

**QUALITY MANUAL
APPROVAL AND
REVISION RECORD**

Document # QM-9001	Title NMT Machining Group Inc. Quality Manual
--------------------	--

APPROVAL

Name	Title	Signature	Date
Nirmal Chatha	President		
Gord Chatha	Vice-President		
Dio Besnea	Q.A. Manager		

REVISION RECORD

Ltr.	Date	Change Description	Initials						
A	08/31/03	First Issue	-	-	-	-	-	-	-
B	09/29/03	Modified paragraphs 4.2.2 and 5.6.1			-	-	-	-	-
C	10/03/03	Modified paragraph 1.0 Scope.			-	-	-	-	-
D	11/07/03	Modified quality objectives § 5.4.1			-	-	-	-	-
E	11/08/03	Modified § 8.1 and 8.4.			-	-	-	-	-
F	10/25/04	Modified Exclusion Table and § 7.5.2			-	-	-	-	-
G	02/15/06	Modified quality objectives § 5.4.1			-	-	-	-	-
H	02/13/09	Modified quality objectives § 5.4.1			-	-	-	-	-
I									
J									
K									
L									
M									
N									
O									

201 Rev. 1

**CONTROLLED COPY NO.: 001
ISSUED TO: Dio Besnea
ISSUE DATE: 09/09/03**

QUALITY MANUAL

Title: NMT Machining Group Quality Manual

Document #: QM-9001

Date Issued: August 31, 2003

Rev: H, **Date:** 02/13/09

1. SCOPE

The quality system described within this manual establishes the total NMT Machining Group quality policy, and is applicable to the following activities: CNC high and low volume machining, specializing in aerospace, jigs and fixtures. The manual as written addresses the requirements of ISO 9001:2000, except for the exclusions shown, with justification, in the table below:

EXCLUSION TABLE

Clause or Sub-clause	Exclusion	Justification
7.3 Design and development	This clause does not apply to NMT Machining Group.	NMT Machining Group does not perform design and development.
7.5.2 Validation of processes for production provision	This clause does not apply to NMT Machining Group.	NMT Machining Group does not employ processes, where the results cannot be verified by measurement.

The manual also serves to direct the user from the policy statements to the procedures required to implement the policy.

2. RELATED DOCUMENTS

Documents related to this policy document include:

- all procedures with the prefix "SOP" and other procedures referenced within the pages of this document.
- all work instructions that directly or indirectly have impact on product or process.
- all forms used in conjunction with in this policy and the procedures and work instructions described in both of the above.

3. TERMINOLOGY

3.1 Quality Policy

The company's requirements on issues affecting quality.

3.2 Quality Procedure

The directions for implementing a Quality Policy.

3.3 Work Instruction

The generic name for detailed descriptions of work to be done in the manufacture and inspection of acceptable product. Work instructions are also used for related tasks such as calibrations and preventive maintenance.

3.4 Quality Management System

A structured approach to:

- reduce variation to reduce or eliminate defects.
- disallow occurring defects from reaching the customer.

4. QUALITY MANAGEMENT SYSTEM

4.1 General requirements

This quality management system has been created, is being maintained, is implemented and its effectiveness will be continually improved to achieve compliance with ISO 9001:2000.

Organizational Chart, form # 202, shows the order and interaction NMT Machining Group's quality management system general processes. The criteria and methods for effective control of processes are found in internal audit procedures, inspection instructions and work instructions. The Vice-President ensures the availability of necessary resources. The information necessary for effective operation and monitoring of these processes is found within available controlled documents. Upon the completion of measurement and monitoring of the processes and analysis of the data, appropriate action is taken to assure intentions are achieved and opportunities for improvement are acted on.

Management of these processes is accomplished in accordance with the requirements of ISO 9001:2000.

Outsourced processes, having impact on the achievement of product requirements, are controlled in accordance with Purchasing Control, SOP 741.

4.2 Documentation requirements

4.2.1 General

NMT Machining Group has elected to include the following documents in its quality management system:

- statements of quality policy
- statements of quality objectives
- this quality manual
- the documents referred to in this quality manual
- documented procedures required by ISO 9001:2000
- any documents required to ensure effective implementation of the processes needed to deliver our products
- the records described in Quality Records, SOP 422.

4.2.2 Quality manual

This quality manual contains:

- a scope statement with exclusions (see 1).
- reference to the quality management system procedures.
- reference to Organizational Chart, form # 202, which provides a description of the interaction within the quality management system.

The above items are described in depth in Quality Management System, SOP 423.

4.2.3 Control of documents

All documents within NMT Machining Group's quality system are controlled by procedures as indicated below:

Documents	Procedure
quality policy (this document)	<u>Documentation Control</u> , SOP 421
quality procedures	<u>Documentation Control</u> , SOP 421
work instructions* *includes manufacturing, inspection, audit, calibration, and preventive maintenance instructions.	<u>Documentation Control</u> , SOP 421
CAD files, machine programming files, etc.	<u>Documentation Control</u> , SOP 421
Quality records	<u>Quality Records</u> , SOP 422

Most documents must be totally reviewed and updated, if required, at least annually by the originating departments. Documents used less than once per year may be reviewed and updated as necessary, prior to use.

4.2.4 Control of quality records

The requirements for quality records are found within Quality Records procedure, SOP 422. Specific NMT Machining Group quality records have been identified and their requirements shown in a matrix within that procedure. All data supporting the achievement of quality requirements and effectiveness of the quality system are included as quality records.

5. MANAGEMENT RESPONSIBILITY

5.1 Management commitment

The following are expressions of NMT Machining Group's management commitment to develop, implement and improve the effectiveness of the quality management system:

- Communication about the importance of fulfilling customer legal and regulatory requirements occurs throughout the company. That communication happens through the use of:
 - General and product specific training
 - Retraining when and where shortfalls appear
 - Displays and postings in high traffic areas of the facilities
 - Periodic communication meetings
 - Specific emphasis in provided documentation
- The quality policy (see 5.3).
- The quality objectives (see 5.4.1).
- The management review records.
- Availability of resources with focus on root causes of occurring nonconformities.

5.2 Customer focus

The highest level of management assures that all customer requirements will be uncovered through the processes described in 7.2 later in this quality manual. Through all of the policies, objectives and processes described in this quality manual, the highest level of management assures the needed environment to consistently fulfill the customer requirements. By routinely assessing customer satisfaction, the highest level of management optimizes the likelihood of

moving customer satisfaction closer and closer to customer delight. Customer Satisfaction Survey, form # 203, serves that purpose.

5.3 Quality Policy

Having given due consideration to the following:

- the purpose of NMT Machining Group
- the need to include an explicit commitment for compliance to requirements
- the need to include an explicit commitment to continual improvement of effectiveness of the quality management system
- the required continual compatibility with quality objectives,
- a quality policy statement that has been formulated by the highest level of management can be found within this manual. It is also prominently displayed at strategic locations throughout the site. The quality policy reads as follows:

NMT Machining Group is committed to being the number one supplier of quality machined products. Our objective is to control the manufacturing of our products to ensure that they meet or exceed our customers' requirements.

Our Company strives for continual improvement of our quality management system, by providing our employees with the required training, materials, resources, and management support.

After communication of the quality policy to the employee population, employees at all levels of the organization are expected to fulfill the requirements of this policy in all of their work-related efforts and decisions.

Lastly, the quality policy is reviewed at least annually for suitability.

5.4 Planning

5.4.1 Quality objectives

The following, measurable quality objectives, have been formulated by the highest level of management:

1. *Improve delivery performance year over year.*
2. *Maintain approved supplier status to main customers.*
3. *Reduce nonconformance costs year over year.*
4. *Reduce overtime index year over year.*
5. *Maintain a zero health and safety index.*

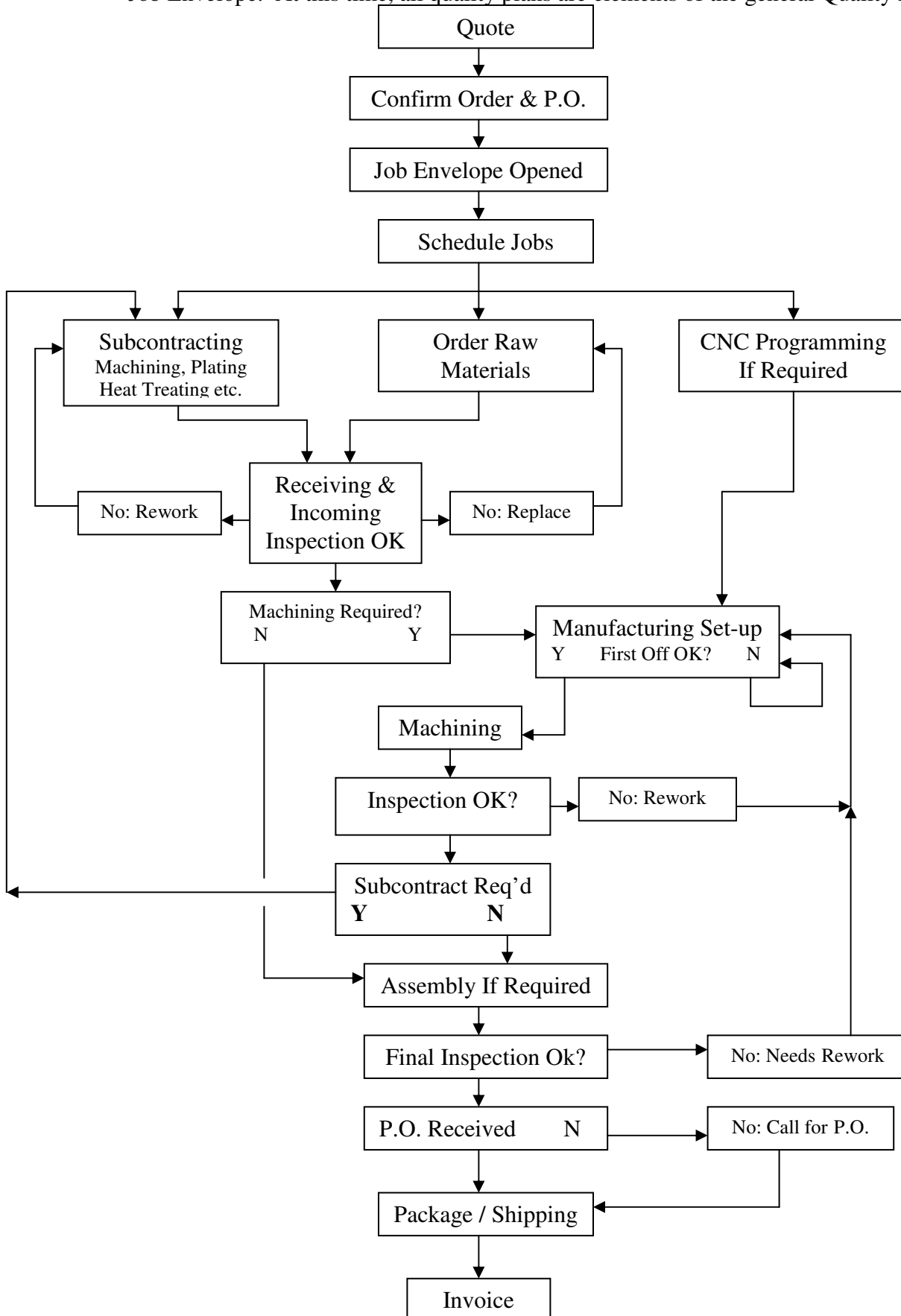
The above quality objectives are rolled down to managers at subsequent levels who in turn convert them into objectives at their level.

5.4.2 Quality management system planning

Employees, responsible for the creation of quality plans, are required to consider the following as they create those quality plans:

- the quality objectives in 5.4.1
- the quality policy information in 4.1

Quality plans are documented on the Manufacturing Procedures Sheet, which is part of the Job Envelope. At this time, all quality plans are elements of the general Quality Plan below.



When significant changes occur in categories such as the organization, the facilities or business strategy, the integrity and compatibility of the quality management system must be maintained.

5.5 Responsibility, authority and communication

5.5.1 Responsibility and authority

The Organizational Chart, form # 202 illustrates functions, their interrelations, responsibilities and authorities relevant to the quality management system. More specific quality management system responsibilities and authorities can be found on standard operating procedures, work instructions etc. associated with machines utilized and products manufactured. Appropriate distribution of these documents and associated training assures clear communication of this information.

5.5.2 Management representative

The Quality Assurance Manager has been appointed by the President to serve as management representative. The assigned duties include:

- overseeing the implementation and maintenance of the quality system in accordance with ISO 9001:2000 requirements.
- reporting on the performance of the quality management system to the highest level of management.
- reporting on the need for improvement of the quality management system to the highest level of management.
- encouraging and assisting in extending the understanding of customer requirements to the degree necessary throughout the organization.

5.5.3 Internal communication

The highest level of management shares data, indicating the performance of the quality management system, throughout NMT Machining Group in the following ways:

- monthly updated postings in strategic locations throughout the site
- near real-time data on the computer network
- accessibility of corrective and preventive action statuses on the computer or to all who ask.

5.6 Management review

5.6.1 General

In order to assure the continuing suitability, adequacy and effectiveness, the highest level of management will conduct periodic reviews of the quality management system. The reviews can address the quality management system entirely or in parts, as long as the entire quality management system is reviewed at least annually. An expected outcome of that review is the determination of the need for any changes or to reveal opportunities for improvement to the quality management system, including adjustments to the quality policy and quality objectives. See Quality Management System, SOP 423. Management review records are maintained in accordance with Quality Records, SOP 422.

5.6.1 Review input

System performance and opportunities for improvement are determined by reviewing the following:

- audit results
 - internal quality management system audits

- 3rd party quality management system audits
- customer audits
- regulatory audits
- etc.
- customer feedback
 - customer surveys
 - customer complaints
 - etc.
- process performance and product conformity
- preventive and corrective action status
- carryover action item status
- quality management system related changes
- potential improvements

5.6.2 Review output

Actions associated with the following are included in the output from management review:

- improvement of effectiveness of the processes of the quality management system
- overall improvement of the quality management system effectiveness
- improvements upon product associated with customer requirements
- maintenance of appropriate resources

Management review records are maintained. See Quality Records, SOP 422.

6. RESOURCE MANAGEMENT

6.1 Provision of Resources

Resources for the following purpose are provided on time:

- to implement and maintain the quality management system
- to continually improve upon the quality management system effectiveness
- to ensure customer satisfaction through consistent achievement of customer requirements.

6.2 Human Resources

6.2.1 General

Anyone in NMT Machining Group, having an assignment that can affect product quality, must be competent through education, skills, training and experience, as necessary. Departmental or top management determines requirements for education, skills, training and experience. Competency is determined during the probation period.

6.2.2 Competence, awareness and training

Managers and supervisors are jointly responsible for the determination of competence needed as new quality management system processes evolve and existing ones change. When training is required to aid achievement of the required competence, one or more of the following may occur:

- Classroom training (internal or external) will be scheduled and coordinated by Vice-President
- On-the-job training will be coordinated by the department supervisor

When and where it is necessary, actions other than training will be used to achieve the needed competence and appropriate measures of effectiveness applied.

One or more of the following will evaluate effectiveness of the training and other actions taken:

- testing on the material presented in the classroom
- operator certification
- certificates of completion for externally provided training
- performance monitoring and reviews on new hires

Managers and supervisors are responsible for keeping records of education, training, skills and experience. See Quality Records, SOP 422.

6.3 Infrastructure

The Vice-President together with the Quality and the Production departments jointly determine the infrastructure needs for each new product or significant change to existing product. Consideration is given to the following:

- building: size, location, etc.
- workspace: size, layout, etc.
- facilities associated with building or workspace: HVAC, water, lighting, electricity, telephone systems, data lines, compressed air lines, machine specific requirements, etc.
- equipment – hardware: furniture, workbenches, storage racks, tools, gages, machines, test equipment, computers, other office equipment, etc.
- equipment – software: CAD, process control, test, calibration, data collection, SPC, etc.
- services for support: preventive maintenance, calibration, engineering, transportation, emergency, etc.

When all the needs have been identified, it is the responsibility of the highest level of management to approve those necessary for the achievement of product requirements.

6.4 Work environment

NMT Machining Group considers and addresses many different aspects of the work environment. Most significant among them and the departments assigned to manage them are listed below:

- Facilities – managed by the Production department
- Health and safety – managed by the Production department
- Housekeeping – managed by the Production department
- Work ethics – managed by Vice-President

7. PRODUCT REALIZATION

7.1 Planning of product realization

As NMT Machining Group prepares for a new product, the following are determined, as appropriate:

- specific quality objectives (see 5.4.1)
- specific processes required (see 5.4.2)
- specific documentation required (see 5.4.2)
- specific resources required (see 5.4.2)
- specific infrastructure required (see 5.4.2)
- verification activities and criteria required (see Inspection Plan, SOP 710)
- validation activities and criteria required (see Inspection Plan, SOP 710)
- monitoring activities and criteria required (see Inspection Plan, SOP 710)

- inspection and test activities and criteria (see Inspection Plan, SOP 710)
- records to demonstrate achievement of requirements (see Quality Records, SOP 422)

7.2 Customer-related processes

7.2.1 Determination of requirements related to the product

In an effort to thoroughly identify all customer requirements, the following are considered by NMT Machining Group as they interface with the customer and as the product development takes place:

- product specifications provided by the customer
- product performance requirements provided by the customer
- customer stated availability requirements
- customer stated delivery requirements
- determination of relevant legal requirements, if any
- determination of relevant environmental requirements, if any
- determination of any other relevant requirements

7.2.2 Review of requirements related to the product

NMT Machining Group will review all identified customer product requirements and other identified product requirements for new business acceptance in accordance with Product Requirements Review, SOP 7221. This procedure addresses:

- definition of requirements.
- situations where customer requirements have been provided verbally.
- requirements that change after the quote process has begun.
- the determination of NMT Machining Group's ability to meet the requirements.

Records of requirements reviews and follow-on actions are maintained (see Quality Records, SOP 422)

Specification, contract or customer purchase order changes are managed in accordance with Product Requirements Review, SOP 7221.

7.2.3 Customer communication

There are several scenarios where communication occurs between NMT Machining Group and its customers. The first contact often occurs through some form of advertising provided by the Sales department. Inquiring potential customers are provided with any further information by the Sales department. Contact required by the customer with other functions, is coordinated by the Sales department. Order taking occurs within the Sales department. Changes to existing orders are coordinated through the Sales department. The Quality department coordinates responses to customer complaints through the use of Corrective and Preventive Action, SOP 8501.

7.3 Design and development

At this time, NMT Machining Group does not perform design and development of product.

7.4 Purchasing

7.4.1 Purchasing process

Significant waste is avoided by controlling the purchasing process at NMT Machining Group. After a potential supplier is determined to be technically suitable by Production/Quality Assurance, approval is based on the supplier survey indicated in Purchasing Control SOP 741. This procedure offers:

- a structured method for supplier selection that considers relevant capability, quality system and quality assurance requirements.
- criteria for initial approval and performance requirements for maintaining the approved status.
- the direction to maintain an approved supplier list and their up-to-date performance.

The application of the above process is tempered by impact of the purchased material on the product realization process.

7.4.2 Purchasing information

NMT Machining Group purchase documents require that the originator include where applicable:

- approval requirements including as appropriate:
 - precise identification of product or service ordered
 - positively identified specifications, drawings, pertinent standards and codes or other technical documents required to establish full acceptability
 - specialized equipment
 - uniquely qualified personnel
- quality management system requirements

All NMT Machining Group purchasing documents must be originated in the purchasing department. Each originator of purchasing documents must assure that specifications contained in the purchasing documents are adequate before an order is placed.

7.4.3 Verification of purchased product

The processes for verification of purchased product or service are found in the specific quality plans for those products or services. The process selected and included in the quality plans depends on the criticality of the purchased product and the performance history of the supplier. The processes for incoming material acceptance include:

- acceptance based on certification of conformance
- acceptance based on the review of data from a certificate of analysis
- acceptance based on incoming inspection
- acceptance based on inspection at the source by NMT Machining Group or NMT Machining Group's customer.

When NMT Machining Group stipulates in any contract that purchased product or service is subject to source inspection by NMT Machining Group or NMT Machining Group's customer, the details for such an inspection and subsequent release of accepted material will be stated in the purchase agreement.

7.5 Production provision

7.5.1 Control of production provision

The control of NMT Machining Group's production provision activities is assured by:

- the easy access of drawings and specifications for product
- the easy access to necessary work instructions
- the suitability of the equipment as determined by the Production Department.
- the availability of specified measuring equipment as determined by the Quality Department.

- the implementation of monitoring and measurement activities, as planned, through the use of specific product quality plans.
- release of product according to specific product quality plans or Nonconforming Material Control, SOP 8301.
- delivery of product in accordance with procedure Material Movement and Protection SOP 7551.

7.5.2 Validation of processes for production provision

At this time, NMT Machining Group does not employ processes where the resulting output cannot be verified by subsequent monitoring or measurement.

7.5.3 Identification and traceability

In order to prevent the misuse or misapplication and to maintain identify of purchased material, work-in-process, or completed product, NMT Machining Group utilizes Product Identification and Traceability procedure, SOP 7531.

Monitoring and measurement status of product at NMT Machining Group is an integral part of the material control task and can be found in Product Identification and Traceability procedure, SOP 7531.

Product traceability is maintained through the use of procedure SOP 7531 when required by the customer or a governing regulatory agency or when NMT Machining Group determines that the practice would be prudent for the product being manufactured.

7.5.4 Customer property

Customer property is treated the same as purchased material. More specifically, it is:

- identified per Product Identification and Traceability procedure, SOP 7531.
- verified per product quality plans.
- protected per procedure Material Movement and Protection SOP 7551.
- maintained using appropriate procedures such as Calibration, SOP 7602.

Lost, damaged, or non-conforming purchaser supplied material is subject to Nonconforming Material Control, SOP 8301.

Customer provided intellectual property would be treated as documents of external origin and distributed on a need-to-know basis.

7.5.5 Preservation of product

The NMT Machining Group procedures for handling, storage, packaging, and protection of product are thoroughly documented in Material Movement and Protection SOP 7551. Product identification is accomplished per procedure SOP 7531.

Material Movement and Protection, SOP 7551, describes the general handling requirements. Standards and work instructions detail the specific methods of handling required by NMT Machining Group.

Material Movement and Protection, SOP 7551 describes the general packaging requirements. Specific packing, packaging, and marking processes are documented in the Job Envelope for the individual products.

Material Movement and Protection, SOP 7551 addresses general storage requirements. Standards and work instructions detail the specific methods of storage required by NMT Machining Group.

When contractually agreed upon NMT Machining Group takes on the responsibility for product delivery without degradation of product quality. Sub-contracted delivery services are selected based upon historical records of previous sub-contracts with NMT Machining Group.

7.6 Control of monitoring and measuring devices

Product quality plans identify the measurements to be made and the measurement equipment required. Inclusion of a measurement device into a quality plan requires that there be sufficient confidence that the error of the measurement system (device, documentation and operator) will not alter the measurement to be made. NMT Machining Group accommodates this need by selecting measurement devices that can resolve one more decimal place than the number of decimal places in the tolerance of the measurement to be made. When these 10:1 criteria cannot be achieved or when there is reason to believe that other sources may interfere with obtaining a true reading, the customer must be notified. This approach assures that initially, measurement capability is consistent with the measurement/customer requirements.

To assure that measurement capability remains consistent, NMT Machining Group requires that measuring devices:

- be calibrated prior to use or periodically to NRC and/or NIST traceable standards.
- utilize safeguards for inappropriate adjustment.
- be handled, maintained and stored properly.
- have records of calibration (See Quality Records, SOP 422).
- Calibration, SOP 7602 has provisions to accomplish the above.

In the event that calibration reveals that measurement capability has been lost, a reaction plan as described in Calibration, SOP 7602 must be employed and corrective action taken.

8. MEASUREMENT, ANALYSIS AND IMPROVEMENT

8.1 General

NMT Machining Group product quality plans are used for planning the necessary monitoring and measurement processes. The process for improvement is found in Continual Improvement, SOP 8511. The need for statistical techniques is considered as plans are being made (See above Quality Plan §5.4.2, and Analysis of Data, SOP 8101. Implementation occurs according to the defined plans, the resulting data is analyzed (See 8.4) and improvements are pursued (See 8.5).

8.2 Monitoring and measuring

8.2.1 Customer satisfaction

Customer surveys are conducted in accordance with Customer Satisfaction, SOP 8211.

8.2.2 Internal audit

Internal audits of the quality management system are conducted in accordance with Quality Management System Audits, SOP 8221. Frequency of audits of specific areas and/or specific requirements will vary with the need. That variation will be reflected in the required audit plans along with the scope, the methods and the assigned auditors. The audits are seeking

conformance with the requirements of ISO 9001:2000, the requirements of this quality systems and plans as indicated in 7.1.

The criteria for auditor independence and clarification of auditor responsibilities are found in Quality Management System Audits, SOP 8221. The results are recorded (See Quality Records, SOP 422) to enable management and others take timely corrective action and to allow for proper verification of effectiveness in accordance with procedure Quality Management System Audits, SOP 8221.

8.2.3 Monitoring and measurement of processes

Quality management system processes are monitored and measured when required in accordance with specific product plans. See 7.1. When departures from planned results occur, process specific reaction plans and Nonconforming Material Control, SOP 8301 enable correction and corrective action where appropriate.

8.2.4 Monitoring and measurement of product

In order to assure conformity to customer requirements, specific product quality plans contain the monitoring and measurement processes to be applied to the characteristics of each product at the appropriate levels of realization.

Evidence of compliance with the requirement(s) must be recorded as well as the authority allowing further progression or final release. See Quality Records, SOP 422.

Product release must be preceded by successful completion of all required activities (see 7.1) unless approved by the customer. See Nonconforming Material Control, SOP 8301.

8.3 Control of nonconforming product

Nonconforming material is identified using Nonconforming Material Control, SOP 8301. Use of nonconforming material is disallowed by applying Nonconforming Material Control, SOP 8301. This procedure allows for:

- scrapping detected nonconformities.
- repairing or reworking nonconformities.
- accepting nonconformities (with appropriate approvals).
- approving nonconforming material for other use.

Records of nonconforming material are maintained as indicated in Quality Records, SOP 422.

Re-inspection is required on all reworked or repaired material. Rework material must meet original requirements. Repaired material must meet intended function and other requirements in accordance with customer needs.

Discovery of nonconforming material after delivery is immediately followed by the actions necessary to minimize its impact and preserve customer satisfaction to the highest level possible under the circumstances. Corrective and Preventive Action, SOP 8501 is used for this purpose.

8.4 Analysis of data

In NMT Machining Group, quality management system related data is recorded as indicated in Quality Records, SOP 422, analyzed with the objectives below in mind and used to determine the suitability, effectiveness and opportunities for improvement of the quality management system. See Analysis of Data, SOP 8101. The data analysis objectives for NMT Machining Group are:

- to assess customer satisfaction levels
- to determine success rates in fulfilling customer requirements

- to gather knowledge on trends associated with products and processes in order to initiate appropriate preventive action
- to maintain awareness of the performance of suppliers and request them to take action to correct or improve the performance.

8.5 Improvement

8.5.1 Continual improvement

The process for continual improvement is described within Continual Improvement, SOP 8511. At NMT Machining Group, continual improvement is:

- a part of the quality policy.
- reflected in the quality objectives.
- a part of the actions taken upon audit results.
- driven by opportunities surfacing from data analysis.
- a result of corrective action when the action taken corrects a new problem.
- always a result of preventive action.
- a required output from management review.

8.5.2 Corrective action

In order to avoid the recurrence of problems, appropriate corrective actions are taken. NMT Machining Group Corrective and Preventive Action procedure, SOP 8501 provides a systematic approach to corrective action problems that includes:

- reviewing nonconformities including customer complaints
- the determination of causes of nonconformities
- assessing the need for actions to avoid recurrence
- the determination of corrective actions needed
- the implementation of determined corrective actions
- making records of the outcomes from actions taken (See Quality Records, SOP 422)
- verifying the effectiveness of corrective actions taken

8.5.3 Preventive action

In order to avoid the occurrence of potential problems, appropriate preventive actions are taken. NMT Machining Group Corrective and Preventive Action procedure, SOP 8501 provides a systematic approach to preventive action problems that includes:

- the determination of potential nonconformities
- the determination of causes of potential nonconformities
- the determination of preventive actions needed
- the implementation of determined preventive actions
- making records of the outcomes from actions taken (See Quality Records, SOP 422)
- reviewing preventive actions taken.