Project Quality Plan

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ENERGYIRAN شرکت صنایع انرژی ایران	New Project Project Quality Plan	KMC صنایع ماشین‌سازی کاوه

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1. Scope

This document defines the quality requirements for the Project, the procedures to meet these requirements and the manner of compliance with these requirements for ensuring that the PROJECT will be completed to the satisfaction of OWNER with the aim of providing a safe, reliable and efficient installation.

- This plan shall apply to:
  All Project scope of services, as specified in the Contract (Contract No:……..), which will be carried out by CONTRACTOR,
- All parties involved including OWNER/ MC & CONTRACTOR,
- The Project lifetime from the date of OWNER/ MC review of this plan until the issuance of the Final Acceptance certificate of the Project.

This Quality Plan is applicable to all works associated with the execution of the PROJECT in that:

A. CONTRACTOR has to demonstrate and deploy adequately the capabilities for engineering, procurement and construction of the facilities for the CONTRACT.
B. Any VENDOR or SUBCONTRACTOR or any involved party that provides products or services to CONTRACTOR shall show and satisfactorily demonstrate conformance of products and services to CONTRACT requirements.

This Quality Plan will be reviewed and updated by Project Q-HSE Coordinator at appropriate intervals to ensure that all current and immediate activities are covered.
Any proposed revisions to this plan shall be agreed by IEIC Q-HSE system manager and project manager.
Note: The mentioned template can be changed by the QHSE coordinator based on request of the OWNER/ MC project manager.

2. References

- PROJECT CONTRACT (Contract No……)
- Kick-off Meeting (MOM No……)
- IEIC Q-HSE systems manual (Doc. No. ……..)
- ISO 9001; Quality Management Systems-Requirements
- ISO/TS 29001; Petroleum, Petrochemical and Natural gas Industries-Sector-Specific Quality Management Systems-Requirements for Product and Service Supply Organizations
- ISO21502; Project, program and portfolio management — Guidance on project management
- ***ISO 9000; Quality management systems, Fundamentals and vocabulary***
- ***ISO 9004; Quality management systems, managing for the sustainable success.***
- ***ISO 10005; Quality management, Guidelines for quality plan.***
- ***ISO 10006; Quality management systems, Guidelines for quality management in projects***
- ***ISO 31010; Risk Assessment Techniques***
- Project Management Body of Knowledge (PMBOK)
- Project Execution Plan (Doc. No. Doc. No. ……)
- Project Risk Management Plan (……..)

- Project Change Order Procedure (……..)
- Project Coordination Procedure (……..)\
- VENDOR Coordination Procedure (……..)
- Document Handling Procedure (……..)
- Document Numbering Procedure (……..)
- Project Reporting Procedure (……..)

3. Definitions

- **PROJECT:** ……..
- **OWNER:** ……
- **MC:** ……
- **CONTRACTOR:** Iran Energy Industries IEIC
- **CONTRACT:** The binding agreement between OWNER and CONTRACTOR (……..)
- **VENDOR:** Any company or person, to whom with prior approval the CONTRACTOR has bought directly or indirectly at any level any material or equipment which are part of PROJECT.
- **SUBCONTRACTOR:** Any company or person, to whom with prior approval has subcontracted directly or indirectly at any level, any part of PROJECT.
- **TPA:** Means 3rd Party Authorities who will supply inspection and certification services and is independent from OWNER, MC, CONTRACTOR, and SUPPLIER.
- **TERMS AND EXPRESSION.**
- **Shall:** Use to express a requirement.
- **Should:** Use to express a strong recommendation.
- **Risk:** An Uncertain event or condition that, if it occurs has a positive or negative effect on project objectives.
- **Stakeholders:** Stakeholders are groups or individual with an interest in business.
- ***Person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity.***
- **Issue:** Issues are problems, gaps, inconsistencies, or conflicts that occur unexpectedly during the lifecycle of a project.
- **Acceptance Criteria:** Specified limits placed on characteristics of an item, process, or service defined in codes, standards, or other requirement documents.
- **Field:** ……..
- **Resource:** Manpower, cash flow, computer facilities, office space,
- **DDM:** Document Distribution Matrix For the circulation of documents between engineering disciplines
- ***Activity: A component of work performed during the course of a project.***
- **Audit:** A planned and documented activity performed to determine by investigation, examination, or evaluation the objective evidence the adequacy of and compliance with the Project and established procedures, instructions, drawings, and other applicable documents, and the effectiveness thereof that is done by an independent body. Internal audits are those of an organization's quality assurance program retained under its direct control and within its organizational structure.
- **Certification:** The act of determining, verifying, and attesting in writing the qualifications of personnel, processes, procedures, or items in accordance with requirements specified in writing.
- **Check:** The tests, measurements, verifications or controls placed on an activity by means of investigations, comparisons, or examinations, to determine the satisfactory condition, accuracy, or performance.

- **Corrective Action:** Action to eliminate the cause of a detected nonconformity or other undesirable situation.
- **Design Change:** Any revision or alteration of the technical requirements defined by the approved and issued design output documents and the approved and issued Changes thereto.
- **Design Input:** Those criteria, parameters, bases, or other design requirements upon which the detailed final design is based.
- **Design Output:** Drawings, specifications, and other documents used to define technical requirements of structures, systems, components, and computer programs.
- **Inspector:** A person who performs inspection activities to verify conformance to specific requirements.
- **Inspection:** Conformity evaluation by observation and judgment accompanied as appropriate by measurement, testing or gauging.
- **Measuring and Test Equipment (M&TE):** Devices or systems used to calibrate, measure, gage, test, or inspect parameters in order to control or acquire data to verify conformance to specified requirements.
- **Monitor:** To watch, observe, or check the actions to ensure compliance with the specified requirements. This activity is not necessarily required to be documented or reported on a continuous basis.
- **Nonconformity:** Non-fulfillment of a requirement.
- **Procedure:** A document recorded according to project specifications and standards that specifies way to carry out an activity or process.
- **Procurement Document:** Material requisitions, purchase orders, drawings, contracts, specifications, or instructions used to define the requirements for purchase.\
- **Purchaser:** The organization responsible for establishment of procurement requirements and for issuance, administration, or both, of procurement documents ***(Buyer) The acquirer of products, services, or results for an organization.*** **Qualification:** The characteristics or abilities gained through education, training, and experience, measured against established requirements, such as standards or tests that qualify an individual to perform a required function.
- **Quality Assurance:** Part of quality management focused on providing confidence that quality requirements shall be fulfilled.
- **Quality Control:** Part of quality management focused on fulfilling quality requirements.
- **Quality Record:** A completed document that furnishes evidence of the quality of items and/or activities affecting quality.
- **Receiving:** Taking delivery of an item at a designated location.
- **Reject:** The action taken to eliminate a nonconforming item from its specified use.
- **Repair:** The process of restoring a nonconforming item to a condition such that the capability of an item to function reliably and safely is unimpaired, even though that item still does not conform to the original requirement.
- **Rework:** The process by which an item is made to conform to original requirements by completion or correction.
- **Service:** The performance of activities such as design, fabrication, inspection, nondestructive examination, repair, and/or installation./
- **Special Process:** A process, the results of which are highly dependent on the control of the process or the skill of the operators, or both, and in which the specified quality cannot be readily determined by inspection or test of the product.
- **Supplier:** Any individual or organization that furnishes items or services in accordance with a procurement document. This is an all-inclusive term used in place of any of the following: VENDOR, seller, fabricator and consultant, etc.

- **Surveillance:** The act of monitoring or observing to verify whether an item or activity conforms to specified requirements.
- **Testing:** An element of verification for the determination of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions.
- **Traceability:** The ability to trace the history, application, or location of item(s), activity(s) and the like by means of recorded identification.
- **Use-As-Is:** A disposition permitted for a nonconforming item when it can be established that the item is satisfactory for its intended use.
- **Verification:** The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining and documenting, whether items, processes, services, or documents conform to specified requirements.
- **Void:** A disposition that NCR is written in error, or that there is nonconforming condition
- **Waiver:** Documented authorization to depart from specified requirements
- **Work:** Work or Scope of Work means all of the Project management and administration, supervision, technical and skilled labor, materials, equipment, tools, consumables, construction support requirements, safety, quality, environmental, health and governmental obligations of any nature, administrative overheads and profit necessary to bring the facilities to full realization and operation, as defined by the contract documents

4. Context of Project

4.1. Project Description

4.1.1 ……..

4.1.2 Project Unit Description

Unit Code	Description

4.2 Understanding the project and its content

The strategic direction and external and internal issues that affect project managers' ability to achieve interested results in project, determined by the 'Project Brief' as internal document. How to execute the project is described in 'Project EPC Execution Plan' (Doc. No. ……..)

4.3 Needs & expectations of interested parties

Identifying and analyzing of stakeholders needs and expectations, prioritization, defining communication channels and improvement plan shall be done according to project Stakeholder management log sheet (……..)

4.4 Project scope of work

In order to ensure that all requirements of the PROJECT have been met, the CONTRACT is reviewed to confirm that:

A. The requirements are adequately defined and documented;
B. Any requirement differing from the CONTRACT are resolved.

The result of CONTRACT review is maintained as documented information.
Prior to CONTRACT to be effective, any discrepancy and variance between the CONTRACT documents are resolved in Kick-Off Meeting (KOM) with OWNER. Any discrepancy and variance raised after KOM are going to be resolved by sending clarification queries to OWNER Any amendment or change order to be applied to the CONTRACT documents are reviewed by the related department and the Project QHSE Coordinator in order to evaluate the quality related changes resulted, and it is reported to the Project Manager for approval by the OWNER.

4.5 Quality Management System & Its Process

IEIC QMS (Quality Management System) is established on the basis of the requirements of ISO 9001 and additional requirements of ISO/ TS 29001 (Technical Specification) & ISO21502 Based on the structure of IEIC Q-HSE, key processes are defined and located in a schematic
diagram named "Process Map" (internal Doc…….).
There is a special Company Manual for processes in Q-HSE documents named "Company Processes" (internal Doc. No. ……) including all company processes documents, the summary list of the processes, the table of criteria and methods for processes monitoring and measurement and any other complementary information about the processes

The process approach used to develop this quality plan is as schemed in Figure 1

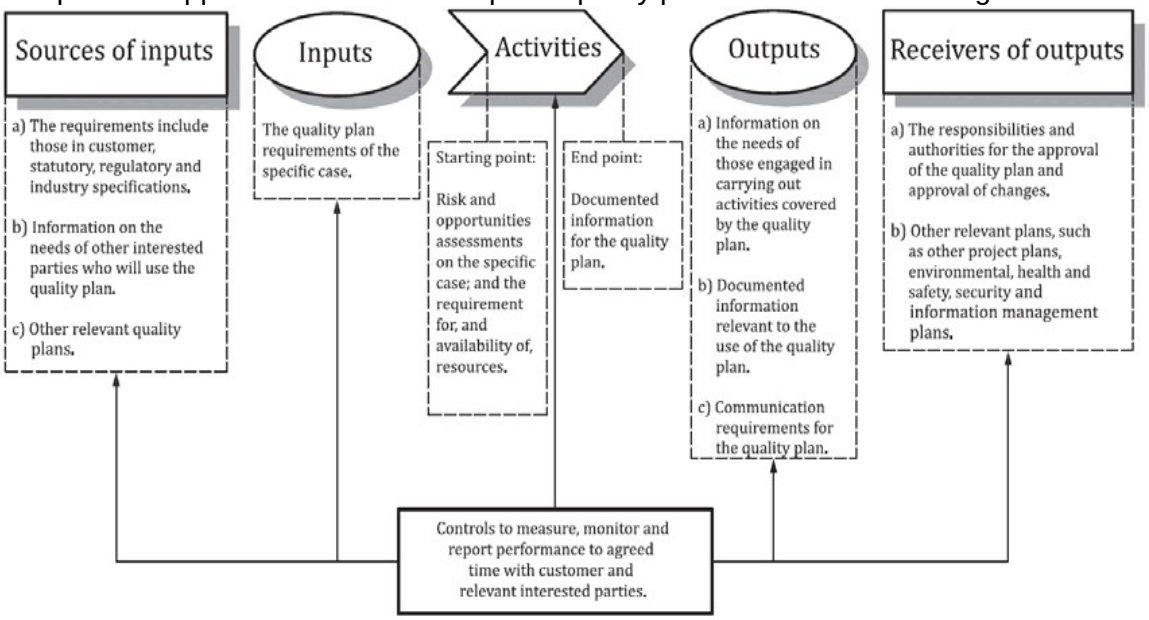

Figure 1 Schematic representation of a process approach applied to the Quality Plan

5. Leadership

5.1 Leadership and Commitment

5.1.1 General

- Project Manager always emphasizes on Quality Management System and meeting its
  requirements through followings:
- Reviewing Project Contract and Agreement between IEIC and OWNER and recognizing all products'/services' requirements, especially OWNER requirements
- Promote risk-based thinking in the project
- Conducting quality coordination meetings
- Ensuring the availability of resources
- Emphasizing on Quality Management Requirements in several meetings with project's personnel
- Attending the Management Review meetings
- Expediting Quality Management issues during coordinating meetings

5.1.2 Customer focus

Project Manager is individually involved in obtaining customer feedback by receiving "Questionnaire on Clients' Views" from OHSE Manager.
Monitoring and measurement of customer satisfaction is fully described in 9.1.2 (Customer Satisfaction).
Also, all declared problems and Client's complaints will be quickly informed to project Q-HSE coordinator by project manager/ project deputy manager/ engineering manager and will be expedited by "Project Management Team". Records of proceedings will be maintained.

5.2 Policy

5.2.1 Establishing the quality policy

IEIC Quality Policy is attached to this document (Appendix 11.1).

5.2.2 Organizational Roles, responsibilities and authorities

Project organizational structure is illustrated in Project Coordination Procedure (Doc. No. …….).
Construction organization structure is illustrated in Project Coordination Procedure (Doc. …….).
The responsibilities and authorities of all project personnel have been elaborated in their relevant job descriptions; however, a brief of the responsibilities of the top Project Management Team are as follows:

- Authorized person for all official correspondences and communication with OWNER, OWNER Project Management, Construction Management, Procurement, etc. and is responsible for all required coordination with different authorities in project as well as engineering sections within the project.
- Promote risk-based thinking in the project
- Managing the needs and expectations of project stakeholders
- Any required coordination with IEIC Head Office such as man-power supply, accessories and infrastructure, project reports etc.
- Receiving the project report as defined in the project from engineering management team, project control, etc. and defining the project policy within the project in accordance with overall project policy, IEIC Head Office Plan, Agreements, etc. and supervising (direct or indirect) on implementation of those requirements.
- Preparation of Invoicing and Change Order Requests to OWNER based on the reports from the financial and commercial section of the project
- Supervision on administration and general affairs and financial section of the project.
- Attending the OWNER's review meetings with participation of Project Management, Construction Management, Procurement Management and providing required data and information about engineering activities to the project.
- Supervision on Manpower allocation to the different sections of engineering team and reports of spent Man-Hours.
- Reviewing Reports and supervision on implication of Quality Management System requirements and procedures in course of engineering and Design.
- Assist Project QHSE coordinator to put forward the corrective actions for critical quality issues (NC's).
- Review the monitoring and measurement of OWNER’s satisfaction and to define required corrective/ preventive actions

Project Engineering Manager

She/he works under direct supervision of project manager. The following key issues are specifically defined in the project as:

- Coordination and supervision on engineering coordination team activities.
- Supervision and follow up on implementation of Project Schedule in each discipline.

- Following up the OWNER coordination letters and comments within disciplines through Lead Engineers.
- Gathering data and technical analysis on engineering activities in each discipline as input for planning and project control reports.
- As authorized person to sign technical documents.
- Attending Technical meetings as required

Project engineer (s)

Project engineer is one of project management team who works under direct supervision of project manager. The main responsibility of project engineer is helping project manager in her/his work and following up related subjects with disciplines under supervision of project manager.

- Cooperation in project change management, Risk management, issue management, …

Quality Management Coordinator

Q-HSE coordinator is responsible for appropriate execution of the job according to Project Procedures, Work Instructions and Quality Plan. The responsibilities of Quality Management Coordinator are described in Quality Management Coordinator Job Description. The highlights of her/his duties are as follows:

- Assessing risks and opportunities related to project context and execution, and implementing risk management during project lifetime;
- Cooperation in updating Knowledge management register log sheet& Stockholder Management Log Sheet.
- Monitoring and supervising the quality of the work through implementation of all related
  work Instructions and Procedures.
- Cooperation in project Issue management
- Cooperation in project stakeholder management
- To hold coordination meeting (Whenever necessary) with project management team to
  report all findings and possible non-conformities and shortfall on job execution within disciplines.
- Cooperation in preparation of the required Project Procedures and supervision on their application in Project.
- Client complaints follow up (if any) and looking after Client's satisfaction.
- Defining the quality parameters in the project, monitoring and its improvement possibilities.
- To conduct & plan the Project Internal Audit.
- To prepare Audit Reports and expedite Corrective Actions
- Control of Project General Documents and supervision on Project records control

Planning and Project Control Coordinator

The Planning and Project Control Coordinator is responsible for project planning, scheduling, monitoring, project control, cost control, progress assessment and reporting. Planning and Project Control Coordinator reports the project status to Project Manager and assists him in proper decision making for project progress and cost deviations.
Some of the other main responsibilities/functions of Planning and Project Control Coordinator may be summarized in following items:

- Coordination with Project manager and Project Coordinators, in order to conduct Project activities in accordance with Project's plans and schedules
- Coordination with Project's planning and Control Team in top organization of the Project and the Coordinators working in that team as well as OWNER/MC Project Planning and Control Manager who is the head of the above-mentioned team. Monitoring and supervision on the work performed by Planning and Project Control team including planning and scheduling engineers, cost control engineers and document controllers.
- Project Document Controller is under supervision of the Planning and Project Control Coordinator too. Project Document Controller provides an always updated data bank of all project documents and deliverables.
- Document Controller ensures that all design documents/comments or information issued to/returned from other parties involved in project (e.g., OWNER/MC, Sub-Contractors, VENDORs etc.) are under full control and acute supervision.

Discipline Lead Engineer

Lead engineer works under direct supervision of Project engineering manager and with coordination of engineering coordinators.
Lead engineer is responsible for all activities in his/her discipline. Some of most important responsibilities of lead engineer are as follows:

- Coordinating and supervision on all engineering activities in his/her discipline
- Determining and following his/her discipline requirements (Human resources, software
  and hard ware, etc.)
- Gathering all data required for his/her related discipline activities
- Distributing prepared document of his/her discipline in project according to the IEIC DDM in HOMA system
- Procurement engineering services.
- Coordination and following up the project requested activities in his/her discipline
- Supervision on doing activities according to related Q-HSE documents in his/her discipline.

Procurement Coordinator

Procurement Coordinator works under direct supervision of project manager and will follow the procurement engineering activities within engineering disciplines. The highlights of his/her duties are as follows:

- Following up the procurement engineering activities within engineering disciplines such as receiving and investigating VENDOR proposals, expediting clarification with VENDORs, receiving and distributing VENDOR replies, etc.
- Investigate the reasons for delays in the PSR/MSR report
- Coordinating on engineering activities related to procurement as per project time schedule for Material Requisition etc. and tracking the special report prepared by Project Control for each item.
- Responsible to coordinate the reply for all procurement correspondences within engineering disciplines prior to be signed by Project Manager.
- Coordinating project document control to keep the proper VENDOR documents such as
  proposals, VENDOR print/drawings etc.
- Coordination and management of technical clarification/ review meetings with bidders/ VENDORs from engineering, with direct and close coordination with Client procurement team.
- Monitoring of Material control activities on the site
- Following up the related activities to the transportation and insurance of project materials
- Supervising the preparation and collection of reports on the quantities of materials shipped to the site and the remaining quantities

Construction Coordinator

- Evaluate the Construction team assigned to the project and announce it to the project manager.
- Determining the required coordinators for activities related to construction management and cooperation with the project manager to allocate these persons to the project.
- Control and preparation of all required documents related to the building and installation of the project
- Cooperation in preparing the construction time schedule in accordance with the project schedule
- Periodically visit the construction activities and prepare a progress report to construction manager
- Review of technical offers of contractors and report to project manager
- Control how to execute of all construction procedures

6 Planning

6.1 Actions to address risks and opportunities

The complete risk identification, assessment and defining response actions procedure is brought up in ‘Project Risk Management Plan’ (Doc. No. …….).
The risks and opportunities of the PROJECT are documented in the Risk Log sheet Form which is an alive document that is reviewed by the PROJECT Q-HSE Coordinator and other PROJECT members involved in the procedure on a regularly base. The main risk and opportunity categories are:

• Project management

• Procurement
• Construction
• Organizational
• External environmental

The effects of project risks usually assessed in the cost, time, quality& safety
All risks that have been occurred and other issues of the project are managed through the Project issue log sheet.

6.2 Quality Objectives

Project manager shall ensure that Quality objectives, including those needed to meet requirements for product are established. The project quality objectives shall be measurable and consistent with the Quality Policy and project needs.
For the execution of CONTRACT for the PROJECT the following objectives have been considered:

1. To review and to monitor closely contractual requirements related to project's products and to identify the deviations (if any) and to take required corrective/ preventive actions
2. To customize the PMBOK's & ISO21502 knowledge areas at project and to fulfill its requirements (such as risk management, issue management, change management, knowledge management, …)
3. To develop an integrated monitoring & measuring system for project's processes and products.
4. To monitor the project changes & variation and ensure that the Project activities are implemented with minimized changes.
5. To ensure that appropriate quality as per the Contract requirements is understood and fulfilled by the Suppliers/ VENDORs/ Subcontractors via technical and systematical audit.

6.3 Planning of Changes

Project changes may occur due to some reasons which some of the most important causes are as follows:

- Change in design input by the OWNER, basic designer, VENDOR/ manufacturer and according to basic endorsement phase
- Change in design input during detail design phase
- Safety, statutory or mandatory rules call for change
- Change raised from design verification or design validation results
- Change in adding/ modifying new equipment
- Change in adding/ modifying new activities at site
  In this project the responsibilities for change notifications internally, are explained in detail as specified in internal change Order procedure.
- There is a procedure for variation order notification to OWNER named 'Change Order Procedure' (Doc. No. ……).

7 Support

7.1 Resources

7.1.1 General

The resources needed to implement, maintain and continually improve the effectiveness of

the Quality Management System and also to enhance the OWNER satisfaction are provided with regard to the Contract requirements. These resources include manpower, infrastructure and the work environment, Monitoring & Measuring Resources & Organizational Knowledge. The method of identification and promotion of the personnel qualifications, provision of required and suitable resources (working places, equipment, etc.) are considered in the Organization's resource management plan. Moreover, the supports required for enhancing the performance of personnel and provision of suitable working environment and improving and enhancing the effectiveness of the QMS shall be provided.

7.1.2 People

Project persons is provided based on Project Organization Chart, as an attachment of 'Project Coordination Procedure' (Doc. No. …….).
According to the chart, one of the members of the project is the QHSE coordinator which is responsible for the effective implementation of the quality management system in the project Construction Persons is provided based on Construction Organization Chart, as an attachment of 'Project Coordination Procedure' (Doc. No. …….).

7.1.3 Infrastructure

Identifying, planning and providing infrastructure for buildings and workspaces, equipment including hardware and software, transportation resources & information and communication technology is done by the project administrative & ICT coordinator in collaboration with the project manager.

7.1.4 Environment for the operation of process

Due to the nature of IEIC, most of the company's activities have an administrative aspect and are performed in the company's building.
In EPC projects where some project personnel are located on the project site, the workshop is equipped by the project administrative coordinator.

7.1.5 Monitoring and measuring resources.

In Engineering phase all software's used by engineering disciplines are validated before first use and periodically based on methods such as:

- Comparison of software calculations with manual calculations
- Comparison of software calculations with similar software

In Construction phase, all testing and control equipment used on the site (by Contractor, Subcontractor …) must be calibrated and calibration records are maintained.
Site QC Coordinator ensure that these SUBCONTRACTORS effectively implement their Quality Plans and procedures and provide on request the relevant related documentation.

7.1.6 Organizational Knowledge.

The Knowledge's of the pervious related PROJECTs are documented in the project Knowledge management log sheet which is an alive document that is reviewed by the PROJECT teams and other PROJECT members involved in the procedure in project meetings and the relevant approved knowledge are used in the project.
Also, the newly identified knowledge will be recorded in the Knowledge management log sheet by the QHSE coordinator after the approval of the project manager.

7.2 Competence

The competence of the persons involved in PROJECT are in compliance with CONTRACT requirements and PROJECT specific needs. Any supplementary training needs of

personnel, whom their activities affect the performance of quality management system are identified prior to their starting date, and the training courses (in-house/ outsourced) are planned and performed based on that.
As the awareness is the result of the effective and continual training, the effectiveness of these training courses is evaluated in order to ensure that the personnel are aware of the relevance and importance of their activities and the way they contribute to the achievement of the quality objectives.
Records of education, on-job training, certified training, skills and experience documents of personnel are maintained in the training department. The key personnel are appointed to the relevant positions with regards to their recognized education, expertise and experience.

7.3 Awareness

Periodic trainings are provided by QHSE Coordinator to ensure that the project team is aware of the requirements of the quality management system.

7.4 Communication

All communication and correspondences types and procedures Between Owner & CONTRACTOR are introduced in ‘Project Coordination Procedure’ (Doc. No. …….).
The main communication channels are project managers of OWNER, MC and CONSULTANT.
However, in technical cases other roles in the project team can communicate with each other directly, with their project managers to be informed.
Also, all communication and correspondences types and procedures between contractor & VENDORs are introduced in ‘VENDOR Coordination Procedure’ (Doc. No. …….).
All communication and correspondences types and procedures between contractor & Subcontractors are introduced in ‘Field Coordination Procedure’ (Doc. No. …….).

7.5 Documented Information

Project Technical and Engineering documents are to be numbered according to Project Procedure named ‘Documents Numbering Procedure’ ((Doc. No. ……)
and issued according to the engineering ‘Documents Handling Procedure’ ((Doc. No. …….).
Project documents will be distributed according to the IEIC ‘Engineering Documents Distribution’ (internal Doc. No …….) in which the recipient discipline and type of document distribution are specified.
It would be mentioned that the latest list of Project’s general forms and work flows shall be recorded in Project derive. Document and drawing formats are also available in the following address:
L_Drive:\.....
The cover page of project technical documents shall be signed in Prepared (by Producer), Checked (by Lead Engineer or another senior engineer from the originator discipline who checks the document), Approved (by Project Engineering Manager or Project Manager /his deputy) and Authorized (by Project Manager /his deputy). After checking of mentioned signatures, the technical documents are sent to OWNER.
It should be noted that the checking of any document must be done by a person other than the Producer of that document.

If a document is changed, the specified places for checked and approved must be signed by the same Discipline that signed the first revision of that Document.

Project documents will be distributed according to the IEIC "Engineering Documents Distribution" (internal Doc. No. ……) in which the recipient discipline and type of document distribution are specified.

Internal document distribution is performed through IEIC BPMS software based on IEIC DDM

Dispatch of documents to OWNER shall be by BPMS system for saving time. OWNER will announce his receipt via BPMS system.

All documents sent from IEIC shall be dispatched under cover of an External Transmittal prepared by DCC and signed by Project manager/Project manager deputy. The record of documents transmissions is stored in HOMA system. Also, project DCC shall keep the records in following address:

L_Drive:\EX

The Project Document Controller shall control the availability of native files of documents, originals of all design documents shall be filed and stored by the Project Document Controller and the latest revision of all documents shall be accessible in the project's folder. The Project Document Controller shall register the information of each issued document in the Document Control System and Project ICT Department shall prepare backups from Document Control System.

7.5.1 Control of Quality Records

- Quality records shall be maintained to demonstrate achievement of the required quality and the effective operation of the quality system.
- CONTRACTOR shall ensure that all quality records, including his VENDORS and SUBCONTRACTORS pertinent quality records, are documented for identification, collection, indexing, access, filing, and storage and are maintained in accordance with all current data/developments.
- The quality records shall be legible, stored in suitable facilities to prevent damage, deterioration or loss, and easily retrievable, in order to be available to OWNER in accordance with CONTRACT requirements.

7 Operation

8.1 Operation Planning & Control

After awarding the Project Contract to IEIC, the following activities are performed sequentially in order to plan the project (product) realization:

- Identifying project's deliverables & WBS according to the scope of work.
- Planning the project's activities and identification of the resources in order to meet the identified requirements.
- Scheduling the project and resources allocation to them.
- Indicating monitoring requirements for the project as per project specifications/procedures or contractual requirements.

- All above items are performed as per Project Schedule Control Procedure (Doc. No. ……), Reporting Procedure (Doc. No. ……), Progress measurement system (Doc. No. ……) & Detailed Time Schedule (Doc. No. ……).
- Specifying verification and validation requirements for the products

Establishment of a Documentation System for provision of the records to prove that project activities performance and the deliverables/services offered to the Client meet the project specified requirements

8.2 Requirements for products and services

8.2.1 Customer Communication

The way of determining the requirements of OWNER is explained in 'Project Coordination Procedure' (Doc. No. ……). Also, communication with OWNER is performed through the following approaches:

- Project manager/ Project manager deputy as the formal contact body with the client: This is the major connection with OWNER for receiving any information/feedback about the project, OWNER's complaints, and contractual correspondence including requests, orders, and amendments and so on.
- IEIC Managing Director or QHSE Manager by sending the feedback forms to OWNER's authorities, specially used for evaluating client's satisfaction, probable complaints or any other comments/suggestion.
  Attendance of IEIC Top Manager in project's essential meetings with OWNER's authorities
- Project manager/engineering manager continuous meetings with OWNER.

8.2.2 Determining the requirements for products and services

The Project's requirements are specified on the basis of the followings:

- The CONTRACT
- The CONTRACT attachments, amendments and or any other contractual documents
- The requirements related to project's nature and characteristics and or the plant application/operation requirements, although not mentioned in contract or declared by the client.
- Requirements related to national and international standards and all of statutory and regulatory requirement applicable to PROJECT.
- Any other requirements defined by IEIC Quality Management System or Internal Technical Standards.

8.2.3 Review the requirements for products and services

Before commencement of the project execution, the project Contract and contractual documents shall be reviewed by project management and project team with acute attention, in order to indicate deviations from the proposal conditions, exclusions or inclusions to Contract, changes in input data and to clarify pending items with the Client and so on.

The contract review results confirm the following items:

- Bid documents compared with contract documents
- Work scope and list of deliverables
- Client specifications and requirements

- IEIC project management policies and practices
- Determination of interfaces with client and communication lines
- Legal and regulatory requirements
- Relevant national, international and the company standards
- All of these matters are finalized with OWNER in project kick off meeting or before holding that meeting.

8.2.4 Changes to requirements for products and services

Whenever any changes in Project Products are required after kick off meeting through project execution, all changes in Project and Products' Requirements shall get OWNER approval. Effects of changes on costs, man-hours and project's schedule shall be identified and investigated by responsible people.
In order to define the changes in project 'Change Order Procedure' forms will be used according to its procedure (Doc. No. ……) and change orders will be sent to OWNER.

8.3 Design & Development of products and services

8.3.1 General

The reference Company Procedure for design and development activities is "Design and Development" (internal Doc. No. QMS-ED-CP-01). Specific requirements related to design and
development control in this project, are described as below:

8.3.2 Design & Development Planning

Planning and project control discipline is responsible for plan design activities according to the project management team needs and orders by using relevant documents as follows:

- Project Schedule Control Procedure (Doc. No. ……)
- Reporting Procedure (Doc. No. ……)
- Progress measurement system (Doc. No. ……)
- Detailed Time Schedule (Doc. No. ……)
  Time schedule of Design Review, Verification and Validation shall be specified in this plan. All engineering disciplines shall maintain the calculations for preparation of each document. For this purpose, enough space has been assigned to each discipline by ICT of the project in drive of the project network.

If any calculation is done in hard copy type, relevant lead engineer shall scan and save the scanned file in project derives If any part of design of the project is outsourced, the project manager shall ensure that the design and development requirements (according to ISO 9001 & ISO21502) are met by our subcontractor.

8.3.3 Design & Development Inputs

Design input checking is described in Design and Development Procedure (internal Procedure).
As it is described in that Procedure a checklist is prepared for design input checking containing general and technical items which must be filled out by each engineering disciplines before starting the design activities.

Some of the project design inputs to be checked are as follows:

- Contractual documents
- Basic documents
- Basic endorsement phase
- Documents and information received from VENDORs and concluded from clarification with them
- Information received from Client
- Documents and information from Licensor
- Inputs that are specified in related Company Processes
- Previous Projects' Documents
- Previous Projects' lesson learned
- Company Processes related to each department professional design

Such above-mentioned inputs shall be reviewed for adequacy. It shall be followed up by each engineering discipline so that the related design inputs are complete, unambiguous and not in conflict with each other. This objective will be covered through bilateral meetings between Engineering Disciplines. Also, each engineering discipline shall complete the design checklist (General & Input).
Project applicable code and standards for use in designs as input data are shown in (Doc. No. ……).

8.3.4 Design & Development Controls

The methods are used in this project for design control are:

8.3.4.1 Design & Development review

According to IEIC's DDM the defined documents in DDM are to be distributed to the related disciplines for design review, and these documents are to be checked by the mentioned disciplines in HOMA system. After checking the ITC documents, the ITC checklists are to be filled out, and along with the comment(s) or no-comment(s) are to put HOMA system.

Holding weekly Internal Coordination meetings (Weekly meeting MOMs are available in project intranet)

- Holding internal Model Review meetings
- The final review shall be done by project manager/engineering manager, who signs the document in authorized box.

8.3.4.2 Design & Development Verification

It is a superior stage of design and development control to ensure that the design and development outputs have met the design and development input requirements.
The methods of verification of documents in all disciplines will be specified by related lead engineers and finally will be approved by project engineering manager. Records of the results of the verification and any necessary actions shall be maintained by originator discipline.

This stage can be covered through other methods, like as:

Comparing documents with previous validated projects
• Verification by another Expert
• 3-D Model Review
• P & ID Review

• HAZOP study

8.3.4.3 Design & Development Validation

For Debottlenecking & Basic Design stage, problems and ambiguous items detected in detail engineering stage is a kind of design validation.
In Detail Design, the final stage of Design and Development control shall be applicable when the engineering and design documents are applied in procurement & construction at site.

The methods used in Detail Design stage for validation are:

- Non-conformities, problems and ambiguous items that are raised during FAT (Factory Acceptance Test) & SAT (Site Acceptance Test) Problems and Ambiguous Items that are reported as Technical Query & DCN (Design Change Notice)
- Procurement & Construction NCRs which their cause is IEIC's design & development The records of design validation shall be kept.

  Note: In the Field Engineering phase, answering the FSQs and cooperating in managing the project DCNs is the responsibility of the Field Engineering team.

8.3.5 Design & Development outputs

Design output check is performed according to the design output requirements, by somebody who was not involved in the design document preparation according to relevant checking Work Instruction / checklists already prepared by each engineering department.
It is to be noted that the method of checking all kinds of documents in each discipline have been determined in some tables named "document checking method" in the related department and have been approved by the department manager.
Completed checklists shall be put in the project's drive in the related transmittal folder, and the project engineering manager will be informed and assured about the filling out of the checklists.
Project Manager signs the transmittal and approve the document.
Original document, its PDFs and the related checklist are stored in IEIC HOMA system. In the case that checklists are not available, the responsible for checking the document has to maintain the draft (manually commented) of the checked documents in his filings. It is to be noted that if there is no appropriate checklist for any kind of document it shall be highlighted on transmittal and approved by project engineering manager.
Furthermore, relevant lead engineers perform the final control of each engineering document (in terms of internal coordination with other disciplines, Project requirements, etc.).

8.3.6 Design & Development changes

For Debottlenecking and Detail Design activities, design changes may occur due to the following reasons:
• Change in design input by the OWNER
• Change in design input by Basic Design review and Debottlenecking
• Change in design concluded from construction
• Change in design data by VENDOR/ manufacturer
• Safety, statutory or mandatory rules call for change
• Change raised from design verification or design validation results

Design changes, including changes to design documents shall require the same controls as theoriginal design, and design documentation.
All changes (either requested by OWNER or raised by CONTRACTOR) shall be registered and assessed from time, cost, Quality & guarantee point of views by relevant disciplines

and approved as described in 'Project Change Order Procedure' (Doc. No. ……).

8.4 Control of externally provided processes, products and services

8.4.1 General Notes

- Terms & condition of Procurement is specified in 'Vendor Coordination Procedure' (Doc. No. ……)
- How to shipping& and packing equipment is described in the Packing, marking & shipping procedure (Doc. No. ……).
- Furthermore, 'Vendor Document Handling Procedure' (Doc. No. ……) which describes the requirements for preparation, review and distribution of VENDORs documents are to be followed in VENDORs documents generation.
- The purchasing information that describes the type, precise identification and applicable relevant technical date (i.e. drawing and specifications) is specified in Requisition before selecting the supplier and finally are mentioned in Purchase Order are announced to the selected VENDOR

8.4.2 Outsourcing Engineering Activities

When it is decided to outsource some of project's engineering activities, the process of outsourcing shall be according to Materials and Services Providing Management Procedure (Doc. No. ……). Although the project is to follow the mentioned items of this procedure for outsourcing some of project's engineering activities, the project is able to create their related forms in different phases of outsourcing process.
In this quality plan the necessary actions for supervising the engineering subcontractor(s)' documents are described in related sections.

8.4.3 Procurement Engineering Services

IEIC is involved in Procurement Engineering Services for EQUIPMENT including preparation of inquiries and Technical Bid Analysis (TBA), preparation of Purchase Order Requisitions, VENDORs drawings review and checking, dispatch and/or deliver to OWNER all the VENDORs drawings, specifications, Operating/Safety and Laboratory Manuals, Mechanical Catalogues and all other documents related to the WORK, all related to home office services and to the extent required under the "EPs" CONTRACT and normally made available by the VENDORs.

8.4.4 Project Bidder List

Project shall select the eligible VENDORs based on the Contract requirements specified on the Contract via VENDOR evaluation and Technical Bid Analysis.
The tender package for receiving the Technical & Commercial proposal of potential VENDORs shall be prepared according to 'Instruction to Bidder' (Doc. No. ……).

8.4.5 VENDOR Evaluation

VENDOR initial, intermediate & final Evaluation is generally performed in accordance with the IEIC Internal Procedure.
The same procedure for evaluation and selection of Construction Subcontractors shall be performed by construction coordinator in EPC Project

8.4.6 Bid Evaluation

Upon receipt of the bids (from potential VENDORs) for the products to be purchased and after technical clarification, a Technical Bid Evaluation is prepared to verify their compliance with requisition documents, to identify any deviations or exceptions, and to evaluate the technical adequacy of the bid and request modifications or clarifications when necessary. This Technical Bid Evaluation (TBE) is approved and documented by the Lead Engineer concerned and is authorized by the Project Manager.
In EP & EPC Projects, Commercial bid evaluation is carried out by CONTRACTOR's transaction committee.

8.4.7 Purchase Order

Upon approval of the outcome of both Technical and Commercial Bid Evaluation, the Procurement Coordinator shall prepare purchase orders. He will maintain and issue inquiry and purchase order status reports (Procurement Status Report – PSR) on a periodic basis. Contracts shall be concluded separately and signed by Project Manager.

8.4.8 VENDOR Data Processing

VENDOR documents shall be reviewed and approved by the relevant Lead Engineer concerned for the compliance with the requisition/ purchase order. Where it deems necessary, the Lead Engineer shall circulate them to concerned discipline engineers for their review.

8.4.9 Control and Verification of VENDOR's Performance

Inspection and test required to be performed by the VENDOR as proof of quality of the product shall be identified in relevant requisition and purchase orders. The minimum quality control requirements which to be performed by VENDOR for the Equipment and materials are described in Project's 'Inspection Procedure' (Doc. No. ……).
Extent of Inspection and Test of equipment at VENDOR workshop shall be regulated and clarified as in the relevant Purchase Order. There shall be four levels of inspection in each ITP.

8.4.9.1 Verification of Purchased Product

For initial Verification of provided products, IEIC performs inspection of equipment covered in his scope of work.
Final Verification of purchased products usually is performed by means of technical inspection executed one or combination of inspector(s) dispatched by the owner and inspector(s) of the inspection agency designated by owner. The main guideline for verification activities in project procurement and general requirement for shop visit and inspection are "VENDORs inspection test plan" in which all project items' inspection and test status are mentioned and relevant activities should be performed accordingly.

8.4.9.2 Inspection, Measuring and Test Equipment

The Technical Inspection Lead Engineer/ TPI inspector shall monitor the VENDOR control system for inspection, measuring and test equipment.

The system shall consist of:

- Assurance that the equipment is of proper capability
- Calibration and adjusting methods of measuring equipment and devices
- Identification of inspection, measuring and test equipment with a suitable marking and identification record to show the calibration status
- Maintenance of records

• Environmental conditions suitable for equipment
• Segregation and identification of discrepant equipment
• Handling, preservation and storage

The VENDOR shall establish the measures for assessing and documenting the validity of previous inspection and test results, when equipment is found to be out of calibration.

8.4.9.3 Inspection and Test Status

Inspection and test status shall be monitored with Test Certificate under responsibility of the nominated Inspector by the respective Discipline. Inspection activities shall be scheduled, organized and monitored by the Technical Inspection Lead Engineer within the Project.

8.4.9.4 OWNER Participation

OWNER/ MC may participate in the inspections as per contractual agreement in Inspection & Test Plans. In such cases, OWNER/ MC shall be notified for participation in Inspection and Test.

8.4.10 Subcontractor selection & evaluation

It should be noted the when SUBCONTRACTORS are needed to achieve any part of the Site WORK, CONTRACTOR shall:

1. Evaluate and select SUBCONTRACTORS, in accordance with the CONTRACT, able to meet the specified requirements and award the subsequent orders and contracts under his own responsibility. Specifically, prior to the order placement/ awards, CONTRACTOR shall confirm/ validate SUBCONTRACTOR capability and practices relative to the requirements of the CONTRACT.
2. Establish and maintain documented quality records of acceptable d SUBCONTRACTORS, in particular for purposes of placing repeated purchases or extending existing orders.
3. Ensure that products and services purchased by his SUBCONTRACTORS to meet their purchase order or CONTRACT requirements conform to the Project Quality System.
4. Define the type and extent of control exercised by his teams over SUBCONTRACTOR

8.4.11 Control of material at site

Based on the equipment and material preservation instruction, applicable specifications, VENDOR information, field purchasing conditions, and Site storing and warehousing requirements, the Site Procurement coordinator is responsible for preparing, maintaining and implementing the field material control procedures which shall define the material receiving, handling, storing, issuing and field purchasing in the job site.

The steps in summary include the following
• Coordination for clearance and delivery to the site
• Delivery of goods to the SUBCONTRACTOR
• warehouse
• Receiving Material
• Reviewing the received materials (OPI, Survey OS & ID)
• Request/ delivery of Materials
• Return the materials to the warehouse

• Registration of Materials status
• Material Balance

8.4.12 Preservation of Material & Products

Site Procurement coordinator is also responsible for preparing procedures to define receiving**,** handling, storing, dispatching and maintaining Goods (material, equipment, consumables) for Construction.
The classification of storing shall be as follows:
• Outdoor storage,
• Weatherproof storage,
• Indoor storage,
• Temperature/ humidity control storage.

Moreover, the IEIC shall provide requirements for optimum storage and effective preservation procedure for the materials and equipment considering the VENDOR information and
specification.

Construction Subcontractor(s) shall prepare a detailed storage procedure based on storage requirements and obtain its (their) approval from CONTRACTOR. The detailed storage and preservation procedure shall be comprised of the following:
• Receiving procedure for the materials and equipment,
• Storage location and space plan,
• Requirements of storage preservation for every material and equipment,
• Requirements of handling materials and equipment,
• Requirements of identification and inventory control,
• Procedure for overage, shortage and damage control,
• Releasing and returning procedures for the material and equipment.

For a safe handling of material and equipment and protecting them from damages, special handling tools and equipment shall be provided and maintained in good condition by Construction group.
All procedures for handling of materials requiring special care shall be approved by Site Manager, which shall be implemented by respective supervisors and workers.

8.4.13 Inspection & Test at site

This section describes the requirements for inspection and testing to verify that the Construction activities affecting quality are implemented in accordance with the applicable requirements namely ITP.
This section also describes the procedure to be followed for selection of different Subcontractors for the provision of the required Services to perform the Work.

8.4.13.1 Responsibilities

- The Field QC coordinator and/or Construction Coordinator are responsible for establishing the inspection and test program for Site Construction & Commissioning activities (ITP). He is also responsible for supervising the performance of the inspection activities and witnessing of the tests.

- The Construction Coordinator is responsible for following the respective Subcontracting procedure for evaluation and selection of competent Subcontractors for the Construction activities.
- Project Construction Management shall be responsible for preparation of the written detailed work plan procedures for tests as required by the Contract Documents. Field QC is responsible for supervising and notifying the designated inspection points to quality personnel/ OWNER and TPI in a timely manner.
- The Field QC Coordinator for construction or his designee shall review and comment on the written procedures for tests covered by this Section. All comments shall be resolved prior to implementation of the procedures. These test procedures shall be reviewed for the inclusion of:
  a. Identification of items, equipment, or packages to be tested.
  b. Identification of devices or equipment to be used during testing.
  c. Test methods
  d. Operations to be performed.
  e. Inclusion or reference of acceptance criteria.
  f. Data to be recorded.
- Project Construction coordinator shall review and ensure that documents submitted by the subcontractor meet the contract's requirements.

8.4.13.2 Inspection Program

- Inspection and test activities shall be witnessed by Field QC Coordinator in accordance with the approved inspection and test plans and applicable procedures and codes during inspection.
- The TPI may also be in attendance to meet code inspection requirements.
- The inspection program shall include the detail description of each work activity to be inspected or tested.
- The inspection points shall be designated the inspection & test plan and agreed with all respective parties

8.4.13.3 Receiving Inspection

When the items arrive at site, the inspector shall perform the receiving inspection upon written request as per applicable procedure.
Receiving inspection shall be performed for:

- Identification
- Visual and Quantity Inspections
- Freedom from shipping damage and cleanliness
- Review of material certificates or test reports.\

8.4.13.4 Final Inspection

Final inspection shall be performed to verify that activities or items conformed to the applicable requirements.
Final inspection includes related document review and resolution of any nonconformance.

8.4.13.5 Record Control

The inspection and test records shall be controlled in accordance with applicable procedure for control of quality record

8.4.13.6 Preservation of Product

In construction management, since IEIC supervise the storage processes, periodic assessment shall be done and shall be recorded related check lists and documents.

8.5 Production and service Provision

8.5.1 Control of Production and service Provision

Equipment manufactured by VENDORs shall be in accordance with the VENDOR's quality plans.

When the contract requires verification or approval of such quality plan, then such quality plans shall be verified or approved prior to the commencement of the manufacturing by the Project Technical Inspection Lead Engineer. Requirements for submission and approval of the VENDOR's quality plan shall be included in the relevant material requisition and purchase order.

Equipment requiring instructions for installation or for commissioning shall be identified by the relevant Lead Engineer prior to the issuance of material requisitions. Requirement for such instructions shall be included in the list of the documents to be provided by the VENDOR.

Inspection and tests required to be performed by the VENDOR as the proof of quality of the product shall be also identified in the relevant requisition forms and purchase orders. The right to access to VENDOR shop (by OWNER & CONTRACTOR) shall be reserved in VENDOR contracts.

8.5.2 Identification and traceability

All major Equipment shall be marked for easy identification at project site before and after installation. Major items of the equipment including rotary and static equipment, instruments, lines, and electrical equipment shall be tagged. Tag numbers shall be used in all drawings, data sheets, material requisitions, orders, certificates, test reports, inspection reports, communications, shipping documents and any other reports. To prevent ambiguity in traceability of the equipment and material, tag numbers shall be unique. When, for any reason, any item is deleted from the scope of the Work**,** the respective tag number shall be identified as "Deleted" and shall not be used for any other purpose.

When certificates for products require identification of the personnel involved in the design or manufacture of the product, such identification shall be provided in the document by clear indication of the name of such personnel accompanied by signature of the responsible body in the organization.

8.5.3 Property belonging to customers or external providers

If any OWNER property (OWNER Properties which are in use by IEIC via OWNER is lost, damaged or otherwise found to be unsuitable for use, this shall be reported via formal letter to the OWNER by Project Manager and records maintained. There is a table prepared in IEIC QHSE systems management which determines the way of protecting the OWNER's properties in
the projects (Doc. No. ……).

8.5.4 Preservation

For engineering phase, preservation of product (documents) is covered with the activities performed in technical services for projects document. In the project all documents electronic files are maintained in the network project derive and needed backups are

prepared.

8.6 Control of Nonconforming outputs

This section describes the requirement for control of identification, documentation, evaluation, segregation (when practical), and disposition of nonconformance and for notification to the organizations concerned.
The purpose of control of nonconformance is to prevent inadvertent use of the item.

8.6.1 General

The nonconforming items shall be controlled according to applicable procedures. A supplier's nonconforming items found at VENDOR shop or at site shall be notified to the related supplier (VENDOR or construction subcontractor) and related section.
All nonconformance waivers for products shall require OWNER Approval.

8.6.2 Identification

- All non-conformances shall be numbered and documented in the NCR Log Sheet.
- Nonconformance items shall be identified by tagging, or other appropriate means.
- The documented nonconformance shall be evaluated for validation prior to be issued by:
    - QHSE Coordinator, for NCRs relating to system and audit,
    - Technical Inspection Lead Engineer, for Procurement inspection,
    - Field QC Coordinator for Field NCRs

8.6.3 Segregation

- Nonconforming items shall be segregated, when practical by placing them in a clearly identified and designated hold area until the appropriate disposition is decided.
- When segregation is impractical or impossible due to physical condition such as size, weight access or configuration, the items may remain in that location, but it shall be fully identified as nonconforming items.

8.6.4 Disposition

The nonconformance shall be dispositional in one of the following ways.

- **Rework:** the process by which a nonconforming item is made to conform to a prior specified requirement by re-completing, re-machining, reassembling or other means.
- **Repair:** the process of restoring a nonconforming item to a condition such that the capability of the item to function reliably and safely is unimpaired, even though that item still does not conform to the original requirements.
- **Reject:** the action taken to eliminate a non-confirming item from its specified use.
- **Use-As-is:** a disposition in which the nonconforming item is accepted without further work, because the deviation will not degrade the quality of the item or the functional
capability of the item.
- **Void:** a disposition that NCR was written in error, or that there is not nonconforming condition.

8.6.5 Implementation

- The responsible Lead Engineer/ Coordinator shall take the necessary action as dispositional as soon as possible.

- The NCR initiator or QHSE or TI shall verify the implementation of the disposition and
  document the result in the NCR and the applicable inspection documents.
- After the NCR is closed-out, the NCR tag shall be removed

8.6.6 Conditional Release

- Where the nonconforming item is required to be released for use for urgent purpose, the
  item may be conditionally released.
- The status of conditionally released items shall be maintained by documentation for recall or replacement

8.6.7 Supplier Nonconformance

The nonconformance regarding the supplier shall be controlled according to applicable quality procedure.

9 Performance evaluation

9.1 Monitoring, measurement, analysis and evaluation

General requirements for monitoring, measurement, analysis and improvement of IEIC Projects are described in the company procedure named "monitoring, measurement and data analysis" (Doc. No. …….).

9.1.1 Customer Satisfaction

As one of the measurements for the performance of the quality management system, CONTRACTOR shall measure the satisfaction of OWNER in relation with the provided services at different stages of project and usually at least one times each year. This measurement shall be performed in line with the respective system procedure, which is available within the QMS of CONTRACTOR.

9.1.2 Analysis of Data

In order to determine the suitability and effectiveness of quality management system and its continual improvement, the data resulting from different measurements (including, but not limited to Process and Product Monitoring and Measurements), shall be performed in line with the current and respective system procedure, and shall be collected and analyzed within the identified intervals. The outputs of such analysis are used for effective execution of project and increasing the level of OWNER’s satisfaction and improvement of project processes. These analyses shall be performed by using the statistical techniques.

9.2 Internal Audit

9.2.1 Responsibility

The QHSE Coordinator is responsible for evaluating the implementation and effectiveness of the established quality system through Quality Audits and the planned Audit Schedule. Also, the QHSE Coordinator is responsible for establishing and implementing Annual Audit Plan and carrying out the planned Quality Audit.
The QHSE Coordinator is responsible for monitoring the implementation of corrective action.

9.2.2 General

- The Project Internal Quality Audit shall be performed by Quality Audit team and technical experts in all project phases including: Engineering, Procurement, Construction and Project Management.
- Audit personnel shall have sufficient authority and organizational freedom to make the audit meaningful and effective.
- Audit shall be planned in a manner to cover all quality elements of the activities being audited as per Audit Schedule approved by Project manager.
- The Project QHSE Coordinator shall notify the audit plan to the project team to be audited. Such notification shall be given a reasonable time before the audit date.
- Audit personnel shall prepare the audit checklists and previous audit finding, if any, shall be noted in Audit Checklist.
- Opening and closing meeting shall be arranged prior to and after the audit in order to confirm the audit scope and planning, to inform the audit result and to establish the course of corrective action, if necessary.
- Audit results shall be approved by Project QHSE Manager.
- Lead Engineer/ Coordinator of the audited discipline shall investigate the cause of the audit findings, and shall schedule and implement the required preventive and corrective actions in order to prevent recurrence.
- Should any nonconformity raised, the associated table of risks and opportunities are going to be updated based on the root-cause(s) of the event.

9.2.3 Records

Corrective Action shall be taken by responsible party and shall be verified by responsible auditpersonnel for the adequacy of implementation and shall be recorded for acceptance of follow-up action in writing.
The audit records such as audit plans, audit reports and audit finding reports shall be controlled according to applicable quality record control procedure.

9.3 Management Review

Management review, as a powerful action to identify the suitability, adequacy and effectiveness of the Project quality management system. This review includes assessing opportunities for improvement and the need for changes in the Project Quality Management System, including the project quality policy and project quality objectives.
The results of project quality audits, customer (OWNER) & Stakeholders feedback, the adequacy of resources, the effectiveness of action taken to address risks and opportunities. Processes performance and conformity of the Project executive operations with the relevant standards or technical specifications and OWNER requests, status of preventive and corrective actions, follow-up actions from previous project management reviews, changes that could affect the Project quality management system and recommendations for improvement are reviewed during the Project management review meetings.
The following decisions and actions are the output from the Project management review meetings:

- Actions required for improvement of the effectiveness of the Project quality management system and the related processes.
- Actions required for improvement of the Engineering, Procurement and Construction services related to the OWNER demands and the resource requirements

10 Improvement

Executor determines, collects and analyses appropriate data to demonstrate the suitability and effectiveness of the IMS and to evaluate where improvement can be

made. This data comes from a number of sources such as internal audits, management reviews, product verification, and continual improvement activities.

10.1 Corrective Action

Corrective actions may be derived from followings:

- OWENR's complaints
- Risk and opportunity assessment results
- Change Management
- Knowledge Management
- The adequacy of resources
- Products nonconformities
- Audits results
- Data analysis results from monitoring and measurement of customer satisfaction, processes and products
- Decisions made in management review meetings or Project Quality Management Meetings Items raised by PROJECT staff
- The following actions should be taken to eliminate the root causes of non-conformities and prevent their recurrence
- Review of nonconformities/ potential nonconformities
- Determining the causes of potential nonconformities/ nonconformities
- Assess the need to take action to ensure that non- nonconformities do not recur
- Record the results of the action taken
- review corrective action taken in terms of the effectiveness of the action

10.2 Continues improvement

Continues improvement in project may be derived from followings:

- Project audit
- Project risks and issues
- Project Lesson learns
- Project Stakeholders needs and exceptions
- Corrective/ improvement actions
- Benchmarking
- Suggestion System
- Creative Problem Solving

  One of the following methods is used to solve the problem and make improvement in project:
- preliminary actions are hidden in the mentioned methods
- Defined as an internal project

11 Appendices

11.1 Quality Policy

11.2 Process Map