

SGM ES Health and Safety at Work Policy Statement

1. Introduction

1.1 This Statement sets out the policy of SGM ES (The Company) in respect of any employee, self-employed person and contractor under our control whose health and safety may be affected by our work activities. Its intention is to assist in protecting all our personnel whilst at work and to assist the Company in fulfilling its legal and moral obligations.

1.2 In addition to the groups of persons mentioned above, this Policy is also intended to assist in ensuring that all Clients and other persons who may come into contact with this Company or its premises or its activities (whether or not work-related) are not adversely affected with regard to their health and safety.

1.3 Provided that persons referred to in 1.1 above adhere to the provisions and precautions contained within this policy, they will normally be able to work safely and without undue risk to their health. They will also be considered to have demonstrated compliance with their conditions of employment or contract insofar as they refer to health and safety at work.

1.4 All persons referred to in 1.1 above are to be made aware of the contents of this Policy and become familiar with the conditions and precautions laid down. A copy of the Policy will be available at each place of work or at head office. Personal copies of the Policy may be obtained on request from Ashgabat Main Office.

2. Definitions

2.1 In this Policy, the expression 'at work' means whenever and wherever work takes place and may include travel for work (for instance travel between premises, sites, to and from meetings etc.).

2.2 The term 'legal obligations' refers to the statutory duties laid down principally in The Health & Safety at Work etc. Act 1974, but also in supporting legislation brought under the Act from time to time.

3. Policy

3.1 The Company will take all reasonable measures to ensure that those persons referred to in 1.1 above are made aware of the contents of this Policy, the possible effects upon their personal health & safety and the possible consequences in the event of any breach of this Policy.

3.2 The Company recognises its obligations under Section 2(1) of The Health and Safety at Work etc. Act 1974 and the various duties and obligations under The Management of Health and Safety at Work Regulations 1999 and associated legislation and will take all reasonable measures to prevent, so far as is reasonably practicable, any breach of duty placed upon the Company by legislation and/or this Policy

3.3 All employees of the Company will at all times exercise diligence in ensuring that this policy is adhered to. Responsibilities of individuals are determined by their grade of employment as detailed elsewhere in this Policy.

3.4 The Company will undertake, so far as is reasonably practicable, the following: -

- a). The provision and maintenance of plant and systems of work that are safe and without risks to health.
- b). Arrangements for ensuring safety and absence of risks to health in connection with the supply, use, handling, storage and transporting of articles and substances.
- c). The maintenance of premises and places of work which are safe and without risks to health, and safe access to and egress from such places.
- d). The provision and maintenance of a working environment for employees without risks to health and adequate as regards facilities and arrangements for their welfare at work.
- e). The provision of such information, instruction, training and supervision as is necessary to ensure the health and safety at work of employees.
- f). Adequate arrangements to ensure that employees or their representatives are given every facility for consulting with management in promoting and developing measures to ensure the health and safety at work of all employees.
- g). Systems and procedures which will ensure that all operations and activities are executed at all times in such a manner that persons not in our employment who may be affected by such operations are not exposed to risks to their health and safety.

4. Supporting Documentation

4.1 Additional information has been prepared in order to assist in adhering to this Policy. Reference should therefore be made to the following groups of documents: -

- a) Documents Directly Associated with This Policy
- b) These comprise the allocation of health and safety responsibilities within the Company and the general arrangements for implementing the policy.
- c) Safe Systems of Work
- d) These comprise the rules and conditions for carrying out specified activities.
- e) Health and Safety Information
- f) Information about matters such as noise at work, manual handling techniques, risk assessment, first aid procedures etc.
- g) Other Policies
- h) In addition to this general policy on health and safety, the Company has prepared the following policies relating to specific health and safety related topics:
 - i). Violence at Work
 - ii). Equal Opportunities
 - iii). Alcohol & Drugs
 - iv). Lone Working
 - v). Accident and Incident Reporting, Recording and Investigation
 - vi). Control of Substances Hazardous to Health
 - vii). Environmental Management
- i) Forms and Miscellaneous Items.

Standard forms are used for various aspects of health and safety management.

These include such items as risk assessments (both generic and specific), display screen equipment checklists, safety audit checklists, employee handbooks etc.

5. Policy Review

5.1 This Policy and its associated documentation will be reviewed after changes in legislation, changes in the structure of the Company, in the light of additional knowledge or information becoming available, and in any event annually.

5.2 When, due to the conditions described in 5.1 above, any part of the company policy and procedures manual requires alteration or modification, it shall be deemed to be sufficient and in compliance with this policy if such alterations or modifications are made to the master printed copy held at head office, and those changes are notified by a convenient and effective method, to all employees in possession of printed or electronic copies of the manual.

6. Responsibility for Policy Implementation

6.1 Responsibilities for different management grades and individuals are detailed in accompanying documentation.

APPROVED BY:

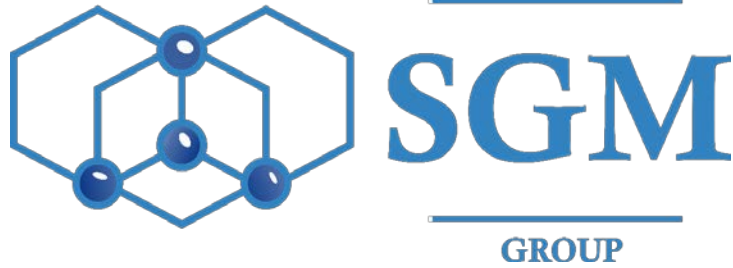
Best Regards,

A blue circular stamp is overlaid on the signature. The stamp contains the text "AN. ASGABAT SAHERI. HOJAYEVA" around the top inner edge, "«SÖWDA GURLUŞYK MASLAHAT»" in the center, and "TÜRKMENISTAN * JEMGYÝETI" around the bottom inner edge. The signature is a blue ink scribble that overlaps the stamp and the text below it.

GEO of ES "Sowda Gurlushyk Maslahat"
Chynar Hojayeva

DOCUMENT FRONT SHEET

QUALITY MANAGEMENT MANUAL



Notes

This document contains technical information that may subject to change.

A	Quality Control assurance								
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PART-1

1.0 INTRODUCTION

This quality manual defines the Quality (Quality Assurance Plan / Quality Control Plan and Program together with the Inspection and Test Plans – which shall be issued during the course of the Project), Management System to be executed and followed thoroughly during the construction of all projects

It will be developed by considering the quality objectives of the project, contract terms and conditions, expectations of Client and Contractor's general quality policies.

All activities to be carried out during the construction shall be in full accordance with Client's standard and Turkmenistan standard.

2.0 QUALITY STANDARD

SGM shall implement and maintain the quality system in compliance with the standard of Client and Turkmenistan. All procedures within this frame, which's list given in this manual shall be strictly utilized

The principles stated in the manual shall be fully executed throughout the project. This manual will serve as a guide to achieve the desired targets set for this project.

On top of that, this manual is assumed to be corporate policy for the QA/QC activities, in general.

3.0 GENERAL

This quality manual has been developed for all SGM employees aiming to achieve highest quality at site. The aim of this manual is to outline and describe the approach to the Quality required achieving an exemplary program for the project.

This manual is a project wide documentation to utilize and adherence by SGM. It will be subject to continuous updating and amendment with appropriate input from all responsible parties as the project progresses.

SGM (corporate) quality policy, in principle, as follows:

SGM Management has aimed to establish a Quality System which will fulfill the legal legislation, International norms & standards and customer requirements and/or expectations, and be upon to continual improvement; and to work in compliance with this system.

4.0 SGM POLICY & OBJECTIVES

4.1 Quality Policy

SGM Quality Management System will lead to:

- execute all activities in compliance with legal (local) regulations, SGM principles, customer requirements and expectations,
- ensure continuity of the customer satisfaction established by the quality of products and services, and achieve all quality objectives,
- utilize resources in the most efficient manner in continual improvement basis having the understanding that quality is the key for success.

SGM has agreed to provide the required resources and ensures compliance with this system by all SGM employees.

4.2 Organizational Values and Main Objectives

The main objective of SGM is to extend its work volume and increase its world wide ranking in contracting business, in a controlled manner, avoiding unknown risks and preserving the reputation and credibility as “**Quality is SGM**”.

In order to reach these objectives following primary principles of SGM shall be observed during the execution of the works:

Honesty,

Correct and on-time delivery,

Compliance with the legal legislations of the country worked,

Execution of the project in compliance with the contract,

Execution of the works with an optimum profit,

Fulfilling customer expectations,

Respect to experience, technology and human,

Besides the Management commitment for implementing, developing and continually improving the effectiveness of the Quality (Quality Manual of SGM) reaching the following general objectives will also be respected as a basic principle in order to comply with statutory and regulatory requirements, maximize customer satisfaction as stated in the SGM policy:

- * Maximum compliance with the customer requirements,
- * Utilization of the most updated processes and technologies,
- * Continual improvement in the work processes, products and services given to the customers,
- * Customer focused planning and execution of works,
- * Targeting minimum deficiency rate,
- * Establishing Total Quality Management philosophy,
- * Investing on human resources,

- * Higher ranking than competitors,
- * Reducing waste and consumption of resources,
- * Elimination of pollution and contamination,

Executive departments establish their measurable objectives by observing the legal legislation, technical and financial possibilities and proposals of the above mentioned general principles. The level of achieving company objectives are periodically reviewed by the Management to assess if the policy and objectives are well understood in the organization. Quality cannot be sacrificed for production.

4.3 Management Review

The performance in activities effecting the quality has been reviewed by the Management to ensure that customer requirements are met with the aim of enhancing customer satisfaction and continual improvement.

SGM management reviews the Quality at planned intervals to ensure its continuing suitability, adequacy and effectiveness, and assesses the following topics to improve the system if necessary.

- * Quality and targets,
- * Process performance, current project reports
- * Quality Internal Audit results,
- * Customer satisfaction and complaints,
- * Training activities,
- * Nonconformities and product conformity,
- * Items pending from the previous management reviews,
- * Recommendations for improvement.

5.0 QUALITY MANAGEMENT SYSTEM & PROGRAM

5.1 General

The Quality Management System has been established in accordance with SGM objectives and policy for all Head Office, Manufacturing Plant and site activities, considering the stipulation of International and Local Standard as minimum requirements. While establishing the Management System, the present structure of the company and maximum efficiency are observed and the system documents are prepared to cover all important activities even though they are beyond the requirements of the mentioned Standard. So the system will be used as a tool for the management of activities concerning quality, in a planned and orderly manner and to ensure continuous customer satisfaction.

The basic and sub-processes in the main work flow of SGM are defined considering the sequence and interactions of the processes, the procedures are formed in a sequential manner with respect to the work flow, and interactions between processes, priorities and authorities are described in the system. The criteria and methods needed to ensure operation, monitoring, measuring and analysis of these processes, and the actions necessary to achieve planned results and continual improvement of these processes are determined in the procedures.

The Quality Manual which is specific to this contract shall be implemented fully at the site, and related facilities of SGM .

5.2 Implementation of Management System

In general, SGM Quality manual shall be applied to the project, in connection with the customer requirements which shall be adopted and incorporated into the same accordingly. However, then it will be applicable for this project, in other words; it shall be specific to the project.

The processes necessary for the realization of the products and/or services undertaken by SGM are performed under the full responsibility of SGM. If needed some of these processes may be outsourced as defined in the related procedures. In such a case the control activities performed by SGM for its own production shall also be valid for the outsourced processes.

5.3 Quality Document Structure

The main documents describing the Quality, principles for management of them and in-between relations of the documentation are as follows:

Quality Manual (doc. no: SGM/QM/002): The Manual defines the general scope and structure of Quality and announces the company policy, main objectives and principles. It is widely distributed to the employees to inform them on these matters. Main processes and interaction between them are described by references to related procedures.

System Procedures: These are the documents prepared to control the managerial activities regarding the quality of the products or services offered to the customers. They describe the processes in accordance with the work flow, whenever it is possible. Detailed or long processes are defined in the attached instructions. System procedures are grouped as Headquarters and Project procedures. Headquarter procedures mostly define the activities in the head office and they are valid for all applications.

Instructions: They are the documents which define the methods for execution of a task or process including details to be cared. Instructions are prepared or revised by the responsible managers of the processes.

Forms: They are the documents on which the information to prove the effective implementation of Quality are recorded. They are defined in the related procedures.

Method of Statements: The Quality activities to be implemented in a project or the manufacturing plant will be defined in Method of statements

Management of Documents and Records: Defined documents for the effective implementation of the Quality, preparation, tracing, control, distribution, updating and preventing the usage of void ones will be defined in the procedures. For this reason;

- Documents will be approved and become valid after the review of authorized personnel.
- Master lists or equivalent document control procedures will be prepared for the tracing of currency/validity of documents.
- The distribution of the documents to all related personnel will be provided.
- It will be provided that the documents will be specific and/or convenient to the work.
- Usage of invalid documents will be preventedç

In the scope of Documentation Management, in addition to the SGM documents, the documents of customers, manufacturers, legal or authorized institutions and other associations will be under control, with respect to their effects on works

Methods for collecting data, reporting and evaluation of records by statistical methods for the subjects within the scope of Quality are defined in the procedures

5.4 Management of Resources

SGM determines the resources to provide quality in construction works for the customers by considering the scope of works, main processes and the effects of the resources on these aspects; plans the supply and operation of such resources. Resources are determined to ensure effective implementation of Quality, and to enhance customer satisfaction by meeting customer requirements.

5.4.1 Management of Human Resources

Utmost care is paid to appoint proper personnel to ensure that the activities are implemented by competent personnel with required qualification.

5.4.2 Management of Facilities, Infrastructure

The important rules related to the management of permanent or temporary facilities are prepared. Within these rules, subjects such as; the maintenance and repair processes for the continuity of the facilities are taken into consideration.

The establishment, mobilization, demobilization, management and control processes of the site facilities are implemented according to the "Mobilization and Demobilization Procedure

The necessary measures to prevent the loss (theft, fire, corruption, etc) of the products, materials and equipment, the rules for taking materials/equipment from warehouses and returning them, product identification methods, arrangements to have the correct materials in an easy way, the review of warehouse records and existing products are defined in the procedure.

Management of equipment and all the processes starting from the procurement to the disposal of the equipment will be executed in a controlled manner as described in the procedure.

Financial needs will be determined for each project and prepared as a cash flow table during planning, and the distributed to the related departments. Control and management of financial resources are excluded from the scope of the Quality.

5.5 Communication Management

The communication system which is necessary for effective implementation of SGM activities

The communication efficiency will be increased by using the developing technology, while necessary precautions are being taken to prevent unauthorized access.

6.0 ORGANIZATIONAL STRUCTURE

6.1 Organization Chart

The Organization Chart of SGM has been prepared for the Head Office, Manufacturing Plant and Project Management separately together with the organizational structure, duties, responsibilities and authorities.

Especially the job descriptions of the personnel who either perform or provide or support the following jobs are included :

- Those who manage or perform the activities related with the product, process and quality,
- Those who prevent or remove the nonconformities,
- Those who define, record and solve the quality problems,
- Those who check the processes before the next operation or delivery to the customer.

However, the site organization chart of SGM specific to the project is prepared as per the project requirements in compliance with the contract

6.2 Common Responsibilities of SGM Personnel

All SGM personnel are in charge of and responsible for the following:

- Execution in of works in his/her job description in a timely, complete and correct way,
- Taking necessary measures and notifying the relevant managers for the problems concerning the works for customers.
- Protection and safeguarding the facilities and equipment owned by SGM or customers and utilization of them only for specified purposes,
- Implementation of Quality and removal of the deficiencies,
- Protecting and observing benefits of the company,
- Implementation of the tasks and instructions given by superiors,
- Improving himself and business related talents,
- Supporting the timely, fully and correct applications of the works in order to sustain customer satisfaction.

6.3 Personnel Policy

SGM implements the following policies for keeping the abilities, qualification and motivations of his personnel on high level, in order to reach the Quality objectives:

- The employment of people, that have the necessary qualification and the ability of improving himself,
- Providing opportunities of development, improvement and proper working conditions in accordance with the abilities and capabilities of the staff,
- Encouraging the staff for success and creativity,
- Providing opportunities of training for the staff to reach the level of success,
- Encouraging all the ideas and opinions for the improvement of works.

6.4 Management Representative

Project Manager has the utmost authority and responsibility in SGM. The establishment, implementation and improvement of Quality on behalf of Project manager are performed by the QA/QC manager.

7.0 MAIN PROCESSES

7.1 General

The procedures applied in performing these activities are outlined herein below and the operation of the system is described by references to the related procedures in general.

7.2 Design Works

The responsibility of SGM in design works defined in the agreements concluded with the customer is performed according to a Design Plan by controlling, verification and validation of design outputs. The details of the design activities included in SGM scope for the project, are planned according to the main project schedule, and the control points and scope are determined for each design activity. These details are defined in the “Design Control Plan” prepared in accordance with the procedures.

7.3 Supply of Materials and Services

The materials and some services that are necessary to execute the project and the activities within the scope of the Contract, will be provided according to the customer definitions and/or design requirements, their types and effects on the quality from suppliers or subcontractors (

The procurement of materials or services is required by describing the specifications clearly, comprehensively and in sufficient detail.

7.4 Delivery, Storage and Transportation of the Materials

Materials are controlled prior to delivery according to the types and quantities and necessary precautions are taken to prevent damages while they are under the responsibility of SGM. Proper transportation means, protection and storage conditions are provided till delivery to the site

7.5 Project Management and Construction

Project Management is the most important and longest stage in the contracting works which constitute the main business of SGM. The ‘Project Management’, which covers the execution and follow-up of all the activities for carrying out the works offered to the customer from the starting till completion of the project,

7.6.1 Start of the Project

- Assigning the Coordinator or Director who will be responsible for the project, appointing the Project Manager,
- Transferring contract and proposal information to the Project Manager,
- Accomplishing the procedure defined in the Contract for coming into force,
- Performing the activities and legal operations for the mobilization of the site.

7.6.2 Project Organization and Planning Stage

- Preparation of the Project Execution Plan,
- Planning for the key personnel that will be working in the project and site managements,
- Determination of necessary resources (direct personnel, indirect personnel, man-hours, facilities, equipment, subcontractors, etc.) for the execution of the project,
- Preparation of detailed work schedule,
- Planning the design works,
- Preparation of work procedures, instructions,
- Preparation of HSE Plan
- Planning the materials to be procured,
- Preparation of cash flow tables.

7.6.3 Commencement of Works

- Planning and realization of the works for the establishment and mobilization of the site,
- Insuring the risks related to the execution of the works and properties
- Determination of the stages where the quality control techniques will be applied and preparation of "Quality Control Plan",
- Execution of design works,
- Establishing the information management system
- Determination and supply of the external documents

7.6.4 Progress of Construction Works

- Execution of construction, control and auditing, preparation of payment reports, delivery to the customer or any other similar activity
- Review and reporting the progress of works, new resource requirements, any precautions to be taken periodically,
- Evaluation of such reports and progress and taking necessary measures,
- Planning and requesting the materials for the execution of the works
- Evaluation of the suppliers and procurement depending on the type of the material,
- Shipping the materials and taking into the warehouse after inspection.
- Supply, maintenance and operation of equipment in a planned manner,
- Calibration and follow up of the control devices used for checking and verification
- Appointment of personnel,
- Evaluation of the subcontractors, subcontracting the works which are planned to be done by the subcontractors,
- Performing the technical applications in accordance with the contract, legal legislation, standards, technical specifications, design drawings and/or work procedures,
- Performing the quality control activities at the critical points or at the end of the work,
- Providing the traceability of the materials which are used in the manufacturing or the end products, if required
- Removal of Residues

7.6.5 Completion of the Project

- Checking the completed works to ensure the conformity with the customer requirements before delivery,
- Handing over of the project to the customer,
- Demobilization of the site and performing legal procedures for closing the site,
- Preparation of the final report of the project in order to compare the actual case with the assumptions during the proposal stage and evaluation of the executions.

7.6.6 Activities After Delivery to Customer

- Recording the protocol with the customer for completion of the project and performing the remedial actions for deficiencies determined in acceptance stage,
- Following up the customer requirements during the guarantee period,
- Performing the Final Acceptance.

No routine service activity is performed by SGM except the responsibilities for the guarantee period.

7.7 Quality Control and Measurement Operations

Quality control operations are performed according to the general technical practice or control plans specifically prepared for the work. Quality Control Plan defines the control activities to be performed for the raw materials, intermediate or final products, process and final inspections in line with the progress of construction works and acceptance criteria and references. Following points are respected during the control and measuring operations regarding quality.

- Drawings and work procedures are reviewed to determine the control stages and principles.
- Common controls are performed according to the specifications and/or work procedures, whereas special ones according to the Project Quality Control Plan.
- Measuring devices are calibrated and the results are documented.
- If necessary the performed control works are marked to provide visual traceability for the products and records.
- Attendances of the customer to the controls, inspection of the records or similar requirements are considered while determining the methods for controls.
- The quality controls which cannot be performed any more if the construction works proceed beyond the defined stage, and the control of "special processes" are planned prior to these activities and the rules to proceed to the next step are defined.

7.8 Control of Customer Supplied Products

Within the scope of the project, all equipment, facilities, areas, materials or structures that are temporarily or permanently handed over by the customer, should be controlled and received by explaining the related conditions to the customer. In case of any deficiency during the storage or usage of the product, customer should be informed immediately.

7.9 Management of Measuring Equipment

The measuring and test equipment to be used for the control activities regarding quality is determined during the preparation period, recorded in the lists and necessary calibration is provided and followed up for these devices.

The measuring device or equipment which will be used for verifying / controlling purposes must be calibrated.

7.10 Evaluation of Aspects and Hazards

The environmental aspects of and hazards due to the activities and/or material and equipment used at each job site throughout the execution of activities are determined and evaluated. The precautions to minimize the effects of the aspects and risks of the hazards are to be applied.

7.11 Quality Internal Audits

Internal Audits are planned for the activities in the head office, manufacturing plant and each project. The audits are performed accordingly by the auditors. During the internal audits, conformity of daily applications on the procedures and specifications are checked, findings, nonconformities, observations are reported to enable the management review for the same.

Process audits are applied in case execution of a special process/product exists in a project. This type of audits is planned and performed for each project separately.

7.12 Management of Nonconformities

Any detected deviation from the written procedures of the Quality or nonconformity with respect to the contract stipulation will be recorded, the corrective actions are defined and the nonconformity is removed in the shortest possible time. Actions to be taken for a detected nonconformity, authorities and responsibilities of related people

The nonconformities within the technical documents, supplied by the customer or produced by the design teams, and the nonconformities in the forms and documents of Quality, are reported as documentation nonconformity and corrected by the producers of the document.

The nonconformities in the purchased products are transferred to the supplier/ subcontractor, and taken into consideration in the evaluation of the performances of the subcontractors. The usage of products and services with nonconformity are prevented and the subcontractor/supplier is informed.

Nonconformities in the construction works are identified by markings and the actions (accepting as it is, reconstruction, repairing or agreement with the customer) to be taken are decided by the authorized people.

All nonconformities are to be reported to the Project Management and/or Quality Assurance Department, and they are evaluated, listed and followed-up. Types and distributions of the nonconformities are evaluated periodically and reported in order to review in the meetings for review of Quality by the Management.

Based on the results of evaluations; corrective actions to eliminate the causes of the nonconformance are defined, handled and spread out.

7.13 Customer Satisfaction

Customer requirements are fully met to provide their satisfaction, which is one of the prime objectives of SGM. SGM does not sacrifice from his own quality values. In case nonconformity is detected by the customer, the reasons for it, conformity with the contract stipulation regarding scope and guarantees are evaluated. Upon this evaluation, if the matter is found to be related with SGM, then, the nonconformity or customer request is taken as a customer complaint and necessary corrective actions are performed.

7.14 Improving, Corrective and Preventive Actions

In order to improve the quality level continuously, SGM, examines the construction processes, activities and products, monitors technological developments, determines the deficiencies by comparing his work with the other projects and other companies and initiates improvement projects. The results of the improvement actions for a project are evaluated by the management to provide the extension of the appropriate ones to the other projects.

The potential sources of nonconformance and possible risks are examined and below mentioned measures are taken to correct a specific nonconformity or prevent occurrence of a repetitive nonconformity;

- The actions to correct the nonconformity before it is reflected to the customer are determined by examining the spread of the nonconformity in the processes, stages and products.
- The main sources and causes of the nonconformity are searched.
- The corrective or preventive actions which will eliminate the main causes are determined, and the priorities, responsibilities, timing and control operations for such are defined.
- The efficiency of the corrective or preventive actions is evaluated by controlling upon completion.
- The possibility to extend the action to the other products and projects is checked and standardization of the action is provided.

Management review is provided by reporting the results of the corrective and preventive action

PART-2

QUALITY CONTROL PLAN

1.0 QUALITY CONTROL PLAN

1.1 QUALITY OBJECTIVES

Engineering, Construction workmanship and labour will first comply with the contract specifications and with the accepted good construction practice where applicable.

Good communication channels will be established between CLIENT and SGM. The quality policy and objectives of SGM defined in the Quality Manual of the company will be observed in all applications.

This present Contract Quality Plan describes the quality organization of SGM on this project.

The Contract Quality Plan will be monitored under the responsibility of the SGM QA/QC Manager located at the site, with the active participation of SGM Discipline Managers, group chiefs, engineers, supervisors and foremen.

1.2 Description of the Contract Scope

The scope to be as contract signed by both parties.

1.3. Special Work Subcontractors

Special subcontractors may be used on work demanding speciality (e.g., piling, NDE; non-destructive examination services)

1.4 Project Quality control Manuals and Procedures

SGM QA/QC team shall design Quality Control Plan and necessary Auditing plan for each project separately to underline importance and variety of each project.

1.5 Material and Equipment tests

SGM Inspection team shall maintain random Quality and material fabrication inspection at factories of vendors to control the raw material tracing documents, compliance to SGM quality requirements and conformity of final product with SGM drawings.

1.6 Site Organization

1.6.1 General

SGM head office support personnel and related managers are not in the scope of this organization chart. They do management, coordination, procurement of design drawings, manpower and materials etc. as per the SGM Quality Management System.

1.6.2 Job Profiles of Key Personnel on Site

Personnel of SGM resident on site i related to this project are included in the following job profiles.

Personnel list is devised to reflect the probable full pace site conditions. Several posts can simultaneously be occupied by a single person temporarily or permanently, depending on site activity rates, or when some people leave work on vacation etc.

i) Project Manager

Superior : SGM Head Office Director.

Subordinate : QA/QC Manager

Eng. Manager

HSE Manager

Procurement & Logistics Mng.

Project Control Mng.

Civil Works Managers

Mechanical Works Manager

Electrical and Instrumentation Works Manager

Administration and Finance Manager

Maintenances and Workshop Manager Surveying

Chief

Main duties and responsibilities:

Oversees all aspects of the SGM Head Office operations related to each project whether contractual, organizational, technical, procurement, financial, schedule wise; related to company/client and subcontractor relationships. Oversees all aspects of the site operations; whether contractual, organizational, technical, procurement, financial, schedule wise; related to the client/company and subcontractor relationships. He coordinates the inter-phases among the civil, architectural finishing, mechanical and electrical erection works.

Troubleshoots and solves all general problems related to the project on site or off site and coordinates them to the SGM High Management.

iii) Site QA/QC Manager

Superior : Corporate QA-QC Manager (head office)

Subordinate : QC Engineers

QC Civil Lab. Technicians

QC Technicians

Main duties and responsibilities:

- Writes, coordinates and implements QA/QC plans and related procedures. Explains these plans and procedures to the personnel who are going to implement them.
- Visits the site on a daily basis to maintain the quality standards according to the specifications and good construction practice.
- Issues non-conformance reports.

- Helps technical wise, in the selection and procurement of some key construction materials.
- Checks and evaluates the Construction Method Statements and Site Instructions.
- Ensures the performance of all preparatory, initial, and follow up inspections as required under the contract.
- Checks the records of incoming project materials and comments during the rejection of defective materials (if required).
- Keep a well organized archive to maintain daily records, inspection and general test results, as well as the manufacturer's material certificates, laboratory test results and calibration records.

iv) Project Control Manager

Superior : Project Manager
 Subordinate : Cost Control & Quantity Survey Engineer
 Planning Engineer
 Draftsmen (also responsible for "Red Marks")
 Document Control Staff

Main duties and responsibilities:

Oversees all aspects of logistical (technical manpower / material) work for site operations; monthly payment certificates, subcontractor payment coordination, design coordination, coordination in writing construction methods, procurement coordination, project scheduling, cost control, etc.

- To conduct all technical documents for issue, record and register.
- Establishing in relation with the Site Manager the project budget in line with the general cost allocation plan of the Contractor,
- Preparation of weekly and monthly progress reports to Company and head office,
- Control of planning and cost during construction,
- To control project documentation

He assists the Site Manager in document control and transmittals *to/from* the Client. He coordinates the site progress control and invoicing preparation. He guides for preparation of daily, weekly and monthly reports

He is responsible for the scheduling, progress monitoring, time and internal document control.

He prepares the invoicing and is responsible for the contractual management and subcontracts implementation.

The word 'coordination' in the above paragraph suggests that some of this work is done at SGM Headquarters

v) Civil Works Superintendent

Superior : Project Manager
 Subordinate : Site Civil Engineer (Supervisor)
 Foremen
 Batch Plant Technician (Operator)

Main duties and responsibilities:

Coordination and implementation of all construction work on site; related to civil engineering and architectural finishing, including preparation of required "Method Statements" (or Methods of Construction and Work Procedures).

vi) Mechanical Works Superintendent

Superior : Project Manager
Subordinate : Mechanical Site Supervisor (Engineer)
Mechanical Technicians
Mechanical Erection Foremen
Mechanical W/Shop Personnel

Main duties and responsibilities:

He hands on implementation of all mechanical erection including steel structures and prepares/writes related "Method Statements" (Work Procedures) belonging to the site works under his responsibility.

vii) Electrical & Instrumentation Works Superintendent

Superior : Project Manager
Subordinate : Electrical & Instrumentation Supervisor (Engineer)
Electrical Technicians
Electrical and Instrumentation and Control Foremen

Main duties and responsibilities:

He hands on implementation of all electrical erection activities including instrumentation and control (automation) works. He is also responsible for writing "Method Statements" (Work Procedures) related to the work discipline.

viii) Administration and Finance Responsible

Superior : Project Manager
Corporate Administration and Finance Manager
Subordinate : Accountant
Personnel Affairs Chief
Camp Chief

Main duties and responsibilities:

- He looks after all personnel registration and accounting affairs, administers the daily run of offices and accommodations.
- Collation of all cost information, invoices etc,
- Reporting all cost / budget status to the Site Manager.
- Keeping personnel records.
- Establishing relationship with local authorities
- To follow administrative local rules and to implement them to company activities.

Finance and Administration Manager directly reports to the Site Manager

ix) HSE Manager

Superior : Project Manager - Corporate HSE Manager

Subordinate : Safety Inspector

Safety Personnel

Main duties and responsibilities:

He will be in charge of health, safety and environmental protection on site. His main responsibilities are:

- To prepare the project HSE Plan and procedures.
- To review all method statements, work procedures and comment on risk assessment.
- To do HSE audits on site, tool box talks and prepare HSE training plans.
- To maintain records and reports on safety and health (accidents, incidents, damages, etc).

x) Project Engineering Manager

Superior : Project Manager

Subordinate : Engineering Department Personnel

Main duties and responsibilities:

- To manage the project engineering activities according to the procedures and the general department standards that defined at Head Office Engineering Management.
- With engineering view to supply required support to the job and time schedule to be prepared and to conduct operational activities by following the prepared plans.

- In coordination with Head Office Engineering Management, to predict required personnel and to assign them.
- To follow and evaluate engineering subcontractors performance and if necessary, to take required precaution
- To approve some important documents, to take support from Head Office Engineering Management when changing on the process time or the other situations that need the support.
- To follow the main performance values of the project and if necessary, take required actions
- To lead and evaluate the personnel that are connected to him by considering project aims
- To assign and follow the personnel in coordinate with Head Office Engineering Management
- When necessary, to change the design during project site conducting
- To view the purchasing activities as technical
- To give the data to Project Control Management in time in order to assess the situation of project

xii) Project Contract Manager

Superior : Project Manager

Main duties and responsibilities:

- To perform the contract management items according to the procedures and standards
- To manage the progress payment and claim management progress
- To supply all contracting support related to subcontractor, vendor, client contract and share with Head Office
- To follow contracts related with subcontractors and to manage claim management When necessary, to take approve and opinion from relevant department.
- To lead and evaluate the personnel that are connected to him by considering project aims
- To assign and follow the personnel in coordination with Head Office Engineering Management
- To ensure that the contracts used by site departments are correct and update
- To inform to Project Manager about activities not complying with the contracts and to suggest the corrective ways
- To report to the Project Manager about project payment schedule, damages, change order, caution money, debenture
- Writing with client in responsible area

- To follow the laws and regulations that may affect contracts

1.7 Communication Lines

Communication lines between SGM and CLIENT, as well as the main internal communication lines of SGM are described below:

1.7.1 Meetings

a) Weekly Progress Meetings

This meeting shall be held once a week between CLIENT and SGM meeting room at site to address the weekly issues at site.

b) SGM Internal Management Meeting

These “Daily and Weekly Meetings” as and when required by the Project Manager will be held at SGM office. The agenda will be on all matters concerning the project. The attendees may be:

Project Manager

QA / QC Manager

Mechanical Works Superintendent

Civil Works Superintendent

Electrical and Instrumentation Superintendent

Administration and Accounting responsible HSE
Manager

Surveying supervisor, etc.

The Project manager may any time convene other meetings including a shorter list to coordinate a smaller group; but this will not annul the above mentioned SGM Management Meeting, because this meeting is intended to inform everyone on the state of art of the project. It is not necessary to record the minutes of these meetings unless otherwise requested by the Project Manager.

1.7.2 Reports

Weekly and Monthly Reports shall be prepared in accordance with contract requirements and submitted to client and SGM head office.

1.8 Quality Control Activities

Quality control activities will be defined and monitored by Quality Control Plans.

QA/QC operation at the site is a live operation which will be implemented by adopting the existing respective SGM QA/QC Procedures.

SGM approach is to involve all of the executive responsible managers and engineers to comply with QA/QC matters as if it is a part of their job. Site QA/QC Manager will not act alone but in some sort coordinates this work.

1.8.1 Document Control

All of the external and internal letters, memos, directives, reports, construction drawings and all other contractual documentation will be numbered, dated and filed properly by the DCC (document control and main archive service) as defined in Contract .

1.8.2 Preparation and Distribution of Drawings

i) Preparation of Drawings

Drawings to be prepared by Eng. group and submitted to relevant disciplines by means of DCC.

ii) Distribution of For Execution Drawings to the Site Personnel

Site personnel should always have the latest updated versions of design drawings for execution. All of the out of date versions of these drawings should carefully be collected from the site people and destroyed immediately during each handover of an updated version.

1.8.3 Preparation of Submittal Dossiers

All documents required by standards and codes to be completed and a Final (Hand-Over) Dossiers to be prepared in the DCC (with the close coordination of the all related Discipline Managers) and submitted to CLIENT in accordance with the contract requirements.

1.8.3.1 Material Submittal

Technical Characteristics of major material inputs will be submitted for approval and send to interested parties after approval.

The following items will be considered in the submittal:

- Manufacturer prospectus
- Test results where applicable
- Related drawing numbers and specs in the contract
- Samples if applicable

The contract requirements in this concern shall be followed.

1.8.3.2 Technical Query (Request for Information: RFI)

If a clarification is needed during the execution of permanent works, a Technical Query is written and sent for acquaintance and send to interested parties simultaneously.

1.8.4 Purchasing and Material Management

All material procurement is done at SGM Headquarters so that existing procedures .

Special requirements of contract specs will be mentioned on the purchase demand. These will be checked at the arrival of material to the site store (warehouse) by the Material Management Staff and Warehouse Keeper/Personnel, the construction/erection supervisors, and the QC personnel, upon “Material Receiving Inspection” notice declared by the Material Management.

Full traceable and limited traceable materials will be stored in a different section of the store to prevent accidental use. A visible physical mark will enclose this section of the store. Delivery of this material from the store should absolutely be made in simultaneous presence of competent people and the storekeeper.

A “**first arrival first exit**” system will be enforced in the site store, to prevent the use of out of date material.

Storekeeper will have a plan in his room clearly showing the arrangement of stored material in the store (the same shall be applicable for the open storage areas). Materials will be kept in an orderly manner only in places attributed to them. Shelves will support the same signs found on this store plan indicating the material stored there.

All movement of material in or out of the store will pass by the storekeeper and a note is taken on the computer. The storekeeper will be able to produce a stock report in short notice at all times.

Material requiring special storage conditions will be noted and implemented by the storekeeper.

To prevent damage during unloading loading and transporting, sufficient handling equipment shall be provided at the store.

All procurement, storage and consumption operations will be transparent and traceable.

1.8.5 Product Identification and Traceability

Several kinds of traceability will be applied on materials requiring different conditions. Most of the time traceability should also be followed on the paper without the requirement of direct physical observation.

1.8.6 Testing of Measuring Equipment

All total stations, other surveying and levelling equipment, and/or any other testing and measuring devices will be checked, adjusted, quality certificates verified in advance before shipment to the site Suspicious measuring equipment will be tagged / marked (“out of use”, “out of order”) and/or removed from the site and shall never be used unless valid certification for calibration is available.

1.8.7 Inspection and Tests

QA/QC group will continuously monitor the construction and erection processes and the materials during the contract execution period. The relevant clauses from the Contract and/or related specifications, procedures and ITP transmitted by CLIENT shall apply in connection with the SGM site approved ITP if required.

1.8.7.1 General Inspection of Works in Progress

Site QA/QC Manager and/or engineer will make a tour of the site every day and keep a good knowledge about ongoing work on site. He will correct minor problems with casual contact, but issue a non-conformance report on more important and major issues.

1.8.8 Testing of Special Materials

If special testing is needed according to specs which needs special test equipment; it will be made in an outside independent laboratory (preserving the contractual rights of the parties), the test results will be recorded and kept in the SGM QA/QC archives.

1.8.9 Non-Conformance Reports and Corrective Actions

All Non-conformance Reports (NCR) will be registered on the Non-Conformance Register Log (NCR Log) and the results of outcome will be traced with dates.

a) Non-Conformance Reports of SGM:

Site QA/QC Manager can raise a NCR during site inspections. Site Discipline Managers may also issue a NCR. In the latter case it is imperative to send the original to the Site QA/QC Manager, first to register the report on the NCR Log and to have the proper number on it.

Site QA/QC Manager shall distribute the NCR to the following as a minimum:

- Project Manager
- Technical Office Manager
- Related Discipline Managers
- Subcontractor (If applicable)

The person who initiates the non-conformance will verbally acknowledge in detail the related personnel on site, who will be involved in the correction. Where practicable the Inspector will arrange the affected items clearly identified to prevent an inadvertent work. This may involve verbal explanation, tags, hold signs, paint, tape, segregation etc.

It depends on the judgment of the Discipline Manager whether to continue on the remaining work in parallel or stop the whole work in the vicinity.

Following details will be filled in on each NCR:

- Description of the non-conformance
- Whom is the non-conformance issued
- The location of the non-conformance
- The drawing, specification, instruction or other control document concerned.

b) Non-Conformance Reports Originated by CLIENT

The Site Manager will transfer the NCR received from CLIENT immediately to the Site QA/QC Manager for registration in NCR Log.

The QA/QC Manager will review the report and distribute to the people concerned. It will be processed same way as a SGM Non-Conformance Report.

Each discipline managers shall request CLIENT to make a review on site prior to close out.

c) Actions to be Taken on Receipt of a NCR:

The discipline manager concerned shall contact the personnel involved and discuss the NCR. One of the actions below will be considered:

- Accept 'as is'
- Rework to meet the required conditions
- Re-grade for an alternative solution
- Reject and dismantle

If the options accept 'as is' or reworks to meet the required conditions are proposed, sufficient technical justification shall be provided to support it.

The discipline manager shall coordinate with all the parties involved including CLIENT to obtain a mutual agreement on the selected proposal.

The agreed proposal shall be written on the NCR and signed off by the discipline manager concerned including the date of agreement. The agreed NCR and the supporting documents will be returned to the site QA/QC Manager.

The QA/QC Manager will do the following:

- He will ensure on site that the necessary corrections are completed according the acceptance criteria.
- He will coordinate a site visit to obtain the signature of the concerned parties on the NCR testifying that the problem is solved.
- He will mark up the NCR Log and considers the NCR as closed.
- He will review the NCR Logs weekly and expedite a response for any NCR left outstanding more than 7 days.

d) Corrective Action

The Site QA/QC Manager and the Discipline Manager concerned shall fill up the "recommendations to prevent recurrence" section of NCR if the problem is not an isolated incident.

If the level of NCR gives serious concern for an overall quality assurance of the project; SGM QA/QC Manager may stop the related work until satisfactory remedial action has been taken.

1.8.10 Quality Records

Project quality records will include but shall not be limited to the following:

- Inspection reports
- Civil Laboratory test results
- Concrete (or grouting) mix designs
- Non-conformance reports
- Test reports
- Material certificates of conformity (mill certificates, manufacturing / factory test sheets)
- Method statements

- Personnel qualification records (for example: NDE personnel and welders – WQR-)
- Approved PQR (welding procedure qualification record) and WPS (welding procedure specification) records
- Calibration records for all equipment and test device used for the site work
- Data book for hydro-tests (*)
- Punch lists (*)

- Final inspection certificates
- Hand over documentation (*)

Quality records will be kept by the QA/QC Manager (and/or by the main archive in the DCC, especially for the “*” marked items) in an orderly manner. Older records will be transferred to an archive on labelled racks.

An indexing system will be applied at all times to the archives. It would be possible to follow the documents from that index without physically touching them.

1.8.11 Internal Quality Audits

QA/QC Manager of SGM will agree upon a schedule of internal audits according to internal procedures

1.8.12 Method Statements (and/or Work Procedures)

Major construction operations will be described from the technical point of view in a Method Statement form and submitted for approval and send to interested parties after approval. This description will be related to the method used in the construction.

a) List of Method Statements (and/or Procedures):

This list will be determined during the course of the project.

b) Format of Method Statements (and/or Procedures):

Method Statements will contain in general the following items:

- Scope
- Resources
- Materials
- Description of work method
- Organization of manpower
- Specific quality plan

- Health, safety and environmental issues
- General supporting documents.

1.8.13 Reporting Contract Changes, Variation Orders & Additional Works and/or Field Work Orders

During the execution of the contract a need may arise for practical reasons, to make alterations in the design.

i) Discrepancies

Discrepancies in design or execution will be dealt with Technical Queries and RFI.

ii) Contract Variations

Contract changes arising for technical reasons on site will be dealt with FWO. Cost impact if any will be included on the Change Orders complete with supporting document.

1.8.14 Inspection and Test Plan(s)

The committee consists of the Site QA/QC Manager and the Manager of the related discipline will develop Inspection and Test Plan of each important item in parallel with the related Specifications, ITP, Procedures and Method Statements after a close examination of Technical Specifications of the Contract.

A tentative short list of Inspection and Test Plans are:

- Earth/field compaction tests
- Concrete strength tests
- Welding tests
- Waterproofing tests (if applicable)
- Painting records
- Bolt torque records
- Some finishing works, etc.

All inspection and test plans related to each topic, when compiled and summarized in one sheet will be called Quality Control Plan.

The relevant SGM procedure to be followed closely is SGM Procedure for Management of Quality Control Activities.

Inspection and testing will generally contain the following control levels:

- Execution “X”
- Surveillance “S”
- Witness “W”
- By spot “()”
- Hold “H”

1.9 Subcontractor and Supplier Quality Guarantees

Subcontractors and major suppliers are assumed to comply with SGM quality guarantees.

1.10 Documentation List

Annex - 1 may be referred as an easy reference which shall be subject to continuous updating in connection with the requirements of the Client and the Company as well as the Contract Terms and Conditions as the project progresses.

1.11 End of Project Documents

To be compiled and submitted as per contract requirements.