Group Environmental, Social, Health and Safety Policy

May 2021

Table of Contents

Tables

Abbreviations

Abbreviation	Description
ERP	Emergency and Response Plan
ESHS	Environment, Social, Health and Safety
ESMS	Environmental and Social Management System
HIRA	Hazard Identification and Risk Assessment
HSE	Health, Safety and Environment
IFC	International Finance Corporation
IMP	Incident Management Procedure
KPIs	Key Performance Indicators
LIT	Liquid Intelligent Technologies

Relevant Document

Document	Description
EAR Internal GMP	East Africa Region Internal Grievance Management Procedure
ESMS Handbook	Environmental and Social Management System Handbook
ESSP	Environmental and Social Screening Procedure
External GMP	External Grievance Management Procedure
Group Archaeological CFP	Group Archaeological Chance Find Procedure
Group Driver Policy	Group Driver Policy
Group ERP Guideline	Group Emergency and Response Guideline
Group E&S Supplier CoC	Group Environmental and Social Supplier Code of Conduct
Group E&S Policy Statement	Group Environmental and Social Policy Statement
Group EMP	Group Environmental Management Programme
Group HSE Contractor Specification	Group Health, Safety and Environmental Contractor Specifications
Group LAC Guideline	Group Land Acquisition and Compensation Guideline
Group IMP	Group Incident Management Procedure
Group SEF	Group Stakeholder Engagement Framework
Group WMP	Group Waste Management Plan
ToR HSE Structure	Terms of Reference for HSE Structures
SAR Internal GMP	Southern Africa Region Internal Grievance Management Procedure

Version history

Version	Date of Issue	Effective Date	Purpose of the Change
1	4 Oct 2019	4 Oct 2019	New Policy
2	30 June 2020	30 June 2020	KPIs as per ESMS Manual (CDC Approved)
3	13 May 2021	13 May 2021	Rebranding Periodic review and update Alignment with ESMS implementation progress

Document Authorisation

Approved By (Sign)	Signed
Name	Johan Hayes
Capacity	Senior Specialist: Environmental and Social
Date Approved	

Approved By (Sign)	Signed
Name	Ahmad Mokhles
Capacity	Group COO
Date Approved	

1. Introduction

As part of the LIT's Integrated Risk Management process, in compliance with the Group Risk and Control Management Policy, it is necessary to create an Environmental, Social, Health and Safety (ESHS) policy to illustrate Liquid Intelligent Technologies' (LIT) commitment towards the Environmental and Social wellbeing as well as the Health and Safety of its employees, contractors and the communities within which we operate.

LIT undertakes to safeguard the environment, its employees, contractors and the communities within which we operate, through providing and maintaining, as far as reasonably practicable, a working environment that is safe and without negative risk to the environment and health of its employees, contractors and the communities within which we operate.

In ensuring a safe and healthy working environment all LIT employees and contractors are obliged to work closely together to prevent or minimise any environmental or social risk that may jeopardise the health and safety of its employees, contractors and the communities. The aim of this policy is to ensure compliance with all local statutory requirements, international standards and be applicable through all LIT operating companies.

1.1 LIT's ESHS Vision

Our shared vision is to provide a working environment free from harm, by promoting a positive culture and continuously improving the ESHS of our workforce and the communities within which we operate. Our commitment to our employees, communities and stakeholders is demonstrated by our leadership team's management of ESHS and our continual drive towards zero ESHS related incidents.

2. Scope of this Policy

The scope of this ESHS policy is to ensure that each LIT employee, contractor and supplier takes cognisance of LIT's focus, intention, values and objectives. LIT wishes to:

- Develop and implement an Environmental and Social Management System (ESMS) compliant with the International Finance Institution (IFC) Performance Standards on Environmental and Social Management.
- Maintain an ESMS to identify, manage, prevent or minimize risk to the environment, personnel and other interested parties who could be exposed to Health, Safety and Environmental (HSE) hazards associated with its activities.
- Ensure compliance with all ESHS legal obligations and requirements.
- Ensure compliance with all investor and client ESHS obligations and requirements.

- Accurate internal and external reporting of relevant ESHS related Key Performance Indicators (KPIs), as stipulated in this Policy.
- Continually improve our ESMS system and performance.
- Ensure compliance with this ESHS policy.

3. Environmental, Social, Health and Safety Principles

All employees, contractors and suppliers of LIT shall strive to continuously improve LIT's ESHS performance by:

- Development of, and continually monitor and review ESHS risk registers, to identify potential ESHS risks.
- Development of, and continually update and review ESHS legal registers, to ensure compliance to applicable ESHS legislation, other agreed requirements and standards relating to LIT's activities.
- Based on identified ESHS risks and legal requirements, develop, implement and maintain appropriate ESHS policies, procedures and practices to ensure effective management of ESHS.
- Engage and educate employees, contractors and suppliers on applicable LIT ESHS policies, procedures and practices.
- Ensure all ESHS related near misses and incidents that occur during LIT business operations are reported via the Group Incident Management Procedure (IMP).
- Comprehensively and accurately investigate all ESHS incidents reported via the Group IMP and identify accurate and applicable control measures to prevent recurring similar ESHS incidents.
- Actively ensure the timeous implementation of control measures identified to prevent ESHS incidents.
- Communicating the desire to continuously improve ESHS performance and fostering the expectation that every employee, contractor and supplier will follow this policy.
- Monitoring ESHS compliance of employees, contractors and suppliers through periodic, or statutory required, management reviews and audits.
- Continually enhance customer services and products through sustainable ESHS process optimisation efforts.

3.1 Hazard Identification, Risk Assessment and Risk Management

Regional HSE Managers are to ensure that an ESHS related Hazard Identification and Risk Assessment (HIRA) is conducted for all relevant projects and task-based activities. Records of all HIRAs are to be kept and used to inform and update ESHS risk and legal registers.

A copy of all HIRAs shall be forwarded to the relevant HSE department. All employees, contractors and suppliers shall be notified of identified ESHS hazards and risks that may adversely affect the environment or their health and safety.

All significant ESHS risks, incidents or non-compliances identified are to be reported to the Group Senior Specialist: Environmental and Social immediately.

3.2 Legal non-compliances and Serious ESHS Incidents

All ESHS legal non-compliances and significant (serious) ESHS incidents are to be reported to the Group Senior Specialist: Environmental and Social immediately.

Regional HSE Managers will be responsible to conduct a detailed root cause analysis and incident investigation for all ESHS legal non-compliances and significant (serious) ESHS incidents within 10 days from the date the ESHS non-compliance or significant incident occurred.

3.3 Training and Competency

LIT's HSE Departments shall develop, maintain and implement a robust ESHS training regime to ensure that all personnel, contractors and suppliers are competent to deliver their assigned tasks in a safe and environmentally responsible manner including:

- Appropriate ESHS training for all tasks (in an appropriate language and delivered via appropriate means for the target audience).
- Mechanisms to determine and manage competency requirements, training needs, training and evaluating training for all ESHS system aspects.
- Mechanisms to ensure that High Risk Activities are only completed by trained, competent and qualified personnel.
- Maintenance of appropriate ESHS training records available for inspection by LIT at any time.

3.4 Provision of Protective Clothing or Equipment

LIT and its contractors shall provide personal protective clothing/equipment for their employees, as identified by HIRAs or where necessary, to:

- Comply with ESHS legislation or a collective agreement.

- Safeguard the employee's health.
- Prevent injuries to employees or community members.
- Prevent the transmission of an infection.
- Prevent damage or pollution to the environment.

LIT and its contractors shall ensure that all employees issued with PPE are appropriately informed and trained on the proper use, fit, limitations and care of such PPE.

3.5 Emergency Response Plans

The Regional HSE Manager, shall develop and maintain a comprehensive emergency/evacuation framework in line with the LIT Group Emergency and Response Plan (ERP) Guideline. Such framework shall conform to the action to be taken in case of fire, bomb threats, robbery, environmental emergencies, natural disasters etc.

- Emergency drills shall be conducted in accordance to the evacuation plan to ensure that each employee knows how to appropriately react in the event of an emergency.
- Emergency telephone numbers of HSE representatives, police, fire department, ambulance service, etc. shall be made available to all employees.

ERPs will be updated at least annually, after an emergency event or should a potential emergency risk be identified.

4. ESHS Authority and Responsibilities

Corporate governance in terms of ESHS management is the key driver to ensure ESHS legal compliance, compliance of the ESMS with the IFC Performance Standards and to ensure continual improvement in ESHS management.

4.1 Responsibilities of the Board

The Board has the following responsibilities:

- Setting corporate objectives and targets and taking strategic decisions on ESHS management.
- Being proactive in developing a positive ESHS culture for the workplace by:
  - Ensuring ESHS is an integral part of the management process.
  - Setting clear ESHS values and standards.
  - Thinking strategically about corporate ESHS responsibilities.
- Reviewing and, where appropriate, endorsing the ESHS policy when prepared by the senior management team.

- Receiving regular reports on progress, performance and implementation of the ESHS policy.
- Ensuring enough resources are made available to achieve and implement ESHS plans.
- Developing a communications plan to show the board's commitment to its ESHS policy.
- Making sure the necessary organizational structures exist to ensure that ESHS is properly managed.
- Maintaining awareness of all matters in relation to ESHS, especially major ESHS risks incidents, ESHS management performance and changes in ESHS legislation.

4.2 Group Chief Executive Officer

The Group CEO is accountable for the overall arrangements and for ensuring that the company's operations are executed at all times in such a manner as to ensure, so far as is reasonably practicable, the health, safety and welfare of all employees and others who may be affected by its operations.

The Group CEO will plan as necessary to make human, financial and other resources available to secure a high standard of ESHS management, taking competent advice on matters of ESHS where relevant. The Group CEO's responsibilities extend to:

- Ensuring the safety, health and welfare at work of all persons working in his workplace.
- Ensuring that top management, the senior managers and the workforce are actively involved in the management of ESHS;
- Ensuring ESHS reviews are undertaken to monitor all aspects of ESHS management ESMS implementation.
- Ensuring that all managers, staff and contractors are familiar with the ESHS policy, specifications, requirements and comply with all aspects.
- Ensuring that responsibility for ESHS is properly assigned and accepted at all subordinate levels.
- Ensuring sufficient resources are made available to achieve and implement ESHS plans;
- Ensuring that adequate training for ESHS is carried out at all levels.
- Ensuring that the ESHS policy is reviewed regularly and, when necessary, revised;
- Ensuring that all board members have a clear understanding of the key ESHS issues for the business and are continually appraised of the risks likely to arise.
- Monitoring the progress of senior managers and others towards achieving their individual ESHS objectives;

- Ensuring organizational compliance with ESHS legislation;
- Reviewing ESHS reports submitted by outside agencies and determining that any agreed actions have been taken;
- Setting a personal example on all matters of ESHS.

4.3 LIT's Executive Management Requirements

To ensure adequate ESHS management is part of all business activities, LIT's Executive Management need to fulfil the following obligations:

- Ensure that the ESHS policy is understood, implemented and maintained at all levels within the Company.
- To provide and maintain, as far as practicable, an environment, systems and equipment that are safe, maintained and without risk to the health or safety of the environment, employees, contractors or communities.
- To take steps to eliminate or mitigate, as far as practicable, any ESHS hazard or potential hazard before resorting to personal protective equipment.
- To establish, as far as practicable, what ESHS hazards are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in the business, and shall as far as is reasonably practicable, further establish what ESHS precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons, and shall provide the necessary means to apply such precautionary measures.
- To provide such information instructions, training and supervision as may be necessary to ensure, a far as practicable, a health and safely working environment for all employees.
- Not to permit, as far as practicable, any employee to do any work or to produce, process, use, handle, store or transport any article or substance or to operate any plant or machinery, unless the precautionary measures, have been taken.
- To take all necessary measures to ensure that the requirements in terms of each countries' ESHS legislation are complied with by every person in LIT's employment or on premises under LIT's control.
- To enforce such measures as may be necessary in the interest of ESHS.
- Work with suppliers, customers and contractors to promote ESHS awareness, and the need to work in a socially responsible manner, recognising our responsibilities to any third parties who may be affected by our works.

- To ensure that work, which is performed and that any machinery used, is under the general supervision of a person trained to understand the hazards associated with it and who has the authority to ensure that precautionary measures taken by the employer are implemented.
- Setting a personal example on all matters of ESHS.

4.4 The Regional and OPCO Management Team

The Regional Management Team will work closely with the Regional CEO in ensuring that the organization attains high ESHS standards. The Management Team's responsibilities extend to:

- Implementing corporate objectives and targets on ESHS set or approved by Executive Management.
- Ensuring the safety, health and welfare at work of all persons working in his workplace.
- Ensuring that all top management, middle level managers, staff and contractors are familiar with the ESHS policy and its implementation requirements.
- Ensuring that top management, the middle level managers and the workforce are actively involved in the management of ESHS.
- Ensuring that responsibility for ESHS is properly assigned and accepted at all subordinate levels.
- Monitoring ESHS performance by reference to regular ESHS inspections, reviews and management reviews.
- Reviewing ESHS performance of top and middle level management.

4.5 Employees

The responsibilities of each employee are the following:

- Take reasonable care for the environment and the health and safety of him/herself and of other persons who may be affected by his/her acts or omissions.
- Regarding any duty or requirement imposed on LIT or any other person, co-operate with LIT or person to enable that duty or requirement to be performed or complied with.
- Carry out any lawful order given to him/her and obey the ESHS rules and procedures laid down by LIT or by anyone authorised thereto by LIT, in the interest of ESHS.
- If any situation which is unsafe or unhealthy comes to his/her attention, as soon as practical report such situation to LIT or to the LIT HSE representative, as the case may be, who shall report it via the IMP.

- If he/she is involved in any incident which may affect his/her or environmental health or which has caused an injury to him/herself, report such incident to LIT or to anyone authorised thereto by LIT, or the LIT HSE representative, as soon as practicable but not later that the end of the particular working day during which the incident occurred, unless the circumstances were such that the reporting of the incident was not possible, in which case he/she shall report the incident as soon as practicable thereafter.

4.6 Contractors and Subcontractors

All contractors and subcontractors engaged to perform work on the company premises are required, as part of their contract to comply with LIT's ESHS policies, procedures and programmes and to observe directions on ESHS from designated offices of the company.

LIT shall have and maintain robust mechanisms to manage sub-contractors including:

- Systems and processes for assessing ESHS capability of sub-contractors.
- Communication of LIT's ESHS requirements and contractual arrangements to flow down LIT's requirements to sub-contractors (with appropriate contractual performance management mechanisms).
- Systems for regular monitoring and review of ESHS performance.
- Prohibitions on further sub-contracting of any High-Risk Activities by Supplier's sub-contractor without the express permission of LIT, and upon LIT request Supplier shall report all parties undertaking High Risk Activity for Supplier.

All contractors shall:

- Compliance with the Group HSE Contractor Specification Document.
- Make proper provision for ESHS for its employees, visitors, contractors and any subcontractors working on its behalf.
- Comply with Applicable Legislation pertaining to ESHS.
- Comply with all additional and relevant standards and regulations relating to ESHS.
- Obtain any necessary ESHS permits, licences and / or insurances needed.
- Operate an appropriate internal ESHS management system.
- Aim to obtain certification to ISO 45001 for relevant High-Risk Activities from a recognised external certification body related to the specific country, market, region or project (or alternative equivalent certification approved for this purpose by LIT in writing).
- Provide appropriate evidence of the competence of Supplier and Supplier personnel when requested by LIT.

- Ensure that Supplier personnel have access to appropriate levels of expert ESHS advice.
- Appoint a senior sponsor for ESHS management, who shall have responsibility for ESHS at all times.
- Ensure roles and responsibilities with respect to the delivery of ESHS management are clearly defined throughout Supplier organisation.
- Ensure equipment is designed, manufactured, installed, constructed, tested and certified in accordance with Applicable Legislation and industry standards.
- Continually monitor and review ESHS performance and compliance with this ESHS Policy through programmes of inspections, testing and internal reviews.
- Regularly submit ESHS performance data to LIT's HSE department, as stated in Contractor HSE Specifications, attend meetings and participate in ESHS audits as reasonably required by LIT.
- Ensure that appropriate systems and processes are in place (and adequately resourced) to identify and address ESHS SE risks associated with the LIT Procurement Agreement and HSE Specifications.
- Have in place mechanisms to ensure that Supplier and Supplier personnel comply with this ESHS Policy and any LIT local HSE requirements communicated from time to time.

5. ESHS Internal Governance Requirements

The following main actions are required for the implementation of this ESHS Policy:

5.1 Regional ESHS / HSE Policy

- Where this ESHS Policy is not wholly adopted, ensure each OPCO has a developed and implemented ESHS / HSE Policy aligned to this ESHS Policy.

5.2 Regional HSE Committees

The Regional HSE Manager is to establish the following committees:

- Regional HSE Steering Committee.
- OPCO HSE Committee incorporating all the regional OPCOs or regional areas.

5.3 Regional / OPCO HSE Procedures

- The Regional HSE Manager is to develop relevant procedures, in addition to the procedures recommended in this policy (Appendix A).
- The Regional HSE Manager is to ensure compliance with the Group IMP:

- Ensure all necessary systems are in place to report, record and investigate all ESHS related near misses and incidents.
- Where a significant / serious ESHS incident occurs that has the potential to directly impact LIT, report this incident immediately via the Group IMP.
- It co-operates with and supports LIT in the investigation of all serious incidents.
- All details related to incidents and investigations are shared with LIT.

5.4 Contractor Vetting and Onboarding

A procedure to ensure all contractors have at least the following in place, shall be compiled:

- Relevant insurances and registrations.
- Public liability insurance cover.
- Contractor staff has the relevant and adequate ESHS training and certifications.
- Compliance with all LIT ESHS Policies and Procedures.

No contractor is to receive a Purchase Order / Work Instruction prior to HSE vetting and approval.

6. ESHS Key Performance Indicators

Based on LIT's Group ESHS policy and potential ESHS risks, ESHS Key Performance Indicators (KPIs) were established. Once a baseline is created ESHS objectives will be established, implemented and maintained at each function and level within LIT. Programmes are established, implemented and maintained for achieving its objectives and targets.

ESHS Performance KPIs identified for reporting, through processes established, by Regional HSE Managers are indicated below.

6.1 LIT ESHS KPIs

- Health and Safety KPIs:
  - Reported Near Misses and Incidents.
  - Near Miss and Incident Classification.
  - Number of Active Contractors.
  - Number of Health and Safety audits conducted on active contractors.
  - Number of Contractor Audit Non-compliances.
  - Number of Employee Audit Non-compliances.
  - Lost Time Injuries.

  - Restricted Work Cases.
  - Reportable Incidents.
  - Civilian injuries.
  - Employee, contractor and civilian fatalities.
  - Health and Safety Incident Costs.
  - Internal and external HSE Training provided.
  - Total Km driven for transporting equipment / staff for LIT projects.
- Waste Management KPIs:
  - Amount and types of waste generated.
  - Amount and types of waste disposed.
  - Waste disposal cost.
  - Percentage of waste recycled.
- Environmental and Resource Efficiency KPIs:
  - Electricity use and cost.
  - Renewable energy generation.
  - Water use and cost.
  - Stationary and mobile fuel combustion.
  - Mobile fuel combustion.
  - Reported Near Misses and Incidents.
  - Near Miss and Incident Classification.
  - Number of Environmental audits conducted on active contractors.
  - Number of Contractor Audit Non-compliances.
  - Number of Employee Audit Non-compliances.
- Social KPIs:
  - Internal Grievances.
  - External Grievances.
  - Labour data and statistics.

6.2 External / Contractor KPIs

Regional managers are to monitor and enforce the submission of monthly contractor KPIs, stipulated in the Group HSE Specification:

- Number of employees working on Liquid Projects.
- Number of female and skilled employees working on Liquid Projects.
- Number of skilled and unskilled employees working on Liquid Projects.
- Number of employees under the age of 25 working on Liquid Projects.
- Manhours of work performed for LIT.
- Health and Safety incidents and classifications.
- Environmental incidents.
- Total Km driven for transporting equipment / staff for LIT projects.
- Amount of fuel used.
- Amount of waste and hazardous waste produced.

6.3 Reporting of ESHS KPIs

The following reporting requirements, via reporting mechanisms provided, shall be met:

- The HSE Regional Manager will report the KPIs indicated on a monthly basis for the month past, not later than the 15th day of the following month. This deadline is a hard deadline and is communicated to internal and external stakeholders.
- KPIs submitted are to be precise and accurate.
- Reports should separately indicate KPIs for each OPCO separately.
- All reports should contain the relevant information from the 26th of each month to 25th of the following month.
- Any late delivery or inaccurate KPI reporting may be escalated to the Regional Executive Management or the Group COO.

6.4 HSE Data Review and Analysis

The Regional HSE Manager is responsible to ensure that monthly review and analysis of ESHS KPIs are conducted to establish *inter alia*:

- Potential areas for improvement in terms of ESHS management.
- ESHS trend analysis of risks and incidents.
- ESHS training requirements.

- ESMS system failures or areas for improvement.
- ESHS legal, investor or client non-compliances.
- ESHS non-compliances with the IFC Performance Standards
- ESHS target and objective development.

7. Policy Owner

The owner of this policy is the:

- Senior Specialist: Environmental and Social

The EXCO Sponsor of this policy is:

- Group COO

8. Contact Person

The Questions and feedback regarding this policy should be submitted to:

- Senior Specialist: Environmental and Social

9. Review cycle

This policy will be reviewed (and updated, where required) at least every two years or whenever the changes in business environment, including legislative requirements, demand such a review.

Appendix A：HSE High Risk Procedures

10. High-Risk HSE Procedures

The following HSE procedures are to be adopted by all Regions, OPCOs and contractors. Detailed procedures, tailored to each OPCOs operations, are developed.

10.1 SHE Plan for High Risk Activities

All contractors shall have and maintain an HSE plan for all High-Risk Activities before commencement of work (where carrying out such High-Risk Activities), setting out measures to manage the accompanying risks. The contractor shall manage the risks in accordance with the HSE plan. The contractor shall provide a copy of the HSE plan to LIT as soon as it is ready.

The HSE plan must include:

- Scope of work.
- Key contacts for HSE including competency, qualifications and responsibilities.
- Risk assessments, method statements and safe systems of work specifically tailored to the circumstances.
- HSE training matrix for Supplier personnel.
- Procedures for emergencies, monitoring, reviews, inspection, certification, incident reporting, investigation, selection and management of subcontractors, selection use and control of high-risk products, plant/ equipment and substances.
- Measures to prevent accidents causing personal injury or death.
- Relevant requirements of Applicable Legislation and compliance plans.

10.2 Fibre Optic Installation Safety

Safety in fibre optics installation includes avoiding exposure to invisible light radiation carried in the fibre; proper disposal of fibre scraps produced in cable handling and termination; and safe handling of hazardous chemicals used in termination, splicing or cleaning. Safety precautions to be followed during fibre optic installation include:

10.2.1 Eye protection

- Safety glasses with side shields shall be worn.
- After handling fibre, hands shall be thoroughly washed before touching eyes or contact lenses.
- Never look directly at the end of any optical fibre unless it is certain that no light is present in the fibre.

- Unused ports should be capped to prevent accidental exposure to laser emission, and equipment should never be mounted at eye level. The light used for signal transmission in fibre optics is generally invisible to the human eye but may operate at power levels that can be harmful to the eye.
- Before using an inspection microscope to visually inspect a connector, use a power meter to confirm that the fibre is not transmitting optical energy.
- When using an optical tracer or continuity checker, look at the fibre from an angle at least 300 mm (12 inches) away from the eye to determine if the visible light is present.

10.2.2 Protection from fibre scraps

- Small scraps of bare fibre produced as part of the termination and splicing process shall be disposed of properly in a safe container and marked accordingly as it is considered as hazardous waste. Hazardous waste is to be disposed off as prescribed in LIT's Waste Management Guidelines and Procedures.
- Do not drop fibre scraps on the floor where they will stick in carpets or shoes and be carried elsewhere. Place them in a marked container or stick them to a double-sided adhesive tape on the work surface.
- Thoroughly clean the work area when finished. Do not use compressed air to clean off the work area. Sweep all scraps into a disposal container.
- Do not eat, drink or smoke near the working area. Fibre particles can be harmful if ingested.
- Wash hands well after working with fibre.
- Carefully inspect clothing for fibre scraps when finished work with fibre.

10.2.3 Other safety issues

- Work only in well ventilated areas. Confined space, such as equipment vaults, manholes can contain toxic or explosive gases or insufficient air to sustain life.
- Materials and chemicals used in installation processes e.g. acetone may be hazardous. Material Safety Data Sheets of all chemicals used shall be available.
- Fusion splicers create an electric arc. Ensure that no flammable vapours and/or liquids are present. Do not use in confined spaces.

10.2.4 Working rules for cleanliness

- Try to work in clean areas.
- Always keep protective dust caps or connectors, mating adapters, patch panels, or test and network equipment.

- Do not touch the end of the connectors.
- Use lint-free wipes and pure reagent grade iso-propyl alcohol to clean connectors. Other solvents can attack adhesives or leave a residue. Cotton swabs or pads may leave threads behind and are not recommended.
- ‘Canned air’ can be used to blow dust out of mating adapters or equipment inputs/outputs.
- Test equipment fibre inputs/outputs and test cables should be cleaned periodically.

10.2.5 General Safety and Health Guidelines for Fibre Optics Civil Work

- Responsibility of Contractor: It is the responsibility of Contractor to ensure that all workers and supervisors are competent, trained and familiar with applicable safe working practices, and that they take immediate and decisive action when safe and approved work methods are not followed.
- Responsibility of Supervisors: It is the responsibility of the supervisors to ensure that each member of his team wears the required PPE and to ensure that the work area is protected by the use of the necessary signs, cones, flashing lights, traffic control personnel, etc. On top of this, approved safe work methods should be implemented.
- Risk Assessment: A competent and trained person shall, before the commencement of any work, perform a risk assessment which shall be written into the health and safety plan to mitigate risks and shall include:
  - Activity-specific hazard and risk identification.
  - Assess and evaluate each identified hazard and risk and rank them i.e. high, medium or low. The best way to protect people is to eliminate the hazard or risk and second best, minimize it.
- Areas accessible to public: All areas used by the public shall be maintained free from debris or equipment that may constitute slipping, tripping, or any other hazard.
- Adherence to all the health and safety management plan procedures.
- Development and obtaining of approval for a Traffic Management Plan (TMP).
- Reporting and record all work Site accidents, incidents and property damaged.
- Establishing safe air space requirements prior to the use of lifting and construction equipment.
- All personnel to wear the following personal protective equipment (PPE):
  - Protective overall.
  - Steel-toed safety boots.

  - Hard hat.
  - Safety glasses (when performing work that requires the use thereof).
  - Work gloves help prevent cuts and bruises from sharp or rough edges on pipe/ducts and other objects.
  - High-visibility vests.

- The contractor shall ensure that all necessary guards, protective structures and warning signs are used to protect both workers and third parties. All necessary barriers and fences shall be erected to guide pedestrians and traffic around the work area.
- A first aid box shall be provided and allocated to a trained, certified first aider. Every injury occurring on site must be treated and recorded. It shall be accessible and correctly stocked
- All employees, management personnel and visitors shall undergo induction training carried out by the Site Manager or a designated deputy before going onto site for the first time. Inductions records shall be kept on site for the duration of the project.
- LIT shall supervise the contractor to ensure that all SHE guidelines are followed during the execution of works.

10.3 Confined Spaces

Confined Spaces are those with limited or restricted access and are not intended or designed for continuous occupancy. They are not necessarily small areas. If there is any doubt as to whether a workplace constitutes the problems associated with a confined space, atmospheric tests must be carried out to determine any possible hazards.

Confined spaces encompass a variety of workplaces having limited access and deficient ventilation; therefore, they are potentially dangerous places in which to work as they may trap hazardous concentrations of toxic or flammable gasses and vapours.

Confined spaces are also liable to become deficient oxygen, due to a build-up of a gas or vapor, which may not be toxic but displaces breathable air. This dangerous atmosphere occurs because of the working activity e.g. welding, painting and the use of adhesives and solvents.

The SHE specialist or his nominated representative will be responsible for all the required monitoring and coordination of activities for entering, inspecting a working in confined spaces:

- Permit System for entry into confined spaces will be observed.
- For routine work in Confined Spaces only adequately trained workers shall be employed. Adequate ventilation and air testing shall be performed.

- Due to possible hazards involved in confined space working, the activities must be planned in detail. The Project Manager responsible for the work to be carried out will provide to the HSE Department detailed information on the activities to be executed to enable a suitable and sufficient risk assessment to be produced. The risk assessment will determine appropriate health and safety measures to be undertaken, complete with emergency arrangements.
- The risk assessment will also supply the necessary information for a safe system of work to be produced.
- Safe systems of work will include: Testing of atmosphere before entry into the confined space, continuous monitoring at the place of the activities, the constant maintenance of contact between persons inside the confined space and the standby person(s) located in free air to carry out any emergency procedure.
- The following measures are priorities and must be carried out: Test atmosphere prior to entry, continuous monitoring at the workface, maintain contact between operative and attendant in free air who is trained to carry out emergency procedures.
- Persons who will be expected to work in confined spaces must be physically and mentally suitable. It is recommended that employees taken on for such work are over 21 years and preferably under 50 years of age.
- Work in confined spaces must only be undertaken by persons who have been trained for the job.
- Training must be planned for: Supervision, persons who will be expected to enter confined spaces to work in them, persons who will act as stand by, persons appointed to form a rescue team.
- Precise form of the training and instruction must depend on the individual operation but in addition to any specialized training for tasks, general training for work in confined spaces include: Observance of the safe system of work, instruction on the suitable types of breathing apparatus and practice in their use, care and maintenance. Instruction on the suitable types of breathing apparatus, practice in their use, care and maintenance. Instruction in the use of atmosphere testing equipment, training in the procedures for rescue, including the correct use and maintenance of rescue equipment and resuscitation equipment. Instruction in first aid, treatment of shock, resuscitation. Instruction and practice in the correct procedures in emergencies, especially evacuation. Instruction and practice in the correct use of fire equipment. Observance of personal hygiene rules to avoid health risks and the use of mobile radios.
- Practice drills are an essential part of training, theoretical knowledge is not enough to ensure that the right action will be taken in a real emergency. The use of breathing

apparatus especially should be practiced regularly also the procedures for emergency evacuation.

- The drill should ensure that employees acquire a sound working knowledge of the signal communication system to be used between persons working in the confined space and those on standby outside. They must also learn the correct procedure for summoning medical aid or the emergency services and the use and maintenance of any recovery winches and methods of recovery.
- Every workplace must be adequately ventilated to ensure that it is safe. In confined spaces, forced ventilation must be provided if there is any risk of the air becoming deficient in oxygen or contaminated with dangerous dust, fumes or gasses. No-one must be allowed to enter until a competent person is satisfied that the entry and work area is safe.
- An atmosphere which is safe on entry may become unsafe and continuous monitoring is therefore necessary while persons are working inside.
- The odour of gases is useful in giving an early indication of possible danger, but it must not be relied on with the back-up of atmosphere testing instrument. The sense of smell varies greatly from person to person. Some dangerous gasses have no smell and others paralyze the sense of smell.
- Without any poisonous gas being present the atmosphere may become lethal through depletion of oxygen.
- The person working in an oxygen-deficient atmosphere may not be aware that they are in danger; consequently, symptoms such as breathlessness, faintness, lack of physical coordination, should lead to immediate evacuation since unconsciousness can follow rapidly and unexpectedly.
- The opposite condition, an oxygen-enriched atmosphere can be equally dangerous. With an excess of oxygen in the air some substances contacting organic matter come liable to spontaneous combustion. Grease and oil may self-ignite, also paint, plastics, textiles, paper and wood.
- Oxygen in more than its normal proportions in the air also greatly increases the combustibility of all other materials. A fire in an oxygen-enriched atmosphere develops with great speed and might can get difficult to extinguish.
- The atmosphere can accidentally become too rich in oxygen because of work which releases extra oxygen into the air.
- It is dangerous to purge with oxygen instead of air and in no circumstances, should oxygen be introduced into a confined space to provide ventilation. A leak of liquid oxygen must be treated as serious.

- Entry into any confined space will be controlled by the issue of a separate entry permit. A written permit-to-enter will be given only after exhaustive tests to ensure the atmosphere is safe to breathe.
- It is important that the atmosphere is tested throughout the whole volume of the space as contaminants can vary from place to place. If it is necessary for a person to enter a confined space to carry out the test, they should wear suitable approved breathing apparatus and a safety harness and lifeline, the loose end of which is held by a person keeping watch outside and capable of pulling them out if necessary.
- Resuscitation apparatus ready for immediate use should be kept close at hand during such operations and a communications system established with an attendant in a safe position outside.
- If an emergency arises through deterioration in the quality of the air, permit-to enter must be cancelled and a fresh permit issued only when all the requisite tests have confirmed that the atmosphere is safe to enter.
- If pre-entry tests indicate that the atmosphere is not safe, forced ventilation and extraction must be introduced to achieve a satisfactory circulation of fresh air, at a supply which varies according to the circumstances. A rate of 1.5m3 per person per minute is recommended as desirable; however, the quantity necessary will depend on the concentration of pollutant gasses or fumes and the need to dilute and disperse them.
- Methods can be: By using compressed air cylinders and using an air compressor and air mover. The compressor should be sited so that its air intake cannot take in contaminated air. The discharge from the compressor air receiver should be fitted with an oil must filter to clean the air being introduced into the confined space. By using a blower fan and trunking – again the fan should be sited so that it cannot take in contaminated air. By using an exhaust fan or ejector and trunking (provided there is an adequate supply of fresh air to replace the air exhausted. In case the air line or trunking should reach the bottom of the confined space to ensure removal of heavy gas or vapor and effective circulation of air.
- The procedure for rescue in an emergency will be set out clearly in the safe system of work with specific jobs allocated to specific persons.
- Training should ensure that if a rescue becomes necessary, all persons concerned are thoroughly familiar with the routine procedures through frequent practice drills.
- Essentials for rescuing someone from a confined space are that: The outside observer must have means of knowing immediately that a person is gassed or has met with an accident.

- A person should wear suitable approved breathing apparatus and a safety harness and lifeline, the loose end of which is held by a person keeping watch outside and capable of pulling them out (2 persons if necessary)
- The rescue team, alerted by the observer, must get the casualty out into free air speedily.
- The casualty must be given first aid quickly, either at the work location or immediately they are brought out into free air and the appropriate medical attention as soon as possible.
- When using prescribed medicine which would affect your balance or ability to work safely rather inform your supervisor and do not perform any work with sharp hand tools.

10.4 Non-Ionising Radiation Safety

The property of all radio waves is that part of carried energy may be absorbed in an exposed body. The potential ill-effects of radio waves are feared on account of the heating effects created in such exposed body absorbing radio waves. To ensure that such RF energy absorption is kept far below the level where potentially adverse heating effects might occur, National and international health authorities have specific exposure limits. LIT's equipment constitutes to comply with the most stringent of these guidelines, thus ensuring that the radio wave exposure from wireless equipment is well below the prescribed limits.

LIT's general duty of care to employees, contractors and the general public, and of respect for the environment, must be considered in any use of or incidental exposure to non-ionising radiation in LIT.

The principle for all telecommunication equipment of LIT will be "as low as reasonably achievable" (ALARA) will be used. The difficulty of this principle is what is reasonably achievable. In no case should the relevant exposure limits specified in the standards be exceeded.

All staff and contractors must:

- Make themselves aware of the exposure limits as indicated in the standards.
- Reduce the radiation hazard of their work to a minimum, taking social, economic and environmental considerations into account.
- Have knowledge of appropriate accident and emergency procedures.
- Understand the statutory regulations, codes of practices and local instructions relevant to their work.

Particular attention will be given to;

- The development of a system of regular internal reviews of radiation safety, with the results of the reviews reported to the CTO, Networks and Customer Services Officer,

through the HSE Manager, the LIT Environmental Management Working Committee and LIT Environmental Management Steering committee. The HSE Manager will be responsible to develop an internal review system.

- The development of a record management system for radiation safety that will include readily audible records of all aspects of the policy, including legislative compliance, a register of all non-ionising radiation sources, records of training and list of contractors who supply, install and/or maintain telecommunication equipment to LIT. The Network engineering department will maintain a record management system.
- The CTO, Networks and Customer Services department shall ensure that radiation readings of a sample of LIT equipment will be done. These measurements will be done by contractors or internal if test equipment is available. The CTO, Networks and Customer Services department will also be responsible, where non-ionising radiation is not used incidentally that the exposures, such as leakage from microwave ovens, solar UV radiation, etc., do not exceed the appropriate Standards.
- The CTO, Networks and Customer Services Facilities Manager: Design and Maintenance, is responsible for ensuring that any infrastructure producing non-ionising radiation, such as electrical power substations etc., do not produce exposures to staff or contractors that exceed the appropriate standard.

10.5 Working at Heights

No employee shall work in an elevated position, unless such work is performed safely from a ladder or scaffolding, or a position where such person can use fall arrest equipment. Employees need to be aware of the Safe work procedures for working in elevated positions.

10.5.1 Working on Rooftops and Towers

- Identify safe hook-up points. (Anchor points)
- The correct use of PPE to mitigate or remove these risks/hazards before work can start.
- The correct Fall Arrest System (FAS) to be used.
- Ensure the basic rescue kit is adequate for the type of structure, maximum height and shape.
- Ensure the fall protection plan to address the identified fall risks is available and communicated to all workers before commencement of work.
- Ensure the correct PPE is issued to workers.
- Ensure all climbers are medically fit to work at elevated positions and have received training and are certified and competent to do so safely.

- Refrain from climbing in bad weather conditions i.e. strong winds, lightning, rain.
- Adhere to all notices and warning signs on the site where work is to be performed.
- All work on towers, masts or poles should be done by at least 2 certified climbers on a team to ensure safe work.
- All equipment rigged to the correct position of the tower, mast or pole should be done safely with the correct rigging equipment (Ropes and pulleys). Ensure that each piece of equipment is tied individually to the rope by means of a carabiner, sling or a rigging knot.
- Wear safety boots and hardhats when working on cat ladders on towers, masts or poles.
- Barricade or mark no go areas below towers to prevent unwanted entry and to warn workers or the public underneath against overhead hazards.
- Only perform work in the allowed Hazard zones as per warning signs on site.
- If there is any level of Radiation from equipment on the rooftop avoid continuous exposure.
- Make use of a personal RF Monitor to ensure the RF levels are within the prescribed levels / dial NOC for the configuration of Safe RF levels.
- Always use climbing gear and fall arrest equipment that is in a good condition. To ensure this make use of a harness user log and PPE check list to ensure a good condition of all equipment before used.
- Prevent any climbing gear from falling as this can damage it and make it unsafe to use.
- The harness, lanyard, slings and carabiners shall be inspected before each use by the climber. The harness shall be inspected for shock loading, rips, tears, abrasion damage, loose stitching or damaged eyelets.
- Prevent any climbing gear from falling as this can damage it and make it unsafe to use.
- Store climbing equipment in a cool and dry place. Never store equipment when it’s wet.
- No person shall be allowed to carry tools or equipment in their hands while ascending or descending a cat ladder on a tower, mast or pole.
- Ensure all materials and tools you carry with you are safely tightened to prevent them from falling. Tools must be hooked up always. Use the recommended tool pouches or tool belt if need be.
- Keep the work area clean and tidy; put all rubbish in bins and away from all access routes.
- When using prescribed medicine which could affect your balance or ability to work safely rather inform your supervisor and do not perform any work on the rooftop.

10.6 Driving and Vehicle Safety

Contractors shall have and maintain appropriate measures to manage the risks associated with driving and shall ensure:

- Compliance with Applicable Laws and industry standards.
- Selection of appropriate vehicles for the intended use.
- Use of vehicles for intended purpose.
- Pre-use inspection of all vehicles.
- Maintenance of vehicles in line with manufacturer recommendations.
- Maintenance of appropriate servicing and maintenance records.
- Fitting of vehicles with appropriate levels of safety equipment, in particular seat belts for all seats.
- Carrying of passengers does not exceed manufacturer or vehicle license specifications for the vehicle, with no carriage of excess or unauthorised passengers.
- Prohibition of the carrying of passengers in the back of pick-up trucks.
- Safe carrying of loads and equipment, with loads being secure and not exceeding manufacturer specifications for the vehicle.
- Employees and equipment are not to be transported in the same vehicle, unless equipment is adequately secured.
- Fitting of hands-free car kits to all vehicles (where safe and legal to do so) and prohibition of the use of handheld mobile phones whilst driving.
- Fitting of a speed monitoring device to all vehicles used for "occupational driving" (where a role requires driving as an integral part of the job).
- Towing only by vehicles that are fit for purpose and suitable for the size of trailer or equipment being towed, with all trailers, towed equipment and mechanisms for securing towed equipment meeting Applicable Laws and industry standards.
- The putting in place of a schedule of work, geographical areas of responsibility and duration of time on the road where a job role involves a significant amount of driving, with this being reviewed regularly.
- Occupational driving is only done by persons with the necessary competencies to perform such role.
- Drivers are appropriately assessed, licensed, trained, and medically fit to operate vehicles.

- Appropriate levels of training are delivered to all drivers determined by the risk posed by their role, and such records are maintained for evidence purposes.
- Drivers are qualified to drive in the country and region they are driving in and hold the appropriate grade of licence(s), and to maintain such records for evidence purposes.
- Implementation of a strict programme to monitor and manage the performance and behaviour of drivers (including but not limited to the use of seats belts by all persons in the vehicle).
- A standard set of driver requirements exist, communicating clear expectations and delivering proper defensive driving techniques through training.
- No driving takes place while under the influence of drugs or alcohol.
- Driving at safe speeds taking into account the road conditions.
- Use of industry-approved safety helmets by drivers and passengers of motorcycles, quads and similar types of vehicle.

10.7 Violence in the Workplace

LIT shall, as far as reasonably practicable ensure that the workplace is violence free. Employees who are found guilty of violent behaviour will be dealt with in accordance the disciplinary code.

10.8 Drug and Substance Abuse

LIT recognizes that drug and substance abuse are serious problems which affect the safety and health of employees and hence their productivity. LIT has a zero-tolerance policy: The Company is committed to maintaining a drug free workplace and therefore prohibits the distribution, sale, use, or possession of drugs and substances in the workplace. This commitment is in line with the company's policy on drugs and substance abuse. It will be the individual's responsibility to notify their supervisor when taking prescriptive drugs that may affect their performance or putting others and themselves at risk.

10.9 Recommended HSE Procedures

Procedures indicated in Table 10-1below are recommended to be developed for each LIT operating region.

Table 10-1: Recommended HSE Procedures

Recommended HSE Document	Procedure
Backfilling	X
Barricading	X
Cable blowing	X
Cable pulling on drums	X

Recommended HSE Document	Procedure
Cement mixers	X
Compressor usage	X
Concrete foundations	X
Confined spaces	X
Crushing operations	X
Directional drilling	X
Driving	X
Duct integrity testing (DIT)	X
Emergency evacuation	X
Excavating and trenching	X
Fall protection	X
Fibre Optic Installation	X
Hand tools usage	X
Hazardous and chemical substances	X
HIRA	X
Housekeeping	X
Inclement weather	X
Ladder usage	X
Live work	X
Lockout (electrical)	X
Manual handling	X
Non-ionising radiation safety	X
Portable electric tools	X
PPE	X
Rebar protection	X
Rigging on structures	X
Scaffolding	X
Site establishment	X
Traffic control on site	X
Trenching	X
Working at heights	X
Working on rooftops and towers	X