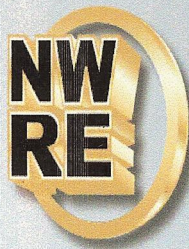


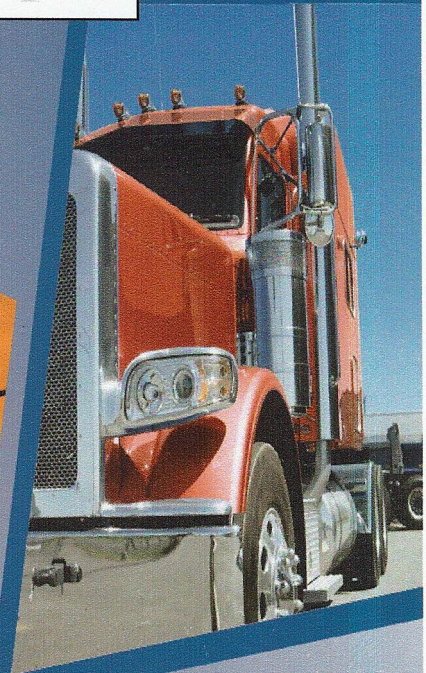
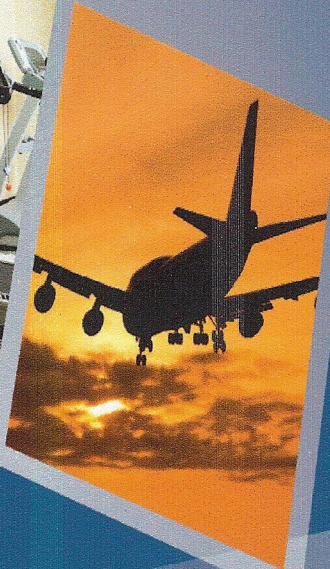
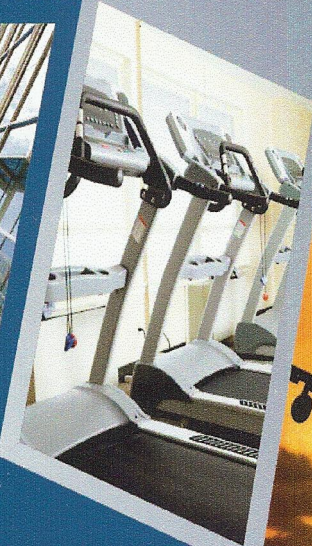
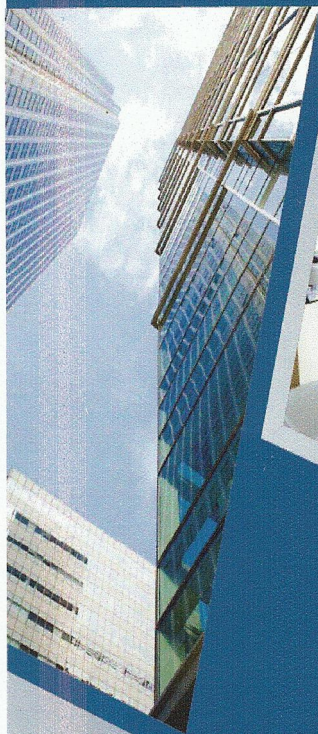
Quality Assurance Policy Manual

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Northwest Rubber Extruders, Inc.

The Flexible People



Since 1978

Quality Assurance Policy Manual Approval

A handwritten signature in black ink, appearing to read 'Bill Snyder'.

Bill Snyder
General Manager

A handwritten signature in black ink, appearing to read 'Randy Robbins'.

Randy Robbins
Quality Assurance Manager

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2.0 INTRODUCTION

The incorporation of Northwest Rubber Extruders, Inc. (**NWRE**) occurred on September 12, 1978. The main thrust for the creation of the business came from the efforts of Joe Lucas Jr. It was through his survey of the market that determined that a viable market existed in the production of short run/quick turn around organic extrusion. At that time, the majority of the larger manufacturers were overlooking the production of small quantity runs of organic extrusion. The survey revealed that the demands of the consumers in this market were substantial enough that potential opportunities were plausible for the company. Through utilizing his background in chemistry, 12 years of hands-on experience, and his current position as owner/manager at Waters Industries, Joe Lucas Jr. was able to enter the market with a head start.

NWRE evolved through a series of stages. In March of 1986, the company purchased state-of-the-art silicone extrusion equipment. The objective in this purchase was to expand into the architectural seismic seal industry. Further change took place in April 1986, with the consolidation of Joe Lucas' two companies, Waters Industries and Northwest Rubber Extruders, Inc. This consolidation added a molding operation to the business' organic and silicone extrusion lines, and in 1988, a thermoplastic extrusion line was added to expand the company's product line.

Northwest Rubber Extruders, Inc. produces its goods on a job order basis. To produce a product that meets the specifications of the customer involves research and development work, such as developing dies, color matching, and extruding and/or molding a first article sample for the customer. It requires making adjustments to meet our customers' ever-changing needs, but in the end, to produce a quality extruded and/or molded good(s) that can be marketed to the customer.

In March of 1998 Northwest Rubber Extruders, Inc. faced with demands requiring substantial expansion, moved to its present location, a new up-to-date facility to meet anticipated growth and products with more sophisticated requirements.

Northwest Rubber Extruders, Inc. is committed to meet the constantly more demanding requirements and specifications presented by our customers.

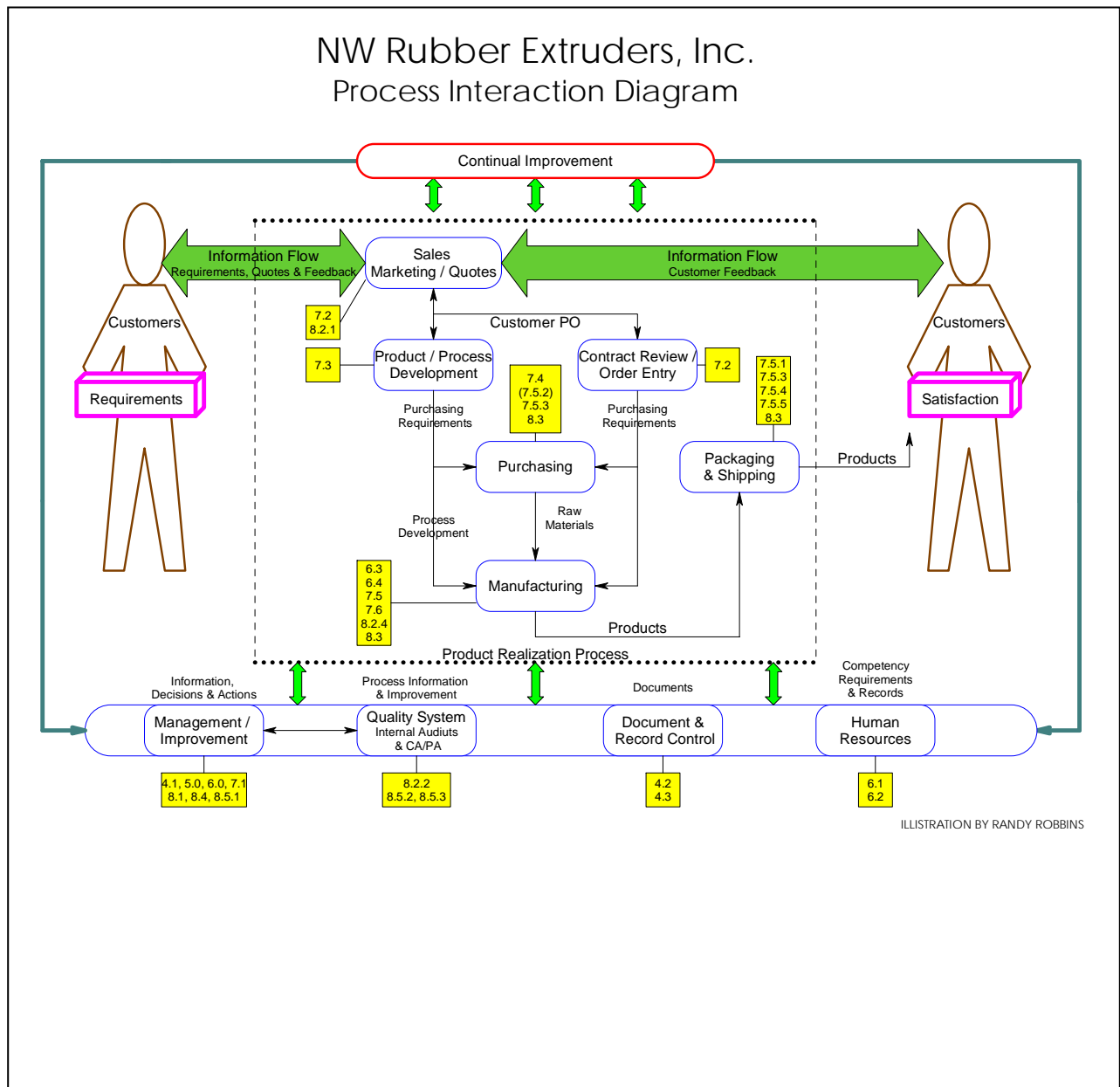
The Company maintains an Organizational Chart and Job Descriptions for all staff. The basic organization structure is shown in the Organization Chart. The Cross Reference Matrix / Index (Appendix 1) and the Process Interaction Diagram (Sec. 3.0) show the interrelation between the quality standards requirements and the NWRE Quality Management System.

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3.0 PROCESS INTERACTION

NWRE has determined the processes needed for the quality management system and their application throughout the organization. The process interaction diagram identifies NWRE's core processes, support processes, information flow to and from the customer and feedback into the system for continual improvement. Each core process and sub process is described in the applicable process (turtle) diagram. The process (turtle) diagrams may contain proprietary information and are not included in this manual, but are available for customer review upon request.



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4.0 QUALITY MANAGEMENT SYSTEM

4.1 Manual Structure & Scope

The Quality Assurance Policy Manual describes the Quality Management System in operation. This manual is the primary reference document within the Company for all quality related activities. It is used to inform customers, suppliers and personnel about NWRE policy and to audit the effectiveness of the Quality Management System. Further detail is provided in the Quality Procedures, which are supplemented by Work Instructions.

The scope of NWRE's quality management system is the manufacture of custom extruded and molded organic, silicone and thermoplastic elastomeric products in compliance with ISO/TS 16949:2009, ISO9001:2008 and AS9100 Rev. B quality standards.

A **Q** level system is used to define how to apply the requirements of the quality system. A **Q** level will be shown on the order entry document and Traveler.

Q 1 is used where the customer's quality requirements exceed ISO 9001: 2008. Examples may be aerospace or automotive customers.

Q 2 indicates that all the requirements of ISO 9001: 2008 and NWRE Quality System must be met.

Q 3 means that portions of the quality system are being met and are defined on the Traveler.

Q 4 indicates that the customer has no quality system requirements or the Traveler is for production of tooling or production of related fixture only.

NWRE provides products to customer designated drawings and specifications and, therefore, excludes the product design and development requirements of section 7.3. Due to the nature of the NWRE's finished products, service provisions of section 7.5 are not applicable.

Italics may be used to indicate specific customer requirements included in the company's policies and procedures and may appear in colored font on the electronic version.

4.2 Approval, Distribution & Control

The General Manager and the Quality Manager approve all releases of the Quality Assurance Policy Manual. Controlled copies are serialized and provided with revision and up date service. Uncontrolled copies are so marked. The Quality Manager is responsible for issuing controlled copies and maintaining a distribution list.

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4.3 Document & Data Control

NWRE maintains a controlled system for documents, of either internal or external origin, that have been determined by NWRE to be necessary for the planning and operation of the quality management system. These quality system related documents are released and controlled by content, revision, and issue date. This policy applies to all of NWRE's quality system documents. Documents and data can be in the form of any media such as hard copy or electronic media and may be of internal or external origin.

NWRE's policy requires that documents are identified, controlled, reviewed, and approved prior to issue. Pertinent issues of the appropriate documents are available at all locations requiring such documents (point of use). Documents of the latest revisions supersede previous issues and are distributed in a timely manner. Obsolete documents are removed from use and discarded or marked obsolete to prevent unintended use. (Note: timely review should be ASAP and shall not exceed two working weeks.)

A master list of documents is maintained that identifies each document's current status. The documents are to be legible, dated and include the revision level or revision date. The documents will be traceable to the product, where applicable, and maintained in an orderly and accessible manner.

Changes to documents are implemented in a controlled manner with traceability. NWRE will evaluate the impact of documentation changes, as necessary, prior to release. NWRE will maintain a record of change affectivity that may affect the customer and if affected by the change, shall coordinate implementation with the customer. NWRE personnel are notified of changes to documents that affect them and / or are applicable to their job function.

4.4 Control of Quality Records

This policy applies to all quality records and may include electronic media. The Quality Manager is responsible for the identification of records required in the operation of the Quality Management System.

Quality records may include, but are not limited to, inspection reports, test data, certificates of conformity, calibration results, supplier assessment reports, corrective and preventive action reports, training records, internal audit reports, and management review meeting minutes.

Quality records are to be legible and identifiable to the related product or process as appropriate. Quality records are stored and maintained in a manner that provides ready access, minimizes deterioration or damage and prevents loss. Quality records are retained for a minimum period of 10 years after the conclusion of the contract, unless otherwise specified by statutory, regulatory or customer requirements. When specified by contract, quality records are made available to the customer.

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5.0 MANAGEMENT RESPONSIBILITY

5.1 Management Commitment

NWRE's Management Team is committed and dedicated to the development and implementation of the quality management system and continuous improvement of its effectiveness. Evidence of this commitment can be seen by the following activities:

- Communicating the importance of meeting customer as well as statutory and regulatory requirements throughout the organization.
- Establishing and communicating the quality assurance policy.
- Ensuring that quality objectives are established at all levels.
- Conducting management reviews and ensuring the availability of resources.
- Review of the product realization process and support processes to assure their effectiveness and efficiency.

5.2 Customer Focus

NWRE's management team is committed to enhancing customer satisfaction by ensuring that all customer requirements are determined, implemented into the quality management system and communicated throughout the organization with the intention of meeting all customer requirements. The management team will also ensure that product conformity and on-time delivery performance are measured and that appropriate action is taken if planned results are not, or will not be achieved. When the customer supplies feedback, such as, metrics or scorecards, the information will be regularly reviewed to track NWRE's performance.

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5.3 Quality Policy, Vision and Mission Statements

QUALITY POLICY

Northwest Rubber Extruders, Inc. is committed to consistently meeting or exceeding our customers' requirements for products and services, and is pledged to continuous improvement.

VISION and MISSION STATEMENT

Our Vision

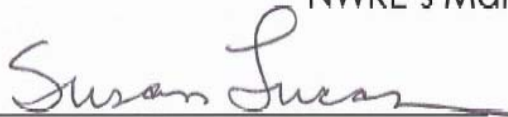
At Northwest Rubber Extruders, Inc., our vision is to be a leading manufacturer in the industrial rubber products industry. We will cultivate a thriving business by empowering our people, by implementing lean manufacturing practices, and by utilizing new tools and processes to build strong lasting relationships with our customers and suppliers.

Our Mission

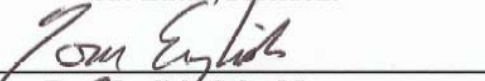
Northwest Rubber Extruders, Inc. is in the business of supplying custom manufactured elastomeric products for all types of applications. Our mission is to exceed our customers' expectations by providing unsurpassed customer service with quality parts at cost effective prices. We will accomplish our mission within the framework of the following core values:

- ❖ **People** - Encourage a culture that values and empowers employees through open communication, integrity and teamwork. Provide a safe environment for employees to work and grow.
- ❖ **Products** - Continuously improve our products and services to maintain our reputation as a custom, high quality, manufacturer.
- ❖ **Business** - Operate according to sound business principles, guided by strong ethics to achieve profit and performance goals.
- ❖ **Customers** - Enable the success of our customers by understanding their unique requirements and by providing reliable, innovative custom products and services.
- ❖ **Partners** - Foster supplier relationships to ensure mutual value and success.
- ❖ **Environment** - Support and encourage activities that lead to environmental responsibility and cleaner safer neighborhoods in which we live.

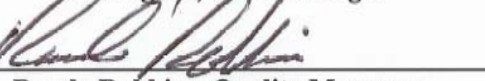
NWRE's Management Team



Sue Lucas, President



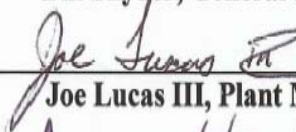
Tom English, Sales Manager



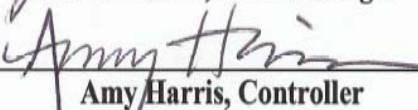
Randy Robbins, Quality Manager



Bill Snyder, General Manager



Joe Lucas III, Plant Manager



Amy Harris, Controller
& Admin. Manager

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5.4 Planning

The NWRE quality system has been planned to ensure that measurable quality objectives are established at all relevant functions and levels within NWRE. The planning will also include those objectives that are needed to meet the requirements of the product. The quality objectives and measurements will be consistent with the quality policy and be linked to and deployed through the business plan.

Changes to the quality system will be reviewed by the NWRE management team to ensure that the integrity of the system is maintained.

5.5 Responsibility, Authority & Communication

NWRE's management team is responsible for communicating the responsibilities and authorities of personnel related to conformity to product requirements. Personnel are provided organizational freedom and authority to ensure cost and schedules do not compromise quality or prevent further processing of non-conforming product and to stop production to correct quality problems. Personnel responsible for ensuring conformity to product requirements shall be available for all shifts.

5.5.1 Responsibility for Quality

Each quality procedure identifies the responsibility, authority and interrelation of personnel who manage, perform and verify work affecting quality. These activities may include:

- Initiating actions to prevent occurrence of non-conformities.
- Identify and record problems relating to product process and the quality system.
- Initiate, recommend, or provide solutions through designated channels and verify the implementation of the solutions.
- Promptly notify managers of products or processes that do not conform to requirements.
- Control further processing, deliveries or installation of non-conforming product until deficiencies or unsatisfactory conditions have been corrected.
- Disposition of non-conforming product.

5.5.2 Management Representative

The authority and responsibility for establishing, implementing, and maintaining the quality management system is delegated to the Quality Assurance Manager, who reports directly to the General Manager. The Quality Assurance Manager is responsible for reporting on the performance of the quality system and, if and when there is a need for improvement. The Quality Assurance Manager also ensures that customer requirements are communicated and promoted throughout NWRE and is responsible for delegated quality activities. As the organization's management representative for quality, the Quality Assurance Manager has been assigned the necessary authority and organizational freedom and unrestricted access to top management to resolve quality

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management issues. The management representative is actively involved in decisions related to development, sales, manufacturing and delivery and has the responsibility to ensure that the requirements of TS16949:2009, ISO9001:2008 and AS9100 Rev. C are met and maintained. Customers will be notified of changes in the management representative assignment as appropriate.

Delegated quality activities will follow procedures that include corresponding training, proficiency requirements, and a process for retracting delegated authority.

If and when the company utilizes external delegated quality verification it shall be controlled and authorized per procedure QP10180.

5.5.2.1 Customer Representative

The Sales Manager is the customer representative with the responsibility and authority to ensure that customer requirements are addressed. The Sales manager directs the Sales / Customer Service staff in the determination of customer specific requirements and ensures that the requirements are understood and implemented within NWRE. These requirements may include, but are not limited to, special characteristics, quality objectives, related training, corrective and preventative actions and product development.

5.5.3 Internal Communication

NWRE's management team has established appropriate internal communication processes to communicate on the effectiveness of the quality management system. This communication begins at the management review meetings where the effectiveness of the quality management system is reported, discussed and analyzed. The communication is flowed throughout the organization by management to supervisors and other employees. Bulletin boards are used to display company objectives performance, customer feedback and continuous improvement activities. Staff and department meetings are held as needed to communicate company performance, safety issues and report on the state of the company.

5.6 Management Review

NWRE's Management Team reviews the quality management system on a regular basis to evaluate the adequacy and effectiveness of the system and to ensure its continued suitability. The review includes opportunities for improvement and changes that may be required to meet current and future needs related to the quality policy and quality objectives. The results of the reviews are recorded and maintained to provide evidence of improvement and achievement of quality objectives related to the business plan and customer satisfaction with the products supplied. Details of the management review inputs and outputs are described in quality procedure QP10040.

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6.0 RESOURCE MANAGEMENT

6.1 Provisions of Resources

NWRE's Management Team is responsible for allocating adequate resources and competent personnel with the appropriate education, trained skills, and experience to ensure that verification activities can be handled in a thorough and effective manner. This includes the resources necessary for implementing, maintaining and continually improving the quality management system with the aim of meeting customer requirements and enhancing customer satisfaction.

6.2 Human Resources and Training

NWRE is committed to ensuring that personnel performing work affecting conformity to product requirements are qualified and competent based on appropriate education, training, skills and experience. NWRE personnel are made aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives. NWRE procedure QP10050 defines the methods used to determine the necessary competence for personnel and provide and evaluate training to ensure that training activities are effective. The procedure also identifies the method used to maintain records of education, training, skills and experience.

6.3 Infrastructure

NWRE determines, provides and maintains an infrastructure to achieve product conformity requirements. The infrastructure includes, but is not limited to, buildings, workspace, utilities, process equipment and support services. Methods, such as, lean manufacturing have been developed and implemented to evaluate and monitor the effectiveness of the existing operations. NWRE utilizes lean manufacturing principles with a multidisciplinary approach to develop and optimize plant, facility and equipment plans that include considerations for material travel, handling and value-added use of floor space.

Contingency plans have also been developed in order to satisfy customer requirements in the event of an emergency such as utility interruption, labor shortage, key equipment failure and field returns.

6.4 Work Environment

NWRE provides and manages a safe and clean work environment to achieve product conformity. Factors, such as, temperature, humidity, lighting, cleanliness and protection from electrostatic discharge are considered and controlled in relation to product requirements. The company premises are maintained in a state of order, cleanliness and repair consistent to the manufacturing process. Product safety and potential risks to employees are considered and addressed during development and manufacturing process activities.

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7.0 PRODUCT REALIZATION

7.1 Planning of Product Realization

A quality plan is defined as a document that specifies the processes of the quality management system and the resources to be applied to a specific product, project or contract. NWRE utilizes a production traveler to ensure that all production activities are planned and defined before initiating the order and are carried out under controlled conditions.

The travelers for new products are developed from the information gathered during the quotation and contract review process. The output from these review processes include, as appropriate: product requirements, quality objectives, required documents, resources including those needed to support operation and maintenance of the product, and the establishment of any needed processes. The required verification, validation, monitoring, measurement, inspection and test activities specific to the product and the criteria for product acceptance will be identified on the traveler and related documents. When applicable, customer requirements and references to the associated technical specifications will be included in the quality plan along with customer approved acceptance criteria, configuration management, and resources that support the use and maintenance of the product. The completion of each sequence of the traveler provides a record of evidence that the realization process and the product meet the requirements. These records are maintained per NWRE **QP10030 Control of Quality Records**.

Automotive customers that invoke ISO / TS 16949 requirements will be identified on the contract review form. NWRE will include advanced product quality planning (APQP) activities along with the above quality planning for these customers.

Boeing travelers (quality / manufacturing plans) will be reviewed by the Quality Department for inclusion of all quality requirements, signed and dated before release for manufacturing. When special processes requiring Boeing approval are required by drawing, specification, or contract, NWRE will obtain qualification before processing or subcontracting the process to a Boeing approved source.

NWRE maintains a confidentiality program to ensure the confidentiality of customer-contracted products and projects under development and related product information.

The Plant Manager or the General Manager is authorized to review and approve changes made to production processes. They shall identify those changes, which require customer or regulatory acceptance in accordance with contractual or regulatory requirements before approving changes. Changes affecting processes, production equipment, tools, and programs shall be documented. Procedures shall be available to control their implementation. The results of changes to production processes shall be assessed by the Plant Manager to confirm that the desired effect has been achieved without adverse effect to product quality.

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7.1.1 Project Management

NWRE plans and manages product realization in a structured and controlled manner to meet the requirements at acceptable risk and within resource and schedule constraints as appropriate to NWRE and the product.

7.1.2 Risk Management

NWRE does not perform product engineering design functions and, therefore, takes exception to the design and development requirements of section 7.3. Risk is evaluated at the quotation phase and, if necessary, managed as appropriate to NWRE and the product. The process is defined in **QP10070 Contract Review**.

7.1.3 Configuration Management

Due to the nature of NWRE products, configuration management is typically not applicable. If configuration management is applicable, NWRE will maintain the identification of the configuration in a manner that identifies any differences between actual configuration and the agreed upon configuration. See **QP10060 Process Control** and **QP10110 Identification and Traceability** for additional details.

7.1.4 Control of Work Transferred on a Temporary Basis

Work that is occasionally, temporarily or permanently planned to be performed outside NWRE's facility will be assigned a Traveler, which will define the process, identify the location, and control the work performed. Typically these products are subject to receiving inspection to verify conformity once returned to NWRE along with the documentation.

Additional details of planning of product realization can be found in NWRE quality procedures **QP10060 Process Control** and **QP10070 Contract Review**.

7.2 Customer Related Processes (Contract Review)

7.2.1 Determination of Requirements Related to the Product

NWRE's procedure **QP10070 Contract Review** defines the process for the review of new customer contracts / purchase orders. The contract review process is used to determine customer designated requirements and any special characteristics, including the requirements for delivery and post delivery activities. This review is also used to identify any requirements that are not stated by the customer but are necessary for specified or intended use and any statutory, regulatory or additional requirements as determined by NWRE.

Repeat purchase orders / contracts or releases of established products will be reviewed and approved by Order Entry in lieu of the sales person responsible for the account. Order Entry will review the purchase order, contract to verify the correct: part number, part name, revision level, price, quantity, material, components, and delivery are

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appropriate. Prices are reviewed by the sales department on a periodic basis as directed by management. When Order Entry identifies a part's quote has expired, the purchase order is routed to the Sales Department for review or renewal. Any purchase order / contract discrepancies or changes noted by Order Entry will cause the purchase order / contract to be given to the responsible sales person for resolution. Any verbal orders are considered advisory until a written purchase order / contract is received from the customer. A copy of the customers approved purchase order / contract will be acknowledged and sent to the customer by Order Entry to confirm receipt of the order. An NWRE sales order is then written by Order Entry and filed in the open order file.

7.2.2 Review of Requirements Related to the Product

For new orders, a review of the requirements related to the product is conducted prior to NWRE's commitment to supply the product to the customer. This is generally done during the quotation phase to ensure that the product requirements are defined, any contract or order requirements differing from those previously expresses are resolved, any special requirements are determined and that NWRE has the ability to meet the defined requirements and manufacturing the product is feasible. Risks, such as, new technology or short delivery time frames will also be evaluated at this time. When changes in product requirements are made, NWRE Sales will ensure that relevant documents are amended and relevant personnel are made aware of the changed requirements. If and when the customer is unable to provide documented requirements, NWRE will confirm with the customer that no documented requirements are invoked prior to acceptance of the order. The formal review of new requests for quotes / orders will only be waived at the customers' request and authorization. Records of the review, including results and actions, will be maintained per NWRE **QP10030 Control of Quality Records**.

7.2.3 Customer Communication

Customer communication related to product information, inquires, purchase order, contract or order handling, amendments, customer feed back, including customer complaints will be channeled through the sales department. NWRE will maintain the ability to communicate necessary information, including data, in a customer specified language and format as found feasible.

7.3 Design and Development

NWRE does not perform product engineering design functions and, therefore, takes exception to the design and development requirements of section 7.3. Development support and assistance in providing the customer with material or product configuration information is provided when requested. The manufacturing process design portions included in this section are only applicable to automotive customers that invoke ISO / TS 16949 requirements as identified on the contract review form. NWRE will include advanced product quality planning (APQP) activities along with the typical quality planning identified in section 7.1 for these customers.

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7.3.1 Multidisciplinary Approach

NWRE utilizes a multidisciplinary approach to prepare for product realization of automotive products through Advanced Product Quality Planning (APQP) as recommended by The Automotive Industry Action Group (AIAG). This method includes, but is not limited to, the development / finalization and monitoring of special processes, the development and review of Failure Mode and Effects Analysis (FMEAs) including actions to reduce potential risks, and the development and review of control plans.

7.3.2 Manufacturing Process Design Input

During APQP activities the team will identify, document and review the manufacturing process design input requirements including product design output data, targets for productivity, process capability and cost, customer requirements and experience from previous developments.

Any applicable special characteristics (product characteristics and / or process parameters) will be identified and included in the control plan and will comply with the customer specified definitions and symbols. These special characteristics will be identified on process control documents including drawings, FMEAs, control plans and operator instructions when applicable.

7.3.3 Manufacturing Process Design Outputs

The manufacturing process design output will be expressed in terms that can be verified against the corresponding inputs and validated. Manufacturing design output will include, as applicable; specifications, drawings, process flow chart / layout, process FMEAs, control plans, work instructions, process approval acceptance criteria, data for quality, reliability, maintainability and measurability, results of error proofing activities and methods of rapid detection and feedback of production / manufacturing process nonconformities.

7.3.4 Manufacturing Process Verification and Validation.

Manufacturing process verification and validation is completed through the planned arrangements identified in NWRE quality procedure **QP10200 First Article Production**. The first article production ensures that the manufacturing process outputs meet the input requirements and produce a product that meets the customers' requirements. This activity is completed prior to the delivery or implementation of the product and is documented through the Production Part Approval Process (PPAP) as recommended by the Automotive Industry Action Group (AIAG) and maintained as a quality record. NWRE will conform to a product and manufacturing process approval procedure that is recognized by the customer. The same product and manufacturing process approval procedure will be applied to the supplier as necessary.

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7.3.5 Prototype Program

NWRE utilizes an R&D process to produce prototype parts at the request of the customer. Whenever possible, NWRE uses the same suppliers, tooling and manufacturing processes for the production part. If and when performance testing activities are requested and prescribed by the customer, NWRE maintains the responsibility for all outsourced services.

7.3.6 Control of Manufacturing Process Changes

Once the manufacturing process has been established, verified and validated, changes will be controlled per NWRE quality procedure **QP10060 Process Control**.

7.4 Purchasing

7.4.1 Purchasing Process

Quality procedure **QP10080 Purchasing** defines the purchasing process used at NWRE to ensure that all purchased products and / or materials used in products meet the specified requirements of the purchase order, including any statutory and regulatory requirements. NWRE maintains the responsibility for the quality of all products purchased from suppliers, including customer designated or approved sources.

Suppliers are assessed and evaluated based on their ability to supply product in accordance with the specified requirements. The assessment of suppliers consists of an initial assessment and ongoing monitoring of performance. In some cases, customer specified suppliers, sole source suppliers and suppliers without an official quality system may be evaluated based on first time receipt of acceptable product or service and may be listed as Conditional. Approval is granted by the Quality Manager and the Purchasing Agent and can be withdrawn by the Quality Manager due to the supplier's poor performance. Once approved, the supplier is added to the Approved Supplier List (ASL), which includes their scope of approval. All suppliers are made aware of NWRE's purchasing terms and conditions and are required to enter into a confidentiality agreement if they receive or have access to confidential information.

The suppliers' performance is monitored through delivered product quality, customer disruptions including field returns, delivery schedule performance and special status customer notifications related to quality or delivery issues.

Suppliers of products or materials for automotive customers that invoke ISO / TS 16949 requirements are required to be third party registered to ISO9001:2008 unless otherwise specified by the customer. These suppliers are prioritized by the importance of the product supplied and are developed and encouraged toward conformity to ISO / TS 16949:2009.

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7.4.2 Purchasing Information

NWRE purchase orders will contain a clear description of the product or service ordered and includes appropriate Identification, part number, revision level references, and other relevant data as outlined in NWRE quality procedure **QP10080 Purchasing**. These purchase orders are reviewed and approved prior to release to the supplier.

The flow-down of right-of-entry provisions and requirements relative to the notification of changes, records retention, anomalies and non-conforming materials are communicated through NWRE purchasing terms and conditions.

7.4.3 Verification of Purchased Product

Purchased product or material is subjected to verification per NWRE quality procedure **QP10100 Receiving Inspection**. It is the responsibility of NWRE to verify conformance of purchased product before acceptance. This verification may take place at NWRE or the supplier's premises by NWRE personnel. Delegation of verification is not permitted. NWRE will utilize one or more of the following methods before further processing:

- Receiving Inspection and / or Testing (such as sampling based on performance).
- Receipt and evaluation of statistical data by NWRE.
- Part evaluation by a designated laboratory.
- Second- or third-party assessments or audits of the supplier sites, when coupled with records of acceptable delivered product quality.
- Another method agreed upon with the customer.

The customer may verify the acceptability of the product at the source or on receipt when specified in the contract. This however, does not absolve NWRE of the responsibility for verifying conformity to product requirements, including the possibility of rejection.

When the customer provides approved sources for special processes they must be used by NWRE and the supplier. NWRE flows down quality system requirements to suppliers to the extent necessary to ensure that the supplier adequately controls characteristics not verifiable upon receipt.

7.5 Production and Service Provision

Due to the nature of our products, NWRE does not perform product service operations or post delivery support; therefore, this section mainly addresses production provisions.

7.5.1 Production Process Control

NWRE plans and initiates production provisions under controlled conditions as outlined in quality procedure **QP10060 Production Process Control**. The planning considers, as applicable, the establishment of process controls and development of control plans where key characteristics have been identified, the identification of in-process

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verification points for special processes, and the design, manufacture, and use of tooling so that variable measurements can be taken with particular attention to key characteristics.

Production process verification in the form of first article inspection is addressed in section 8.2.4.1 of this policy and described in **QP10200 First Article Production and Inspection**.

7.5.1.1 Control Plans

For automotive customers that invoke TS16949:2009, control plans are established during Advanced Product Quality Planning (APQP). The control plan is developed at the system, sub-system, component and / or material level for all product supplied, includes the manufacturing process FMEA outputs and is available for pre-launch and production.

The control plan will identify the controls used for the manufacturing process, include any customer required information, the methods of monitoring the control of special characteristics that have been defined by the customer or NWRE and initiate a reaction plan when the process becomes unstable or not capable of delivering acceptable products. These control plans will be reviewed and updated when changes occur that affect product, manufacturing process, measurement, logistics, supply sources or FMEA.

7.5.1.2 Production Documentation and Control of Production Process Changes

NWRE completes production operations in accordance with approved data, such as but not limited to, drawings, parts lists, inspection documents, process flow charts that include inspection operations, a list of specific and non-specific tools and numeric control machine programs including instructions associated with their use and production documents.

The main production document at NWRE is the production traveler. The Traveler assigned to the product being produced is developed to include the quality plan requirements and other pertinent data that is identified on the Contract Review Order Checklist Form #245. The traveler identifies the process sequence, product inspection, testing, special procedures, standards, key characteristics and any codes needed to manufacture the product. Special requirements that are included on the customers purchase order or contract will be included on the Traveler, including any requirements for qualification of processes, equipment or personnel.

The Traveler provides a space for acknowledgement of all items to be signed off and dated for verification of job set-up, operations completed, inspection compliance and quantities of product accepted and / or rejected. *Boeing Travelers are reviewed by the Quality Department for inclusion of all quality requirements, then signed and dated for verification prior to release for manufacturing.*

Work Instructions are prepared and available at work stations for all employees having responsibilities for the operation of processes that impact product quality. These work

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instructions will be derived from sources such as the quality plan, the control plan and the product realization process and may be specific to the product or process. The work instructions include job set-up instructions that are then validated and documented on the traveler during initial run, material changeover or job change. Statistical methods of verification are used when and where applicable.

The Plant Manager or the General Manager is authorized to review and approve changes made to production processes. They shall identify those changes, which require customers or regulatory acceptance in accordance with contractual or regulatory requirements before approving changes. Changes affecting processes, production equipment, tools, and programs shall be documented. The results of changes to production processes shall be assessed by the Plant Manager to confirm that the desired effect has been achieved without adverse effect to product quality.

7.5.1.3 Control of Production Equipment and Tooling and Software Programs

New customer furnished and reactivated tooling shall be released for production use only after parts produced have been verified to the part drawings and specifications and approved either by the customer or the NWRE Sales representative with customer granted approval authority. The Plant Manager is responsible to ensure that all customer owned tooling is accurately identified, inventoried, and that records kept for the type of tool, tooling number, customer name, and tool location. These records shall document proper control and care of customer owned tooling.

Tooling is inspected at the end of each production run by the appropriate department supervisor or designated individual. The inspector examines the tool for visual damage to verify the continued accuracy of the tool for manufacturing use. Tooling is properly stored and controlled to prevent misuse, damage, and deterioration. Periodic or routine inspection intervals of customer tooling are tightened or loosened based on data collected from previous inspections. *Additional Boeing tooling inspections may be initiated by Boeing or as defined in Boeing document D33200.*

Order Entry is responsible for maintaining a list (Black Book) of specific or non-specific tools used in production operations and numerical control (NC) machine programs for applicable machines. The documents associated with the specific tools enabling the tool to be designed, produced, validated, controlled, and used will be maintained per NWRE procedure **QP10030 Control of Quality Records**.

Production equipment is effectively maintained through the preventive and predictive maintenance program. The program identifies and provides resources for key process equipment and includes planned maintenance activities, packaging and preservation of equipment, tooling and gauging, availability of replacement parts for key equipment and documenting, evaluating and monitoring maintenance objectives. If and when applicable, predictive maintenance methods will be used to continually improve that effectiveness and efficiency of production equipment.

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7.5.1.4 Production Scheduling

The Plant Manager is responsible for providing a production schedule which tracks the traveler number, completion status and the location of the product being produced. Production scheduling is order driven and intended to meet customer delivery requirements, such as, just-in-time.

7.5.2 Validation of Processes for Production & Service Provisions (Special Processes)

Special processes are defined as processes that cannot be verified by subsequent inspection and testing of the product and where process deficiencies may become apparent only after the product is in use. These processes will be carried out by qualified personnel and / or require continuous monitoring and control of process parameters in order to verify that the specific requirements are met.

These special processes may be controlled and validated through the use of certified operators, statistical process control, quality assurance monitoring or other methods acceptable to the customer. The control and validation method(s) will demonstrate the ability of the process to achieve planned results. The qualification requirements of process operations, equipment, and personnel will be specified and documented and the records will be maintained.

When special processes are identified NWRE will make arrangements, as applicable, to define the criteria for review and approval of the process, obtain qualification and approval prior to use, obtain approval of equipment and qualification of personnel, use specific methods and procedures, control significant operations and parameters in accordance with documented process specifications and define record requirements and revalidation.

7.5.3 Identification and Traceability

NWRE describes and defines the process of identification and traceability in quality procedure **QP10110 Product Identification and Traceability**. All material is identified upon receipt and during all stages of production by means of an attached label, storage bin label or marking on the material. Product is identified by individual tagging or marking, or in the case of multiple parts, by marking or tagging the container. Unique identification of individual product or lots are maintained to provide traceability to the applicable materials. Traceability is documented on NWRE's Traveler and supporting documentation and is maintained in the appropriate quality record file. If identification or traceability is lost NWRE will process the material as nonconforming product.

The product's inspection and test status will be identified on the product or through sequence completion of the traveler. The traveler will be readily available at or near the location of the product. The inspection stamps, electronic signatures or passwords used as acceptance media are maintained and controlled per NWRE quality procedure **QP10120 Inspection and Test Status**.

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If and when special levels of traceability are required by contract, regulatory agency or other, NWRE will provide for the following as applicable;

- Identification to be maintained throughout product life
- All products manufactured from the same batch of raw material or from the same manufacturing batch to be traced as well as the destination of all products of the same batch
- The identity of all components of an assembly and those of the next higher level to be traced
- The sequential record of a products manufacture, assembly or inspection to be retrieved.

Due to the nature of NWRE products, configuration management is typically not applicable. If configuration management is applicable, NWRE will maintain the identification of the configuration in a manner that identifies any differences between actual configuration and the agreed upon configuration.

7.5.4 Customer Property

Customer supplied product is subject to receiving inspection per NWRE quality procedure **QP10100 Receiving Inspection**. Product received in a nonconforming or damaged condition is documented on a nonconformance report (NCR), identified and segregated. The customer is then notified of the nonconformance or defect. After receipt of the product any product that becomes lost, damaged, or unsuitable for use will be recorded on an NCR and reported to the customer. Customer supplied product / property is maintained and stored per NWRE quality procedure **QP10130 Control of Customer Supplied Product**.

Customer supplied documents such as specifications and drawings will be controlled per NWRE quality procedure **QP10020 Document Control**. Records or documents associated with customer supplied products will be controlled and maintained per NWRE quality procedure QP10030.

Customer supplied tooling is addressed in NWRE quality procedure **QP10060 Process Control**. Customer owned manufacturing, test, inspection tooling and equipment will be permanently marked so that the ownership of each item is visible and easily determined.

7.5.5 Preservation of Product

NWRE maintains quality procedure **QP10140 Preservation of Product** that describes and defines the specific methods of handling, storage, packaging, preservation and delivery of products. The product is handled to preserve the conformity of the product and prevent damage or deterioration at all stages of production. Preservation of product includes, where applicable, the provisions for cleaning, prevention, detection and removal of foreign object debris (FOD), special handling for sensitive products or hazardous materials, marking and labeling requirements including safety warnings, and shelf life control and stock rotation. Bins, containers, pallets, trays, racks, or bags are

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used, as applicable, to move product in-house. Defined storage areas are provided for product prior to use. Receipt and issue of materials from stores is performed in accordance with written instructions. Storage methods and first-in-first-out (FIFO) stock rotation maintains the product quality and identification. Product susceptible to deterioration is identified and assessed at defined intervals. Product of limited shelf life is identified with expiration date.

Product approved for delivery to customers is packaged to provide adequate protection from damage during storage and delivery. The use and configuration of packaging material is defined in written specification, Work Instructions or in accordance with the customers' requirements. Packaged product is appropriately identified. The Shipping documentation identifies the product, customer and destination. Unless otherwise instructed by the customer, carriers are selected by NWRE based on the ability to provide dependable delivery without product damage. The pack list and applicable quality documentation, as defined by the contract, are included with all shipments.

7.6 Control of Monitoring and Measuring Equipment

All tools and test equipment used to provide evidence of conformity to specified requirements for NWRE's products are controlled, calibrated and maintained per NWRE quality procedure **QP10150 Control of Inspection, Measuring and Test Equipment**. A list of all inspection, measuring, and test equipment is maintained in a computer database. All such equipment is uniquely identified and records are maintained that identify the equipment's type, location, frequency of checks, check methods and acceptance criteria.

Technical data pertaining to inspection, measuring, and test equipment, as a specific requirement, will be made available to the customer for verification that the equipment is functionally adequate. Calibration activities are traceable to the National Institute of Standards and Technology (NIST). Where no standard exists, the basis used for calibration or verification will be identified and recorded. The calibration interval is dependent upon use, findings and conditions. The Quality Assurance Manager authorizes any changes to the calibration interval before the change is implemented. Calibration and use of the equipment is to take place in suitable environmental conditions. The calibration status is displayed on all inspection, measurement, and test equipment and the items are safeguarded against adjustments that would invalidate measurement results. Records of calibration are maintained to provide details of results, traceability, and calibration intervals. If and when test hardware and / or software is used in production, it is verified prior to use in order to prove its capability to verify the acceptability of product and is re-verified at prescribed intervals. Accuracy of inspection equipment will generally be 10 times the tolerance, with a minimum of 4 times the tolerance. All devices used to accept parts, including supplier and employee owned tools are included in a calibration system. When a measuring device is found to be out of calibration it is adjusted or re-adjusted as necessary. An evaluation also takes place to determine if the erroneous readings may have resulted in the production of non-conforming product. If so, the product is recalled for re-inspection. Measuring and

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test equipment is handled, stored, and transported in a manner that prevents damage, deterioration and a negative effect on calibration or the condition of the equipment.

7.6.1 Measurement System Analysis

Measurement systems that are referenced in a control plan that is developed during advanced product quality planning (APQP), will be analyzed. Statistical studies are conducted to identify the variation that is present in the results of each type of measuring and test equipment. The Automotive Industry Action Group (AIAG) Measurement Systems Analysis (MSA) manual is used to identify the analytical methods and acceptance criteria for the MSA studies. Other methods and acceptance criteria may be used with the customer's approval.

7.6.2 Laboratory Requirements

NWRE staffs and maintains a quality control laboratory that performs inspections and materials testing. The scope of the laboratory activities and capabilities is included in Appendix 3 of this document. The technical requirements for adequacy of procedures, competency of personnel and capabilities relevant to the applicable standards are specified, implemented and reviewed. Documentation is provided for calibration when performed in house according to the scope of NWRE's internal QC laboratory.

External laboratory facilities used for inspection, test or calibration services will be approved and identified on the approved supplier list. A record of their approval and qualifications will be on file. These external laboratories are required to have a defined scope that includes the capability to perform the required inspection, test or calibration and be certified to ISO/IEC 17025 or other national equivalent. In the event that a certified laboratory is not available or practically feasible, the customer will be contacted to obtain approval of the laboratory.

8.0 MEASUREMENT, ANALYSIS AND IMPROVEMENT

8.1 General

NWRE's management team is responsible for the measurement, analysis and improvement processes that demonstrate conformity of the product and ensure conformity and continual improvement of the effectiveness of the quality management system. The processes are described and defined in NWRE quality procedure **QP10160 Measurement, Analysis and Improvement**. These include the determination of applicable methods including, where applicable, statistical techniques and the extent of their use. Basic statistical concepts will be understood and utilized throughout the organization where applicable. When Advanced Product Quality Planning (APQP) is used, appropriate statistical tools will be determined for the process and included in the control plan.

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8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction

The perception of customer satisfaction is monitored and measured by the analysis of data provided from internal schedule performance, quality reports, customer feedback (complaints) and corrective action requests. The customer feedback may include but not limited to customer supplied vendor ratings and audits, other sources that include delivered part quality performance, customer disruptions or field returns, delivery performance (including incidents of premium freight) and the customers' notification related to quality and delivery issues. This information will be included in the management meeting notes / agenda.

8.2.2 Internal Audits

NWRE performs internal audits of the quality management system in relation to ISO/TS 16949:2009, ISO9001:2008 and AS9100 Rev. B. Internal audits are planned to ensure that all aspects of the quality management system processes, including all activities and shifts, are audited at least once a year. The internal audits will also meet any applicable contract and regulatory requirements. The frequency of the audits is determined by the results of previous audits, customer complaints and the significance of the individual system activities. The audits include an evaluation of the effectiveness of activities, processes, products, work areas, and services being performed and any associated documentation. Qualified staff that is independent of the work being performed audit in compliance with NWRE quality procedure **QP10170 Internal Quality Audits**.

Detailed tools and techniques are developed such as check sheets, process flowcharts or any similar method that supports auditing of the quality management system. All findings and observations are documented during the audits and the individuals responsible for the audited areas review and agree on the corrective actions that are required to correct any deficiencies. The corrective or preventive actions are completed according to NWRE quality procedure **QP10220 Corrective and Preventive Action**. Corrective and preventive actions receive followed up activity to ensure that the corrective action has been implemented and is effective in solving the problem. Management reviews the internal audit reports to ensure the continued effectiveness of the quality management system and determine if there are any improvements to be made.

8.2.3 Monitoring and Measurement of Processes

The quality management system processes of NWRE are monitored and, where applicable, measured to demonstrate the ability of the processes to achieve the planned results. When planned results are not achieved or a process is found to be nonconforming, NWRE takes appropriate action to correct the nonconformance, evaluates the process nonconformity to determine if it has resulted in product nonconformity, and determine the extent of the nonconformity related to other processes or products. If product nonconformity exists, NWRE will identify and control the nonconforming product and take the appropriate corrective action to ensure the

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conformity of the product per NWRE quality procedure **QP10210 Control of Nonconforming Product**.

8.2.3.1 Monitoring and Measurement of Manufacturing Processes

On new products for automotive customers that invoke ISO / TS 16949 requirements, process studies are performed to verify process capability and provide additional input for process control. The process study results are included with the Production Part Approval Process (PPAP) documentation. The results of the process studies are used to determine any necessary process specification limits, objectives, and acceptance criteria. The process capability or performance identified in the approved production part (PPAP) documentation will be maintained along with the control plan and process flow diagram specifics, such as, measurement techniques, sampling plans, acceptance criteria and reaction plans.

Reaction plans for characteristics that are not statistically capable or unstable will be initiated. The reaction plans will include containment of the product and 100% inspection as appropriate. Corrective action is taken to assure that the process becomes stable and capable. This corrective action plan or changes to the reaction plan will be reviewed and approved by the customer if required.

Significant process events, such as tool changes or machine repair are recorded. NWRE maintains records of process changes and their effective dates.

8.2.4 Monitoring and Measurement of Product

NWRE monitors and measures characteristics of the product at various stages of product realization to verify that the product requirements have been met. This includes key characteristics that have been identified. The monitoring and measurement stages include receiving inspection, in-process inspection and final inspection and are documented procedures.

Product is not used until it has been inspected or otherwise verified as conforming to the specific requirements unless released under positive-recall procedures pending completion of all requirement measuring and monitoring activities. Sequence completion and inspection sign-off on the traveler provides evidence of conformity with the acceptance criteria. Other production documentation that includes additional information, such as, criteria for acceptance and / or rejection, where in the sequence measurement and test operations are performed and type of measurement instruments are required may be used. Product release does not proceed until all of the planned arrangements have been satisfactorily completed unless otherwise approved by the relevant authority or the customer. The traveler identifies the person authorizing the release of the product and is maintained as a quality record. Test records show the actual test results data when required by the specification or acceptance plan. When required to demonstrate product qualification records will provide evidence that that product meets that defined requirements.

Sampling inspection used for product acceptance is outlined and defined in NWRE quality procedure **QP10090 Statistical Sampling**. The sampling plan is statistically valid

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and is based on acceptance on zero criteria (C=0). Nonconforming conditions are not permitted in a sample. The procedure or sampling plan is submitted for customer approval when required.

For products that are designated by the customer as appearance items, NWRE provides the appropriate resources as needed. These may include lighting or evaluation equipment, masters for color, grain, gloss and texture. The maintenance and control of appearance masters and verification of personnel competence and qualification in appearance evaluations is also provided.

8.2.4.1 First Article Inspection

NWRE completes first article inspection (layout inspection) of all new products. Quality procedure **QP10200 First Article Production and Inspection** describes the inspection, verification and documentation of a representative item from the first production run of a new part or following any change that invalidates the previous first article. The first article inspection includes the product dimensions, layout inspection and functional verification to the applicable customer purchase order, engineering design records and material / performance standards as applicable. NWRE provides for the customers' designation of first article method, such as, AS9102 for aerospace or Production Part Approval Process (PPAP) for automotive.

8.3 Control of Nonconforming Product

NWRE quality procedure **QP10210 Control of Nonconforming Product** identifies the method that NWRE uses to ensure that product that does not conform to specified requirements is prevented from unintended use or delivery. The procedure defines the responsibility for review and authority for the disposition of the nonconforming product and the process for approving personnel that make these decisions. The control of nonconforming product procedure applies to all nonconforming product and materials including products or materials received from suppliers, NWRE product from nonconforming processes, product returned to NWRE from the customer and any unidentified or suspect product or material.

All nonconforming products and materials are identified and segregated from conforming products. The details of the nonconforming product are documented, indicating the material or product identification, the description of the non-conformance, and the quantity involved. The nonconformance details are forwarded to the Quality Assurance Manager for review and evaluation.

The nonconforming product disposition is indicated and may include, use-as-is (with customer approval), rework, re-grade or scrap. For use-as-is disposition of product or manufacturing processes that are different from that which is currently approved, NWRE will obtain the customer's approval prior to further processing. This applies equally to purchased product. NWRE will maintain a record of the expiration date or quantity authorized to ensure compliance with the original or superseding specifications and requirements when the authorization expires. Material that is shipped on an authorization will be properly identified as such on each shipping container.

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All reworked product will have rework instructions and is re-inspected and / or re-tested in accordance with documented procedures prior to release. The rework instructions and re-inspection verification may be included on the nonconformance report in the disposition area or on a rework traveler.

Product that is dispositioned as scrap is conspicuously and permanently marked or positively controlled until rendered unusable and / or discarded. *Boeing product that is dispositioned as scrap is mutilated and destroyed.* This process is recorded on the nonconformance report and the completion signed and dated by the Quality Manager.

Customers are promptly notified in detail when a non-conformity is discovered in the processes or product that may affect product that has already been delivered. This includes the notification to customers and / or regulatory authorities on issues of product reliability and / or safety. The notification will include a clear description of the nonconformity and identify the parts affected, customer and / or organization part numbers, quantity and dates delivered.

8.4 Analysis of Data

NWRE collects and analyzes data to demonstrate the suitability and effectiveness of the quality management system and identify opportunities for continual improvement. The data generated from measuring and monitoring, along with other sources, provides information relating to customer satisfaction, conformity of product requirements, suppliers, characteristics / trends of processes and products including opportunities for preventive action. Trends in quality and operational performance are compared with the progress toward objectives and lead to action to support the development of priorities and prompt solutions to customer related problems. Key customer related trends and correlations are used for decision making and long term planning. These actions also support the information system used for timely reporting of product information related to usage.

8.5 Improvement

8.5.1 Continual Improvement

The continual improvement process and activities are outlined in NWRE quality procedure **QP10160 Measurement, Analysis and Improvement**. The management team of NWRE utilizes and analyzes the information and data gathered from the quality policy, quality objectives, audit results, corrective and preventive action through management review. The management team selects continuous improvement projects from manufacturing as well as supporting business processes and determines the objectives, the method of measurement, and evaluates the ability of the process or product to achieve the results of the plan. Manufacturing process improvement is focused on controlling and reducing variation in the product characteristics and manufacturing process as far as economically feasible. The results are integrated with the corrective and preventive action system as necessary.

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The management team selects the specific continuous improvement projects, including their priorities and subsequent activities to achieve their objectives. They collect and analyze appropriate data along with supporting input provided by the responsible managers and / or supervisors. Categories for project selection may include, but are not limited to:

- Customer Satisfaction (includes the customers' perception as to whether NWRE has met their requirements)
- Quality
- Employee Welfare i.e. Training, Attendance, Safety
- Product and process improvement and consistency
- Supplier Performance

8.5.2 Corrective and Preventive Action

NWRE quality procedure **QP10220 Corrective and Preventive Action** establishes and defines the requirements for; reviewing nonconformities, reviewing customer complaints, analyzing rejected products, determining root causes of nonconformities, evaluating the need for actions to prevent reoccurrence, reviewing corrective action taken and maintaining the records of the results of actions taken. NWRE uses various methods of problem solving to identify the root causes, unless the customer prescribes a certain format. In that case NWRE will use the customer prescribed format. Error proofing is used when and where it is both economical and feasible. Similar processes and products are considered to determine if the corrective action and controls implemented can be applied to eliminate other potential nonconformance. When it is determined that the supplier is responsible for the root cause, the corrective action requirement is flowed down to the supplier. In cases where timely and / or effective corrective actions are not accomplished, the specific actions are documented and the corrective action is escalated within NWRE.

Preventive action is also included in NWRE quality procedure **QP10220 Corrective and Preventive Action** and establishes and defines the requirements for; determining potential nonconformities and their causes, evaluating the need for action to prevent occurrence of nonconformities, determine and implementing action needed. Records of the results of actions taken and reviewing the preventive action are maintained. Other sources and methods of Preventive Action exist and provide evidence of these activities such as:

- Continuous Improvement Projects
- SWOT Analysis Activities
- Lean Manufacturing Activities
- FMEA & CA activities applied to similar products or processes
- Activities resulting from customer feedback, sales calls or customer / supplier visits
- Preventative & Predictive Maintenance

Appendix 1

NWRE Cross Reference Matrix / Index

<i>ISO9001 / AS9100 Section</i>	<i>NWRE Title</i> Also see NWRE Process Interaction Diagram	<i>NWRE Quality Policy Reference</i>	<i>NWRE Quality Procedure Reference</i>
N/A	Introduction to NWRE	2.0	N/A
N/A	Quality Policy Statement	5.3	N/A
N/A	Company Mission Statement	5.3	N/A
N/A	Policy Manual Structure, Scope of Application and Approval	4.1	N/A
4.2 Documentation Requirements	Quality System Planning	5.4	QP10010
4.2.3 Control of Documents	Document Control	4.3	QP10020
4.2.4 Control of Records	Control of Quality Records	4.4	QP10030
5.1 Management Commitment	Management Responsibility	5.0	QP10040
5.2 Customer Focus	Management Responsibility	5.0	QP10040
5.3 Quality Policy	Management Responsibility	5.0	QP10040
5.4 Planning	Management Responsibility	5.0	QP10040
5.5 Responsibility, Authority and Communication	Management Responsibility	5.0	QP10040
5.6 Management Review	Management Responsibility	5.0	QP10040
6.1 Provision of Resources	Management Responsibility	5.0	QP10040
6.2 Human Resources	Training	6.2	QP10050
6.3 Infrastructure	Process Control	6.3	QP10060
6.4 Work Environment	Process Control	6.4	QP10060
7.1 Planning of Product Realization	Quality System Planning	7.1	QP10060
7.2 Customer Related Processes	Contract Review	7.2	QP10070
7.3 Design Control	Design Control	7.3	QP10060, QP10200
7.4 Purchasing	Purchasing	7.4	QP10080
7.4.3 Verification of Purchased Product	Receiving Inspection & Statistical Sampling	7.4.3, 8.2.4	QP10100, QP10090
7.5 Production & Service Provision	Process Control, Service Provision	7.5	QP10060
7.5.3 Identification and Traceability	Product Identification & Traceability	7.5.3	QP10110
7.5.3 Identification and Traceability	Inspection & Test Status	7.5.3	QP10120
7.5.4 Customer Property	Control of Customer Supplied Product	7.5.4	QP10130
7.5.5 Preservation of Product	Handling, Storage, Packaging Preservation and Delivery	7.5.5	QP10140
7.6 Control of Monitoring and Measuring Devices	Control of Inspection, Measuring and Test Equipment	7.6	QP10150
8.0 Measurement, Analysis and Improvement	Measurement, Analysis and Improvement	8.0	QP10160
8.2 Monitoring and Measurement	Internal Quality Audits	8.2.2	QP10170
8.2.3 Monitoring and Measurement of Processes	Measurement, Analysis and Improvement	8.2.3	QP10160
8.2.4 Monitoring and Measurement of Product	Statistical Sampling, In-Process Inspection & Final Inspection	8.2.4	QP10090, QP10180, QP10190
8.2.4.2 First Article Inspection	First Article Production and Inspection	8.2.4.1	QP10200
8.3 Control of Nonconforming Product	Control of Nonconforming Product	8.3	QP10210
8.4 Analysis of Data	Measurement, Analysis and Improvement	8.4	QP10160
8.5 Improvement	Corrective and Preventative Action & Measurement, Analysis and Improvement	8.5	QP10220, QP10160

Appendix 2

Quality Procedure Index

<i>NWRE Title</i>	<i>New NWRE Quality Procedure Reference</i>
Quality System Planning	QP10010
Document Control	QP10020
Control of Quality Records	QP10030
Management Responsibility	QP10040
Training	QP10050
Process Control	QP10060
Contract Review	QP10070
Purchasing	QP10080
Statistical Sampling	QP10090
Receiving Inspection	QP10100
Product Identification & Traceability	QP10110
Inspection & Test Status	QP10120
Control of Customer Supplied Product	QP10130
Handling, Storage, Packaging Preservation and Delivery	QP10140
Control of Inspection, Measuring and Test Equipment	QP10150
Measurement, Analysis and Improvement	QP10160
Internal Quality Audits	QP10170
In-Process Inspection	QP10180
Final Inspection	QP10190
First Article Production and Inspection	QP10200
Control of Nonconforming Product	QP10210
Corrective and Preventative Action	QP10220

Appendix 3

Proprietor: R. Robbins	Northwest Rubber Extruders, Inc.  <i>THE FLEXIBLE PEOPLE</i>	Revision Level: B Revision Date: 11/16/09 Original Issue Date: November 25, 2008
Reviewed By: B. Snyder Signature:		QA Laboratory Scope
Approved By: R. Robbins Signature:		
Title: Internal QA Laboratory Scope		

NWRE's Internal QA Laboratory is staffed and equipped to provide the following capabilities to support quality conformance testing of materials, verify product characteristics as specified by customer requirements and support our customers in research and development. NWRE has participated in the available interlaboratory tests to demonstrate the laboratory's testing capability and competence. Training of quality personnel is conducted, documented, recorded and maintained per NWRE Quality Procedure QP10050. The competence and performance of quality personnel is evaluated at the conclusion of training and through on-going surveillance by the Quality Manager. All laboratory related records are reviewed prior to filing and are controlled as quality records per QP10030.

Materials Testing

NWRE utilizes the American Standard Test Methods (ASTM) as recommended by the American Society of Automotive Engineers (SAE).

Test Description

Bondability: Adhesion to Rigid Substrates
 Color Measurement & Analysis
 Compression / Deflection
 Compression Set
 Durometer Hardness
 Flammability: Vertical & Horizontal
 Fluid & Oil Resistance – Effects of Liquids
 Heat Aging: Deterioration in an Air Oven
 Mooney Viscometer: Viscosity, Stress Relaxation, and Pre-Vulcanization Characteristics
 Rheometer: Vulcanization using Oscillating Disk Cure Meter
 Tear Strength, of Vulcanized Rubber
 Tensile Strength, Elongation, Modulus, Tension Set of Elastomers
 Volume Resistivity: Conductivity & Surface Resistance

Test Method

ASTM D-429
 Fed-Std-595, BSS7319, ASTM E-284
 ASTM D-575
 ASTM D-395
 ASTM D-2240
 BSS7230, 14CFR25.853
 ASTM D-471
 ASTM D-573
 ASTM D-1646

 ASTM D-2084
 ASTM D-624
 ASTM D-412
 ASTM D-991

Dimensional Inspection

<u>Parameter</u>	<u>Measurement Technique</u>	<u>Range</u>	<u>Accuracy</u>
Linear	Caliper - Digital	0-12 inches	0.0005 inch
	Micrometer - Digital	0-1 inch	0.0001 inch
	Tape – Metallic & Non metallic	0-100 feet	0.03125 inch
	Rule	0-24 inches	0.0005 inch
	Snap Gage	0-0.5 inches	0.0005 inch
Angle	Angle Gauge - Digital	0-180 degrees	0.1 degree
	Angle Gage	0-180 degrees	0.5 degree
Weight	Scale - Digital	0-100 pounds	0.02 pounds
	Scale - Digital	0-2,000 grams	0.1 grams
	Scale - Digital	0-50,000 milligrams	0.01 milligrams
Outside Diam.	Pi Tape	0.75-7 inches	0.001 inch
Hole Diam.	Pin Gage	0-3.328 inches	0.001 inch

Calibration / Verification

Measurement devices and gages used at NWRE are calibrated to NIST traceable standards or verified against NIST traceable standards prior to use.

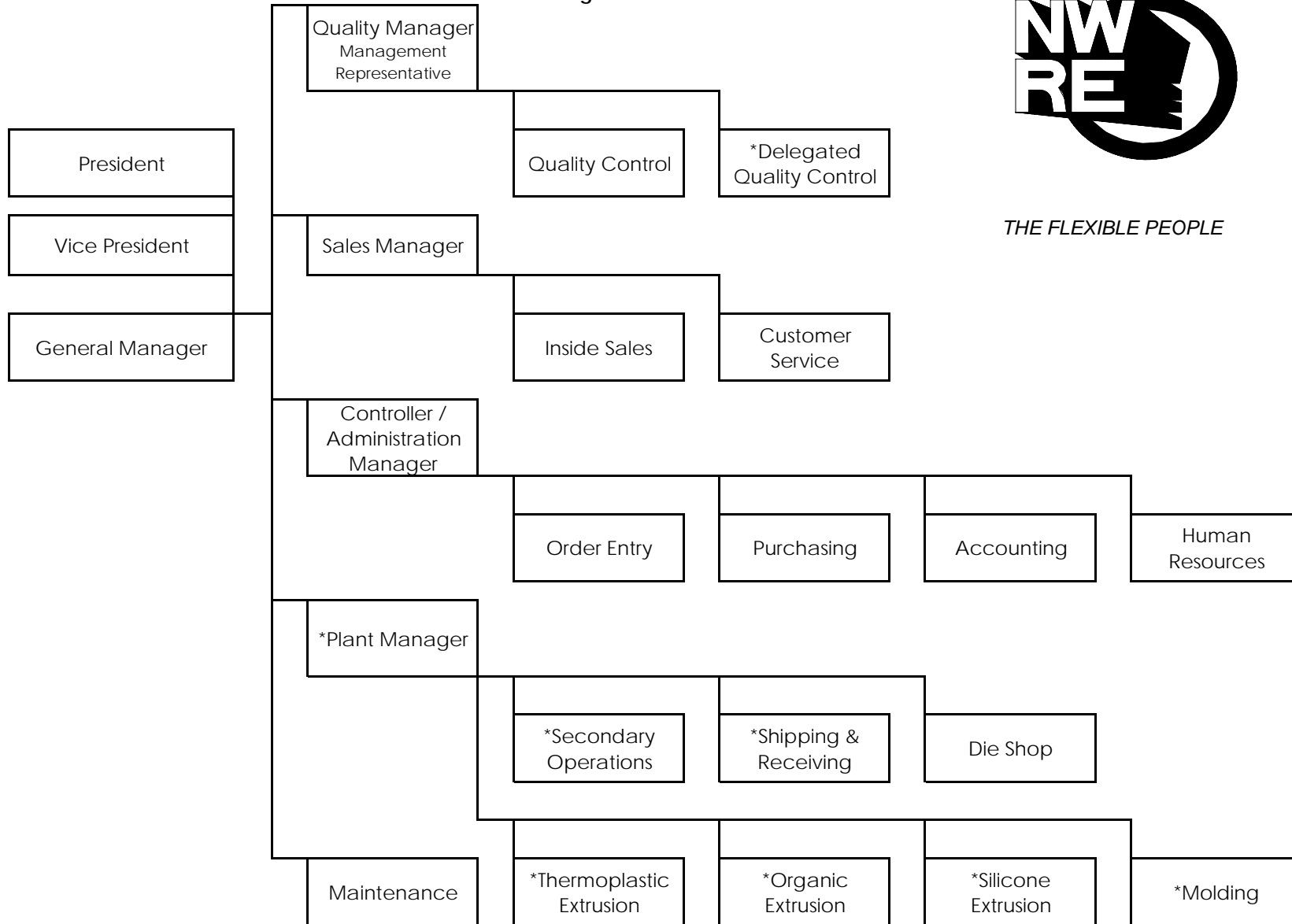
Appendix 4

Northwest Rubber Extruders, Inc.

Organizational Chart



THE FLEXIBLE PEOPLE



*Indicates Certified Delegated Inspector