Environment, Health and Safety Plan (EHS)

Environment, Health and Safety Plan

GENERAL

Health and Safety covers all personnel working under the project and will be in line with the national health and safety guidelines.

The Occupational Health and Safety plan will aim to ensure that the workplace is safe and healthy by: addressing the hazards and risks at the workplace; outlining the procedures and responsibilities for preventing, eliminating and minimizing the effects of those hazards and risks; identifying the emergency management plans for the workplace or workplaces; and, specifying how consultation, training and information are to be provided to employees at various workplaces.

Some of the risks/hazards associated with workplaces are due to working close to or at sites associated with the various project construction activities. Other risks associated with the project construction phase include risk of increase of vector borne and other different diseases.

The following sections will be implemented during the construction phase to address and ensure workers' health and safety.

a. Screening and regular unannounced checking of workers

As per the procedure for hiring workers, all contractors and labor agencies are required to make all prospective workers undergo medical tests to screen for diseases and sicknesses, prior to selection and employment of any worker. The contractor is also responsible for ensuring that no worker who has a criminal record is employed at the project site. It will be ensured that all workers undergo medical tests to screen diseases at source and at sites in consultation with the designated Health Officer.

In addition to this, the Project Management will also undertake sudden, unannounced checks on workers to look for diseases such as HIV, STDs, and hepatitis and take necessary steps as mandated by the Contractual agreement between the Contractor and the Worker(s).

b. Minimizing hazards and risks at the workplace.

To ensure safety at all work sites, the following will be carried out:

i. Installation of signboards and symbols in risky and hazardous areas, to inform workers to be careful.

ii. Construction of barricades around construction sites and deep excavated pits, to cordon off and deter entry of unauthorized personnel and workers into these areas.

iii. Providing a safe storage site/area for large equipment such as power tools and chains, to prevent misuse and loss.

iv. Proper Housekeeping: Ensuring that materials are all stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling, or collapse. Brick stacks will not be more than 7-feet in height and for concrete blocks they will not be more than 6 feet high.

v. Removing all scrap timber, waste material and rubbish from the immediate work area as the work progresses.

vi. Where scaffolds are required, ensuring that each scaffold or its components shall be capable of supporting its own weight and at least 4 times the maximum intended load applied or transmitted to it. The platform/scaffold plank shall be at least 15 inches wide and 1.5 inches thick. The rope should be capable of supporting at least 6 times the maximum intended load applied or transmitted to that rope. Pole scaffolds over 60 feet in height shall be designed by a registered professional engineer and shall be constructed and loaded in accordance with that design. Where scaffolds are not provided, safety belts/safety nets shall be provided;

vii. Ensure that all ramps or walkways are at least 6 feet wide, having slip resistance threads and not inclined at more than a slope of 1 vertical and 3 horizontals.

viii. Stacking away all excavated earth at least 2 feet from the pit to avoid material such as loose rocks from falling back into the excavated area and injuring those working inside excavated sites.

ix. Constructing support systems, such as bracing to adjoining structures that may be endangered by excavation works nearby.

x. Install fire extinguishers and/or other fire-fighting equipment at every work site to prepare for any accidental fire hazards.

c. Provision of Personal Protective Equipment

Risks to the health and safety of workers can be prevented by provision of Personal Protective Equipment (PPEs) to all workers. This will be included in the construction cost for each Contractor. Depending on the nature of work and the risks involved, contractors must provide without any cost to the workers, the following protective equipment:

i. High visibility clothing for all personnel during road works must be mandatory.

ii. Helmet shall be provided to all workers, or visitors visiting the site, for protection of the head against impact or penetration of falling or flying objects.

iii. Safety belt shall be provided to workers working at heights (more than 20 ft.) such as roofing, painting, and plastering.

iv. Safety boots shall be provided to all workers for protection of feet from impact or penetration of falling objects on feet.

v. Ear protecting devices shall be provided to all workers and will be used during the occurrence of extensive noise.

vi. Eye and face protection equipment shall be provided to all welders to protect against sparks.

vii. Respiratory protection devices shall be provided to all workers during occurrence of release of particulate matter, or vehicular emissions.

viii. Safety nets shall be provided when workplaces are more than 25 feet (7.5 m) above the ground or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors or safety belts is impractical.

The specific PPE requirements for each type of work are summarized below.

Table E.1 PPE Requirement List

Type of Work	PPE
Elevated work	Safety helmet, safety belt (height greater than 20 ft.), footwear for elevated work.
Handling work safety	Helmet, leather safety shoes, work gloves.
Welding and cutting work	Eye protectors, shield and helmet, protective gloves.
Grinding work	Respirator, earplugs, eye protectors.
Work involving handling of chemical substances	Respirator, gas mask, chemical-proof gloves. Chemical proof clothing, air-lined mask, eye protectors.
Wood working	Hard hat, eye protectors, hearing protection, safety footwear, leather gloves and respirator.
Blasting	Hard hat, eye and hearing protection.
Concrete and masonry work	Hard hat, eye protectors, hearing protection, safety footwear, leather gloves and respirator.
Excavation, heavy equipment, motor graders, and bulldozer operation	Hard hat, safety boots, gloves, hearing protection.
Quarries	Hard hat, eye protectors, hearing protection, safety footwear, leather gloves and respirator.

d. Procedures to Deal with Emergencies such as Accidents, Sudden Illness and Death of Workers

First aid kits will be made available at all times throughout the entire construction period by the respective contractors. This is very important, because most work sites will be at some distance from the nearest hospital. In addition to the first aid kits, the following measures should be in place:

i. Provision of dispensaries by the individual EPC contractor.

ii. A vehicle shall be on standby from the Project Office so that emergency transportation can be arranged to take severely injured/sick workers to the nearest hospital for immediate medical attention.

iii. A designated Health Officer/worker for the Project will be identified as a focal person to attend to all health and safety related issues. This employee's contact number will be posted at all work sites for speedy delivery of emergency services. The focal person shall be well versed with the medical system and facilities available at the hospital.

iv. Communication arrangements, such a provision of radios or mobile communication for all work sites, for efficient handling of emergencies, will be made.

e. Record Maintenance and Remedial action

The Project Management will maintain a record of all accidents and injuries that occur at the work site. This work will be delegated by the contractor to the site supervisor and regularly reviewed every quarter by project management. Reports prepared by the contractor shall include information on the place, date and time of the incident, name of persons involved, cause of incident, witnesses present and their statements. Based on such reports, the management can jointly identify any unsafe conditions, acts or procedures and recommend for the contractor to undertake certain mitigate actions to change any unsafe or harmful conditions.

f. Compensation for Injuries and Death

Any casualty or injury resulting from occupational activities should be compensated as per the local labor laws. Where compensation is sought by the injured party, proper procedures for documentation of the case will be followed, including a detailed report on the accident, written reports from witnesses, report of the examining doctor and his/her recommendation for treatment. Each individual contractor will be responsible for ensuring compensation for the respective workers.

g. Awareness Programs

The Project management will undertake awareness programs through posters, talks, and meetings with the contractors to undertake the following activities:

i. Dissemination sessions will clarify the rights and responsibilities of the workers regarding interactions with local people (including communicable disease risks, such as HIV/AIDS), work site health and safety, waste management (waste separation, recycling, and composting), and the illegality of poaching.

ii. Make workers aware of procedures to be followed in case of emergencies such as informing the focal health person who in turn will arrange the necessary emergency transportation or treatment.

h. Nomination of a Health and Safety Focal Person

Within each site (especially if different sites are being implemented by different contractors), a Health and Safety Focal Person will be appointed. The Terms of Reference for the focal person will mainly be as follows:

i. Function as the focal person/representative for all health and safety matters at the workplace;

ii. Responsible for maintaining records of all accidents and all health and safety issues at each site, the number of accidents and its cause, actions taken and remedial measures undertaken in case of safety issues;

iii. Be the link between the contractor and all workers and submit grievances of the workers to the contractor and instructions/directives on proper health care and safety from the contractors back to the workers;

iv. Ensure that all workers are adequately informed on the requirement to use Personal Protective Equipment and its correct use;

v. Also responsible for the first aid kit and making sure that the basic immediate medicines are readily available.

GENERAL GUIDELINES FOR HEALTH AND SAFETY

The following points are vital to a successful health and safety program:

- No person shall be instructed or required to work under conditions that are dangerous to their health.
- Each employee is responsible to carry out works in a safe manner, including the use of Personal Protective Equipment (PPE) when required and general personal safe work practices. Each employee shall report unsafe conducts of work, preventing avoidable accidents to site personnel. Reporting shall be made to the designated, safety representative (EHS), PM or SE on site.
- Worksite shall have person(s) available on site that can translate information in relevant languages when required.
- Inductions shall take place for each individual employed at the project site, together with visitors. The induction will identify the known site safety and health risks as well as mitigating measures.

Note: Construction sites are dangerous areas. Danger can be defined as anything from a simple carpenter's nail to a load being carried on a crane; it is vital that precautions are put in place to prevent incidents ranging from workers stepping on a nail to an insecure load being dropped on a worker.

Ensuring Site Safety

The most valued resources are employees, the client and the communities. It must be dedicated to providing a safe and healthful environment for employees and customers, protecting the public, and preserving contractors properties and assets.

The Safety Plan will assist management and employees in controlling hazards and minimizing employee and customer injuries, damage to resident's property and damage to contractors, clients and community's properties.

All employees of the project and sub-contractors will follow this program. Noncompliance to this program by employees or sub-contractors will result in one of the following:

- Verbal Warning; if minor violation (i.e. violation resulting in non-injury/damage)
- Written Warning; if second minor violation or minor injury/damage caused.
- Immediate dismissal; if third minor violation, or second minor injury/damage caused, or first Major injury/damage caused.

Engineering Personnel

All Engineers, Service Provider Engineers and site personnel shall undertake training based upon this Safety Plan prior to startup of the project. Contractor shall employ an Engineer to undertake the task of monitoring safety (the post will be officially called "Health & Safety Engineer – hereinafter HSE").

The HSE will report to the Project Manager. The role will include visiting all sites on a regular basis, conducting safety training, and ensuring all sites are functioning in accordance with the safety manual.

Will conduct special trainings for leading site personnel and as well for the subcontractor's foreman, supervisor, engineers etc.

Will brief all its workers and sub-contractors entering the worksite, if necessary on daily base. All names shall be recorded on an induction form and signed by the employees. It shall be highlighted that everyone has a duty of care with regards to safety.

Site Safety Meetings

Inductions

Employees shall be provided a health and safety Induction by the assigned HSE prior to start of work. Inductions shall include:

- Personal requirements and responsibilities for accident prevention
- General policies outlined in this document
- Contractor (Safety Engineer) and Construction Supervision Engineer responsibilities for reporting all accidents
- Information relating to medical facilities/personnel and emergency responses
- Procedures for reporting and correcting unsafe conditions or work practices
- Relevant job hazards (Activity Hazard Analysis (AHA) may be presented)

Upon completion of Inductions, each worker shall be assigned a specific number. This number will be displayed on the workers hard hat. The number will be filed on a master register with the name of the employee. The employee will be required to note his/her number on a daily log sheet (upon arrival and leaving), to show the Site Engineer or any other contractors representative in charge who is on site on each particular day. This has the added benefit of carrying out a number check should the site be evacuated.

Weekly Safety Meetings

On a weekly basis the Management Consultant (MC)/ Supervision Consultant (SC)staff shall meet at the Site/Sub Office to discuss safety matters with the Contractors Quality and Safety representative. The meeting will follow an officially documented site safety inspection between the two representatives. The main issues raised noted in the inspections and within the meetings shall be recorded.
The form “weekly safety assessment” has to be filled out by the contractors H&S rep. and submitted to the Construction Supervision Engineer.

Note: Meetings between contractor supervisors/foremen and workers will be encouraged to meet at least on a weekly basis, and if required on a daily basis, in the form of a “tool box talk”. Notes from this meeting may be presented in the weekly safety meetings with the MC/SC.

Monthly Safety Updates

All workers, site supervisory staff and other relevant representatives shall meet every six months to discuss safety issues. These meetings will provide an opportunity to update the safety requirements, resolve safety concerns and improve general site safety conditions. If it is necessary to update in any occasion the contractor’s main management has to inform the SC.

Waste Management Plan

During construction/civil works sources of waste will include spoils generated during excavation activities, excavation waste for other civil works, domestic wastes (solid & wastewater), fuel or oil leakages or spills, onsite effluents from vehicle wash & cleaning, and cement spills.

Waste disposal of materials containing contents of both hazardous and non-hazardous nature such as scrap wood, bricks, concrete, asphalt, metal scraps, oil, electrical wiring and components, chemicals, paints, solvents etc. can potentially become a serious environmental issue, particularly with the local contractors. To avoid any potential issue, the supervision consultant in collaboration with focal agencies will need to impose adequate internal controls.

Domestic wastes generated during construction of road will include sewage, grey water (from kitchen, laundry, and showers), kitchen wastes, combustible wastes and recyclable wastes from contractor camps.

MANAGEMENT METHODOLOGIES

A waste management plan will be developed prior to the start of construction. This plan will cater to sorting of hazardous and non-hazardous materials prior to disposal, placing of waste bins at the project sites for waste collection and an onsite hazardous waste storage facility i.e. designated area with secondary containment.

Licensed waste contractors will be engaged to dispose off all non-hazardous waste material that cannot be recycled or reused.

- Excavated material from trenches will be stored at site and it will be used as fill/cover material after laying of pipelines while access spoil shall be transported to spoil disposal site if required.
- Excavated material generated during construction of road will be used as a fill material at site and access spoil shall be transported to spoil disposal site if required.
- All types of combustible and non-combustible waste including plastic or glass bottles and cans will be temporarily stored on site and later sold/handed over to a waste/recycling contractor who will utilize these wastes for recycling purposes.
- Waste management training for all site staff to be included in Contractor's training plan.
- Fuel storage areas and generators will have secondary containment in the form of concrete or brick masonry bunds. The volume of the containment area should be equal to 120% of the total volume of fuel stored.
- Fuel and hazardous material storage points must be included in camp layout plan to be submitted for approval. Hazardous material storage areas shall include a concrete floor to prevent soil contamination in case of leaks or spills. Fuel tanks will be checked daily for leaks and all such leaks will be plugged immediately.
- Designated vehicles/plant wash down and refueling points must be included in camp layout plan to be submitted for approval.
- Hazardous waste will be initially stored on site at designated area and then handed over to EPA certified contractor to final disposal.
- Record of waste generation and transfer shall be maintained by project contractors.
- Spill kits, including sand buckets (or other absorbent material) and shovels must be provided at each designated location.
- At the time of restoration, septic tanks will be dismantled and backfilled with at least 1m of soil cover keeping in view landscape of surrounding natural surface.
- It will be ensured that after restoration activities, the campsite is clean and that no refuse has been left behind.
- Clinical wastes will be temporarily stored onsite separately and will be handed over to approve waste contractor for final disposal.

- Training will be provided to personnel for identification, segregation and management of waste.