# CONTINUOUS NITROGEN SUPPLY

# QUALITY SYSTEM MANUAL

# ISO 9001

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# Table of Contents

## Distribution Log:

| Copy Number | Authorized Holder | Controlled (C)/ Uncontrolled (UC) | Date Issued |
|---|---|---|---|
| Master | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| | | | |
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| ISM Clauses | Rev. # | Description of Revision | Date | Sign |
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# 1. General

**Continuous Nitrogen Supply (CNS)** management developed and implemented the Quality Management System (QMS) described in this manual to help the organization demonstrate its ability to consistently provide the **Nitrogen Services And Pipeline/Mechanical Repairs.** CNS operates with increased effectiveness and efficiency with the overall aim of enhancing customer satisfaction.

CNS QSM utilizes the process approach and quality management principles contained in the International Standard ISO 9001 to enhance its ability to continually improve the system.

The CNS Quality Management System is structured to achieve a good internal system and better results of customer satisfaction & continual improvements.

This Quality Management System is based on the following eight major principles:

## 1.1 Customer Focus:

CNS QMS is based on understanding and meeting customers' needs, and exceeding their expectations. Thourgh understanding of customers' requirements before starting any ouput, better communication during execution and after-sale services.

## 1.2 Leadership:

The General Manager is the person who is mainly involved in developing a practical system in order to lead the organization to meet the stated policy and Objectives. He encourges all managers to develop short terms objectives and provide necessary resources to achieve these goals. He has delegated authority to the Management Representative to summerize and follow up continual improvements and regualar training activities.

## 1.3 Involvement of People:

Employees at all levels are involved in developing and implementing the system through 'suggestion box' and open house meetings.

## 1.4 Process Approach:

All activities at CNS are treated as processes, the output of any process will be the input for the next one, and interrelations between these processes will be clarified.

## 1.5 System Approach to Management:

Interrelated process are will identified understood, and managed as a system for the purpose of efficiency increase.

### 1.6 Continual Improvement:

Policy, Objectives and the integration of the system will be dedicated to organization continual improvement.

### 1.7 Factual Approach in Decision Making:

All management and strategic decisions will be decided upon statistical and analytical data.

### 1.8 Mutually Beneficial Supplier Relationship:

General Control Group and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

# 2. Application

CNS General Contracting Est. QSM complies with all applicable requirements contained in ISO 9001 covers matters of General Contracting for Electrical and lighting works, telecommunication works, electric & electronic works, construction and restoration of buildings, civil works, mechanical works.

## 2.1 Reference Documents

A list of referenced procedures and documents is attached.

## 2.2 Terms & Definitions

QSM uses the same internationally recognized terms, vocabulary and definitions as given in ISO 9001 Standard. Acronyms, terms, vocabulary and definitions unique to organization, customers, sector and region. These are defined in the next page.

## 2.3 List Of Abréviations Used

| | |
|---|---|
| CNS | Continuous Nitrogen Supply |
| GM | General Manager |
| QC Manager | Quality Contoller |
| PM | Production Manager |
| FM | Finance Manager |
| Pur. M | Purchasing Manager |
| OM | Operations Manager |
| NCR | Non-Conformance Report |
| CAR | Corrective Action Report |
| CPAR | Corrective and Preventive Action Report |
| QMS | Quality Management System |
| PD | Process Description |
| Mgt | Management |

# 3. Terms &Definitions

## 3.1 Terms Relating to Quality

| | |
|---|---|
| Quality | Ability of a set of inherent characteristics of a product, system or process to fulfill requirements of customers and other interested parties. |
| Customer Satisfaction | Customer's opinion of the degree to which a transaction has met the customer's needs and expectations. |
| Capability | Ability of an organization, system, or process to realize a product that fulfils the requirements for that product. |

## 3.2 Terms Relating to Management

| | |
|---|---|
| Management System | System to establish policy and objectives and to achieve those objectives. |
| Quality Management System | System to establish a quality policy and quality objectives and to achieve those objectives. |
| Quality Policy | Overall intentions and direction of an organization related to quality as formally expressed by to management. |
| Quality Objectives | Something sought, or aimed for related to quality. |
| Quality Planning | Part of quality management focused on setting quality objectives and specifying necessary operational processes and related resources to fulfill the quality objectives. |
| Quality Control | Part of quality management, focused on fulfilling quality requirements. |
| Quality Assurance | Part of quality management, focused on providing confidence that quality requirements shall be fulfilled. |
| Quality Improvement | Part of quality management, focused on increasing effectiveness and efficiency. |

## 3.3 Terms Relating to Organization

| | |
|---|---|
| Organizational Structure | Orderly arrangement of responsibilities, authorities and relationships between staff of a company. |
| Work Environment | Set of conditions under which a person operates. |
| Customer | Organization or person that receives a product. |
| Supplier | Organization or product that provides a product. |
| Interested Property | Person or group having an interest in the performance or success of an organization. |

## 3.4 Terms Relating to Process and Product

| | |
|---|---|
| Process | System of activities which uses resources to transform inputs into outputs. |
| Product | Result of a process. |
| Service | Intangible product that is the result of at least one activity performed at the interface between the supplier and customer. |
| Design and Development | Set of processes that transform requirements into specified characteristics and into the specifications of the product realization process. |

## 3.5 Terms Relating to Characteristic

| | |
|---|---|
| Quality Characteristics | Inherent characteristics of a product, process, or system derived from a requirement. |
| Traceability | Ability to trace the history, application or location of that which is under consideration. |

## 3.6 Terms Relating to Conformity

| | |
|---|---|
| Conformity | Fulfillment of a requirement. |
| Non-conformity | Non-fulfillment of a requirement. |
| Preventive Action | Action taken to eliminate the causes of a potential non-conformity or other potentially undesirable situation. |
| Corrective Action | Action taken to eliminate the cause of a detected nonconformity or other undesirable situation. |
| Correction | Action taken to eliminate a detected nonconformity. |
| Concession | Authorization to use or release a product that does not conform to the specified requirements. |
| Release | Authorization to proceed to the next stage of a process. |
| Repair | Action taken to a non-conforming to make it acceptable for the intended use. |
| Rework | Action taken on a non-conforming product to make it conform to the requirements. |
| Re-grade | Alteration of the grade of a non-conforming product in order to make it conformant with requirements differing from the initial ones. |
| Scrap | Action taken on a non-conforming product to preclude its originally intended usage. |

### 3.7 Terms Relating to Document

| | |
|---|---|
| Document | Information and its support medium. |
| Specification | Document stating requirements. |
| Guideline | Document stating recommendations or suggestions. |
| Quality Manual | Document stating the quality management system of an organization. |
| Quality Plan | Document specifying the quality management system elements and the resources to be applied in a specific case. |
| Procedure | Specified way to perform an activity or a process. |
| Record | Document stating results achieved or providing evidence of activities performed. |

### 3.8 Terms Relating to Examination

| | |
|---|---|
| Objective Evidence | Data supporting the existence or verity of something. |
| Inspection | Conformity evaluation by observation and judgment accompanied as appropriate by measurement, testing or gauging. |
| Verification | Confirmation and provision of objective evidence that specified requirements have been fulfilled. |
| Validation | Confirmation and provision of objective evidence that the requirements for a specific intended use or application have been fulfilled. |

### 3.9 Terms Relating to Audit

| | |
|---|---|
| Audit | Systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which the audit criteria shall be fulfilled. |
| Audit Program | Set of audits to be carried out during a planned time. |
| Audit Scope | Extent and range of a given audit. |
| Audit Criteria | Set of policies, procedures, or requirements against which collected audit evidence is compared. |
| Audit Evidence | Records, verified statements of fact or other information relevant to the audit. |
| Audit Findings | Results of the evaluation of the collected audit evidence against audit criteria. |
| Audit Conclusions | Outcome of an audit decided by the audit team after consideration of all the audit findings. |
| Auditee | Organization person being audited. |
| Audit Team | One or more auditors conducting an audit, one of whom is appointed |

| | |
|---|---|
| | as leader. |
| Auditor | Person qualified from a certification body to conduct audits. |

## 3.10 Terms Relating to Quality Assurance for Measurement Processes

| | |
|---|---|
| Measurement | Set of operations having the object of determining the value of a quantity. |
| Measurement Process | Set of interrelated resources, activities, and influences related to a measurement. |
| Measurement Control System | Set of operations necessary related to achieve meteorological confirmation and continuous control of measurement processes. |
| Measuring Equipment | Instrument, measurement standard, reference material and/or auxiliary apparatus necessary to implement a measurement process for carrying out a specified and defined measurement. |

# 4. Quality Management System

## 4.1 General Requirements

CNS QSM describes the documented quality policy, and related processes for providing the best products which meet or exceed customer requirements.

CNS has adopted the process and system approach advocated by ISO 9001 QSM, which means that we shall define and manage:

Processes input, various controls, and outputs to ensure that the desired results are achieved.

Interfaces between interrelated processes to ensure system effectiveness is achieved.

In accordance with the increased customer emphasis advocated by ISO 9001:2015, is paying a particular attention to QSM processes to ensure that desired results are achieved.

Recognizes the significant role of its subcontractors in achieving desired results. Shall manage all outsourced processes.

### 4.1.1 Key Processes

Key processes include:

1. **Management and Leadership**:

Management processes are implemented by the management team which determines an overall strategy for the company defines and improve the organization in order to achieve the desired objectives;

- Manages and improves business performances.
- Sets quality objectives and manages its performance.

2. **Marketing:**

Marketing includes analysis of rival conditions, identifying customers and market opportunities. The information collected is the key input to the process of improvement.

3. **Design and Engineering:**

Operations Production and Maintenance planning is carried out collection of chain activities, which starts with the planning for the product, production as per approved drawing / specifications and agreed terms & conditions.

### 4. Procurement and Supply Management:

To support services activities, the process of procurement and supply management provides a timely, qualitative and quantitative management for the production process requirements. These requirements results in timely delivery and reduction in the total cost.

### 5. Production/Services:

The process of Services includes preparation of proper scheduling, arranging all facilities and equipment and execution. These operations are performed according to procedures and directives within the defined timing.

### 6. Delivery:

The process of sale includes all activities of planning for sale, conducting order handlings for customers, releasing bills, delivery of Production and follow up action for any customer complaint.

### 7. After Sale Services:

The process of after sale services includes proactive planning to meet and fulfill customer related needs, collecting their feedbacks on product quality and reliability, as well as forwarding this information to the management.

#### 4.1.2 Model of Quality Management System

Interaction between the various processes is illustrated at Appendix E.

#### 4.1.3 Documentation System

The procedures/ directives which define support activities include:

1. Management review
2. Control of documents and records
3. Identification and traceability of the product
4. Calibration and maintain of monitoring and measuring devices
5. Control of nonconforming product
6. Complaints & feed back
7. Improvement
8. Assessments and audits

## 4.2 Documentation Requirements

#### 4.2.1 General

A quality policy statement has been defined and published and can be found with the General Manager endorsement on the front inside cover of this manual. Quality manual and Quality

procedures been documented for the purpose of achieving the quality objectives of this Quality Management System.

Documentation procedures will sustain the availability and reliability of all documents needed by the organization to ensure effective planning, operations and control of the processes in addition to the control of national and international regulations or any other specifications determined by the customer.

Control of Quality Records will describe in the section 4.2.4.

### 4.2.2 Quality Manual

This manual defines the scope of and documents the policy, procedures and processes needed to implement quality policy and achieve quality objectives.

1. This manual also documents the justification for exclusions from ISO 9001:2015 QSM requirements and defines the overall sequence and interaction between key QSM processes.
2. This quality manual contains documented statements of quality policy and quality objectives and references of documented procedures required by ISO 9001:2015 and other documents needed to ensure effective planning, operation and control of the key processes.
3. The level and type of QSM documentation established for business is continually reviewed to ensure that it remains appropriate for the complexity and interaction of processes and the competence of its core management staff.
4. QSM documents and the data collected to ensure complete compliance may be the shape of hard copy or electronic records.
5. QSM documentation includes these quality manual, quality procedures, work instructions, flow charts, and external documents needed to manage, perform and verify work affecting production quality.
6. CNS uses Work Instructions to document and define the key QSM processes. Uses Flow Charts to aid in the development and improvement of processes defined in Work Instructions.
7. CNS also issues and control work instructions, job descriptions, and other external documents and data as appropriate and needed to effectively manage the CNS-QSM.

### 4.2.3 Control of Documents

The procedure stated describes the control over preparation, approval, distribution and handling of the following documents and their subsequent changes and revisions in the Quality System manual, process descriptions, work instructions, product specifications, Relevant standards and specifications.

### 4.2.4 Control of Records

1. This sub-section describes the controls employed over preparation, control and retention of quality records.

2. Records shall be generated and maintained in order to demonstrate achievements of the required quality of the products and effective operation of the documented Quality Management System.
3. Records shall be stored and maintained in box files, which would prevent damage, deterioration or loss and shall be readily retrievable.
4. Authorized persons carry out identification, collection, indexing, filing, maintenance and specify retention time of the records.
5. Records are stored in legible manner, are identifiable, easily retrievable, and protected from deterioration.
6. Quality Records will act as inputs for data analysis process.
7. If required by contract, records will be made available to a customer for an agreed period of time.

# 5. Management Responsibility

## 5.1 Management Commitment

1. CNS management is committed to provide direct leadership and resources to ensure continued conformance with the requirements specified in this Quality Manual.
2. The primary evidence in support of Management Commitment is the responsibility of the Management Representative (MR), who directly reports to the GM.
3. CNS policy of meeting the requirements of the customer and its importance in the present business situation shall be communicated to the employees.
4. CNS quality objectives shall be clearly defined and communicated to all employees to make sure that the quality policy is achieved and continuously maintained by the organization.
5. CNS quality system is subjected to regular review by the top management as defined in Section 5.6.
6. The resources required for the smooth and effective operation of the system are identified and made available from time to time. The Process Descriptions for Human Resource Management, Purchasing, Equipment Maintenance, etc. ensuring the required resources right in time.

## 5.2 Customer Focus

Customer's requirements shall be determined and met with the aim of enhancing customer satisfaction by analysis of feedback received through a survey of the customers which shall be conducted periodically.

## 5.3 Quality Policy

1. CNS shall achieve customer's satisfaction by providing a consistent level of work performance that meets or exceeds customer requirements.
2. CNS quality policy statement indicates commitment and focuses on what is important to us as an organization achieving customer satisfaction and it prescribes the method by which we accomplish this by continually improving processes and services to ensure they consistently meet or exceed requirements. Moreover, quality policy statement acts as a compass in providing the direction and a framework for establishing key corporate level performance measures and related improvement objectives.
3. CNS ensures that quality policy is communicated and understood at all levels of the organization through documented training and regular communication.
4. CNSquality policy statement is controlled by inclusion in this manual, and along with all policies contained in this manual, is reviewed for continuing suitability during management review meetings.

## 5.4 Planning

### 5.4.1 Quality Objectives

Overall quality goal is to achieve the requirement of quality policy, maintain the integrity of the system and continually improve its compliance with ISO 9001:2015 QSM. Establishes both corporate level and operational level improvement objectives that are measurable and achievable within a defined time period. Operational level improvement objectives are determined from process monitoring activities in each of the following areas:

1. To ensure that approved methods and procedures are in place.
2. To optimize the reliability, operability and maintainability of the facilities.
3. To minimize the wastage during the production processes.
4. To ensure that safety of the personnel, the facilities and environment have been carefully considered.
5. To comply with International codes and standards while planning and executing the customer's projects.
6. To demonstrate the fulfillment of related customers requirements.
7. To maintain an effective and economical program for quality and meet agreed specifications.
8. To ensure that quality requirements shall be determined and satisfied throughout all phases of production & delivery.
9. To ensure that approved practices, procedures, inspection and test plans and audits are in place and utilized, as they apply, throughout all processes.
10. To provide for early and prompt detection of deficiencies and for timely and effective actions.
11. Management level improvement objectives shall be discussed in management review meeting and reviewed for continuing suitability.

CNS key personnel shall monitor and measure performance of the processes within their areas of responsibility and, where appropriate, establish measurable operation level improvement objectives consistent with quality policy.

## 5.5 Responsibility, Authority and Communication

### 5.5.1 Responsibility & Authority

1. The organization chart of CNS is given in this manual.
2. The responsibility and authority of different personnel within the organization shall be detailed in the Job Description issued to each personnel performing the jobs affecting the product quality.
3. The responsibilities for each task shall be defined in the Process Description.
4. A brief description of responsibilities for effective implementation of the Quality System are as given below:

| # | Personnel | Responsibilities for Quality Activities |
|---|---|---|
| **1.** | General Manager | Quality Policy, Management Review, Contract Review. |
| **2.** | Management Representative | Quality System, Internal Quality Audit, Handling of Customer Complaints, Training, Instrument Calibration, Maintenance of Quality Record. |
| **3.** | Production Manager | Product Realization, Measuring and Analysis of Product, Disposition of Non-Conformances |
| **4.** | Operations Manager | Equipment Maintenance, Corrective & Preventive Maintenance of machinery. |
| **5.** | Purchasing Manager | Supplier Evaluation, Material Purchase, |
| **6.** | Store In-Charge | Storage and Preservation of Raw Materials, Packing of Products |

### 5.5.2 Management Representative

Quality Contoller is designated as Management Representative (MR), responsible for ensuring that the Quality System as set out in this Quality Manual is developed, effectively implemented and maintained. He reports directly to the GM.

MR shall have the freedom to:

1. Initiate action to prevent occurrence of Process Non-conformance.
2. Identify and record any quality problem.
3. Initiate, recommend or provide solutions after consultation with concerned Manager and staff.
4. Verify the implementation of the agreed corrective actions.
5. Control further processing and/or delivery of non-conforming products till the non-conformance has properly been resolved.
6. Report to the top management regarding the performance and any need for improvement of the quality system.
7. To ensure that the awareness of the customer requirements throughout the organization.
8. Liaison with customers and any other external agencies on matters related to Quality Management System.
9. The Management Representative has the authority to stop any process, which will affect the quality of the products.

In the matters affecting quality systems set out in this Quality Manual, only the GM can over-rule the Management Representative.

### 5.5.3 Internal Communication

1. All employees of have access to the relevant Quality documents of the CNS General Contracting Est.
2. Clients' requirements and expectations shall be identified. The special product related documentation is issued during the product realization and the concerned personnel execute the process in accordance with the Production Order.
3. Periodic meetings shall be organized with the concerned & Management Representative to discuss the progress and problems (if any) of the product or the process.
4. During the meeting, the effectiveness of the Quality Management System shall be discussed.

## 5.6 Management Review

### 5.6.1 General

Management Review is held minimum once a year to monitor the system's effectiveness. This meeting shall be chaired by the General Manager and participated by the Management Representative, Human Resource ManagerProduction Manager, Maintenance Manager, Sales Manager, Purchasing Manager and any other personnel specially invited for discussing any specific issue.

### 5.6.2 Input Review

The following quality related performance parameters shall be reviewed during the meeting;

1. Implementation of actions initiated during the previous review outputs.
2. Results of the Internal and External Quality Audits results.
3. Feedback from the customers and the customer's complaints.
4. Performance of Various Processes and conformity.
5. Performance of Suppliers and Sub-contractors.
6. Actions taken for the correction of existing product non-conformances and prevention of any potential non-conformance.
7. Suitability of the established Quality Management System.
8. Changes made/proposed in the Quality Management System.
9. Suggestions for improving the Quality Management System and Performance of the Processes.

#### 5.6.3 Output Review

Records of the Management Review Meetings shall be prepared and circulated to all concerned by MR. It must contain:

1. Improvements discussed regarding the quality management system and its effectiveness.
2. Improvements discussed and agreed for the enhancement of the products and services.
3. Provision of desired resources by the operational management in order to successfully complete quality goals.

# 6. Resource Management

## 6.1 Provision of Resources (by Top Management)

1. The required resources in terms of product knowledge, raw materials, equipments, tools and manpower shall be identified and made available by the management with the objective of implementation, maintenance and continually improvement of the Quality Management System and enhancing customer satisfaction.
2. The adequacy of these is reviewed during the Management Review Meetings and any additional requirements shall be identified and taken care of.

## 6.2 Human Resources

### 6.2.1 Job Description

1. Job Description for each personnel performing work affecting the product/process quality shall be prepared and issued to the personnel.
2. The personnel required for performing the work affecting product/process quality shall be recruited depending on their education, experience and skill as defined in the Job Description. Additional trainings shall be provided, wherever necessary.

### 6.2.2 Competence, Awareness and Training

1. All new employees shall be given induction training to an extent necessary as per responsibilities of the individuals regarding business, quality and safety policy and practices.
2. Quality documents relevant to one's job shall be prepared for to the employees, as necessary.
3. New employees shall be assigned with an existing employee for on-the-job training, if and as required.
4. The performance evaluation of all employees shall be carried out by the immediate reporting superior for the review of the concerned department Manager and approval by the General Manager.

5. During this evaluation, training needs for the employee shall be identified and necessary training shall be provided. All personnel shall be trained regarding the Quality System implemented at to the extent of their position requirement. MR shall arrange such training.
6. The 6 & MR shall maintain the training record.

### 6.2.3 Infrastructure

1. The infrastructure required for the production, inspection, storage and delivery of the raw material as well as finished product shall be identified and enhanced from time to time.
2. The adequacy of the resources shall be reviewed during the Management Review Meeting and any additional requirements shall be identified and made available.
3. All the major equipments and inspection instruments shall be under preventive maintenance and calibration as needed in each case.

### 6.2.4 Work Environment

The work environment, safety and hygiene requirements shall be identified, established and maintained with the objective of meeting the product requirements and employees' comfort. This is achieved at the CNS through providing the most updates machines, software and hardware, suitable ways of communication, applying a quality management system to organize, protect and increase the efficiency of work and employees.

To its employees, the company is committed to providing an environment of continuous job satisfaction and advancement.

The Company uses state of the art manufacturing technologies, to produce products of high quality.

It is company policy to employ on competitive basis highly motivated, qualified, an efficient engineers and technicians.

# 7. Product Realization

## 7.1 Planning of Product Realization

The processes that shall be required for the process realization shall be identified and established as described in Section 4.1 of this Manual.

Resources required shall be identified and made available to complete the production within the scheduled delivery period.

General Inspection Plan shall be followed for the Inspection requirements for products at various stages of production. The requirements shall be followed and records shall be maintained as evidence.

## 7.2 Customer Related Processes

### 7.2.1 General:

1. Activities such as inquiry receipt, estimation, quotation preparation and order receipt shall be carried out by the Sales Manager in co-ordination with the General Manager.
2. All relevant information such as price list of the components and cost of the raw materials and other resources shall be made available during the estimation by the management.

### 7.2.2 Review of Requirements Related to the Product

1. The Sales Manager shall review & understand the special product requirements specified by the customer.
2. All customer enquiries shall be clearly understood, reviewed and documented with signature. Queries, if any shall be clarified with the customer or internal staff, prior to cost estimation and preparation of the quotation.
3. Necessary liaison work shall be carried out with the customer to realize a quotation into an actual Purchase Order.
4. The received Purchase Order shall be reviewed by the Sales Manager to ensure that the order requirements shall be in compliance with the original quotation proposal and any other mutually agreed modifications.
5. A Job order is prepared detailing all the products requirements required by the customer and is forwarded to the Production Manager for initiating the production activities.
6. Changes to the Purchase Orders shall be processed in the same way as the original order.

### 7.2.3 Customer Communication

1. The Sales Manager shall be constantly in touch with the customer by way of visits, telephonic discussion, fax messages, etc, in order to get the complete information regarding their requirements including product information.
2. Customer Enquiries, Purchase Orders and amendments shall be handled as described in this Quality System Manual.
3. Customer Complaints shall be collected and analyzed for identifying improvements. Customer Complaints shall be processed and corrective actions are identified and implemented as per the documented procedure. The corrective action implemented is usually intimated to the customer (if based on the feedback received from the customers).

## 7.3 Design and Development (Limited Application)

### 7.3.1 Design and Development Planning

The company is completely following all the requirements of the designing ethically.

The design and development is limited working on the drawings supplied by the client / as per samples supplied by the client / specifications received approved from the customers.

### 7.3.2 Design and Development Inputs

The company follows all the requirements of the client as per his written specifications.

1. Sales Manager shall provide input from the clients.
2. Data on customer supplied sample requirements.
3. The input shall be reviewed for adequacy completeness & unambiguous by production Manager.
4. A written record of the Input Adequacy shall be kept.

### 7.3.3 Design and Development Outputs

The contract and project specification and requirements shall be approved by the customer's representative. Development outputs shall:

1. Meet the input requirements.
2. Specify any characteristics of the product.
3. Provide appropriate information to the Purchasing & Operation Departments to start with.
4. Contain reference of acceptance criteria of the end product.
5. A written record of the output completion shall be kept for review.

### 7.3.4 Control of Design and Development Review

At suitable stages, systematic reviews of the development shall be performed for:

1. Evaluate the ability to in operate the changes asked by the client.
2. Identify any problems and propose necessary actions
3. A written record of various reviews shall be maintained.

### 7.3.5 Control of Design and Development Verification

1. Verification shall be performed in accordance with physical testing to ensure that the design and development outputs have met the inputs requirements. Necessary changes as demanded in the verification stage shall be carried out.
2. Records of the results of the verification and shall be maintained.

### 7.3.6 Control of Design and Development Validation

An appropriate authority person of agency shall review the validation of the design parameters. A record of the review shall be kept.

### 7.3.7 Control of Design and Development Changes

The changes shall be reviewed, verified and validated as appropriate and approved. Records of the results of the review of changes and any necessary actions shall be maintained.

## 7.4 Purchasing

### 7.4.1 Purchasing Process

Raw materials and components shall be purchased based on the stock requirement or based on the specific orders.

1. All materials shall be purchased from the approved suppliers. Materials and components shall be purchased only from suppliers who are able to demonstrate capability to meet the specific material requirements.
2. All suppliers shall be approved based on their previous dealing relations with which include price, material quality, and delivery schedule promptness in resolving and discrepancy in material and market reputation.
3. A Questionnaire shall be sent to new suppliers who are interested in working with. However all suppliers who are working with before January 2016 shall be considered as approved.
4. An Approved Supplier List (ASL) is maintained and used for all the purchases made. The process of assessment of suppliers and their inclusion or deletion in the ASL is carried out as per approved Process Description.
5. Services shall be purchased only from sub-contractors who are able to demonstrate capability to meet the requirement of the product.

6. Materials requisitions shall be prepared based on the Minimum Stock for the stock items and as per the Job Order for the requirement against a specific order.
7. The GM as per the documented Process Description shall approve Purchase Orders for the materials and services.

### 7.4.2 Purchasing Information

1. All Purchase Orders shall be issued to the suppliers detailing clearly the product/material specification, grade, type and description. The delivery and commercial terms and conditions shall also be clearly detailed in the Purchase Order.
2. Purchase Orders issued to suppliers detail clearly the required proof of quality in the form of inspection reports, test certificates, etc. (if applicable), which shall be to be furnished by the supplier.
3. Revisions to Purchase Order shall be handled and processed in the manner as a new order. In such cases the obsolete Purchase Order will be withdrawn.

### 7.4.3 Verification of Purchased Product

1. All purchased items shall be verified, to ensure the conformance to the required product/quality requirement.
2. Verification of the materials at supplier's premises is not generally applicable to the purchase scope of CNS General Contracting Est. However, if required, it will be specified in the purchasing documents.

## 7.5 Production and Service Provision

### 7.5.1 Control of Production and Service Provision

1. CNS initial focus is to assure the quality of process inputs, that is, employees, material, facilities, equipment, and methods. Employees shall be equipped to perform the process properly through appropriate education, training, and certification.
2. Material shall meet specified requirements and properly identified, stored, and issued. Equipment and facilities shall be adequate, accurate, available and properly utilized.
3. Work instructions and other important data shall be current and correct. Methods shall be appropriate and proven capable of accomplishing the desired results.
4. The CNS appropriateness of all these process inputs shall be assured, measured, monitored and controlled to assure effectiveness and identify opportunities for improvement.

CNSis gearing strategies for the following:

1. Ensuring the competency, awareness and training of employees. Ensuring that only correct materials and services shall be planned, procured and verified.
2. Planning, providing and maintaining appropriate and suitable facilities, equipment and related support services.
3. For developing effective work processes capable of meeting all applicable requirements.
4. The GM has overall responsibility for ensuring all processes shall be planned, scheduled and carried out in a timely and effective by manner.

### 7.5.2 Validation of Processes for Production and Service Provisions

The processes shall be reviewed on regular intervals and any non conformances occurring due to process deficiency, the interrelation of the processes shall be corrected accordingly.

### 7.5.3 Identification and Traceability

1. The system is followed for indicating identification, traceability and inspection status of a product at all stages which are of receiving, storage, production and delivery.
2. After performing the receiving inspection of the materials and components, the accepted materials shall be forwarded for storage or issued for production.
3. Materials stored shall be identified with proper location numbers.
4. Finished products shall be identified properly with an Identification Tags, Customer Identification and Item Number etc.
5. Non-conforming products at any in-process stage shall be suitably identified with a Hold Tag and reported for initiating corrective action.
6. All the records related to a particular production order shall be referenced with the production date ensuring complete traceability of products from receipt of raw materials to delivery of the product to a customer.

### 7.5.4 Customer Property

The customer is not supplying any raw material or semi-finished products to .

1. The company shall prepare an agreement / procedure duly approved by the client how to control his supplied raw / semi finished product / Electronic data for processing / drawings / or specifications.
2. The company shall maintain proper record of receipt, storage, issuance, usage, and remaining items.
3. Disposition of any non-conformance and remaining stock shall be carried out as per agreed terms and conditions.

### 7.5.5 Preservation of Product

1. Handling raw material, semi-finished and finished products are handled and transported in a suitable way in order to prevent the product from any damage/deterioration.
2. The Purchase Order received issued to a supplier shall specify any special packing instruction to protect the raw materials from any damage on receipt.
3. All Handling, Storage operations of materials and products shall be carried out in the best way.

## 7.6 Control of Monitoring and Measuring Devices

Inspection, Measuring and Test equipment shall be selected on the basis of measurement to be made / test to be performed and the accuracy required as per the product related requirements specified in the job order received from the customers.

Change according to actual situation of the company.

1. All inspection, measuring and test equipment which shall be used in the production and inspection shall be identified and their record maintained in a master list.
2. All inspection, measuring and test equipment stated in the master list shall be calibrated periodically. The frequency of calibration for an instrument is determined on the basis of manufacturer's recommendation or experience from the usage of the instrument. The designated frequency of calibration is entered in the master list.
3. Calibration is carried out by trained and qualified personnel against a calibrator traceable to the National & International standards. The calibrator shall be calibrated at defined frequencies by an approved calibration laboratory/agency.
4. Marking the instrument with a unique identification number identifies its traceability in the master list of calibration.
5. The calibration status of instruments is indicated by means of a calibration sticker which states the calibration date and the next due date for calibration. The calibration stickers shall be pasted on the instrument. Care shall be taken to prevent an unauthorized person from making adjustments. No user is allowed to make any adjustment to the instruments without the knowledge of the MR who will be responsible for its re-calibration/repair and updated the master list and affixing a new sticker.
6. Only calibrated instruments shall be issued to the production and inspection personnel. Instruments found out of calibration or damaged during usage shall be withdrawn from usage for the necessary corrective action.
7. The inspection personnel maintain traceability of calibrated equipments used for inspection and testing.
8. Handling, preservation, use and storage shall be identified under suitable environmental conditions and shall be specified for their usage.
9. New instruments shall be purchased and checked for accuracy / calibration before actual usage.

**10.** If an instrument is reported out of calibration during re-calibration, the previous user is informed accordingly for the adverse effect, if any. It will be responsibility of MR to verify the validity of the previously checked results and take appropriate corrective actions, if required to ensure accuracy of the products measured with the instrument in question.

# 8. Measurement, Analysis & Improvement

## 8.1 General

The inspection of incoming raw materials, in-process materials and final product shall be performed by qualified staff.

Internal audits shall be planned and performed to ensure the conformity of the Quality Management System.

Corrective and preventive action system, Management Review, Customer satisfaction survey and analysis shall be planned and implemented to make sure that the quality management system and its effectiveness shall be continually monitored and strived for improvement.

## 8.2 Monitoring and Measurement

### 8.2.1 Customer Satisfaction

1. Customers are the reason for the existence of a company and shall drive its quality policy "to meet or exceed customer requirements". The Sales Manager has overall responsibility for identifying and reviewing customer requirements and for monitoring and measuring customers' satisfaction.
2. Data collected from the customers during routine communication and customer feedback forms received back from them is the primary basis for assessing customer satisfaction. SM shall use a customer satisfaction survey form to ascertain the customers' overall perception of how well is in meeting their requirements.
3. Customer complaints (received in writing or verbally) shall be forwarded to the MR for action. If MR cannot resolve, the complaint shall be brought to the notice of the GM. Customer complaints shall be documented and monitored through corrective/preventive action process.
4. Customer survey data along with other customer feedback (including written or verbal complaints) shall be reviewed timely by MR to initiate a corrective/preventive actions request.

### 8.2.2 Internal Quality Auditing

1. A good number of Internal Auditors shall be got trained from an appropriate agency. A record of their training shall be maintained properly.
2. The trained auditors shall be deployed in order to verify the effectiveness of the Quality System and to ensure that the quality objectives are achieved accurately.
3. A complete internal audit of all facilities shall be carried out at least once a year.
4. Planning and performing internal audits, reporting of non-conformances, implementation of corrective actions based on audit results and verification of implementation are carried out as per the documented Quality Procedure [QP # 8.2.2] by trained internal auditors.
5. Designated auditors shall be selected independent of the processes they have been assigned to audit.

6. Audits shall be planned to cover the entire quality system functioning. An annual audit schedule shall be drawn. Checklists shall be prepared and used for conducting audits. Specified formats shall be used for reporting of audit observations.
7. Non-conformances shall be discussed with the concerned personnel. Corrective actions and a time frame for implementation shall be agreed upon in writing.
8. If required, a follow-up audit shall be performed after the stipulated time period to verify the implementation of the agreed corrective actions.
9. Extra ordinary audits shall be carried out when any of the following conditions exist:
10. When significant changes shall be made in functional areas of the Quality System including significant re-organizations and revision in the quality procedure.
11. When it is considered necessary to verify implementation of corrective actions which has taken place as a result of a major non-conformance.
12. The internal auditors shall submit the audit report to the MR and copies sent to the concerned personnel for initiating corrective action.
13. A management review meeting attended by GM, MR and concerned personnel shall be held at least once a year to review the effectiveness of the implementation of the Quality System. Audit reports, non conformance reports and corrective action status shall be reviewed. Necessary actions shall be taken based on the observations.

### 8.2.3 Monitoring and Measurement of Processes

1. CNS shall apply suitable methods for monitoring and measuring all QSM processes.
2. QSM processes shall be documented measured, controlled and evaluated to ensure they shall be effective (i.e. achieve desired results) and to identify opportunities for improvement. GM has the overall responsibility for the process development Key processes measurement is used to qualify process effectiveness and efficiency.
3. All managers shall be trained in the development and use of appropriate process management and control tools and techniques.
4. A process is effective only if the desired results are achieved. Effectiveness can be measured in terms of product quality, process accuracy, delivery/schedule performance, cost/budget performance, employee/function performance against established objectives and customer satisfaction.
5. A process is efficient when resource utilization is optimal. Efficiency can be measured in terms of total resource utilization, productivity indicators, and or waste/rework costs or hours. Since effectiveness is of primary importance to customers and efficiency is of primary importance to management, achieving and improving effectiveness and efficiency of all key QSM processes is critical to success.
6. CNS may conduct additional internal audit to obtain more nonconformance's opportunity for improvement and use statistical technique to monitor and measurement processes and improve them.

### 8.2.4 Monitoring and Measurement of the product

1. During manufacturing, in process inspection is carried out at specified points. Any non-conforming item/product detected is segregated and marked up accordingly.
2. Selecting a sample form batch to ensure that id conforms to specify requirements tests finished products.
3. Finished products are not released for shipment until; records have been verified that all steps have been completed and all results are documented and accepted.
4. Results are kept for all the tests carried out on raw materials, in process, and final products. These results can be used to provide any necessary information as requested by customers.
5. All inspections and test records clearly show status of test samples of every production batch according to CNS inspection and tests criteria.
6. International, Local standards will be followed to be referenced to whenever needed.
7. Records are kept as described in procedure.

## 8.3 Control of Non Conforming Products

CNS has established a procedure for Non-Conformance Control to prevent the inadvertent use of materials, components, products, etc. that are not conforming to the specified requirements.

1. At any stage the responsibility for non-conformance detection and reporting is that of the person who handles the materials at that stage
2. Non-conforming products observed at every stage e.g., receipt, storage, production and delivery is tagged / segregated and recorded on the applicable report.
3. The non-conformed product or parts are disposed of by taking any one of the following decision.
4. USE AS IS: If the non-conformance is minor and will not affect the product quality, the product or part may be allowed under concession after suitable recording.
5. REPAIR: Items, which can be reworked/repaired to make them meet the specified requirement, shall be reworked/repaired by the authorized personnel. Repaired/reworked products or parts shall be subjected to re-inspection and records shall also be maintained.
6. SCRAPPED: If the disposition on a non-conforming product is scrapped, the product or part is identified with suitable tag and necessary action is initiated.
7. The records for the disposition of non-conformance shall be recorded in the applicable reports as detailed in the respective Process Description.

## 8.4 Analysis of Data

The data generated and collected during the different stages of the product shall be subjected to the analysis by statistical techniques.

The following are the areas where this analysis is carried out:

1. Customer Satisfaction & Customer Complaints

2. Product/Service Non-Conformance
3. Corrective & Preventive Action
4. Supplier's Performance
5. Internal Quality Audit Process

A periodic report (at least once a year) based on the above analysis is prepared, circulated to concerned personnel, and discussed with management for review. The trends shall be reviewed in the Management Review Meeting.

## 8.5 Improvement

### 8.5.1 Continual Improvement

1. Continual Improvement in each area is part of the quality policy and objectives of . These shall be achieved through analysis of the results of internal audits, product non-conformances, and customer complaints and feedback and by identifying corrective and preventive action.
2. The Quality Management System is implemented within all functions and this is accomplished within a total quality environment, which promotes continuous quality improvement through active employee involvement and utilization of measurement data from both internal and external sources.

### 8.5.2 Corrective Action

System/document related corrective actions can be proposed by any person by filling up a document change request as described in the Section 4.2.3 of this Quality Manual.

1. The non-conformance reports requiring system related or product related corrective actions shall be attended to immediately and the relevant documents shall be changed appropriately.
2. Reports of rejection, rework, scrap and returned from the customers shall be reviewed to identify the causes of the non-conformances and the means of preventing their recurrence.
3. The results of Internal Quality Audits and customer complaints shall be reviewed during the Management Review Meetings and appropriate corrective actions shall be decided.
4. Product related non-conformance pertaining to purchase products is reported to the respective supplier for necessary corrective action. In case of repeated non-conformances, the supplier is removed from the Approved Supplier List.
5. When the non-conformance is due to inadequate training of personnel, the concerned staffs shall be provided with necessary training.
6. All formal customer complaints regarding products shall be analyzed and results shall be discussed in the Management Review Meetings to decide on the corrective measures. Actions required and time frame for completion is specified in the records of such meetings and is regularly followed up.
7. The corrective actions implemented shall be verified for their effectiveness during the Internal Quality Audit and Management Review Meetings.

### 8.5.3 Preventive Action

1. Reports on rejection, rework, scrap and return to supplier shall be prepared, reviewed and the trend is monitored periodically to identify any potential non-conformity and preventive action required.
2. The results of Internal Quality Audit and Customer Complaints shall be reviewed during the Management Review Meetings and any preventive action required shall be discussed and decided.
3. The performance of suppliers is monitored and any preventive action like development of new supplier is identified and carried out.