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Revision History	
Date-Revision	Nature Of Change
Original- 1-31-05	
Revision #1 3-19-08	<p style="color: red; margin: 0;"><b><i>Manual reviewed by Chief Operating Officer and Quality Manager</i></b></p> <ul style="list-style-type: none"> <li>Updated Company Background-# of full time employees</li> <li>Updated Organizational chart to include Power Generation and the VSP Technologies Houston facility</li> <li>Minor wording and format changes throughout</li> </ul>
Revision #2 11-08	<p style="color: red; margin: 0;"><b><i>Manual reviewed by Chief Operating Officer and Quality Manager</i></b></p> <ul style="list-style-type: none"> <li>Changed name throughout to VSP Technologiess</li> </ul>



	Number: <b>QM-1</b>
Subject: <b>QUALITY MANUAL</b>	Revision: <b>Revision #2</b>
	Date: <b>11-28-08</b>
Management Representative:	Page: <b>2 of 26</b>

## Section 1 Company Background

VSP Technologies was formed in May of 1979 to provide local fluid sealing product fabrication and supply to industry in Hopewell, Va. The primary product line in 1979 was compression packing and the primary manufacturer represented by VSP Technologies was Garlock.

During the early 1980s VSP Technologies began to focus on industrial gasketing. VSP Technologies range of products and manufacturers increased during the time period to include manufactures such as Gore and Union Carbide.

In 1992 VSP Technologies established a manufacturing division (Signum) to enter the spiral wound gasket market as a quality, high end manufacturer. Due to the enormous costs associated with the manufacturing process, product development and marketing, VSP Technologies elected in 1997 to sell Signum including all related technology and Intellectual Property to Garlock. VSP Technologies opted to maintain the Signum technical staff and through coordination with VSP Technologies' large industrial clients, developed unique support services and supply programs which incorporates VSP Technologies' sealing solution expertise and specialized products to lower client's Total Usage Costs for fluid sealing products. These technical support and cost reduction programs have led to significant supply/support contracts with large clients based inside and outside the state of Virginia.

Today VSP Technologies operates with 47 full time employees. VSP Technologies' business is a combination of:

- Formal Fluid Sealing Management contracts with large industrial clients and traditional sales/distribution within Virginia and the mid-atlantic states.
- Sales of fabricated gaskets to distributors, OEMs and catalog companies around the country.
- Development and manufacturing of patented or proprietary sealing products.
- Product supply and technical support into the railroad tankcar market.



## Section 2 Quality Manual/Policy

### Description

This Quality Manual provides the policies relating to the quality system at VSP Technologies. This quality system is in accordance with the standards set forth in ISO-9001:2000 (excluding Design Control). The ISO-9001:2000 procedures are contained in a separate series of documentation. Policies and procedures relating to quality must be adhered to by VSP Technologies personnel. Updates or revisions to the Quality Manual must be approved by the Quality Manager.

### Scope

This Quality Manual applies to raw materials, interdepartmental services and processes relating to the manufacturing and distribution of sealing products from VSP Technologies

### Quality Policy

*VSP Technologies. is committed to Quality Management practices. This commitment allows VSP Technologies to service and support our customers at such a high level that we are the logical choice for their fluid sealing needs. We involve our customers, suppliers and employees in continuous improvement of the quality and productivity of our processes and services. Our commitment to Quality Management practices ensures our ability to continually meet the needs and expectations of both our internal and external customers.*

### Responsibilities

The President and Chief Operating Officer are responsible for implementing and ensuring the Quality Policy is communicated across all levels of the organization.

On-File  
**Paul Malgee, President**

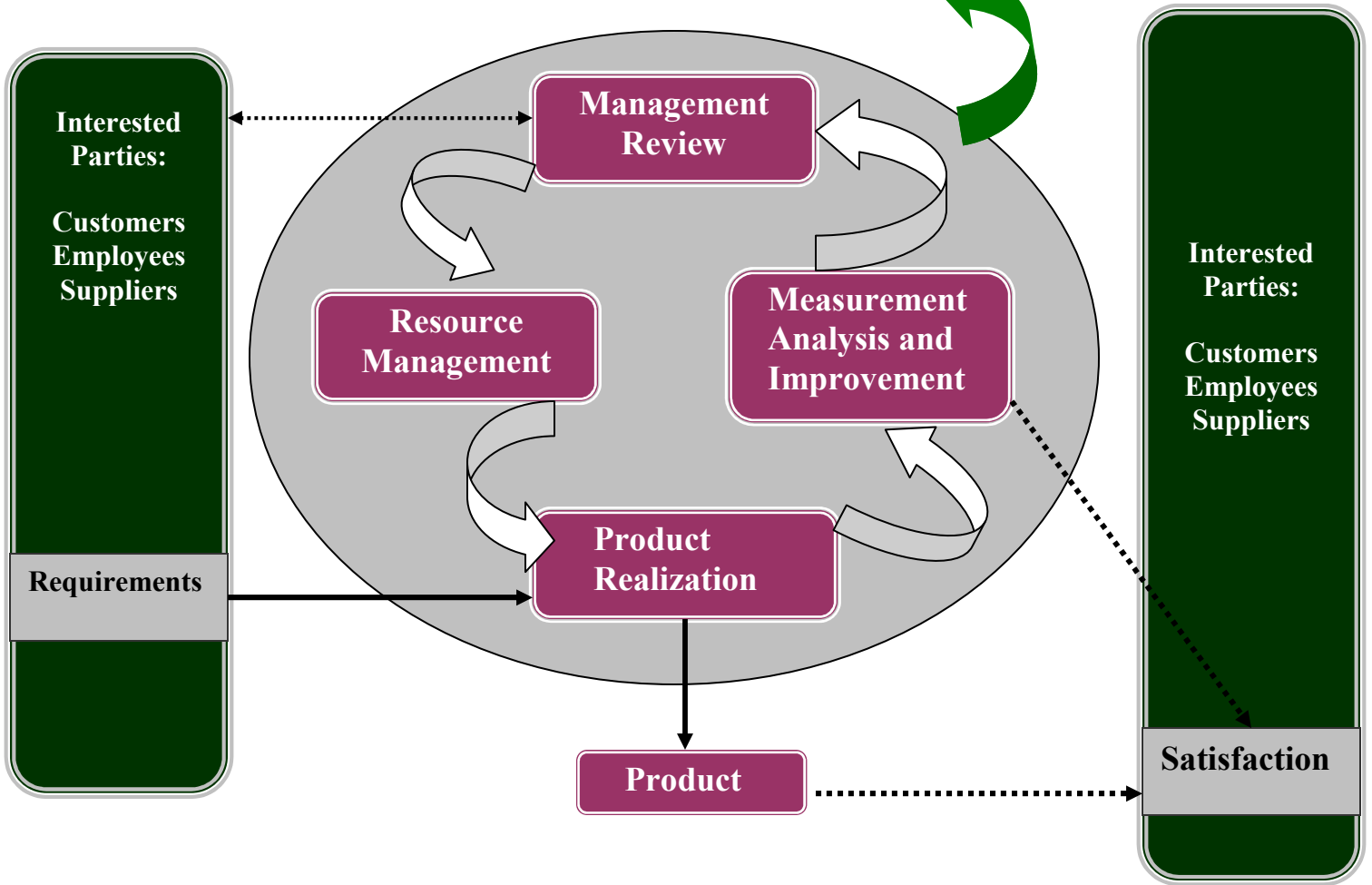
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On-File  
**David Malgee, Chief Operating Officer**

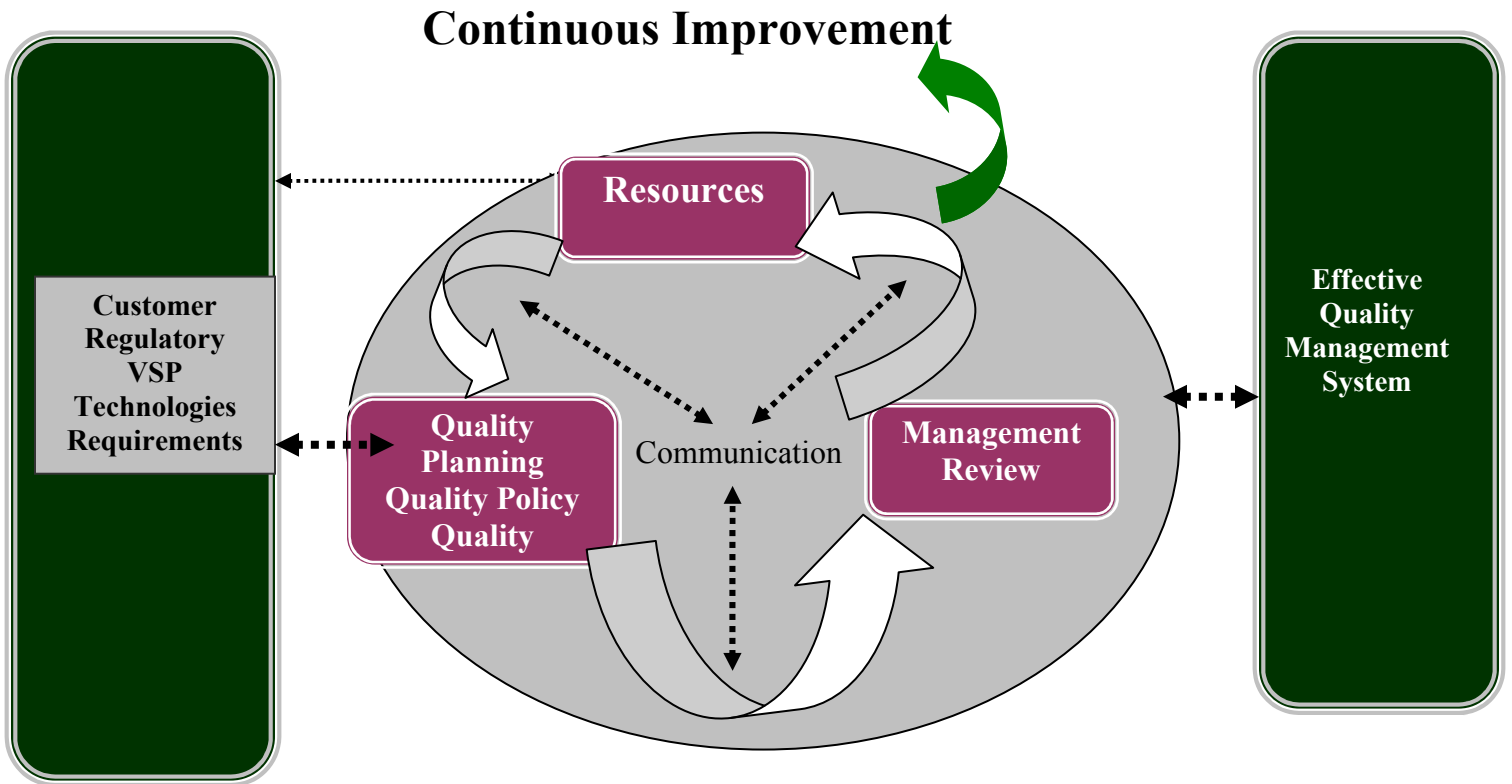
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# VSP Technologies Continuous Improvement

## Continuous Improvement

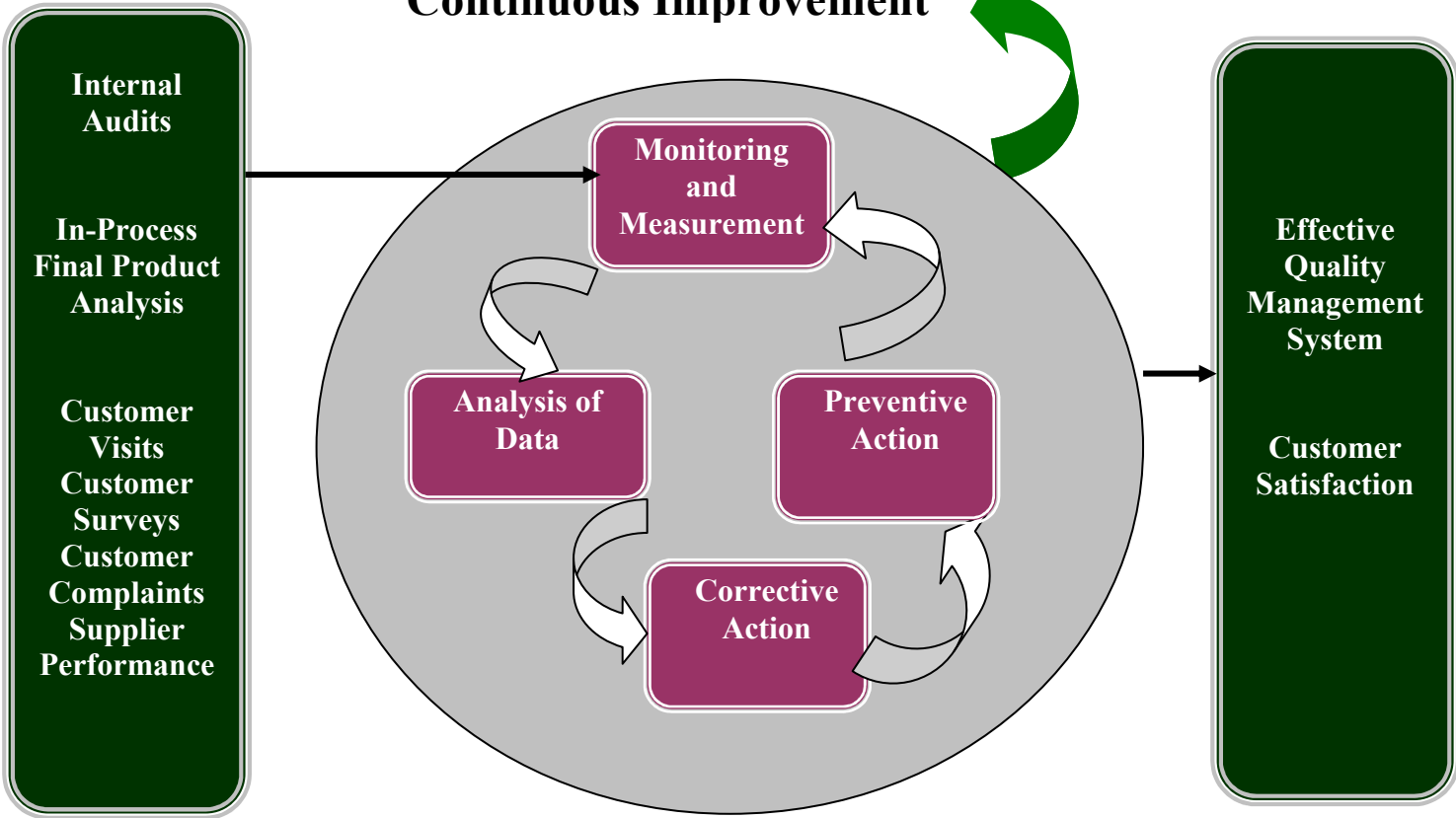


## Management Responsibility



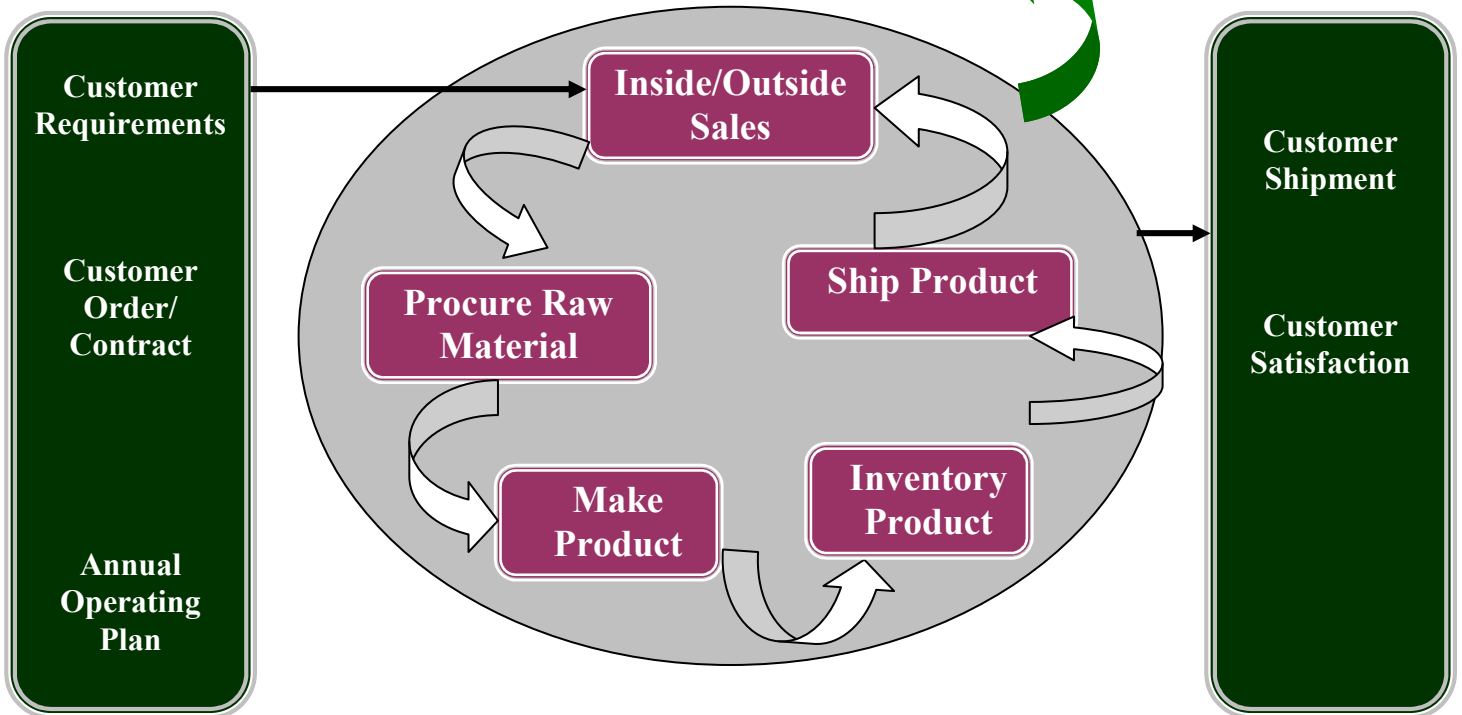
VSP Technologies Measurement, Analysis and Improvement

Continuous Improvement

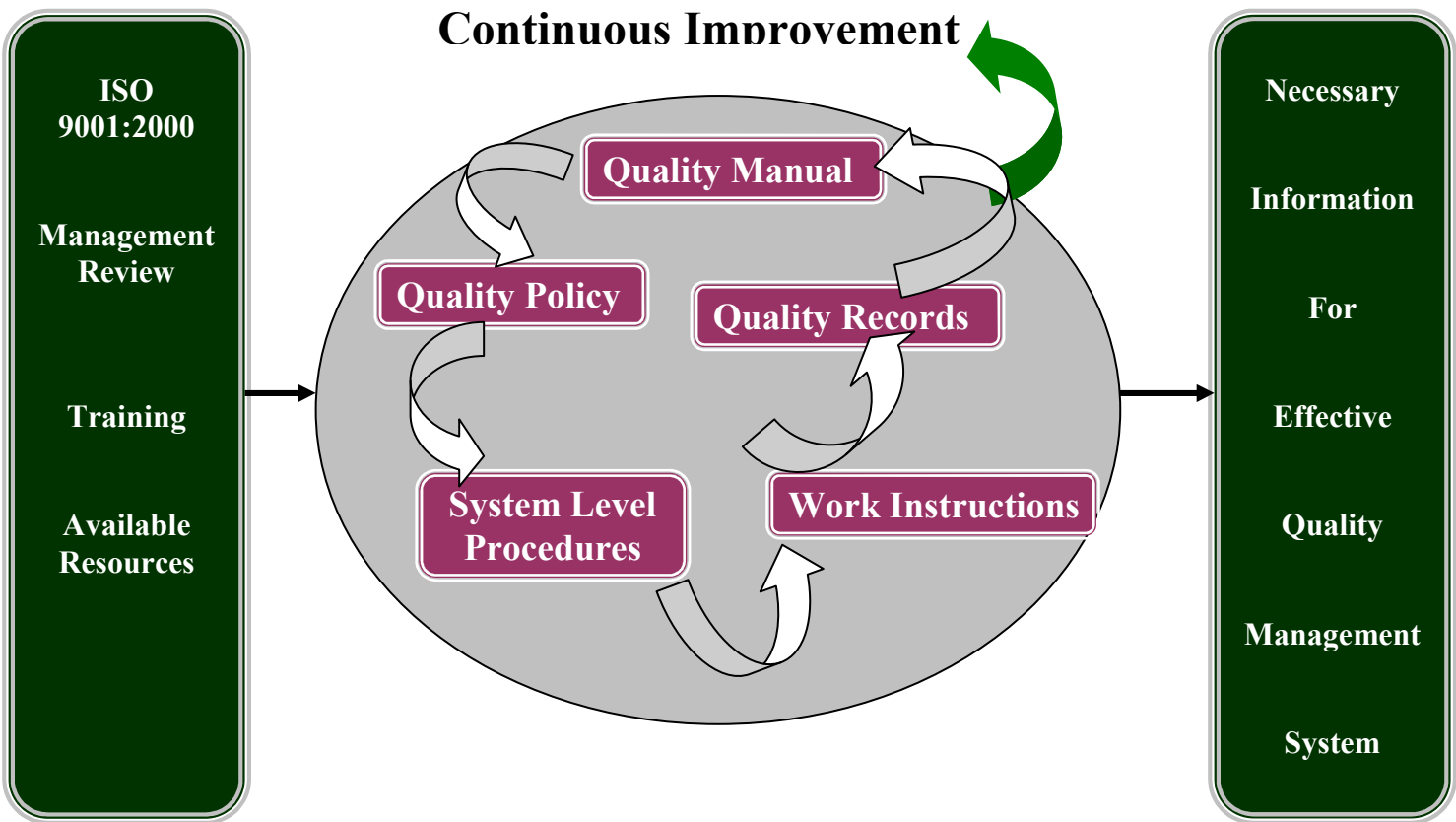


# VSP Technologies Product Realization

## Continuous Improvement

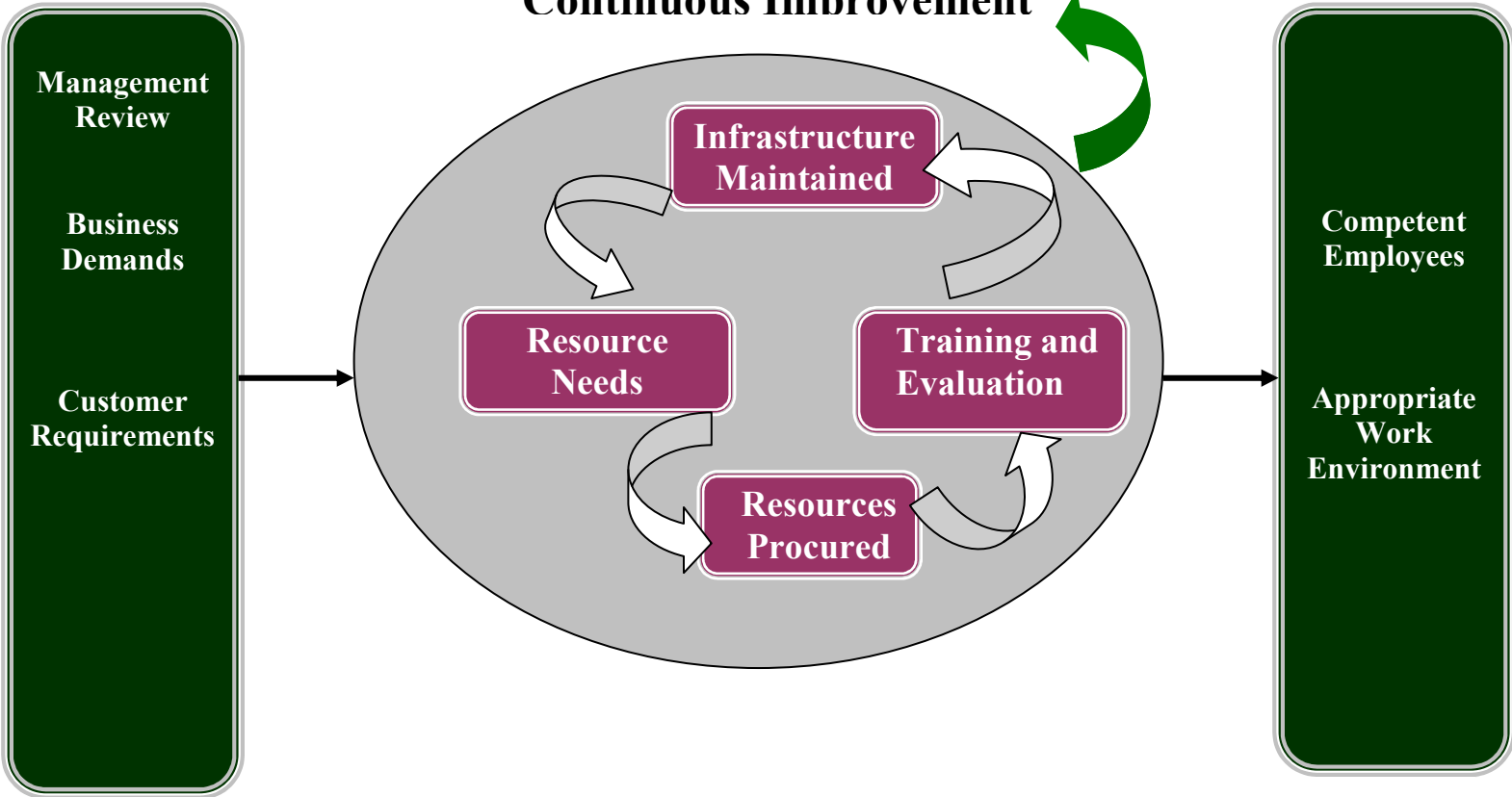


VSP Technologies Quality Management System Documentation

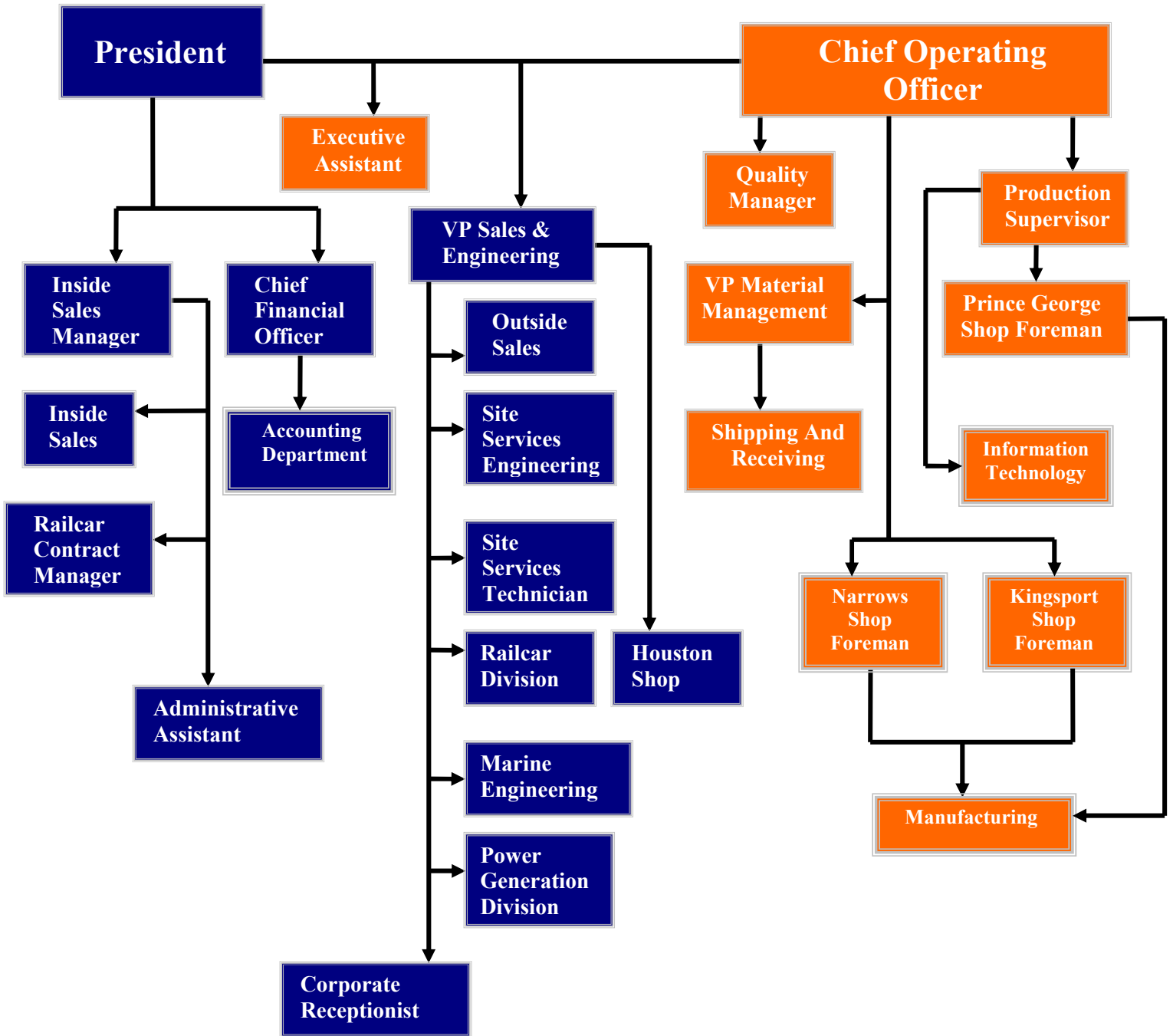


# VSP Technologies Resource Management

## Continuous Improvement



### Section 3 Organizational Chart/Cross References



### Section 3 (Continued) Cross References

QUALITY MANUAL

SUPPORTING DOCUMENTATION

QM-4	Quality Management System	→	<b><i>**Document Control (SLP-02)**</i></b> <b><i>**Record Control (SLP-03)**</i></b>
QM-5	Management Responsibility	→	N/A
QM-6	Resource Management	→	N/A
QM-7	Product Realization	→	Work Instructions Control Of Monitoring and Measuring Devices (SLP-04) Materials Management (SLP-06)
QM-8	Measurement, Analysis and Improvement	→	Work Instructions <b><i>**Control Of NonConforming Product (SLP-05)**</i></b> <b><i>**Corrective Action (SLP-01)**</i></b>

***\*\*ISO-9001:2000 Required Procedure***

## Section 4 Quality Management System

### 4.1 General Requirements

The VSP Technologies Quality System is documented through the use of System Level Procedures and area Work Instructions. These documents provide the following:

- a. identification of processes for the Quality Management System
- b. sequence and interaction of these processes
- c. criteria and methods used to ensure operation and control of processes, including any outsourced processes which affect product conformity
- d. means for measuring, monitoring and analyzing these processes
- e. ways to implement actions necessary to meet planned goals and support continuous improvement

Necessary information and resources are provided through interaction between Management and identified processes and employees.

### 4.2 Documentation Requirements

#### 4.2.1 General

The VSP Technologies Quality System documentation includes:

- a. documented quality policy including, quality objectives
- b. a quality manual
- c. documented procedures to meet standard requirements including:
  - ◆ document and data control
  - ◆ quality records
  - ◆ control of nonconforming product
  - ◆ internal audits
  - ◆ corrective and preventive actions
- d. area work instructions and procedures to ensure the effective planning, operation and control of the processes
- e. quality records necessary to meet the requirements of ISO 9001:2000

#### **4.2.2 Quality Manual**

The VSP Technologies Quality Manual includes:

- a. the scope of our quality management system and justification for any exclusions
- b. documented procedures that establish the quality management system
- c. flowcharts that describe the interaction of processes that make up the quality management system

#### **4.2.3 Control of Documents**

VSP Technologies Inc. has a documented System Level Procedure that insures:

- a. documents are approved for adequacy prior to use
- b. documents are reviewed, updated and re-approved as necessary
- c. document changes and current revision status are identified
- d. relevant documents are available at points of use
- e. documents are legible and readily identifiable
- f. external documents are identified and their distribution is controlled
- g. obsolete documents are not used and any retained obsolete documents are suitably identified

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

VSP Technologies Inc. has a documented System Level Procedure that insures:

- a. records are established and maintained
- b. records are legible, readily identifiable and retrievable
- c. records are protected and given adequate retention times

## Section 5 Management Responsibility

### 5.1 Management Commitment

VSP Technologies' Management Team insures its commitment to implementing and approving the quality system by:

- a. communicating to employees the importance of meeting customer requirements as well as statutory and regulatory requirements through various meetings, presentations and memos.
- b. establishing a quality policy
- c. insuring quality objectives are established
- d. conducting management reviews
- e. ensuring the availability of resources

### 5.2 Customer Focus

VSP Technologies' Management Team ensures customer requirements are determined and met with a goal of enhancing customer satisfaction. This is done through internal and external communication, thorough review of customer requirements and effective timely response to customer issues.

### 5.3 Quality Policy

VSP Technologies' Management Team ensures that the quality policy:

- a. is appropriate to the purpose of VSP Technologies' business
- b. includes a commitment to meeting requirements and to continually improving the quality management system
- c. provides a framework for establishing and reviewing quality objectives
- d. is communicated and understood throughout the VSP Technologies facility
- e. is reviewed for continuing suitability

## 5.4 Planning

### 5.4.1 Quality Objective Planning

The VSP Technologies Management Team ensures that quality objectives, including those needed to meet quality requirements, are established at relevant functions and levels throughout the VSP Technologies facility. These quality objectives are measurable and are consistent with meeting the quality policy including our commitment to continuous improvement.

### 5.4.2 Quality Management System Planning

The VSP Technologies Management Team ensures that quality management system planning is performed in order to meet requirements of the Q9001:2000 standard, as well as quality objectives. When changes to the quality management system are planned and implemented, the integrity of the quality management system is maintained through internal communication, training and documentation revision.

## 5.5 Responsibility, Authority and Communication

### 5.5.1 Responsibility and Authority

The VSP Technologies Management Team ensures that responsibilities and authorities are defined and communicated throughout the VSP Technologies facility. This is done through meetings, individual work instructions, Departmental Level Procedures, System Level Procedures and the Quality Manual.

### 5.5.2 Management Representative

The Quality Manager has been designated by the Management team as the Quality Systems Leader. The Quality Manager has responsibilities and authorities that include:

- a. ensuring the processes needed for the quality management system are established, implemented and maintained
- b. reporting to the Management Team on the performance of the quality management system and need for improvements
- c. ensuring the promotion of awareness of customer requirements throughout the organization

### 5.5.3 Internal Communications

The VSP Technologies Management Team ensures that appropriate communication processes are established at the VSP Technologies facility and that communication takes place regarding the effectiveness of the quality management system. This communication is accomplished through various means including but not limited to: memos, training, and meetings.

## 5.6 Management Review

### 5.6.1 General

The VSP Technologies Management Team reviews the plant's quality management system at planned intervals to ensure its continuing suitability, adequacy and effectiveness. This review includes assessing opportunities for improvement and the need for change to the quality management system, including the quality policy and quality objectives. Records of these reviews are maintained per SLP-03.

### 5.6.2 Review Input

Inputs to the VSP Technologies management review include:

- a. results of audits
- b. customer feedback
- c. process performance and product conformity
- d. status of preventive and corrective actions
- e. follow-up from previous management reviews
- f. vendor performance
- g. planned changes that could affect the quality management system
- h. recommendations for improvement

### 5.6.3 Review Output

Outputs from the VSP Technologies management review include any decisions and actions related to:

- a. improvement of the effectiveness of the quality management system and processes
- b. improvement of product related customer requirements
- c. resource needs

## Section 6 Resource Management

### 6.1 Provisions of Resources

VSP Technologies' Management Team insures resources are provided as necessary to:

- a. implement and maintain the quality management system and continually improve its effectiveness
- b. enhance customer satisfaction by meeting customer requirements

### 6.2 Human Resources

#### 6.2.1 General

The VSP Technologies Management Team insures that personnel performing product quality related activities are competent. Competency is achieved through educational background, various training programs and experience that have developed skills necessary to perform required activities.

#### 6.2.2 Competence, Awareness and Training

- a. determining the necessary competence for personnel performing work affecting product quality
- b. providing training and evaluating its effectiveness
- c. ensuring personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives
- d. maintaining appropriate records of education, training, skills and experience

### 6.3 Infrastructure

The VSP Technologies Management Team determines, provides and maintains the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable

- a. buildings, workspace and associated utilities
- b. process equipment
- c. services such as transportation and communications

## 6.4 Work Environment

The VSP Technologies Management Team determines and manages the work environment needed to achieve conformity to product requirements.

## Section 7 Product Realization

### 7.1 Quality Planning

As part of VSP Technologies' Quality Management System, plans and processes are developed necessary for Product Realization. This planning and developing is achieved through the following:

- a. establishing quality objectives and requirements for the product
- b. establishment of processes, documents and resources specific to the product
- c. verification, validation, monitoring, inspection and testing specific to the product and criteria for product acceptance
- d. maintenance of records providing evidence of realization processes and product conformance

### 7.2 Customer Related Processes

#### 7.2.1 Determination of Requirements Relating to the Product

As part of VSP Technologies' Quality Management System product requirement determination is based on:

- a. requirements specified by the customer including delivery requirements
- b. other requirements not specified by the customer but necessary for specific or intended use
- c. statutory and regulatory requirements related to the product
- d. any additional internal requirements determined by the VSP Technologies facility Quality Management System

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

As part of VSP Technologies' Quality Management System product requirements are reviewed through:

- a. defining product requirements (specifications)
- b. resolution of conflicts with contracts or orders
- c. ensuring the ability to meet defined product requirements

Records are maintained of this review process and any actions resulting from the review.

### **7.2.3 Customer Communication**

VSP Technologies' Quality Management System establishes arrangements for customer communication in relation to:

- a. product information
- b. inquiries, contracts or order handling, including amendments
- c. customer feedback, including customer complaints and compliments

## **7.3 Design and Development (\*\*Excluded at this time\*\*)**

## **7.4 Purchasing**

### **7.4.1 Purchasing Process**

Through SLP-06 VSP Technologies' Quality Management System ensures purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product is dependent on the effect of the purchased product on subsequent product realization or the final product.

VSP Technologies Inc. evaluates and selects suppliers based on their ability to supply product in accordance with established requirements. Criteria for selection, evaluation and re-evaluation is documented through SLP-06. Records of the results of evaluations and necessary actions arising from the evaluation are maintained through Management Review and Supplier Performance documentation.

### **7.4.2 Purchasing Information**

VSP Technologies' Quality Management System ensures that purchasing information describes the product to be purchased and includes where appropriate:

- a. requirements for approval of product, procedures, processes and equipment to be purchased
- b. requirements for qualification of supplier personnel
- c. quality management system requirements

The adequacy of the specified purchase requirements are ensured prior to supplier communication.

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

VSP Technologies' Quality Management System provides for inspection activities that ensure purchased product meets specified purchase requirements. Any verification at the supplier's premises requires that the intended verification arrangements and the method of product release be stated in the purchasing information.

## **7.5 Production and Service Provision**

### **7.5.1 Control Of Product and Service Provisions**

**Note: There is no servicing involved in the VSP Technologies facility Quality Management System**

VSP Technologies' Quality Management System ensures that production is planned and carried out under controlled conditions. Controlled conditions include where applicable:

- a. availability of information that describes the characteristics of the product
- b. availability of work instructions, as necessary
- c. use of suitable equipment
- d. availability and use of monitoring and measuring devices
- e. implementation of monitoring and measurement
- f. implementation of release and delivery activities



### **7.5.2 Validation of Processes for Production and Service Provision**

**Note: There is no servicing involved in the VSP Technologies facility Quality Management System**

All product under the scope of ISO9001:2000 registration produced at the VSP Technologies facility is validated as meeting intended purposes prior to being shipped to the customer. This validation demonstrates the ability of the processes to achieve planned results. VSP Technologies has established arrangements for processes including, where applicable:

- a. defined criteria for review and approval of the processes
- b. approval of equipment and qualification of personnel
- c. use of specified methods and procedures
- d. requirements for records
- e. revalidation

### **7.5.3 Identification and Traceability**

VSP Technologies' Quality Management System ensures all product is identified through testing, visual inspection and labeling. Records of testing are maintained as necessary to ensure traceability.

### **7.5.4 Customer Property**

VSP Technologies' Quality Management System ensures that customer property is identified, verified, protected and safeguarded throughout the process of incorporation into the product.

### **7.5.5 Preservation of Product**

VSP Technologies' Quality Management System ensures that product conformity is preserved during internal processing and delivery to the intended destination. This preservation includes identification, handling, packaging, storage and protection.

## 7.6 Control of Measuring and Monitoring Devices

VSP Technologies' Quality Management System through SLP-04, ensures that proper monitoring and measurement to be undertaken is determined and what devices will be used to determine conformity. Processes have been established that allow monitoring and measuring to be carried out in a manner that is consistent with requirements. Where necessary to ensure valid results, measuring equipment shall:

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

VSP Technologies' Quality Management System ensures appropriate action is taken on equipment and affected product when measuring devices are found to be out of calibration. Documented procedures exist ensuring action is completed and documented.

## Section 8 Measurement, Analysis and Improvement

### 8.1 General

As part of the Quality Management System at VSP Technologies, monitoring, measurement, analysis and improvement processes are planned and implemented as necessary to ensure:

- a. product conformity is demonstrated
- b. quality management system conformity
- c. continual improvement and effectiveness of the quality management system statistical techniques are used as necessary to enhance process understanding, improvement and control.

## 8.2 Monitoring and Measuring

### 8.2.1 Customer Satisfaction

VSP Technologies' Quality Management System ensures that customer perception of VSP Technologies' ability to meet their requirements is monitored. Monitoring is done through random surveys, customer visits and follow-ups to customer complaints or compliments.

### 8.2.2 Internal Audit

Internal audits are conducted at the VSP Technologies facility per SLP-07 to determine whether the quality management system:

- a. conforms to planned arrangements and meets requirements of both ISO9001:2000 and VSP Technologies policies and procedures
- b. is effectively implemented and maintained and improved

Audits are planned based on the importance of the processes and areas to be audited and results of previous audits. Audit criteria, scope, frequency and methods are defined through various plant documents.

Auditors are selected assuring objectivity and impartiality of the audit process and will not audit their own work.

The responsibilities and requirements for planning and conducting audits and for reporting results and maintaining records are defined in SLP- 07

Management ensures timely actions are taken to ensure nonconformities are eliminated.

All internal audits performed at the VSP Technologies facility require follow-up verification to ensure that corrective actions taken were effective in eliminating the root cause of any nonconformities. All audit information concerning nonconformities and follow-ups are documented and maintained per SLP-03 (Record Control)

Audits are performed by personnel who have been trained in auditing skills and techniques that ensure only comprehensive well planned audits are conducted.

### **8.2.3 Monitoring and Measurement of Processes**

Processes that make up the VSP Technologies Quality Management System are monitored and measured to ensure their ability to achieve planned results. When planned results are not achieved, preventive and corrective action are taken as appropriate to ensure conformity of the product.

### **8.2.4 Monitoring and Measurement of Product**

As part of the VSP Technologies Quality Management System, characteristics of product are monitored and measured to verify that product requirements have been met. This verification is done at appropriate stages according to documented procedures.

Evidence of conformity to acceptance criteria is maintained along with person(s) authorizing release of product.

Product will not be released until all planned arrangements have been completed unless otherwise approved by relevant authority or, where applicable, by the customer.

## **8.3 Control Of Nonconforming Product**

The VSP Technologies Quality Management System ensures that product that does not conform to established requirements is identified and controlled to prevent its unintended use or delivery. Controls and related responsibilities are documented in SLP-05. Nonconforming product at the VSP Technologies facility is addressed by one or more of the following ways:

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

Records will be maintained showing the nature of the nonconformities and any actions taken, including concessions obtained.

All corrected nonconforming product is re-verified through established procedures/plans.

When nonconforming product is detected after delivery or use has started, actions will be taken as appropriate to the nonconformity.

All records dealing with disposition, approval, product identification and test results are maintained per SLP-03.

## 8.4 Analysis Of Data

VSP Technologies' Quality Management System ensures that appropriate data is collected and analyzed as necessary to demonstrate the suitability and effectiveness of the Quality Management System and to evaluate where continual improvement of the Quality Management System can be made. Data collected and analyzed provide information relating to:

- a. customer satisfaction
- b. conformity to product requirements
- c. characteristics and trends of processes and products including opportunities for preventive action
- d. suppliers

## 8.5 Improvement

### 8.5.1 Continual Improvement

The VSP Technologies Quality Management System ensures continual improvement of the effectiveness of the Quality Management System through use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive action and management review.

### 8.5.2 Corrective Action

The VSP Technologies Quality Management System ensures action is taken to eliminate the causes of nonconformities in order to prevent recurrence. Corrective actions shall be appropriate to the effects of the nonconformities encountered. SLP-01 defines requirements for:

- a. reviewing nonconformities including customer complaints
- b. determining causes of nonconformities
- c. evaluating actions needed to prevent recurrence
- d. determining and implementing actions needed
- e. recording results of actions taken
- f. reviewing corrective actions taken



### **8.5.3 Preventive Action**

The VSP Technologies Quality Management System ensures action is taken to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions shall be appropriate to the effects of the potential problem. SLP-08 defines requirements for:

- a. determining potential nonconformities and their causes
- b. evaluating actions needed to prevent occurrence
- c. determining and implementing actions needed
- d. records of results of actions taken
- e. reviewing preventive actions taken