طرح نگهداشت و افزایش تولید 27 مخزن

QUALITY CONTROL PLAN (QCP)

نگهداشت و افزایش تولید میدان نفتی بینک

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NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید بسته نم زدای گاز ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0010_08)	
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REFERENCES

QA Organization

- **Project Quality Audit Schedule**
- **ISO 9001 : 2015 Certificates**
- **Corporate Quality Management System Procedures**

1.GENERAL

1.1INTRODUCTION

MFS has been maintaining a quality system consistent with ISO 9001 for 5 years, which provides the foundation for our organization to harmonize the quality of our products and services with those of our EMPLOYER'S and subcontractors. Our quality management system is accredited by TUV NORD for Quality Assurance on May 2019. After three routine surveillances at yearly intervals have been conducted,

Contractor achieved the renewal Certificate of ISO 9001:2015 successfully on. The renewed certificate is valid until May. 2022.

Our Quality Management System is characterized by the Quality Management Manual, supporting quality assurance procedures and many kinds of reference documents including corporate standards, specifications, procedures, instructions, guidelines and the like.

The Quality Management Manual describes the quality policy of the EMPLOYER to assure the quality in the performance of engineering, procurement services, construction and commissioning of various plants and facilities, and also prescribes the quality system elements in the same sequence of clauses as ISO 9001.

The quality assurance procedures and reference documents delineate the principles of the quality system to be applied to, and interact with, all activities related to the quality of the project.

In the practical execution of a specific project, it is our practice to prepare and implement a project quality assurance plan by the Project Quality Assurance Manager (hereinafter callas "PQM") in conjunction with the Quality Assurance Team. This project quality assurance plan will delineate the elements of the corporate quality management system to satisfy EMPLOYER'S needs and expectation as well as the project requirements.

To achieve the final goal of the project with good success, a specific project task team will be organized to carry out the various activities under the controlled status. The PQM will execute periodic quality audits for the quality-related activities to be accomplished by the lead engineers of respective disciplines.

The Quality Assurance Team is the pivot of the EMPLOYER-wise quality management activities, and all management actions and procedures for the total quality management programs are being established and implemented under the jurisdiction of the Quality Assurance Team.

The project quality programs described in this plan applies to the design engineering and procurement in compliance with the requirements stipulated in the Invitation to Bid.

The purpose of the project quality control and quality assurance programs established by the PQM is to set out;
- Responsibility, authority and the interrelation of personnel, who manage, perform and verify work affecting quality.
- Specific quality practices, resources and sequence of activities.
- Establishing updated methods and procedures for project activities
- Improving personnel skills & knowledge for teamwork and reducing projects delivery time.

Quality Policy

Masnouat Felezi Sangin has adopted, and is committed to, a Quality Management System according to ISO 9001:2015 in order to ensure that all M.F.S projects are executed in conformity with contractual requirements and that final product is to the satisfactions of the end-user. Quality, in every day work, is the responsibility of all employees who work for M.F.S The implementation of the Quality system in M.F.S relies entirely on the individual attitude and discipline of everyone in the Company and in case of any non-conformity would issue required Corrective and Preventive actions. MFS would strive for continuous improvement and has aimed to:

- Enhance its personnel skills and capabilities by providing the suitable and proper training system and evaluating its efficiency
- Achieving & Increasing Client and Customer satisfaction
- On time delivery of produced equipment

MFS top management has informed its personnel and shareholders of MFS about its Quality Policy and will monitor the system performance and efficiency to become sure about its continuous improvement.

Project Quality Objectives

- Increasing Efficiency of Project Problem Solving and surveillance
- Decreasing quantity of unsolved problems in project weekly meetings
- Increasing project progress in comparison with projects integrated time schedule
- Decreasing Customer complaints: Shall be less than 2 items per project
- Decreasing NCR in fabrication drawings issued by Technical Office: shall be less than 3 per month
- Percentage of Delay in VPIS document preparation: shall be less than 10%
- Decreasing the difference between projects estimated budget with actual costs: shall be less than 10%

We, all managements and staff make every effort through the whole life cycle of this Project to have quality policy and objectives implemented successfully.

Milad Afsarzadeh

Project Director / 30-May-2020

1.2 Terms and Definitions

The terms and definitions used throughout this plan shall have the following meanings except where the context requires otherwise.

EMPLOYER

DI Polymer Arian Company (DPAC)

CONTRACTOR

Masnouat Felezi Sangin (MFS Co.)

Quality

All those features and characteristics of a product or service that bear on its ability to satisfy a given need, i.e. that render it fit the purpose intended

Quality Assurance

All the planned and systematic activities implemented within the quality system, and demonstrated as needed, to provide adequate confidence that an entity will fulfill requirements for quality.

Quality Control

The operational techniques and activities used to fulfill requirements for quality.

Quality Management Manual

A document setting out the genera! quality policy, procedures and practices of an organization

Quality Management System

The organization structures responsibilities, activities, resources and events that together provide organized procedures and methods of implementation to ensure the capability of the organization to meet quality requirements.
or order.

A document prepared by the Contractor, defining general requirements for quality matters related to a particular contract

Quality Management Program

A document prepared by the Contractor, defining general requirements for quality matters related or order.

Quality Plan

A document setting out the specific quality practices, resources and sequence of activities relevant to a particular product, project or contract & order.

Quality Audit

A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

Inspection

The process of measuring, examining, testing, gauging or otherwise comparing the product with the applicable requirements

Third Party Inspectorate

An organization independent of the Contractor, Vendor or manufacturer and possessing the necessary competence to verify that any or all of the design, manufacture, and installation satisfy the specification and purchase order requirements.

Verification

Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled.

Corrective Action

Action to eliminate the cause of a detected nonconformity or other undesirable situation

Preventive Action

Action to eliminate the causes of a potential nonconformity or other undesirable potential situation

Traceability

Ability to trace the history, application or location of that which under consideration

2. QUALITY MANAGEMENT SYSTEM

2.1 General

1) This project establishes and applies process-based quality management system promoted in ISO 9001:2015.

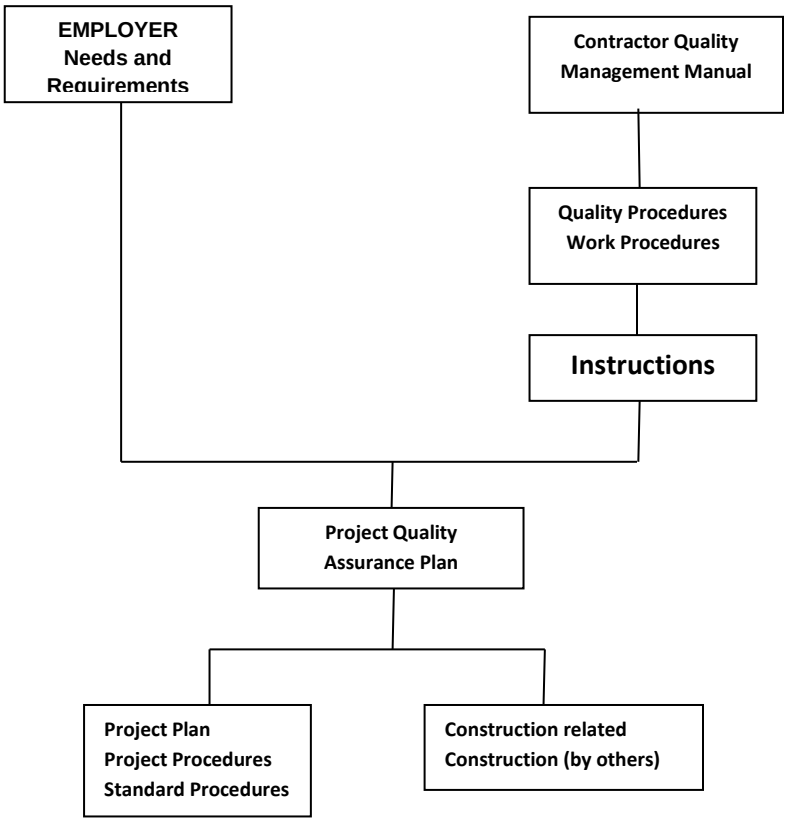
2) The project quality management program consists of the processes for operation, provision of management resources, product realization and measurement, analysis and continual improvement needed to provide products which meet Company's requirements and is specified in this quality plan.

3) The project quality plan shall be applied to all the processes including identification of Company's requirements, design, procurement services.

4) All personnel of project shall be responsible for trying to prevent non-conformities by carrying out their work in accordance with procedures and reporting problems needed to be corrected or improved to a person in charge of them.

2.2 Project Quality Plan Documentation

2.2.1 Hierarchy of Project Quality Plan



1) Documents constituting the Project Quality Plan shall be linked inter-systematically, and the content of lower level documents shall not deviate from that of higher level documents.

2) All documents constituting Project Quality Plan shall be controlled in accordance with the Company Standard Document Control Procedure (PR-01-02) and Technical & Systematic Numbering Work Instruction (WI-01-06), Document Control Center work Instruction (WI-12-17), Valid Documents Master List (FR-01-02/03).

1) The Project Quality Plan shall satisfy the requirements of ISO 9001: 2015, and Contractor's own standard manual, Quality Management Manual (QM-01-13).

2) The Project Quality Plan will be prepared to clearly specify work scope of each organization, to help the reader understand the whole structure of the system and to include references to procedures.

3) Project Procedures shall be prepared to describe requirements of the Project, and include office and field work procedure, inspection and test items, acceptance criteria etc.

4) Quality documents shall be revised depending on the project status such as the results of quality related activities and field conditions.

5) Reference
- Valid Documents master list

2.2.3 Control of Documents

1) General

The following documents are maintained with the latest version;

- ❖ Project Quality Plan
- ❖ Inspection & Test Plan
- ❖ Material Requisitions and Purchase Orders
- ❖ Project Plans and Procedures
- ❖ Procedures and instructions
- ❖ Specifications, Data Sheets and Drawings

Document can be in the form of hard copy media, or they can be in electronic media or others.

The latest approved documents shall be available where activities affecting quality are performed.

Master list or equivalent Document Control Sheets identifying the current revision status of the document shall be established and available.

The numbering system is included in the Project Coordination work instruction (WI-01-06) and Instruction for Vendor Documentation (1217-DE-00-DC-PCJ-001-00)

2) Preparation, Review and Approval

- Documents shall remain legible and readily identifiable.
- Documents related to other departments shall be reviewed.

• Document shall be prepared, reviewed and approved by an authorized personnel or organization prior to issue.

3) Issue, Distribution and Maintenance

• For the documents displayed on internal computer network, the original document having approval autograph shall be kept and controlled by the generating department if required, and the other hard copies shall be regarded as uncontrolled ones. Where hard copy is required to be controlled; only the generating department can issue controlled one.

• For hard copies the distributing organization shall record and maintain the distribution status on the document distribution log, and the receiving organization shall record and maintain the status of documents and data received on the document receipt log.

4) Revision and Discard

• The changes to document and data shall be performed by the same personnel/organization that performed the original review and approval unless specifically designated otherwise.

• Changed part of document shall be identified through appropriate marking.

• After replacing obsolete documents, the receiving organization shall remove them promptly to preclude the unintended use. When it is required to retain obsolete documents for legal, knowledge or traceability preservation, it shall be identified with" For Historical" by the originating or receiving organization.

5) References

• Document Control Center Work Instruction
• Company Standard Document Control Procedure
• Company Technical & Systematic Numbering Work Instruction
• Project Numbering System

2.2.4 Control of Records

1) General

• Quality records shall be identifiable, legible and readily retrievable.

• Quality records of supplier and subcontractor shall be controlled as a part of Contractor's quality records.
• Quality records may be in the form of any type of media, such as hard copy or electronic media.

• A complete set of Vendor Data Book (VDB) & Manufacturing Data Record (MDB)shall be prepared by the Contractor during the Contract Period. These documents shall be prepared to represent the Facilities in the as-built condition and shall be supplied to the Company prior to turnover. The Contractor shall initially discuss it with the Company.

2) Identification and Collection

• Project records are documented by the Contractor's own standard procedure, Document and Data Control Procedure.

• Document controller shall collect quality records for indexing and filing.

3) Indexing and Filing

• Quality records shall be indexed by the title, classification, retention time and responsible organization of files, and also filed in file folder or file binder.

4) Storage, Protection and Retention

• Quality records shall be stored and maintained in facilities that provide a suitable environmental condition to minimize deterioration or damage and to prevent loss.

• Quality records shall be maintained until the established retention time.

5) Access and Disposition

• Quality records shall not be accessed or taken from the storage facilities without permission of the Document Controller.

• Where agreed contractually, quality records shall be made available to the Company for an agreed period. Upon transfer of quality records, acknowledgement of a Company's written receipt of the quality records shall be received.

• Quality records exceeding the retention time shall be deposed through consideration of relevant regulation, requirements of Company and others.

6) References

- Instruction for Vendor Documentation (1217-DE-00-DC-PCJ-001-00)
- Technical Data Book Preparation Instruction (WI-08-07)
- Document and Control Work Instruction(WI-12-17)
- Quality Record Control Procedure (PR-01-01)
- Sub-Contractors Order Procedure (WI-04-08)

3. MANAGEMENT RESPONSIBILITY

3.1 Management Commitment

Project Manager shall ensure the following to establish, implement and assess the quality management system, and maintain its effectiveness through continual improvement.

1) Providing guideline meeting Company's as well as statutory and regulatory requirements.

2) Ensuring quality policy and objectives in accordance with Contract requirements.

3) Continual improvement of the quality management system through management review

4) Securing management resources and effective operation of it for continual improvement of processes and working environment.

3.2 Customer Focus

Project Manager shall focus on the Company's requirements and expectations as well as statutory and regulatory requirements regarding products and services to be supplied by Customer. Also ensures that the criteria and methods to reflect them are determined and implemented for Customer satisfaction. Based on the project quality policy and objectives for this project, Contractor shall make every endeavors to achieve Company Satisfaction.

3.3 Planning

3.3.1 Quality Objectives

1) Project Manager shall establish project quality objectives in accordance with project quality policy.

2) The quality objectives shall be periodically reviewed against management achievements and be revised if necessary.

3.3.2 Planning of the Project Quality Plan

1) Project Manager shall ensure that the established Project Quality Plan is adequate to achieve the project quality objectives.

2) The Project Quality Plan shall be revised to reflect the requirements and expectations of the Company and interested parties, but integrity of the Project Quality Plan shall be maintained.

3.4 Responsibility, Authority and Communication

3.4.1 General

1) Each organization in the project shall out the project work in accordance with quality assurance system

2) Management personnel or each Department Manager may delegate all of his duties or part thereof to others, but the responsibilities for the duties shall rest with those who delegated.

3.4.2 Responsibility and Authority

1) Head Office Organization

1.1. Quality Management Representative

- Establishing, executing and maintaining the corporate quality management system in accordance with ISO 9001; 2015.
- Reviewing the suitability and effectiveness of the corporate quality management system and reporting to the President.
- Approving the quality audit report.

1.2. QA Team Manager
- Preparing quality management report.
- Establishing corporate quality policy.
- Establishing and maintaining corporate quality manual / procedures.
- Appointing a Project Quality Manager.
- Executing or supporting training related to quality.
- Maintaining a coordination channel with external organization for the quality matters
- Maintaining corporate standard documents.

1.3. Project Manager
- Controlling the cost, schedule and quality of the project.
- Reporting the project progress status to the Management regularly.
- Ensuring that all contractual requirements are satisfied.

1.4. Project Quality Assurance Manager (PQM)
- Establishing the project organization with the resources assigned to the project and the project execution policy, quality plan, project procedures are implemented, and ensures project-wide awareness of quality requirements.
- Organizing and managing overall quality activities in compliance with the requirement of the quality plan.
- Establishing project quality plan and internal project audit schedule.
- Monitoring effectiveness of the quality system as a quality objectives through regular review and audits
- Conducting internal quality audits.
- Verifying the process dealing with nonconformities.
- Reporting the project quality matters to QA Team Manager

1.5. Engineering Manager (EM)
- Planning, organizing and monitoring all the engineering activities.
- Coordination with all engineering parties participating in the project and
- Preparation of technical part of change proposals

1.6. Project Engineer (PE)
- Assisting the Project Director and EM in the prosecution of the project.
- Planning, organizing and monitoring all the project activities.
- Coordination with technical matters in respect with all related parties in the project.

1.7. Project Control Manager (PCM)
- Coordinating and controlling the schedule, cost and execution of the project administrating systems in collaboration with PM, PEM.

- Reporting to and receiving the project direction from PM

1.8. Lead Engineer (LE)

- Undertaking and performing the design functions of his particular discipline.
- Preparing and maintaining engineering execution plan or design plan.
- Documentation of the material requisition and technical/commercial bid evaluation.

1.9. Material Procurement Manager (MPM)

- Establishing the procurement plan.
- Preparing and issuing the inquiry documents and purchase orders.
- Expediting Vendor of equipment and bulk material.
- Arranging the shipping and transportation of equipment and materials.

1.4.1 Internal Communication

1) Project Manager shall ensure that appropriate communication processes are established within the Project and that communication takes place effectively in accordance with Project Quality Assurance Plan.

2) For internal communication on the requirements and results of work processes among department (team) and personnel or work unit, the following means can be used;

- Meeting, seminar
- Meeting minutes, official letter or bulletin board using internal computer network
- Internal e-mail etc.

3) Changes that could affect the quality management system (organization change, the result of review for the suitability and effectiveness of the quality management system etc.)

4) System improvement request from relevant department/site

5) Subcontractor quality evaluation result

4. RESOURCE MANAGEMENT

4.1 PROVISION OF RESOURCES

Project Manager shall identify and supply proper resources (human / computer program /materials / equipment / facilities / subcontractor) to execute the project, and the secured resources should ensure the effectiveness through implementation and continual improvement of the quality management system.

4.2 HUMAN RESOURCES

4.2.1 Competence and Awareness

1) Project Manager shall control the work affecting product quality to be performed by the Personnel being competent on the basis of appropriate education, training, skills and Experience.

2) Project personnel's awareness of the importance and relevance of their activities and how they contribute to the achievement of the quality objectives is confirmed and controlled through education and measuring the achievement.

4.2.2 Control of Education and Training

1) Implementation of Education and Training

• Personnel to be trained include all the personnel to perform activities affecting quality of the project, and include personnel in supplier and subcontractor, if necessary.

• The training needs shall be identified, considering the object, the results of previous training, work accomplishment and the content of training, and they shall be reflected on the yearly training plan, be implemented and the result shall be controlled and maintained.

• Personnel carrying out internal verification of measuring equipment shall be trained prior to assignment to the work in accordance with relevant procedure.

• The depth of understanding and effectiveness of training shall be controlled and identified through questionnaire or evaluation for the training for qualification.

• In case that additional training is needed on account of change of work level, Customer requirements, or relevant department manager shall implement adequate training to the personnel in charge.

• Personnel assigned to the specified activities such as follows shall be experienced, trained, educated and verified for skills.

• Special process (Welding, PWHT, NDT, Lining and Cathodic protection)
• Design
• Inspection and test
• Quality audit

• The training records and qualification records shall be controlled in accordance with para. 2.2.4 of this plan.

4.2.3 References

- Project Control Procedure (WI-10-01)

4.3 Infrastructure and Work Environment

4.3.1 Facilities and Equipment Control

Project Manager shall determine and provide the following infrastructures and maintain them to be utilized effectively.

1) Process equipment and operating software
2) Services such as maintenance, transport or communications
3) Other auxiliary facilities

4.3.2 Knowledge and Information Control

1) Information system using internet and intranet shall be provided and controlled so that necessary information could be available at all times and on time for work efficiency, enhancing knowledge level of project personnel and Company by sharing of information, and important information shall be protected and safeguarded with appropriate control system.

2) Project Manager shall control to provide the latest data and information by periodically reviewing and revising those used in Company works.

4.3.3 Work Environment

Project Manager shall identify and determine the work environment related to facilities, Equipment and information system needed to achieve conformity to product requirements and enhance work efficiency, and may control to change, if necessary.

5. PRODUCT REALIZATION

5.1 Planning of Product Realization

5.1.1 Project Manager shall establish and implement project execution plan including necessary resources, schedule, methods and procedures by identifying appropriate work processes such as project acceptance, design, procurement services meeting Company requirements.

- Project quality policy and objectives.
- Documentation and improvement of the project quality management system.
- Necessary manpower, equipment and operating software

5.1.2 Project Quality Plan shall be distributed after review and approval by Company, and be revised if quality effectiveness is not satisfied.

5.2 Company-related Processes

5.2.1 Determination of Requirements related to the Products and Services

Project Director shall identify and determine the following to supply products and services which meets Company requirements.

1) Company requirements including the requirements for the delivery and post-delivery activities.

2) Requirement not stated by the Company but necessary for specified or intended use.

3) Statutory and regulatory requirements.

4) Any additional requirements not requested by Company but determined by Contractor.

5.2.2 Review and Control of Requirements from Company

1) Contract document including Company requirements shall be reviewed by PD as per Contract review procedure (PR-11-01).

2) Records of the results of the Contract review and actions arising from the review shall be maintained according to para. 2.2.4 of this plan.

5.2.3 Project Pre-Quality Meeting

A meeting shall be scheduled between the Company and the Contractor's PQM as outlined herein to discuss and clarify overall aspects of Quality and Certification if necessary.

5.2.4 Communication with Company

1) For the communication with Company, the following means shall be used, but not limited to;

- Formal letter, telephone or fax.
- Meeting or seminar
- Briefing or electronic media (internet, e-mail) etc.

2) For the following work, communication with Company shall be controlled in accordance with an appropriate method.

- Review of Company's requirements.
- Contract, design change, or handling of Company request in the course of project execution

5.2.5 References

- Project Coordination Procedure

5.3 Design and Development

Design study, design plan, design input, design output, design review, design verification and design change shall be carried out in accordance with Contractor's own standard procedure, Project Design Develop & Realization procedure (PR-06-01) (PR-06-01)
Contractor shall undertake necessary detail design works to fully achieve the Contract requirement.

5.3.1 Design Study

The lead engineer shall prepare design and process studies so as to arrive at the optimum solution for design, efficiency and operational/maintenance problems encountered or anticipated during the performance of the work or the life of the facilities and/or to verify conformance to the Company standards. Such design studies may include, but not limited to: site condition, line sizing, stress calculations, flow rates, equipment sizing, instrument locations and maintenance access, etc.

5.3.2 Design Planning

1) Design plan shall be prepared by the lead engineer in consideration of Contract requirements, approved by concerned department manager and transferred to Project Manager.

2) Design plan shall include the following and design schedule, drawings, specifications and procurement documents shall be controlled separately.

- Organization
- Manpower schedule
- Scope of work
- Document list to be prepared
- Applicable data, procedure, software and manual
- Design review and verification

5.3.3 Organization and Work Assignment

1) Each discipline manager shall assign project members depend on engineer's skill, experiences and work volume as per relevant procedures.

2) The lead engineer will indoctrinate or train all relevant personnel to the project requirements and the discipline interfaces.

5.3.4 Design Input

1) Design input shall include all the design related information such as process data, performance, functional, environmental and safety requirements, applicable codes, technical standards, statutory regulation, local information, product requirements and specifications, and these shall be provided by Project Manager.

2) The lead engineer shall list design inputs in order to confirm that they are reflected to design outputs.

3) The lead engineer shall review and update design criteria, basic engineering design data, and design input/output data.

5.3.5 Design Output

1) Design outputs such as drawings, specifications, calculations and data sheets shall meet the input requirements for design input and be prepared in accordance design manual and relevant procedures.

2) Lead engineer shall review design work periodically on the basis of design review requirements such as work class, work volume and relevant department work.

3) Design output shall be reviewed and approved against design checklist and environmental aspects shall be taken into consideration against environmental checklist.

5.3.5 Design Review

1) Design review shall include; model review, ergonomic review, constructs ability review.

2) The discipline lead engineer concerned shall review the adequacy of design with all other concerned lead engineer to ensure that the design input is correctly reflected in the project requirements

3) Lead engineers concerned shall review the following to confirm that design outputs meet input requirements.

- P & ID & PFD Review
- Fabrication Plan Review
- Fabrication Procedure Review

4) Records of the results of design review shall be maintained separately or recorded on the output and be maintained.

5.3.6 Design Verification

1) Discipline lead engineer shall perform design verification which can comprise activities such as alternative calculations, comparison with a similar proven design specification, undertaking tests and demonstrations or reviewing documents prior to issue.

2) The effectiveness of purchased or self-developed computer software shall be verified prior to initial use.

3) The means of design verification performed and the results of verification shall be recorded and maintained.

4) Receiving Client Approval and release rote certificate shall be considered as part of verification.

5.3.7 Design Change

1) Lead engineer shall review design documents to ensure that changed requirements and latest design documents have been verified by relevant department prior to issue.

2) When design changes are required on account of Company's request. Project Manager shall designate relevant department and issue design change request.(DCR).

3) Lead engineer in charge shall manage to change relevant design outputs through coordination with relevant lead engineer.

4) Stages of changed design documents shall be determined according to design plan in principle but addition or deduction of stages shall be determined by lead engineer in charge.

5) In case that design changes can give any impact on materials or construction, Project Manager shall notify concerned organizations of it in order to make them take necessary actions.

6) Changed parts and revision number shall be identified on the document.

7) Revised design documents shall be submitted to Company for approval and status of revision shall be maintained.

5.3.8 References

- Project Design Develop & Realization procedure (PR-06-01)

5.4 Procurement / Procurement Services

5.4.1 General

1) Procurement shall be carried out in accordance with Material Procurement Control Procedure (PR-04-01, WI-04-07).

2) Materials and services which is sub-contracted shall be purchased from approved suppliers or subcontractors.

3) Registration and evaluation of supplier shall be performed in accordance with Material (WI-04-06).

4) The result and record of evaluation shall be maintained as quality record,

5.4.2 Control of Procurement Document

1) Preparation of Inquiry documents

- Technical Inquiry (Material Requisition)

On the basis of basic design data and experiences, concerned lead engineers shall perform detailed engineering and prepare the material requisition for procurement.
The technical inquiry documents shall comprise the following:

- ❖ General requirements of vendor's drawings, data, specification, etc.
- ❖ Basic technical data, specifications and drawings, applicable code, special process qualification where required, procedures, etc.

- ❖ Inspection and test specification, acceptance criteria, etc

• Commercial Inquiry

The MPM shall prepare the commercial requirements, such as Instruction to Bidder, Terms and Conditions of Purchase, Packing and Care Marking Specification, and Payment & Invoice.

2) Review of Inquiry Documents

PM shall review the material requisitions in general and technical matter based on the contractual requirements.

The MPM shall review the inquiry documents for the adequacy of specified requirements prior to release.

3) Approval of Inquiry Documents

The MPM shall arrange the inquiry packages in grouping by similarity. The inquiry package plan is to be submitted to PM for approval.

5.4.3 Vendor selection

1) Vendor Evaluation / Project Vendor List

• The MPM shall evaluate and select the eligible vendors on the basis of their ability to meet subcontract requirements including quality system and quality assurance requirements. MPM shall also review the Approved vendor list attached to contract which has Priority for purchase.

• The Inspection lead engineer will review vendor's quality plan.

• The MPM shall provide vendor qualifications to contain justifiable comparison such as work history, standard certification, survey data, ISO 9001 status and specific benefits. The Company reserves the right to approve the Vendor List.

2) Issue of inquiry

•The MPM will issue the inquiry to adequate approved vendor for bidding.

3) Technical Bid Evaluation

Receipt of the bids for the products to be purchased, a Technical Bid Evaluation is performed to verify their compliance with the requisition documents, identify any deviations or exceptions, evaluate the technical adequacy of the bid and request modifications or clarifications when necessary. This evaluation is ensured and documented by the lead engineer concerned, and is approved by the PM and Company.

4) Purchase Requisitions

• After approval of Technical Bid Evaluation^ purchase requisitions are prepared by the lead engineers who ensure that the drawings, specifications and any other necessary documents are referenced and attached thereto.

• The requisitions are approved by the Project Manager and transmitted to the MPM for purchasing.

5.4.4 Purchase Order

Upon approval of Technical Bid Evaluation by Company, MPM will prepare purchase orders. The MPM will maintain and issue inquiry and purchase order status reports on aperiodic basis.

5.4.5 Vendor documents

Vendor documents shall be reviewed and approved by lead engineer and the Company on the basis of purchase order requirements. Where it deems necessary, LE will circulate them to related discipline engineers for their review.

5.4.6 Verification of Purchased Material

• Inspection Level

Inspection lead engineer shall determine level of inspection for materials depending on the importance and submit EMPLOYER for approval.

•Level 1 Receiving Inspection
•Level 2 Final inspections prior to shipment
•Level 3 Limited inspection
•Level 4 Progressive quality surveillance
•Level 5 Resident quality surveillance

• Inspection and test plan (ITP)

Inspection lead engineer shall prepare ITP taking the requirements of EMPLOYER and the importance of materials into consideration, make project manager review and get approval of EMPLOYER.

• Inspection and Test

• Vendor pre-inspection meeting

Inspection lead engineer shall select inspector on the basis of experience and qualification to perform inspection.

• Witness by Company

Witness point of Company will be confirmed in accordance with the Contract requirements.

•Selection of inspector

Vendor Pre-inspection meeting shall be held for certain equipment's, which are to be decide necessity during Project Pre-inspection Meeting, to make relevant personnel aware of the quality requirements, contents of purchase order, standards and drawing, and to communicate with each other.

• The vendor pre-inspection meeting is normally held at the manufacturer's shop with Contractor's inspection lead engineer and/or inspector, vendor and Company, when it is necessary by the Company, inspection lead engineer shall inform in accordance with Project Coordination Procedure.

• Witness / Hold point, Surveillance point and review point shall be determined in accordance with Inspection & Test Plan and the meeting minutes shall be prepared and distributed to the related personnel.

• Communication system will be referred in Project Coordination Procedure. Contractor shall provide a notice for inspection to the Company at least 10 days in advance in the case of offshore inspection and 7 days in advance for on-shore inspection items.

• Witness of inspection and test

Witness and hold point shall be given in final approved vendor's Quality Plan and it should be confirmed that the latest document be used in the shop by reviewing vendor's documents prior to inspection and test. Inspector shall report inspection result to inspection lead engineer.

• Final Inspection

Prior to final acceptance of equipment and materials the following shall be reviewed.

- Completion of all the inspection and test that were planned
- Confirmation that the results of inspection and test conform to requirements.
- Documentation for evidence of conformity to requirements

• Shipping permit

Inspection release note will be issued to the vendor by Contractor's inspector or designated representative after accepting the item for delivery from the vendor's shop

•Inspection of special items

All the special requirements shall be described in the specifications in the purchase order, otherwise inspection level or Vendor Quality Plan shall replace them.

5.4.7 References

- Material Procurement Procedure (PR-04-01)
- Sub-Contractors Evaluation Work Instruction (WI-04-03)
- Sub-vendor Evaluation Work Instruction (WI-04-06)
- Sub-Contractors Order Procedure (WI-04-08)

6. MEASUREMENT, ANALYSIS AND IMPROVEMENT

6.1 General

Project Manager shall plan and implement the monitoring, measurement, analysis and improvement processes needed to demonstrate conformity of the product, to ensure

conformity of the quality management system and to continually improve the effectiveness of the quality management system.

6.2 Monitoring and Measurement

6.2.1 Quality Audit

1) General

• Quality audit shall be scheduled taking into consideration the status and importance of the engineering and procurement services. And Audit shall be carried out by personnel who have no direct responsibility for the activities to be audited.

• Quality audits shall be carried out by the personnel who are qualified.

• The results of quality audits shall be used for an integral part of management review activities.

2) Quality Audit Plan

• Quality audit shall be scheduled on the basis of the status and importance of the activities to be audited. Audit frequencies may vary depending upon the nature and importance of the activity being performed and result achieved, and shall be carried out at least twice during life of project as attached quality audit schedule, Appendix-2,

• If quality problems are found during the project monitoring or Company's request, PQM will conduct the special audit.

• Audit plan shall be prepared to include the purpose and scope of the audit, related documents, audit personnel, time schedule, organization being audited and other information on audit process.

• An unscheduled quality audit may be carried out, when it is required, in addition to schedule quality audit.

• Lead Auditor shall prepare Quality Audit Checklist to evaluate whether the specified requirements of quality management system are implemented.

3) Quality Audit Conduct

• The audit plan shall be notified to the organization to be audited before the start of audit

• Audit can be carried out by audit team including technical expert who is independent of the organization being audited if required, and the expert can be free from auditor qualification.

• The Corrective Action Request for the audit finding may be issued to the audited organization, during or after completion of quality audit.

4) Corrective Action

• The audited organization shall inform the Lead Auditor of a written plan and result of corrective action.

• The adequacy of the corrective action for the audit findings proposed by the audited organization shall be evaluated and approved by the Lead Auditor, and the audited organization shall implement the corrective action as approved.

• The Lead Auditor shall verify the implementation and effectiveness of the corrective action through follow-up action.

5) Audit Report

• The Lead Auditor shall prepare the Quality Audit Report and the report shall be reviewed by the QA Team Manager and approved by the Quality Management Representative.

• The Lead Auditor shall notify the audited organization of the approved Quality Audit Report

6) Quality audit record

The quality audit records shall be controlled in accordance with Para. 2.2.4 of this plan.

6.2.2 Monitoring and Measurement of Work Process

1) PM shall monitor and measure the project work processes and the result of the processes.

2) Monitoring and measuring shall be carried out to achieve quality policy and objectives.

3) Engineering manager shall monitor the design activities through the review of design output.

4) In case that deficiency or problem is found as a result of monitoring or measurement, PM/CM shall correct them and take corrective action.

5) Project Quality Manager shall confirm the adequacy and effectiveness of the action taken from the problem and the result of monitoring and measurement through auditing.

6) References

- Quality Audit Procedure (PR-01-04)
- Monitoring & Measurement Criteria Form (FR-01-13/05)

6.3 Control of Nonconforming Product

6.3.1 General

1) Nonconforming product control procedures include the identification, documentation, evaluation, segregation (when practical), disposition, and notification to the functions concerned.

2) Nonconformance control of purchased product shall be performed according to the Non-conforming Product Control Procedure (PR-08-03).

6.3.2 Identification and Segregation

1) Nonconforming product shall be identified by label/sticker or other proper means.

2) The nonconforming product shall be segregated until they are properly disposed.

3) When segregation is impractical or impossible, nonconforming product shall be identified and easily recognized by distinguishable means.

6.3.3 Documentation and Implementation

1) The nonconforming product shall be reviewed and disposed by the responsible personnel in accordance with the Non-conforming Product Control Procedure (PR-08-03) and it may be;

- Reworked to meet the specified requirements
- Accepted with or without repair by concession
- Regarded for alternative applications
- Rejected or scrapped

2) Nonconformance with regard to design shall be handled by the lead engineer.

3) Where required by the contract, the use or repair of nonconforming product shall be approved for concession by Company.

4) Repaired and/or reworked product shall be re-inspected in accordance with the applicable procedures and/or original acceptance criteria.

5) Closed data of nonconforming product shall be analyzed, if necessary, the results of the analysis shall be managed in accordance with the Corrective and Preventive Action procedure (PR-01-03) and reflected in Management Review.

6.3.4 Conditional Release

1) The nonconforming product may be used on conditional release, if the investigation or proper disposition of nonconforming product is not obstructed by further processing.

2) The nonconforming product conditionally released shall be recorded, traced and controlled for follow-up actions.

6.3.5 Quality Records

Records for nonconforming product shall be controlled in accordance with Para. 2.2.4 of this plan.

6.3.6 References

- Non-conforming Product Control Procedure (PR-08-03)
- Corrective and Preventive Action procedure (PR-01-03)

6.4 Analysis of Data

6.4.1 Project Manager shall determine collect and analyze appropriate data to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvement of the effectiveness of the quality management system can be made. This shall include data generated as a result of monitoring and measurement and from other relevant sources.

6.4.2 The object, procedure, methods and time of analysis shall be dependent on the characteristic of the organization and the items to be analyzed may be the following, but is not limited to;

1) Status of non-conformities and their disposal
2) The result of internal quality audits
3) The result of corrective/preventive action
4) Supplier's/subcontractor's capability for quality activities

5) Other quality activities

6.4.3 In case that improvement/corrective/follow-up action is need as a result of the analysis, it shall be implemented in accordance with Contractor's own standard procedure, Improvement Control work Instruction (WI-01-12) and the result of the action shall be notified to the organization in charge of analyzing the data.

6.4.4 PQM shall review analysis of data to determine and take additional follow-up action.

6.4.5 References

- Improvement Control Work Instruction (WI-01-12)

6.5 Improvement

6.5.1 Continual Improvement

1) Project Manager shall review and utilize the following to continually improve the/effectiveness of the quality management system.

- Achievement of quality policy and objectives
- The result of periodical suitability review for quality management system
- The result of management review
- The result of corrective/preventive actions
- The result of internal quality audits
- Data analysis (refer to Para. 6.4)
- The result of monitoring and measurement of processes.

2) Project Manager shall determine the activities, which could continually improve the effectiveness of the quality management system and reflect them on the establishment of quality objectives and their implementation plan.

3) Personnel in charge shall implement the improvement in accordance with established plan, but may revise the plan in case that the schedule or contents of the plan changes.

4) Personnel in charge shall work out a countermeasure or revise the plan if it is found necessary through evaluating the status and result of the implementation.

6.5.2 Corrective and Preventive Action

1) General

- The corrective action eliminating the cause of nonconformities in order to prevent recurrence shall be appropriate to the effects of the nonconformities encountered, and the procedure shall include;
  - Reviewing nonconformities (including Customer complaint).
  - Determining the cause of nonconformities.
  - Evaluating the need for action to ensure that nonconformities do not recur.
  - Determining and implementing action needed.

- Records of the results of action taken.
- Reviewing corrective action taken.

- The preventive action eliminating the cause of potential nonconformities in order to prevent their occurrence shall be appropriate to the effects of the potential problems, and the procedure shall include;

  - Determining potential nonconformities and their cause.
  - Evaluating the need for action to prevent occurrence of non-conformities.
  - Determining and implementing action needed.
  - Records of results of action taken.
  - Reviewing preventive action taken.

2) Handling of Corrective and Preventive Action

• Relevant organization shall request appropriate organization in charge to issue corrective action request (CAR).

•The organization requested to issue CAR shall review relevant data and, for the action needed, issue CAR which requests the receiving organization to take necessary action in due date designated on the CAR.

•CAR receiving organization shall prepare document describing the cause and action plan or the result of action taken, and request CAR issuing organization to review it.

• CAR receiving organization shall take necessary action within due date, confirm resolution of problems by self-evaluation and transfer the CAR with attaching evidence document of the result.

• CAR issuing organization shall close the CAR in case that the action taken and its results are confirmed to be effective.

• In case that the action and/or its results is found unsatisfactory, CAR issuing organization shall expedite the organization to take additional action.

3) Records for corrective and preventive action shall be controlled in accordance with Para. 2.2.4 of this plan.

6.5.3 References

- Corrective and Preventive Action procedure (PR-01-03)
- Improvement Control Work Instruction (WI-01-12)