QUALITY MANUAL

EMPCO, LLC (DBA IMPCO)
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REV.	DESCRIPTION OF CHANGE	RELEASED DATE	RELEASED BY
F	Updated all main sections to include more details	6/2/2006	Linda Berger
G	Updated Organizational Chart	1/12/2007	Linda Berger
H	Updated General Manager & added sales flow charts	10/4/07	Linda Berger
I	Update to include Sterling Heights facility	4/01/09	Linda Berger
J	Updated to Remove Sterling Heights	6/1/2010	Linda Berger
K	Updated to correct safety training on sections 5.5.3 and 6.4 to a minimum once a year and corrected type error of 9000 vs 9001	7/3/2012	Linda Berger
L	Updated Manual to correct error in environmental policy and to remove flow charts	7/31/2013	Linda Berger
M	Minor Changes to the Quality Policy	4/6/2016	Linda Berger
N	Updated to Comply with the new standards ISO 9001:2015 and company name change	5/16/2017	Emi Nakase

Authorization

This Quality Manual is published to document and communicate the quality policies to all of our employees and customers. It provides policy direction for the development of procedures and work instructions for activities and operations affecting quality, production, engineering, purchasing and sales. It is the intent of this manual to ensure that systems are defined and documented, records maintained and evidence of product and process conformance recorded.

This document is controlled and maintained by the Quality Assurance Organization, with direct content responsibility assigned to the Management Staff. It is reviewed periodically and updated as necessary to appropriately reflect the current quality plan.

IMPCO's Quality Management System is established in accordance with the EN ISO9001:2015 standard.

This manual has been authorized by:

Jim Mitchell *07/03/2012*
Director, Quality Assurance Date
IMPCO Technologies

We are focused on long-term profitable growth and is guided by a common vision, mission and core competencies.

Our Vision:

- We provide innovative and state-of-the-art products and services for comprehensive equipment management and control systems
- We encourage and support employees to achieve bold and inspiring common goals in a positive and fun atmosphere
- We exceed the expectations of our employees, customers and vendors thus becoming their "Preferred Partner"

Our Mission:

- Climb to Prime - The point at which the company is the strongest, most profitable and has clarity of vision. Also, it is maintaining an even balance between control and flexibility

Our Core Competencies:

- Development of highly reliable engine and fuel system controls, instrumentation, displays and protection equipment
- Deep application expertise that creates industry leading products
- Operational excellence through LEAN manufacturing, leading industry management practices and supply chain optimization
- Customer Intimacy - strong relationships based on heritage, performance and responsiveness

QUALITY POLICY

IMPCO is committed to producing products which provide customer value, contribute to a better environment and are;

- high quality
- reliable
- cost effective
- delivered on time
- designed to meet or exceed all applicable customer or regulatory requirements

Our Quality Management System (QMS) has been established to achieve these objectives and to embrace the principles of continuous improvement

ENVIRONMENTAL POLICY

IMPCO is dedicated to a better world through cleaner air, and has committed itself to the development of technologies and applications aimed at better utilizing alternate fuel resources, and improving global environmental quality with a commitment to Protection of the Environment including Prevention of Pollution.

We demonstrate this commitment through our dedicated development efforts to expand global availability of alternate fuel products. Our policy encompasses;

- Providing products to OEM customers for use in all combustion engine applications that exceed customer and governmental emissions regulations.
- Working with government regulators worldwide in support of technically and financially responsible environmental legislation, and supporting such legislation with technology development to provide product solutions to meet those environmental requirements.
- Continuously assessing the impact of our plants, products and processes on the environment, to ensure we fulfil all legal and other compliance obligations.
- A goal to continuously assess our environmental management system to identify opportunities for improvement, and to implement those changes with the full commitment and support of management at all levels.

4.0 Context of the organization

Understanding the organization and its context

The Organization is committed to defining our position in the marketplace and how relevant factors arising from legal, economic, social and technological issues influence our strategic direction and our organization context.

We identify, analyze, monitor and review external and internal factors that may affect our ability to satisfy our customers and stakeholders, as well as factors that may adversely affect the stability of our processes and our quality management system.

Our quality system has the priority to meet the Customer's expectation by assuring the product conformity with the specified requirements and a continuous improvement of products, services and our processes.

In order to attain this purpose, the management intends to apply the eight quality management principles:

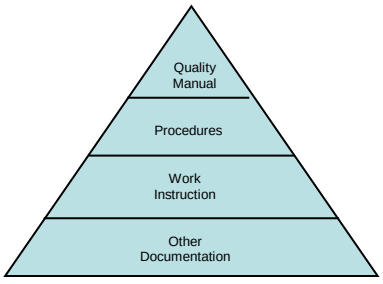
1. **Customer Focus:** The organization intends to understand the customer's current and future needs to meet their requirements in order to exceed all expectations.
2. **Leadership:** The Managers have established the organizations goals and objectives and have involved personnel to achieve them.
3. **Employee Involvement:** Our employees are the essence of our organization. Their involvement and awareness of their importance allows us to obtain their maximum benefit.
4. **Process approach:** We uses a process approach to manage activities and resources.
5. **System approach to management:** We uses a system approach which aligns our policies and procedures which enables us in achieving our goals and objectives.
6. **Continual Improvement:** We have adapted the methodology know as Plan-Do-Check-Act (PDCA) which allows us to continual improve our processes.
7. **Factual approach to decision making**: All decision is based upon facts and data.
8. **Mutually beneficial external party relationships**: We believes in supplier partnership which aligns with our mission statement to work as one team.

Understanding the needs and expectations of interested parties
We have identified the needs and expectations of interested parties that are relevant and have an impact to our organization and our quality management system.

Determining the scope of the quality management system
We design and manufacture of gaseous fuel management systems and components that allow internal combustion engines to operate on burning gaseous fuels, such as propane or natural gas.

Quality Management system and its processes
This Quality Management System includes provisions for ensuring continual improvement and measuring effectiveness of procedures and processes and resources needed for these processes and ensuring their availability.

We have established and we maintain our Quality Management System as a means of ensuring that products conform to specified requirements and that all processes affecting quality are identified, documented and monitored. Our Quality Management System is comprised of Quality Policy, Quality Manual, procedures, forms, work instructions and records.

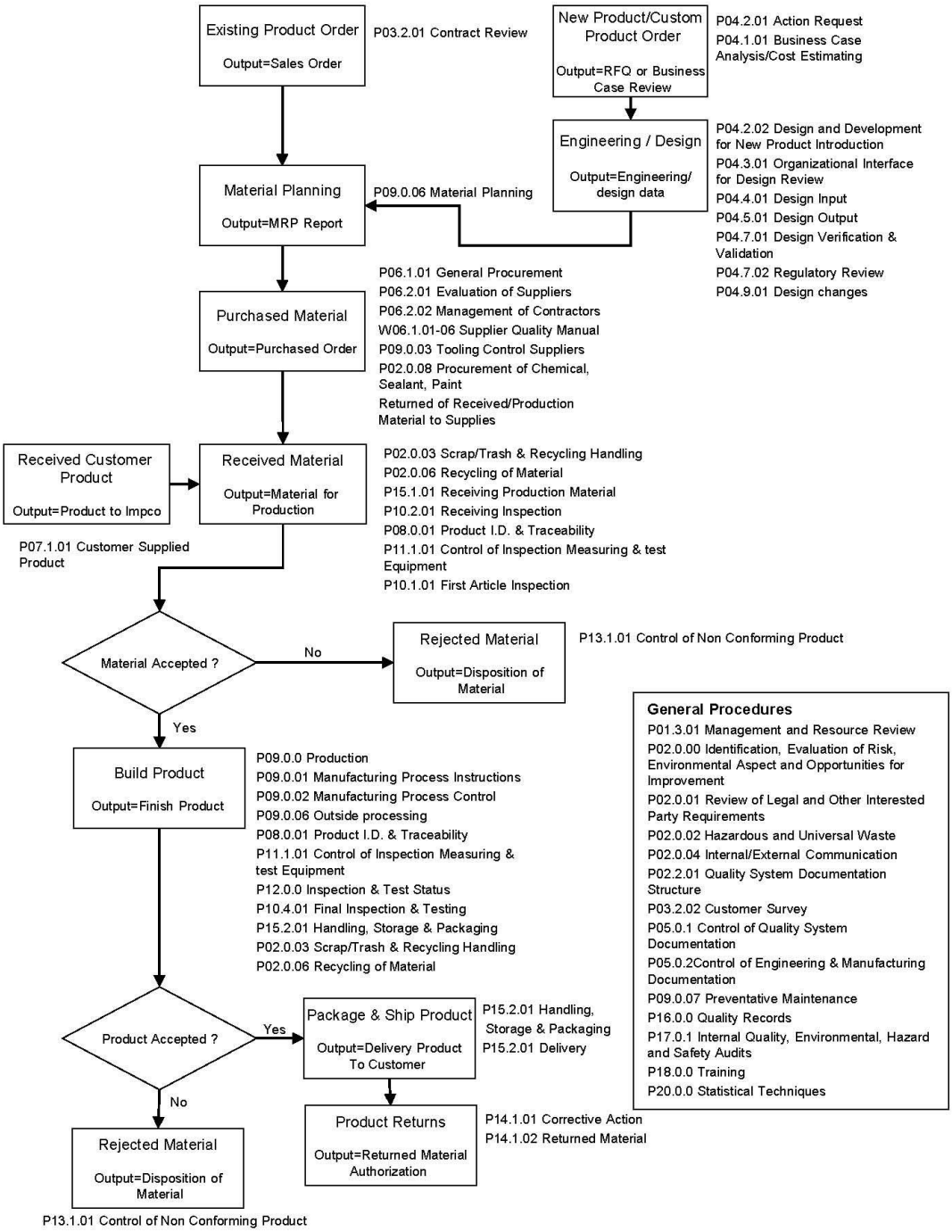


The Director of Quality Assurance is responsible for maintaining this Quality Manual as an outline of our overall Quality Plan.

We has prepared documented procedures consistent with the requirements of EN ISO9001:2015 and the company's stated Quality Policy and Quality Manual. The procedures that form this Quality Management System correspond with the company's operational processes.

The range and detail of these procedures is dependent upon the complexity of the work, the methods used and the skills and training needed by personnel involved in carrying out the activity. The documented procedures may make reference to work instructions that define how an activity is performed. Implementation of this Quality Management System is supported with records of training and satisfactory compliance of products and processes.

Quality/Environmental System Operational Overview



Procedure / Process	Responsibility	Quality	Engineering	Operations: Purchasing	Operations: Materials	Operations: Production	Sales	Human Resource	Accounting
P01.3.01	Leadership and Commitment including management Review	X							
P02.0.00	Identification, evaluation of risk, environmental aspect and opportunities for improvement	X	X	X	X	X	X	X	X
P02.0.01	Review of Legal and Other Interested Parties	X	X	X	X	X	X	X	X
P02.0.02	Hazardous and Universal Waste					X			
P02.0.03	Scrap/Trash & Recycling Handling	X	X	X	X	X			
P02.0.06	Recycling of Material	X	X	X	X	X	X	X	X
P02.0.08	Procurement of Chemical, Sealant, Paint			X					
P02.2.01	Quality System Documentation Structure	X							
P03.2.01	Contract Review						X		
P03.2.02	Customer Survey								
P04.1.01	Business Case Analysis/Cost Estimating		X						
P04.2.01	Action Requests		X						
P04.2.02	Design and Development Planning for New Product Implementation (NPI) Process		X				X		
P04.3.01	Organizational Interface for Design Review		X						
P04.4.01	Design Input		X						
P04.5.01	Design Output		X						
P04.7.01	Design Verification/Validation		X						
P04.7.02	Regulatory Review	X	X						
P04.9.01	Design Changes		X						
P05.0.01	Control of Quality System Documentation	X							
P05.0.02	Control of Engineering & Manufacturing Documentation		X						
P06.1.01	General Procurement			X					
P06.1.04	Procurement of Capital Equipment								X
P06.2.01	Evaluation of Suppliers			X					
P06.2.02	Management of Contractors			X					
P07.1.01	Control of Customer Supplied Product				X				
P08.0.01	Product ID & Traceability					X			
P09.0.00	Production					X			
P09.0.01	Mfg. Process Instructions		X						
P09.0.02	Mfg. Process Control	X							
P09.0.03	Tooling Control - Suppliers			X					
P09.0.05	Outside Processing of Inventory Items			X					
P09.0.06	MRP				X				
P09.0.07	Preventive Maintenance		X						
P10.1.01	Internal/Customer First Article Inspection	X							
W06.1.01-06	Supplier Quality Assurance Manual	X							
P10.2.01	Receiving Inspection & Testing	X							
P10.3.01	Machine Shop Inspection	X							
P10.4.01	Final Inspection & Testing	X							
P11.1.01	Control of Inspec., Measure., & Test Equip.	X							
P12.0.00	Inspection & Test Status	X							
P13.1.01	Control of Nonconforming Product	X							
P14.1.01	Corrective and Preventive Action	X							
P14.1.02	Returned Materials	X							
P15.1.01	Receiving Production Materials				X				
P15.2.01	Handling, Storage/ Packaging/Preservation				X				
P15.3.01	Delivery				X				
P16.0.00	Quality Records	X	X	X	X	X	X	X	X
P17.0.01	Internal Quality Audits	X							
P18.0.00	Employee Development and Training							X	
P20.0.00	Statistical Techniques	X							

Reference Documents:

Company Quality Manual Q01.0.00
Company procedure P02.0.00 Identification, evaluation of risk, environmental aspect and opportunities for improvement
Company procedure P02.0.01 Review of Legal and Other Interested Parties
Company procedure P02.2.01 Quality/Environmental System Documentation Structure
Company procedure P16.0.00 Quality Records

5.0 Leadership

Leadership and commitment

Our management with executive responsibility is committed to the development and improvement of the Quality Management System as described throughout this Quality Manual which include the following:

- Taking accountability for the effectiveness of the quality management system
- Ensuring that the quality policy and quality objectives are established for the quality management system and are compatible with the context and strategic direction of the organization.
- Ensuring the integration of the quality management systems requirements into the organizations business process
- Promoting the process approach and risk based thinking
- Ensuring that the resources needed for the quality management system are available
- Communicating the importance of effective quality management and of conforming to the quality management system requirements
- Ensuring that the quality management system achieves its intended results
- Engaging, directing and supporting employees to contribute to the effectiveness of the quality management system
- Promoting improvement and evidence based decision making
- Supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility
- Communication to the organization the importance of meeting customer, statutory and regulatory requirements.
- The establishment of appropriate workplace infrastructure

Customer Focus

Our management has implemented a Quality Management System aimed at meeting the customer's requirements and risks and the ability to enhance customer satisfaction

Policy

Establishing the quality policy

Our Quality Policy is stated on page 7 of this document. The company's Quality Policy is issued and re-assessed by the management so that it can always be updated as changes devise in the market. The Quality Policy is communicated through out the organization and understood by all and available to interested parties, as needed.

Organizational roles, Responsibility, Authority

Top Management ensures that the responsibilities and authorities are defined and communicated throughout the organization. We have developed Organizational Charts to reflect the reporting structure of the organization and Job Descriptions which define employee responsibilities.

Our Quality Assurance Program is established at the direction of the Director of Quality Assurance.

Management Representative

The Director of Quality Assurance with irrespective of other responsibilities, have defined authority for:

- Ensuring that a Quality Management System is established, implemented and maintained in accordance with this Quality Manual and ISO 9001:2015.
- Ensuring that the processes are delivering their intended outputs.
- Reporting on the performance of the Quality Management System to our management for review and as a basis for improvement of the system.
- Ensuring the promotion of customer focus throughout the organization.
- Ensuring that the integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

Responsibilities of the Management Representative also include liaison with external parties on matters relating to our Quality Management System. In the event of absence of the Quality Assurance Director, the Operations Director serves as the alternate Management Representative.

The responsibility for execution of the Quality Program is assigned to the management staff. Their disciplines include Quality Assurance, Sales/Marketing, Engineering, Operations, Human Resources, Finance and Project Management. The management staff may delegate responsibility for the Quality Program, however, they retain the ultimate responsibility.

The primary responsibilities for the functional areas are as outlined below:

- Ensuring that orders for product are adequately reviewed, agreed to and communicated is the responsibility of Sales.
- Ensuring that designs are appropriate to the requirements, establishment of the testing criteria and the ability to meet new designs and design changes is the responsibility of Engineering.
- Ensuring the timely purchase of materials that conform to the specified requirements for incorporation into our products is the responsibility of Purchasing.
- Establishment of the manufacturing process, identification of suitable verification points and clarification of those acceptability standards within the manufacturing process is the responsibility of Manufacturing Engineering.
- Management of our production planning system and inventories is the responsibility of Materials Group.
- Planning, set up and execution of the production process is the responsibility of Production.
- Ensuring that personnel are retained and properly trained is the responsibility of Human Resources.

Quality Assurance has responsibility, directly or in conjunction with the operating organization, for:

- Incoming material inspection
- In-process and final inspection
- Control of inspection, measuring and test equipment
- Inspection and test status
- Control of nonconforming product
- Corrective and preventive action
- Returned materials
- Internal quality audits
- Statistical techniques

Quality Assurance has the organizational freedom and authority to prevent the occurrence of nonconformities, record problems, initiate corrective actions, verify solutions and, if necessary, stop those processes until such time as they fully comply.

Reference Documents:

Company procedure P01.3.01 Leadership and Commitment including management Review
Company procedure P03.2.01 Contract Review
Company procedure P106.1.01 General Procurement
Company procedure P06.1.02 Procurement of Raw Materials
Company procedure P09.0.06 Material Planning
Company procedure P10.2.01 Receiving Inspection
Company procedure P10.1.01 First Article Inspection
Company procedure P12.0.0 Inspection and Test Status
Company procedure P10.4.01 Final Inspection and Testing
Company procedure P13.1.01 Control of Non Conforming Products
Company procedure P14.1.01 Corrective Action
Company procedure P14.1.02 Returned Material
Company procedure P17.0.00 Internal Quality Audits
Company procedure P18.0.00 Employee Development and Training
Company procedure P20.0.00 Statistical Techniques

6.0 Planning

Actions to address risk and opportunities

The quality management system analyzes risk associated with programs and activities and looks for opportunities for improvements.
This Quality Manual and all of the supporting procedures is referred to as the Quality Plan.

The quality plan is to:

- Give assurance that the quality management system can achieve its intended results.
- Enhance desirable effects.
- Prevent or reduce undesired effects.
- Achieve improvement.
- Continually improve products, processes and resources.
- Implement actions to address risk and evaluate the effectiveness of those actions.

Quality objectives and planning to achieve them

Quality objectives have been established at all corresponding levels and processes throughout the company.

Our company quality objectives are as follows:

- Consistent with the quality policy.
- Are measureable.
- Taken into account all applicable requirements.
- Relevant to the conformity of products and services and to the enhancement of customer satisfaction.
- Monitored
- communicated
- Updated as appropriated

The management determines the followings in order to achieve the objectives:

- what will be done
- what resources will be required
- who will be responsible
- when it will be completed
- how the results will be evaluated

Planning of changes

When changes to the quality management system are deemed necessary, we ensure the changes comply with the requirements of the ISO Standard and shall consider the following:

- The purpose of the change and their potential consequences.
- The integrity of the quality management system.
- The available of resources.
- The allocation or reallocation of responsibilities and authorities.

Reference Documents:

Company procedure P02.2.01 Quality System Documentation Structure
Company procedure P05.0.01 Control of Quality/Environmental System Documentation
Company procedure P01.3.01 Leadership and Commitment including management review
Company procedure P02.0.04 Internal and External Communication

7.0 Support

Resources

We are fully committed to providing adequate resources required for the implementation, maintenance and continual improvement of the quality management system with the following into consideration as required;

- The capabilities of, and constrains on, existing internal resources
- What needs to be obtained from external providers

People

Our Human Resources Organization has established and maintains documented procedures for identifying training needs and coordinating the training of personnel performing activities affecting quality. Personnel performing specific assigned tasks are qualified on the basis of appropriate education, training and/or experience, as required. Formal training is provided to employees to ensure compliance to the published procedures and to encourage employee involvement in continual improvement.

Infrastructure

We have determined the maintenance and the infrastructure necessary for the operation of its processes and to achieve conformity of products and services.

Our infrastructure consideration includes the following:

- Buildings and associated utilities
- Equipment, including hardware and software
- Transportation resources
- Information and communication technology

Environment for the operations of processes
We have determined the work environment necessary for the operation of our processes and to achieve conformity of products and services.

- We are aware that the working environment factors affect personnel's motivation, satisfaction, physical factors and performance as well as process conformity and with clear effects on the quality of products and company's services
- To verify and make safety measures always efficient, We conducts a safety meeting at a minimum once a year to make sure all employees are satisfied with the safety of the working environment.

Monitoring and measuring resources
We have determined and provide the resources needed to ensure valid and reliable results when monitoring or measuring is used to verify conformity of products and services to requirements.
The structure of internal resources includes but is not limited to the following:

- Resources are suitable for the specific type of monitoring and measurement activities being undertaken.
- Are maintained to ensure their continuing fitness for their purpose.

Our procedures ensure; the requirement for, and the devices needed, to monitor and measure product and process are determined. Equipment used to provide evidence of product conformity is controlled and includes items such as:

- Inspection and test devices,
- Automated test equipment,
- Customer supplied equipment.

Guidelines for the selection of appropriate equipment and required environmental conditions for calibration, inspection and test are defined.

We have defined a calibration process and we maintain a register of these monitoring and measuring devices which specify; equipment type, identification, location, interval, method and acceptance criteria.

Measurement Traceability
Where required or considered essential by the organization to ensure valid results, measuring equipment is:
Calibrated at specified intervals or prior to use, against standards traceable to national or international measurement standards; where no such standards exist, the basis for calibration/verification;

- Is recorded
- Adjusted/readjusted as necessary
- Identified as to its calibration status
- Safeguarded from adjustments which would invalidate measurement
- Protected from damage and deterioration
- Recalled for calibration by a defined method

When equipment is found not to conform to requirements; previous measurements are assessed, and appropriate action taken on the equipment and affected product. This activity is performed initially and reconfirmed as necessary. Records of calibration results and verification are maintained.

Organizational Knowledge
We consider specific knowledge for each operation and considers this as an important resource to ensure our employees and processes are consistent and will achieve conformity of the product and services we provided to our customers. Specific organizational knowledge is defined, maintain and available as needed.

Also, when addressing changing needs and trends, we consider the current knowledge and determine how to acquire or access any necessary additional knowledge and required updates.

Competence
A job description specifying the education, knowledge, skills required and typical tasks is prepared/documented for each job position by the responsible manager and submitted to Human Resources for control and record keeping purposes.

When required, the employee receives on the job training under the supervision of the responsible manager or designee.

Employees are encouraged to continue their formal education through University study and/or recognized seminars.

Company organized/sponsored training/seminars are also provided as a means of improving the knowledge and skills of the workforce.

Performance appraisal is conducted for each employee by the responsible Manager.

Awareness
All employees are aware of the following items:

- Aware of the Quality Policy
- Aware of relevant quality objectives
- Aware of their contribution to the quality management system, including improved performance
- Aware of implications of non-conforming with the quality management system requirements

Communication
Oue management with executive responsibility ensures that information regarding the Quality Management System is effectively communicated externally and internally throughout the organization including what to communicate, when to communicate and whom to communicate via the following methods:

- E-Mail
- Safety meeting conducted at a minimum once a year
- Posting boards
- Meeting
- Web site

Documented information
We maintain a documented quality management system as means that product and services confirm to specified requirements per the ISO standard.

Creating and updating
We have processes in place when creating and updating documents that the documents are with a title, date and a procedure or form number including the format and media (electronic, paper, hard copy, etc..). All documents go through a review and approval process.

Control of documented information
Documented information required to support the quality management system is controlled to insure the following:

- It is available and suitable for use, where and when it is needed.
- It is adequately protected from loss of confidentiality, improper use, of loss of integrity.
- It is available for distribution, access, retrieval and use.
- It has storage and preservation, including preservation of legibility.
- All changes are controlled including retention and disposition.

Documented information of external origin determined by the organization to be necessary for the planning and operation of the QMS are identified and controlled.

Reference Documents:

Company procedure P01.3.01 Leadership and Commitment including management Review
Company procedure P02.0.04 Internal and External Communication
Company procedure P05.0.01 Control of Quality/Environmental System Documentation
Company procedure P18.0.00 Employee Development and Training
Company procedure P11.1.01 Control of Inspection Measuring and Test Equipment
Company procedure P10.2.01 Receiving Inspection
Company procedure P10.1.01 First Article Inspection
Company procedure P12.0.0 Inspection and Test Status
Company procedure P10.4.01 Final Inspection and Testing

8.0 Operations

Operational planning and control

We have defined the expectation and implemented controls for each of our quality management system processes. The planning of controls is required to ensure consistent acceptability of our products and services. Planning processes include the quality objectives, development for required processes, establishment for appropriate verification programs and the requirement for records necessary to demonstrate the process and products confirm to the intended requirements.

Operational planning and control is required to new and or revised products and processes being implemented. Below are the required actions that we take:

- Requirements for the products and services
- Criteria for the processes and the acceptance of products and services
- Resources needed to achieve conformity to the products and services
- Control of our processes
- Documented information necessary to have confidence that the processes have been carried out as planned and to demonstrate the conformity of products and services to their requirements

The output of operational planning and control includes documented quality plans, resources requirements, process instructions, equipment, test data and design outputs.

We controls planned changes and reviews the consequences of unintended changes, takes action to mitigate any adverse effects as necessary and also ensures that outsourced processes are controlled.

Requirements for products and services

Customer Communication

We have established effective means for customer communication relative to:

- Product information
- Enquiries, contracts and changes
- Customer feedback and complaints
- Handling or controlling customer property
- Establishing specific requirements for contingency actions when relevant

Determining the requirements and services
We ensure when determining the requirements for the products and services to be offered to our customers, the requirements are defined including the followings;

- Any applicable statutory and regulatory requirements
- Those considered necessary by the organization

Also we ensure the organization can meet the claims for the products and services it offers.

Review of the requirements for products or services
We ensure we have the ability to meet the requirements for products and services to be offered to the customer. A contract review is conducted prior to committing to supply products and services to the customer. The review process includes the following:

- Requirements specified by the customer, including the requirement for delivery and post delivery activities
- Requirements not stated by the customer, but necessary for the specified or intended use, when known
- Requirements specified by the organization
- Statutory and Regulatory requirements applicable to the products and services
- Contract or order requirements differing from those previously expressed

We ensure that contract or purchase requirements differing from those previously defined are resolved prior to entering orders into our business system.

The customer's requirements are confirmed by the organization before acceptance, when the customer does not provide a documented statement of their requirements.

We retain documented information as applicable on the following:

- On the results of the reviews
- On any new requirement for products or services

Changes to the requirements for products and services
We ensure that the relevant documented information is amended, and that the relevant persons are made aware of the change requirement when the requirements for product or services has changed.

Design and development of products and services

Design and Development Planning
We have established procedures for the planning and control of design and development activities. As part of the planning process, the following is considered:

- The nature, duration and complexity of the design and development activities
- Design and Development stages
- Review, verification and validation appropriate for each stage
- Responsibilities and authorities
- The internal and external resources needed
- The need to control interfaces between persons involved
- The need for involvement of customers and user
- The requirement for subsequent provisions
- The level of control expected for the design and development process by customers and other relevant interested parties
- The documented information needed to demonstrate that the design and development requirements have been met

When required, planning shall be in accordance with the agreed to Customer terms including; documentation, data, schedules and reviews as applicable. Planning addresses activities relative to Customer/Regulatory requirements and safety/functional objectives.

Design and Development Inputs
Design and development inputs are determined to ensure product and product related requirements are identified. Inputs are reviewed for adequacy and completeness, and free of any ambiguities or conflicts with considering the followings;

- Functional and performance requirements
- Applicable statutory and regulatory requirements
- Where applicable, information derived from previous similar designs
- Standards or codes of practice that the organization has committed to implement
- Potential consequences of failure due to the nature of the products or services
- Other requirements as determined by us essential for design and development
- We maintain the records of design and development inputs.

Design and development controls
Design/development controls are in place for the design and develop processes.

Control are in place to achieve the following;

- The results to be achieved
- Reviews are conducted to evaluate the ability of the results of the design and development to meet the requirements
- Verification activities are conducted to assure that the outputs meet the input requirements
- Validation activities are conducted to ensure that the resulting products and services meet the requirements for the specified application or intended use
- Necessary actions are taken on problems identified during the reviews, or verification and validation activities
- Documentation information of these activities are retained.

Design and Development Verification
Verification is performed in accordance with planned arrangements to ensure that the design and development outputs have met the design and development input requirements.
Verification methods include: calculations, analysis, modeling, similarity comparison, tests and/or data review as appropriate. Records of the verification results and any necessary actions are maintained.

Design and Development Validation
Design Validation is a planned activity performed to ensure that the resulting product is capable of meeting the requirements for the specified application or intended use, where known. Wherever practicable, validation is completed prior to the delivery or implementation of the product. Records of the results of validation and any necessary actions are maintained.

Design and Development Output
The output of design and development activities are provided in a form that enables verification against the design and development input. They are approved prior to release and reviewed by the cross functional team and the records are maintained. We ensures design and development outputs;

- Meet the input requirements for design and development
- Provide appropriate information for purchasing, production and service
- Contain or reference product acceptance criteria; including monitoring and measuring requirements as appropriate
- Specify the characteristics of the product that are essential for its safe and proper use
- Identify key characteristics when applicable

All pertinent data required to support the product manufacture, use or maintenance is defined including:

- Drawings, parts list and specifications
- Configuration baseline
- Relative information on product material, process and operation

Control of Design and Development Changes
Design changes are identified, documented, verified, validated and approved as appropriate prior to implementation. The review of design and development changes includes an evaluation of the effect of the changes on constituent parts and product already delivered.
The change control process includes provisions for Customer/Regulatory approval when required. Records of the changes and reviews, the authorization of the changes, and when applicable the actions taken to prevent adverse impact are maintained.

Control of externally provided processes, products and services

Purchase Process
Our procurement system ensures that purchased products conform to specified requirements. Processes are established for the identification, evaluation, selection, monitoring and feedback of our supply base. The level of control applied is dependent on the complexity and/or criticality of procured product or service.

Suppliers are evaluated and selected based on their ability to supply product in accordance with established requirements. Criteria for selection, evaluation, and re-evaluation have been established. Records of evaluations and any necessary actions arising from the evaluation are maintained.
We have defined the processes to control the supply base through the Supplier Quality Assurance Manual.

Type and extent of control
We have established procedures for inspection and related activities to ensure that purchased product meets specified requirements and the organizations ability to meet customer and applicable statutory and regulatory requirements. Verification activities include as appropriate:

- Objective evidence of product conformity from the supplier
- Inspection/Audit at supplier facility
- Receiving inspection
- Supplier certification or verification delegation
- Supplier quality requirements (Ref: Supplier Quality Manual)

Purchased product is not used or processed until it is verified as conforming unless it is released.

Information for external providers
We ensures the adequacy of specified purchase requirements prior to submittal to the supplier. Product information including requirements and approval criteria are communicated and also described on the Purchase Order as appropriate:

- Drawing Number
- Drawing revision level
- Product description or part number; relative specifications, instructions and/or technical data and its corresponding issue
- Any special processes or equipment if needed
- Any competence including any required qualification of persons or resources required

We also communicate with external providers the followings as applicable;

- competence, including any required qualification of persons
- the external providers' interactions with the organization
- control and monitoring of the external providers' performance to be applied by the organization
- verification or validation activities that the organization, or its customer, intends to perform at the external provider's premises.

Production and Service Provision

Control of Production and Service Provision
We have established procedures to ensure production is planned and carried out under controlled conditions. Controlled conditions include, as applicable:

- Description of product characteristics
- Availability of work instructions
- Use of suitable equipment and environment for operation
- Availability and use of monitoring and measuring devices
- Implementation of monitoring and measurement
- Implementation of release, delivery and post-delivery activities
- Accountability of product
- Action to prevent human error
- Action/reports in regards to post delivery problems
- Control/update of technical documentation
- Approval, control and use of repair schemes

We have established procedures to validate any processes for production where the resulting output cannot be verified by subsequent monitoring or measurement. Validation includes as applicable:

- Defined criteria for review and approval of the processes
- Approval of equipment and qualification of process and/or personnel including provisions for samples
- Use of specified methods and procedures, including control of significant operations and parameters, and changes thereto
- Requirements for data/records
- Re-validation

Identification and Traceability
We have established processes to ensure that product is identified throughout product realization including its status with respect to monitoring and measurement requirements. These processes also control the as-designed and identify the as-built configuration of product. We also controls the unique identification of outputs when traceability is a requirement and retain any documented information necessary to enable traceability.

Property belonging to customers or external providers
Our procedures define the controls relative to the handling of Customer or external providers' property or under its control and address:

- Handling and use
- Identification, verification, protection and maintenance
- Notification and reporting to customer involving damage or loss and retain the record

Preservation of product
IMPCO has prescribed appropriate methods and means of preserving product conformity during internal processing through delivery. Where applicable in accordance with product specifications and/or applicable regulations, IMPCO procedures for identification, handling, storage, packaging, preservation, and delivery also cover the specific requirements.

Post-delivery activities
We maintain documented information of all products delivered to our customers. Following items are considered while determining the extent of post-delivery activities:

- Statutory and regulatory requirements
- Any potential undesired consequences associated with our products or services
- The nature, use or intended lifetime of our products or services
- Customer requirements
- Any customer feedback

Control of changes
We review any changes to production or services to the extent necessary to ensure continuing conformity of internal or customer requirements. Changes for production may be initiated as a result of the following:

- Process improvement
- Engineering change
- Customer requirement or customer feedback
- Needs of interest parties

The results will be documented on the manufacturing work instructions.

Release of products and services
We have established processes defining the release activities needed for product and services. The release of product and services to the customer shall not proceed until the planned arrangements have been satisfactorily completed unless otherwise approved by a relevant authority and, as applicable by the customer. The following is determined as appropriate:

- Quality objectives and product requirements
- Processes, documents and resources to support product design, manufacture, Operations and maintenance
- Verification, validation, monitoring, inspection, test and acceptance criteria
- Data and records of product acceptance
- Traceability of the persons authorizing the release

Control of nonconforming outputs

We have established, documented and implemented a process for the identification, segregation, disposition and control of nonconforming product to prevent its unintended use or delivery. Upon detection, nonconforming product is recorded and following actions taken as applicable:

- Eliminate the nonconformity
- Authorize its use
- Preclude its original or intended use or application
- Nonconforming product which is repaired or reworked is re-verified for conformance to stated requirements. Product dispositioned scrap is returned to the supplier or scrapped in-house.
- When nonconforming product may affect the reliability or safety of previously delivered product, We will take action appropriate to the effects or potential effects including contacting the Customer with all pertinent information in a timely fashion. Records of nonconforming product and subsequent actions are maintained.

Reference Documents:

Company procedure P01.3.01 Leadership and Commitment including management Review
Company procedure P03.2.01 Contract Review
Company procedure P02.0.04 Internal and External Communication
Company procedure P04.2.01 Design and Development Planning
Company procedure P04.3.01 Organizational and Technical Interfaces
Company procedure P04.4.01 Design Input
Company procedure P04.5.01 Design Output
Company procedure P04.6.01 Design Review
Company procedure P04.7.01 Design Verification and Validation
Company procedure P04.7.02 Regulatory Review
Company procedure P04.9.01 Design Changes
Company procedure P05.0.01 Control of Quality System Documentation
Company procedure P05.0.02 Control of Engineering System Documentation
Company procedure P05.0.03 Control of Manufacturing System Documentation
Company procedure P06.1.01 General Procurement
Company procedure P06.1.02 Procurement of Raw Materials
Company procedure P06.1.04 Procurement of Capital Equipment
Company procedure P06.2.01 Evaluation of Suppliers
Company procedure P07.1.01 Control of Customer Supplied Products
Company procedure P08.0.01 Product ID & Traceability
Company procedure P09.0.01 Manufacturing process Instructions
Company procedure P13.1.01 Control of Non Conformity Products
Company procedure P15.1.01 Receiving Production Materials
Company procedure P10.1.01 First Article Inspection
Company procedure P10.2.01 Receiving Inspection and Testing
Company procedure P14.0.02 Returned Material
Company procedure P15.2.01 Handling, Storage/Packaging Preservation
Company procedure W06.1.01-06 Supplier Quality Assurance Manual

9.0 Performance evaluation

Monitoring, measuring, analysis and evaluation
We have established methods for the planning and implementation of the monitoring, measurement, analysis and improvement processes needed to:

- Demonstrate product conformity
- Ensure conformity of the Quality Management System
- Continually improve the effectiveness of the Quality Management System

These processes include determination of applicable methods, including statistical techniques, and the extent of their use. Depending on the nature of product and specified requirements, statistical techniques may be used to support the following as applicable:

- Design verification (Reliability, Maintainability, Safety)
- Process capability/control
- Acceptance sampling

We have a profound interest in the perception of its Customers relative to meeting its requirements. We have developed the means to obtain this information and in conjunction with specific feedback from its Customers generates measures of Customer satisfaction.

The methods for obtaining, analyzing and using Customer satisfaction data are defined.

Monitoring and Measurement of Processes
We have developed methods for monitoring and measurement of Quality System processes. The methods demonstrate the ability of the process to achieve planned results. When planned results are not achieved, correction and preventive actions are taken, as appropriate, to ensure product conformity.

Monitoring and Measurement of Product

Inspection and test operations are planned throughout product realization. We have established processes to define the type and level of monitoring and measurement of product characteristics to ensure product conformity. Where key characteristics are identified, they are monitored and controlled.

When acceptance sampling is specified, its use is statistically valid and appropriate. Product is not released for further processing, stocking or delivery until all planned arrangements have been completed and product is verified as conforming to stated requirements. Evidence of product conformity and records of product release authority are maintained.

Customer Satisfaction

IMPCO monitors information relating to customer perception or our continual ability to fulfill their requirements. Maintaining customer satisfaction is one our company objectives of the quality management system. Collected customer feedback and complains are analyzed and reviewed during management review and the data are used for continual improvements.

Analysis and evaluation of Data

We determine, collects and analyzes appropriate data to demonstrate the effectiveness of the Quality Management System and to evaluate where improvement can be made. This information includes data which is generated from monitoring and measurement of processes and other relevant sources.

The analysis of data provides information which are used to evaluate the followings:

- Customer satisfaction
- Product conformity
- Product/process characteristics, trends and improvement opportunities
- Performance of external supplier
- Performance and the effectiveness of the quality management system
- The effectiveness of actions taken to address risk and opportunities
- The need to improve the quality management system

Internal Audit
Internal audits are an integral part of our Quality Program. Audits are planned and conducted to determine whether the Quality Management System:

- Conforms to planned arrangements, established Quality System requirements and applicable standards
- Is effectively implemented and maintained
- The Audit program is documented and defines responsibilities and requirements for; planning and conducting audits, reporting results and maintaining records.
- Audits take into consideration; the status and importance of the product, process and/or system to be audited, as well as results of previous audits. The audit criteria, scope (including contract and regulatory requirements), frequency and method are defined. The selection of auditors and conduct ensure objectivity and impartiality of the audit process. Auditors do not audit their own work or audit areas where they have key responsibility. Audit planning includes the preparation/review of applicable standards, procedures and/or checklists as appropriate.

The results of the audits are reported to relevant management, and where findings requiring actions are discovered, corrective actions are issued and assigned to the responsible manager. Follow up activities verify the actions taken and their effectiveness.

Management Review
Our management with executive responsibility reviews the Quality Management System yearly to ensure its continuing suitability and effectiveness in satisfying the requirements of this Quality Manual and our stated Quality Policy and objectives. Records of such reviews are maintained. Input items for consideration are noted below:

- The status of actions from previous management reviews
- The changes in external and external issues that are relevant to the quality management system
- The adequacy of resources
- Opportunities for improvements
- The effectiveness of actions taken to address risk and opportunities
- Information on the performance and effectiveness of the quality management system, including trends the following:
    - Customer satisfaction and feedback from relevant interested parties

- The extent to which quality objectives have been met
- Process performance and conformity of products and services
- Non conformity and corrective actions
- Monitoring and measuring results
- Audit results
- The performance of external providers

Outputs items of management reviews include the following:

- Opportunities for improvements
- Any changes to the quality management system
- Any additional resources if needed

Reference Documents:

Company procedure P01.3.01 Leadership and Commitment including management Review
Company procedure P02.0.00 Identification, Evaluation of Risk
Company procedure P03.2.02 Customer Survey
Company procedure P06.2.01 Evaluation of Suppliers
Company procedure P09.0.00 Production
Company procedure P09.0.02 Manufacturing Process Control
Company procedure P17.0.01 Internal Quality audits
Company procedure P20.0.00 Statistical Techniques

10.0 Improvement

Continual Improvement

We are committed to continually improving the suitability, adequacy and effectiveness of the Quality Management System through the establishment, review and use of the following:

- Quality policy
- Quality objectives
- Audit results
- Analysis of data
- Corrective actions
- Preventive actions
- Management review
- Customer feedback

We consider the results of analysis and evaluation, and outputs from management review to determine if there are needs or opportunities that needs to be addressed as part of continual improvement.

Corrective Action

Our Quality Assurance Organization has established and maintains documented procedures for implementing corrective action. Any corrective action taken to eliminate the causes of actual or potential nonconformities is appropriate to the magnitude of problem and commensurate to the associated risks.

When required, changes to the procedures resulting from corrective actions are documented.

IMPCO's procedures for corrective action include the following:

- Effective handling of customer complaints
- Reports of product nonconformities
- Investigation of the cause of nonconformities relating to product, process and Quality System
- Determination of the corrective action needed to eliminate the cause of nonconformities, and application of controls to ensure that corrective action is taken and that it is effective.
- Update risks and opportunities determined during planning, if necessary
- Make changes to the quality management system, if necessary

Preventive Action

Our procedures for preventive action include the use of appropriate sources of information such as;

- Processes and work operations which affect product quality,
- Concessions
- Audit results
- Quality records
- Service reports
- Customer complaints

To detect, analyze and eliminate potential causes of nonconformities, the steps required to deal with the problem, specific actions and the controls applied to ensure the effectiveness, and any other relevant information on the preventive action are submitted for management review.

Reference Documents:

P01.3.01 Management Review
Company procedure P03.2.02 Customer Survey
P14.1.01 Corrective and Preventive Action
P14.1.02 Returned Materials
P17.0.01 Internal Quality Audits