



HSE MANAGEMENT PLAN

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1) Purpose

This document is to define the general technical guidelines established by the CONTRACTOR to provide all personnel with safe operating practices and awareness for the work they perform in the course of their duties.

The purpose of this plan is therefore:

- To explain the rules and organization setup by the CONTRACTOR to monitor and improve the performance regarding health and safety of employees at work and environmental protection.
- To describe the allocation of responsibilities at all levels of the project.
- To describe some of the tools to analyze, advise and review on health, safety and environmental issues.

2) Scope

This document must be applied to the entire **PEPC** construction site, employees, and subcontractors, and must be considered as a minimum requirement. The application of this plan is the direct responsibility of the management and all employees, subcontractors and Vendors involved in its day-to-day application.

3) Definition of Terms

Where the term –

“Contractor” is used this includes the contractor and all its subcontractors.

“Incident”: An event or a chain of events that has caused or could have caused human injury/illness and/or damage (loss) to assets, the environment or third parties.

“Accident”: Any event that results in injury, and/or damage and/or loss.

“Near miss”: Any event which had the potential to cause injury and/or damage and/or loss, but which was avoided by circumstances.

“Anomaly”: Any situation having the potential to contribute to an Incident. An Anomaly is an incident factor, which requires to be combined with several others to generate an Incident.

“Audit”: Systematic and independent examination to determine whether or not activities and related results comply with planned arrangements and whether or not these arrangements are implemented effectively and are suitable to achieve objectives.

“Critical”: Qualifies an item of equipment, a product, a service or an operation having the potential to give rise, directly or indirectly, to risks of ill-health or injury, damage to property, plant or the environment.

“HSE”: Health, Safety and Environmental HSE improvement plan: A document, which defines the corrective or preventive actions needed to improve HSE performance.

“HSE Committee”: The committee at the site in charge of monitoring all HSE matters, especially the HSE improvement plan.

“Site”: Defined area where the activity takes place.

“Management”: Management of PROJECT activities at a specific location.

“Risk”: A combination of the probability (or frequency) of occurrence of a defined hazard and its estimated cavity.

“Simultaneous Operations”: Two or more major activities(construction, modifications, production) carried out in the same vicinity at the same time potential interference creating notable risks.

“Specification”: All internal rules and regulation adopted by PROJECT.

“System”: Organization structure, responsibilities, procedures, processes and resources needed to implement HSE management.

“Approved”: An internationally recognized approval authority and/or the company have approved the item or procedures shall: Indicates a mandatory course of action and should Indicates a preferred or recommended course of action.

“TPA”: Third Party Authority.

“PPE”: Personal Protective Equipment.

“MSDS”: Material Safety Data Sheet.

“PTW”: Permit to Work.

4) HSE Policy Statement

Health, Safety and Environment Policy Statement PEPC is committed to the achievement of a Safe, Healthy, Injury free and environmentally sound business. The Project Management Team of PEPC recognizes that, to ensure well being of general public, employees, contractors and environmental sustainability must do all that is reasonably practicable to identify potential Health, Safety and Environmental risks, eliminate them where possible and/or implement effective risk control measures. The objectives which PEPC considers of greatest importance are:

- Consideration of health and safety at work and respect for the environment as important as the economic performance of PROJECT.
- Prevention of exposure to risk in all areas of its endeavors
- Adoption of an attitude of openness and constructive dialogue with public Authorities and local communities to protect the environment and to safeguard the health, safety and quality of life of those living or working in the vicinity of our operating facilities.
- Minimization of any adverse effects of its operations on the environment. To meet these objectives of a safe, healthy, injury free and environmentally sound business: PEPC commits to the:
- Establishment of HSE management systems and programs and endorsement of them at all levels.
- Education and understanding of HSE systems, plans and practices for all Project personnel and other people involved in activities where there is a chance of personal injury / illness or environmental harm.
- Enforcement of all HSE policies, procedures, plans and preventive measures.
- Education of HSE management systems, plans and programs to ensure ongoing continuous improvement in providing and maintaining a safe, healthy and environmentally responsible workplace. PEPC will achieve these commitments by:
- Continued development and implementation of management plans to eliminate or control hazards associated with the operations.
- Involving all employees in HSE programs through consultation, participation and using an effective proper communication system.
- Ensuring that HSE policies, procedures and practices are in accordance with the legislative requirements, industry and standards and best practice concepts.
- Ensuring that all relevant HSE legislation, regulations, codes and licenses are complied with.
- The development and implementation of training programs to ensure that employees, supervisors and managers are familiar with, and understand principles, policies, procedures and practices.
- Ongoing implementation of environmental management plans through pollution prevention, eco-efficiency and waste avoidance, reduction re-use, recycling and natural resource management.
- Ensuring the all potential HSE impacts are considered prior to changes to the business or operations.
- Providing levels of supervision appropriate to the nature and risk of the task being ensure that the suppliers and contractors are aware of and comply with PEPC.
- HSE policies, procedures, practices and legislative requirements where applicable.
- Conducting regular HSE management audits and inspection in due time, and developing and monitoring defined HSE objectives. All employees, contractors, vendors and visitors shall comply with this present HSE policy whilst involved in PEPC Project operations. It is the responsibility of all managers and supervisors to ensure understanding, implementation and enforcement of this policy. That HSE

policies, procedures and practices are in accordance with the Legislative requirements, industry and standards and best practice concepts.

- Ensuring that all relevant HSE legislation, regulations, codes and licenses are complied with.
- The development and implementation of training programs to ensure that Employees, supervisors and managers are familiar with, and understand HSE principles, policies, procedures and practices.
- Organizing of effective emergency and injury management plan.
- Ensuring that all potential HSE impacts are considered prior to changes to the business or operations.
- Providing levels of supervision appropriate to the nature and risk of the task being performed.
- Ensuring that the suppliers and contractors are aware of and comply with PEPC.
- HSE policies, procedures, practices and legislative requirements where applicable.
- Conducting regular HSE management audits and inspection in due time, and developing and monitoring defined HSE objectives. All employees, contractors, vendors and visitors shall comply with this present HSE policy whilst involved in PEPC Project operations. It is the responsibility of all managers and supervisors to ensure implementation and enforcement of this policy. Objectives and goals. The following are the goals and objectives of the HSE Management System.

- a) To ensure and display compliance with International Codes and Standards.
- b) No (Zero) Lost Time injuries, permanent disabilities and fatal accidents.
- c) No (Zero) Significant Property Loss
- d) Exclusion of unsafe conditions/situations on the site.
- e) Exclusion of situations that could have a negative impact on employee's health, safety or welfare.
- f) Exclusion of activities that might have a negative impact on the environment.
- g) To preserve COMPANY and Project image.

5) Commitments and Motivation

PEPC is fully committed to this Health, Safety and Environmental Policy and Standards and will provide motivation through.

- Planning all work in a safe manner prior to executing the tasks and conducting risk assessments for non-routine and hazardous activities.
- Providing a safe facility, equipment, personal protective equipment and safe working procedures.
- Providing suitable training, supervision, information and instruction to all personnel engaged in Project activities.

- Accepting and being accountable for the responsibility of accidents and incidents in the workplace.
- Introducing systems to encourage active involvement of the management workforce and the local community in providing suggestions and proposals for improvements in the HSE performance.
- Providing active support to the workforce by way of specialist advice in safety and quality areas.
- Assessing the risks in the workplace with subsequent communication to the workforce.
- Assessing the risks in the workplace with subsequent communication to the workforce.
- Maintaining an active record of all incidents for continual evaluation/analysis of the Project safety performance so that ways and means for improvement can be developed and implemented. A continuous effort, driven by Project Management involvement, will be made throughout all phases of Project activities to motivate the workforce to take an active part in use issues and activities.

6) HSE Rules

In order to formulate the necessary standards to be used in the HSE policy, Ten Basic HSE Rules are considered to be the foundation for such standards that have been established to achieve Project Objectives. The Ten Basic Rules are:

- 1) PEPC will comply, as a minimum, with national and international laws and applicable local regulations and rules throughout its operations and activities.
- 2) These Health, Safety and Environmental Policy and Standards are to be clearly defined and made known at all levels of the Project. Responsibilities and accountabilities for the associated application are to be identified and assigned in writing.
- 3) Throughout Project's activities and operations, the risks to health, personnel, assets and environment are to be identified and the means by which they are to be minimized / avoided are to be defined.
- 4) All subcontractors must be evaluated for their ability to conform to the Project's health, safety and environmental requirements that must be clearly stated in the contract. All contract award recommendations must address this issue.
- 5) All operators with a potentially critical effect on health, safety and environment are to be covered by procedures that are reviewed and updated on a regular basis.
- 6) Training and competency programs are to be formalized and implemented to ensure that personnel are prepared for the tasks required of them with particular attention being given to safety and environmentally critical posts.
- 7) Emergency procedures covering communications and actions in case of medical, accident and environmental emergencies are to be maintained and tested.

- 8) All incidents and accidents, including near misses, are to be reported, analyzed and remedial actions taken to avoid re-occurrence.
- 9) All project's operations and activities are to be assessed by inspection and audits.
- 10) Each area of operation will establish objectives and improvement plans based on incident analyses, audit results and risk analyses in order to raise the level of HSE performance.

7) HSE Organizations and Coordination

The emphasis on protection of project safety, health and environmental standards starts with Contractor corporate management and extends throughout the project organization from the management team to each and every work front on site. As noted, this requires the commitment of all members of the team to meet their own individual responsibilities toward the health, safety and welfare of the project as a whole.

The HSE Management Team and team members are charged with responsibility for the implementation of HSE management system and programs for the project as a whole and, as such, play a key role in the success of the project. They not only have a direct hand in the daily direction of HSE matters on the project, they have responsibility for supporting all members of the project team through the review of safety features, the review of construction plans and methods, the provision of proper training and safety guides, the supply of safety tools and equipment throughout the site, the auditing of working practices, advising on preventative measures and implementing safety improvements as required. In addition to this primary role in preventative action, the HSE team will act as leaders of the first line response teams in the event of accidents or incidents. Contractor will submit its site specific HSE Manual for COMPANY approval as soon as well prior to commencement of work at site. However, the principles of organization will be as follows:

(1) Management

The Project Manager acts as the sponsor for project compliance with Project HSE Policy for the whole project. He is also a member of Contractor's corporate HSE Management Committee and answerable to them for conduct of HSE Policy on the project.

The HSE Manager for the project will be assigned at an early stage and immediately well prior to the commencement of work at site. He will report directly to the Project Manager at this initial stage and, with the support of project management, select the members of his team who will participate in initial safety reviews in Project.

(2) Personnel

The site HSE supervisors will be assigned in sufficient numbers to ensure that full time coverage and support is provided at every major work face. Contractor's policy is to ensure that all field supervisory staff, from Construction Manager to the field foreman

level, plays a proactive role in protecting the health, safety and welfare of the work force on the site. This policy ensures the maximum numbers of field personnel are given direct responsibility and accountability, in the direct achievement of site health and safety goals.

The HSE Manager and his supervisors will be responsible for the necessary training, auditing and support necessary to ensure that Contractor's construction supervisory team and that of sub-contractors, can exercise this responsibility at all times. Site management shall carry out regular reviews of the HSE organization in order to confirm its suitability to fulfill the stated HSE objectives.

8) Procedures for Implementation of the Basic Rules

In order for HSE policy to be effective, the necessary HSE manual for implementation of the Ten Basic Rules must be addressed and followed. For the implementation, the following guidelines shall be adopted:

9) Regulation Monitoring

9.1. Contractor

Contractor ensures to establish and maintain procedures to dentil', collect, update and communicate to all concerned parties and to enforce the legislative and regulatory texts applicable to its activities.

Contractor ensures that no activity is undertaken if the required official authorization for its execution has not been obtained.

9.2. Personal Protective Equipment (PPE)

The Contractor will provide the full range of personal protective equipment and clothing to ensure the safe working of the work force. As noted, no personnel will be admitted to the working areas prior to receiving suitable PPE. This applies to visitors to the site who shall also be issued with the PPE required for their specific activity. All gears will be "Purpose Approved" for the service and selected with the advice of the HSE Supervisors for the specific task BODY PROTECTION The Contractor provides protective clothing and equipment to all its employees engaged in work where such devices are required to protect them from injuries and health hazards HEAD PROTECTION Approved safety helmets shall be worn at all times when working or visiting any of the work site.

EYE AND FACE PROTECTION

Protective goggled, safety glass spectacles, visors or screens of approved type shall be worn to give protective to the face and eyes against the effectsof welding arcs, sparks, chipping, hydrocarbons, chemicals and injurious light rays.

HEARING PROTECTION

Earmuffs or earplugs shall be worn in areas designated as “Noise Areas” as normally more than 85 dB or whilst operating equipment with a high noise level. Such as generators, air compressors, high pressure service lines, etc.

FOOT PROTECTION

Only approved safety footwear shall be considered satisfactory *for* use, when working in or visiting operating areas and / or work sites. Footwear having external steel toes or heel plates or fitted with metal studs will be strictly forbidden in all areas.

HAND PROTECTION

General purpose had gloves provide protection against usual job hazards such as slipping, abrasion, dirt, oil, grease and moderate heat. These shall be worn at all times during the normal course of work. Suitable heat protection gloves will be provided for welders / fitters exposed to welding, cutting flames, heating torches, etc., and shall be worn at all times when tasks requiring this type of protection are performed. Gloves should not be worn while working with running rotating equipment to prevent the risk of entanglement.

SAFETY HARNESS AND LIFELINES

Safety harness with lifeline shall be worn when any work is carried out from an exposed position and 2 meters or more above ground. Static lines will be installed for use at elevation along pipe racks and structures. All persons required working in confined spaces where there is a deficiency of oxygen or which contains toxic or noxious gases or fumes will wear a safety belt and life line in addition to the appropriate breathing apparatus.

9.3 Communication

- A system is to be set up to ensure that personal, including subcontractors employees, are kept regularly informed regarding HSE matters, can discuss or acquire information relevant to current issues relating to HSE, and that questions raised will receive appropriate action.
- Language problems shall be identified and measures taken to avoid any risk of misunderstanding. Clarity of communication is to be addressed regularly.
- In case of a major accident. Project in co-operation with site management shall be prepared for communication with local communities, public authorities, the press, families of concerned parties and partners. In this respect, an Emergency Management Team consisting of representatives designated by Project shall be organized.
- This authority and responsibilities of these representatives shall be specified in writing.

9.4 Risk Evaluation

9.4.1 General Statement

Contractor accepts that some of its operations may, unless properly controlled, create risks to members of its staff, and others, and will take all reasonably practicable measures to reduce these risks to an acceptable level. Contractor will take all reasonable steps to ensure that risks assessments are carried out which will detail the range of hazards associated with working operations together with any necessary remedial actions. Any employee who discovers a hazard during working operations should report the hazard to management so that the necessary remedial action can be taken.

9.4.2 Procedures for dealing with HSE Issues

The current system for discussing Health and Safety issues with employees is via HSE team. The employee safety coordinators provide an avenue which any concerns raised by employees, emanating from the risk assessments, can be brought to the attention of senior management for more formal discussion. Contractor will delegate the HSE manager as the manager with special responsibility for the implementation and operation of the risk assessment process. HSE manager provides the management with the necessary knowledge, information and resources to ensure the proper operation of this process.

9.4.3 Control and Monitoring

The purpose of the risk assessment is to formulate a system of control for hazards associated with daily working environment and working practices. To achieve this a proper system for the formulation of remedial actions to cater for the hazards identified has been developed. All items of concern arising from the completed risk assessment procedure are discussed by the HSE team. The assessment team leader will detail members of the team to be responsible for monitoring implementation of the recommended controls, assessing the efficiency of the controls and making any additional recommendations.

9.5 Work Permit System

Working in a petrochemical plant involving hydrocarbon and toxic material presents special risks and, in order to provide safe working conditions, a Work Permit system shall be followed. This is a comprehensive permit to work system and will be reviewed and agreed with COMPANY prior to work in any area or on any systems deemed to be potentially hazards and subjects to the Work Permit System for the operation plant.

9.5.1 Function of the Work Permit

The basic purpose of the Construction Work Permit system is to prevent injuries or harm to personnel. Protect property from damage and ensure that all work is carried out in the safest possible manner. The Work Permit also fixes responsibility and authority of each party for the safe execution of the works.

It should be clearly understood that adherence to the system does not in itself guarantee freedom from risk. Therefore, all personnel involved in the task shall ensure that safe practices prevail throughout the work period. The Construction Works Permit system is devised to allow work to be carried out within the designated period and construction areas. The work permit serves the following functions.

- Prescribe the nature of the work and the way of execution
- Specify the places and equipment on which persons are, for a specified time, allowed to work
- Details any remaining hazards and precautions to be taken
- Bring to all parties' attention the steps that have been taken and that shall be maintained to make the area/plan safe for work to be carried out.
- Gives written permission for work to be done.
- Provides for auditing and reconfirmation of safe working conditions during the course of work.

9.5.2 Work Permits

The following types of work permits, although not normally applicable to most work, may apply uncertain specific cases to construction work carried out in the designated unrestricted" work areas;

1. Excavation Permit - An Excavation Permit is required for any excavation in an area where the absence of existing underground facilities cannot be confirmed there is existence of risk of falling and or risk of collapsing.
2. Cold Work Permit - A Cold Work Permitting system is required for all general construction work on the plant and equipment that does not involve activities related to Hot Work as described below. This will provide for general observance and surveillance of safe work practices; and provided an audit tool for work safety.
3. Hot Work Permit is required for work carried out in the construction area if the use of a local source of ignition is capable of igniting flammable gases, liquids or any other

materials that may be present. Examples in the construction area are welding, burning, grinding, open fires, etc around confined stores of chemicals, gases, etc.

4. Confined Space Entry Permit Required for personnel entry into confined spaces that could be subject to the presence of hazardous materials or present a deficiency in fresh air. Deep manholes subject to ground water leakage or tall vessels with no controls on manhole closure are just two examples.
5. Electrical Permits Prior to work on electrical circuits/equipment, an electrical permit shall be used. The authorized competent Person shall isolate the power from sub-station. If a multi-lock system is required, each concerned person shall register as required.
6. Radiography activity permits
7. Road closure permits
8. Post Weld Heat Treatment (PWHT) permit

9.6 Hazardous Substances

Products, materials or substances considered as hazardous by local regulations or the international standards of reference, must be identified with an indication of where they are stored and in what quantities. For each hazardous product, a safety data sheet shall be available on-site.

Dangerous waste are to be segregated, stored safely and taken off-site using approved methods and properly qualified service companies. Procedures shall be in place to cover:

Information and documentation of Hazards the course the label, as- "Safety Inducted" will be stamped on the gate pass card and in addition one HSE induction card will be issued.

9.7 Alcohols and Drug Prohibition, Smoking Restriction

No alcoholic beverages or illegal drugs are permitted on worksite. The Contractor shall ensure that Personnel is made aware of and fully comply with this prohibition.

- No smoking takes place in the non-smoking areas.
- Safety at work is not jeopardized by any kind of narcotics and drugs, which may include some medical drugs, affecting the sense of vision, balance or awareness.

9.8 Emergency Preparedness

Emergency procedures covering communications and actions in case of medical, accident and environmental emergencies are to be maintained and tested.

- Contractor establishes and updates emergency procedures, including medical evacuations, which define immediate actions to be taken in the case of an accident or hazardous situation.
- For certain critical scenarios (major accidents) the emergency procedures shall include contingency plans that define the organization of assistance, emergency action methods and the means available for controlling the situation. For those scenarios

wherein the local communities may be affected, the system shall be developed to ensure community awareness and assistance, if applicable, is included.

- The procedures and contingency plans are to be evaluated and updated regularly through exercises and drills. The procedure applies to all operations on and associated with the construction activities on the Project. It applies to the activities of subcontractors under the supervision or control of Contractor. It applies to the following situations:
 - Fire/Explosion
 - Chemical spill or release
 - Sabotage
 - Natural disaster
 - Traffic accident
 - Evacuation
- Emergency equipment and personal protective equipment and clothing shall be inspected regularly and reviewed at appropriate intervals in order to verify suitability and good working order.

9.9 Identification and inspection of equipment

Equipment critical to HSE performance is to be identified

For identified critical equipment, an inspection schedule defining the method and frequency of inspections and tests and the measures to be taken to ensure that and item of equipment is not used unless its compliance with specified requirements has been verified shall be established. Collective actions are to be taken regarding all non-conformities detected during inspection.

In order to reduce the risk of failure of critical equipment, a preventive maintenance program shall be developed, implemented and periodically reviewed to ensure adequacy.

9.10 Environmental Management

The Contractor will develop detailed procedures covering the handling, treatment and disposal of liquid and solid wastes generated in the course of the Project.

To implement the Environmental Management System into the Project site, the following items shall be inspected continuously.

1. Hazards Chemical and Waste Material collection/storage/disposal areas.
2. Oil and Chemical Spillage.
3. Solid Waste Materials (rubbish, garbage, etc...) generated from the Camps and Site areas,
4. Dust control on the unpaved roads.
5. Housekeeping around all Site areas.
6. Waste water Treatment.

Good housekeeping is an important part of the site Safety and Loss Prevention Plan. Good housekeeping practices, when practiced as part of normal work methods, will lead to increased productivity, reduced materials and tools losses and a much safer, more hygienic and easier area in which to work. The Contractor will ensure that the tool, equipment and resources necessary for the maintenance of site cleanliness and orders are provided.

9.11 Incidents and corrective actions

All incidents and accidents are to be reported, analyzed and remedial action taken to avoid re-occurrence.

- Contractor establishes a procedure for incident (accident or near miss) and anomaly processing. This procedure is to cover reporting, analysis of the causes, evaluation of potential damage and implementation of remedial actions.
- All incidents are to be reported formally to site management. For serious accidents, transmittal of this information shall be issued immediately. A comprehensive report shall be issued.
- Incidents with obvious lessons for other departments of Project are to be reported in such a way as to allow feedback across the Project organization.

9.12 Audits and inspections

9.12.1 Audits

Audits of the HSE system are to be organized on a regular basis in order to check that procedures are applied, comply with the requirements of the present document and are suitable for achieving objectives.

A schedule of audits stipulating the activity to be audited, those responsible for the audit and the reference documents to be used is established.

A report indicating any observed nonconformity shall be issued for each audit. This report is to be delivered to the head of the audited activity that proposes and implements the corresponding corrective actions.

9.12.2 Planned Checks

Planned general checks are to be organized regularly in all sectors of the activity. Corrective actions are to be applied to any nonconformity detected.

9.13 Health and Hygiene

The Contractor will provide and maintain the facilities and services necessary to provide First Aid medical treatment for all site personnel. This service will provide for both the minor first aid needs, which can readily and properly be taken care of on site, and for the immediate emergency aid required for those injured or seriously ill requiring more extensive care and /or treatment at outside facilities. The Contractor will maintain adequate hygiene levels due to consideration to the local climate, and in particular for:

- Potable water to be provided in sufficient quantities and meeting Health Organization specified quality.
- Food storage and processing
- Sanitary services
- Adequate camp and accommodation facilities conditions

9.14 HSE Improvement Plan

Each area of operation will establish objectives and improvement plans based on incident analyses, audit result and risk analyses in order to raise the level of HSE performance. Site management shall establish an HSE improvement plan that will allow monitoring of; objectives, corrective actions following incidents, Corrective actions regarding non-conformities observed during internal and external audits, self-and imposed inspections, impact monitoring on the environment, training, exercises/drills and integrating experience gained from incidents outside Project, Risk assessment and preventive actions, Action required by this document,

The HSE Committee shall have the responsibility to collect information relative to the incidents; set priorities according to the risks incurred and monitor corrective actions that are integrated into the HSE improvement plan.