Vopak Gulf Coast
Quality Management System Manual

VTDP-11180
Issue 4 (09/17/12)

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Document Control Policy for This Manual

This manual summarizes the quality requirements at Vopak Gulf Coast to ensure that our services conform to specified requirements. It is controlled under document control provisions outlined in Section 4.2.3. Sections of this manual represent Vopak Gulf Coast’s approach to quality and correspond to the clauses of ISO 9001:2008 standard, which refers exactly to the same clauses in ISO 9001:2000. The Gulf Coast Quality Program Manager, who functions as the Quality Management Representative, shall oversee the Quality Management System and ensure that processes adhere to this manual and the requirements of ISO 9001:2008 standard and applicable Vopak standards. This manual shall be reviewed annually as well as any subsequent changes that could affect the Quality Management System.

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This manual may be issued to our customers or potential customers as uncontrolled copy with permission from the General Manager, the Terminal Manager, or the SHEQ/Quality Program Managers. Holders of this manual are responsible for verifying the version to be current prior to use or issue.
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1.0 Introduction

1.1. Scope of the Quality Management System

Vopak is not a manufacturing facility. The product that Vopak offers is storage and movement service of customer’s products. Personnel, processes and areas involving these service activities within Gulf Coast Region are the scope of Quality Management System. Vopak Gulf Coast Region is under the umbrella of Vopak North America Division. The region comprises two terminals located at Galena Park and Deer Park, Texas. These terminals are geographically and strategically situated in the southeast of Houston, Texas along the ship channel.

Vopak Gulf Coast Quality Management System (QMS) meets the requirements of ISO 9001:2008 standard and ISCC EU-RED program (International Sustainability & Carbon Certification European Renewable Energy Directive). The only exclusion is clause 7.5.2 Validation of Processes for Production and Service Provision. The services provided by Vopak are verified against agreed upon requirements by customers prior to release; special validation activities do not apply.

The scope of QMS will be reviewed and amended as changes occur involving the nature or type of business, facility, operations, activities, products or services.

1.2. Company Overview

With a history spanning almost four centuries (400 years), Vopak is the global market leader in the independent storage and handling of liquid oil products, chemicals, vegetable oils and liquefied gases. Vopak has terminals in the world’s most strategic ports. It operates specialized facilities including product tanks, jetties, truck loading stations and pipelines, and provides access to road and rail networks. In many instances, it stores its customers’ products for extended periods at these terminals, often under highly specified conditions such as controlled temperature. The company also blends components according to desired specifications. Vopak’s terminals play a key role in product transit from the producer plant via tank terminals to end-user locations, either by ship, tank truck, railcar or pipeline.

Vopak’s independent tank terminal network is responsible for a number of logistic functions in the product’s flow from producer to end-user. Vopak operates three types of terminals:

1. Import-Export-Distribution Terminal
The logistical chain in bulk liquid import and export often involves transport by oceangoing vessel. For Vopak’s customers, the terminal can serve as a point of origin for inland distribution by inland shipping, pipeline, tank truck or rail. Or alternatively, it serves as collection point for small parcels, originating from an inland production facility, to create a large parcel for overseas export.

2. Hub Terminal
A hub terminal combines the tasks of an import-export-distribution terminal with that of a meeting point for trade. It is, in other words, a location that provides access to a market. The Vopak network comprises hubs in the Amsterdam-Rotterdam-Antwerp (ARA) Region in Europe, Houston in the US, Fujairah in the United Arab Emirates, and Singapore in Asia.

*Vopak Gulf Coast region belong in this terminal network category.*
3. Industrial Terminal
The industrial terminal is a logistical center integrated via pipelines to every major petrochemical facility within an industrial complex. Within the complex, it supports product flows and the supply and export of feedstock and finished products.

Vopak’s terminals help optimize the reliability and efficiency of our customers’ logistical processes. From these terminals, Vopak offers its customers – including state-run oil companies and the producers and traders of oil products and chemicals – high-quality operations worldwide. Vopak develops its services with product, market and functional requirements in mind, always in collaboration with customers and strategic partners. At present, Vopak operates 80 tank terminals in 32 countries with a total storage capacity of more than 27 million cubic meters (cbm).

The nature of the business requires a long-term investment in strategic locations, therefore Vopak invests in long-term relationships with customers, strategic partners, governments, shareholders and employees (see 1.3 Mission & Strategy).

Sustainability is an integral part of Vopak’s business processes and operations. This is reflected by our consistent application and enforcement of strict standards, rules, codes and procedures such as concerning Safety, Health, Environmental, & Quality (SHEQ). Vopak’s standards are in keeping with the most trendsetting oil and petrochemical companies, which constitute a major part of Vopak’s customer base. Of course, the Vopak standards comply with local legislation and regulations.

Vopak is organized into five divisions: (1) Chemicals Europe, Middle East & Africa (CEMEA), (2) Oil Europe, Middle East & Africa (OMEA), (3) Asia, (4) North America and (5) Latin America.

The units within our global organization work closely with one another to share their knowledge, expertise, and best practices. All of this enables Vopak to respond rapidly, creatively and correctly to changing customer needs and market developments. Vopak continually seeks to improve and expand its terminal network, particularly in strategically located ports.

1.3. Mission and Strategy

Our mission
Vopak is the world’s leading storage provider for bulk liquids. It is our aim to contribute to optimizing the reliability and efficiency of our customers’ regional or global supply chain processes by leveraging our network of storage terminals around the world, our 400 years experience, our logistics and storage specific know-how and solution driven and agile attitude. We aspire to be the world’s most admired independent storage terminal company, admired by its:

- **Customers**, because we contribute to their commercial success in an environmental and social responsible way
- **Employees**, as Vopak offers them equal opportunities to develop themselves
- **Shareholders**, because we bring them added value
- **Partners**, because we are a trustworthy and reliable long term business partner

The Vopak Values
We believe that we can only achieve our ambition by living and acting according to values that speak to the economic, social, and environmental responsibilities of business and society, being:

- **Professionalism**: always striving for the highest standards
- **Service**: our most important product; we deliver what we promise
Integrity: the basis for lasting relationships
Improvement: through open communication, creativity and continuous assessment of results
Agility: adaptability, flexibility and alertness in order to act rapidly and skillfully
Ownership: to take responsibility and the initiative in the best interest of the customer and the company
Passion: enthusiasm, loyalty and commitment; we believe in what we do

Vopak Strategy
On the basis of our mission of becoming the most admired independent storage terminal company a strategy has been defined that rests on three pillars:

1. **Growth leadership**
   - Optimizing and expanding existing terminals
   - Developing terminals in new geographical areas
   - Mergers and acquisitions
   - Developing terminals for new products or markets, like LNG and biofuels

2. **Customer leadership** through recognized excellence in customer service at every site.

3. **Operational efficiency leadership** through continuously improving operational processes

The strategy is being implemented through special internal programs, known as strategic initiatives, and excellence programs for improving existing operating processes.

**Vopak long term company objective**
Vopak is aiming to become a storage services company which is driven by excellence and that is setting new standards in safety, operations and customer service.

1.4 **Quality Management Principles**

To ensure success in our operations, we will manage our QMS in a systematic and visible manner based on the eight quality management principles that are referenced in the ISO 9000:2008 standard. Gulf Coast Management uses these principles in leading the organization toward improved performance.

**Principle 1: Customer Focus** (Sections 5.2 Customer Focus & 7.2 Customer-Related Processes)
We are dependent on our customers and therefore should understand our current and future customers’ needs. We will meet our customers’ requirements and strive to exceed their expectations.

**Principle 2: Leadership** (Section 5.0 Management Responsibility)
Our management team will establish our purpose and direction for the organization. They will create and maintain an internal environment in which Vopak employees can become fully involved in achieving our organization’s objectives.

**Principle 3: Involvement of People** (Section 6.2 Human Resources)
Employees at all levels of the organization are the essence of our success in meeting customer requirements and their full involvement will enable our organization to benefit from their activities.

**Principle 4: Process Approach** (Section 3.0 Process Approach: Plan-Do-Check-Act)
A desired result is achieved more efficiently when our activities and related resources are managed as a process approach, giving us an efficient desired result.
Principle 5: System Approach to Management (Section 4.1 General Requirements)
Our approach includes identifying, understanding and managing interrelated processes as the system contributes to the organization's effectiveness and efficiency in achieving our objectives for quality.

Principle 6: Continual Improvement (Sections 5.3 Quality Policy and 8.5 Improvement)
Continual improvement of the organization’s overall performance is a permanent objective of Vopak.

Principle 7: Factual Approach to Decision Making (Section 8.4 Analysis of Data)
We will analyze our data and information to make effective decisions.

Principle 8: Mutually Beneficial Supplier Relationship (Section 7.4 Purchasing)
We believe that our suppliers (contractors) and ourselves are interdependent and that a mutually beneficial relationship will enhance the ability of both of us to create value.
2.0 Definition of Terms

The following terms and definitions are based on Vopak’s internal process and the ISO 9000:2000 Quality Management Systems – Fundamentals and Vocabulary:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced Scorecard</td>
<td>A strategic planning and management system used to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals. The balanced scorecard suggests that the organization is viewed from four perspectives, and to develop metrics, collect data and analyze it relative to each of these perspectives: financial, customer, internal process and learning and growth</td>
</tr>
<tr>
<td>CBT courses</td>
<td>Stands for computer-based training courses. VNA uses ClarityNet for interactive e-learning solution that includes online safety, human resources management, and industrial skills and maintenance training courses. VNA has purchased and offers 100 self-paced online courses for employees to choose from.</td>
</tr>
<tr>
<td>Competence</td>
<td>Demonstrated ability of Vopak employees to apply knowledge and skills.</td>
</tr>
<tr>
<td>Continual Improvement</td>
<td>Recurring activity to increase the ability to fulfill requirements.</td>
</tr>
<tr>
<td>CRM</td>
<td>Stands for Customer Relationship Management. An online global reporting system used by Vopak. It is a web-based program running on Oracle CRM On Demand that is used for managing customer information including customer complaints.</td>
</tr>
<tr>
<td>Customer</td>
<td>Refers to Vopak’s customers. Defined as an organization or person, internal or external, that receives a product (service).</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>Customer’s perception of the degree to which the customer’s requirements have been fulfilled.</td>
</tr>
<tr>
<td>DataStream (Infor EAM)</td>
<td>A maintenance work order tracking system (enterprise asset management) used by Vopak for managing asset, asset information and maintenance activities.</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>Extent to which planned activities are realized and planned results achieved.</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Relationship between the result achieved and the resources used.</td>
</tr>
<tr>
<td>GWP</td>
<td>Stands for Global Workplace Project. A remote desktop application rolled out in the first half of 2011 within the VNA division. It aims to improve and increase the reliability of IT services and makes employees’ work lives easier by having the ability to log in from any PC anywhere at any time without compromising company security.</td>
</tr>
<tr>
<td>Interested Party</td>
<td>(Stakeholder) Person or group having an interest in the performance and success of the organization. May be Vopak's customer, supplier, partners, society, etc.</td>
</tr>
<tr>
<td>ISCC EU-RED</td>
<td>International Sustainability &amp; Carbon Certification is a compliance program that meets the European Renewable Energy Directive. As a storage provider of sustainable biofuel products, Vopak utilizes the ISO 9001 framework to ensure conformance to the ISCC requirements.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>JDE (JD Edwards) System</td>
<td>An ERP system (enterprise resource planning) used by Vopak for managing tank terminal business activities involving inventory, finance, billing, sales, order processing and purchasing. The terms JDE and PEPI can be used interchangeably, because PEPI is JDE. PEPI stands for Package Enabled Process Improvement. JDE is the original supplier of the software and PEPI is the name that Vopak gave to the modified package.</td>
</tr>
<tr>
<td>Organization</td>
<td>Refers to Vopak Gulf Coast Region. Defined as a group of people and facilities with an arrangement of responsibility, authorities and relationships.</td>
</tr>
<tr>
<td>Outsourced Process</td>
<td>A process that the organization needs for its quality management system and which the organization chooses to have performed by an external party.</td>
</tr>
<tr>
<td>PEPI</td>
<td>Stands for Package Enabled Process Improvement. See JDE for more details.</td>
</tr>
<tr>
<td>Process</td>
<td>Set of interrelated or interacting activities which transform inputs into outputs.</td>
</tr>
<tr>
<td>Process Approach</td>
<td>The application of a system of processes within an organization, together with the identification and interaction of these processes, and their management.</td>
</tr>
<tr>
<td>Product</td>
<td>Result of a process. Products are categorized into services, software, hardware and processed materials.</td>
</tr>
<tr>
<td>Quality</td>
<td>Degree to which a set of inherent characteristics fulfills requirements.</td>
</tr>
<tr>
<td>Quality Management System (QMS)</td>
<td>Set of interrelated or interacting elements to direct and control and organization with regard to quality based on established policy and objectives.</td>
</tr>
<tr>
<td>Quality Objective</td>
<td>Something sought, or aimed for, related to quality and based on the quality policy. Since quality efforts are customer-driven and quality is an integral part of the business (supply chain), quality objectives are considered or may be perceived as business objectives.</td>
</tr>
<tr>
<td>Quality On-Line (QoL)</td>
<td>An automated workflow application system used by Vopak for managing controlled documents (Document Management System [DMS] module) and tracking report status (Report Management module).</td>
</tr>
<tr>
<td>Quality Plan</td>
<td>A document specifying the processes of the quality management system (including the product realization processes) and the resources to be applied to a specific product, project or contract.</td>
</tr>
<tr>
<td>Quality Policy</td>
<td>A policy statement stating the overall intentions and direction of an organization related to quality as formally expressed by Vopak Gulf Coast Management.</td>
</tr>
<tr>
<td>Requirement</td>
<td>Need or expectation that is stated, generally implied or obligatory. Requirements may be internal, customer, product, statutory or regulatory.</td>
</tr>
<tr>
<td>Supplier</td>
<td>Refers to Vopak’s vendor or contractor. Defined as an organization or person, internal or external, that provides product or service.</td>
</tr>
<tr>
<td>Service Now</td>
<td>An IT work order tracking system (help desk management solution) used by Vopak for managing work orders involving IT/RCC support.</td>
</tr>
<tr>
<td>Top Management</td>
<td>Vopak Gulf Coast Management. Defined as a person or group of people who directs and controls an organization at the highest level.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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</tr>
<tr>
<td>VIMS</td>
<td>Stands for Vopak Integrated Management System. A SHEQ management system mainly comprising integration of the requirements of ISO 9001, ISO 14001, OHSAS 18001 and Responsible Care.</td>
</tr>
<tr>
<td>VNA</td>
<td>Stands for Vopak North America. A division of Vopak located in Houston, Texas. VNA has 9 strategically-located terminals: 2 in Canada and 7 in the USA.</td>
</tr>
<tr>
<td>Work Instruction (WI)</td>
<td>The work instruction referred to may either pertain to a type of document that supports the procedure and controlled on QoL or a work order generated by Customer Service from PEPI that highlights detailed instructions pertaining to product, order activity and special requests from customer.</td>
</tr>
</tbody>
</table>
3.0 Process Approach (Plan-Do-Check-Act)

When applied to the Quality Management System (and SHE Improvement Planning), a process-based approach emphasizes the importance of:

1. understanding and meeting requirements (internal, customer, product, regulatory or statutory)
2. the need to consider processes in terms of added value,
3. obtaining result of process performance and effectiveness, and
4. continual improvement of processes based on objective measurement.

The figure below illustrates that customers play a significant role in defining requirements and providing post-delivery feedback. Vopak Gulf Coast established a process-approach QMS that identifies the linkage and interaction between the key processes within the system. This approach emphasizes the importance of fulfilling customer requirements, evaluating results of process performance and effectiveness, and driving continual improvement.

![Figure 3.0 Business Process Cycle](image-url)
4.0 Quality Management System

4.1 General Requirements

Figure 4.1 Sequence and Interaction of Vopak’s Processes
In order to set standards within the region, Vopak has established and adopted an approach in accordance with the requirements of ISO 9001:2008, ISCC EU RED program, Vopak QA/QC Procedure for Handling & Storage of Biofuels under ISCC Certification, and Vopak Way Integrated Management System standards that identifies, implements, maintains, controls and improves processes affecting the QMS.

Our approach includes:
- identification of the sequence and interaction of the processes (Figure 4.1),
- criteria and methods needed to ensure effective operation and control (Section 7.0),
- availability of resources and information necessary to support the operation and monitoring of the processes (Section 6.0),
- methods to monitor, measure, and analyze the processes (Section 8.0), and
- implementation of actions necessary to achieve planned results and continual improvement (Section 8.5).

Processes pertinent to Safety, Health, Environmental (including pollution prevention) and Security are separate from the QMS and covered in the SHE, Disposal and Security sections located in Quality On-Line Document Management System. However, basic SHE (PPE) requirements are addressed as a section in every procedure.

When processes that affect product conformity with requirements are outsourced, appropriate controls are implemented to ensure that Vopak requirements are met. Controls of these processes may vary and are identified in Section 7.0. The type and extent of control to be applied to these outsourced processes can be influenced by factors such as the:

a) potential impact of the outsourced process on the organization's capability to provide product that conforms to requirements,
b) degree to which the control for the process is shared,
c) capability of achieving the necessary control through the application of Section 7.4.

Product inspection is carried out by third party inspectors that are usually selected by Vopak's customers. Mode of transportation of product as well as the freight company to be used are usually dictated by Vopak's customers. The only outsourced process that may potentially impact product conformity is the cleaning of equipment (i.e., tanks, hoses, pipelines), periodic tank gauging and the preventive and corrective maintenance of storage equipment and its constituents (i.e., API, calibration).

4.2 Documentation Requirements

4.2.1 General

Vopak Gulf Coast’s QMS includes:
- Quality Policy (Section 5.3),
- Quality Objectives (Section 5.4.1),
- QMS Manual (this manual VTDP-11180),
- documented procedures and records required by the ISO 9001:2008 and ISCC, and
- documents, including records, determined by Vopak to be necessary to ensure the effective planning, operation and control of its processes.

The extent of QMS documentation will be based on the:
- size of group involved and type of activities,
- complexity of processes and their interactions,
- complexity of products to be handled,
- customer requirements and applicable standards, regulations, or legislations, and
- competence of personnel performing the process.
Level 1
First-tier documents are documents considered as guiding principle. This level includes key documents that provide consistent information, both internally and externally, about Vopak's operations, management, objectives, strategy, and where applicable, statutory and regulatory requirements. Vopak Way standards, HR policies, company policies, SHEQS policies and QMS manual belong in this category. This manual references link to lower tier documents.

Level 2
Supporting documents to level 1 documents. This may be in a form of plans, procedures and manuals that provide set of instruction/direction on how to perform activities and processes necessary to achieve objectives and strategy. Design standards are also in this category.

Vopak Gulf Coast defines the QMS for respective departments in a form of department manuals. Each department manual is supported by procedures. These procedures direct the members of the system on the specifics of how each job activity is performed. System members are trained on the usage of procedures relevant to their job functions. The procedures used in each department are referenced in the respective department manuals. Employees review their department’s procedures annually and as changes occur.

Level 3
Documents that may be generated as required. Work instructions provide detailed direction on how to perform activities and processes consistently. Job description
and job safety analysis are considered tier-3 documents. In addition, this level includes technical documents (such as specifications, guidelines, drawings) of internal or external origin. Specifications are documents stating requirements. Guidelines are documents stating recommendations or suggestions.

**Level 4**

Documents that may be generated as required. Forms are types of documents that are defined by documented procedures and work instructions. Records are special types of documents that provide objective evidence of activities performed or results achieved.

### 4.2.2 Quality Management System Manual

Vopak Gulf Coast has established and maintains a quality manual that includes:

- the scope of the quality management system, including details of and justification for any exclusions (Section 1.1),
- the documented procedures established for the quality management system, or reference to them, and
- a description of the interaction between the processes of QMS (Figure 4.1).

### 4.2.3 Control of Documents

At a minimum, the following documents are controlled in the Quality On-Line (QoL) Document Management System (DMS):

- Standards
- Policies
- Manuals/Procedures/Training Modules
- Job Safety Analysis
- Design Standards
- Guidelines
- Permits
- Forms

Documents that can only viewed using a special software or application such as drawings (among others) as well as the ones containing company proprietary information (i.e., Facility Security Plan, HR policies, financial documents) are controlled locally and coordinated respectively within authorized departments.

Majority of Gulf Coast employees have access to QoL. Should access is not available particularly for field personnel, the Lead Operators, Supervisors, Training Coordinator and Managers in the Operations Department will assist in providing access to these documents. To promote process ownership, any Gulf Coast employee who is directly impacted by the process can initiate improvements by submitting a document change request through QoL.

The Document Control Matrix (i.e., documents in QoL) defines the controls that ensure:

- a) Documents are approved for adequacy by document authorizers on QoL prior to issue. The QoL document authorizer is a role assigned to any Vopak Gulf Coast individuals who have managerial authority to execute the process.

- b) Documents are reviewed and updated as necessary usually by the QoL document owner and re-approved. Documents controlled in QoL are usually reviewed every 12 months from release date. Documents with set expiry dates are reviewed (at the latest) a month before its expiration. Review period may be shortened or extended as appropriate.

- c) Changes and the current revision status of documents are identified with QoL issue number and issue date on actual document.
d) Relevant versions of applicable documents are available at points of use. Majority of Gulf Coast employees have access to QoL and available computers are provided in various locations of the facility. It is understood by all that duplication of document (whether electronic or hardcopy) will change its control status to “uncontrolled”. It is the responsibility of document users to verify the correct version of document on QoL prior to issue or use in work operations.

Gulf Coast documents are prefixed with VTDP and made available to both Deer Park & Galena Park folders in QoL DMS. This will also be indicated on the scope of the procedure. Documents prefixed with VTGP are specific to Galena Park. VTDP documents that are specific to Deer Park will only be available in the Deer Park folder.

e) Documents remain legible and readily identifiable. Templates are available in QoL and provided in prescribed readable format (including font type, font size). The document title and QoL-assigned number are affixed on the header of the document.

f) External documents are identified and their distribution controlled. This type of document is identified through its logo or company of origin. External documents controlled on QoL are categorized with “external” document type.

g) Unintended use of obsolete documents is prevented and that suitable identification is applied if they are retained for any purpose. Documents that are archived on QoL are no longer accessible to Gulf Coast employees. Only local QoL administrators can view this document. It is understood by all that documents are to be kept current and obsolete version must be refrained from public use or access to avoid producing substandard or wrong output.

Records are a special type of document and controlled in Section 4.2.4.

4.2.4 Control of Records

Records established to provide evidence of conformity to requirements and of the effective operation of the QMS shall be controlled. Procedure for Control of Records defines the controls needed for the identification, storage, protection, retrieval, retention and disposition of records. A new procedure template will have a section for controlling specific records. Vopak Gulf Coast ensures that records remain legible, readily identifiable and retrievable.

The VNA Information Technology has established a disaster recovery plan for electronic data and records saved on terminal servers. The server for the new Global Workplace Project (GWP) is housed in One Data Center located in downtown Houston. Backup server is located outside Texas: one in Atlanta, GA and the other in Rotterdam, The Netherlands.

Records required per ISCC EU-RED and Vopak QA/QC Procedure for Handling & Storage of Biofuels under ISCC Certification shall be kept for a period 10 years.

<table>
<thead>
<tr>
<th>RECORD</th>
<th>RETENTION TIME</th>
<th>LOCATION</th>
<th>AUTHORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management review</td>
<td>All records outlined are kept indefinitely or with 1-year minimum. Disposition will be determined by the authorized management.</td>
<td>GM's office or designate</td>
<td>General Manager</td>
</tr>
<tr>
<td>Internal audit reports</td>
<td></td>
<td>QoL Report Management</td>
<td>SHEQ Manager and/or Quality Program Manager</td>
</tr>
<tr>
<td>Customer audits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incident reports</td>
<td></td>
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</tr>
<tr>
<td>Supplier and contractor audits</td>
<td></td>
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<tr>
<td>Corrective/Preventive action reports</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Customer complaints</td>
<td></td>
<td>CRM</td>
<td>Customer Service Mgr. and/or Quality Program Mgr.</td>
</tr>
</tbody>
</table>
5.0 Management Responsibility

5.1 Management Commitment

Vopak Gulf Coast Management is committed to the development and implementation of QMS and continually improving its effectiveness by: a) communicating the importance of meeting customer as well as statutory and regulatory requirements, b) establishing quality policy and quality objectives, c) conducting management reviews, and d) ensuring the availability of resources.

**Vopak North America (VNA) Division:**
Vopak is committed to provide the highest quality service and facilities to meet our customers’ expectations and conform to all requirements.

All VNA employees are dedicated to this goal and nothing less is acceptable.

**Vopak Gulf Coast Region:**
In agreement with the VNA quality commitment to continually strive to provide quality services and facilities to meet the expectations and requirements of our customers, Vopak Gulf Coast will:

- Select, train, and retain highly qualified employees.
- Preserve a mutual understanding between each employee and the company so that the importance and responsibilities of each position are known.
- Support the cooperation and teamwork among employees by supporting participation in quality initiatives and overall quality program.
- Support enthusiastic, pro-active approaches to problem solving by action groups from various levels of the organization.
- Sustain partnerships with suppliers and customers through communication, cooperation, and support.

5.2 Customer Focus

Gulf Coast Management’s commitment to customer focus and customer satisfaction is demonstrated in the Quality Policy statement.

During the product realization process (Section 7.0), Vopak ensures that customer needs and expectations are determined, converted into requirements, and fulfilled with the aim of enhancing customer satisfaction.

5.3 Quality Policy

Gulf Coast Management has established a quality policy that is appropriate to the operations of the company. It emphasizes commitment to customer satisfaction, operational excellence and continual improvement. The policy serves as a framework for reviewing our quality objectives and ensuring its continued alignment. It is communicated and understood at all levels of the organization. It will be displayed in conspicuous locations as a sign of our pride and a clear reminder of our commitment. The policy is preceded by the VNA Quality Commitment, which is referred to and included in this manual (Section 5.1) so that employees understand that the regional policy is an expansion of the corporate quality commitment.

New employees will be briefed on our Quality Policy during orientation. Management is responsible for reinforcing commitment to the QMS at all levels of the company.

As addendum to the SHEQS Policy, Vopak is committed to providing additional value to our customers with respect to sustainability requirements by complying with ISCC EU-RED as a storage provider.
Safety, Health & Environmental Policy
- Protection of the environment, the safety and health of Vopak’s employees, customers, suppliers and all those involved is an integral part of our activities.
- We are committed to continual improvement in our processes to manage SHE performance.
- We will contribute to the continuity of our company by systematic control, prevention and elimination of hazards. We will continuously work towards our goals of zero incidents and no damage to the environment.
- We will strictly adhere to SHE governing regulations as a minimum.
- Line Management’s responsibility is to demonstrate visible commitment, enforcement and provision of appropriate resources to implement Vopak’s SHE policy.
- Safety is everyone’s responsibility and we expect every employee to contribute to the prevention of accidents by reporting, analyzing and controlling SHE hazards. This will be supported by efficient and effective training programs and the development of annual SHE improvement plans.
- We are committed to providing suitable return to work opportunities for injured employees.

Quality & Security Policy
Our Quality commitment is to:
- increase customer satisfaction by understanding and fulfilling our customer needs;
- promote operational excellence by setting the highest standards and applying our values and principles in what we do and;
- drive continual improvement by reviewing and improving our strategy, performance and objectives.

Our Security commitment is to:
- provide a secure work environment in which our business can be carried out safely and successfully;
- enforce our security policy that emphasizes the importance of protecting people, property and operational facilities against loss or damage by intentional destruction or theft.

SHEQS Responsibilities
Vopak North America Employees are responsible for:
- adhering to the SHEQS policies and standards;
- supporting the established SHEQS objectives;
- reporting incidents, complaints and potential hazards. If possible, control any associated risks and;
- participating in any SHEQS-driven efforts and the completion/implementation of corrective actions.

Vopak North America contractors, third parties and visitors are responsible for:
- complying with all of Vopak’s safety, health, environmental, quality and security requirements.
5.4 Planning

5.4.1 Quality Objectives

Gulf Coast Management has established quality objectives at relevant functions and levels within the organization. The quality objectives are the strategic business objectives. Since QMS is adopted as process approach, QMS is perceived as part of the business. Annually, the Gulf Coast Management, in conjunction with relevant staff members, reviews and establishes strategic departmental objectives. These objectives are measurable and aligned with the Quality Policy as well as Vopak’s Mission and Strategy. Progress is periodically reviewed and monitored. The annual objectives are maintained by the General Manager and updated by respective department managers. Monthly KPIs (including Corporate Service KPIs) are tracked, measured and reported by every department in a form of monthly flash report. Standards are set based on annual target in the KPIs. Standards may also be based on process improvement objectives.

![Figure 5.4.1 Balanced Scorecard Approach](image)

The balanced scorecard is a strategic planning and management system used to (1) align business activities to the vision and strategy of the organization, (2) improve internal and external communications, and (3) monitor organization performance against strategic goals. It suggests that the organization is viewed from 4 perspectives, and to develop metrics, collect data and analyze it relative to each perspective: Financial, Customer, Internal Process and Learning & Growth

5.4.2 Quality Management System Planning

Gulf Coast Management ensures that a) the planning of the QMS is carried out in order to meet the requirements in Section 4.1, as well as the quality objectives, and b) the integrity of the QMS is maintained when changes to the QMS are planned and implemented.

For capital investment projects or long-term business/process improvement initiatives within Vopak Gulf Coast, development of Quality Management Plan will be determined to contain QM components as prescribed in Appendix 11: Quality Management Plan Standard of Standardized Project Management Tools and plan out in accordance with Section 7.3 of this manual and the Vopak Project Management standard.
5.5 Responsibility, Authority and Communication

5.5.1 Responsibility and Authority

Figure 5.5.1 Vopak Gulf Coast Leadership Team (as of Jul 2012)

The current version of the organizational chart is maintained by the HR Department.

The responsibilities and authorities of the Gulf Coast Management Team are detailed in their respective job descriptions, which are maintained by the HR department. The responsibilities of the Quality Management Representative are outlined in Section 5.5.2. Operational responsibilities and authorities by every Vopak employee are further defined in the QMS documents such as procedures, manuals, etc. SHEQS responsibilities for employees, contractors, third party and visitors are outlined in the SHEQS Policy Statement. Detailed SHEQS responsibilities for employees are also in the job description maintained by HR.

**General Manager**: reports to the VNA Division President and is responsible for and has the authority to execute the QMS within the region. This position delegates responsibility and authority to other positions in the system as appropriate.

**Director of Human Resources**: reports to the General Manager and has overall responsibility and authority on HR management and development within the region.

**Director of Engineering, Maintenance and Procurement**: reports to the General Manager and has overall responsibility and authority within procurement, maintenance and engineering areas.

**Terminal Manager, Deer Park & Galena Park**: reports to the General Manager and has overall responsibility and authority within the facility, including customer service and operations departments.

**SHEQS (Safety, Health, Environmental, Quality & Security) Managers**: reports to the General Manager and has overall responsibility and authority on matters pertaining to occupational safety and health, disposal operations, environmental, security and quality within the region. Likewise, ensures that the terminal is within regulatory compliance.

**Commercial Manager**: reports to the General Manager and has overall responsibility and authority on commercial matters within the region such as solicitation (bid opportunities), contract review, contract renewal, account servicing and customer communications.

**Finance Manager**: reports to the General Manager and has overall responsibility and authority on financial matters within the region.
Business Development Manager: reports to the General Manager and has overall responsibility and authority on business development activities and expansion projects.

Sourcing & Procurement Manager: is part of VNA division, but has dotted line report to the General Manager on matters pertaining to sourcing and procurement activities within the region.

5.5.2 Management Representative

The Quality Program Manager functions as the Quality Management Representative and the ISCC Coordinator for Gulf Coast Region who, irrespective of other responsibilities, has responsibility and authority that includes: a) ensuring that processes needed for the QMS are established, implemented and maintained, b) reporting to the Gulf Coast Management Team on the performance of the QMS and any need for improvement, and c) promotion of awareness of customer requirements throughout the organization. Responsibility extends to include liaison with external parties and internal network on matters relating to the QMS & ISCC. The Quality Program Manager reports to the Environmental & Quality Manager and has dotted line report to the General Manager on QMS matters.

5.5.3 Internal Communication

Gulf Coast Management Team utilizes various tools for ensuring effective communication of processes within the organization. Means of communication can be any of the following:

- Internal newsletter (Vopak Matters and Vopak Connections)
- Company website (www.vopak.com or www.vopakamericas.com)
- Management review (including any meetings pertinent to QMS)
- Electronic communication (e-mail or network system)
- Interoffice correspondence, monitors or bulletin boards
- Quality On-Line and CRM online application systems
- Orally such as face-to-face, teleconference, phone call or net meeting

5.6 Management Review

5.6.1 General

Gulf Coast Management Team reviews the QMS at least annually to ensure its continuing suitability, adequacy and effectiveness. This review shall include assessing opportunities for improvement and the need for changes to the QMS, including the quality policy and quality objectives. Minutes of the meeting is maintained by the Quality Program Manager.

5.6.2 Review Input

The input to management review includes information on:

- results of audits (internal, customer, supplier, contractor or third party),
- customer feedback,
- process performance and product conformity,
- status of preventive and corrective actions,
- follow-up actions from previous management reviews,
- changes that could affect the QMS, and
- recommendations for improvement.

5.6.3 Review Output

The output from the management review includes any decisions and actions related to:

- improvement of the effectiveness of the QMS and its processes,
- improvement of product related to customer requirements, and
- resource needs.
6.0 Resource Management

6.1 Provision of Resources

Vopak Gulf Coast determines and provides the resources needed to: a) implement and maintain the QMS and continually improve its effectiveness, and b) enhance customer satisfaction by meeting and exceeding customer expectations.

6.2 Human Resources

6.2.1 General

Personnel performing work affecting conformity to product requirements shall be competent on the basis of appropriate education, training, skills and experience.

6.2.2 Competence, Training and Awareness

The respective terminal/department managers, in conjunction with the Operations Training Coordinator, will:

a) determine the necessary competence for personnel performing work affecting conformity to product requirements.

b) provide training or take other actions to achieve the necessary competence,

c) evaluate the effectiveness of the actions taken,

d) ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives, and

e) maintain appropriate records of education, training, skills and experience.

Gulf Coast Training Program (VTDP-11418) has been established, maintained and adhered to Vopak Way Management of Training standard. The Operations Training Coordinator, along with the SHEQ personnel and terminal/department managers, will be responsible for managing training activities within Gulf Coast. Gulf Coast Region utilizes specific training modules equipped with sign off checklist. Completed training checklist serves as evidence of training. Operations training modules are controlled documents and available in the QoL Document Management System.

Gulf Coast personnel are assessed annually by their manager/supervisor to determine if their qualifications are adequate and if additional training is needed. Employee performance assessment and development planning is done using 4People application managed by Human Resources. Employee performance reviews are considered non-auditable records due to sensitivity of information. Likewise, annual computer-based training (CBT) refresher courses are provided to all employees and its completion tracked on a periodic basis. Vopak offers about 100 CBT courses and courses are assigned by job title and nature of work. Field employees are subject to comprehensive CBT courses as compared to office employees. The training curriculum varies by position (management or non-management; office or field) and department (operations, customer service, etc.). Assignment and completion of assigned CBT courses is part of the new employee orientation and recurs annually. Although some CBT courses are specific to position and department, majority of CBT courses provided are pertinent to SHEQS. A CBT course is considered complete (or "mastered") when the employee successfully passes the comprehensive test given at end of each course.

New employee orientation covers:

- Company policies and benefits orientation
- Completion of assigned CBT courses and (where needed) HAZWOPER training
- Departmental procedures related to the employee’s position
- Training workshop on software applications to be used (PEPI, CRM, JDE, QoL)
Other training (in-house, online or external) that may be deemed necessary to fulfill or improve job requirements

The Quality Program Manager is responsible for developing and providing QMS awareness training to Gulf Coast employees.

6.3 Infrastructure

Vopak Gulf Coast 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 (both hardware and software), and
c) supporting services (such as transport, communication or information systems).

Gulf Coast Maintenance is responsible for scheduling and performing preventive and corrective maintenance of plant equipment. This includes periodic inspection of tanks in accordance with API 653 standard. There are a number of prescribed maintenance, inspection and monitoring procedures for each type of equipment. These procedures are accessible to QoL Document Management System. Maintenance activities, including (non-IT) work order requests placed by Vopak employees, are managed through DataStream (Infor EAM) system and records are kept by the Maintenance personnel.

VNA Information Technology utilizes Service Now system for managing work order requests involving IT hardware, software, network and system support aspects. RCC group provides support and training on software applications or systems used by Vopak (i.e., JDE/PEPI, CRM). Vopak EMEA Helpdesk likewise assists with other software application and system support (i.e., QoL, THA). VNA IT introduced a remote desktop application called GWP (known as Global Workplace Project) within the division. It aims to improve and increase the reliability of IT services and makes employees’ work lives easier by having the ability to log in from any PC anywhere at any time without compromising company security.

6.4 Work Environment

Vopak Gulf Coast determines and manages the human and physical factors of the work environment needed to achieve conformity to service requirements. Consideration of such factors includes health and safety conditions, work methods, handling methods, and ambient working conditions. Matters pertinent to Safety, Health, Environmental & Security are handled by SHEQS. All SHEQS (including disposal) documents are accessible to QoL Document Management System. Basic SHE (PPE) requirements are also addressed as a section in every procedure.
7.0 Product Realization

7.1 Planning of Product Realization

Vopak Gulf Coast plans and develops the processes needed for product realization. Planning of product realization is consistent with the requirements of the other processes of the QMS.

In planning product realization, Vopak Gulf Coast shall determine the following, as appropriate:

a) quality objectives and requirements for the product,
b) the need to establish processes and documents, and to provide resources specific to the product,
c) required verification, validation, monitoring, measurement, inspection and test activities specific to the product and the criteria for product acceptance,
d) records needed to provide evidence that the realization processes and resulting product meet requirements.

The output of this planning shall be in a form suitable for the organization's method of operations.

7.2 Customer-Related Processes

7.2.1 Determination of requirements related to the product

Gulf Coast Customer Service, in conjunction with the Commercial group and other managers, determines a) requirements specified by the customer, including the requirements for delivery and post-delivery activities, b) requirements not stated by the customer but necessary for specified or intended use, where known, c) statutory and regulatory requirements applicable to the product, and d) any additional requirements considered necessary by the organization.

Where the customer provides no documented statement of requirement, the customer requirements shall be confirmed by Vopak before acceptance.

Where product requirements are changed, Vopak will ensure that relevant documents are amended and that relevant personnel are made aware of the changed requirements.

Customer contracts, commitments, and project dispositions (PDs) are negotiated by Corporate Sales and forwarded to the terminal as authorization for the terminal to perform services and invoice the customer.

**Contracts**
A copy of the contract is received by the Customer Service Manager and reviewed for accuracy (against commitments and PDs) and any non-standard terms or conditions. Corporate Sales is notified of any PD or commitment discrepancies. The General Manager is notified of any non-standard terms, conditions or requirements. The date of the review is recorded on the face of the contract and initialed by the reviewer. The contract is then passed to the Billing Coordinator for review.

**Commitment and Project Disposition**
Commitments and project dispositions are received electronically. The Billing Coordinator attaches a routing slip and circulates these documents for immediate notification and review by the appropriate personnel.

The Billing Coordinator inputs the contract, commitment, and PD information into the computer to activate the customer's account for authorized services and invoicing. The contract documents are filed in the customer contract file.

**Contract Activity**
Gulf Coast Customer Service receives customer order via fax or electronically. Under the appropriate contract, the order information is entered into the computer to officially log in the order. The internal plant order (work instruction) is then generated against the customer contract and forwarded to the Operations Department as authorization to perform the service.

By updating the computer, orders placed against each contract are tracked through the system from the point of initial entry to the invoicing process. Open, incomplete orders are discernable from completed orders, as are invoiced orders from yet-to-be-billed orders.

### 7.2.3 Customer communication

Gulf Coast Customer Service, in conjunction with the Commercial group and other managers, determines and implements effective arrangements for communicating with customers in relation to a) product information, b) enquiries, contracts or order handling, including amendments, and c) customer feedback, including customer complaints.

The Customer Service Manager holds periodic reviews with customers. Customer complaints are managed through the CRM system and handled in accordance with VTDP-11176 Gulf Coast Customer Complaint Handling Procedure. Status of complaints is reviewed monthly by the Gulf Coast Complaint Management Team. At a minimum, the team comprises the General Manager, Terminal Managers, Customer Service Manager, Commercial Manager and Quality Program Manager. This monthly meeting is also participated by the Commercial Initiative Manager and the Process Improvement Manager from the VNA division.

### 7.3 Design and Development

Gulf Coast Engineering utilizes the Vopak Project Management standard and applicable design standards in certain stages of design and development activities. Design standards are available on QoL Document Management System and cover the following aspects of design: civil, structural steel, loading accessories, marine facilities, piping, firewater system, insulation, painting and
coatings, electrical, instrumentation, railroads, buildings and architectural finishes, mechanical equipment, tanks, specialty items and engineering.

The design and development requirements specified below will be part of the Quality Management Plan for engineering project documentation (Section 5.4.2):

7.3.1 Design and Development Planning

Gulf Coast Engineering plans and controls the design and development of product. During the design and development planning, the Gulf Coast Engineering determines a) the design and development stages, b) the review, verification and validation that are appropriate to each design and development stage, and c) the responsibilities and authorities for design and development. The organization shall manage the interfaces between different groups involved in design and development to ensure effective communication and clear assignment of responsibility. Planning output shall be updated, as appropriate, as the design and development progresses.

7.3.2 Design and Development Inputs

Inputs relating to product requirements shall be determined and records maintained. These inputs shall include:
- functional and performance requirements,
- applicable statutory and regulatory requirements,
- where applicable, information derived from previous similar designs, and
- other requirements essential for design and development.

The inputs shall be reviewed for adequacy. Requirements shall be complete, unambiguous and not in conflict with each other.

7.3.3 Design and Development Outputs

The outputs of design and development shall be in a form suitable for verification against the design and development input and shall be approved prior to release.

Design and development outputs shall:
- meet the input requirements for design and development,
- provide appropriate information for purchasing, production and service provision,
- contain or reference product acceptance criteria, and
- specify the characteristics of the product that are essential for its safe and proper use.

7.3.4 Design and Development Review

At suitable stages, systematic reviews of design and development shall be performed in accordance with planned arrangements to:
- evaluate the ability of the results of design and development to meet requirements, and
- identify any problems and propose necessary actions.

Participants in such reviews shall include representatives of functions concerned with the design and development stage(s) being reviewed. Records of the results of the reviews and any necessary actions shall be maintained.
7.3.5 Design and Development Verification

Verification shall be performed in accordance with planned arrangements to ensure that the design and development outputs have met the design and development input requirements.

Records of the results of the verification and any necessary actions shall be maintained.

7.3.6 Design and Development Validation

Design and development validation shall be performed in accordance with planned arrangements to ensure that the resulting product is capable of meeting the requirements for the specified application or intended use, where known. Wherever practicable, validation shall be completed prior to the delivery or implementation of the product. Records of the results of validation and any necessary actions shall be maintained.

7.3.7 Control of Design and Development Changes

Design and development changes are identified through Management of Change process and records are maintained on QoL Report Management. The changes shall be reviewed, verified and validated, as appropriate, and approved before implementation. The review of design and development changes shall include evaluation of the effect of the changes on constituent parts and product already delivered. Records of the results of the review of changes and any necessary actions shall be maintained.

7.4 Purchasing

7.4.1 Purchasing Process

Gulf Coast Procurement ensures that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product shall be dependent upon the effect of the purchased product on subsequent product realization or the final product.

Gulf Coast Procurement evaluates and selects suppliers and contractors based on their ability to supply product or service in accordance with Vopak’s requirements. Criteria for selection, evaluation and re-evaluation shall be established in accordance with this manual and the Contractors & Suppliers Management standard. Records of the results of evaluations and any necessary actions arising from the evaluation shall be maintained. An approved vendor list has been established and maintained by the Procurement group. As part of improving supplier/contractor relationship, the Procurement Manager, along with the Quality Program Manager and representatives from Operations, Maintenance, Engineering or Customer Service Departments, conducts supplier and contractor audits annually. At least 8 suppliers and contractors are selected based on spending level, criticality of product or service provided or current performance. The Supplier & Contractor Assessment Form (VTDP-10824) highlights the audit requirements. Results of audits are reported on QoL Report Management module.

7.4.2 Purchasing Information

Purchasing information shall describe the product to be purchased, including, where appropriate, a) requirements for approval of product, procedures, processes and equipment, b) requirements for qualification of personnel, and c) QMS requirements. All purchase orders are processed through JDE system. Procurement manuals are available on QoL Document Management System.
Gulf Coast Procurement ensures the adequacy of specified purchase requirements prior to their communication to the supplier or contractor.

7.4.3 Verification of Purchased Product

Gulf Coast Procurement establishes and implements the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements. Vendor shipments are checked by the Warehouse Receiving against the requisition warehouse copy to ensure correct receiving of items purchased. Any nonconforming items or conditions (i.e., wrong item, incomplete, defective, damaged in shipment) will be noted and coordinated to the vendor for return or replacement. The requisitioner may be involved in the verification due to technical nature of the purchase.

Where Vopak Gulf Coast or its customer intends to perform verification at the supplier's premises, Gulf Coast Procurement states the intended verification arrangements and method of product release in the purchasing information.

7.5 Production and Service Provision

7.5.1 Control of production and service provision

Gulf Coast Operations plans and carries out production and service provision under controlled conditions. Controlled conditions includes, as applicable, the:

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

Gulf Coast Operations established and maintains a number of operational procedures specific to activity and product. These procedures, training modules and supporting documents are available on QoL Document Management System.

The main operational function of the QMS is the storage and movement of the customer's products. Product movement is first initiated by an order from the customer. These orders are received by the Customer Service Department, where the Work Instruction (WI) or plant order is developed. The WI is then forwarded to the Operations Department. The WI is the authorization and instruction for the Operations Department on what product is to be moved to or from what tank or vessel. These products could be arriving from a customer or leaving Vopak bound for clients of the Vopak customer.

Tank Car Movement

Vopak Gulf Coast has established a procedure for tank car product movement (VTDP-11045 Tank Car Product Movement Procedure/Training Module) to ensure safe and efficient operations. Operational loading and unloading checklists have likewise been established and used for every tank car movement. Apart from specific checklist, common checklists used are VTDP-11147 Check Off List for Loading Railcars and VTDP-11148 Check Off List for Unloading Railcars.

On a daily basis, the Operations department develops a list of all railcars in the terminal to generate an inbound track sheet. Operations and Customer Service Traffic departments
jointly generate the tank car loading/unloading schedule. The Operations department receives the Work Instruction (WI) authorizing the move and then generates a tank car preparation work order and prepares the tank car. Standard operating procedures are established to ensure safe and efficient operations. The tank car is then spotted and inspected. After successfully passing inspection, the tank car is then connected.

Once the movement is completed, the Operations department performs quality and quantity inspection and completes the tank car loading/unloading checklist. The tank car is next moved and, if specified by the customer, weighed. The WI is completed and returned to the Customer Service Department.

**Tank Truck Movement**

Vopak Gulf Coast has established a procedure for tank truck product movement (VTDP-10152 Tank Truck Product Movement Procedure/Training Module) to ensure safe and efficient operations. Operational loading and unloading checklists have likewise been established and used for every tank truck movement. Apart from specific checklist, common checklists used are VTDP-11078 Check Off List for Loading Tank Trucks and VTDP-11149 Check Off List for Unloading Tank Trucks.

Tank truck scheduling is completed by the Customer Service Traffic department and coordinated with the Operations department. The Operations department receives the Work Instruction (WI) and completes the tank truck preparation work order. The truck is weighed upon arrival and then inspected by the Operations department. A check off list for loading or unloading tank trucks is completed; this serves as operational quality verification. Standard operating procedures are established to ensure safe and efficient operations.

The tank truck is then connected and the movement is completed. The truck is then reweighed and undergoes quantity verification. Discrepancies are noted on the WI and corrected if necessary. The WI is then returned to the Customer Service department for declaring and confirming all quantities that were moved along with any additional services that were performed.

**Marine (Vessel) Movement**

Vopak Gulf Coast has established a procedure for marine vessel movement (VTDP-10068 Vessel Product Movement Procedure) to ensure safe and efficient operations. An operational checklist has likewise been established and used for every ship or barge movement. Apart from specific checklist, common checklist used is VTDP-11127 Check Off List for Product Movement on Vessels.

After the customer order is received, the Work Instruction (WI) is generated by the Operations Planning / Marine Traffic Control department. Operations Planning coordinates the dock schedule (generated daily; Monday to Friday) to coordinate the marine vessel's time at the dock (estimated time of arrival, quantity, etc.). The WI with any special instructions from the customer is forwarded to the Operations department. At this time, Operations lines up the piping system, pumps, blind flanges, etc. The marine vessel arrives and the customer surveyor inspects the vessel. Procedures are established for the handling of a rejected vessel. The approved vessel is connected and the movement is made. The completed move is again inspected for quantity and quality by the customer's surveyor. Upon approved inspection, the vessel is released.

Standard operating procedures are established to ensure safe and efficient operations. Operations checks the tanks and gauge each tank with the third party inspector (surveyor)
before and after the movement in accordance with VTDP-10192 Tank Gauging Narrative/Training Module. A 4-hr relaxation or settling time will be observed on receiving tank prior to closing gauge. The move and WI is considered complete. All paperwork is then forwarded to Customer Service/Marine Traffic Control to declare the move (and all other service activities) into the system and to the Customer Service/Marine Confirmations to confirm the transfer quantity into the system. Customer Service receives and files all completed paperwork.

**Tank to Tank Movement**

Vopak Gulf Coast has established a procedure for tank to tank transfer activities (VTDP-10208 Tank to Tank Transfer Procedure/Training Module) to ensure safe and efficient operations. An operational checklist has likewise been established and used for every tank to tank movement - VTDP-11339 Check Off List for Tank to Tank Transfers.

In summary, after the customer order is received, the Work Instruction (WI) is generated by the Customer Service department. Customer Service consults with the Operations department. The WI along with any special instructions from the customer is forwarded to the Operations department after verification that the transfer can precede by checking product compatibility and inventory levels in each tank. Operations checks the tanks and gauge each tank before and after the movement in accordance with VTDP-10192 Tank Gauging Narrative/Training Module. A 4-hr relaxation or settling time will be observed on receiving tank prior to closing gauge. The move and WI is considered complete. All paperwork is then forwarded to Customer Service/Traffic Control to declare the move (and all other service activities) into the system and to the Customer Service/Inventory to confirm the transfer quantity into the system. Customer Service receives and files all completed paperwork.

**Direct Movement (No Tank Storage)**

After the customer order is received, the Work Instruction (WI) is generated by the Customer Service department and provided to the Operations department (including any special instructions from customer). To ensure safe and efficient movement of products, Operations has established procedures for direct movement. Product movement involving marine activities (vessels and barges) from/to rail cars or tank trucks is processed in VTDP-10081 Direct Move to Vessel Procedure. Product movement involving land activities (tank trucks and rail cars) from/to another tank trucks and rail cars is processed in VTDP-10974 Direct Move to Tank Procedure. During product movement, inspections for quantity and quality are carried out by the customer’s surveyor. Procedures are established for the possible discrepancy in quantity or quality. The direct movement activity is concluded upon approved inspection. The WI is completed and returned to the Customer Service Department.

**Pipeline Movement (Production movement to or from off-site facilities)**

Pipeline movements are in most cases communicated to the Operations Planning / Marine Traffic Control. The Work Instruction (WI) is generated and forwarded to the Operations department. The Operations department verifies the appropriate tank and capacity. Traffic Control communicates with the customer to begin the movement Operations will track the movement by regular gauging of the delivery or receiving tank. Traffic Control again will communicate with the customer to complete the movement. The final gauge is verified and the WI is completed and returned to the Customer Service Department. To ensure safe and efficient movement of products, Operations has established specific checklists for pipeline movements.
Operations checks the tanks and gauge each tank before and after the movement in accordance with VTDP-10192 Tank Gauging Narrative/Training Module. A 4-hr relaxation or settling time will be observed on receiving tank prior to closing gauge. The move and WI is considered complete. All paperwork is then forwarded to Customer Service/Traffic Control to declare the move (and all other service activities) into the system and to the Customer Service/Inventory to confirm the transfer quantity into the system. Customer Service receives and files all completed paperwork.

7.5.2 Validation of processes for production and service provision

This section does not apply to Vopak Gulf Coast. The scope of QMS is limited to transfer and storage of customer’s products. Product inspection is carried out by third party inspector selected by the customers. No special validation takes place during production and service provision.

7.5.3 Identification and Traceability

Vopak Gulf Coast identifies the product by suitable means throughout product realization. Vopak identifies the product status with respect to monitoring and measurement requirements throughout product realization.

Vopak Gulf Coast also controls the unique identification of the product and maintains records.

Product identification and traceability are achieved through the following methods of tracking:
- Tank Status Report
- Pipeline Status Report
- Identification tags (tank and pipeline)
- Operator crosscheck
- Terminal ERP System (PEPI)

These methods are used as references and checks to aid in assuring products are transferred to and from their proper location at any given time. This knowledge is especially critical immediately before a product move. Customers normally send an independent surveyor to verify quantity and quality of the materials loaded into outgoing vessels. As requested by customer, Vopak Gulf Coast keeps sample retains of product moves within agreed upon retention time. Samples beyond retention period are considered wastes and are disposed of by the Operations Support Operator according to the Drum Pad Sample Dumping List. The list is updated by the Environmental Specialist.

For more complete coverage of the activities of this section, refer to the Operations procedures available on QoL Document Management System.

**Tank Status Report** is revised and verified at least monthly under the responsibility of the Customer Service Department. Interim changes are normally made to the report as the products at particular locations in the terminal change. These changes (moves) are made at the request of the customer. It is the responsibility of the customer to properly identify the product arriving at the terminal. It is the responsibility of Vopak to keep track of the products in the terminal system. Vopak can only be responsible for the volumes and protecting the integrity of the material. Before every product is moved, tanks are physically gauged. Tanks without movement are inventoried by gauging every month. For additional information, refer to the Customer Service Manuals on QoL Document Management System.
Pipeline Status Report is responsibility by the Operations Department to maintain for land and marine-based activities. This report is similar to the Tank Status Report in that it tracks what products are presently held in the various pipelines.

**Identification Tags:** There is a pipeline identification tag at each dock, tank truck and tank car load/unload point. Every tank has a product identification tag on the main tank valve. These tags are for additional verification of what is in the tank or pipeline.

**Operator Crosscheck:** Prior to every product movement, the operator in charge of the product movement will crosscheck the paperwork (plant order) with the identification tags and confirm the appropriate tank and pipeline. Additionally, the Operations Supervisor or Lead Operator will physically verify the correct connection of these movements.

**Sample Retains:** As requested by customer, sample retains are taken on certain moves as designated (for a description of which moves, see the Operations Manual). These retains are kept by Vopak for a minimum of 3 months. Samples beyond retention period are considered wastes and are disposed of by the Operations Support Operator according to the Drum Pad Sample Dumping List. The list is updated by the Environmental Specialist.

### 7.5.4 Customer Property

Vopak Gulf Coast exercises care with customer property while it is under Vopak's control and identifies, verifies, protects and safeguards customer property provided for storage. If any customer property is lost, damaged or otherwise found to be unsuitable for use, Vopak Gulf Coast Customer Service / Terminal Manager reports this to the customer and maintains records. Refer to Section 8.3 Control of Nonconforming Product.

Vopak Gulf Coast also considers transportation as customer-supplied equipment, which is identified on the customer order and verified against the plant order. Tank cars are normally held and maintained for loading or unloading as racks become available.

**Tank trucks** are nominated by the customer and, upon arrival, inspected by Vopak operators. Tank trucks must be dry, clean, and odor-free unless otherwise specified on the customer order. If the tank truck does not pass inspection, the customer is notified and asked for disposition by the designated Traffic Coordinator. If the tank truck passes inspection, it will be loaded with the proper material and shipped.

**Tank cars** are nominated by the customer and inspected by Vopak operators. They are to be dry, clean, and odor-free unless they are in dedicated service. If for any reason, the tank car is deemed unsuitable for loading the customer will be notified and asked for disposition by the designated Traffic Coordinator.

**Containers** are nominated by the customer and inspected by Vopak operators. They must be dry, clean, and odor-free. If for any reason, the container is found not suitable for loading; the customer is asked for disposition by the designated Traffic Coordinator.

**Ships/Barges** are nominated by the customer. Inspectors are nominated by the customer to inspect and accept or reject the barge. If the barge is rejected, the customer is notified and asked for disposition by the Marine Operations Department or Traffic Control.

### 7.5.5 Preservation of Product

Vopak Gulf Coast preserves the product during internal processing and delivery to the intended destination in order to maintain conformity to requirements. As deemed applicable,
preservation includes identification, handling, packaging, storage and protection. Preservation will also apply to the constituent parts of a product. Disposal of waste is also covered in this section with reference to prescribed disposal procedures on QoL DMS.

Vopak Gulf Coast does not manufacture a product and therefore does not handle, store, package or deliver a finished Vopak product, but handles, stores, and loads/unloads finished products belonging to the customers. Vopak is not responsible for the delivery of any of the customer product. It is the responsibility of the Vopak Gulf Coast to load/unload (package) the customer's product on schedule so the customer can have the shipment delivered.

Some customers have Vopak arrange for a carrier to deliver the shipment. In this case, Vopak Gulf Coast's responsibility goes beyond just loading the vessel for pickup. The responsibility includes selecting a customer-approved carrier, scheduling the carrier, and releasing the vessel to the carrier on schedule. Procedures for these activities are referred to in the QoL DMS under Operations and Customer Service Departments.

**Handling and Storage** is the scope of Vopak Gulf Coast QMS and addressed in various sections of the manual.

**Packaging** is the loading and securing activity of the various shipping containers/vessels selected at the customer's request. Containers/vessels are scheduled and filled as dictated by the customers to meet their needs. The activity of filling the various containers/vessels is the responsibility of the Operations Department. Further description of these activities can be found in the Operations Department procedures on QoL DMS.

Containers/vessels are normally selected and provided by the customer for filling at the terminal. Customers may request Vopak to arrange for a container to be provided by one of the customer-approved carriers (i.e., tank truck).

Vopak Gulf Coast is not responsible for the delinquency of customer product to their customers, but responsible for filling the containers/vessels on time and releasing them to the carrier to meet the customer's scheduled shipping date.

**Preservation:** Vopak Gulf Coast stores only finished products for customers. Prior to contract commitment, product storage requirements are provided and spelled out by the customers. Vopak preserves customer's product by keeping the products according to controlled requirements and segregated by methods observing its identification and traceability requirements.

**Disposal:** Vopak Gulf Coast Disposal Group (a department under SHEQ), in conjunction with the Environmental Specialists, is responsible for managing waste and prevention of environmental pollution. Activities involving waste disposal are carried out in accordance with regulatory and statutory requirements as well as specific disposal procedures available on QoL Document Management System.
7.6 Control of Monitoring and Measuring Equipment

Gulf Coast Maintenance determines the monitoring and measurement to be undertaken and the monitoring and measuring equipment needed to provide evidence of conformity of product to determined requirements.

Gulf Coast Maintenance established processes to ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements. Maintenance procedures including VTDP-10649 Calibration Activity Procedure are available on QoL Document Management System.

Where necessary to ensure valid results, measuring equipment shall
a) be calibrated or verified, or both, at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification shall be recorded;

b) be adjusted or re-adjusted as necessary;

c) have identification in order to determine its calibration status;

d) be safeguarded from adjustments that would invalidate the measurement result;

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

In addition, Gulf Coast Maintenance assesses and records the validity of the previous measuring results when the equipment is found not to conform to requirements. Gulf Coast Maintenance takes appropriate action on the equipment and any product affected.

Inspection, testing, and measurement equipment are available, whether owned or vendor-supplied, to be used in on-site testing of field instrumentation. This facility uses various test hardware to verify accuracy and precision of inspection, measuring and test equipment. Equipment used for test to verify that instruments are within tolerance is kept in the Maintenance Department with procedures located in QoL Document Management System. Each piece of test equipment has a history file kept at the Maintenance Department. Records of the results of calibration and verification are maintained. Where feasible, calibration certificates are posted in close proximity of calibrated equipment or available in the Maintenance Department office.

Test software is not used in our facility and has been excluded from this section.

A list of field instruments maintained to meet the requirements of this section (quality instruments) is listed in the Maintenance Equipment Log.

- **Test frequency**: For field quality instruments, testing frequency is listed in the Maintenance procedures manual.

- **Test procedures**: Test procedures for all field quality instruments tested on site are located in the Maintenance procedures manual.

- **Test equipment control**: Certain test equipment shall be sent to a qualified testing company on a normal frequency to verify operation within the manufacturer’s specifications. The Maintenance procedures manual provides control standards for having equipment tested.

  - If on-site instrumentation is determined to be defective, it shall be tagged “defective”, sent to the manufacture/supplier for correction and testing. Reports received on each piece of equipment containing name of testing source, date, test results, and equipment number will be copied to the instrument file.

- **Nitrogen regulation**: The supply of nitrogen is provided by pipeline to the terminal. Analysis of nitrogen quality is provided upon request. Nitrogen blanketing system procedures are located in the Maintenance procedures manual.
Tank level gauges: Tank level gauges are provided on all tank storage which are used only for operational monitoring and not for customer inventory or custody transfer.

Tank truck and car scales: Tank truck scales are inspected and tested by the Texas Department of Agriculture. The Terminal has truck scales checked quarterly by an outside certified scale company and a copy of the report kept with the guard as well as in the truck scale file. Tank car scales are tested annually by the Southern Pacific Railroad Scale Department. The Maintenance Department requests follow-up tests and checks approximately every six months. All test and calibration reports are kept in the Maintenance Department equipment files.

Thermal indicators: Thermal indicators normally are tested for accuracy annually through the Maintenance Department, in which a metal tag is placed on device for identification and tracking location.

- Devices are replaced when determined not to meet test measurements.
- Documentation is placed in the Maintenance Department file as it relates to tank, exchanger, chiller, vapor recovery, boilers, etc.

Gauge lines: Gauge lines are normally replaced with standard replacement elements, which are purchased through supplier. There are no tests performed on this device and Operations Department personnel determine replacement.

- Documentation is returned with instrument, which shall state the nature of repairs, calibration, date tested, and person testing. All test and calibration reports are kept in the Maintenance Operations file.

MMC devices: The Operations Department uses MMC gauge and temperature devices. Any testing or repairs are normally returned to the supplier.

- Documentation report is returned with instrument, which shall state the nature of repairs, calibration, date tested, and person testing. All test and calibration reports are kept in the Maintenance Operations file.

Steam controllers: Steam controllers are normally tested annually with a report of test date and person testing. Controllers are tested by the Maintenance Department craftsman or by outside vendors.

- Meters found to be inoperable are sent out for testing and repairs. Vopak then receives a test report consisting of the date, steam meter flow test, and person testing. Reports are kept in equipment files at the Maintenance Department.

Steam meters: Steam meters are checked between 0800-1430 Monday through Friday for the purpose of recording steam usage on tanks, and delivery to sister company and miscellaneous unloading areas. Meters are not calibrated during any time period because they are not used for product accuracy cost.

- Meters found to be inoperable are sent out for testing and repairs. Vopak then receives a test report consisting of the date, steam meter flow test, and person testing. Reports are kept in equipment files at the Maintenance Department.

Flow meters: There are two types of flow meters used: a) product meters to tank truck/tank car, and b) marine line vessel loading.

- Tank truck/tank car meters are normally tested once per year. Meters may be sent to outside vendors for bench test. Scales are used to verify product loads; meters are not used for customer transfers. Test reports are provided for both outside and inside vendors which states the date, test results, accuracy at time of test, and vendor testing.

- Marine line vessel loading flow meters are not required to be certified or tested at any normal period because they are not used for product transfers. Meters are only used for products that require use of marine vapor control system.
8.0 Measurement, Analysis and Improvement

8.1 General

Vopak Gulf Coast plans and implements the monitoring, measurement, analysis and improvement processes needed to:

a) demonstrate conformity to product requirements,

b) ensure conformity of the QMS, and

c) continually improve the effectiveness of the QMS.

This shall include determination of applicable methods, including statistical techniques, and the extent of their use.

8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction

Vopak Gulf Coast monitors information relating to customer perception as to whether the organization has met customer requirements. Feedback serves as an indicator of satisfaction. Negative feedback received from external customers is of particular importance. Complaint KPIs (part of Corporate Service KPIs) are formulated, analyzed and reported to the Gulf Coast Management Team. Vopak performs an annual customer satisfaction survey in which results are analyzed, communicated and any improvements are identified and addressed. A prioritization matrix has been formulated by the Gulf Coast Complaint Management Team as means of prioritizing complaint handling as what is deemed important to the customers. This matrix will be updated and reviewed for adequacy using the result of succeeding customer satisfaction survey. The Quality Program Manager will conduct a score-based customer feedback survey on recently closed complaints through CRM and by contacting the customer who reported the complaint. This effort is taken to evaluate the customer’s level of satisfaction on complaint handling.

As part of increasing customer satisfaction, Vopak Gulf Coast has established a procedure for handling complaints and ensuring resolutions taken effectively – VTDP-11176 Gulf Coast Customer Complaint Handling Procedure.

8.2.2 Internal Audit

The Gulf Coast Quality Program Manager conducts internal audits at planned intervals to determine whether the QMS conforms to the planned arrangements and the requirements of ISO 9001:2008 standard, ISCC EU-RED program and the ones established by Vopak are effectively implemented and maintained.

Gulf Coast audits are planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The Quality Program Manager maintains an Audit Schedule Registry that highlights information on audits carried out and future schedule. The schedule also covers second and third party audits. The audit criteria, scope, frequency and methods are defined in the individual audit plan or audit paperwork. Audit teams may be formed and pool of auditors will be selected from various departments. The audit team members will be qualified on the basis of training, education, experience, competence and/or skills per Section 6.2. The selection of auditors and conduct of audits shall ensure objectivity and impartiality of the audit process. Auditors are not allowed to audit their own work.
An internal audit program has been established to define the responsibilities and requirements for planning and conducting audits, establishing records and reporting results. Results of audits are maintained in QoL Report Management and reported to the Gulf Coast Management Team. The management responsible for the area being audited shall ensure that any necessary corrections and corrective actions are taken without undue delay to eliminate detected nonconformities and their causes. Follow-up activities shall include the verification of the actions taken and the reporting of verification results.

The Quality Program Manager utilizes the ISO 19011:2002 standard as a guidance document for auditing the Quality Management System and Environmental Management System.

### 8.2.3 Monitoring and Measurement of Processes

Vopak Gulf Coast applies suitable methods for monitoring and measurement of the QMS processes. These methods will demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction and corrective action shall be taken, as appropriate.

Vopak has established a performance measurement system for monitoring, measuring, analyzing and improving the QMS processes, business operations, goals, strategy, objectives and customer satisfaction – see Section 5.4.1 of this manual.

These methods may include, but not limited to, the following:
- quality audits (internal and external),
- management reviews,
- committee/departmental meetings (SHEQ Committee, Operations Tool Box),
- self-assessment or self-discovery,
- performance measurement system (balanced scorecard approach),
- statistical trend and data analysis,
- customer feedback, and
- suggestion program.

### 8.2.4 Monitoring and Measurement of Product

Vopak Gulf Coast monitors and measures the characteristics of the product to verify that product requirements have been met. This shall be carried out at appropriate stages of the product realization process in accordance with the planned arrangements. Evidence of conformity with the acceptance criteria shall be maintained. Records shall indicate the person(s) authorizing release of product for delivery to the customer.

The release of product and delivery of service to the customer shall not proceed until the planned arrangements have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer.

Inspection of product quality and quantity is carried out by customer or third party surveyor during transfer activity. Discrepancy is reported and addressed accordingly. These operational activities are covered in Section 7.5.1 Control of Product and Service Provision and established processes are available on QoL Document Management System.

**Customer-Selected Surveyors**

The frequency of tankage, vessel or stored material testing and inspection completed by the third-party surveyor is dictated by the customer on a month-to-month, per move, or special request basis. Vopak does not manufacture, but stores and moves customer products. Hence, the quality of the product sent to Vopak terminal is the responsibility of our customer.
It is Vopak's responsibility to protect the material within storage and transfer in the Vopak system. The customer's product is scheduled and moved into an outbound vessel destined to a location chosen by our customer. The customer's chosen independent surveyor will sample the Terminal's storage tank prior to the movement and sample the outbound vessel upon completion of filling. The surveyor brings these samples to a lab pre-selected by the customer and analyzes the samples according to methods agreed upon directly with the customer.

These results are reported directly to the customer. Vopak does not normally maintain specifications for the customer products stored and transferred within the Vopak system. The customer's surveyor also samples the terminal's storage tanks and the inbound vessel prior to moving the inbound material. These results are also communicated directly to the customer by their surveyor. The surveyor is responsible for giving the terminal approval to move the customer's material.

**Operations and Maintenance Inspection**

The Operations and Maintenance Departments have responsibility in the tank inspection prior to the inspection by the customer's surveyor. For empty tanks being made ready for inspection by the surveyor, the Utility Operations Department supervises the tank cleaning and completes a visual cleanliness check to verify that it is ready for the customer's surveyor inspection. The Maintenance Department then inspects the tank for mechanical integrity (floating roofs, valves, walls, etc.). Procedures for the inspection and test activities are located in the QoL Document Management System.

**Inspection Records**

All movements or vessel-for-shipment releases are upon customer approval and based on the independent surveyor's results. It is the responsibility of the Operations Department to coordinate the activities of tracking inspection status. At the end of successful inspection:

- Empty Tank Report is issued by the Operations Department
- Maintenance Tank Inspection Report is issued by the Maintenance Department
- Tank Inspection Certificate is issued by customer's surveyor

**Various Testing**

This section includes tests under the responsibility of the Maintenance Department that may be required by the customer.

- In-service testing of tanks normally consists of:
  - Ultrasonic testing performed by a designated inspector
  - Visual inspection

- Out-of-service testing of tanks is performed per API 653 guidelines:
  - Foundation settlement survey and evaluation
  - Bottom inspection
  - Shell inspection and thickness calculations
  - Nozzles and appurtenances inspection
  - Fixed roof inspection
  - Floating roof inspection
  - NDE inspection
  - Equipment utilized for magnetic flux leakage, ultrasonic testing, vacuum box testing, magnetic particle testing, level testing, and pit gauge testing
8.3 Control of Nonconforming Product

Vopak Gulf Coast ensures that product which does not conform to product requirements is identified and controlled to prevent its unintended use or delivery. Controls and related responsibilities and authorities for dealing with nonconforming product will be defined.

If nonconforming situation arise that compromise product quality, Vopak Gulf Coast must thoroughly identify the nonconforming situation before notifying the customer and work under the strict direction of the customer for. Appropriate managers will take immediate action to remedy the situation and re-verify to ensure conformity to requirements.

Nonconforming situations are usually reported as incidents and corrective action tracked in the QoL Report Management – Section 8.5.2. Incident reports are reviewed and assigned by the SHEQ Manager. Incidents are managed in accordance with VTDP-10561 Incident Reporting and Analysis.

- Product sent to the wrong tank
- Wrong product sent to shipping vessel
- Off-specification product in pipeline, vessel or shore tank
- Product contamination
- Loss of product
- Product shortage or overage in loading vessels

Vopak deals with nonconforming product by one or more of the following ways:

a) by taking action to eliminate the detected nonconformity,
b) by authorizing its use, release or acceptance by a relevant authority and by the customer,
c) by taking action to preclude its original intended use or application, and
d) by taking action appropriate to the effects, or potential effects, of the nonconformity when nonconforming product is detected after delivery or use has started.

8.4 Analysis of Data

Vopak Gulf Coast determines, collects and analyzes appropriate data to demonstrate the suitability and effectiveness of the QMS and to evaluate where continual improvement of the effectiveness of the QMS can be made. It will include data generated as a result of monitoring and measurement and from other relevant sources.

The analysis of data 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, and d) suppliers or contractors.

Each department in the Vopak Gulf Coast tracks, analyzes and reports KPIs. These KPIs are part of balanced scorecard (Section 5.4.1) and captured in monthly flash reports. To name a few:

- Result of annual customer satisfaction survey; Complaint service KPIs
- LTI and total injury rate
- Tank occupancy
- Truck and rail activity; Tank truck turnaround time
- Ship & Pipeline volume receipt and deliver
- Ship dock utilization; Average dock time per ship; Dock waiting time; for barges and ships – ship dock wait time and overall dock time
- Monthly throughput
- API tank inspections; Maintenance work order results
- CAPEX spending
- Procurement bid opportunities (project/engineering)
- Terminal labor for budget control and service review.
Below are applicable methods or tools that may be utilized for effective and objective analysis:

### Cause Analysis Tools
- **Fishbone (Ishikawa) diagram**: identifies many possible causes for an effect or problem and sorts ideas into useful categories.
- **Pareto chart**: shows on a bar graph which factors are more significant.
- **Scatter diagram**: graphs pairs of numerical data, with one variable on each axis, to help you look for a relationship.
- **5 Whys**: is a root cause analysis technique that allows to identify the physical and systemic causes by asking why 5 times. The first 3 whys are considered physical causes and may need remedial action while the last 2 whys are systemic and would need corrective action.
- **Tripod**: an instrument that can be used in any investigation. Tripod analysis looks for underlying causes of incidents and in that respect looks more at deficiencies in the organization than at individuals.

### Process Analysis Tools
- **Flowchart or process mapping**: A picture of the separate steps of a process in sequential order, including materials or services entering or leaving the process (inputs and outputs), decisions that must be made, people who become involved, time involved at each step and/or process measurements.
- **Failure modes and effects analysis (FMEA)**: A step-by-step approach for identifying all possible failures in a design, a manufacturing or assembly process, or a product or service; studying the consequences, or effects, of those failures; and eliminating or reducing failures, starting with the highest-priority ones.

### Data Collection and Analysis Tools
- **Box and Whisker Plot**: A tool used to display and analyze multiple sets of variation data on a single graph.
- **Check sheet**: A generic tool that can be adapted for a wide variety of purposes, the check sheet is a structured, prepared form for collecting and analyzing data.
- **Control chart**: A graph used to study how a process changes over time. Comparing current data to historical control limits leads to conclusions about whether the process variation is consistent (in control) or is unpredictable (out of control, affected by special causes of variation).
- **Design of experiments**: A method for carrying out carefully planned experiments on a process. Usually, design of experiments involves a series of experiments that start by looking broadly at a great many variables and then focus on the few critical ones.
- **Histogram**: The most commonly used graph for showing frequency distributions, or how often each different value in a set of data occurs.
- **Scatter diagram**: A diagram that graphs pairs of numerical data, one variable on each axis, to look for a relationship.
- **Stratification**: A technique that separates data gathered from a variety of sources so that patterns can be seen.
- **Survey**: Data collected from targeted groups of people about their opinions, behavior or knowledge.
Idea Creation Tools

- **Affinity diagram**: Organizes a large number of ideas into their natural relationships.
- **Benchmarking**: A structured process for comparing your organization’s work practices to the best similar practices you can identify in other organizations, and then incorporating the best ideas into your own processes.
- **Brainstorming**: A method for generating a large number of creative ideas in a short period of time.
- **Nominal group technique**: A structured method for group brainstorming that encourages contributions from everyone.

Project Planning & Implementation Tools

- **Gantt chart**: A bar chart that shows the tasks of a project, when each must take place, how long each will take and completion status.
- **PDCA Cycle (plan-do-check-act) or PDSA (plan-do-study-act)**: A four-step model for carrying out change that can be repeated again and again for continuous improvement.

8.5 Improvement

8.5.1 Continual Improvement

Vopak Gulf Coast continually strives to improve the effectiveness of the QMS through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions, customer feedback and management review. Vopak Gulf Coast, in coordination with VNA Process Improvement Manager, participates in process improvement initiatives (i.e., kaizen, lean, six sigma, 5 whys, etc.)

Plan-Do-Check-Act (PDCA) cycle is utilized as a model for continual improvement.

- **Plan** covers the requirements, objectives and processes established in Sections 4.0 Quality Management System, 5.0 Management Responsibility and 6.0 Resource Management of this manual.
- **Do** pertains to communication of objectives and implementation of key processes provided in Section 7.0 Product Realization.
- **Check** (or **Study**) refers to the requirements for monitoring and measuring of processes and products and is further discussed in Section 8.2 Monitoring and Measurement.
- **Act** represents the actions taken or to be taken to continually improve process performance and is detailed in Section 8.5 Improvement of this manual.

Figures 3.0 Business Process Cycle and 4.1 Sequence and Interaction of Vopak’s Processes illustrate how the PDCA approach is applied at Vopak.

8.5.2 Corrective Action

Vopak Gulf Coast takes action to eliminate the causes of nonconformities in order to prevent recurrence. Corrective actions must be appropriate and proportional to the effects of the nonconformities encountered. These actions are managed thru QoL Report Management.

Corrective Action procedure will be established to define requirements for:

- a) reviewing nonconformities (including customer complaints and incidents),
- b) determining the causes of nonconformities,
- c) evaluating the need for action to ensure that nonconformities do not recur,
- d) determining and implementing action needed,
- e) records of the results of action taken, and
- f) reviewing the effectiveness of the corrective action taken.
The need for corrective action is based on systemic issues that are high risk/frequency:
- Audits (external or internal)
- Complaint (customer, third party or internal)
- Incidents
- Customer-issued deficiency reports (CAR, SCAR or equivalent)
- Process defect

8.5.3 Preventive Action

Vopak Gulf Coast determines action to eliminate the causes of potential nonconformities to prevent their occurrence. Preventive actions must be appropriate and proportional to the effects of the potential problems. These actions are managed thru QoL Report Management.

Preventive Action procedure will be established to define requirements for:
- determining potential nonconformities and their causes,
- evaluating the need for action to prevent occurrence of nonconformities,
- determining and implementing action needed,
- records of results of action taken, and
- reviewing the effectiveness of the preventive action taken.

Preventive action is based on any of the following sources:
- Suggestions (external or internal)
- Management reviews
- Audits (findings that cited as commentaries or opportunities for improvements)
- Process improvement initiatives

The requirements in this QMS manual are preventive measures. If applied consistently, it could be an effective approach to preventing or minimizing potential failures and allow Vopak to perform to the customer's expectations and be able to meet its established Quality Policy and Quality Objectives.