Determined the necessary competence for personnel performing work affecting product quality,
- Provided training or take other actions to satisfy these needs,
- Evaluated the effectiveness of the actions taken,
- Ensured that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives,
- Maintained appropriate records of education, training, skills and experience ( see 4.2.4)

### **6.3 Infrastructure**

N&P Precision has determined, provided and maintained the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable

- Buildings, workspace and associated utilities,
- Process equipment (both hardware and software), and
- Supporting services (such as transport or communication).

### **6.4 Work Environment**

N&P Precision has determined and managed the work environment needed to achieve conformity to product requirements.

## **7 Product Realization**

### **7.1 Planning of Product Realization**

N&P Precision plans and develops the processes needed for product realization. Planning of product realization is consistent with the requirements of the other processes of the quality management system (see 4.1).

In planning product realization, N&P Precision determines the following, as appropriate:

- Quality objectives and requirements for the product;
- The need to establish processes, documents, and provide resources specific to the product;
- Required verification, validation, monitoring, inspection and test activities specific to the product and the criteria for product acceptance;
- Records needed to provide evidence that the realization processes and resulting product meet requirements (see 4.2.4);

- **The identification of resources to support operation and maintenance of the product.**

The output of this planning will be in a form suitable for the N&P Precision and Mold's method of operations.

## **7.2 Customer-Related Processes**

### **7.2.1 Determination of Requirements related to the Product**

N&P Precision will determine:

- Requirements specified by the customer, including the requirements for delivery and post delivery activities,
- Requirements not stated by the customer but necessary for specified or intended use, where known,
- Statutory and regulatory requirements related to the product, and
- Any additional requirements determined by the organization.

### **7.2.2 Review of Requirements Related to the Product**

N&P Precision will review the requirements related to the product. This review will be conducted prior to the N&P Precision' commitment to supply a product to the customer (e.g. submission of tenders, acceptance of contracts or orders, acceptance of changes to contracts or orders) and will ensure that

- Product requirements are defined,
- Contract or order requirements differing from those previously expressed are resolved,
- The organization has the ability to meet the defined requirements, and
- **Risks (e.g., new technology, short delivery time scale) have been evaluated.**

Records of the results of the review and actions arising from the review will be maintained (see 4.2.4).

Where the customer provides no documented statement of requirement, the customer requirements will be confirmed by N&P Precision before acceptance.

Where product requirements are changed, N&P Precision will ensure that relevant documents are amended and that relevant personnel are made aware of the changed requirements.

### **7.2.3 Customer Communication**

N&P Precision will determine and implement effective arrangements for communicating with customers in relation to

- Product information,
- Enquiries, contracts or order handling, including amendments, and

- Customer feedback, including customer complaints.

## 7.2-01 Customer Related Process Procedure

### **7.4 Purchasing**

#### **7.4.1 Purchasing Process**

N&P Precision ensures that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product will be dependent upon the effect of the purchased product on subsequent product realization or the final product.

The organization shall be responsible for the conformity of all products purchased from suppliers, including product from sources defined by the customer.

N&P Precision evaluates and selects suppliers based on their ability to supply product in accordance with the N&P Precision' requirements criteria for selection, evaluation and re-evaluation is established. Records of the results of evaluations and any necessary actions arising from the evaluation will be maintained (see 4.2.4).

N&P Precision will:

- **Maintain a register of approved suppliers that includes the scope of the approval;**
- **Periodically review supplier performance; records of these reviews will be used as a basis for establishing the level of controls to be implemented;**
- **Define the necessary actions to take when dealing with suppliers that do not meet requirements;**
- **Ensure where required that both the N&P Precision and all suppliers use customer approved special process sources;**
- **Ensure that the function having responsibility for approving Supplier Quality systems has the authority to disapprove the use of sources.**

#### **7.4.2 Purchasing Information**

Purchasing information will describe the product to be purchased, including where appropriate

- Requirements for approval of product, procedures, processes and equipment,
- Requirements for qualification of personnel,
- Quality management system requirements,
- **The name or other positive identification, and applicable issues of specifications, drawings, process requirements, inspection instructions and other relevant technical data,**
- **Requirements for design, test, examination, inspection and related instructions for acceptance by the organization,**
- **Requirements for test specimens (e.g., production method, number, storage conditions) for design approval, inspection, investigation or auditing,**

- **Requirements relative to**
  - *Supplier notification to N&P Precision of nonconforming product and*
  - *Arrangements for N&P Precision approval of supplier nonconforming material,*
- **Requirements for the supplier to notify N&P Precision of changes in product and/or process definition and, where required, obtain organization approval,**
- **Right of access by the N&P Precision, its customer, and regulatory authorities to all facilities involved in the order and to all applicable records, and**
- **Requirements for the supplier to flow down to sub-tier suppliers the applicable requirements in the purchasing documents, including key characteristics where required.**

N&P Precision will ensure the adequacy of specified purchase requirements prior to their communication to the supplier.

### **7.4.3 Verification of Purchased Product**

N&P Precision will establish and implement the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements.

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.**

Purchased product will not be used or processed until it has been verified as conforming to specified requirements unless it is released under positive recall procedure.

When N&P Precision utilizes test reports to verify purchased product, the data in those reports will be acceptable per applicable specifications. N&P Precision will periodically validate test reports for raw material.

Where N&P Precision delegates verification activities to the supplier, the requirements for delegation will be defined and a register of delegations maintained.

Where N&P Precision or its customer intends to perform verification at the supplier's premises, N&P Precision will 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 will be afforded the right to verify at the supplier's premises and N&P Precision's premises that subcontracted product conforms to specified requirements.**

Verification by the customer will not be used by the N&P Precision as evidence of effective control of quality by the supplier and shall not absolve the N&P Precision of the responsibility to provide acceptable product, nor shall it preclude subsequent rejection by the customer.

#### 7.4-01 Control of Purchasing Procedure

### **7.5 Production and Service Provision:**

#### **7.5.1 Control of Production and Service Provision**

Planning will consider, as applicable,

- *The establishment of process controls and development of control plans where key characteristics have been identified,*
- *The identification of in-process verification points when adequate verification of conformance cannot be performed at a later stage of realization,*
- *The design, manufacture, and use of tooling so that variable measurements can be taken, particularly for key characteristics, and*
- *Special processes (see 7.5.2).*

N&P Precision will plan and carry out production and service provision under controlled conditions. Controlled conditions include, as applicable

- The availability of information that describes the characteristics of the product,
- The availability of work instructions, as necessary,
- The use of suitable equipment
- The availability and use of monitoring and measuring devices,
- The implementation of monitoring and measurement,
- The implementation of release, delivery and post-delivery activities,
- **Accountability for all product during manufacture (e.g., parts quantities, split orders, nonconforming product),**
- **Evidence that all manufacturing and inspection operations have been completed as planned, or as otherwise documented and authorized,**
- **Provision for the prevention, detection, and removal of foreign objects,**
- **Monitoring and control of utilities and supplies such as water, compressed air, electricity and chemical products to the extent they affect product quality and**
- **Criteria for workmanship, which shall be stipulated in the clearest practical manner (e.g., written standards, representative samples or illustrations).**

##### **7.5.1.1 Production Documentation**

**Production operations will be carried out in accordance with approved data.  
This data contains as necessary**

- Drawings, parts lists, process flow charts including inspection operations, production documents (e.g., manufacturing plans, traveler, router, work order, process cards); and inspection documents (see 8.2.4.1), and
- A list of specific or non-specific tools and numerical control (NC) machine programs required and any specific instructions associated with their use.

#### **7.5.1.2 Control of Production Process Changes**

Persons authorized to approve changes to production processes will be identified.

N&P Precision will identify and obtain acceptance of changes that require customer and/or regulatory authority approval in accordance with contracts or regulatory requirements.

Changes affecting processes, production equipment, tools and programs shall be documented. Procedures will be available to control their implementation.

The results of changes to production processes will be assessed to confirm that the desired effect has been achieved without adverse effects to product quality.

#### **7.5.1.3 Control of Production Equipment, Tools and Numerical control (N.C.) Machine**

**Programs:** production equipment, tools and programs will be validated prior to use and maintained and inspected periodically according to documented procedures. Validation prior to production use includes verification of the first article produced to the design data/specification.

Storage requirements, including periodic preservation/condition checks, are established for production equipment or tooling in storage.

#### **7.5.1.4 Control of Work Transferred, on a Temporary Basis, Outside the Organization's Facilities**

When planning to temporarily transfer work to a location outside the organization's facilities, N&P Precision will define the process to control and validate the quality of the work.

### 7.5.1-01 Control of Production Procedure

#### **7.5.3 Identification and Traceability**

Where appropriate, N&P Precision will identify the product by suitable means throughout product realization.

**N&P Precision will maintain the identification of the configuration of the product in order to identify any differences between the actual configuration and the agreed configuration.**

N&P Precision will identify the product status with respect to monitoring and measurement requirements.

**When acceptance authority media are used (e.g., stamps, electronic signatures, passwords), the organization shall establish and document controls for the media.**

Where traceability is requirement, N&P Precision controls and records the unique identification of the product (see 4.2.4).

**According to the level of traceability required by contract, regulatory, or other established requirement, the organization's system shall provide for:**

- **Identification to be maintained throughout the product life;**
- **All 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.**

#### **7.5.4 Customer Property**

N&P Precision will exercise care with customer property while it is under the organization's control or being used by the organization. N&P Precision will 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 unsuitable for use, this will be reported to the customer and records maintained. (see 4.2.4)

#### **7.5.5 Preservation of Product**

N&P Precision will preserve the conformity of product during internal processing and delivery to the intended destination. This preservation includes identification, handling, packaging, storage and protection. Preservation also applies to the constituent parts of a product.

**Preservation of product also includes, where applicable in accordance with product specifications and/or applicable regulations, provisions for:**

- **Cleaning;**
- **Prevention, detection and removal of foreign objects;**
- **Special handling for sensitive products;**
- **Marking and labeling including safety warnings;**
- **Shelf life control and stock rotation;**
- **Special handling for hazardous materials.**

**N&P Precision will ensure that documents required by the contract/order to accompany the product are present at delivery and are protected against loss and deterioration.**

## 7.6 Control of Monitoring and Measuring Devices

**N&P Precision will maintain a register of these monitoring and measuring devices, and define the process employed for their calibration including details of equipment type, unique identification, location, frequency of checks, check methods and acceptance criteria.**

N&P Precision has established processes to ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements.

N&P Precision will ensure that environmental conditions are suitable for the calibrations, inspections measurements and tests being carried out.

Where necessary to ensure valid results, measuring equipment will

- Be calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification shall be recorded;
- Be adjusted or re-adjusted as necessary;
- Be identified to enable the calibration status to be determined;
- Be safeguarded from adjustments that would invalidate the measurement result;
- Be protected from damage and deterioration during handling, maintenance and storage;
- **Be recalled to a defined method when requiring calibration.**

### **Selection criteria for calibration is as follows:**

- a. Frequency of usage
- b. Review of calibration date to determine drifting of tolerance
- c. Past history of data
- d. Manufacturers recommendation
- e. Type of application

In addition, N&P Precision will assess and record the validity of the previous measuring results when the equipment is found not to conform to requirements. N&P Precision will take appropriate action on the equipment and any product affected. Records of the results of calibration and verification will be maintained (see 4.2.4).

When used in the monitoring and measurement of specified requirements, the ability of computer software to satisfy the intended application will be confirmed. This will be undertaken prior to initial use and reconfirmed as necessary.

## 8. MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.1 General

N&P Precision will plan and implement the monitoring, measurement, analysis and improvement processes needed

- To demonstrate conformity of the product,

- To ensure conformity of the quality management system, and
- To continually improve the effectiveness of the quality management system.

This will include determination of applicable methods, including statistical techniques, and the extent of their use.

## **8.2 Monitoring and Measurement**

### **8.2.1 Customer Satisfaction**

As one of the measurements of the performance of the quality management system, N&P Precision will monitor information relating to customer perception as to whether the organization has met customer requirements. The methods for obtaining and using this information will be determined.

### **8.2.2 Internal Audit**

N&P Precision will conduct internal audits at planned intervals to determine whether the quality management system

- Conforms to the planned arrangements (see 4.7.1), to the requirements of this International Standard and to the quality management system requirements established by the organization, and
- Is effectively implemented and maintained.

An audit program will be planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods will be defined. Selection of auditors and conduct of audits shall ensure objectivity and impartiality of the audit process.

Auditors will not audit their own work.

The responsibilities and requirements for planning and conducting of audits, and for reporting results and maintaining records (see 4.2.4) are defined in a documented procedure.

The management responsible for the area being audited will ensure that actions are taken without undue delay to eliminate detected nonconformities and their causes. Follow-up activities will include the verification of the actions taken and the reporting of verification results (see 8.5.2).

**Detailed tools and techniques are developed such as check sheets, process flowcharts, or any similar method to support audit of the quality management system requirements. The acceptability of the selected tools will be measured against the effectiveness of the internal audit process and overall organization performance.**

**Internal audits will also meet contract and/or regulatory requirements.**

#### 8.2.2-01 Internal Audit Procedure

### 8.2.3 Monitoring and Measurement of Processes

N&P Precision will apply suitable methods for monitoring and, where applicable, measurement of the quality management system processes. These methods will demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction and corrective action shall be taken, as appropriate, to ensure conformity of the product.

**In the event of process nonconformity, N&P Precision will:**

- **Take appropriate action to correct the nonconforming process,**
- **Evaluate whether the process nonconformity has resulted in product nonconformity, and**
- **Identify and control the nonconforming product in accordance with clause 8.3.**

### 8.2.4 Monitoring and Measurement of Product

N&P Precision will monitor and measure the characteristics of the product to verify that product requirements have been met. This is carried out at appropriate stages of the product realization process in accordance with the planned arrangements (see 7.1).

**When key characteristics have been identified, they will be monitored and controlled.**

**When the organization uses sampling inspection as a means of product acceptance, the plan will be statistically valid and appropriate for use. The plan will preclude the acceptance of lots whose samples have known nonconformities. When required, the plan will be submitted for customer approval.**

**Product will not be used until it has been inspected or otherwise verified as conforming to specified requirements, except when product is released under positive-recall procedures pending completion of all required measurement and monitoring activities.**

Evidence of conformity with the acceptance criteria will be maintained. Records will indicate the person(s) authorizing release of product (see 4.2.4).

Product release and service delivery will not proceed until all the planned arrangements (see 7.1) have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer.

#### 8.2.4.1 Inspection Documentation

**Measurement requirements for product or service acceptance will be documented. This documentation may be part of the production documentation, but will include**

- **Criteria for acceptance and/or rejection,**
- **Where in the sequence measurement and testing operations are performed,**
- **A record of the measurement result, and**

- **Type of measurement instruments required and any specific instructions associated with their use.**

**Test records will show actual test results data when required by specification or acceptance test plan.**

**Where required to demonstrate product qualification N&P Precision will ensure that records provide evidence that the product qualification N&P Precision will ensure that records provide evidence that the product meets the defined requirements.**

8.2.4-01 Receiving Inspection

8.2.4-02 In-process Inspection

8.2.4-03 Final Inspection

#### **8.2.4.2 First Article Inspection**

**N&P Precision' system will provide a process for the inspection, verification, and documentation of a representative item for the first production run of a new part, or following any subsequent change that invalidates the previous first article inspection result.**

### **8.3 Control of Nonconforming Product**

N&P Precision will ensure that product which does not conform to product requirements is identified and controlled to prevent its unintended use or delivery. The controls and related responsibilities and authorities for dealing with nonconforming product are defined in a documented procedure.

N&P Precision will deal with nonconforming product by one or more of the following ways:

- By taking action to eliminate the detected nonconformity;
- By authorizing its use, release or acceptance under concession by a relevant authority and, where applicable, by the customer;
- By taking action to preclude its original intended use or application.

N&P Precision will not use dispositions of use-as is or repair, unless specifically authorized by the customer, if

- The product is produced to customer design, or
- The nonconformity results in a departure from the contract requirements.

**Unless otherwise restricted in the contract, N&P Precision -designed product which is controlled via a customer specification may be dispositional by the organization as use-as is, or repair, provided the nonconformity does not result in a departure from customer-specified requirements.**

**Product dispositional for scrap shall be conspicuously and permanently marked, or positively controlled, until physically rendered unusable.**

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, shall be maintained (see 4.2.4).

When nonconforming product is corrected it shall be subject to re-verification to demonstrate conformity to the requirements.

When nonconforming product is detected after delivery or use has started N&P Precision will take action appropriate to the effects, or potential effects, of the nonconformity.

**In addition to any contract or regulatory authority reporting requirements, N&P Precision' system will provide for timely reporting of delivered nonconforming product that may affect reliability or safety. Notification will include a clear description of the nonconformity, which includes as necessary parts affected, customer and/or organization part numbers, quantity, and date(s) delivered.**

### 8.3-01 Nonconformance Reporting Procedure

#### **8.4 Analysis of Data**

N&P Precision will determine, collect and analyze appropriate data to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvement of the effectiveness of the quality management system can be made. This shall include data generated as a result of monitoring and measurement and from other relevant sources.

The analysis of data shall provide information relating to

- Customer satisfaction (see 8.2.1),
- Conformity to product requirements (see 7.2.1),
- Characteristics and trends of processes and products including opportunities for preventive action, and
- Suppliers.

#### **8.5 Improvement**

##### **8.5.1 Continual Improvement**

N&P Precision will continually improve the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

##### **8.5.2 Corrective Action**

N&P Precision will take action to eliminate the cause of nonconformities in order to prevent recurrence. Corrective actions shall be appropriate to the effects of the nonconformities encountered.

A documented procedure is established to define requirements for

- Reviewing nonconformities (including customer complaints),
- Determining the causes of nonconformities,

- Evaluating the need for action to ensure that nonconformities do not recur,
- Determining and implementing action needed,
- Records of the results of action taken (see 4.2.4),
- Reviewing corrective action taken,
- **Flow down of the corrective action requirement to a supplier, when it is determined that the supplier is responsible for the root cause, and**
- **Specific actions where timely and/or effective corrective actions are not achieved.**

#### 8.5.2-01 Corrective Action Procedure

### **8.5.3 Preventive Action**

N&P Precision will determine action to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions shall be appropriate to the effects of the potential problems.

- A documented procedure is established to define requirements for
- Determining potential nonconformities and their causes,
- Evaluating the need for action to prevent occurrence of nonconformities,
- Determining and implementing action needed,
- Records of results of action taken (see 4.2.4), and
- Reviewing preventive action taken.

#### 8.5.3-01 Preventive Action Procedure

## **Appendix A - Definitions**

Within the ISO 9000 Standard, there appear certain words that require universal understanding. The definitions that are to be associated with these words are contained in ISO 9001:2008 Standard: Quality Management Systems-Fundamentals and vocabulary.

The following represent definitions that are absolutely essential to the correct interpretation of the standard and are either stated directly or paraphrased from the Standard:

These definitions are not all-inclusive but, rather, are ones that form the framework for the implementation and Management of the Quality Management System.

**Assessment:** For the purposes of this document the word assessment is used to describe the audits (Internal Audits - 8.2.2.a) conducted by Internal Assessors.

**Audit:** Systematic, independent process for obtaining evidence and evaluating it objectively to determine the extent to which certain criteria are fulfilled.

**Continual improvement:** Includes improvement of the QMS framework and business and product, service, or solution performance. NOTE: The process of continual improvement need not take place in all areas of activities, products and services simultaneously; business units and sites may prioritize continual improvement efforts based on their specific quality and business objectives.

**Corrective Action:** Action taken to eliminate the cause of an existing detected nonconformity or other undesirable situation; action taken to prevent recurrence. These actions may include but are not limited to: (1) root cause analysis; (2) changes to processes; 3) changes to procedures; (4) changes to requirements; and (5) changes to monitoring and measurement programs.

**Conformity:** Fulfillment of specified requirements.

**Contract:** Agreed requirements between a supplier and customer transmitted by any means.

**Customer:** The term customer is used in this document to describe both external customers and regulatory agencies.

**Document:** Information and its support medium; may include but is not limited to electronic, photographic, drawn, written or printed material.

**Functional organizations:** Organization performing specific tasks or functions, for example: legal or procurement.

**Key Characteristics:** The features of a material, process, or part whose variation has a significant influence on product fit, performance, service life, or manufacturability.

## **DEFINITIONS (CONT'D)**

**Nonconformity:** Lack of fulfillment of a specified requirement.

**Organization:** Provider of a product to the customer.

**Procedure:** Specified way to carry out an activity or a process; a series of activities that define a particular task, which may include, but is not limited to, instructions, checklists, and flowcharts.

**Process:** Set of interrelated or interacting activities, which transform inputs into outputs.

**Procurement:** Purchasing function.

**Product:** Result of a process, services and items developed, manufactured, assembled, provided or sold by the organization. Products: components, assemblies, parts, software, support, education, management; includes products, services, intellectual property and solutions.

**Quality:** Degree to which a set of inherent characteristics fulfill requirements.

**Quality Management:** All activities of the overall management functions that determine the Quality Policy, Objectives, and Responsibilities and that implements them by such means as quality planning, quality control, quality assurance, and quality improvement within the quality system.

**Quality Management System:** Organization structure, procedures, processes, and resources needed to implement quality management.

**Quality Manual:** Document stating the Quality Policy and describing the quality system of an organization.

**Quality Objectives:** Something sought or aimed for, related to quality; generally based on the organization's Quality Policy and specified for relevant functions and levels in the organization.

**Quality Policy:** Overall intention and direction of an organization with regard to quality as formally expressed by top management.

**Top Management:** Person or group of people who directs and organizes at the highest level.

**Quality & Environmental Policies:** Statement by the organization, which provides a framework for setting quality & environmental objectives and targets.

**Record:** Document stating results achieved or providing evidence of activities performed; evidence that an event or activity occurred including, but not limited to, written evidence in the form of hard copy or soft copy memoranda, checklists, meeting minutes or notes, presentations, budgets, and capital and/or expense plans.

**Services:** see product

**Shall:** "must" or "is required."

**Should:** "suggested" or "recommended"

**Supplier:** Provider of a product to the organization.

**Top Management:** Highest level of management with direct responsibility for an enterprise, site, function, or product. Where the term top management is applicable it should be defined.

## **Appendix B- Procedures**

| ISO 9000 ELEMENT |   | PROCEDURE NO.              | PROCEDURE TITLE                            |
|------------------|---|----------------------------|--|
| 4                | Quality Management System                   |                            |  |
| 4.1              | General Requirements                        |                            |  |
| 4.2              | Documentation Requirements                  | PR-4.2.3-01<br>PR-4.2.4-01 | Control of Documents<br>Control of Records |
| 5.1              | Management Commitment                       |                            |  |
| 5.2              | Customer Focus                              |                            |  |
| 5.3              | Quality Policy                              |                            |  |
| 5.4              | Planning                                    |                            |  |
| 5.5              | Responsibility, Authority and Communication |                            |  |
| 5.6              | Management review                           |                            |  |
| 6.1              | Provision of Resources                      |                            |  |
| 6.2              | Human Resources                             |                            |  |
| 6.3              | Infrastructure                              |                            |  |
| 6.4              | Work Environment                            |                            |  |
| 7.1              | Planning of Product Realization             |                            |  |
| 7.2              | Customer-related Process                    | PR-7.2.0-01                | Customer- Related Processes                |
| 7.3              | Design and Development                      |                            |  |
| 7.4              | Purchasing                                  | PR-7.4.0-01                | Purchasing                                 |
| 7.5              | Production and Service Provision            | PR-7.5.1-01                | Control of Production                      |

|     |   |  |   |
|-----|---|--|---|
| 7.6 | Control of Monitoring and measuring Devices |  |   |
| 8.1 | General                                     |  |   |
| 8.2 | Monitoring and Measurement                  | PR-8.2.2-01<br>PR-8.2.4-01<br>PR-8.2.4-02<br>PR-8.2.4-03 | Internal Audit<br>Receiving Inspection<br>In-Process Inspection<br>Final Inspection |
| 8.3 | Control of Nonconforming Product            | PR-8.3.0-01  | Non-conformance Reporting   |
| 8.4 | Analysis of Data                            |  |   |
| 8.5 | Improvement                                 | PR-8.5.2-01<br>PR-8.5.3-01                               | Corrective Action<br>Preventive Action  |

End of Document