YÜKSEL PROJE GREEN ENGINEERING

BAKU METRO EXPANSION PROJECT

GREEN LINE

Occupational Health and Safety Plan (OHSP)

Prepared for Baku Metropolitan Closed JSC

metro

Quality Information

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List of Acronyms

ALARP	As Low As Reasonably Practicable
AIIB	Asian Infrastructure Investment Bank
BM	Baku Metro
BMEP	Baku Metro Expansion Project
CCTV	Closed-Circuit Television
CESMP	Construction Environmental and Social Management Plan
CJSC	Closed Joint-Stock Company
CSM	Common Safety Method
DNP	Defects Notification Period
E&S	Environmental and Social
EPRP	Emergency Preparedness and Response Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESS	Environmental Social Standard
GBVH	Gender-Based Violence and Harrasment
GM	Grievance Mechanism
H&S	Health and Safety
HSE	Health, Safety and Environment
ILO	International Labour Organization
ISO	International Organization for Standardization
JSA	Job Safety Analysis
KPI	Key Performance Indicator
LEL	Lower Explosive Limit
LTIFR	Lost Time Injury Frequency Rate
LOTO	Lock Out Tag Out
MSDS	Material Safety Data Sheets
NDT	Non-Destructive Testing
OHS	Occupational Health and Safety

1. INTRODUCTION

1.1 Project Description

The Government of the Republic of Azerbaijan, through Baku Metropolitan Closed Joint-Stock Company ("Baku Metro" or "BM"), is implementing Phase II of the Baku Metro Expansion Project ("BMEP"), which includes the extension of the Green Line within the urban area of Baku. The Green Line Extension is planned to be financed by the Asian Infrastructure Investment Bank (AIIB) and is being developed in accordance with applicable national legislation and international standards.

The Green Line Extension, which is the focus of this Occupational Health and Safety Plan (OHSP) comprises approximately 7.4 km of fully underground alignment and four new underground stations (Y-14, Y-15, Y-16, and Y-17), extending from Khatai to Hazi Aslanov. The extension passes through high-density urban districts of Baku and represents a key component of the city's east–west transport corridor. Construction works include tunnel excavation, station construction, and associated surface-level activities in areas characterized by complex urban fabric and long-established development patterns

This OHSP forms part of the Project's Environmental and Social Management Plan (ESMP) and applies to all permanent and temporary works and operational activities associated with the Green Line Extension. The OHSP covers construction, testing and commissioning, handover, and operational phases, including tunnels, stations, shafts, construction compounds, ancillary facilities, access areas, and the upgrading of pre-existing structures. Project Location is shown in Figure 1**Hata! Başvuru kaynağı bulunamadı.**.

Figure 1: Green Line Extension

1.2 Purpose of This Occupational Health and Safety Plan

The purpose of this OHSP is to establish a comprehensive and risk-based framework for managing occupational health and safety (OHS) risks during both the construction and operational phases of the Project. The Plan aims to prevent work-related injuries, occupational illnesses, incidents, and fatalities, and to promote continuous improvement in health and safety performance throughout the Project lifecycle.

This OHSP sets out the minimum requirements and management arrangements applicable to all personnel engaged in the Project, including Contractor and subcontractor workers during construction, and Baku Metro personnel and operational contractors during the operation phase. The OHSP shall be reviewed and updated as necessary by the Contractor during construction and by Baku Metro during operation to reflect changing site conditions, construction methodologies, and operational needs.

The Plan defines roles, responsibilities, procedures, and control measures for:

- Hazard identification and risk assessment.
- Safe systems of work and permit-to-work arrangements (as applicable);
- Competency, training and supervision.
- Incident notification, investigation, and corrective action.
- Emergency preparedness and response.
- Monitoring, auditing, and performance reporting.

During the construction phase, the Contractor shall develop and implement detailed, activity-specific procedures, risk assessments, method statements, and Safe Work Instructions consistent with this OHSP.

Upon commencement of operations, Baku Metro shall assume responsibility for maintaining, updating, and implementing the OHS management arrangements applicable to operational and maintenance activities, ensuring continued compliance with national legislation, AIIB requirements, and international good practice.

The Contractor (during construction) and Baku Metro (during operation) shall maintain appropriate OHS records, conduct inspections and audits, implement corrective actions where required, and report OHS performance in accordance with the Project's ESMP and AIIB's reporting obligations.

All necessary safety signage, warning notices, barriers, and control measures shall be provided, maintained, and kept functional at all times, consistent with applicable standards and site-specific risk assessments.

This Occupational Health and Safety Management Plan, established regarding ISO 45001 and 14001 Management Systems and AIIB requirements is applied throughout the Project to be further updated by the Contractor for construction and by the Baku Metro for operation

1.3 Scope

This OHSP applies to all Project-related activities undertaken during mobilisation, design (where applicable), construction, testing and commissioning, completion, handover, Defects Notification Period (DNP), and subsequent operational activities of the Green Line Extension.

During the construction phase, the Plan applies to the Contractor, subcontractors, suppliers, visitors, and any authorised persons present at Project sites.

During the operational phase, the Plan applies to Baku Metro personnel, operational contractors, maintenance teams, and any other authorised persons engaged in the operation and maintenance of the Green Line Extension.

Upon possession of the Site and notice to commence, the Contractor shall establish site-specific OHS systems and controls, including site access management, traffic segregation, emergency arrangements, and risk control measures appropriate to underground works and construction activities.

For the execution of the Contract, the Contractor shall deploy suitably qualified and experienced management, competent supervision, trained personnel, and appropriate plant and equipment to ensure safe delivery of the Works.

Following handover, Baku Metro shall ensure that operational OHS management systems are maintained and periodically reviewed to address operational risks such as train operations, maintenance works, confined space entry, electrical systems, passenger interface areas, and emergency response.

Where requirements differ between national legislation, AIIB Environmental and Social Framework (ESF) 2024, and international good practice, the Project shall apply the most stringent applicable standard.

2. NATIONAL LEGISLATION AND LENDER'S REQUIREMENTS

2.1 Overview

This chapter summarises the applicable national occupational health and safety (OHS) legislation, Lender requirements, and relevant international good practice that inform the structure and implementation of this Occupational Health and Safety Plan (OHSP).

The Contractor and Baku Metro shall comply with all applicable national legal requirements. Where differences exist between national legislation, AIIB Environmental and Social Framework (ESF) 2024 requirements, and international good practice, the more stringent requirement shall apply.

Further details on the Project's legal and institutional framework are provided in Chapter 4 of the ESIA.

2.2 National Legislation

The following key legislation of the Republic of Azerbaijan is applicable to this OHSP. The Contractor shall also comply with any additional specific regulatory requirements relevant to the scope of works.

Labour Code of the Republic of Azerbaijan (1999, as amended)**:** Establishes requirements related to labour rights, employment contracts, working hours, overtime, rest periods, minimum wage, non-discrimination, prohibition of forced and child labour, and protection of workers' rights. The Contractor shall ensure compliance for all direct and subcontracted workers.

Law on Occupational Safety and Health (2010)**:** Requires implementation of OHS risk assessments, appointment of competent OHS personnel, provision of training and personal protective equipment (PPE), emergency preparedness planning, incident investigation and reporting, and maintenance of a safe working environment.

Law on Social Insurance (1997)**:** Requires registration of workers under the state social insurance system and reporting of occupational accidents and illnesses.

Rules for Investigation and Recording of Workplace Accidents (Cabinet of Ministers Decision No. 27, 2000)**:** Defines procedures for investigation, documentation, and reporting of occupational accidents.

Law on Personal Data Protection (2010)**:** Requires secure handling and confidentiality of worker records, medical data, and grievance-related information.

In addition to national legislation, Baku Metro internal technical and safety instructions relevant to underground works, lifting operations, electrical safety, fire safety, tunnel access, and rail system safety shall apply during both construction and operational phases. These internal procedures complement national law and establish additional operational controls specific to metro environments.

2.3 Lender's Requirements

This OHSP applies the AIIB Environmental and Social Framework (ESF) 2024 as the framework for the Green Line Expansion.

In particular, this OHSP supports compliance with:

- AIIB Environmental and Social Framework (ESF) 2024, Environmental and Social Standard 1 (ESS1) – Environmental and Social Assessment and Management, Section E: Health and Safety, including Occupational Health and Safety provisions;
- AIIB ESF 2024, ESS1 – Environmental and Social Assessment and Management, Section F: Labour and Working Conditions;

AIIB requires implementation of a project-specific OHS management system aligned with international good practice, including:

- Application of the hierarchy of controls;
- Risk assessment procedures;
- Reporting of accidents, injuries including fatalities, near-misses;
- Worker participation and consultation;
- Emergency preparedness and response;
- Monitoring and continuous improvement.

The Contractor and Baku Metro shall ensure that OHS performance is monitored and reported in accordance with AIIB requirements.

2.4 International Best Practices

The OHSP is informed by internationally recognised standards and industry best practice, including but not limited to:

- ISO 45001 – Occupational Health and Safety Management Systems
- ISO 14001 – Environmental Management Systems (where interface with environmental risk exists)
- European Framework Directive on Occupational Health and Safety (89/391/EEC) (as international good practice reference)
- Common Safety Method – Risk Assessment (CSM-RA) principles applicable to rail systems
- ILO Core Labour Conventions ratified by the Republic of Azerbaijan (including conventions on freedom of association, non-discrimination, prohibition of forced labour and child labour)

These international standards and principles provide guidance for systematic risk management, worker protection, and continuous improvement in OHS performance throughout the Project lifecycle.

3. ROLES AND RESPONSIBILITIES

Given the high-risk nature of underground metro works (tunnelling, TBM operations, confined space, live-line electrical works, and contaminated ground conditions), a three-tier supervision structure shall be in place prior to construction mobilisation. This structure complements the Contractor OHS organisation set out in Sections 3.1 to 3.19 below.

(I) **BM Project Implementation Unit (PIU)** – E&S Team. Baku Metro shall establish a dedicated PIU with, at a minimum: an Environmental and Social Manager, an OHS Specialist, a Social Specialist, and a GBVH/Gender Focal Point. The PIU E&S Team reports directly to the BM Project Director and is responsible for client-side oversight of all E&S and OHS commitments across the Green Line works.

(II) **Owner's / Supervising Engineer.** The Supervising Engineer shall maintain a dedicated on-site OHS Specialist and Environmental Specialist throughout the construction phase, with qualifications commensurate with metro and tunnelling risks. The Supervising Engineer reports to the BM PIU and is responsible for day-to-day oversight of Contractor performance, method-statement approvals, and verification of risk controls.

(III) **Contractor OHS Organisation.** The Contractor shall maintain the OHS organisational structure defined in Sections 3.2 to 3.19 of this OHSP, including the HS Lead/Manager, OHS Engineer(s), HS Technicians, and specialist supervisors (Scaffolding, Lifting Operations, Machine Supply, TBM Construction).

Reporting lines:

Weekly Contractor OHS performance reports shall be submitted to the Supervising Engineer; monthly consolidated reports from the Supervising Engineer to the BM PIU; quarterly reports from the BM PIU to BM senior management and AIIB.

Contractor will ensure that adequate resources are continuously provided to meet the requirements of this Plan and that the personnel responsible for the assessment of the duties and requirements of the H&S Plan are adequate in terms of training and experience.

The Key Personnel in charge of coordinating and reporting on issues within the Plan are all responsible for the implementation of this Plan throughout the Project, with all the employees whose duties and responsibilities are clearly defined in the below organizational structure.

Contractor needs to develop its own organization chart

3.1 Management And Health & Safety Commitment

In addition to the Health, Safety Policy, Contractor Project Management is committed to the development of the Project Health and Safety Culture and will make an effective plan for achieving the determined strategic objectives, while taking the safety issues into account during the construction phase.

Contractor Objectives:

- Protect human health
- Protect the environment
- Prevent damage to property
- Protection from the accidents

All employees serving as Contractor personnel and Subcontractors are responsible for the implementation of this Plan to reach the above-mentioned targets.

3.2 Organization

OHS and the Environmental Management Systems were established to cover Contractor and its subcontracting employees. Every employee in charge of the project is responsible for the delivery of these plans and workshops to their field of practice**.** However, the control of its application shall be undertaken by Contractor HS Department.

Also; all Subcontractors shall appoint their own HS specialists according to legal requirement within the scope of the Project and to deliver the "Contractor HS Plan", "Procedure" and "Instructions" to the study fields and to follow safe working conditions and to submit a copy of the assignment letters Contractor Project Directorate. In cases where a full-time Certified HS Specialist be appointed to follow the works done by Contractor, provided that the number shall be increased in line with the study points for follow up.

All appointed subcontractors and other appointed Health and Safety (HS) Specialists shall be responsible in addition to attend all Site Safety Reviews and Meetings organized by the Contractor, Contractor.

3.3 Project Manager

Project Manager has the overall responsibility for the Project OHS Management System and specifically to ensure that Project OHS Plans are implemented through the use of prescribed processes, procedures and safe working practices and that supervisors, employees and Subcontractors are aware of OHS Policies and OHS expectations.

The Project Manager has responsibility for the effective implementation of the Project OHS Management Plan throughout all phases of the Project. The Project Management Team shall support the Project Manager in this endeavour. Project Manager is required to demonstrate leadership and commitment and provide resources to enrich the Projects OHS Culture in the following ways:

- Ensure legislative obligations are met and OHS policies are effectively deployed to the operational areas through the planning process.
- Ensure resources (including Subcontractors) are provided to the workplace that will result in a safe and healthy working environment and fulfil Project requirements.
- Develop a positive safety culture and foster behavioural change.
- Promote positive safety culture and obtain commitment from all the project personnel to achieve Project “Goal Zero” target.
- Develop and implement Continuous Improvement Processes at all levels in the organization for the Project.
- Provide visible commitment to a safe and healthy work environment by ensuring regular inspections are undertaken and participating in OHS meetings and training as required.
- Ensure all incidents are documented via incident reports and investigations reviewed and review all incident reports.
- Plan, organize, lead and control the Project Team in the provision of full range of contracted activities.
- Ensure compliance with ESMP and equipment/materials coming to site comply with Environmental and Social Management and Standards.
- Support and progress the Project Environmental Programs, and specifically coordinate the commitment & motivation, risk management, incident, investigation, emergency preparedness and other elements for which he/she has responsibility.
- Deliver safe, environmentally sensitive and cost-effective Project.
- Maintain awareness and promote project goals in respect of ESMP.

- Monitor and regularly review safety performance against predetermined targets and initiate programmes for continual improvement.
- Ensure adequate training is provided to employees in OHS issues.
- Ensure adequate and competent supervision is provided taking account of safety needs.
- Take action to immediately rectify any unsafe situations or acts and undertake appropriate disciplinary action against persons and Subcontractors who may fail to fulfil their OHS responsibilities.
- Ensure safe work procedures are defined and documented for each task and implemented.
- Chair OHS meetings where necessary as required with Employer, Engineer and Subcontractors.

3.4 Deputy Project Manager(s)/Site Manager(s)

Deputy Project Manager(s)/Site Manager(s) plays a critical role at the interface of the planning, implementation and monitoring phases of the Project OHS Plan. The Deputy Project Manager(s) shall:

- Provide leadership to the Contractor and Subcontractors' teams as it meets the overall objectives of the OHS Program.
- Promote the setting up of site OHS rules and regulations, and OHS procedures and programs, including a comprehensive training programs, emergency procedures, incentive award scheme, etc.
- Monitoring the completion of Project activities in accordance with the requirements of the Project OHS Plan.
- Ensure a safe working environment through the implementation of the project OHS management system, OHS policies, programs, procedures and safe working practices;
- Demonstrate commitment through the effective allocation of resources and the active promotion of OHS in the workplace.
- Lead all OHS communication program (monthly OHS committee meetings, weekly OHS meetings, weekly construction progress meetings, site OHS Walkdowns).
- Ensure all Subcontractors aware of the OHS Policies and OHS Plans and further effective implementation.
- Ensure all Subcontractors develop Hazards and Effects Management process (Risk Assessment, Job Hazard Analysis, and Method Statements) and implement effectively.
- Allocate responsibilities for safety critical positions at the workplace and ensure those responsibilities are understood and carried out in compliance with the Project OHS Plan.
- Ensure developing safe working practices for all potentially hazardous tasks where there is potential to injure persons or damage plant or equipment.
- Review reports prepared by the Project teams on audits, incident reports and performance indicators.
- Actively participate in incident investigations, reviewing findings and promoting recommendations to prevent recurrence.
- Ensure all plant and equipment provided by Subcontractors is relevant to the task, is well maintained and can be operated with safety.
- Ensure procedures and facilities to manage first aid, firefighting and emergency response capabilities.
- Ensure all Subcontractors comply with the relevant legislative, policy and Contractor requirements.

- Ensure Subcontractors are fully informed of OHS requirements prior to establishing a presence on the workplace.
- Review Subcontractors safe working procedures and OHS Management Plans, where required, prior to approval to commence work on the Project workplace.
- Attend toolbox meetings and construction meetings as required as per the frequency and schedule.
- Ensure all personnel are suitably qualified, experienced, fit to work and trained to undertake their work activities in a safe manner.
- Ensure control measures are implemented and monitored.

3.5 Construction Line Managers/Engineers

- Support the Deputy Project Manager(s)/Site Manager(s) ensuring that OHS targets and goals are achieved.
- Ensure safety performance and accountability and compliance to the safety program; communicate safety requirements and Job Bulletins.
- Ensure that the works under their control are planned and undertaken in such a way as to give foremost regard to health, safety and environmental protection, as well as fulfilling the requirements.
- Ensure that risk assessments and method statements are produced for the works under their control and the details of these are communicated to the relevant people.
- As part of the risk assessment process ensure that members of the Project Management Team, who will be responsible for taking the preventative and protective measures associated with the Project operations, are competent and aware of their duties and responsibilities.
- To arrange for all levels of staff under their immediate control to receive, where necessary, adequate and appropriate training in health, safety and environmental matters.
- Ensure that personal protective equipment is used.
- Monitor environmental performance in their areas/sections and carry out regular site area/section inspections.
- Provide an interest in and enthusiasm for environmental and social matters and set a good personal example.
- Coordinate and plan the work schedule to ensure that conflicts of interest between Subcontractors do not occur.
- Direct line supervisors to ensure requirements for their roles and responsibilities for OHS.
- Attend weekly construction progress meetings, which should include OHS topics.
- Ensure that concerned personnel and Subcontractors analyze all hazardous work, identify any hazards with a serious loss potential and establish work execution procedures.
- Ensure that work execution procedures have been provided for all hazardous work, and they incorporate adequate provisions for OHS.
- Patrol the site daily and ascertain the status of the work and compliance with OHS requirements.
- Promote housekeeping and waste disposal at the highest standard.
- Report to the Site Manager on any anticipated matters of concern and on topical matters.

3.6 Health And Safety Lead/Manager

Project Health and Safety Lead (HS Lead) reports to Project Manager and Corporate HS Director and is supported by site OHS personnel and independent specialists where required. Project HS Leads' main duty is to advise and guide the Management on OHS issues and oversee Subcontractors OHS performance and implementation of this OHS Plan and programs. HS Lead shall be responsible for coordinating all Occupational Health and Safety matters or aspects related to the Contractor and Subcontractors work activities, meeting the pre-mobilization and start of construction deliverables, launching the key OHS programs; the preparation of the related safety procedures and the monitoring/control of their implementation, including those related to welfare of the workers.

The responsibilities and accountabilities of the HS Lead are:

- Development of Project OHS elements of the OHS Management System, OHS supporting plans and procedures and approve OHS Management Procedures as required.
- Support and guide effective OHS Management System implementation on the Project.
- Ensure Subcontractors develop OHS Plans and Procedures and are consistent with Project requirements as applicable and are approved by Contractor and implemented.
- Provide OHS expertise in support of the risk management process.
- Proactive in the investigation of incidents and accidents in accordance with Project Incident Investigation Procedure; Lead the investigations as required. Coordinate with Subcontractors and ensure all incidents are reported and investigated. Prepare the final incident reports and submit to Management.
- Liaison with Subcontractors and/or regulatory authorities.
- Coordinate with all the Subcontractors for OHS performance data collection to meet Project reporting requirements.
- Oversee OHS requirements for all phases and elements of the development for respective sites.
- Participate in site/facility OHS audits and ensure compliance assurance programme is effectively implemented for the Project.
- Provide support to Project Manager and Deputy Project Manager(s) and his team on all technical and commercial OHS related issues throughout all Project phases.
- Develop Contractor Management OHS Targets / Performance Standards for the Project and monitor / review regularly.
- Ensure that all the hazards associated with the development are identified and assessed, and that appropriate controls are put in place to reduce risks to ALARP.
- Monitor, audit and review implementation of the OHS Management System and OHS Plans.
- Provide verbal and written reports to the Project Manager, Project Teams and Corporate OHS functions on all aspects of OHS throughout the Project.
- Provide advice to Project Team to resolve OHS issues in a timely and effective manner.
- Provide advice and information on OHS matters relating to all site / facility personnel.
- Maintain a daily working relationship with the OHS team, Subcontractors in relation to their compliance with the provisions of the Project OHS Plan and regulatory requirements.
- Coordination and scheduling of OHS review activities and meetings with Project Teams and Subcontractors.
- Coordinate and organize OHS meetings, workshops etc. as per this Project HS Plan and schedule with Subcontractors and Project Management.

- Ensure Contractor personnel and the personnel of Subcontractors are fully trained and competent with respect to all work activities to be performed, including all OHS aspects of the work.
- Review the training programs and quality of trainings provided by the Subcontractors and provide any additional training required.
- Ensure emergency preparedness and response plans and resources are readily available at all the times and drills conducted regularly.
- Ensure medical facilities and medical resources are adequately provided for the Project.
- Ensure OHS Key Performance indicators for the Project are established and reviewed regularly.
- Ensure Contractor and Subcontractors comply with the legal requirements and review compliance periodically.
- Ensure the Project OHS requirements are communicated to all and verify compliance through follow-up meetings, inspections and audits.
- Ensure effective communication aids such as (toolbox talks, meetings, notice boards, signs, posters etc.) are implemented.
- Review the effectiveness of the OHS Performance and report to Management as required;
- Direct, manage and train other field health and safety staff as necessary to attain OHS Management standards set by the Project;
- Support Deputy Project Manager(s) and other Project Team members in all communications and decisions with Employer in relation to OHS.

3.7 OHS Engineer(s)

The site OHS Engineer(s) provide specialist information to the project management team, field personnel and Subcontractors staff.

OHS Engineer(s) shall:

- Assist the Project OHS Manager in development of Project OHS elements of the OHS Management System, supporting plans and procedures and approve OHS management procedures as required.
- Support and guide effective OHS Management System implementation on the Project.
- Ensure Subcontractors develop OHS Plans and procedures and are consistent with Project requirements as applicable and are approved by Contractor and implemented.
- Provide expertise in support of the risk management process.
- Act as a team member for incident investigations as required. Co-ordinate with Subcontractors and ensure all incidents are reported and investigated.
- Oversee OHS requirements for all phases and elements of the development for sites.
- Support Management by participating in site/facility OHS audits.
- Provide field support to Deputy Project Manager(s) and construction supervision to guide on safe working practices, Project requirements etc.
- Advise Project and site personnel of the requirements of legislation, guidelines, and codes of practice, standards, risk assessments and method statements relevant to the workplace.
- Ensure that Project OHS Plan requirements are consistently and comprehensively deployed on site.

- Co-ordinate the workplace inspection program and assist with regular internal OHS audits of the system and/or associated processes, procedures and work practices; perform inspections and audits.
- Assist in the development, implementation/delivery and revision of the HS induction and training programs.
- Ensure effective implementation of Project OHS initiatives such as toolbox talks, bulletins etc.
- Communicate Contractor's OHS requirements to all Project personnel and ensure proper implementation.
- Ensure all Project activities are carried out safely and guide site supervision on the day to day safety issues.
- Ensure Permit to Work implementation as per Project requirements,
- Participate in Emergency Response Drills and ensure all resources are readily available.
- Ensure Environmental and Social Management Plans, Waste Management Plans, Spill Response Plans etc. are implemented and monitor on daily basis.
- Ensure and monitor the requirements for PPE, lifting operations, work at heights, using power tools, hazardous material storage etc. on the Project.
- Ensure the Project OHS requirements are communicated to all and verify compliance through follow-up meetings and audits.
- Coordination and scheduling of OHS review activities.
- Review the effectiveness of the OHS performance and report as required.
- Assist in the identification, assessment, and development of control mechanisms for hazards in the workplace.
- Assist in the investigation and reporting of incidents on site.
- Ensure OHS information is systematically disseminated to all personnel.
- Co-ordinate the collection, recording and analysis of OHS data.

3.8 OHS Technician(s)

- Review the effectiveness of the OHS performance and report as required.
- Assist in the identification, assessment, and development of control mechanisms for hazards in the workplace.
- Assist the Project OHS Manager and the OHS Engineer(s).
- Patrol the site as frequently as possible and inspect current activities and working conditions.
- Inform the Deputy Project Manager(s) and Discipline Manager/Engineers of any unsafe conditions or violations, remedial action required, and record and retain the details.
- Prepare daily OHS reports and report to the Project OHS Manager & OHS Engineer(s) on major activities and topics.
- Monitoring and implementing corrective measures on all matters relating to safety.
- Responsible for the evacuation of all personnel in his designated area in the event of an emergency alarm, ensuring all personnel have cleared the area before he leaves. Authorized to stop any unsafe activities of work.
- Liaise with the managers and engineers regarding any matters relating to safety.
- Carry out routine safety inspections within his/her designated area.

- Ensure PPE requirements are strictly obeyed by all site personnel. (hard hats, glasses, shoes, harnesses, etc.)
- Attend toolbox meetings conducted by foremen.
- Ensure good housekeeping is maintained at all times.
- Inspection of safety barriers.
- Check condition / storage of fire extinguishers within his/her area.
- Check crane certificates entering his/her area.
- Check crane operators, plant operators and driver licenses of personnel working within his/her area.
- Ensure all plant and equipment are operated safely.
- Carry out safety checks on plant and equipment.
- Ensure that scaffolds are erected / modified only by qualified personnel.
- Control the implementation of OHS rules and regulations.
- Ensure qualified inspections are carried out regularly on all operating plant and equipment and to check plant and equipment test certificates are up to date.
- Ensure all non-compliant plant and equipment is placed “in Quarantine” or removed from site until compliance has been confirmed.
- Ensure inspections are carried out on all plant and equipment operators’ qualifications / licenses.

3.9 H&S Trainings and Records Specialist

- To train the staff on the OHS related subjects defined in the legislation and to register them with related documents.
- To record the information from the daily field inspections on the list of corrective preventive actions to share with the unit supervisors.
- To develop an archive system for the regular keeping of all records with regards to the OHS unit.

3.10 Environmental Lead

- Establish Environment and Social Management Plan, required procedures and instructions to ensure their notification to related parties and to follow up their implementation.
- Increase the awareness in terms of site occupational safety as well as environmental aspects and to ensure the training of the site teams for the continuation of the activities and to guide them as necessary.
- Establish environmental and social audit programs, including all levels of the construction site.
- Prepare environmental training programs.
- Assist the authorized persons in identifying and correcting environmental nonconformities arising during the activities.
- Establish a communication network in order to ensure that environmental and safety issues are delivered to all employees.
- Follow up toolbox meetings performed by responsible site teams and to check whether environmental issues as well as safety issues are effectively communicated to site staff.
- Inspect the work areas, dining halls, workshops and offices regularly in terms of occupational safety and environment.

- Announce the construction site HS and Environmental rules to all Subcontractors in cooperation with the authorized unit supervisors,
- Lead the preparation of the Emergency Action Plans and to ensure that all employees are being informed,
- Lead the organization of demonstrations to get prepared for emergency situations,
- Lead the assessment of the risks arising from the activities and to warn then supervisor about the necessary measures,
- Keep records of all activities related to Environmental and Social issues,
- Revise the Project Environmental and Social Management Plan according to needs.

3.11 Social Lead

- Establish Environment and Social Management Plan, required procedures and instructions to ensure their notification to related parties and to follow up their implementation.
- Supervise social activities on site,
- Provide on-site advice and technical assistance to the Project Manager and project team members on social issues.
- Ensure preparation, review, approval and updates of CESMP and environmental/social procedures of the Project,
- Prepare monthly Environmental and Social reports, maintain records, registers, and logs,
- Ensure that planned Environmental/Social Inspections are carried out,
- Ensure that stakeholder engagement and grievance management plans are implemented,
- Ensure community grievances are investigated and mitigated properly, non-conformance reports, corrective actions are developed and implemented in a timely manner,
- Ensure requested documents/procedures are in place to secure environmental and/or social permits,
- Ensure environmental and community monitoring programs are in place,
- Monitor and report environmental and social performance of the Project,
- Increase the awareness in terms of social issues and ensure the training of the site managers for the continuation of the activities and to guide them,
- Establish Social Audit Programs, including all levels of the construction site,
- Prepare Social Training Programs,
- Keep records of all activities related to social issues,
- Revise the Project Environmental and Social Management Plan according to needs.

3.12 Medical Personnel

- Ensure ‘Health Risk Assessments’ are conducted highlighting health hazards and associated mitigation measures associated with work activities.
- Ensure effective fitness to work process for Contractor personnel and ensure Subcontractors have the fitness to work process to assure all the personnel engaged on the Project are fit for their work.
- Ensure that the entire Project personnel including Subcontractors personnel fitness to work certificates are provided, verified.

- Ensure first aid facilities are established as per the Project requirements.
- Ensure Subcontractors provide required medical resources including first aiders.
- At least one certified First Aider must be present per shift at each active shaft head and tunnel face, equipped with an AED and trauma kit.
- Conduct health & hygiene inspections per HS Plan inspection schedule.
- Implement health & welfare fitness programs to promote a healthy lifestyle for all employees.
- Review/Audit pre-employment medical testing to ensure employees are fit for duty.
- Participate in medical emergencies and coordinate with Project management.

3.13 Line Supervisors (Includes Engineers, Supervisors, Foremen and Team Leaders)

- Demonstrate OHS leadership and management skills.
- Accept they are “key” to OHS performance and responsible for their crews’ implementation of OHS practices.
- Identify and control hazards by ensuring Job Hazard Analysis and MS are developed for critical activities and are implemented.
- Know, understand, and supervise their work with the expectations and standards of OHS policies and procedures and fully apply the Project OHS Plan.
- Demonstrate leadership and performance, which promote individual responsibility and which endorses the
- “Incident and Injury Free” philosophy.
- Be directly responsible and accountable for OHS performance and compliance with requirements applicable to their areas of supervision.
- Take all reasonable action to optimize the OHS performance of his subordinates.
- Initiate incident/near miss investigations and participate and assist in the preparation of required reports.
- Effectively implement toolbox talks on the Project.
- Ensure that personal protective equipment (PPE) are used properly.
- Communicate the Contractor’s OHS requirements and implement throughout the Project.
- Implement PTW system where applicable and ensure precautions taken as per the PTW system requirement.
- Stop unsafe acts and correct unsafe conditions.
- Use toolbox talks, risk assessments and safe work instructions to identify hazards in work tasks of their crews & implement controls to keep the job site safe & incident free.
- Report near misses and investigate to avoid reoccurrence.
- Check with work crews for any health related issues prior to starting work by monitoring health of work crews.

3.14 TBM Construction Engineer

- To ensure the establishment of occupational health and safety rules for works performed in their own workplaces and to execute and implement HS Program,

- To participate in the Occupational Safety Committee meetings and to implement its decisions, to lead in areas of responsibility,
- To ensure providing personal protective equipment and all kinds of safety equipment necessary for the safe working environment to the workplace,
- To provide and place the necessary caution signs in the work environment,
- To perform daily OHS inspections of the region under their responsibilities,
- To detect the unsafe conditions or behaviours within his/her work areas,
- To assist with OHS Trainings,
- To ensure safe use of every kind of construction equipment and load lifting equipment in their areas of activity and to cooperate with Machine Supply unit for making their periodical checks,
- To ensure that employees who are under his/her responsibility are aware of this HS Plan and their responsibilities,
- To review personally any critical operation with high risk before performing each and to ensure its operation in line with the Contractor work permit system,
- To control the compliance with HS rules in their units of responsibility by making site checks in regular intervals with HS Supervisors,
- To collaborate with the geotechnical works chief, to follow collapses and deformations, to help the analysis of the measurements taken from the control points generated for the structures within the impact area,
- To stop the works urgently when it is shifted to geotechnical data investigation and alarm level and making suggestions for the required measures by attending to emergency meetings,
- To develop a system to remove excavation and waste materials and to follow the applications,
- To establish the necessary equipment for the control of dust, smoke, steam, gas during the drilling, digging and debris extraction processes and to carry out the work, to develop solutions to follow the legislative measures and follow them up,
- To ensure that all electrical wiring in the tunnel conforms to the standards,
- Ensure the establishment and operation of appropriate ventilation systems for the control of toxic and explosive gases in underground works,
- To perform environment air measurements (mainly with flammable / explosive, oxygen, carbon dioxide and carbon monoxide) during the work, to increase the ventilation when the limit values are reached, to stop the work urgently and to evacuate the personnel if necessary and to take necessary precautions by participating in emergency meetings,
- To provide the necessary work permits,
- To ensure the daily toolbox talks, pre-work speeches are given to workforce,
- To arrange coordination meetings on OHS upon the selection of Subcontractors.

3.15 Machine Supply Supervisor

- To ensure the establishment of occupational health and safety rules for works performed in their own workplaces,
- To participate in the Occupational Safety Committee meetings and to implement its decisions, to lead in areas of responsibility,
- To perform daily security checks of the area under their responsibilities,
- To ensure the determination of unsafe conditions or behaviours,

- To assist with Occupational Safety Trainings,
- To ensure that the operators, equipment and pressure vessels to be used in the work areas are competent and have the necessary certifications, as specified in the relevant laws, regulations and regulations, that the operators are well maintained, controlled and comply with the requirements,
- To ensure that the machine is operated in accordance with all kinds of procedures and instructions in order to ensure the safety of the work, especially the loading and unloading instructions, during transportation, placement and transportation of the machinery, to take all kinds of precautions for safe material transfer urban roads and highways, and to check / have others checked those measures taken with the help of work permit forms,
- To check the conformity of repair, maintenance and revision procedures of all kinds of machines and vehicles and to ensure that such works are recorded (revision work and operations shall be done with written permission and project in absolute terms),
- To carry out periodic maintenance works to ensure safe use of construction equipment, machines, train etc. to be used during all works,
- In order to ensure that the equipment, machines and trains (railway system service vehicles) are equipped with state-of-the-art technology, with a low-emission type engine and a particle-holding filter exhaust system or are battery operated and add/have added equipment to enable the operator to see both sides and possibly the rear of the vehicle / train,
- Ensure safety/warning signs on equipment, machines and trains are in place,
- To ensure that machine maintenance is kept in record (Maintenance plan will be established according to the instruction notes to be taken from the manufacturer and complete compliance will be provided). (All work machines to be used in the project will be registered by the Machinery Supply Chief Before the work machine starts to run, the latest maintenance documents etc. will be found in the machine register file and will be made to be registered in time according to the legislation and producer usage information. It will not be allowed to operate any expired machine. Besides any possible failure or repair will be recorded on the machine's registry file)
- To ensure that employees who are under his/her responsibility are aware of the existence of this plan and all the responsibilities of everyone are to be mentioned on this plan and the limits of responsibility are also determined,
- To work with other unit managers in coordination and to help in order to resolve issues related to their area of responsibility in a timely manner,
- To review the critical operations personally before performing every work with higher risk and to activate permit system when deemed necessary; to perform the control of compliance to OHS rules in their relevant units by performing site checks in regular intervals with HS Supervisors,
- To arrange coordination meetings on OHS issues upon the selection of Subcontractors.

3.16 Scaffolding Supervisor

Scaffolding Supervisor is responsible for the safe installation and dismantling of the scaffolds used in the Project site in accordance with their intended use, with daily and weekly controls and inspections, recording inspections to confirm safety, placing scaffolding into and out of services, if necessary, positioning of safe for use signs / scaffold tags to confirm scaffolding is safe for use and for filling in the relevant forms and recording them. They are responsible for immediately reporting the detected nonconformities to the H&S Lead/Manager and stopping the work if necessary.

3.17 Lifting Operations Supervisor

Lifting Operations Supervisors are responsible for the daily and weekly inspections of the lifting equipment assigned by the H&S Department and the safe execution of lifting operations. Lifting plans will be prepared

for complex lifting operations by the team stated in Contractor's Lifting Operations procedures. The daily checks performed will be recorded and delivered to the H&S Department.

3.18 All Project Personnel/Employees

All personnel employed on the Project are responsible and accountable for:

- Accepting individual responsibility for their own safe behaviour as well as sharing responsibility with their fellow workers and line supervision to "look out for their own as well as their co-workers" safety.
- Complying with and constructively participating in the OHS activities of the Project OHS Management System.
- Work in a safe manner at all times and contribute to the implementation of the "Incident and Injury Free" philosophy.
- Take reasonable care for the health and safety of themselves and other personnel who are at the workplace and who may be affected by any acts or omissions on their part.
- Comply with the safe working policies, procedures and practices adopted by Contractor as part of the safe working system.
- Co-operate with management in ensuring that their workplace is as safe and healthy as is reasonably practical.
- Report to their supervisor of any hazard or potential hazard in the workplace or any incident, personal injury, accident or near miss, OHS observations (unsafe acts and unsafe conditions) that may have occurred during the course of the work to the supervisory staff immediately.
- Correctly use, store, and maintain personal protective equipment issued for the protection against workplace hazards.
- Follow all verbal or written safe work procedures, practices, and directions.
- Observe all warning signs and notices.
- Attend toolbox meetings and pre-start meetings.
- Complying with OHS requirements which apply to an individual's work activities.
- Maintain the work area in an orderly condition.
- Wear PPE appropriate for the work activities.
- Comply with all work instructions and permits.

3.19 Subcontractors

All Subcontractors engaged on the Project shall conduct their work activities and meet their duty of care responsibilities in compliance with this OHS Plan, Contractor OHS Policies & procedures and the relevant legislation for the work activities performed. The Subcontractors have the responsibility to:

- Take all reasonable measures to prevent damage, injury or loss to property and personnel of the Project and all other persons who may be affected.
- Develop and implement Project specific OHS Plans and/or Procedures in line with Project OHS Plan & Procedures for their scope of work and must be approved and/or comply with Contractor's OHS Plans and Procedures.
- Subcontractors shall allocate sufficient, competent and fit for work resources to ensure the effective implementation of health and safety throughout the various phases of the work.
- Implement and enforce the requirements of the Project OHS Plan and Procedures, regulations and codes as they apply to the scope of work.

- Take all reasonable measures to ensure no damage to the environment.
- Observe and comply with all environmental rules and regulations.
- Meet their legal and their OHS obligations as required by the Contract.
- Cooperate with Contractor personnel to ensure OHS plans are effectively implemented and a safe working environment is maintained.
- Provide sufficient performance data and information that will demonstrate the Subcontractors compliance with prescribed performance targets and commitment to continuous improvement.
- Complete designated safety activities and submit weekly and monthly performance reports to Contractor's OHS Lead.
- Respond positively to employee safety suggestions and take appropriate action to correct any unsafe conditions.
- Assign OHS Specialists (provided increasing the number according to the different numbers) through having the approval of Contractor, to ensure them to work in coordination with Contractor OHS Unit.
- Notify urgently their authorized Contractor staff about the work accidents and hazardous situations those may cause work accidents while performing their works.
- Provide suitable and robust machines and tools for work.
- Ensure that the machines and tools to be used are approved by the relevant Contractor authority and that no machinery and tools are in operation (especially all work machines, cranes and accessories, electrical appliances and mechanical appliances, extension cables are approved by Contractor) without prior approval.
- Provide qualified, trained and appropriate employees for the work.
- Obtain work permits from Contractor site and unit supervisors for high-risk activities and to fulfil the requirements,
- Effectively implement Project OHS programmes such as Contractor's HSE Plans, OHS rules & regulations and Emergency Response Plans etc.,
- Provide required trainings to their employees as per the approved training matrix.
- Reinforce positive safety initiatives and behaviour by being part of the OHS observation (safe - unsafe acts & conditions) process,
- Implement disciplinary procedures when any of their employees fail to comply with their responsibilities.
- Develop / implement incentive program procedures when any of their employees fail to comply with their responsibilities

4. OHS MANAGEMENT

4.1 Determination of The Working Methods / Risk Managements

Risk Assessment Procedure and related risk assessment must be prepared by the Contractor.

Construction phases will be organized in accordance with safe construction methods and risk assessment documents. These process steps and the measures to be taken will be communicated to the relevant teams and team manager will regularly check the actions taken.

In order to establish safe working conditions, all kinds of occupational risk will be assessed according to "Risk Assessment Procedure". Risk assessment work will be carried out by a team of practitioners and relevant managers and HS Specialists.

Risk assessment work will be completed before the work starts and at this stage the security measures to be applied shall be decided.

In order to decide the level of risk and the required security measures, the working method must be determined. First, the working method will be written (the construction method will be prepared) and then the risk assessment will be started. The construction method will be changed until the risk level is reduced to acceptable level. The final construction method and the risk assessment form will be taken into account. Risk management will be performed according to Risk Assessment Procedure to be prepared by the Contractor. Determination of the Working Methods / Risk Management Procedures are performed as follows:

- All the steps of the work are planned by the relevant engineer,
- The method of construction is changed until the risk is reduced to an acceptable level by the risk assessment team,
- Authorized persons to undertake work and their numbers,
- Work scope and performance sequence,
- Whether authorization required to commence work,
- Safe access roads for material depots and workers and machines,
- PPEs required for the workers,
- Arrangement of the site and storage of waste,
- Determine the impact of work in the surrounding area and its relevance with the work,
- It is ensured to take special security measures for high-risk activities which are subject to work permits.
- It is investigated if a special work tool, equipment and machinery are needed for the work to be done.

The risk assessment for all work items and informing the employees with regards to those items by the responsible personnel shall be followed up as a main principle.

For Project planning, design, mobilization, construction, commissioning and delivery phases, to identify major hazards and risks arising from the Project region, type and construction methods, preliminary risk analysis will be held. To ensure a safe working environment during the Project and to keep employees away from the risks associated with the work done, the following activities and subjects will be controlled:

- Health check
- Alcohol, drugs and smoking
- Field adjustments

- Entries and exits
- Traffic and access roads
- Environmental safety
- Cleaning and arrangement
- PPE (Personal Protective Equipment)
- Electrical safety
- Lighting, illumination
- Work tools and machines
- Lifting operations
- Landslides
- Tunnelling / TBM works
- Excavation works
- Working at height, catwalks
- Work platforms
- Material storage and handling
- Chemical management
- Ventilation
- Noise and vibration
- Demolition works
- Energy insulation
- Change Management
- Working near Electrical Current

All activities are given according to Risk Assessment Procedure (Ref no: PRO-T22002-OHS-309) and will be reduced using relevant safe work practices.

4.2 Health Check

All workers will have health report indicating that they can be employed for “very dangerous works”. They will present their health reports before starting work entry training and will be included in training afterwards (depending on the situation). If nonconformity is detected as a result of the health examination, the person will not be allowed to work. In the same way, after an accident or a major illness, the staff will be re-examined through health check. Health examinations will be renewed as often as required by legislation.

Apart from this, Contractor will ensure that the Joint Health and Safety Unit will monitor the activities to be carried out in order to fulfil other requirements related to health surveillance and legislation.

4.3 Stopping the Works

Contractor and its subcontracted employees have the right authority and responsibility to stop the work at any point that the work is unsafe.

In addition, the work shall be stopped without delay in the following cases and will be continued after the necessary measures are taken:

- Cases where work is not done in compliance with the HS and the environment plan,
- Unfavorable cases, which are explained in the legal legislation and the employer's specifications,
- Unsafe situations, situations that may cause accidents and situations where undesirable effects may occur around the environment.

Production can be resumed with the consent of the HS Team and the production supervisor responsible for the sufficiency of the measures taken.

In addition to Contractor and subcontracted workers, the Supervising Engineer's OHS Specialist and the BM PIU also hold independent stop-work authority, exercisable without reprisal, in cases of imminent danger, serious injury risk, or material breach of OHS requirements. All stop-work events shall be logged and reported through the reporting chain defined in Section 3.

Resumption of works following a stop-work event requires written clearance from the Supervising Engineer. For stop-work events involving imminent danger to life, serious injury, or significant environmental incidents, resumption additionally requires written endorsement from the BM PIU.

4.4 Alcohol, Drugs and Smoking

During the Project, it is strictly forbidden to use alcohol and drugs in work areas or to enter work areas under the influence of alcohol and drugs. These situations will also constitute a reason for being dismissed from the work without the need for notice. Contractor will give necessary training and warnings to its employees and subcontractors.

Smoking areas shall be identified and marked with signs at the points identified in the work areas away from combustible / flammable / explosive solid / liquid / gas leaks. Smoking outside of these areas will be prohibited. Contractor will provide training and warnings to its employees and subcontractors.

4.5 Construction Site Security and Site Arrangements

All field entrances will be secured by security officers. Personnel will be banned from entering the construction site without ID cards issued by Contractor.

The site layout plans will also be completed in terms of Occupational Health and Safety once it has been approved by the Engineer / Employer. Site ID cards will be used at the site entrance and exit gates where the staff information is kept. 3rd person entries can be made in company with the supervisor / attendant after the Occupational Health and Safety orientation training is provided, along with visitor ID cards also the personal protective equipment is delivered to them. Orientation training will be conducted on a dedicated training course.

Entrants to the area are strictly forbidden without the supervision of the officers of the Contractor. It is forbidden to enter non-authorized personnel into tunnels and shafts. All entries will be recorded.

In-site layout plans shall be designed by considering the following criteria and to be submitted for Engineer/Employer. In the project the following aspects shall be defined.

- Walking and vehicle paths will be established independent of each other,
- Car wash unit and its capacity will be determined,
- In-site dumping areas and measures that shall be taken will be determined,
- Transformers and their places for installation shall be selected appropriately,
- Material storage areas,
- Storage areas of materials the with risk of explosion and combustion will be defined.

No mobilization to construction site shall be allowed without its project having approved.

To ensure that vehicles leaving the site will be washed and cleaned from the road dust and slurry, a wash area will be created that incorporates water spills into the subsidence system in the site. Otherwise, the vehicle will not be allowed to enter or leave the building site.

The road washing vehicle will be kept ready during the site construction phase and will be provided at regularly clean the roads around the site.

All the raw materials and debris that need to be collected in the site safety area will be stacked safely. The site will always be clean, tidy and orderly.

Contractor will provide a seating area for the use of workers during breaks. This area will be clean, in a place where food will not be polluted, and will provide reasonable thermal comfort in high and low temperatures.

At the same time Contractor will provide adequate access to the toilets and washbasins for workers.

The Contractor must provide separate, clearly labelled, lockable, well-lit, and secure sanitary and changing facilities for female workers at all construction compounds and camps.

4.6 Housekeeping

All work locations including camps, workshops, and offices are to be maintained with the highest regard for good housekeeping practices. Although general housekeeping considerations are intended to include aspects of maintaining a well-organized workplace, the safety aspect of these considerations is given the highest priority. Monitoring of housekeeping standards will be carried out during area inspections. All Subcontractors shall carry out regular housekeeping for their area of work activities. Contractor will maximize good housekeeping by:

- Regular monitoring of the worksites.
- Discussion at HSE Meetings. Site personnel will be reminded that they have the main responsibility for the maintenance of good housekeeping standards.
- The need for good housekeeping practices will also be discussed at Project meetings, HSE inductions and toolbox talks.
- Housekeeping inspections will be included in regular inspections / audits.

An effective Health and Safety program can be achieved through the establishment of good housekeeping standards. The following issues shall be respected, but not limited to:

- All materials are stacked properly
- Overall site cleanliness and tidiness will be ensured.
- Escape routes are maintained free of obstruction at all times, identified and illuminated.
- Tools, materials or debris do not impede access to emergency equipment.
- The avoidance of walkway obstructions and tripping hazards.
- All tools onsite are in good condition and suitable for the job.
- Tools, surplus materials or debris are removed from the worksite as soon as they are known to be surplus to requirements.
- Removal of flammable materials from work areas.
- Appropriate storage of all hydrocarbons and other chemicals.
- Waste to be disposed of in an approved matter as per legislations. Waste and unnecessary materials will not be accumulated in the work area. All wastes will be disposed in waste bins and cans (plastic, hazardous chemicals, glass, etc.) which are located on the site and indicate which types of garbage are to be disposed

- Every employee and team will clean their own garbage and take care of the arrangement. A properly working layout system can only be achieved in this way.
- Materials, rubble, etc. will not be laid on the working area roads, emergency roads and walkways for any reason.
- All cables and rubber hoses shall be laid in such a way that they do not interfere with the operation and passage, and especially the electrical cables shall be taken from the height which prevents them from interfering with the ground (the electrical cables shall be in the plastic shield).
- At the end of the shift, the team will leave the workplace clean and tidy.
- When the melds are dismantled, all nails will be removed or bent so that the materials will be stacked regularly.
- Pans shall be placed under oil leaking machines to drip oil.

Department engineers will be responsible for ensuring that the workplace is clean, orderly and safe.

Contractor will restore the working area after completion of work in temporary working areas. Housekeeping will be performed regularly on daily basis in all work areas including camps, accommodation areas, sanitary areas, kitchens, rest areas etc.

4.7 Personal Protective Equipment (PPE)

Contractor shall provide personal protective equipment and safety equipment in accordance with the requirements of the occupational health, safety and security legislation and the Personal Protective Equipment Directive for its employees, visitors and Subcontractors (depending on the contract status). All employees in the Project will be provided with basic mandatory PPE and PPE that will protect them against the risks associated with the work they carry out. The PPE to be used will be determined by the work-specific risk assessment. The minimum PPE that is required to u in working areas: work shoes with sole and toe resistant against material sticking, helmet with jaw belt and high visibility jackets or vests, overalls, etc. Employees who do not use any of them will not be allowed to work or enter the site. In addition to these, different types of PPE will be provided according to the requirements of the business and not limited to the following and will be distributed for use by staff.

This personal protective equipment shall comply with national standards. In addition, these personal protective equipment and work clothes will be distinctive. Every staff member will use clothes and personal protective equipment suitable for their occupation class. Employees who will be using the work clothes will have their identification cards; Navy for the employer, orange for engineer, phosphorous green for Contractor and Subcontractors of Contractor will be used. In addition, the name, blood group and company's logo will be placed on helmets, and their colours shall be distinctive. PPE selection will be decided according to Risk assessment procedure.

- Helmet (EN 397)
- Safety shoe (EN 20345 class: S3 WR SRC)
- Reflective vest (EN 471)
- Dust goggles (EN 166: 1F34)
- Face shield (EN 166: 1B)
- Parachute type safety belt - double ropes (EN 361)
- Gloves (EN 388 / grade abcd: 4132)
- Welder gloves (EN 12477)
- Anti-vibration gloves (EN ISO 10819)

- Electrician gloves (EN 60903)
- Earphone (EN 352-3 min SNR 30dBA)
- Respiratory equipment (EN 140)
- Welder glasses (EN 379)
- Welder apron / jacket (EN ISO 11611)
- Welder work shoes (EN 20349)

In addition, the following shall be distributed to the employees authorized enter the tunnel;

- Handheld torch / flashlight helmet
- Hoother alarm be supplied.
- use of Tag/Label system for all personnel entering and exiting tunnels and other confined spaces under construction
- use of multi-gas meter and explosimeter

4.8 Electrical Safety

4.8.1 Electric Lines

All temporary or permanent power lines and ground connections will be placed within a project. These projects will be taken into consideration in other works, especially the excavation activities which will be held in the center and the works which are going on in the works. The energy cables will be passed through the protective cover absolutely. This will apply to all temporary energy lines to be used throughout the project.

Grounding of all electrical equipment, panels and metal bodies (including outlets and escalators) shall be carried out in accordance with the applicable legislation.

Materials and installations to be used shall meet the following minimum requirements:

- Industrial type fittings to be used
- Ground circuit breakers must be present,
- Panel and tables will be earthed and all panels will be locked
- The cables will be suitable for the cargo
- All cabling and connections will be handled appropriately. Wired connection and extension work shall be done with a panel, plug-in system or other safe techniques as the case may be. However, it is prohibited to use the attached cable in power tools.
- In the case of re-use of electrical cables with a cross-section greater than 6 mm2 previously used, 1000 V MEGGER test should be applied.

Contractor will allocate sufficient number of electrical engineer / technician / technician and each work related to electricity (connection, relocation etc) will be performed by these officials. These authorized persons will have sufficient experience and certification.

The panel will be locked by the electrician, and the key will be kept in the electricity worker. There will be a leakage current relay on the panel and an insulated table will be placed in front of each panel.

All kinds of electric panels will be kept in closed places where authorized persons can enter. In order to protect the energy life safety, leakage current relay shall be put in consideration of the current and voltage values of the working areas of the panels and a suitable isolated mop shall be provided. In addition, grounding cages shall be installed in the stations at the ends of the platforms to prevent them from being exposed to contact and energy.

All temporary and permanent tools, equipment and internal plumbing works; shall be recorded in accordance with the procedure and with the frequencies declared in the legislation.

Energy cabling will be tied high above the tunnel segments. Energy cables will be buried in the protective cover everywhere and at least 70 cm deep, which is possible in the site area.

All work done with electrical work will be subject to "label-lock and work permit" procedures.

A project will be prepared for electrical extension cables in the construction site and electrical cables will not be allowed to spread unevenly to the site.

Adequate security measures will be taken by chocking and securing in front and behind where cables must be taken from the ground (where they are not buried).

Apart from this, "weekly electric field trips" will be made and recorded, for each zone separately. This control is under the responsibility of field electrical officer. Construction supervisor shall check whether the work is done

4.8.2 Temporary Electrical Installations and Equipment

- All electrical equipment/circuits shall be considered as live (energized), even if it is not in working condition, until it is de-energized and determined to be de-energized.
- The electrical equipment/circuits to be worked on/next to will be de-energized.
- A competent and expert "Electrical Supervisor" will be assigned to necessary project areas, to install, control and maintain the electrical installations.
- Materials related to electrical work will be selected by a competent Electrical Engineer and shall comply with international standards. The installation of unsafe, high-quality materials that may cause electric shock or fire risk will definitely not be allowed.
- All parts of electrical installations must be manufactured, assembled and protected in such a way as to prevent electric shock, fire and explosion.
- All subcontractors must ensure that the list of electrical equipment to be used in the work area is forwarded to the Electrical Department and HS Department for pre-mobilization electricity distribution planning.
- Electricity distribution in each area will be made with an insulator that can cut all currents from the conductor at once, it will be designed with this quality and it will be able to be locked in the "closed" position, not locked in the "open" position. Electrical installations / switch units are locked with only access to the switches by the electrical expert.
- Electricity will be configured in such a way that in case of any emergency, the electricity in all power supplies and conductors can be cut off.
- All electrical appliances and electrical outlets must be marked to indicate their purpose and voltage.
- Control, repair, and maintenance of electrical equipment will only be done by authorized and authorized persons. All work to be done in places where there are strong current arrangements will be done under the responsibility, supervision of a licensed electrical engineer.
- Even if competent, personnel will not be sent to malfunctions alone, at least 2 or more personnel will be provided to intervene in the malfunction. (The rule of not working alone in the project area, in general, will also be taken into account for electrical works).
- Personnel will not be assigned on or near loaded power lines, regardless of voltage, without adequate occupational safety precautions.

It is mandatory to use all work-specific PPE in all electrical works. The work clothes, maintenance tools and PPE required for the maintenance and repair personnel will be delivered with a report in advance. It will be ensured that they know how to use the maintenance and repair work tools that they will use.

4.8.3 Lighting/Illumination

Regulations will be made in such a way that adequate and uniform lighting is provided in the tunnels with the construction parts where natural lighting is insufficient. Lighting fixtures and connections will be uniform, and measures will be taken to protect the bulbs from external influences.

Lighting fixtures will be arranged so as not to have a negative effect on external traffic.

Tunnels and construction lighting will be connected to a different source (generator, etc.) to be used in an emergency situation and to switch on in the event of a power failure and provide at least 2 hours of energy.

4.9 Lifting Operations

Load lifting and lowering activities require special expertise. Sufficient number of trained and competent personnel will be employed for such work, and it is strictly prohibited for others to do the work. The activities to be carried out in the relevant area will be stopped until the expert control and supervision are provided.

The necessary information will be given to the Engineer / Employer regarding the characteristics of the lifting, conveying devices and pressure vessels to be delivered for use in operation and settlement and periodical tests and maintenance will be carried out within the framework of the standards specified in AIIB standards, local regulations and OSHA standards and legislation. The provisional acceptance of the related equipment will be followed up by Contractor with precision until the construction is completed and the periodic tests and maintenance done by the authorized persons will be submitted to the Engineer / Employer.

A lifting plan will be prepared before critical, complex lifting operations heavier than 10 tons. The plan that shall be prepared by officer of the vehicle, crane company or field supervisor and will be checked and approved by the relevant application unit chief. The plan will contain diagrams and drawings, and load lifting diagram of the machine.

In addition, the following items shall be in the plan:

- Location, date and time of operation,
- Drawing of the lift area (overlaps with other works and fixed installations etc.),
- Distances between existing structures,
- Lifting diagram (boom angle, highest working weight and counter weight - fixed weight with machine),
- Capacities of straps, chains and hooks,
- Strap, strap angle and position,
- Markup position (if the operation is done vertically, markers will be along the shaft, but the operator will be given a direct mark by a marker),
- Position of the other crane if any, and boom angle,
- Walkways, overhead lines, other vehicles and track lines in operation.

During the lifting works:

- The operation will be controlled by the lifting supervisor,
- If the operator, supervisor and signalman will communicate via radio and vertically lower the material into the shaft, one more pointer will be assigned at the top and bottom of the shaft,

- During hull motion, the environment will be warned by the horn. During shaft operation, the sound and visual warning signal will be activated along the shaft,
- There should be no one under the load,
- All loads can be moved with the help of guide rope,
- The load lifting supervisor, with the crane feet fully open, will be checked,
- It is strictly forbidden to carry out load lifting in the darkness of the night and in areas where adequate lighting is not provided,
- If any accessory is damaged, it must be removed immediately from use,
- Accessories to be kept on proper conditions,
- Walking roads, work to be carried out near railway lines in other vehicles and in operation shall be made by obtaining permission from competent authorities,
- Special attention will be given to electricity, telephone, etc., which are transmitted from the ground, and will be monitored during the operation.

4.9.1 Operational measures:

Straps and other apparatus and hose connections etc. will be checked by the operator and the supervisor responsible for lifting and lowering the load before commencing the lifting operation. Damaged lifting equipment will be removed immediately from the site.

Regular maintenance period for lifting equipment throughout the Project is maximum 3 months. This period can be reduced by the production supervisor according to the job status and risk level. (The revisions to be applied to the lifting equipment will only be in accordance with the manufacturer's instructions and the periodic inspection will be renewed irrespective of the period after the work of replacing the fixed cranes with such operations).

Operation of any load lifting equipment will not be allowed that has not been periodically maintained / incomplete / periodic maintenance. A copy of the lifting machines and the certification and maintenance documents of the equipment shall be maintained in the machine register files on the machine supply unit.

In addition, all lifting accessories will be certified. Using any handmade accessory without a certificate will not be allowed.

All lifting equipment and accessories will be coded with paint indicating that they have been checked. Colours will be changed every 3 months. Again, the use of equipment and accessories without colour code application will not be allowed. Before the colour code implementation by the Contractor Health and Safety unit officers' visual examination shall be made as mainly periodic maintenance document control and thereafter colour code shall be implemented. Lifting equipment will be checked by the operator before every use. These checks will be made through daily check list, signed after each check and will be sent to Contractor Health and Safety Unit at the end of the month. The safe lifting load (maximum load) will be written on each lifting device. The machines to be used for loading and unloading shall be checked by the Chamber of Mechanical Engineers not less than specified in the legislation and delivered to the Engineer / Employer if the control reports are requested.

4.10 Excavation

Contractor will ensure that all excavation and digging activities will be carried out within a secure operating system and those risks will be assessed comprehensively by a competent person to ensure that excavation work is supported safely and stably regardless of the depth of excavation work. If possible, avoid human entrances into the excavation area. In cases where entry is unavoidable, the excavators will apply methods to support workers in order to prevent them from being crippled, injured or harmed by their health. At no point will any workers enter an excavation area without support.

Before the excavation work, it is necessary to obtain the relevant work permit (excavation work under 1.2m also requires indoor work permit). All the words described in this footnote will be written in alphabetical order. Apart from that:

- Sufficient inclination or support for excavation walls,
- Entire excavation area shall be limited to a minimum height of 1m, two rows of horizontal handrails and a minimum of 15 cm of bumpers, which can withstand loads of at least 125 kg each way,
- Increase the visibility of the excavation area with additional measures in places with traffic,
- Barriers will be placed at the corner of the excavation area at a distance of at least 1 m and warning signs indicating the excavation area will be installed,
- For open excavations deeper than 1.2 meters, safe, secured ladder or stair access must be provided at intervals of not more than 15 meters of lateral travel.
- Excavation areas below 4 m shall be provided with landing stairs,
- During the excavation work, "O2, CO, CO2, NO2 and CH4" gases will be observed by the contractor with multiple gas measuring devices and any increase in concentration will be stopped immediately and the excavated area will be evacuated. The rest of the work will only be done after sufficient safety precautions have been taken and with the permission of the supervisor,
- Shaft excavations will have emergency escape apparatuses as well as the number of personnel as in tunnels, and mechanically operated ventilation systems will be installed,
- It is forbidden to remove the excavated soil from the operator and other personnel in shaft excavations. However, in shaft excavations, the controls of all lifting equipment used up to the point of excavation and tunnel junction will be frequent and the lifting accessories will be checked by the operator at least 3 times a day.

All types of drilling works, demolition, excavation and excavation process, such as foam tank, irrigation tank - water spraying plant etc. such as dust and mud in various forms to prevent vehicles and vehicle washing equipment will be generated to prevent environmental pollution

4.11 Underground Works

4.11.1 Pump Installations

Protection against flood shall be ensured for the work performed and working points. The pumping system that will be installed shall be equipped with a warning system that gives audible and visual warning in case of pump failure. The pump power supply will be connected to the emergency power supply which will not be affected by excavation and water flooding and will automatically switch on if there is a fault in the main supply source. Primary power and emergency power supply system will be physically protected so it shall be prevented against damages after a possible accident.

Emergency Preparedness and Response Plan (EPRP) should incorporate contingency and adaptive management responses measures for flash flood risks associated with extreme rainfall events defined in Chapter 13 of the ESIA:

- In the event of a flood warning, power supply to all fixed and temporary electrical installations within shafts and open excavation areas should be isolated from the main distribution boards.
- Open excavations, retaining systems, and slopes should be continuously monitored during and immediately after heavy rainfall, and work at the toe of excavation faces should be prohibited during such events due to slope instability risks.

- Emergency assembly points should be located on elevated ground outside the 100-year flood extent and protected from potential inundation.

4.11.2 Work With Pressurized Air

At all points where the compressed air should be used in the project, whatever the reason, all hose connections will be connected on both sides (with steel rope etc.), preventing the hose from being thrown away during the explosion. Devices supplying compressed air will be provided with periodic maintenance and shall be kept in a steel cage to prevent particle dispersion in case of possible explosion. Energy supply cables and hoses shall be protected against collisions.

4.11.3 Coating Works with Shotcrete

Entrances to the shotcrete work area shall be banned as long as the operation is continued, and all employees will wait at sufficient distances except for the personnel who perform the shotcrete work. If it is necessary to work at the same time, measures will be taken to prevent dispersion of the dust. The operating method and equipment will be selected which reduce the ergonomic and dust distribution as much as possible.

All hose connections will be connected on both sides (with steel rope etc.) to prevent injury and to be wound around in the event of any jamming or explosion.

Measures will be taken to filter the exhaust smoke from the vehicles used at the exit point.

Personnel who work in the shotcrete business will be equipped with adequate PPE equipment and will not be allowed to work without PPE

4.11.4 Tunnel Ventilation and Monitoring Air Quality

The hazardous gases to be monitored are as follows and appropriate gas detectors will be provided:

The gases of CH_4, O_2, H_2S, NO_2, SO_2, and CO_2 will be measured with the multi-gas meter and the measurements will be recorded. This work will be done with TBM integrated gas measuring equipment in tunnel opening works with TBM.

Temporary ventilation systems that can work in both directions within the tunnel and clean air in accordance with the standards shall be provided. The ambient air will be constantly monitored, and equipment will be provided for audible and visual warning about the level of flammable / explosive / toxic gas and oxygen level above the limits. The gas meters shall be checked periodically according to the manufacturer's recommendations to ensure that they are always in working condition, and the device shall be calibrated every 6 months. As the tunnelling process progresses, the gas control system will be expanded accordingly.

A test shall be carried out at the beginning of each shift to check whether the limits specified in the relevant regulations have been exceeded. The control frequency will be increased if any of the values approaches the limit values. If it is determined that the limit value is reached according to the measurement results, the emergency plan will be introduced immediately.

However, in addition to the standard PPEs, emergency escape devices will be provided to the tunnel team and these devices will be used in case of emergency.

4.11.5 Tunnel Construction Equipment

In the scope of the whole project including tunnel works, in the vehicle movements such as work machines, trucks etc., and flagman will be used with absolute certainty, and the drivers will act only with instructions given by flagman. Periodic maintenance checks will be carried out to ensure safe operation of the work machine, railway system service vehicles, etc. to be used throughout the tunnel work.

Wherever possible, electrical tools and machines will be used to prevent air pollution. Work machines and trains will be equipped with state-of-the-art technology, low-emission type engine and exhaust system with particulate trap filter or battery operated. Additional equipment will be added so that the operator can easily

see both sides and the rear of the vehicle / train if possible. Where the operator cannot see the danger zone, a closed-circuit camera system will be installed so that the operator can see other workers.

All vehicles operating underground will have the appropriate type of fire extinguisher.

Overloading of any machine shall be prevented. Information boards showing the capacities of all machines and trains will be attached to the work machines with Hanging safety/warning signs on machines and trains. In situations where this sign cannot be seen in the tunnel, the vehicle manoeuvring area will be restricted to safety and a warning sign "no entry to the vehicle movement area" shall be placed.

Machine maintenance will be recorded. The maintenance plan shall be established in accordance with the instruction notes to be taken from the manufacturer and shall be fully followed. Use of Petrol driven plant and equipment shall not be allowed inside tunnels or other confined spaces

4.12 Work at Height

Collective protection measures will be given priority in order to prevent employees from falling from height.

(Including at least 1 m height, two rows of horizontal balustrades and at least 15 cm of bumpers, capable of withstanding at least 125 kg of load that can come from each side), as well as safety nets where necessary will be provided for safety of work. All barriers and balustrades will be equipped with a sufficient number of warning signs.

Parachute type safety belts shall be used in situations where mass protection measures are not applied and points where there is a danger of slipping or falling, irrespective of height difference. All seat belts will be double safety ropes and at least one safety rope will be connected to a solid point.

However, during concrete preparation at the ground level, sharp and sharp pointed protrusions such as iron bars/ Rebar, which may be on the building wall and in melds, will be covered with plastic covers and will prevent the body from sinking during a possible fall despite all precautions.

Contractor will ensure that the work platforms and fall prevention measures are monitored periodically and that they are working sufficiently and properly.

The staircases will provide safe & secure landing - exit. Vertical lifeline system according to EN 353-1 standards, stepped platform, etc., with staircases on cable or ventilation shafts. necessary work safety will be ensured by using continuous protection methods. Areas to be maintained / repaired or tested / controlled in the cable and ventilation shafts shall be provided with protection / holding areas in accordance with the standards.

There will be permanent staircases and handrails of more than three steps each.

Static calculations of the permanent stairs used in the shaft will be made and the maximum number of cargoes and people to be loaded on the stairs will be hung on the stair entrances and prevented from exceeding this capacity.

Shaft covers in street level out of the station shall be designed to prevent foreign materials being thrown inside and walking/ standing people on it.

Work at Height Training needs will be determinate according to Training Procedure to be prepared by the Contractor.

Work at Height PPE selection will be decided according to Risk Assessment Procedure to be prepared by the Contractor and site specific risk assessments.

4.13 Working Platforms

Working platform installation and dismantling require special expertise. Sufficient number of trained and competent personnel will be employed for such work, and it is strictly prohibited for others to do this work. Activities to be carried out in the relevant area until the expert control and supervision are provided will be stopped.

Use of scaffolding is subject to labelling and no scaffolding that is checked by the scaffolding team and does not have an approved tag will be permitted.

If the working platforms are rented, it will be requested that the crew have the certification of the installation. During the working platform installation phase:

- Personnel shall use safety belt
- skirting board, the intermediate and upper balustrades and the crossings and the connections to the building should be done properly
- Incomplete piers will hang a red card marked "PROHIBITED TO USE".

The completed scaffolding will be ready for use with a card containing the following information:

- Safe load transporting,
- Name, surname and signature of the installer (team head),
- Date of installation,
- Fixed platforms shall be inspected at least once a month by the crew or site construction engineer / construction technician who installs them, and the inspection documents shall be signed.

4.14 Harnesses

All harnesses shall have double land yards (EN 361). Fall-prevention system (EN 360) will be used where necessary. Where there is no anchorage point, the lifelines will be set, and the harnesses will be tied to this lifeline.

In addition, harness will always be used on scaffolds and work platforms.

4.15 Mobile (Self-Elevated) Working Platforms and Guardrails

Mobile working platforms will be subject to periodical maintenance and reported at least once every two months, similar to cranes. The platforms will be wide enough to allow at least 2 people to work and signs will be placed showing safe working load. Anti-slip devices mounted on the upper edge of the escalators shall be designed and installed to avoid injury. No sharp corner, easy to install apparatus will be used. In railway entry areas, guiderails shall be made in accordance with the legal regulations. All guiderails shall be in compliance with the qualifications specified in the legislation.

4.16 Storage

The materials will be stored to prevent falling and slipping. The material placed in the shelves will have a skirting of at least 2 cm in front of them. Any kind of material stock which will possibly threaten electrical lines (ground, wall or high) will be forbidden. The materials may be stacked up to 3 m provided that necessary measures are taken. The storage capacity of the shelves shall be indicated on the shelves.

There will be a sufficient number of suitable fire extinguishers, fire blanket and first aid kit in the warehouse area. A special storage area for flammable, flammable and explosive substances and gases shall be prepared and the gases which are flammable and combustible and empty and full of the same kind shall be separated from each other.

Areas above where the flammable / combustible / explosive gases and materials are stored will be protected from sunlight, surrounding environment, and kept locked. Under no circumstances flammable and burning tubes will be stored in the same area. The minimum distance between the flammable and combustible gas cylinders shall be 6 m and the necessary planning shall be such that the distance between empty and filled cylinders is 1 m at least. Again such stocks will be 10 m away from the employees.

4.17 Chemicals And Hazardous Materials

Hazardous materials can be defined as “a material that because of its quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosively, flammability, explosiveness, radioactivity or physical, chemical or infectious characteristics, may pose a hazard to human health or the environment when improperly treated, stored, disposed of or otherwise managed".

Contractor shall ensure compliance with applicable regulations through ongoing monitoring of implementation of operational procedures. Periodic inspections of chemicals and hazardous materials management activities will ensure compliance with local legislation, applicable standards and employer requirements. Contractor will ensure that Subcontractors perform storage and handling of hazardous materials in accordance with currently accepted industry practices and complies with Contractor requirements and local Laws and Regulations. The minimum requirements to be followed are described below:

4.17.1 General Measures for Impact Avoidance and Mitigation:

General measures for handling of hazardous materials are given below:

- Contractor will maintain an inventory of hazardous materials including a summary of the physical and chemical properties of the materials held or generated, to ensure that these are understood and that appropriate measures are in place to mitigate the potential hazards posed by them both to humans and the environment; this will include provision of MSDSs for all stored materials and details on the segregation of potentially reactive materials.
- Appropriate Personal Protective Equipment (PPE) will be made available to personnel involved in chemical and hazardous material handling operations; all relevant personnel will be trained in the use and maintenance of PPE.
- All personnel will be trained in the use of fire extinguishers.
- Fuel storage and handling areas will be located away from offices and domestic facilities.
- Chemical and hazardous material storage areas will be protected from rainfall and direct sunlight.
- Materials will be clearly labelled, segregated, protected from general access and stored on pallets to prevent the contamination of runoff.
- Suitable fire-fighting equipment will be located close to hazardous material storage areas.
- Oil-filled electrical appliances will be maintained in good and fire-resistant condition.
- The overall volume of chemical and hazardous materials purchased and present on site will be minimized through careful stock control and materials inventory.

4.17.2 General Storage of Hazardous Chemicals:

Chemicals should always be stored separately away from other materials and access to chemical storage must be limited to authorized persons only. Storage must conform to compatibility restrictions. (Chemical Compatibility Chart is given below). Typically, solvents, acids, bases, reactive, oxidizers and toxins will be stored separately. The manufacturer's instructions and MSDSs must be followed for the storage of chemicals. Any chemicals with high reactivity should be stored separately (i.e. chemicals that react with each other).

All chemical materials will be kept in inventory. This inventory includes typical materials that are not limited to:

- Paints, thinners and flammable solvents,
- Pressurized gases,

- Petroleum product fuels,
- Epoxy and other types of compounds.

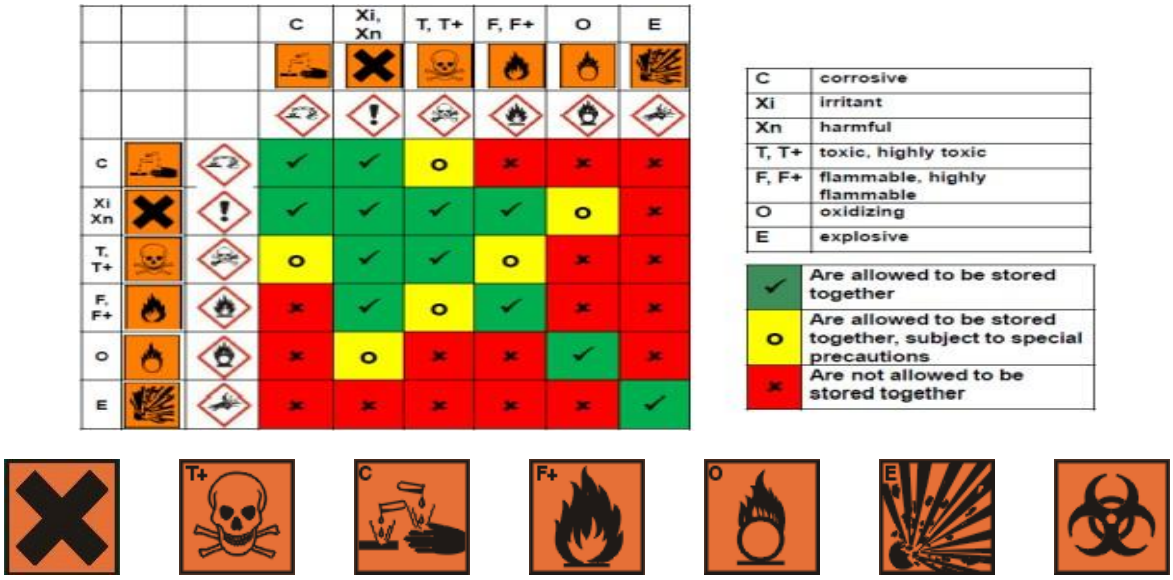

Figure 2: Chemical Materials

4.17.3 Labelling:

All containers, carboys, jerry cans, bottles containing chemicals must be clearly and distinctively labelled detailing product identity, associated hazard, statutory warning, manufacturer's name, date of opening and date of expiry etc. Labels could be mark, sign, device, stamp, seal, sticker ticket, tag or wrapper.

Label should contain: Product identifier, supplier identifier, Risk phrase, Precautionary measures and first-aid measures as per MSDS (Material Safety Data Sheets).

Flammable & Toxic Chemicals:

Such chemicals shall be stored inside a well-ventilated room, far away from any source of ignition or heat. Moreover, such chemicals should be stored at least 15 cm from floor level in order to provide adequate containment under them in case of spillage and in comparatively cold place without exposure to direct sunlight. An extraction duct closer to floor level must be provided in the store, where flammable vapors heavier than air might be released from such chemicals.

When storage of flammable and flammable materials is required underground, the stock area shall be marked away from the working area by being selected away from walking and vehicle traffic. A sufficient number and type of fire tube will be installed around the stock area. Nevertheless, over 24 hours of dangerous supplies of this type will not be allowed and all hazardous materials, including gas cylinders, will be kept on site only to meet the needs.

Material Safety Data Sheets (MSDS):

The Material Safety Data Sheet (MSDS) for each chemical/hazardous material shall be available at worksite. Subcontractors shall ensure all workers involved in handling of such hazardous material will use the required protective equipment and are trained in first-aid procedures against the accidental exposure as defined in the MSDS.

The locations of storage areas shall be marked on to a site plan showing details of substance type and quantity, supported with a copy of the MSDS for the Emergency Plan and use of the emergency services. Empty containers shall be removed as soon as possible, and arrangements shall be made for their safe

disposal. All storage areas must be conspicuously marked inside and out with signs: “Flammable - Keep Fire Away – No Smoking”.

Before bringing any chemical to the construction site that is harmful to health, the department manager or purchasing manager will be notified. Material Data Safety Sheet (MSDS) of all chemical substances must be supplied at the time of purchase and must be transferred to the employees at the pre-work meetings. A copy of these forms to be sent by the manufacturer with the material will be kept by the Health and Safety and Environmental Department.

Chemical materials (chemicals used for tunnel drilling, oils, epoxy, polyurethane products, injection materials, asphalt fumes, pulverized silica, rail lubricants, fuels, solvents, paints etc.) must be stored and used only in special packages and packages brought by the manufacturer company.

In the case of packaging, transportation, use, etc., the information written on the MSDS forms will be examined, transferred to the employees and recorded, and attention will be paid to what will happen. Required PPEs will be provided before starting work. This task will be under the responsibility of the manufacturing supervisor.

Compressed Gas Cylinders:

Compressed gas cylinders shall be kept securely stacked inside the purpose built rack in up -right position to prevent accidental fall. These cylinders must be kept away from heat or open flame. The protective cap should always be kept in place while transporting the cylinders. The cylinder should be transported using a suitable trolley and under no circumstances should a cylinder be dragged. Oxygen cylinders must be stored at least 6.0 m away from the cylinders of acetylene. Safety “No Smoking” signs shall be provided. Suitable fire extinguishers shall be provided at the storage areas.

Spill Prevention and Response:

Contractor shall ensure and manage all employees and Subcontractors to take all necessary precautions to prevent accidental spillage of chemicals, fuels etc. Drainage from potentially hydrocarbon or chemical contaminated areas should be prevented from entering the surface water and soil. Contingency plans shall be prepared for any uncontrolled release, spill, or leak. Contractor and Subcontractors shall provide sufficient and suitable emergency response personnel and equipment (spill kits, PPE etc.) to respond to chemical spill emergencies. Contingency plans should include remediation measures, as appropriate.

Subcontractors will maintain records of all spills of hazardous substances and hydrocarbons and will report spillages in accordance with the Company requirements. Subcontractors shall perform quarterly drills on spill response preparedness. Contractor shall ensure provision of environmental training for all Subcontractors personnel.

4.18 Ventilation and Dust Control

Adequate fresh air will be provided to the tunnels and shafts through a temporary ventilation system. The system will provide fresh air intake and polluted air out. The air flow and the amount of air required will be calculated and the fan design will be done accordingly. Fresh air will be taken through ducts made from non-combustible material along the tunnel.

With appropriate ventilation system, workers will avoid exposure of dust. Basic dust control will be done through ventilation and soaking. The ventilation system will be connected to a spare energy source, which can be energized for at least 2 hours in an emergency. The other requirement is as follows:

- The system will be selected so that it does not make wind and sound,
- Ventilation channel shall be made of inflammable and non-combustible material,
- Air will not be allowed to circulate in the tunnel.

4.19 Manual Handling

Manual lifting, handling, pushing and towing work will be minimized as much as possible through technical assistance. In this regard, training of the personnel will prevent occupational diseases and injuries caused by manual handling.

In particular, the maintenance work of the TBM cutter head etc. will be done with the help of mechanical load lifting equipment (hoists etc).

All personnel will undergo periodical health checks by workplace doctor to verify that they are suitable to perform work. Actions to reduce risks of manual handling shall be given in the Risk Assessment Procedure to be prepared by the Contractor.

4.20 Permit To Work

It is a system established to ensure that high-risk activities are carried out safely. The use of a permit is required when a certain work was identified as particularly hazardous, or when it requires higher than normal safety precautions. Managers and employees must note that there are specific work activities to which the Permit to Work (PTW) will always be applied. These are given below in Table 1:

Table 1: Types of Permits to Work

Type of works	Permit to Work form	Prolongation
Works carried out in confined spaces	Confined Space PTW Form	Single shift only (max. 12 hours); daily re-authorization required
Excavation works – for trenches deeper than 1 m.	Excavation PTW Form	Max 7 days
Deep shaft works	Excavation PTW Form	Single shift only (max. 12 hours); daily re-authorization required
All fragile roof works – even if PFPE (Personal Fall Protective Equipment) is worn	Work at Height PTW Form	NO
All hot works carried out by subcontractors and by Contractor employees. Except for works performed within the confines of a Contractor Workshop or a Fabrication Workshop which are classed as designated areas.	Hot Work PTW Form	NO
Any work performed at a height of more than 2 m above the ground. Except for: works performed behind a fixed handrail, whether on a fixed or temporary platform, e.g. a cherry picker/a scissor lift, etc.	Work at Height PTW Form	Max 7 days
Live electrical works.	Live Electrical Work PTW Form	Single shift only (max. 12 hours); daily re-authorization required
Non-routine and heavy lift operations.	Non-Routine Lifting PTW Form	Max 7 days

Type of works	Permit to Work form	Prolongation
Tower/portal crane installation & dismantling	General PTW Form	Max 7 days
Operating equipment near energized electrical overhead services.	Live Electrical Work PTW Form	Max 7 days
Grating and handrail removal.	Work at Height PTW Form	Max 7 days
Explosive devices and tools utilizing explosive charges.	Hot Work PTW Form	NO
Diving operations.	General PTW Form	Max 7 days
Pneumatic testing.	Live Electrical Work PTW Form	Max 7 days
Assembly and disassembly of scaffolding.	Work at Height PTW Form	Max 7 days
Demolishment.	General PTW Form	Max 7 days
NDT and Ionizing Radiation Activities.	General PTW Form	Max 7 days
Any work activity of sufficient significance and residual risk levels to be classified as needing the extra control of a Permit to Work.	General PTW Form	Max 7 days

4.21 Work Area Entry and Exits

Sufficient entry and emergency escape routes will be identified in the work area and will always be kept clean for emergency use. The entrance and exit routes will be non-slip surfaces and stairs and ramps will be made where necessary. Only the personnel who is authorized by Contractor Project Directorate can pass through these entries. By outdoor security: the names, numbers and locations of the entering staff will be recorded. Recorded information can be shared with fire departments and emergency services in the event of an accident.

The number of personnel that can be found at the same time in the tunnels will be determined and the number of people in the tunnel will be recorded at the entrance of the tunnels and personnel / visitors' entry above the maximum capacity will be prevented. In all underground excavation works, there will be an evacuation route to be used in case of emergency. In the tunnel a walking route extending to the back of TBM will be established and it will be kept in good condition. Walkway will be manufactured from a minimum of 1m height, two rows of horizontal guardrails and a minimum of 15 cm of bumpers, with the ability to withstand at least 125 kg load that can come from all directions, with or without a non-slip surface and non-flammable material.

Lines such as in-tunnel water and electricity supply lines will not be located on the walkway side and in each case the energy supply will be arranged to go under the water line from the top and attention will be paid to maintaining sufficient distance between them. In tunnels constructed with TBM, the same arrangements will be made to leave sufficient safety distance between energy and water lines. The entire

route will be marked with signs at intervals of 100 m and will be written in the direction of evacuation and the nearest communication point.

4.22 Noise and Vibration

Materials, equipment and methods that minimize noise and vibration as much as possible in the working areas will be selected. Noise levels resulting from the construction works as will be monitored from noise measurement points will be evaluated in accordance with national and international standards and background noise levels. In case of determining that the noise levels exceed national legal conditions, corrective and preventive actions will be undertaken by Contractor for the purpose of reducing the noise to a reasonable level. However, health examinations of personnel who are likely to be exposed to noise and vibration are to be conducted and controlled under these considerations. Noise and effects may arise from the following project activities:

- Construction traffic including heavy vehicles and loading equipment,
- Construction activities: field opening, construction of access roads,
- Superstructure works,
- Excavation and backfilling works,
- Use of excavators, dozers,
- Removal trucks and/or loaders used for carrying and loading the excavation materials as well as filling materials,
- Shotcrete laying work,
- Trucks bringing materials to and taking materials from the worksite,
- Busses and private cars transporting the employees to and from the worksite.
- Machinery used for bored pile work,
- Ventilation fan inside the tunnel,
- Generators working (when necessary)

Piling or blasting works that may be important sources for vibration will be performed in specific intervals when required in the project area. Therefore, potential vibration effects will be in connection with the piling, blasting works, truck movements, and the use of construction machinery in the project area. Any increase in vibration may disturb the residents and sensitive buildings close to the project borders. Vibrations during blasting works are measured and reported by measuring vibration values in each activity with a contractual university organization or licensed company. Vibration sources shall be monitored as not to be limited with the following:

- Sheet piling etc.
- Hydraulic systems
- Machines
- Generators
- Ventilation systems
- Cutting and grinding work
- TBM operations

Noise measurements are performed in specific intervals. Environmental measurements are performed annually by an accredited organization. Following reducing action will be taken in order to control the noise effects:

- Construction works will be performed during day hours insofar as possible.
- “Low noise” equipment will be used in the construction works as much as possible. When the construction equipment is supplied with sealed acoustic protection or housing, these will be kept close when the machines are in use.
- The machines will be off or with reduced power when not in use.
- Maintenance procedures will be applied for keeping the equipment in good working condition in order to minimize disturbing noises resulting from poor performance.
- Routine checks will be performed in order to identify any equipment at non-acceptable noise levels.
- Any facilities or equipment parts that are determined to cause excessive noise due to defected sound absorbers, defected or incorrectly mounted engine covers or other reasons will be decommissioned immediately (if possible / if safe to do so) and will be subjected to appropriate servicing, repair or will be replaced.
- Where and when required, following design controls should be equipped in order to minimize mobile equipment noise generation:
    - Exhaust sound absorbers maintained in accordance with the technical specifications of producer;
    - Sound absorbers suitable for motor exhausts and compressor components;
    - Acoustic housing for the equipment causing noise emission:
    - Fan sound absorbers;
    - Screening and isolation of equipment generating noise; and
    - Assembling vibration isolation parts for mechanical equipment;
- Residents close to the area will be notified in advance for any kind of planned exceptional activities that may cause noise in the vicinity of sensitive receptors above the standard values in force.
- The distance between noise generating activities in the construction area and residential receptors should be maximized.
- Containers, offices, stacking and other worksite buildings will be used for screening sensitive receptors from sources of noise. Where necessary, noise barriers (2-2.5 m high) will be used to ensure that the receptor noise levels are less than the limit values adjacent to noisy activities.
- Awareness among construction workers will be increased with regards to the reduction of noise.
- Contractor and Subcontractor’s personnel will be trained in terms of the appropriate use and maintenance of tools and equipment, the location of machines in the worksite in order to minimize noise emissions to neigh boring societies.

Ear protectors will be available at the point where noise cannot be prevented despite all the measures and noise levels reach 80 dB (A) and these protectors will be used at a noise level of 85 dB (A).

4.23 Demolition Works

Despite all the interventions done, if demolition of a building is necessary, demolition work will not be started without the following measures:

- Around the building area twice as much space as the building height will be emptied and secured,

- Construction method and risk appraisal according to building structure,
- The way in which the resulting debris will be sent to where it will be planned,
- Possible hazardous chemical (asbestos etc.) survey will be made and necessary measures will be taken,
- Consider effects that might be present on the environment (vibration, noise, dust, etc.) and take necessary precautions,
- All lines before demolition; electricity, natural gas, water telephone, etc. will be cut and recorded,
- The demolition plan will be prepared and how the demolition will be done, what type of machinery and materials will be used, the names of the personnel to be assigned, etc.,
- Required PPEs will be used.

4.24 Confined Space Works

Confined space means any enclosed or partially enclosed space or trench having restricted access or egress, a potential for a hazardous atmosphere and which due to its nature may form a trap and become a life-threatening environment.

Such spaces are usually not designed or intended for human occupancy. They include tunnels, large tanks, vessels, separators, silos, ducts, sewers, pits, holes, flues, manholes and voids. They also include any space in which dangerous contaminants can accumulate, and ventilation is restricted e.g., excavations, trenches (normally deeper than 1.2 meters or 4 feet), sumps, draw pits and culverts and any other poorly ventilated areas.

- Risk assessment required prior to entry into confined space.
- Authorized Gas Tester makes tests for oxygen levels and toxic gases prior to entry and during work duration.
- Buddy system will apply person to look-out for each other.
- Dedicated person will always be present when the space is occupied and will be located outside the confined space, who is able to immediately call for assistance and who will inspect and monitor the confined space for the presence of gases and other hazards. e.g., potential trenches collapse due to excessive ground water.
- The person entering the confined space shall be attached to a lifeline.
- If any of the listed hazards are present, entry is not permitted.

Works in confined spaces shall not be undertaken without Contractor Confined Space work permit. In the permit form, the personnel to enter the confined space, the gas measurement results, the measures to be taken, the communication method to be used, the personnel to wait outside the area, etc. shall be indicated. In addition, harness and tripods will be supplied for rescuing the personnel during emergency and used for sewerage etc. vertical confined area work.

4.25 Energy Isolation/Control of Hazardous Energy

Energy insulation shall be carried out in accordance with Contractor's electrical safety and labelling/locking procedures and the work under any energy shall not be carried out without the fulfilment of the mentioned procedures. When energy insulation is provided, it will be locked and labelled. The key will be in the insulation staff and will be prevented from accidentally supplying energy.

The electric work will also be carried out with the "Electric work permit form" and will be provided to the operating personnel to use the required PPE.

- In cases where there is a potential for accidental exposure to dangerous energy during any inspection, cleaning, maintenance, repair, etc. activities, LOTO (Lock Out/Tag Out) is applied together with the relevant work permit.
- Special risk analysis is mandatory in all working areas.
- During the commissioning phase of the project, the project-specific dangerous energy control and LOTO procedure will be prepared by the commissioning team.
- It is forbidden to work on the energized system.
- This standard does not apply when equipment is operating.
- The lock or tag on the energy isolation devices shall never be removed without approval.
- Tags removed from the locks will not be reused. It is forbidden to make changes to the tag,
- For machine or equipment isolation, it is necessary to obtain the approval of the authorized person who made the isolation and the designated control authority.
- Persons applying locks must be authorized by the project. (There must be technical personnel who have received training on the subject)
- All parties involved in the work will be informed (including those affected by the work, isolation authorities, and those who will work on machinery and equipment) before locking and removing locks.
- The locked and/or tagged energy isolation device will never be operated.
- All energy isolation devices must be locked. Isolation devices that cannot be locked by design must be modified for locking. Only the use of tags will be restricted. Only tags may be permitted in such very rare cases, if the modification would create greater hazard or if the lock cannot be physically attached to the isolating device.

4.26 Change Management

Changes to laws, regulations and regulations in the organization, personnel, systems, processes, procedures, equipment, products, materials or materials will be taken into consideration and will not be implemented until the "Change Management" procedure is fulfilled.

All changes will be transferred to the construction management, and the risk assessment form will be revised by taking into consideration all risks associated with the change. Depending on the risk assessment form, additional measures will be taken to ensure that work continues.

4.27 Colour Coding

Control and colour coding are done only by the authorized person, and the control results are recorded with forms.

All equipment/tools that are not color-coded or incorrectly color-coded will be removed from service immediately and allowed for use after re-checking.

Below are all the equipment/tools that need to be color-coded on a monthly basis:

- All lifting apparatuses (all kinds of slingshots, lifting locks, etc.)
- All parachute type seat belts and yoyos
- All lifting equipment (crane hooks, chain lugs, caracals', tripods, etc.)
- All power tools (spiral machine, drillers, crushers, etc.)
- All electrical appliances (cables, patch cords, extension cords, projectors, heaters, etc.)
- All electrical panels (main, distribution, supply, mobile, etc.)

The color-coding cycle, the colour code of the period will change in monthly periods, the controls will be made on a monthly basis at the latest, and after each control, tape/cable tie, etc., in the colour of the relevant period will be used. After each control, the serial number of the relevant equipment/tool will be written, and the control will be recorded by the authorized person. In cases where the serial number is missing/deleted, the relevant equipment/tool must be numbered so that it cannot be deleted.

Colour coding will be applied in a way that does not damage the equipment/tools and does not impair their properties. Spray paint will not be used for colour coding, except for steel/metal surfaces. Tape and/or cable ties, the recommended color-coding practice for power tools and equipment, will be used. Cable ties/tapes will be used without damaging the recommended color-coding practice for lifting equipment. (The use of tape is recommended for cloth straps). Colour coding will be applied on a monthly basis, and the control calendar for the last week of each month will be shared with subcontractors through the year. All checks will be planned in the first week of each month.

4.28 Thermal Stress

Working at extreme heat conditions can be detrimental to worker health and therefore the following will be implemented:

Construction Phase:

- Suitably cool drinking water is to be provided for employees,
- Workers are to be instructed to drink small amount of cool water frequently to avoid dehydration,
- Employees will be encouraged to take breaks and hydrate any time they feel necessary,
- A space in a shaded area or an air-conditioned building will be provided for taking breaks.
- Shaded areas during remote outdoor work (e.g., constructing temporary shelters using tarps) will be provided to workers,
- Contractor will ensure that appropriate clothing will be provided and worn by workers, including light-coloured, lightweight, and loose-fitting cotton clothing that allows ventilation of air to the body during extreme temperatures,
- The job will be paced to allow more frequent breaks for fluid intake and sufficient recovery time during period of elevated temperatures and,
- Work modifications will be considered to reduce the risk of heat stress. For example, on extremely hot days, concrete pouring and heavy installation works will be shifted from the hottest hours of the day (12:00–16:00) to night shifts.
- During heatwave alerts, working periods will be revised to 45 minutes of work / 15 minutes of rest. On-site areas with air conditioning, shade, and access to cold water will be established.

Operational Phase:

- Operational-phase workers include station operations and customer-service staff, electromechanical and signalling maintenance crews, and track/tunnel maintenance personnel. While the underground environment is thermally more stable than ambient conditions, internal heat gains from rolling stock, traction systems and equipment can elevate localised temperatures, particularly in tunnels and technical rooms. Maintenance activities frequently coincide with night-time and confined-space working, where ventilation may be reduced. Heat stress for these groups should be managed through work-rest scheduling during extreme heat periods, adequate ventilation of work areas, hydration provisions, and the heat-related contingency procedures incorporated into the operational management framework.

- Passengers — including vulnerable groups such as the elderly, persons with disabilities, and women with children — are exposed to station environments for short durations during normal operation. The primary heat-related risk arises during peak summer periods and potential service disruptions when dwell times are extended. The environmental control provisions assessed in Chapter 13 of the ESIA and CRVA are designed to maintain passenger thermal comfort within acceptable limits; these should be complemented by pre-cooling protocols, real-time temperature/humidity monitoring via SCADA, and emergency response procedures for prolonged high-temperature events

4.29 Workshop Safety

Machine tools will only be operated by authorized personnel and following suitable training and assessment. Approved personal protective equipment will be issued and will always be worn when using machines or portable power tools. Rotary or reciprocating machinery can be extremely dangerous. Loose clothing, e.g., ties or scarves, will never be worn and long hair will be tied back when working with such machines.

4.30 Office Safety and Safe Systems of Work

There are many hazards from equipment in the office environment which can be eliminated with forethought.

- Do not overload sockets.
- Damaged or suspect leads and plugs should be reported to the Engineer/Supervisor (Electrical)
- Before leaving work, all electrical appliances, including computer terminals, should be switched off unless otherwise instructed.
- Follow instructions provided when clearing photocopier jams taking care to avoid hot or sharp surfaces.
- Avoid contact with photocopier dusts.
- Unplug shredders before clearing jams.

The drawers of cabinets, desks, cupboards, etc. will be kept closed when not in use and lower drawers filled first and only one drawer opened at a time to maintain stability. “No Smoking” Policy will be obeyed, smoking is only allowed in designated areas.

4.31 Security – Site Entry and Exit Control

Work areas and personnel will be protected by security personnel by making appropriate security arrangements against risks originating from outdoor areas such as machinery, office, dormitory, theft etc.

The regulations can be listed as follows:

- Security
- Alarm system
- CCTV system
- Entry-Exit control system
- Exterior and interior lighting etc.

4.32 Thermal Stress

Working at extreme heat conditions can be detrimental to worker health and therefore the following will be implemented:

- Suitably cool drinking water is to be provided for employees,
- Workers are to be instructed to drink small amount of cool water frequently to avoid dehydration,
- Employees will be encouraged to take breaks and hydrate any time they feel necessary,
- A space in a shaded area or an air-conditioned building will be provided for taking breaks.
- Shaded areas during remote outdoor work (e.g., constructing temporary shelters using tarps) will be provided to workers,
- Contractor will ensure that appropriate clothing will be provided and worn by workers, including light-colored, lightweight, and loose-fitting cotton clothing that allows ventilation of air to the body during extreme temperatures,
- The job will be paced to allow more frequent breaks for fluid intake and sufficient recovery time during period of elevated temperatures and,
- Work changes will be considered to lower the risk of heat stress.

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- CCTV system
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5. MONITORING AND REPORTING

Three audit tiers apply to the Project:

(I) **Contractor internal audits —** conducted by the Contractor HS department and relevant unit managers in accordance with the subjects, frequencies, and responsible bodies set out in Table 5-1 below. Results reported monthly to the Project Manager by the Health and Safety Manager.

(II) **Second-party audits —** conducted by the Supervising Engineer (monthly site audits) and the BM PIU (quarterly compliance audits). Scope includes verification of Contractor compliance with this OHSP, implementation of mitigation measures, incident response, and closure of previous audit findings.

(III) **Independent third-party / Lender audits —** conducted annually, or as required by AIIB, by an independent auditor approved by the Lender. Scope includes overall OHSP performance, adherence to AIIB requirements, and verification of remedial actions from previous audits.

Audit findings flow through the reporting chain defined in Section 3. Corrective actions from all three tiers shall be tracked in a single consolidated Action Tracking Register maintained by the Contractor HS Lead and reviewed monthly by the Supervising Engineer and BM PIU.

Construction site audits shall be conducted in accordance with the subjects and periods given below by HS department and relevant unit manager or unit engineers in compliance with Contractor HS Plan, and audit results shall be reported to Project Manager at the end of each month by Health and Safety Manager.

Table 2: Construction Site Audits

Controls	Frequency	Responsible Body
HS Control	Daily	HS Supervisor, Construction and Site Supervisor
Change Management Control	Daily	HS Supervisor, Construction and Site Supervisor
Fire Extinguishing Tubes	Daily	HS Supervisor, Construction and Site Supervisor
Tunnel works and precautions	Daily	Tunnel Construction Supervisor and HS Supervisor,
Electrical hand tools, Extension Cords	Daily	HS Supervisor, Construction and Site Supervisor
Work platforms, ladder	Daily	HS Supervisor, Construction and Site Supervisor
Lifting Equipment, Pressure Vessels and other construction and Mac. and Equipment.	Daily	HS Supervisor, construction and Site Supervisor, Machine Supply Supervisor
First Aid Cabinets	Weekly	HS Supervisor, Workplace Doctor
Workshops	Weekly	HS Supervisor, Mac. Supply Unit

Controls	Frequency	Responsible Body
Camp, Dining Hall, WC, Dormitory Control	Monthly	HS Supervisor, Workplace Supervisor
Lifting Equipment	3 Months	HS Supervisor, tunnel construction and Site Supervisor, Machine Supply Supervisor
Pressure Vessel Control	Annual	HS Supervisor, tunnel construction and Construction Supervisor, Machine Supply Supervisor
Controls (Environment)		
Solid Wastes (Separation, Storage, Moving)	Daily	ENV Supervisor, Construction and Site Supervisor,
Environmental Control (Leakage, Spills, etc.)	Daily	ENV Supervisor, Construction and Site Supervisor,

Internal audits are scheduled audits performed by the Contractor. 2. Party/Stakeholder Audits performed by the Client, partner company and Lenders. Third party / external audits: Certification audits, audits performed by the legal authority, etc.

The scope of the audit for the audits to be carried out is determined by evaluating the items as set forth hereunder, including but not limited to:

- Critical operations carried out in the Project,
- The current and planned work items and needs of the Project,
- Accident / incident and trend analysis,
- Project risk assessment studies/Job hazard analysis,
- Actions to be taken to achieve goals,
- H&S Management System requirements,
- Company procedures, processes, instructions, etc.,
- Feedback from and requirements of the Lenders, Client
- Project requirements, and
- Legal HS Legislation.

5.1 Daily Observations

The project operations will be audited on daily basis by Project HS and Site teams. The HS team must ensure that the operation supervisors/team leaders deployed on site are performing their HS duties, that necessary assessments are made, and that corrective, preventive and remedial actions are taken for all recognized hazards and risks.

5.2 Audits on Conformity to The System Procedures

The Project HS Department and relevant Section Managers will conduct conformity audit to the system procedures (Accident/Incident Management system, Hazard and Risk Management Procedure, Permit

to Work System, etc.) through questionnaires drawn up to monitor compliance with the HS procedures defined within the scope of the Project. The period for inspections is scheduled as 6 months.

5.3 H&S Meetings

Meetings will be held wherein the hazards and risks related to the ongoing or future works of the Project, the actions to be taken to prevent occurrence thereof, and the persons in charge are determined. In this context, monthly HS Management meetings to be held with attendance of the Project Management, the weekly meetings with attendance of section managers and engineers, and weekly foreman meetings will be held.

The HS management system, wherein the job and hazards are communicated to the employees before proceeding with the work will be monitored, and effectiveness thereof will be measured at regular intervals.

On-Site HS walks is one of the methods to be used for demonstrating leadership and visibility of management on matters related to HS. Such walks to be carried out by the site management and the supervisors on weekly periods will aim that the project management (project manager, deputy project managers, site supervisors, section managers, etc.) and supervisors take the lead in identifying the hazards and risks on site and to take actions as required.

5.4 Follow-Up / Reporting and Evaluation of Actions

During verification and evaluation processes, studies are planned for the actions taken in line with the corrective/preventive and remedial actions regarding the nonconformities discovered during the routine progress in the project site and are completed within specified time. Non-conformances shall cover all safety violations on site including, additionally, plant and equipment operations, traffic, use of PPE, behaviours, and levels of non-conforming severity shall be identified, recorded, controlled and reported without delay

5.5 Key Performance Indicators

The performance of this Occupational Health and Safety Plan will be monitored through a set of Key Performance Indicators (KPIs). These KPIs are based on the daily observations, inspections, audits, incident and near-miss reporting, training records, medical surveillance and grievance records described in this Plan. KPI results will be reviewed regularly by the H&S Lead/Manager together with relevant discipline leads, reported through the project's H&S meetings, and used to support corrective actions, disciplinary procedures where applicable, and periodic review of this Plan.

Table 2 summarises the key performance indicators (KPIs) and associated monitoring actions used to assess the effectiveness of the mitigation measures defined in this Plan.

Table 3: Key Performance Indicators and Associated Monitoring Actionsü

No	Monitoring Area	KPI Description	Measurement / Record Source	Acceptance Criteria	Frequency	Responsible
1	Incident Management	Number of project-related fatalities	Incident and accident reports	Zero fatalities	Monthly	H&S Lead/Manager
2	Incident Management	Lost Time Injury Frequency Rate (LTIFR) per 1,000,000 hours	Incident reports and timesheet records	Continuous reduction trend	Monthly	H&S Lead/Manager
3	Incident Management	Number of near-miss reports submitted and investigated	Near-miss reporting log	All near-misses investigated	Monthly	OHS Engineer
4	Health Surveillance	% of workers with valid health checks before site entry	Medical records	100% compliance	Monthly	Medical Personnel
5	Occupational Health	Number of occupational illness cases reported	Medical surveillance records	Zero new cases	Monthly	Medical Personnel
6	PPE Compliance	PPE compliance rate observed during site inspections	Daily site observation records	≥ 95%	Weekly	OHS Technician
7	Risk Assessment	% of activities with approved risk assessment prior to start	Risk assessment documents	100%	Monthly	H&S Lead/Manager
8	Permit to Work	% of high-risk activities executed under valid PTW	Permit-to-work records	100%	Weekly	Line Supervisors
9	Training	% of workers completing induction before site access	Training attendance records	100%	Monthly	H&S Training Specialist
10	Training	Toolbox meeting attendance rate	Toolbox meeting records	≥ 95%	Weekly	Line Supervisors
11	Training	% of workers completing role-specific special trainings	Training records	100% before task	Monthly	H&S Training Specialist
12	Audit & Inspection	Planned vs. completed internal H&S audits/inspections	Audit and inspection register	100% of plan	Monthly	H&S Lead/Manager

No	Monitoring Area	KPI Description	Measurement / Record Source	Acceptance Criteria	Frequency	Responsible
13	Audit & Inspection	Closure rate of findings within target time	Findings action tracker	≥ 90% within 30 days*	Monthly	OHS Engineer
14	Equip. Compliance	% of lifting, scaffolding & electrical gear with valid certs	Equipment register and tags	100%	Monthly	Relevant Supervisor
15	Emergency Prep.	Emergency drills conducted vs. planned	Drill records	≥ 1 drill per quarter	Quarterly	H&S Lead/Manager
16	Worker Grievances	Average response time to OHS-related grievances	Grievance Mechanism records	≤ 7 days	Monthly	Social Lead

* HSE internal compliance score must be calculated using a standardized, weighted OHS checklist approved by the Supervising Engineer, with any score below 85% triggering an automatic Stop Work.

5.6 Disciplinary Board

A disciplinary board will be established in order to ensure peace of work and work in discipline. The establishment and operation of the board will be as follows and will function in accordance with Disciplinary Board Procedure to be prepared by the Contractor:

- The disciplinary board shall be compromised with at least 4 members, and the number of board members will be increased if the Project Manager deems it necessary.
- The supervisor of the disciplinary committee is the site supervisor. The assignment of the other members is the responsibility of the Project Manager. The Project Manager will choose among the personnel who are considered as objective during the appointment process of the disciplinary committee members.
- Board decisions are taken by the member majority. In case of equality, the Project Manager determines the situation.
- A staff member may ask about the matter to be discussed on the board by personnel other than board members. In any case, the board meets within two days at the latest and finalizes the situation which is the subject of the meeting.
- Board agenda and resolutions are recorded by signatures of board members.
- Declaration of Conformity shall be communicated to the employee in writing. If there is no official letter, no decision and communication can be made.
- At least 2 warnings are required for referral to the discipline board. However, the chairperson may not seek to write a warning in some cases, such as using alcohol in the workplace / entering the construction site under the influence of alcohol, exhibiting behaviours that will disturb the public peace, deliberately throwing himself or other employees in danger.

If work in progress or an existing situation jeopardizes the safety of employees, the work will be stopped immediately, and the Project Manager will be notified. The Project Manager takes the necessary precautions according to the situation and initiates the activities of the Disciplinary Board.

5.7 Communication (Work Safety Information Exchange)

The main benefit that is expected towards development of security culture from the communication; to prevent work accidents, to prevent it from happening again, to reduce frequency and severeness of the work in order to create a healthy and safe work environment and to protect the employees from the adverse effects of the accidents.

Information shall be delivered to employees through on-the-job trainings, regular Occupational Health and Safety trainings, daily pre-work discussions, procedures, instructions, warnings and warning signs and information signs.

5.7.1 Work Commencement Meeting

When any part of the work is delivered to the subcontractor, a "Kick-off Meeting" is organized. In this meeting, senior engineer, HS Supervisor, and subcontractor shall take part in the work together with the relevant unit supervisor. The organization and coordination of the meeting will be under the responsibility of the unit supervisor who will do the work.

At these meetings, the project will be discussed on Work Safety expectations and responsibilities, and pre-work preparations will be completed.

The Occupational Safety section of the agenda for this meeting covers the following topics:

- Consideration of Occupational Safety issues

- Personal Protective Equipment,
- Desired tool and machine standards,
- Ensuring cooperation with other subcontractors,
- Assignment of the subcontractor responsible for Occupational Safety,
- Training of personnel for jobs which will be done in the field,
- Evaluation of the study method and the risks associated with it,
- Potential hazards in work covered by the work.

5.7.2 Project Work Safety Committee Meetings

During the monthly organized meetings, the decisions are taken with regards to construction sites and production facilities and assignments are done to correct inconveniences. HS Supervisors, employee representatives, workplace doctor(s), worker representatives relevant Contractor Unit Supervisors and other committee members and if it is required the representatives of Subcontractor participates in the monthly meetings which are organized by the Project Manager.

The following topics are included in the agenda of these meetings:

- Minutes of Meeting (held by HS Department),
- The issues that arise and need to be discussed,
- Performance of the Project up to that date (accidents / events),
- Planned activities,
- Audit results,
- Defective issues,
- Other issues to be discussed.

5.7.3 Team Interviews

Team supervisors shall inform employees about the work hazards defined by/according to risk assessment study and job safety analysis.

5.7.4 Work Safety Information Boards and Brochures

The necessary warning, caution and information signs and brochures will be prepared at the workplaces by HS Unit.

5.7.5 Safe Work Manuals For Employees

In the Project, "Safe Work Handbooks for Employees" will be created by the Contractor as a guide for employees to increase their knowledge levels in the OHS issues and when they encounter a problem, and these handbooks shall be delivered to each employee after safety induction training and/or change in work conditions (e.g., incidents, change of work methods, cases, work environments etc.) against signature.

5.8 Work Safety Trainings

Contractor employees will be trained to improve their problem-solving and hazard identification competencies and safety standards, regardless of their organizational location. Every employee will firstly be provided with the information about the HS and the Environmental Policy and HS System and their requirements.

Contractor will establish an adequate training infrastructure to provide a safe working culture.

A training program will be set up that will provide training during the year and will be tailored to the training program if new activities, work methods and work shifts, genuine technology and accidents and incidents that have been near missed.

5.9 Visitor Information Training

Visitors entering only office buildings shall be given no training. However, for the field visit they will be given "HS all information training" and they will be able to enter the field only in company with the personnel who has the initial recruitment training. Responsibility on this issue shall belong to the person visited.

5.10 Initial Recruitment Training

The Contractor shall ensure that all employees are duly registered with the relevant social protection authorities in the Republic of Azerbaijan in compliance with national labour and social security legislation. All workers will be transferred to "job training" before doing their work. Workers will be trained in all necessary matters especially the training titles stipulated by the legislation and these training shall be recorded.

Main topics of the recruitment training shall be as follows:

- HS General Principles,
- Information on working legislation,
- Legal rights and responsibilities of the employees, housekeeping and arrangement of the workplace,
- Legal consequences arising from work accidents and occupational illnesses,
- Disease prevention principles and application of prevention techniques,
- Biological and psychosocial risk factors,
- HS committees,
- First aid,
- Emergency-evacuation and rescue,
- PPE
- Safety and health signs,
- The reasons for work accidents and the prevention principles,
- How to Prevent - Slips, Trips and Falls – Covering all work scopes.
- Working at height,
- Crane and lifting equipment,
- TBM works,
- Soil and excavation works,

- Safety in machines and workbenches,
- Welding, cutting and grinding works,
- Confined Space, Indoors, Work permit system,
- Noise-vibration-radiation,
- Falling from height and falling objects,
- Safety in compressed gas cylinders,
- Maintenance and repair works,
- Electrical hazards and risks,
- Working on screened equipment and vehicles,
- Safety in the use of work equipment,
- Fire-explosion-fire and fire protection,
- Manual lifting and handling,
- Chemical-physical-ergonomic risk factors

Site entry cards will be handed over following the work recruitment training with "name and surname, identity number, blood group, photo, company name, employee registration number" information.

Entries to work site shall only be permitted by showing these identity cards.

5.11 Toolbox Meetings

A short informative training will be given by the team field supervisors every day before work to explain the work method, the risks to be encountered and precautions to be taken. These trainings will absolutely be recorded and will be delivered to Contractor HS Team during the day. These toolbox meetings will be followed up on site with toolbox talks with the subcontractors, covering work methods, hazards and risk identification and reduction measures to ALARP levels.

5.12 Weekly Trainings

The training topics identified in the annual training plan will be transferred to Project employees by HS Team on certain days of the week.

5.13 Special Trainings

- **First Aid and Fire Fighting Training**

First aid and firefighting training will be provided by a professional training institution for a sufficient number of personnel to be prepared for emergencies and to ensure that the personnel in the emergency teams are able to perform their duties in the best possible way. Fire training will be the minimum number of firef ighting team leaders, and this number will be increased if necessary.

- **Risk Assessment, Work Safety and Management System Training**

Such training will be carried out either from professional training institutions or by Contractor HS and the Environment department, to increase the awareness of the site managers and to increase the safety culture.

Contractor will prepare a general risk analysis file of the Construction Methods / Work Methods related to all the systems and deliver it to the Client within 1 month following the delivery of the site in case the work is to remain in service.

Contractor will evaluate the risk of all activities that shall be done and that shall be affected by its construction, by the Engineer / Employer and will create a risk assessment report on this issue and

submit this report to the Client for approval at least two (2) weeks before the start of the related work. The work will not commence until the construction methods / risk assessment report is established and approved by the Client.

Hazard and Risk Analysis will be carried out including the whole system, operation and maintenance, and the precautions to be taken will be clearly indicated and added to the document. Critical points will be determined in terms of safety, especially in terms of both operation and maintenance. Hazard and Risk Analysis that shall be prepared for the project in a particularly systematic and inclusive manner, shall cover not only a general document but also specific conditions on this line.

Contractor shall organize a short training course in reference to the risks that staff may encounter by utilizing Risk Assessment Forms and other relevant training forms before starting work every business day and shall record them.