AURORA MACHINE LTD.

Quality Management System Manual

This manual has been reviewed and approved for use by:

	March 07, 2011
_____	_____
Jack Zazulak **President,** **Aurora Machine Limited**	**Date**

Change History

Date	Description	Version
July 20,2009	First issue	Rev. 01
Nov 04,2009	Introduction, Objectives, Scope, R&D revised based on internal and external audit results	Rev.02
March 07 2011	1) 1.0 Introduction 2nd paragraph 1st line *and certification.....ISO system* 2) 2.2 Quality objectives Product quality 2nd bullet *reduce scrap material to 1%*	Rev.03

Table of Contents

1.0 Introduction

Aurora Machine Limited (Aurora) is a machine shop located in Edmonton, Alberta Canada that provides machining of castings, milling, turning, and any special preservation (i.e. Chem.-plating) or special coating of parts as requested by Customer. Aurora is a company committed to the manufacture of precision components for a variety of industries. Areas of expertise range from large production runs with various processes to development and prototype machining. The use of late model CNC equipment coupled with Gibbscam and Mastercam programming allows Aurora to ensure quality and precision.

Aurora's commitment to quality continues with its recent enrollment in ISO 9001 *and certification was awarded in October 2009. As part of its quality strategy Aurora has engaged a consultant to help it for effective implementation of ISO system*. Aurora has and will continue to deploy JOBBoss operating system allowing for a very high standard of traceability throughout the procurement, manufacturing and delivery processes.

2.0 Quality Policy and Objectives

2.1 Quality Policy Statement

Aurora's quality policy is to supply machined products of consistent high quality to meet the requirements of our Customers and to effect continuous improvements on our operations and products while maintaining a safe and respectful work environment.

2.2 Quality Objectives

- **Product Quality:**
  - **Short term: establish data set and benchmark**
  - **Long term: *reduce scrap material to 1%***
- **Customer Satisfaction :**
  - **Short term: deliver survey and benchmark**
  - **Long term: maintain or improve Customer satisfaction level as determined by survey**
- **Employee Satisfaction :**
  - **Short term: deliver survey and benchmark**
  - **Long term: maintain or improve employee satisfaction level as determined by survey**

The above Objectives are reevaluated on an annual basis at the Management Review meeting. Interim management and evolutions are performed by the General Manager and senior management as documented in the management meeting minutes.

2.3 Registration to ISO 9001:2008

ISO 9001:2008 (ISO 9001) is an internationally recognized framework for establishing a Quality Management System (QMS). ISO 9001 is a management tool that enables Aurora to focus on its business processes and measure performance. ISO 9001 is more than providing consistent product or service. It is a systematic approach to ensure Aurora's QMS is effective, customer requirements are

satisfied and improvements are realized.

3.0 Scope and Exclusions

3.1 Scope

Machining of castings, milling, turning, and any special preservation (i.e. Chem.-plating) or special coating of parts as requested by Customer.

3.2 QMS Exclusions

Aurora does not design its own products and thus the requirements of Section 7.3: Design and Development, of ISO 9001 are excluded.

Aurora waives Inspections and stamping of parts for some customers, as such parts are repeat orders and being manufactured for a long time, such waiving of inspection is mentioned in Job Traveler / work order.

4.0 Quality Management System

4.1 General requirements

Aurora has established documented and developed systems and methods to maintain the QMS and continually improve its effectiveness in accordance with the requirements of ISO 9001.

The processes, their interrelationship, and the criteria and methods needed to ensure effective operation and control, are documented in the QMS and related procedures.

Effective control of the QMS processes at Aurora is ensured by:

a) Providing resources and information necessary to support both the operation and the monitoring of the QMS processes;
b) Establishing measurable objectives and monitoring and analyzing the data collected as a means of ensuring the QMS processes remain reliable and in control; and
c) Implementing actions necessary to achieve planned results and to continually improve process performance.

The methods and responsibilities for ensuring that control is maintained over any processes within the QMS that are subcontracted out, is defined in the Purchasing Section and related procedures.

4.2 Documentation

4.2.1 General

Documentation at Aurora includes:

a) Quality policy statement and documented objectives;
b) QMS Manual that defines the quality system;
c) Documented procedures and processes;

d) Work instructions, job aids and other documents needed to ensure the effective planning, operation and control of the business; and

e) Records required for operation of the business.

4.2.2 QMS Manual

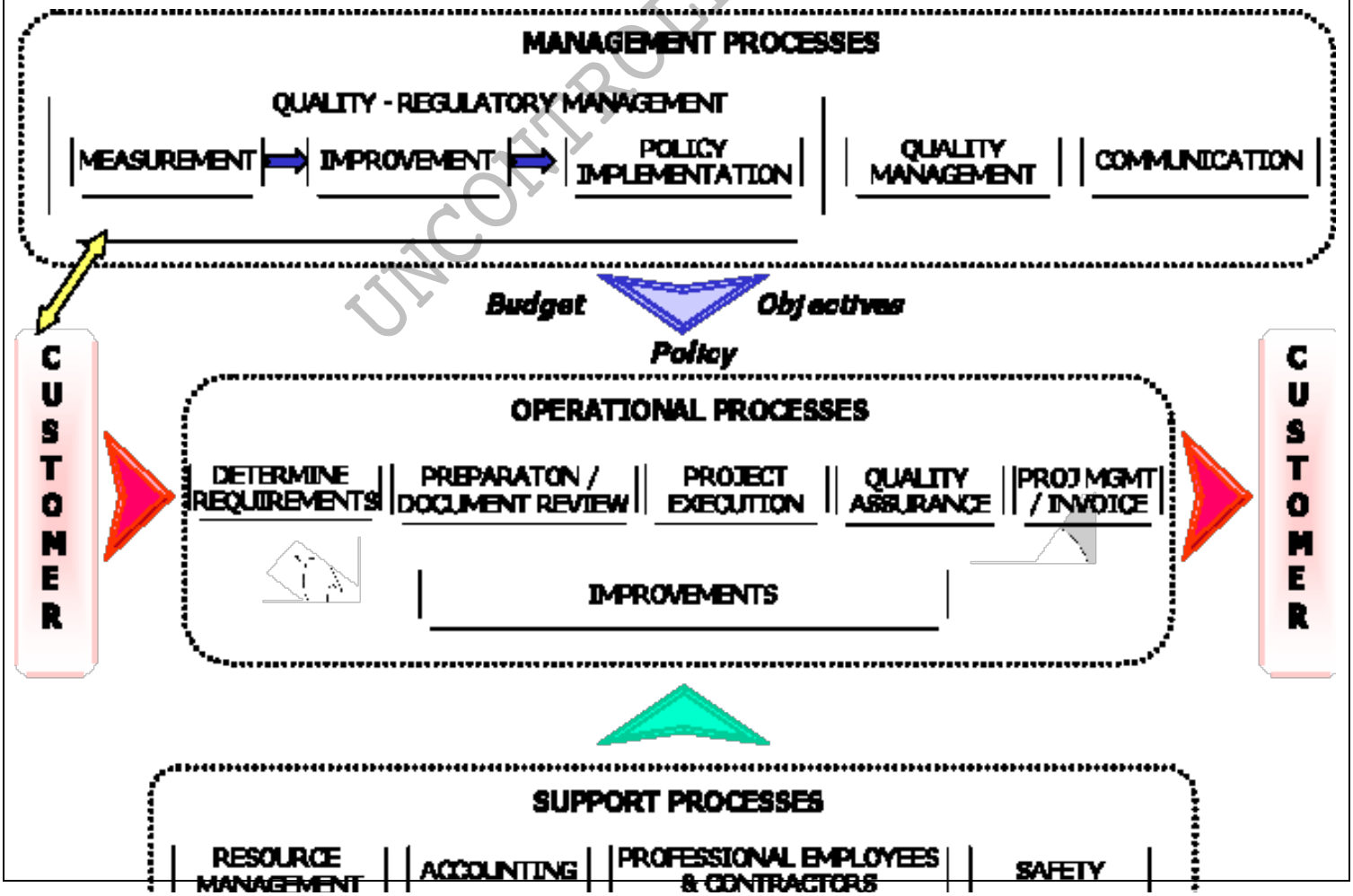
The QMS Manual has been developed based upon the requirements of ISO 9001 and Aurora's business needs.

The numbering sequence of the QMS manual and related procedures is in line with the numbering sequence of the ISO 9001. Documented procedures required to support the requirements specified in this manual are referenced as appropriate.

The interrelationship of the QMS processes is identified in the procedures and their accompanying flowcharts. The relationship of the various processes required to support the QMS is depicted in the Management Process Interrelationship Diagram.

4.2.3 Management Process Interrelationship Diagram

The following diagram captures an overview of the management process at Aurora.



4.2.4 Control of Documents

Documents required by the QMS are identified on the Master Document List and controlled as described in QMS Procedure - Document and Data Control. The controls include ensuring:

a) Documents are approved for adequacy prior to issue;
b) Documents are reviewed, updated and re-approved as necessary when changes are required;
c) A record of the changes made to the documents and the current revision status of documents is maintained;
d) Relevant versions of applicable documents are made available;
e) Documents remain legible and readily identifiable;
f) Documents of external origin are identified and their distribution is controlled;
g) No unintended use of obsolete documents;
h) Obsolete documents that are to be retained for any purpose are suitably identified; and
i) Document retention times are identified and followed.

4.2.5 Control of Records

Records will be established and maintained to provide objective evidence that objectives are being meet, continuous improvements are being effected, compliance to the ISO 9001, etc. Records must be legible, readily identifiable and easily retrievable if required.

The method of controlling records, including the identification, storage, protection, retrieval, retention time and the authority responsible for the collection, maintenance and disposition of the records is defined in QMS Procedure - Record Control. Records that are required to provide evidence of conformity to requirements and the effective operation of the QMS are retained for a minimum period of one year.

5.0 Management Responsibility

5.1 Management Commitment

Management at Aurora provides evidence of their commitment to the development, implementation and continual improvement of the QMS:

a) Communicating through such vehicles as meetings and e-mails: the importance of meeting customer and statutory and regulatory requirements;
b) Establishing and reinforcing Quality Policy and measurable objectives;
c) Conducting regular management reviews; and
d) Ensuring sufficient resources are made available to perform the work effectively and efficiently.

5.2 Customer Focus

Management at Aurora maintains a focus on the customer by ensuring customer requirements are clearly understood and documented in the contract agreements and by monitoring the performance of the quality, cost, delivery, safety and customer satisfaction which is measured annually with a survey and by the quantity of repeat business.

5.3 Quality Policy

The Quality Policy is intended to provide a framework for continuous improvement. This is accomplished by establishing measurable objectives as well as by ensuring everyone in the organization is committed to comply with the requirements of ISO 9001.

The President has approved the Quality Policy. The Quality Policy and objectives are communicated throughout the organization to employees initially, during their orientation session and re-enforced again through various methods of communication such as bulletin board postings, verbal communications etc. as appropriate for the area.

The Quality Policy is reviewed annually as part of the Management Review process to ensure it remains suitable and is appropriate to the operations at Aurora.

5.4 Planning

5.4.1 Quality Objectives

To ensure consistent delivery of the products and services provided by Aurora, measurable objectives, based on the key indicators of quality, cost, delivery, safety and customer satisfaction, have been established and are maintained at all relevant departments or functions and levels within the organization.
The management at Aurora reviews the objectives and the data collected on an ongoing basis to identify where and when corrective action is needed to ensure that the objectives are achieved.

5.4.2 Management System Planning

The achievement of objectives and other improvement opportunities at Aurora is accomplished through effective planning which includes:

a) Identifying and documenting the key processes;
b) Establishing measurable and attainable objectives; and
c) Implementing systems for measuring performance, evaluating data and effectively implementing corrective actions when necessary.

As changes to the QMS are identified, the integrity of the QMS manual is maintained through the requirements specified in the QMS Procedure - Document and Data Control.

5.5 Responsibilities, Authority and Communication

5.5.1 Responsibility and Authority

The responsibility and authority of individuals at Aurora is defined in the job description for each position and throughout the QMS documentation.

5.5.2 Management Representative

The Management Representative assumes responsibility for establishing, implementing and maintaining the processes needed for the QMS while ensuring the promotion and awareness of customer requirements throughout the organization.

The Management Representative is also responsible for compiling information related to the performance of the QMS, identifying any need for improvement and presenting this information at the management reviews.

5.5.3 Internal Communication

Internal communication at Aurora is accomplished through meetings that discuss the Quality Policy, status of the objectives, and current accomplishments to employees of Aurora

5.6 Management Review

5.6.1 General

Management at Aurora conducts regular reviews of the QMS in accordance with the requirements defined in QMS Procedure - Management Review. At defined intervals, and at least once annually, a formal review is conducted to ensure the QMS remains suitable, adequate and effective for the operation. The annual review is recorded and includes an assessment of opportunities for improvement and the need for changes to the QMS, including changes to the quality policy and objectives. Agenda and minutes with actions assigned are prepared, approved and circulated.

5.6.2 Review Input

Input to management review includes information related to:

a) **Results of internal and external audits that have been conducted;**
b) **Customer feedback;**
c) **Performance of the sales, manufacturing, and service delivery processes including reports of and analysis of nonconformities;**
d) **Status of preventive and corrective actions;**
e) **Follow-up actions from previous management reviews;**
f) **Planned changes that could affect the QMS; and**
g) **Recommendations for improvement.**

5.6.3 Review Output

Output from management review will include any decisions and actions related to the improvement of:

a) **Effectiveness of the QMS and its processes;**
b) **Products related to customer requirements; and**
c) **Allocation/addition of resources.**

6.0 Resource Management

6.1 Provision of Resources:

Management at Aurora will ensure sufficient resources are made available to implement, maintain and continually improve the QMS and to enhance customer satisfaction by ensuring customer requirements are consistently met.

6.2 Human Resources

6.2.1 General

General Manager at Aurora ensures that personnel performing the various tasks within their area of responsibility are competent to perform these tasks based on them having the appropriate education, training, skills and/or experience.

6.2.2 Competence, Awareness and Training

Initial qualifications required for each position at Aurora and any significant impacts each position may have on the quality of the product, the environment, or the health and safety of the employee are identified in the job description for that particular position. All new employees are made aware of the relevance and importance of their activities and how they contribute to the achievement of objectives, as well the consequences of deviating from procedures.

General Manager will determine the necessary competencies for personnel performing work affecting quality and ensure personnel are provided with the necessary training to perform their tasks effectively, efficiently and safely.

The systems, methods and responsibilities for identifying training needs and ensuring competence of all personnel performing activities that affect product quality are defined in QMS Training Procedure.

The effectiveness of any training provided will be determined by means of "test" or as evaluated through observation and performance reviews conducted by management.

Records indicating each employee's education, training, skills/experience and evaluation of competency are maintained.

6.3 Infrastructure

The management at Aurora will ensure a suitable infrastructure including appropriate buildings, workspaces, utilities, processing equipment etc. is provided to ensure conformity with the products and services provided to customers.

Computers systems are maintained by a vendor. Security, Passwords, etc. are managed by General

Manager.
Passwords are uniquely assigned to each applicable employee; passwords are logged and kept with Office Manager.

6.4 Work Environment

The management at Aurora ensures the work environment is suitable thus enabling employees to perform effectively and provide a quality service. This includes the provisioning of appropriate personal protective equipment and the proper maintenance of the work areas and equipment. To help identify areas of concern, employees are encouraged to report unsafe or unsatisfactory conditions to management.

7.0 Product Realization

7.1 Planning of Product Realization

To ensure customer satisfaction, Aurora has established objectives and targets for the sales, manufacturing, and service delivery focused on enhancing customer satisfaction and improving organizational efficiencies.

Documented procedures, detailed work instructions, coupled with trained, qualified personnel, constitute the basis of the plan for ensuring these processes are carried out effectively and efficiently.

Verification, validation, monitoring and inspection activities as well as the records required to provide evidence of the performance of these activities are identified in QMS procedures.

The methods and control features used to translate product requirements provided from external sources, into the product realization processes are identified within the applicable QMS procedure.

7.2 Customer-Related Processes

7.2.1 Determination of Requirements Related to the Product

Customer requirements and statutory and regulatory requirements related to the products manufactured by Aurora, are clearly stated on the work order, drawings, specifications, or work instructions as applicable. These requirements will include requirements for delivery and/or post-delivery activities as well as any requirements that are not specified by the customer but are necessary for the specified use or known or intended use of the product.

7.2.2 Review of Requirements Related to the Product

Prior to committing to the order, Aurora staff will verify the customer request to ensure that the order requirements have been clearly defined and any contract or order requirements differing from those

previously expressed have been resolved and Aurora has the ability to meet the defined requirements. This will include a review of the drawings and/or specification for completeness.

Records of the results of this review and actions arising from the review are maintained.

Where the customer provides no documented statement of requirement, Aurora will confirm the customer requirements before acceptance.

Where order requirements are changed, Aurora will ensure that relevant documents are amended and that relevant personnel are made aware of the changed requirements. The system, methods and responsibilities for determining and reviewing customer requirements are defined in QMS Procedure - Manufacturing Process.

7.2.3 Customer Communication

Aurora's primary method of communicating with their customers is through direct contact.

Any customer feedback, including customer complaints, both formal or informal, are documented and used as a basis for determining opportunities to improve operations and/or customer satisfaction QMS Procedure - Control of Non-Conformances and Continual Improvement.

7.3 Research and Development

Excluded

7.4 Purchasing

7.4.1 Purchasing Process

Personnel with authorization to purchase products or services on behalf of Aurora will ensure that the purchased products or subcontracted services conform to specified requirements.

The type and extent of control applied on the supplier is dependent on the impact the products or services provided by the supplier have on the on the services or products provided to Aurora's customers.

Suppliers will be selected based on their ability to supply products or services in accordance with Aurora's requirements. When "special processes" are outsourced, personnel authorized to perform this activity will ensure that the supplier can comply with the requirements specified as applicable.

The system, methods, responsibilities, controls, along with the criteria used for evaluating suppliers and monitoring their performance are defined in QMS Procedure - Purchasing, Receiving and Supplier Evaluation.

7.4.2 Purchasing Information

Personnel authorized to purchase on behalf of Aurora will ensure purchasing documents adequately describe requirements prior to communicating them to the supplier. Specific requirements may include:

a) **Requirements for approval of product, procedures, processes, or equipment;**
b) **Requirements for qualifications of personnel;**
c) **Quality management system requirements;**
d) **Type, class, grade or other precise identification of any supplies or materials; and**
e) **Title, or other positive identification and applicable issues of specifications, drawings, inspection instructions or other relevant technical data.**

7.4.3 Verification of Purchased Product

All purchased products, are inspected upon receipt and reconciled to the original purchase order. The system, methods, controls and responsibilities for receiving and verifying purchased product are described in QMS Procedure - Purchasing, Receiving and Supplier Evaluation.

When verification of purchased product is to take place at the supplier's premises, specific verification arrangements and method of product release will be specified in the purchasing documentation.

7.5 Production and Service Provision

7.5.1 Control of Service Provision

The control features applicable to the production and servicing processes are defined in the QMS purchasing procedures. The control features include, as applicable:

a) **Availability of information that describes the characteristics of the product;**
b) **Availability of work instructions;**
c) **Use of suitable equipment;**
d) **Availability and use of monitoring and measuring devices;**
e) **Implementation of monitoring and measurement; and**
f) **Implementation of release, delivery and post-delivery activities.**

The procedures identify all of the activities and documents used in the process such as routings, travelers, checklists, process sheets, etc. and where additional information such as the acceptance criteria for tests, or inspections and specific instructions for carrying out an activity can be found.

7.5.2 Identification and Traceability

The system, control methods and responsibilities for the identification and traceability of product are defined in QMS Procedure - Manufacturing.

The control features include the:

a) System and methods used to identify the product throughout the product realization process are work orders and Final parts will be stamped with Part no. as PRT#....., Heat no. as HT#....., Purchase order as PO#....., Aurora reference as AUR#....., and Bar code, any additional information etc. if any, as required by Customer to be supplied along with purchase order.

b) Control features and methods used to identify the product status with respect to monitoring and measurement requirements are listed on the work orders;

c) Methods used to provide traceability of the product from manufacture through to delivery to the customer or installation are on the work orders, Aurora material number and bills of lading; and

d) Methods used to replace identification and traceability marks and/or records if necessary as well as keeping records of such are painted and color-coded.

e) Aurora waives Inspections and stamping of parts for some customers, as such parts are repeat orders and being manufactured for a long time, such waiving of inspection is mentioned in Job Traveler / work order.

7.5.3 Customer Property

General Manager will ensure that care is exercised with any customer owned property while it is under their control. All customer-owned items will be clearly identified by the work order to which it is linked. If any customer property is lost, damaged or otherwise found to be unsuitable for use, it will be recorded in accordance with the requirements for corrective and preventive action described in QMS Procedure - Corrective and Preventive Action.

7.5.4 Preservation of product

To optimize the inventory turns over time and to assure effective stock rotation, Aurora uses a system of "first-in-first-out" or FIFO for all stock items that are sensitive.

In order to detect deterioration, the condition of completed products or their constituent parts held in stock is assessed at intervals.

The system, methods, and responsibilities for ensuring stock items in inventory remain in conformance with the original specifications are defined in QMS Procedure - Manufacturing. The controls include ensuring all items are clearly identified and where appropriate, methods of handling, packaging, protecting and storing these items are implemented.

7.6 Control of Monitoring and Measuring Devices

Aurora's tools and equipment requiring the use of measuring devices will be determined. The monitoring and measurement to be undertaken within their respective areas and the devices needed to provide evidence of conformity of the finished product to specified requirements are listed in the calibration register.

Where necessary, and to ensure valid results, measuring equipment will be:

a) 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 will be documented);

b) Adjusted or re-adjusted as necessary;

c) Identified to enable the calibration status to be determined;

d) Safeguarded from adjustments that would invalidate the measurement results; and

e) Protected from damage and deterioration during handling, maintenance and storage.

If the method used to verify the accuracy of the device is internal, Aurora prepares work instructions describing the method of verification and a record that provides evidence of verification within the prescribed interval.

Personnel conducting monitoring and measuring activities at Aurora will ensure that the environmental conditions are suitable for the calibrations, inspections, measurements and tests being carried out.

When a device is found to be out of calibration, the Quality Control Manager will assess and record the validity of any previous measurements or test results when that device was used.

8.0 Measurements, Analysis and Improvement

8.1 General

Monitoring, measurement and analysis of data are used to demonstrate conformity of the services provided by Aurora, validate continual improvement and to demonstrate compliance with regulatory and accreditation requirements.

8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction

In addition to monitoring the performance of quality, cost, delivery and safety measurements, data is gathered by sales and operations personnel relating to customer's perception as to whether Aurora has or has not met their requirements. Customer satisfaction is measured annually with a survey and by the quantity of repeat business. The data collected is quantified and analyzed to determine improvement opportunities as described in QMS Procedure - Improvement.

8.2.2 Internal Audit

Internal audits are conducted, at least annually to determine whether the QMS conforms to the requirements of the ISO 9001, assess the effectiveness of the system and identify opportunities for improvement. Personnel independent of those who performed or directly supervised the activity being audited conduct internal audits of the QMS.

When planning the audit, consideration is taken with respect to the status and importance of the

processes and areas to be audited, as well as the results of previous audits. Personnel conducting internal audits will be trained for this task by means of in-house training from a qualified auditor or through external training seminars.

The responsibilities and requirements for planning, conducting, responding to nonconformities detected, reporting results and maintaining records is described in QMS Procedure - Internal Auditing.

Management of the area being audited ensures that actions are taken without undue delay to eliminate detected nonconformities and their causes. Follow-up activities include verification of the actions taken and the reporting of the verification results.

8.2.3 Monitoring and Measurement of Processes

QMS processes/procedures are audited at least annually. Effectiveness of the process/procedure is considered during the audit including the inspection of the procedure against actual activities and objective evidence thereof. In the event that improvements are recommended, QMS Procedure: **QSP-005 - Corrective and Preventive Action** is initiated. As well, the results of these audits and assessments are reviewed at the management review meeting. Also, recommendations from customers or employees are captured and acted upon as applicable.

8.2.4 Monitoring and Measurement of Product

Products manufactured at Aurora are monitored, measured and/or inspected at appropriate stages of the manufacturing processes to verify that the products meet stated requirements.

Records indicating the inspections carried out of the product, with respect to passing or failing the inspections conducted, along with the person(s) authorizing release of the product are kept with the work order.

No product will be released for shipment to the customer until all inspection and tests have been satisfactorily completed, unless otherwise approved by the Manager and, if the product is to be sold under concession, to the customer. When concession is used, the deficiencies, with respect to specified standards, drawings, etc, are documented or submitted along with packing slip.

Only personnel other than the persons who performed or directly supervised the production of the materials or products shall perform final acceptance and product release.

8.3 Control of Nonconforming Product

Quality Control personnel will ensure that product that does not conform to requirements, is clearly identified and controlled to prevent its unintended use or delivery. Nonconforming product that can be corrected will be re-verified in the same manner as the original to demonstrate conformity to requirements.

If nonconformances are detected after delivery has taken place, the employees will take action appropriate to the situation and document the action(s) taken in accordance with the requirements specified in QMS Procedures - Control of Nonconforming Product and Corrective and Preventive Action. When concession is used to dispose of nonconforming product, the nature of the concession will be documented. UniPoint software is used for NCRs, CARs, and PARs

The controls, responsibilities and authorities for handling nonconforming products, and methods of disposing of these items are defined in QMS Procedure - Control of Nonconforming Product.

8.4 Analysis of Data

Data is collected and analyzed to demonstrate the suitability and effectiveness of the QMS and to evaluate where continual improvement can be made. This will include data generated as a result of the monitoring and measurement activities conducted on site as well as from other relevant sources.

The analysis of this data provides information related to:

a) **Customer satisfaction;**
b) **Conformance of the shipped items to the customer's specified requirements,**
c) **The characteristics and trends of the processes and products including opportunities for preventive action; and**
d) **Supplier evaluations.**

The respective process documentation prescribes the data collected and reviewed under the management review process.

8.5 Improvement

8.5.1 Continual Improvement

The effectiveness of the QMS will be continually improved through the use of the quality policy, the establishment of measurable objectives, audit results, analysis of data, corrective and preventive actions and management reviews. The control features used to demonstrate continual improvement are defined in QMS Procedure - Corrective and Preventive Action.

8.5.2 Corrective Action

When nonconformities are identified, action will be taken to eliminate the cause of the nonconformity in order to prevent a recurrence. Corrective actions will be appropriate to the effects of the nonconformity encountered.

The system, methods and responsibilities for reporting, addressing, responding to and reviewing corrective actions is defined in QMS Procedure - Corrective and Preventive Action and includes the following:

a) **Reviewing nonconformities (including customer complaints);**
b) **Determining the causes of nonconformities;**
c) **Evaluating the need of action to ensure that nonconformities do not recur;**
d) **Determining and implementing action needed;**
e) **Recording the results of the action taken; and**
f) **Reviewing and following up on the corrective action taken to evaluate effectiveness.**

8.5.3 Preventive Action

The system, methods and responsibilities for identifying, reporting and carrying out preventive action is defined in QMS Procedure - Corrective and Preventive Action and includes the following:

a) **Determining where there are potential nonconformities and their causes;**

b) **Evaluating the need for preventive action;**

c) **Determining and implementing action needed;**

d) **Recording the results of action taken; and**

e) **Following up on the preventive action taken to determine the effectiveness of the action(s) taken.**