EDDLUX STEEL MANUFACTURING

HEALTH SAFETY AND ENVIRONMENT POLICY

Document Owner: HSE DEPARTMENT

EDDLUX

EDDLUX STEEL MANUFACTURING

REVISION SUMMARY

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Chapter 1

HSE Management System Introduction

1. Scope

The purpose of this manual is to document how the Health, the Safety and the Environment (HSE) are managed in the EDDLUX STEEL MANUFACTURING (**EDDLUX**) offices, sites or locations and during the course of operations.

2. Comments and Suggestions

Reader's experiences are of great value to the custodian of this manual in deciding the contents and layout of documentation. If you have any comments, no matter how trivial you may think they are, please write them down and return them to the custodian of this manual.

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Chapter 2
Commitment and Leadership

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1. Introduction

The business success of EDDLUX depends on our ability to continually improve the quality of ourservices while protecting people and the environment.

Emphasis must be placed on ensuring human health, operational safety, environmental protection, quality enhancement and community goodwill.

EDDLUX senior and line management recognizes the need for HSE risk management and are committed to achieve high HSE standards.

This commitment is in the best interests of our customers, our employees and those in the communities in which we operate and live.

The HSE Management System model comprises six (6) interrelated components, which are:

1) **Commitment and Leadership**
2) **Organization, Responsibilities and Resources**
3) **Risk Management**
4) **Planning and Procedures**
5) **Implementation and Monitoring**
6) **Assessment and Continuous Improvement**

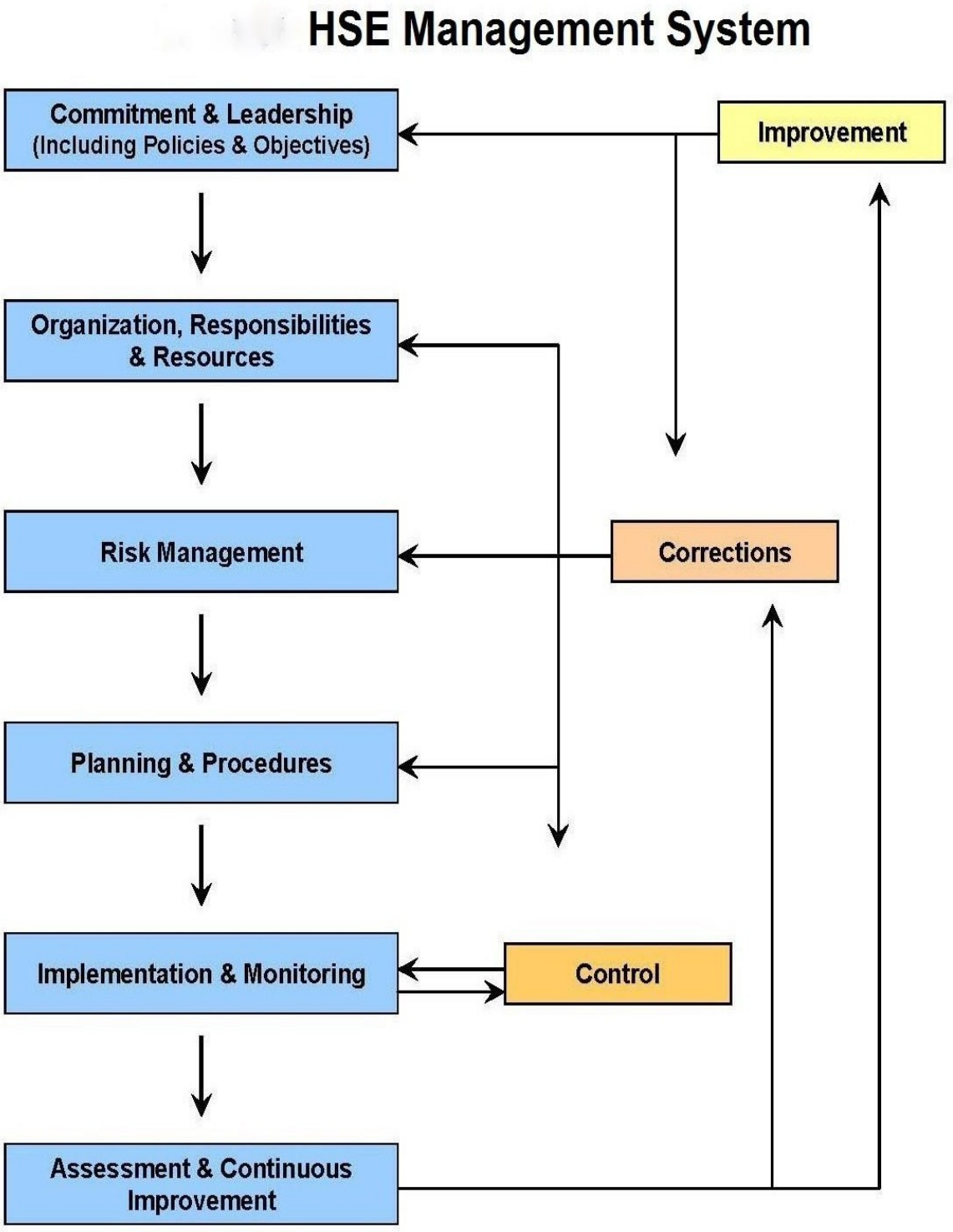
These are continuously improved by conformance checks:

- On day-to-day standards and procedures (controls).
- On the management system (correction).
- And through modifications to the Management System (improvement).

The HSE Management System is a living document and as such will be reviewed annually and updated as circumstances change.

The custodian of this manual will be the one responsible for ensuring all updates are publicized to the relevant sites and people.

The below diagram illustrates how the HSE Management System HSE operates in EDDLUX Organization with its six (6) interrelated components as mentioned above:


HSE Management System
Commitment & Leadership
(Including Policies & Objectives)
Improvement
Organization, Responsibilities
& Resources
Risk Management
Corrections
Planning & Procedures
Implementation & Monitoring
Control
Assessment & Continuous
Improvement

2. Management Statement

This Management Statement has been our guidance in the preparation of the HSE Management System document and related documents.

Below is the context of this statement.

"EDDLUX Executive Management iterates its commitment to execute its scope of work during the execution of the projects through the full respect and implementation of the EDDLUX HSE Management System standard.

- For the Safety, by the application of induction courses and training programs, personnel protection equipment implementation, hazard analysis programs, housekeeping, working at heights awareness, the emergency response procedures and contingency planning and inspections, audits, reviews and corrective actions.
- For the Environment, by the full implementation of our Environmental Management System so as to preserve the environment free from any contamination and human inflicted degradations so that future generations can learn the greatness of the past and enjoy the prospects of the future.
- For the Health, by having full medical support thus providing our employees with required health care and disease prevention**".**

Eddie Shid
CEO

EDDLUX

3. Vision

We envision a service culture that enables us to exceed customer expectations and actively involve and empower all employees in the continuous improvement process.

To enact this vision, we will:

- Define and respond to customer expectations.
- Adapt to changing and expanding business conditions and market opportunities.
- Differentiate our service capability from the competition.
- Be a recognized industry leader in HSE.

4. Mission

Our HSE mission is to ensure that Health, Safety and Environmental considerations remain top priorities for management and for all employees.

Prevention of accidental risk and loss from process failure becomes a recognized, integral part of our continuous improvement culture.

5. Culture

Leadership and Commitment are essential in setting objectives and achieving targets for activities, projects and operations.

HSE, a line management responsibility, requires visible commitment, leadership and involvement. Our proactive HSE culture shall be understood, shared and practiced by all employees as an integral part of everyday business.

EDDLUX senior and line management will lead by example, motivate all staff to adopt high HSE standards, provide resources to identify and manage HSE risks in balance with business performance, to effectively achieve company objectives.

Fundamental to this culture is our belief that all losses of people, asset and process result from management failure and are preventable.

EDDLUX main value is that “Our people, their motivation and dedication to customer’s service, in a safe and clean environment, are our main asset”.

6. Strategy

We will strive for a zero defect culture:

- No accidents.
- No loss to process or assets.
- No harmful emissions.
- No health-related incidents.

This zero defect culture shall be attained through:

- Visible commitment, leadership and involvement of line management towards objectives.
- Standards of HSE training for all personnel various learning techniques.
- Maximized efficiency and synergy through sharing of resources.
- HSE integration in all project commenced.
- Recognition by our customers that we are a leader in HSE.

7. Commitment

EDDLUX requires the active commitment to and support of HSE from all employees. In addition, line management has a leadership role in the communication and implementation of, and ensuring compliance with, HSE policies, standards and procedures.

We are committed to:

- Protect the health and safety of our people at all times and in all circumstances.
- Eliminate HSE accidents and events.
- Provide a framework for the setting of HSE goals and performance objectives, and the use of an effective management system.
- Monitor, evaluate and continually improve our HSE performance through the definition of operational procedures, training, assessments and audits.
- Be fully prepared to respond to any HSE emergency.
- Minimize our impact on the Environment through the full implementation of EDDLUX Environmental Management System, which is considered as the remaining body ofthe HSE Management System, on all sites through pollution prevention, control of discharges and proper waste management through the efficient use of natural resources and the reduction, reuse and recycling of waste.
- Educate our employees, customers and contractors on the safe and environmentally responsible use of our services, and how their actions can influence HSE performance.
- Communicate openly with interested parties about our HSE and other related policies, programs and performance.

In addition, we are committed to the proactive integration of HSE objectives into our management system at all levels, actively reinforced by reward programs that recognize outstanding HSE performance demonstrated by our employees and contractors.

The commitments are in addition to our basic obligation to comply with EDDLUX guidelines, as well as all applicable laws and regulations where we operate. This is critical to our business success because it reduces risk and adds value to our services, in other wordsit creates and maintains a “Good Business”.

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EDDLUX Managers shall demonstrate their visible commitment to HSE and provide the necessary resources to develop and maintain an active HSE Management System throughout the organization to achieve our HSE objectives.

To achieve this, Managers shall demonstrate their commitment by the following examples:

- Motivate your staff to strive for HSE excellence.
- Allocate necessary resources (time and money) to HSE matters.
- Put HSE high on the agenda of meetings.
- Be actively involved in HSE activities.
- Communicate the importance of HSE considerations in business/operational decisions.
- Give recognition to good performance.

8. Leadership

Managers shall provide strong, visible leadership and actively participate in the continuing drive toward a corporate culture that places HSE equal in importance to the other critical business objectives.

Visible leadership is demonstrated by the following examples:

- Set a personal example in everyday work.
- Actively contributing to HSE activities such as audits, site visits, etc.
- Maintaining a culture of HSE awareness so that prevention of accidental risk and loss to asset or process is a recognized and integral part of our daily activities.
- Encourage the involvement of all employees and empower them to develop and implement solutions pertinent to HSE issues at their site.
- Hold award ceremonies.
- Review closure of action plans and RWP.
- Personally investigate accidents.
- Mention HSE issues in your communications.

9. Policies

Policies are used to make clear statements on accepted practice or procedure regarding important topics.

Policies are to be adopted by the company and third parties (sub-contractors). Therefore, it is required that all personnel are informed of the policies that apply to the environment in which they work and that they are routinely reminded of the contents and importance.

Other site-specific policies can be defined and implemented in order to meet applicable internal and external requirements as long as it does not conflict with the HSE Management System. The Project or Site Manager with the HSE Manager can authorize and sign such policies.

The following principal Policies are defined and will be permanently posted on the office's/site's bulletin boards and communicated periodically through first arrivals briefing or inductions, toolbox meetings, etc.

- **Health, Safety and Environment (HSE) Policy**
- **Drugs and Alcohol Policy**
- **Driving and Road Safety Policy**
- **Housekeeping Policy**

Policies can be translated to Kurdish and other languages if the need arises for better communication purposes with EDDLUX employees and contractors.

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HEALTH SAFETY AND ENVIRONMENT POLICY

The Company will conduct its activities in such a way as to protect the Health and Safety of its employees, and to safeguard the conservation of the natural Environment.

The Company is committed to a continual and progressive improvement in its performance against Health, Safety and Environment objectives.

The Company believes that:

- HSE is the responsibility of line management.
- Managers shall at all levels be personally, actively and visibly involved in HSE matters.
- Working conditions should not damage the health of its staff.
- Accidents are preventable.
- The operations should not adversely affect third parties and the environment.
- HSE conservation is almost more importance that the other business objectives.
- HSE conservation is company responsibilities discharged through line management.
- A safe operation is efficient and is more profitable than unsafe operation.

Consequently, EDDLUX is continuously monitoring the performance of its operations andemployees and involving at all levels within the company as well as with its subcontractors to follow and fully implementation of this policy.

Chairman

Eddie Shid
CEO

EDDLUX

DRUGS AND ALCOHOL POLICY

The abuse of drugs and alcohol can impair performance at work, and can be a serious threat to safety, health, the environment and productivity.
To establish measures to prevent drugs use and alcohol abuse, EDDLUX will:

- Make staff aware of the detrimental effects of drugs and alcohol on personnel and team performance.

- Forbid the possession and use of drugs (except those drugs prescribed by a doctor or nurse) on company sites and forbid the possession of alcohol in the workplace.

- Monitor staff for visible impairment in the workplace and establish appropriate response procedure.

- When investigating incidents, consider the potential linkage to drugs use or alcohol abuse.

- Regulate the consumption of alcohol at company functions.

The above measures related to workplace and to company related activities only. The employee's private life is, and must remain, clearly his/her own, but it is the management's hope that the code of conduct applied in the workplace will be mirrored in the non-work environment.

Chairman

Eddie Shid
CEO

EDDLUX

DRIVING AND ROAD SAFETY POLICY

EDDLUX management recognizes that driving is a high-risk activity, which requires activemanagement.

Therefore, we will apply and enforce such measures as are necessary to minimize this risk.

EDDLUX is committed to a continual and progressive improvement in its performanceagainst its driving objectives.

EDDLUX believes that:

- All road accidents are preventable.
- Driving and Road Safety is a line management responsibility.

We aim by this policy for:

- No road accidents fatalities.
- The acceptance that driving is a profession that requires training, skill, dedication and discipline.
- A significant reduction in the road traffic incidents.

We will implement the following precautions as a minimum requirement to ensure that our aims are maintained:

- Apply the journey management.
- No use of mobile phones during driving any vehicle.
- No exceed speed limits.
- All vehicles equipped with seat belts for use by all passengers.
- All vehicles are adequately maintained.
- All vehicles are well equipped with the HSE requirements.
- Defensive Driving Training to be conducted to all company drivers and any driver who possess a company vehicle.

Chairman

Eddie Shid
CEO

EDDLUX

HOUSEKEEPING POLICY

EDDLUX Management recognizes the need for proper housekeeping in theproduction sites.

EDDLUX believes that:

- All accidents are preventable.
- Housekeeping is a line management responsibility.

Our aim by this is to:

- Maximum minimization of rubbish.
- Proper storage of material, equipment and machinery in relation to the HSE regulations.
- Proper and Safe access that leads to a no-accidents.

Chairman

Eddie Shid
CEO

10. Objectives

The business objective of EDDLUX is to establish its earned projects in a responsible manner. Therefore, the proper management of HSE is highly necessary to achieve this objective.

Our HSE strategic objective is to set controls under which we will conduct operations in a safe and healthy manner and with respect for the environment and these objectives are:

- The identification and assessment of all hazards.
- The elimination of all hazards.
- The provision of controls and recovery measures for all hazards with potential for effects rated high or serious, which cannot be eliminated.
- The continuous reduction of all other lower level risks (low or medium) by the application of best practice management method.
- The continuous improvement of HSE performance.

These targets shall be communicated to our customers, employees and contractors, and employees and contractors shall be informed about what is required of them to achieve these targets.

The developed HSE program with its six (6) interrelated components will be used to assess the HSE performance against the set objectives and to do so:

EDDLUX has developed a yearly HSE Plan, which defines a number of specific HSE objectives.

The HSE yearly plan will be posted on the site's/location's HSE bulletin board and in the Area/Project/Site Manager and HSE offices.

The yearly plan will be developed by the HSE Manager and will be communicated with all sites and departments and reviewed quarterly by the Area/Project/Site and the HSE Managers and status will be updated.

Some of these objectives include QHSE indicator performance targets as given below:

STOP/Accident/Incident reports > 5 per employee per year

In addition, all EDDLUX employees will have HSE objectives as part of their Job Descriptions.

The HSE objectives will be reviewed annually by the HSE Manager and approved by the Top Management or the Project Manager. These HSE objectives will be cascaded down from the yearly HSE plan.

Chapter 3

Organization, Responsibilities and Resources

1. Scope

EDDLUX management is responsible for providing a competent staff and adequate resources to manage the business.

2. Organizational Structure

EDDLUX HSE department is established as the management's arm to ensure the implementation of the company policies and objectives.

Qualified safety personnel are assigned at different sites and locations representing the HSE Department and acting as an arm of the department.

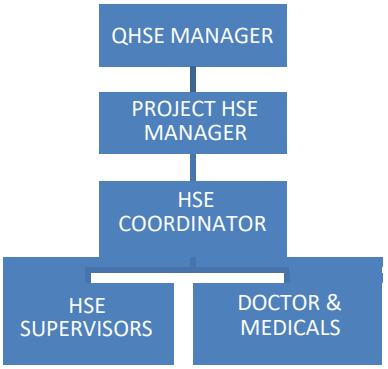
The HSE personnel will be in close coordination with the RG various department's personnel operating at their assigned sites to ensure that EDDLUX policies and other customers policies are adhered to and that the required and applicable HSE procedures, rules and regulations are followed and implemented at all times.

The EDDLUX HSE organizational structure is shown below, which details the reporting structure of the HSE Department and their responsibilities (See section 3 Organizational Responsibilities of this Chapter).

HSE Manager updates the QHSE organizational chart while EDDLUX Top Management represented by the President and the Managing Director update the areas organizational charts.

2.1 HSE Organization Chart

The below diagram reflects the HSE Organization in EDDLUX Group:



3. Organizational Responsibilities

Accountability for unsafe practices and resulting accidents lies with line management, from the President and Managing Director (refer to as Top Management) to every level of supervisor and down to each individual employee.

Therefore, all levels of the EDDLUX organizational structure have a specific Job Description, which details the responsibilities and duties required of the individuals in their particular positionto achieve a high quality and safe operations

Each Job Description is as specific as possible to a particular job title of the organizational structure and will not be a generic document containing non-specific generalizations.

Once the individuals sign reading this HSE Manual, it is considered as approval from them towards their detailed Job Descriptions.

Below listing the Job Descriptions of the EDDLUX organizational structure.

3.1. EDDLUX STEEL MANUFACTURING Top Management

The EDDLUX Top Management is responsible for:

- HSE commitment to all field operations, locations and Offices.
- Providing sufficient budgetary funds to the HSE related activities required for the contract operations.
- Contracts conditioning HSE commitment of all sub-contractors.
- Providing HSE policies.
- Make available the resources necessary to achieve the Environmental Program objectives and address customer satisfaction.
- Provide resources essential to the implementation and control of the Environmental Management System (EMS). Resources include human resources and specialized skills,

3.2. Project Manager

The Project Manager is the prime responsible for site Safety, Health and Environment, he will:

- Promote the company's HSE policies.
- Periodically appraises the effectiveness of the policies and ensures that any necessary change is made to improve the policies.
- Ensure that all supervisors are aware of and comply with the safety regulations and accident prevention requirements.
- Ensure that all supervisors and sites are in compliance with the RG Environmental Management System (EMS).
- Institute a system of inspection and correction by Supervisors of potential hazards.
- Hold monthly supervisors meetings at which safety problems will be discussed.
- Coordinate investigation and reporting of accident.
- Discuss accident prevention recommendations made by HSE Manager and Site Managers and initiate action.
- Ensure an adequate supply of the correct types of PPE is available.
- Check continuity of safety and environmental training and toolbox talks.
- Reporting on the performance of the Environmental Management System (EMS) to Top Management for review and as a basis for improvement of EMS.

- Review all HSE audits conducted by all sites and the HSE Department and ensure that findings are corrected by the individual managers.
- Ensure that appropriate employees must have assigned environmental performance objectives and that are reviewed periodically.

3.3. HSE Manager

He is responsible for:

- Proactive provision of advice and support to all levels of management and supervision to enable them to discharge their responsibilities as per the EDDLUX HSE system.
- Monitoring the company's performance against its HSE plans.
- Assisting in selection or formalization of appropriate HSE objectives, specifications, standards and procedures.
- Ensuring that Environmental Management System (EMS) requirements are established, implemented and maintained on all sites, locations and offices and assist managers in specifying best plans and methods to achieve this.
- Hold the Site Environmental History File on the work site where assigned.
- Carry out regular Safety and Environmental inspections of operational work areas and sub-contractors works.
- Advising all departments and sections of the company and sub-contractors on matters pertaining to sanitation and hygiene; in particular on the monitoring of food preparation, water quality control and domestic refuse disposal.
- Direct, undertake or assist in Safety, Health and Environmental Training of all levels of staff.
- Carry out occupational health surveys in all areas, e.g. noise, safe handling of equipment and machinery.
- Assist line management to provide an adequate First Aid service through the field medics and ambulance. As well gather and report medical statistics.
- Assist line management to provide an effective field fire fighting service.
- Assisting line management in mobilizing camps and providing the correct man power to handle and follow the HSE standards.
- Advising line management in ensuring that the emergency services are suitably equipped manned and trained.
- Advice in execution and take part in HSE audits performed.
- Issue weekly (Safety Line) for display on bulletin board.
- Technology and financial resources.

3.4. HSE Officers

They are accountable and responsible for:

- Report Directly to the HSE Manager.
- Full commitment to EDDLUX HSE policies.

- Monitoring their work site performance against its HSE plans.
- Daily site HSE reporting.
- Assist in developing better HSE awareness in personnel.
- Risks and Hazards analysis and advising management in ways of eliminating risks and hazards.
- Providing support to management to eliminate risks and hazards.
- Advise in execution and take part in the HSE audits.
- Assisting management in issuing work permits.
- Assisting management in preparing STARRT (Safety Task Analysis Risk Reduction) sheets.
- Assisting management in preparing the HDS (Hazard Data Sheets).
- Backup the doctor or medic in carrying evacuation procedures.
- Ensuring that all personnel are adhered to the RENWA safety regulations.
- Direct, undertake or assist in toolbox meetings of all levels of staff and labors.
- Ensure full commitment to the Environment Management System.
- Advising and assisting management in achieving ways for better housekeeping.
- Advising, assisting and supporting camp boss in running his daily work tasks.
- Hold the Site Environmental History File on the work site where assigned.
- Ensuring that Environmental Management System (EMS) requirements are established implemented and maintained on their assigned sites and assist managers in specifying

3.5. Medical Staff (Doctors / Medics)

They are responsible for:

- Report Directly to the HSE Manager.
- Full commitment to EDDLUX HSE policies.
- Responsible for the First Aid preparation for medical evacuation of personnel employed on EDDLUX sites and that all site operations take place with minimal risk of health.
- Assisting the evacuated personnel during transportation whenever needed.
- Ensuring the proper supply and follow-up of first aid material and drugs.
- Ensuring the availability of drugs and of health controls.
- The immediate intervene and providing of proper first aid in case of casualty.
- Ensuring the proper medical preparation to injured personnel in case of evacuation to an outer medical center.
- Ensuring the medical follow-up of working personnel as necessary.
- Ensuring by regular visits and controls the living quarters (catering staff health condition, kitchens and its related stores hygiene status, quality of food and water, etc.…).

- To define, request and follow additional operations to improve sanitary status whenever needed.
- Issuing statistics related to occupational health, consultation, drugs consumption, etc.
- Cleanness of ambulance and organization of equipment.
- Best plans and methods to achieve this.

3.6. Individual Managers

They are responsible for:

- The proper management of HSE risks in their processes, activities and assets.
- They are responsible and accountable for the promotion of the company's HSE policies.
- Full implementation of HSE Management System in their department and/or site.
- Full implementation of Environmental Management System (EMS) in their department and/or site.
- Requesting budgetary resources for the HSE related activities within their departments.
- Set out the departmental HSE objectives, which complement the companies and will make and implement annual departmental HSE action plan to achieve these targets.
- Promoting HSE awareness in their employees by showing a genuine and visible personal commitment towards HSE issues.
- They will ensure that all members of their departments attend HSE meeting regularly.
- They shall measure, appraise and where reasonably practicable, improve the sub-contractor's safety performance on the assigned project or job.
- Attend the weekly safety meetings, and show commitment to the raised subjects.
- Assist in preparing the Safety Task Analysis Risk Reduction (STARRT) sheet.
- They will ensure that their staff and employees are informed of hazards that might affect their health or the environment and they are aware of the measures being taken to minimize risk and to conserve the environment.
- They will make staff available for HSE training and provide the resources necessary to achieve the company's HSE objectives.
- Develop and communicate Job Description to their departmental employees, which include specific Health, Safety and Environmental responsibilities.

3.7. Foremen and Line Supervisors

A great deal of the effectiveness of the company's prevention effort will depend on the attitude and approach of the Foremen and Line Supervisors. Therefore, they are to:

- Conduct work under their control in accordance with HSE Policies, Environmental Policy and applicable standards and procedures.
- Ensure that equipment and machinery in their custody are operated and maintained according to the relevant HSE standards.
- Enforce the use of applicable PPE.
- Ensure that their employees are acquainted with emergency procedures.
- Maintain good housekeeping.
- Inspect equipment and tools before use and ensure correct storage facilities are available and properly utilized.
- Develop awareness of HSE matters, in their specific work areas.
- Conduct induction-training program with work crews.
- Conduct safety toolbox meetings with work crews.
- Develop appropriate Environmental skills and competence in their staff.
- Correct unsafe conditions immediately they arise.
- Stop work or operations immediately if a defined HSE policy or procedure are or will not be complied with.
- Attend weekly Supervisors safety meetings.
- Show Full Corporation with the Remedial Work Plan corrective measurements and issues.
- Corporate, with the QHSE Department, to comply with the HSE Management System and the Environment Management System in all operations being performed.
- Set a personal example.

3.8. Individual Employees and Sub-Contractor Staff

Individual employees and Sub-contractor staff are responsible for:

- Conducting their work accordance with QHSE Policies and Environmental Policy and applicable standards or procedures.
- Recognizing their important role in their own health and safety and that of others and acting accordingly.
- Reporting unsafe behavior and unsafe acts and situations.
- Reporting violations of the HSE policy and applicable procedures and standards to line supervisors.
- Commitment to HSE related training courses given by the company.
- Ensure to fully understand and comply with the relevant Job Description.

3.9. Non- EDDLUX Group -Personnel on Site

- It is the responsibility of any EDDLUX personnel dealing with Non- EDDLUX (e.g. visitor,agent, etc) to:
- Ensure that these persons are adequately protected according to the safety regulations and rules of the HSE system (e.g. wearing the correct PPE, etc.).

- Properly inducted by the HSE Department personnel available on the site to the site risks, hazards and safety procedures they are at.

4. Training, Awareness and Competence

No accident prevention program can be considered complete without the conclusion of a comprehensive training element.

The issuing and enforcing of safety rules and regulations will not instill in the workman the desired attitude towards accident prevention; this can be only created and fostered through education and training.

We believe in the EDDLUX Management that "Safety Training" plays an essential part in achieving our HSE objectives. We are certain and will provide all the means required to develop the essential HSE standards awareness in all of our employees.

All employees and subcontractors involved with our operations must be educated to identify and evaluate risk, trained in HSE procedures and competent in their job.

The first step in successful recruitment of personnel must be to outline specifically to the prospective employee or subcontractor concerned the exact requirements of personnel.

Formal and informal (On-the-job) training will be provided to fulfill the competence requirements of all job functions.

The HSE Manager will periodically assess all training programs for quality and effectiveness.

All employees and subcontractors involved with our operations must be of the following:

- Educated to identify and evaluate risk.
- Trained in HSE procedures.
- Competent in their jobs.

These points are dealt with in the following ways:

4.1. Trainers

HSE Manager, Safety Officers, Doctors or Medics are actively involved in the formal or the informal (On-the-job) training of the employees.

4.2. Training Records

All training carried out, in order to fulfill company, client, and regulatory requirements are recorded and a hard copy is filed in the HSE Manager's office, in the site assigned Safety Officer's office or in the Site Environmental History File.

Attachment 1 in Chapter 8 shows the EDDLUX form for recording any Awareness or Training course.

Training details of individuals will be entered into a training database maintained by the HSE Manager to ensure good management and monitoring of the training program. This Training database is called the "HSE Training Matrix".

The HSE Training Matrix, which provides a comprehensive training record, reflects all the training done by the employees and outlines the specific training requirements of all individuals per location or site. In addition, it allows the HSE Manager to easily monitor the training program of the individuals and spot potential problem areas before actual problems develop.

The training Matrix is an Excel sheet that is kept in the HSE Manager's computer.

The HSE Manager updates it after he complete any training course or as the site HSE Officers may indicate to him by submitting the formal training attendees form.

Printed copies of the "HSE Training Matrix" are distributed periodically to all the Sites for review. The Site Managers and QHSE Officers ensure that it is kept current and updated through their coordination and commitment to the HSE training program.

If specific customer or client training is required and or conducted to any EDDLUX employee, then data should also be entered into the "HSE Training Matrix" and updated accordingly.

After an employee successfully complete a training course, the HSE department issues to him a training certificate titled with the course name and date of completion and signed by the HSE Manager and the Project/Site Manager.

4.3. Training Program

Following are the most common, but not limited, formal or informal safety training courses to be given to EDDLUX or Non- EDDLUX personnel with brief details of their contents.

4.3.1. Briefing of New Employee

This informal (on-site) briefing is designed only for any skilled employee or Non-EDDLUX personnel at their new or first time arrival to any EDDLUX location or site.

Everyone is to get to know the importance of the EDDLUX Health, Safety and Environment Management System and other HSE related policies.

It will include information on the following:

- The Customer
- EDDLUX main HSE objectives
- Operations – overview
- EDDLUX organization
- EDDLUX HSE Management System in relation to its main elements:
- Leadership and Commitment
- Organization, Responsibilities and Resources
- Risk Management
- Planning and Procedures
- Implementation and Monitoring

- Assessment and Continuous Improvement
- EDDLUX Environmental System (EMS)
- Hazards – Location/Site/Field
- Muster point, Fire Drill, and Smoking (ERP)
- Snakes, Scorpions, etc.
- Health and Hygiene
- Fuel
- PPE zones
- STOP System
- Incident / Accident reporting

Attendees are to:

- Sign up after completion of the new employees briefing.
- Fill their personal details.

4.3.2. HSE Induction

All new non-skilled employees will be given a short period of informal (on-site) induction training immediately upon arrival.

Every time they return to location/site after more than three months absence, they will be briefed about the recent changes.

The Location/Site Manager conducts the induction for all the Top Management or the highly important visitors. HSE Advisors conduct this induction for all other staff.

The induction is based on a checklist and includes the safety critical instructions to ensure a safe location/site and to set knowledge of the HSE Management System in attendees.

It will include:

- Explanation of the HSE policy
- Driving and transportation to and from work sites and related issues of speed limits, seatbelt, smoking and equipment handling (Driving and Road Safety Policy)
- The PPE zones
- Explanation of the fire fighting procedure
- Explanation of the location or site evacuation plan
- Working around and in fabrication shops, storage areas and housekeeping (Housekeeping Policy and Environmental Policy).
- Working around and with equipment and machinery (Drugs and Alcohol Policy).
- Learning how to read the HSE signs and the importance of such signs.

- Paying attention to the hazards and risks notified by their senior managers and supervisors in their related work areas.
- Learning how to define a hazard and how to report.
- Learning the importance of the toolbox meeting.
- Spill prevention and countermeasures control plan.

Attendees are to:

- Sign up after completion of the HSE Induction.
- Fill their personal details.

4.3.3. Personal Protective Equipment (PPE)

This is an introductory formal course to the essential role of the Personal Protective Equipment (PPE) to guarantee the personnel safety in their daily work activities around their work locations.

The course explains:

- What are the PPE elements (hard hats, working gloves, safety boots, safety glasses, welder's helmets, jackets and face shields, earmuffs and earplugs, life rings and jackets, coveralls and safety harnesses)?
- What are the benefits of PPE?
- How to choose the correct PPE?
- When to use the proper PPE?
- Knowing the consequences behind the failure or negligence of using the necessary PPE in the related work activity.

Attendees are to:

- Sign up after completion of the PPE Training.

4.3.4. Environmental Training

Please refer to the EDDLUX Environmental Management System (EMS) for the fulldetails of this training program.

4.3.5. Unsafe Act and Reporting Awareness

The course is introduced to increase the importance of the Unsafe Act awareness in staff and employees in their work areas and through their daily work tasks and to provide them with the required knowledge to fill the EDDLUX Accident/Incident Report Form.

The course will include the following subjects:

- Explanation of the personal benefits of safe operations.
- Why the Unsafe Act reporting has been introduced to our work life?
- Learning the benefits of implementing this system.
- Learning the techniques for defining unsafe acts.
- Defining requirements for the unsafe act reporting skill.

- Method of reporting the unsafe acts?
- Ways of approaching the personal when arising the unsafe act.
- Explanation of the S.T.O.P. program (Stop Training Observation Program) and the correct way of filling the STOP card.
- When and how to fill an EDDLUX Accident/Incident Report Form.

Attendees are to:

- Sign up after completion of the Unsafe Act and Reporting Training.

4.3.6. Fire Fighting Awareness and Prevention

Fire extinguisher formal training will be provided to specific candidates identified as requiring such training.
The Fire Fighting course is introduced to reflect the management commitment to safeguard the employees and all locations, sites or project's assets related equipment, material and machinery.
The course will explain the following:

- The triangle elements of fire:
  - Fuel.
  - Heat (Source).
  - Air (Oxygen).
- The generation of fire.
- The fire fighting procedure.
- EDDLUX procedure for dealing with small fires, and big fires.
- The fire extinguisher types.
- Choosing the correct type of fire extinguisher for the currently occurring fire.
- Precautions to be taken when dealing with fires.
- Practical illustration followed by an example, where attendees will self-practice putting off a fire.

Attendees are to:

- Sign up after completion of the Fire Fighting Awareness and Prevention Training.

4.3.7. First Aid Training

The course is designed to introduce the First Aid awareness into employees.
It is ascertained that all sites have minimum of one trained Medic or First Aider. The Medics with equipped ambulance will be stationed at each work location or site and the doctor mans the main company clinic.
A Doctor or an experienced medic will give the course and will explain procedures for the following first aid cases:

- Body injuries.

- Broken bones.
- Bleeding.
- Eyes injuries.
- Heat injuries.
- ABC system.
- Electrical shock.
- The Medevac plan.

Attendees are to:

- Sign up after completion of the First Aid Training.

4.3.8. Driving Training

In order to increase the driver's sense of knowledge toward HSE related matters within the driving skills and to meet the objectives of our Driving and Road Safety Policy, any employee who possess a company vehicle or any company driver will undergo Defensive Driving Training (DDT).
The Defensive Driving Training course introduces the five safe seeing habits, which are:

- Aim High in Steering
- Get the Big Picture
- Keep Your Eyes Moving
- Leave Yourself an Out
- Make Sure They See You

Attendees are to:

- Sign up after completion of the Defensive Driving Training.

4.3.9. Industrial Specialized and Other Training

The HSE Department will also provide and conduct other training courses, as required and/or to meet the needs of specific projects, these courses will help increase the HSE awareness to the job performed by EDDLUX employees in order to control and eliminate risks and accidents and meet the objectives.
Listing below some of the main training courses titles:

- **Drugs and Alcohol Awareness**
- **Electrical Awareness**
- **Health and Hygiene Awareness**
- **Stepping, Handling and Lifting**
- **Workshop Hazards Awareness**
- **H2S Safety Awareness**
- **Scaffolding Training**
- **Rigging Training**

Attendees are to:

- Sign up after completion of any Training Program.

5. Information Management

We believe in the EDDLUX that communication of HSE issues can increase the sense of responsibility in our staff and employees. Therefore, we have developed an effective communications process to ensure free circulation of information throughout the organization, with customers, contractors, relevant government agencies and third parties.

All EDDLUX sites are equipped with various tow-way systems for communication both within the area of operations and beyond, listing below the main systems:

- Voice Lines – Available at all locations and sites as telephones or mobiles.
- E-mail Facility – Available in all departmental Manager's offices.
- Fax Facility – Available at all locations and sites.
- Hardware – Available at all departmental offices (e.g. Desktops, Laptops, Printers, Scanners, Photocopiers, etc.)

Active participation in EDDLUX information communication process shall be encouraged and maintained.

Information is disseminated through line management and directly down to all levels of employees through the following practices:

5.1. Operations Meetings

Operations meetings are conducted weekly and are chaired by the Project Manager or Site Manager.

This is primarily an operational meeting, but current HSE issues are reviewed.

All Individual Managers attend the meeting.

5.2. HSE General Meetings

These meetings are conducted at the End of every month and will be attended by the Individual Managers, HSE Department personnel and chaired by the Project Manager or Site Manager.
The customer or client representatives might be invited to attend this meeting.
The meeting normally focuses on particular HSE issues including the review of incidents during the month and the points raised from the STOP Card reporting system.
Action items assigned are documented and closure tracked via the site Remedial Work Plan (RWP).
Minutes of the meeting will be taken, posted and filled.

5.3. Toolbox Meetings

Every department shall hold a Toolbox meeting on the following basis:

- Daily basis

- Prior to commencing any unusual new job
- Changing the current work area
- Whenever specific problems arise (e.g. starting of an operation, which requires issuing Permit To Work (PTW) form.
- After any incident or accident to disseminate information

The Line Supervisors are to lead the meetings, where they briefly explain the coming daily task risks and types of hazards, stressing the importance of using the correct PPE.

These talks should each deal with a specific hazard and should mainly but not limited to unsafe work practices as applied to the particular job.

Topics concerning the Health, Safety and Environment (HSE) are to be discussed on rotation basis in order to get equal importance.

Speakers may also be rotated daily to ensure the full understanding of the HSE matters and issues discussed earlier and to raise the sense of responsibility among the staff towards HSE related issues and practices.

Line Supervisors are to make sure that all personnel under their job task responsibilities are to attend these meeting.

Each talk should be approximately at least ten minutes duration and conclude with a short period of discussion and suggestions.

The Line Supervisors are then to fill the EDDLUX weekly standard form for the toolbox meetings and submit it in return, at the end of week, to the HSE Department for reporting purposes.

In other words, Toolbox meeting should follow the EDDLUX five standards for conducting Toolbox Meetings:

1) **Rotate Topic (H, S & E).**
2) **Rotate Speaker.**
3) **Attendance is Mandatory.**
4) **Maximum 10 minutes.**
5) **Form Filled and Reported.**

Attachment 2 in Chapter 8 shows the RG weekly standard form for conducting and reporting toolbox meetings.

5.4. HSE Bulletin Boards, Signs and Posters

Bulletin boards are designed and implemented to enhance the overall safety awareness of EDDLUX employees. Hence, all EDDLUX locations and sites shall maintain a HSE Bulletin Board, posted at the most noticeable place.

The HSE Manager and his HSE Officers are in charge of keeping the bulletin board up to date and uncluttered.

Essential elements are posted on the bulletin board like the HSE policies, RWP, last HSE meeting minutes and Inspection and Training Schedules. In addition, specific information in the form of memos, posters, HSE alerts, etc. may be posted on the board.

If required, policies translated into other languages may be posted on the work site areas.

The posting of information does not constitute a successful dissemination of information and relevant matters should be addressed in more direct forums, toolbox meetings for example.

In addition, Safety Signs and Posters will be posted at strategic locations throughout the workshops, construction, offices and residence camp areas (if available).

These posted massages allow the RG commitment to safety awareness to become more highly visible and can be used to supplement and re-enforce the topics discussed at toolbox and HSE meetings and training courses.

Whenever HSE Department note any repetitive non-compliance to a particular safety policy or regulation or any downward trend in safety interest or awareness, signs and posters can be considered as an important method of recalling employees' attention to HSE related matters.

5.5. Standards

Any project carried out by EDDLUX will be operated under the following standards:

- Legal Standards for employees - must comply with local laws and regulations.
- Subcontractor standards - must comply with EDDLUX standards.
- Client Standards must be adhered to as required by signed contracts.
- EDDLUX standards.

The Project and the HSE Managers will take into consideration the client's standards and requirements in compiling a bridging document, if required, and apply such standards during the course of the project where these standards are more stringent than those of EDDLUX, and do not conflict with the strategic objectives.
In addition to the EDDLUX standards as mentioned in chapter 2 (Leadership and Commitment) of this HSE manual, the following listed standards will apply to all EDDLUX locations and sites:

5.5.1. Speed Limits

All vehicles shall be operated with strict adherence to the speed limits as listed below. Continued disregard by drivers of the speed limits will result in disciplinary action, which may include termination from the company's employee.
The listed below limits are the maximum speeds and vehicles should be driven at speeds as dictated by the road conditions.

Black Top

- **Station Wagons 100km/h**
- **Pick-ups 80km/h**
- **Heavy Trucks 60km/h**

Off Road

- **Station Wagons 80km/h**
- **Pick-ups 60km/h**
- **Heavy Trucks 40km/h**

Exceptions are as follows:

- Where lower national speed limits and/or other limits (e.g. road construction, detours, etc) are posted.
- It must be remembered that these limits are the highest speeds allowed, when circumstances dictate (i.e. bad weather or poor road conditions) speeds must be lowered to compensate.

5.5.2. Smoking

While the individual rights of smokers are respected, the damaging effect of the second hand smoke on the health of non-smokers is well established. With this in mind, in the absence of local regulations prohibiting smoking in the work place, we shall ensure that as a minimum, smoking is prohibited:

- In all meetings and conference rooms.
- In all public areas where legally restricted.
- In offices where smoking is not welcomed by non-smokers and considered a damaging factor on their health
- In workshops and storage areas, where risk of fire and loss of asset exists
- In the vicinity of any hazardous operation such as refueling.
- In messes, kitchens, toilets, laundry rooms.

This can be established through the introducing of the site-specific Smoking Policy. On the other hand, positive efforts shall be made to accommodate the interests of both smokers and non-smokers, through the provision of designated safe smoking area/room.

Keeping in mind what was stated earlier in Chapter 2 – Section 9, “Other site-specific policies can be defined and implemented in order to meet applicable internal and external requirements”.

It was found by experience that the existence of locations or sites “Smoking Policy” is a good and health protecting practice to be followed in EDDLUX.

The location/site smoking policy shall be posted and states clearly the Non Smoking areas.

Also smoking can become prohibited in offices where non-smoking personnel work adjacent to smoking personnel.

The main idea of this specific policy is to:

- Prevent accidental fires from destroying or damaging the company, clients, contractors, governmental, or third parties assets or properties.
- Safe the health of EDDLUX employees (Health Commitment)
- Provide a healthy environment for EDDLUX employees to becomeproductive

Once a Smoking Policy is defined and signed by the Site and HSE Manager, it shall become obligatory to all EDDLUX and Non- EDDLUX personnel.

It is worth mentioning that providing a designated safe smoking room/area in a location or site is a good practice that can be followed.

5.6. Bridging Documents

HSE bridging documents are normally established as necessary to ensure a coherent approach between all operating parties with a specific project (i.e. it connect the HSE Management Systems of our clients and contractors with our HSE Management System).

The bridging document is normally developed with the participation of all interested parties to identify similarities and difference between systems, and offer methods so that different systems can co-exist in harmony.

Bridging documents are normally available in the HSE Department and the Project Manager's Office. All EDDLUX Individual Mangers have access to it.

5.7. Information Security

Information Security is considered of our great responsibilities in EDDLUX, in which we strive to ensure the security and confidentiality of all proprietary and customer/clientinformation.
It is the Project Manager responsibility with close corporation of the HSE Manager to ensure such system and measures are taken place at all times.

Chapter 4
Risk Management

EDDLUX

1. Scope

EDDLUX Management will continually direct its qualified staff to:

- Comprehensive and systematic identification of all hazards encountered and the associated risks
- Design the hazards out.
- Implement controls such as procedures to reduce hazards effects.
- Mitigate the impact of our operations on health, safety and the environment.

This process will be called the “Risk Management Process”.

2. Definitions

In our aim to identify the hazards and their risks, we will use the HSE definitions frequently as a topic of the various locations/sites and workgroups daily toolbox meetings to ensure the full and correct understanding of our work force to the HSE definitions used in EDDLUX.

Unsafe Act	Any act that has the potential to cause an Accident. **Note**: The increase number of Unsafe Acts in a job function or process will definitely lead to an Accident.
Unsafe Condition	Any condition that has the potential to create an Accident. **Note**: The increase number of Unsafe Conditions in work location/site will definitely lead to an Accident.
Hazard	Any object, physical condition or physical effect that has the potential to cause an Incident.
Hazardous Situation	Any situation where a Hazard is present and/or an unsafe Act is being conducted.
Near-Accident (Incident)	An undesired event, which under slightly different circumstances had the potential to cause an Accident.
Accident	An undesired event, which results in: • **Harm to People** (injury or occupational illness) • **Damage to Asset** (vehicle, machinery, etc.) • **Has a negative effect on the environment** (Spills, vegetation damage, etc.). Accidents are **classified** as **Serious**, **High**, **Medium** or **Low** according to the severity of the loss.

Risk	Is the measure of the probability (Exposure) for an Incident to happen and of the potential severity of the consequences (Potential).
Corrective Action	An action taken to prevent reoccurrence of an Accident/Incident and/or minimize its consequences.
EDDLUX Employee	Any person engaged in activities for benefits of EDDLUX and who receives payment, even on temporary basis (Part-time/Casual), from EDDLUX.
Third Party	Anyone who is not EDDLUX Employee or contractor.
Headcount	Total number of EDDLUX personnel at month-end, includingfull and part-time (Casual) employees.
Contractor	Any company or person providing services on a routine basis to EDDLUX.

3. Categories of Accidents

We believe that we can significantly improve our HSE performance by applying the industrial categories for accidents into our system knowing that our level of involvement through the commencement of our projects is significantly higher than is the normal in the industry.

The categorization of accidents in EDDLUX defines the investigation and review process that is applicable.

First Aid Case (FAC)	Any one-time treatment and subsequent observation of minor scratches, cuts, first-degree burns, splinters and so forth, which do not ordinarily require medical care by a physician. (Such treatment is considered First Aid Case (FAC) even if provided by a physician).
Medical Treatment Case (MTC)	Any work-related injury or illness which requires a medical treatment by a physician (e.g. broken bones, cuts requiring stitching and all second-degree burns), but which has less severe consequences than a Restricted Workday Case (RWC) or a Lost Time Injury (LTI).
Restricted Workday Case (RWC)	Any work-related injury or illness that prevent worker from performing ALL of his normal job tasks.
Lost Time Injury (LTI)	Any work-related injury or illness that prevent worker from performing ANY of his normal job tasks.

Fatality	A death resulting from a work-related injury or illness, regardless of the time intervening between injury/illness and death.
Multiple Fatality	A multiple death resulting from a work-related injuries or illness, regardless of the time intervening between injury/illness and death.

In addition we use the following equations to calculate the Lost Time Accident Rate as follow:

$$\text{Lost Time Accident Rate (MTC, RWC and/or LTI Rate)} = \frac{\text{Accident (ie MTC, RWC..)} \times 200{,}000}{\text{Total on-Job Hours of Exposure}}$$

4. Risk Management Process

We believe in EDDLUX STEEL MANUFACTURING that:

"HSE hazards and risks are associated with every product used or job performed in our daily work activities".

Therefore, we aim to:

- Identify all possible hazards and effects, which may be encountered, as early as possible in the life of the work or activity.
- Reduce as far as it is reasonably practicable the risk of an accident happening to zero or at least an acceptable level or the possible consequences of an accident by setting up and implementing the correct controls or the proper recovery measures should the controls fail.
- Eliminating or reducing the hazards depends on reason judgment and consideration of alternatives or additional controls.
- Continuously track these hazards and effects using the Remedial Work Plan (RWP).
- All employees shall receive formal training in Risk Management.
- These targets can be achieved through control and recovery measures such as constant awareness, effective procedures and training, wearing PPE and emergency procedures.

4.1. Identification of Risks

The EDDLUX's HSE Management System will be used to identify risks and prevent accidents.

Hazards are identified mainly by inspection and experience and through the advice of the HSE Department personnel.

Line personnel, at all levels, of the EDDLUX are actively involved in the risks identification process of the Hazards and its Effects. In addition, for all projects, key personnel must be aware of the risks specific to that project.

All EDDLUX staff and personnel shall use the Stop Training Observation Program (STOP) card system to focus on identifying and reporting Unsafe Acts and Conditions encounteredin the daily work activities.

4.2. Assessment of Risks

Prior to risks identification of the Hazards and Effects, barriers will be put in place to reduce the probability of the release of the Hazard (Control) or to reduce the Effects (Recover).

In EDDLUX we manage the risks that might encounter prior to or during the commencement of a project's operations through the preparation of a "**Risk Assessment Table**", which details all identified Hazards and setting up the correct and proper control and recovery measures.

Risk Assessments form the basis for reducing the risks associated with a certain job, task or action to an acceptable level where work activity can continue safely, by reason judgment or the correct selecting of controls or the proper alternative recovery measures should the controls fail.

It is only by conducting these tasks assurance is provided that major hazards will be managed.

"Risk Assessment Table" is:

- ü A living document (i.e. require continual and regular update)
- ü An Excel format sheet that gathers identified hazards and assesses risk based on activity.
- ü Presented in an easily manageable table format.
- ü Directs user to support documents.
- ü Table format reduces size required for this process.
- ü Table designed for ease input.
- ü Prepared and controlled by the HSE Manager
- ü Communicated and circulated through the HSE meetings and the posting on the bulletin boards.

Attachment 3 in Chapter 8 shows the Risk Assessment Table Form to be used in our operations, locations and sites.

4.3. Communication of Risks

All Hazards and Effects of identified Risks are communicated to the workforce through:

- Toolbox Meetings
- HSE Meetings
- HSE Alerts
- HSE Signs and Posters.

5. Prevention and Mitigation

The various Controls and Recoveries identified during the process of risk management are applied through the EDDLUX operations, locations and sites to minimize the exposure to the risk of loss and to reduce the severity of any loss should it occur.

5.1. Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) will be worn or used as part of the job requirement.

Disciplinary action may be taken against the employee and his Supervisor for failure to wear or use the required PPE for the job or during the operation commenced.

EDDLUX's HSE Management System has identified the correct type of PPE to be used in the various and different jobs during the commencement of the project's tasks and operations in the various Work Procedures and in particular the PPE Work Procedure, which are developed as a strict and mandatory procedures applied over the entire organization.

5.2. Equipment Features

To alert employee in emergency situation, if it occur, an electric and/or manual fire alarms are provided in the locations, sites and/or camps.

Smoke detectors are fitted in all offices and accommodation rooms in camps, when high risk is identified due to the lack of personnel awareness.

All light vehicles are fitted with seatbelts for all passengers and roll over protection bar.

All machinery used in operations are fitted the required safety measures (e.g. front and rear lights, reverse alarms, fire extinguishers, etc.).

Separate areas for Battery Charging and Hazardous Material Storage have been identified and assigned in a full compliance with the Environmental Management System (EMS).

5.3. Fire Fighting Equipment

Most of the fire extinguishers kept on the various RG locations and sites are multi-purpose Dry Powder rated ABC.

CO2 and Liquid fire extinguishers are also used in RG locations, sites and camps. The CO2 fire extinguishers are located mainly around Generators and electrical main distribution boxes (only after a clear ventilation is maintained), while the Liquid or Foam fire extinguishers are located around the fuel and highly flammable liquid containers.

Fire extinguishers sizes used in EDDLUX ranges between 1 to 35 Kg's.

All light vehicles are fitted with 2 kg Dry Powder fire extinguishers, while machinery (heavy vehicles) are fitted with 6 kg Dry Powder fire extinguishers.

Fire buckets full with sand and Barrels full with water are also used in EDDLUX locations, sites and camps as an extra measurement to control the risk of fires.

Fire Extinguishers type and size, the fire Buckets and Water Barrels are distributed and located in their positions after the trained and qualified HSE Department personnel conduct a detailed QHSE inspection to the location, site or camp.

5.4. First Aid Kits

First Aid kits are also used in EDDLUX as a Control

measurement.Following are the contents of the First aid kits:

Triangular Bandage,
Gauze Pads,
Roller Gauze,
Surgical Adhesive Tape,
Strips,
Tweezers,
Scissors,
Tongue Depressor,
Burn Dressing,
Eye Bandage,
Non-sterilized Disposal Gloves,
Antiseptic Fluid and Cotton roll.

First aid kits are provided in all company vehicles. The doctor in the main location/site/camp and the Medics in the off-sites/ambulances/camps check the first aid kits on monthly basis to ensure contents are kept as standard.

5.5. Occupational Health

EDDLUX strives to help its personnel to care for their own health. As regard occupational health, we shall provide a workplace, which protect the health of all employees, contractors and the surrounding community and through improvement of industrial hygiene, ergonomics and safety to reduce the work-related health risks.

The responsibilities for health are shared between the individual and the company. This section lists what the company provides.

Health Risk Assessments form the basis for regular examination of employees, identification of health risks and assignment of resources.

Thorough emergency and medical procedures are implemented and available in EDDLUX, locations, sites and camps (Please refer to the Emergency Response Medevac Evacuation Plan at Section 4.1. – Chapter 5.

EDDLUX supplies a Doctor/Medic accompanied by an Ambulance with all work locations or sites at all times.

The Doctor/Medic is to be responsible for water samples testing, as he is to monthly collect water sample and sends it to the identified qualified hospital/laboratory for testing.

It is the responsibility of newly hired personnel to hand-fill and sign the Newly Arrival Medical Record Form (Attachment 4 – Chapter 8) on arrival and to inform the Doctor/Medic of any changes of their medication prescriptions taken, if occur.

All personnel are to be medically checked by the Doctor/Medic on arrival and the personnel medical records to be updated accordingly.

The Doctor/Medic will keep and update a record of each employee in the clinic. These records can/will be used in the emergency cases only. These records are considered highly confidential.

A copy of the EDDLUX personnel medical record shall be kept in the contracted Hospital. It is the EDDLUX's Doctor/Medic's responsibility to continuously update this file.

Non-smoker's right in working in a healthy environment is also protected through the implementation of the site-specific Smoking Policy. Health Alerts are posted on the HSE Bulletin Boards.

5.6. Environment Impact

EDDLUX has introduced an Environmental Management System in a highly management commitment and approach toward clean and health environment.

Please refer to the full details in the EDDLUX Environmental Management System (EMS) Manual, which is considered as the non-separated and continual part of this HSE Management System Manual.

6. Recording of Hazards and Effects

We found out in EDDLUX, that it is of great important to properly and permanently record the identified Hazards and their potential or known Effects and their associated Risks in the Major jobs or tasks performed in our operations. This allows the HSE Management System to become an easy system to use and implement directly and immediately at the start of commencing any new project.

The HSE Department has commenced producing Hazard Registers and HSE cases for the management of Major Risks identified and known by experience in our operations.

6.1. Hazard Data Sheet

The main method of recording hazards and Effects of HSE cases in EDDLUX is the "**Hazard Data Sheets**".

The EDDLUX Hazard Data Sheets (HDS's) are a Risk Evaluation documents for the hazards when combined with an activity.

They provides means of recording control procedures, equipment, systems or other measures to be in place to limit either probability or effects and means of recording the recovery measures to be in place in the event of loss of control, taking into considerations the escalating factors of the risk.

Each Hazard Data Sheet has a unique number allowing easy tracking.

It describes the activity of the job and details the Hazards and Effects. It also explains the elements that can increase such risks (Escalating Factors). In addition, it indicates the exposure and potential severity and nature of risk (Harm to People, Damage to Asset or Environment Effect) and defines the proper control and recovery measures to eliminate the Hazards and Effects of the risk. Furthermore, it details the work procedures and job descriptions related to the risk as a comprehensive reference for more details to be followed.

Each Hazard Data Sheet has to be approved by the Project Manager after revision of the HSE Manager.

The formulation of Hazard Data Sheets (HDS's) is considered an ongoing process (living documents), which is controlled by the HSE Manager and communicated to all work forces through the toolbox meetings.

It is the responsibility of the HSE Department and the Individual Managers to ensure that all personnel are aware of the major Hazard Data Sheets (HDS's) within their work area.

Hazard Data Sheets (HDS's) are to be reviewed annually and prior to commencing any new project by the HSE Manager.

Additional Hazard Data Sheets (HDS's) can be prepared if new risks are identified during the commencement of any project.

Attachment 5 – Chapter 8 shows the standard EDDLUX Hazard Data Sheet Form followed by its legend.

Appendix A (i.e. Section 10) of this chapter (Chapter 4) details the Major identified Risks in EDDLUX operations and their relevant Hazard Data Sheets.

6.2. Safety Task Analysis Risk Reduction System (STARRT)

The Safety Task Analysis Risk Reduction (STARRT) system is introduced in EDDLUX to identify the hazards and effects that might be encountered as well as the proper and correct control and recovery measures and precautions required prior to the start of commencing any kind of unusual or major job to be performed at a specific operations or work site.

The system is based on the full and responsible corporation between the Individual Managers and the HSE Department. Hence, the system is expected to work on the elimination of activity's hazards and effects to as low as it is reasonably possible based on the experience and observation.

The most important role of this system is that: -

- Increase the awareness of the Individual Managers and their operational responsible personnel in the EDDLUX, towards the hazards and effects that might associate the specific jobs they intend to perform or used to.
- Increase their corporation with the HSE Department to identify the best controls and recovery measures and precautions prior commencing the specific job or task.
- Training them on using their experience and observation techniques during the hazards, effects and control and recovery measures identification.
- Training them on the brain Storming Methodology.
- The system works as an extensive toolbox meeting between the Operation Supervisor and the work force involved in the operation about to be commenced.

6.2.1. Practicing the STARRT System

In this system, every Individual Manager has to complete the STARRT sheet prior to start commencing the job intended to, preferable one day earlier.

The STARRT sheet is to be filled with attendance of the HSE Department personnel, mainly the location/site assigned Safety Officer or it can be the HSE Manager.

After finishing and completing the STARRT sheet, a detailed discussion meeting is to take place between all senior members and the HSE person, in order to review the sheet and accordingly determine the necessarily actions or precautions (control and recovery measures) to be taken or considered to eliminate the identified hazards and risks.

Prior to commence operation, The Individual Manager responsible on that operation has to discuss in details the STARRT sheet with all personnel involved with that particular job or operation in a comprehensive toolbox meeting.

After completing the toolbox meetings, the attendees personnel names involved in the job or operation to be printed on the sheet and signatures to be gained.

Attachment 6 in Chapter 8 shows the Safety Task Analysis Risk Reduction (STARRT) Form.

EDDLUX

7. Accidents / Incidents Reporting and Investigation System

7.1. Purpose

It is of our believe that all accidents are preventable (refer to the HSE Policy). Hence, the reporting system implemented in EDDLUX is purposed to ensure that all accidents and incidents undergo appropriate, accurate and adequate analysis, identifying both cause and consequences, and to develop and implement suitable actions to prevent reoccurrence both by eliminating causes, where possible, and by protecting against their consequences.

7.2. Objective

The system is objective to:

- Promote the identification and reporting of all suggestion of improvement, hazardous situations, unsafe acts, accidents and near-accidents (incidents).
- The identification of the Root Causes (EDDLUX HSE Management System mainsix (6) components lack of control).
- The assessment of the associated risks.
- The implementation of the corrective action(s) to address the suggestion or reduce the accidental risk(s) to an acceptable level.

The system allows the HSE Manager to:

- Investigate, analyze, follow-up and close out all accidents and incidents, including the failures and hazardous situations that occur within EDDLUX locations and sites or at off-site locations, regardless of the severity.
- Investigate, analyze, follow-up and close out all accidents involving both, EDDLUX and Non-EDDLUX employees, equipment and/or property.

7.3. Responsibility

It is of the line management responsibility to ensure that all incidents and accidents are reported, investigated and reviewed and that corrective actions are assigned. This requires a continuous encouragement and setting a "**No Blame Culture**" principle among work force around the work locations and sites.

The HSE Manager is responsible for ensuring that the correct and proper corrective actions are identified to address the root cause of the incident and that the corrective actions are implemented, followed-up and closed out.

The Project Manager is responsible for reviewing and approving these procedures (corrective actions) to ensure they comply with the EDDLUX HSE Management System policies, philosophies, vision, mission, culture, strategy and objectives.

Individual Managers are responsible for ensuring that all personnel within their scope of responsibility cooperate with the HSE Department personnel when and while investigating the occurred and reported accidents or incidents.

EDDLUX

7.4. Risk Assessment Methodology

The EDDLUX HSE objectives were translated in terms of a specific Hazard Management Performance Criteria, called the "**Risk Assessment Matrix**".

The Risk Assessment Matrix will allow us assessing the specific risks, weaknesses and deficiencies during the operations of the commenced projects and their likely effects in terms of effects on the People, the Assets and the Environment. This process is called as the "**Risk Classification**".

The Risk Classification is based on deciding or measuring the "**Exposure Severity**" of the weaknesses and deficiencies, which is defined from 0 to 5 and the "**Potential Severity**", which is defined from A to D.

It is very important when classifying the risk to be a bit realistic about our choices and not to exaggerate.

Only by classifying (deciding) the Exposure and Potential Severities we can decide the exact "**Risk Zone**" of the Risk Assessment Matrix.

In EDDLUX we differentiate these zones into four (4) zones and accordingly we should react,these zones are listed below as follow:

Serious	The operation does not start or continue until an alternative method has been developed or additional controls have been implemented.
High	The operation starts or proceeds only when risk-reducing measures are in operation or with specific sanction by management.
Medium	The operation starts or proceeds, with continuous effort to improve.
Low	The operation starts or proceeds and improvements are made when developed.

Deciding or measuring the Potential and Exposure Severities categories for each of the weaknesses or deficiencies is very important.

Therefore, the definitions of such deficiencies, of the EDDLUX major categories (People, Assets & Environment), on explaining severity and potentials are detailed in the following listed tables (tables 1, 2 & 3), followed by the EDDLUX Risk Assessment Matrix (table 4) used in identifying the Risk Zone of the weaknesses or deficiencies.

Furthermore, Attachment 7 – Chapter 8 shows the Accident/Incident and Investigation Report Form used in EDDLUX.

EDDLUX

Table 1- Harm to People

Exposure Severity	Description	Explanation
0	No Injury	- No injury or damage to health
1	Slight Injury	- Not affecting work performance or causing disability - First Aid Cases (FAC) & Medical Treatment Case (MTC)
2	Minor Injury	- Affecting work performance, such as restriction to activities or a need to take few days to fully recovers. - Limited health effect, which are reversible. - Restricted Workday Case RWC.
3	Major Injury	- Affecting work performance in the longer term. - Irreversible health damage without loss of life - Lost Time Injury (LTI) including Permanent Disability.
4	Single Fatality	- From an accident or occupational illness (e,g, poisoning, cancer) -Fatality or Permanent Total Disability
5	Multiple Fatality	- From an accident or occupational illness (e.g. poisoning, cancer)

Table 2 - Asset Damage

Exposure Severity	Description	Explanation
0	No Damage	- Zero Damage
1	Slight Damage	- Repair cost less than 1000 US$
2	Minor Damage	- Repair cost less than 10,000 US$
3	Local Damage	- Repair cost less than 50,000 US$
4	Major Damage	- Repairs or stop of other customer's /client's operations - Cost up to 100,000 US$
5	Extensive Damage	- Massive repairs or long shutdown of customer's /client's production facility - Cost in excess of 100,000 US$

Table 3 - Environment Effect

Exposure Severity	Description	Explanation
0	No Effect	- No environmental damage - No change in the environment - No financial effect
1	Slight Effect	- Local environment damage - Negligible financial effects.
2	Minor Effect	- Contamination - Damage sufficiently large to attack the environment - No permanent effect on the environment.
3	Local Effect	- Limited loss of discharge known toxicity. - Affecting neighborhood.
4	Major Effect	- Severe environment damage. - The company required taking extensive measures to restore contaminated environment to its original status.
5	Extensive Effect	- Persistent severe environmental damage or severe nuisance extending over a large area - In terms of commercial or recreational use or nature conservancy, a major economic loss for the company.

Table 4 - Risk Assessment Matrix

Exposure Severity	People	Assets	Environ-ment	Potential Severity			
				A	B	C	D
				Never occurred before	Has occurred before	Several times/year	Several times/y in same job
0	No Injury	No Damage	No effect	LOW			
1	Slight Injury	Slight Damage	Slight Effect				
2	Minor Injury	Minor damage	Minor Effect		MEDIUM		
3	Major Injury	Local Damage	Localized Effect			HIGH	
4	Single Fatality	Major Damage	Major Effect				
5	Multiple fatality	Extensive Damage	Massive Effect			SERIOUS	

7.5. Corrective Actions

Once the accident/incident has been thoroughly investigated and analyzed, based on results of analysis, the HSE Department is responsible for reviewing the analysis results and determining whether the corrective action is required or not.

Corrective actions are filled in the designed table in the accident/incident and investigation report form and must serve one or two purposes of the following:

- ü To prevent reoccurrence of the accident/incident and or
- ü To minimize the consequences of reoccurrence to an acceptable level

Corrective actions should be proposed whenever:

- A new safety regulation/equipment is required to prevent reoccurrence of an accident/incident.
- A new safety regulation/equipment is required to minimize consequences of an accident/incident to an acceptable level.
- A repeated or continual pattern of non-compliance to existing regulations is observed.

Depending on the nature of the corrective action proposed, it may be issued either:

- Immediately by authority of the HSE Manager or

- It may require review and approval by the Project Manager.

Corrective actions can be proposed either in writing or verbally, the last depends on the nature, severity and potential of the weakness or deficiency that caused the accident/incident to occur.

Regardless of how the corrective action was proposed, corrective action must state clearly the name of the person appointed responsible for implanting the corrective action with a specified target date (time frame period) for completion. Further remarks can be added on the corrective action table of the accident/incident and investigation report form

HSE Department personnel when notified and/or observe the completion and closing out of a corrective action, only then the completion date is filled in the corrective action table of the accident/incident and investigation report form and, only then, it is considered as a closed accident/incident report.

7.6. Early Notification of Accidents

For all Serious, High and Medium (SHM) accidents, the HSE Manager and Project Manager shall be notified of the Eight Minimum Accident Facts (See Attachment 8 – Chapter 8) within 24 hours of the accident/incident.

For all cases classified as Serious (e.g. fatality or multiple fatality, extensive asset damage or massive environment effect), the Project or HSE Manager shall immediately, by telephone, inform the RG Top Level Management.

Eight Minimum Accident Facts

1) Brief description of the accident including accident type and severity.
2) Location or site of accident.
3) Date and time of occurrence.
4) Name of injured, if any, including third party.
5) Job title of the injured.
6) Initial injuries and treatment given.
7) Situation of injured at time of report.
8) Brief description of asset damage or environment effect, if any

8. Remedial Work Plan (RWP)

Where and when deviations of performance against plan are found, corrective measures are identified, planned and implemented. Keeping in mind that the emergency of implementation is a risk related, following established work procedures or emergency response plans.
The implementing of the Remedial Work Plan (RWP) purposed mainly for the fast and immediate action(s) to be assigned and closed out when performance deficiencies are recognized.
The Remedial Work Plan (RWP) is designed to:

- Shows the location or site of the task(s) that require corrective action (e.g. newly identified hazards and outstanding remedial work).
- List all outstanding issues.
- Correct description and/or explanation of the nature of the corrective action item assigned to eliminate the hazard for each of the outstanding issues.
- Shows the source of identifying the action item.
- Shows the time frame required for eliminating the hazard or completing the work task.
- Shows by whom the work task is to be completed by (i.e. responsible person for closing out the action).
- Shows the exact completion date of each action item.
- Shows line management comments on the assigned action items.

The Remedial Work Plan (RWP) is a powerful tool designed for ensuring required corrective actions are captured and completed.

The Remedial Work Plan (RWP) is a living location/site specific Excel sheet format database document and is controlled and updated regularly by the HSE Department personnel.

Sources for action items entries in the Remedial Work Plan (RWP) database Excel sheet varies and can be anything from accident/incident report, STOP card, verbal suggestion, toolbox meeting, personal observation, HSE and/or Operational meeting, inspection and/or audit finding, practice drills, etc.

The Remedial Work Plan (RWP) is to be discussed in the location's/site's monthly HSE Meetings, where hazardous situations are discussed in methods of prevention or elimination and personnel responsible are assigned for the commencement of the work task and the agreed time scale to be completed in is set up.

In each HSE Meeting, the Individual Managers are to provide the completion date of their department location/site assigned tasks and/or follow up comments showing what has been done to their assigned work tasks or reasons for delay of closure.

After completing the Remedial Work Plan (RWP) discussion in the location/site HSE Meeting or at the end of each month, status is updated of all open action points and only then the completed items in the database are saved by the HSE Department.

Posting the Remedial Work Plan (RWP) on the location/site bulletin board works as a reminder for work staff of the action items they are responsible for and its completion date assigned. In addition, it enables all personnel to see what progress is being made on any task and who is responsible and accountable for ensuring tasks are completed.

In general, the Remedial Work Plan (RWP) is used to track closure and assign corrective actions.

Attachment 9 – Chapter 8 shows the EDDLUX locations and/or sites used Remedial Work Plan Form.

EDDLUX

9. Management of Temporary Change

Processes shall be in place to assure that appropriate prevention and mitigation measures are applied so that risk is minimized to an acceptable level in the case of temporary changes.

9.1. Identification of Temporary Changes

In the case that the normal prevention and mitigation measures implemented, on a work location or site or on a specific job, are temporarily not applicable, alternative measures have to be defined and implemented in a safe and controlled manner.

Temporary changes result, in particular, from:

- Standard but non-routine operations (e.g. confined space entry)
- Temporary impossibility to apply standard risk minimization measures (e.g. use of tractors in towing welding machines that are not fitted with roll bars).
- New activities (e.g. moving and/or lifting of heavy loads).

9.2. Permit To Work System (PTW)

9.2.1. Objective

EDDLUX STEEL MANUFACTURING (EDDLUX) has specified the need for a Permit To Work (PTW) system to be implemented for any work area and/or operation, where normal prevention or mitigation measures are temporarily not applicable, in order to set safety control(s) and manage the temporary changes in a hazardous operation or a new non-routine or non-standard job about to be performed (e.g. confined space entry).

The Permit To Work (PTW) system is designed to minimize the effects of such hazards by:

- The inspection of the area prior to work commencing
- The establishment of safe working procedure

9.2.2. Types of Permit To Work (PTW) Forms

EDDLUX has identified two types of Permit To Work (PTW) Forms, which are:

1) **The General Permit To Work Form.**
2) **The Hot Work Permit Form.**

Each form has a unique sequential number and is designed of four copies, which are distributed as follows:

Blue (Original)	HSE Department
Pink (Copy)	Operation Supervisor
Yellow (Copy)	Operation/Site Manager
Green (Copy)	Client/Customer copy/HSE Department

Attachment 10 and 11 – Chapter 8 shows the two different PTW Forms used in EDDLUX operation.

9.2.3. Responsibility

Operations supervisor will be responsible for issuing the Permit To Work or the Hot Work Permit Form in the present of the HSE Manager or one of his Officers.

HSE Officer has to attend the toolbox meeting conducted by the Operation Supervisor prior commencing the task or operation.

The Operation/Site Manager has to sign approving the PTW Form prior any work allowed to be commenced.

9.2.4. Practicing the PTW System

When a new hazardous, a non-routine or non-standard task or operation about to be performed, the Operation Supervisor will issue a PTW Form specific to the nature of the task or operation intended to be done with consultancy of the site assigned Safety Officer or the HSE Manager.

The HSE Officer has to complete all the inspections required by the PTW Form. The

Operation Supervisor will then sign off the PTW Form by other Supervisors involved in the PTW task or operation about to be commenced, if required by the Form, and the Operation/Site Manager responsible for the task or operation, as a final step for approving the commencement of the task or operation.

After approving the PTW Form, the Operation Supervisor will then hold a toolbox meeting with all involved work staff and discuss the Permit To Work (PTW) Form in details making sure that all personnel involved in the task or operation are aware of the inspection results, evacuation procedure and assembly point.

When all safety controls are in place, toolbox meeting is conducted and understood by all the work force involved and the Safety Officer has completing his inspections, it is only then the task or operation can be commenced.

The toolbox meeting can be conducted using the STARRT sheet prepared earlier by the Operation supervisor and the HSE Officer for that particular task or operation.

When the task or operation is completed, the PTW Form is then closed out, by printing the date and hours at the time of ending the task or operation.

The closed PTW checklist is then submitted to the distribution list as mentioned in the above Section (8.2.2.) for record keeping.

In the event of changing conditions creating hazards that are not previously specified during the commencement of a task or operation that been approved by a WTP Form, procedure will be as follow:

- Stop the work and the existing Permit To Work (PTW) Form to be closed out or canceled.
- Issue a new PTW Form specific for the update situation of the task or operation.

It is only then when work can be resumed in this task or operation.

No work in a restricted area may be commenced until a Permit To Work (PTW) Form has been issued applicable to that particular operation.

9.2.5. Record Keeping

As per the distribution list in above section (Section 8.2.2. – Chapter 4):

The Blue (Original)	Is filled in the HSE Department Office
The Pink (Copy)	Is filled in the Operation Supervisor's office.
The Yellow (Copy)	Is filled in the Operation/Site Manager's office.
The Green (Copy)	Is submitted to the Client/Customer or can be filled in the HSE Department office as well.

Both originals and copies are to be stored until the end of contract.

10. Appendix A – EDDLUX Major Identified Risk's Hazard Data Sheets.

EDDLUX has identified through experience of commencing various oilfield construction projects the following Hazard Data Sheets (HDS), which are to be followed and implemented during operations of projects:

EDDLUX -HDS-01	Back Filling
EDDLUX -HDS-02	Electrical Wiring
EDDLUX -HDS-03	Excavation
EDDLUX -HDS-04	Working with Explosives
EDDLUX -HDS-05	Fire in the Facility / Location / Site
EDDLUX -HDS-06	Foundation
EDDLUX -HDS-07	Gas Cylinders
EDDLUX -HDS-08	Working with Generators
EDDLUX -HDS-09	Heat
EDDLUX -HDS-10	Heavy Lifting and Loading
EDDLUX -HDS-11	Working on Heights
EDDLUX -HDS-12	Hydro Testing
EDDLUX -HDS-13	Installation of A/C Ducts
EDDLUX -HDS-14	Liquids
EDDLUX -HDS-15	Working with Machinery
EDDLUX -HDS-16	Operating Compressors
EDDLUX -HDS-17	Radiation
EDDLUX -HDS-18	Removing Roof Shatters
EDDLUX -HDS-19	River Crossing
EDDLUX -HDS-20	Road Crossing

EDDLUX -HDS-21	Sandstorm
EDDLUX -HDS-22	Scaffolding
EDDLUX -HDS-23	Scorpions
EDDLUX -HDS-24	Security
EDDLUX -HDS-25	Small Tools
EDDLUX -HDS-26	Snakes
EDDLUX -HDS-27	Steel Structure Erection
EDDLUX -HDS-28	Stringing of Pipes
EDDLUX -HDS-29	Transportation
EDDLUX -HDS-30	Welding, Grinding and Cutting

	HEALTH SAFETY AND ENVIRONMENT MANUAL	CODE EDDLUX-HSE-MAN
		DATE October 28, 2019

HAZARD DATA SHEET	
HAZARD DESCRIPTION	HDS Reference No.
Back Filling	**EDDLUX-HDS-01**

Activity Description (An action which may put someone or something at risk from a hazard)

- Backfilling trenches with sand using hand tools or machinery (dozers or backhoes).

Risk Assessment (Description of Hazard in Relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of injury (e.g. foreign body, cuts, fractures and bruises).

- Risk of environmental damage (e.g. spills).

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.)

- fatigue

- Wind.

- Rain.

People		X	Assets				Environment			X
Severity	**0**	1	2	3	4	5	**Potential**	**A**	**B**	**C**	**D**
	NA	VL	L	M	H	VH		**L**	**M**	**H**	**S**

C/R	Safety Critical Tasks	PE	By
C	PPE: Gloves, Safety glasses or goggles, ear muffs, dust masks & safety shoes	**E**	All site Engineers, Supervisors, Foremen and HSE Officers.
C	Machinery to be inspected regularly and maintained by authorized mechanics only	**PE**	
C	Tools to be inspected regularly.	**PE**	
R	Medical coverage and evacuation procedures in place.	**PE**	
C	Supervisor available at all times.	**E**	

Applicable Work Procedures

Prepared By	Revised By	Approved By
Name:	Name:	Name:
Position:	Position	Position

	HEALTH SAFETY AND ENVIRONMENT MANUAL	CODE EDDLUX-HSE-MAN
		DATE October 28, 2019

HAZARD DATA SHEET											
Hazard Description							HDS Reference No.				
Electrical Wiring							**EDDLUX-HDS-02**				
Activity Description (An action which may put someone or something at risk from a hazard)											
Electrical Wiring in Building and Machinery. Electrical Wiring in Equipment and											
Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc											
- Risk of Electrical Shock. - Risk of Fall from Heights. - Risk of Fire											
Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))											
-Wind											
-Rain											
-Narrow Trenches.											
People			X	Assets			X	Environment			
Severity	0	1	2	3	4	5	Potential	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Fire Extinguisher to be Available	PE	All Site Engineers and HSE Officers
C	PPE: Safety glasses, Hard Hats, ear Plugs/Muffs & Safety Shoes		
C	Scaffold to be Inspected and Tagged.		
CR	Tag Out/Lock Out System to be Implemented.	PE	
C	Medical Coverage and Evacuation Procedures in Place.	PE	
C	Proper and Inspected Tools & Equipment to be used.	PE	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

	HEALTH SAFETY AND ENVIRONMENT MANUAL	CODE EDDLUX-HSE-MAN
		DATE October 28, 2019

HAZARD DATA SHEET											
Hazard Description							HDS Reference No.				
Excavation							**EDDLUX-HDS-03**				
Activity Description (An action which may put someone or something at risk from a hazard)											
_Excavation using Hand Digging Tools, jackhammers and/or Backhoes.											
Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)											
- Risk of Injury (Foreign Baody in Eye, Fractures, Cuts and Bruises)											
Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))											
-Wind											
-Rain											
-Narrow Trenches.											
People		X	Assets		X	Environment					
Severity	0	1	2	3	4	5	Potential	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Tools, equipment & machinery to be inspected.	PE	All Site Engineers and HSE Officers
C	PPE-Hand Digging: Safety Glasses or Goggles, Gloves, Hard Hats & Safety Shoes	PE	
C	PPE-Jackhammers: Safety Glasses or Goggles, Gloves, Hard Hats, safety Shoes and Ear Muffs.	PE	
CR	Ladders Provided Inside Trenches.	PE	
C	Soil Planned at Least 2 Feet Away from Trench Edge.	PE	
C	Barricades and Signs Installed at Work Site.	PE	
C	Safe Crossings to be Provided Across Trenches.	PE	
R	Medical Coverage and Evacuation Procedures in Place.	PE	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**

Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

	HEALTH SAFETY AND ENVIRONMENT MANUAL	CODE EDDLUX-HSE-MAN
		DATE October 28, 2019

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Working with Explosives	**EDDLUX-HDS-04**

Activity Description (An action which may put someone or something at risk from a hazard)

-Using Explosive to Perform Excavating Activities in Hard Rcky Land.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Fire.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Lack of Training
-Rain

People	X	Assets	X	Environment

Severity	0	1	2	3	4	5	Potential	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Only Qualified & Authorized Personnel to Perform any Duties related to Explosive.	E	All Site Managers, Supervisor and HSE Officers
C	PPE-Hand Digging: Safety Glasses or Goggles, Gloves, Hard Hats & Safety Shoes	E	
C	Watchmen Available around Blasting Area.	E	
C	No Personnel allowed near Blasting Area (Safe Distance to be followed).	E	
C	Warning Signs to be Installed at Strategic Location.	E	
C	No Metal Devices allowed to be worn when loading (e.g. Watch, Rings,	E	
C	All Electronic and Electrical Devices and Equipment should be Switch off While Loading.	PE	
R	Medical Coverage and Evacuation Procedures in Place.	E	
R	Fire Extinguisher to be Available.	E	
C	Whistle and Red Flags to be Available and Used Prior Blasting.	E	

Work Procedures Applicable		

Prepared By	Revised By	Approved By
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Fire in the Facility / Location / Site	**EDDLUX-HDS-05**

Activity Description (An action which may put someone or something at risk from a hazard)

Fire in the Facility, Location or Site due to Careless Welding, Cooking and Working on Electrical Equipment or with Electrical Tools.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Assets Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Lack of Training.
-Wind.

People	X	**Assets**	X	**Environment**	

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Electrical works to be performed by authorized personnel only.	E	All Personnel
R	Fire prevention equipment to be available and located at strategic	PE	
C	Selected personnel to be trained on fire fighting techniques.	E	
C	No smoking policy to be available and adhered to.	E	
C	Warning signs to be located at strategic places (e.g. No Naked Lights, No Smoking, etc.).	E	
C	Fire escape route to be planned.	E	
R	Fire control plan to be available and explained to all personnel.	PE	
C	Machinery & equipment to be inspected regularly.	E	
R	Medical Coverage and Evacuation Procedures in Place.	PE	
C	Practicing emergency drills.	E	
C	Maintenance of firefighting equipment and fire alarms.	E	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Foundation	**EDDLUX-HDS-06**

Activity Description (An action which may put someone or something at risk from a hazard)

Performing foundations work activities on various areas and locations using machinery and hand

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Fire
- Risk of Environment Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Fatigue. - Wind. - Rain.

People	X	**Assets**	X	**Environment**	X

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Induction to be conducted prior personnel allowed to start work.	E	All Work Staff and HSE Officers
C	Supervisor to conduct a daily toolbox meeting.	E	
C	Warning signs installed around work area.	E	
C	Work area to be barricaded.	E	
C	Good housekeeping to be implemented at all times.	E	
C	Nails to be removed from ground at end of day work.	E	
C	Removing nails area to be barricaded separately and only authorized personnel allowed inside.	E	
C	Machinery (concrete mixers, cranes, etc.) used to be inspected regularly.	E	
C	Only qualified and authorized personnel to operate machinery.	E	
C	PPE: gloves, safety glasses or goggles, hard hats, safety shoes & dust	E	
R	Medical coverage & Evacuation procedures in place.	PE	
C	Secondary containments around fuel tanks.	E	
R	Fire control plan to be available and explained to all work staff.	PE	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Gas Cylinders	**EDDLUX-HDS-07**

Activity Description (An action which may put someone or something at risk from a hazard)

Storing and using gas cylinders in cutting, welding or coating activities.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Fire
- Risk of Injuries.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Hot Climate. - Wind.

People	**X**	**Assets**	**X**	**Environment**

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
R	Fire extinguisher to be available.	E	All Work Staff and HSE Officers
C	Caps to be installed when cylinders not in use (in store or transport).	PE	
C	Hoses and gauges to be inspected regularly.	PE	
C	Cylinders to be stored in upright position and secured properly.	E	
C	Signs to be installed (Flammable & No Naked Lights).	E	
C	Only flint guns to be used.	PE	
R	Medical coverage & Evacuation procedures in place.	PE	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Working with Generator	**EDDLUX-HDS-08**

Activity Description (An action which may put someone or something at risk from a hazard)

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Fire
- Risk of Electrical Shock.
- Risk of Environmental Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Rain.
- Wind.

People	X	**Assets**	X	**Environment**	X

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
R	Fire extinguisher to be available.	E	Site Managers, Maintenance Manager, Mechanics and HSE Officer.
C	Maintenance system to be implemented.	PE	
C	Machine to be operated by authorized personnel only.	E	
C	Authorized electrician to install and inspect the electrical circuits and	E	
R	Secondary containment around fuel tank.	PE	
R	Medical coverage & Evacuation procedures in place.	PE	
C	PPE: Ear Muffs, safety glasses or goggles, hard hats, gloves & safety	PE	
C	Signs to be installed.	E	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Heat	**EDDLUX-HDS-09**

Activity Description (An action which may put someone or something at risk from a hazard)

- Working in hot climate areas.
- Working in areas with heat sources.
- Living in camps.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Dehydration
- Heat Cramps
- Heat Exhaustion.
- Heat Stroke
- Sunburn.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Lack of Shade.
- Lack of Knowledge.
- Lack of Water
- Heavy Physical Work.

People	**X**	**Assets**		**Environment**	

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Medical check up for all work staff.	E	All Personnel
C	Safety induction, toolbox meetings to be conducted.	E	
C	Acclimatization.	E	
C	Adequate supply of cool water and re-hydration salts.	E	
C	Shades to rest or work under.	E	
C	Proper clothing (light colored cloths) and caps and hats.	E	
C	Temperature monitoring and warning or stop operations when exceeding limits.	E	
R	First aid training to selective personnel.	PE	
R	Medical coverage & Evacuation procedures in place.	PE	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Heavy Lifting / Loading	**EDDLUX-HDS-10**

Activity Description (An action which may put someone or something at risk from a hazard)

- Lifting and loading pipes, heavy equipment and any other items using cranes, side booms or forklift

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Equipment Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Fatigue. - Wind. -Rain.

People	X	**Assets**	X	**Environment**	

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Crane safety certificate should be available in cabin.	PE	All Site Engineers, Foremen, Supervisors, Riggers and HSE Officers.
C	Lifting machines maintenance program shall be implemented and inspected regularly.	PE	
R	Fire extinguisher shall be available.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
C	PPE: Safety glasses or goggles, hard hats, safety shoes & gloves.	E	
C	Riggers shall wear reflective (fluorescent) jackets.	PE	
C	Lifting equipment shall be suitable for the load.	E	
C	Lifting equipment shall be inspected regularly and documented.	PE	
C	Robes for guiding and stabilizing the load shall be available for the operation.	E	
C	Watchman available and unauthorized personnel should be kept away.	E	
C	Area barricaded if the need arise (when operation is conducted in residential areas).	E	

Work Procedures Applicable

Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Working on Heights	**EDDLUX-HDS-11**

Activity Description (An action which may put someone or something at risk from a hazard)

- Working on Heights and/or Building Roofs

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury (Fall from Altitude causing Fractures, Cuts and Bruises).
- Risk of Equipment Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Fatigue. - Wind. -Rain.

People	X	**Assets**	X	**Environment**	

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Scaffolds to be inspected and tagged.	E	Site Engineers, Supervisors, Foremen, Scaffolders & HSE Officers..
C	Ladders to be suitable and inspected.	E	
C	Lifting equipment to be inspected.	E	
C	PPE: Hard hats, safety glasses or goggles, safety shoes & gloves.	E	
C	Safety belts or full body harness with shock absorbing lanyard to be worn on heights exceeding 6 feet.	E	
C	Lifeline to be installed on roofs.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
C	Safety belt or harness should be tied to lifeline or to fixed point at all	E	

Work Procedures Applicable

Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Hydrotesting	**EDDLUX-HDS-12**

Activity Description (An action which may put someone or something at risk from a hazard)

- Hydrotest Pipelines or Tanks.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Fire.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- High Pressure used in Operation. -Fatigue.

People	X	**Assets**	X	**Environment**	

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Hydro test area to be barricaded.	E	All Hydro test personnel, Site Engineer and HSE Officers.
C	Warning signs to be installed.	E	
C	Adequate artificial lights to be installed.	PE	
C	Medical coverage & Evacuation procedures in place.	PE	
C	Suitable and adequate valves, bolts and nuts to be used.	PE	
C	Suitable tools should be used for operation.	PE	
C	PPE: Safety shoes, gloves, hard hats, safety glasses or goggles & ear plugs/muffs.	E	
R	Fire extinguisher to be available.	E	

Work Procedures Applicable

Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Installation of A/C Ducts	**EDDLUX-HDS-13**

Activity Description (An action which may put someone or something at risk from a hazard)

- Installation of A/C Ducts inside the Buildings and on Roofs.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury (Falls from Heights).

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Wind. -Fatigue.

People	X	Assets		Environment	

Severity	0	1	2	3	4	5	Potential	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Scaffolds to be erected by scaffolders only inspected and tagged.	E	All Site Engineers, Supervisors, Foremen & HSE Officers.
C	Scaffolds to be dismantled by scaffolders only.	E	
C	Portable equipment to be inspected regularly.	PE	
R	Medical coverage & Evacuation procedures in place.	PE	
C	PPE: Face shields, gloves, safety glasses or goggles & safety shoes.	E	
C	Lifeline to be installed on roofs.	E	
C	Safety belts or full body harness with shock absorbing lanyard to be worn on heights exceeding 6 feet or on roofs.	E	
C	Safety belt or harness should be tied to lifeline or to fixed point at all	E	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Liquids	**EDDLUX-HDS-14**

Activity Description (An action which may put someone or something at risk from a hazard)

- Using Chemical Liquids to Perform Construction Works.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Chemical Burns.
- Risk of Inhalation Problems
- Risk of Invironment Damage (e.g. Spills).
- Risk of Fire.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Inadequate Storage or Transportation.
- Lack of Knowledge.
- Lack of shade.

People	**X**	**Assets**	**x**	**Environment**	**x**

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	PPE: gloves, masks, coveralls, safety boots/shoes & face shields.	E	All Personnel.
C	MSDS to be available.	E	
C	Proper storage transport and disposal techniques to be followed.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
R	Fire extinguisher to be available.	E	
C	Personnel handling these liquids to be trained on MSDS procedures.	E	
C	Toolbox meetings conducted prior use, store or transport liquids.	E	
C	Warning signs and barricades to be used as necessary.	E	

Work Procedures Applicable

Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Working with Machinery	**EDDLUX-HDS-15**

Activity Description (An action which may put someone or something at risk from a hazard)

- Working with machinery causing damage to property (asset), personnel injury or fire.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Assets Damage.
- Risk of Invironment Damage (e.g. Spills).
- Risk of Fire.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Lack of Supervision. -Lack of Training. -Fatigue. -Rain.

People	**X**	**Assets**	**x**	**Environment**	**x**

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Only authorized personnel to operate authorized machinery.	E	All Personnel of Maintenance Department.
C	Daily toolbox meetings.	E	
C	QHSE-MS induction to be conducted to all personnel.	E	
C	Fire extinguishers to be available.	E	
R	Medical coverage & Evacuation procedures in place.	E	
R	Maintenance program to be implemented.	PE	
C	Driving permit to be issued prior to allow any driver to operate any machinery.	E	
C	Daily machinery check to be adhered to.	E	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Operating Compressors	**RG-HDS-16**

Activity Description (An action which may put someone or something at risk from a hazard)

- Operating compressors to perform excavating or hydro test activities.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury (e.g. Hearing Damage, etc.).
- Risk of Fire.
- Risk of Invironment Damage (e.g. Spills).

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Wind.

People	**X**	**Assets**	**x**	**Environment**	**x**

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
R	Fire extinguisher to be available.	E	All Site Engineers, Supervisors & HSE Officers.
C	Standby watch mechanic.	E	
C	Equipment to be used by authorized person (trained and qualified).	PE	
C	Medical coverage & Evacuation procedures in place.	PE	
R	Spare parts used to be authorized by Maintenance Manager.	E	
C	Secondary containment around fuel tank.	E	
R	Authorized mechanic/electrician to perform machine maintenance and inspections.	E	
C	Equipment area to be barricaded when operating in residential areas.	E	
C	No unauthorized personnel allowed near equipment at all times.	E	
C	PPE: Ear Muffs, gloves, hard hats, safety glasses or goggles & Safety	E	

Work Procedures Applicable

Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Radiation	**EDDLUX-HDS-17**

Activity Description (An action which may put someone or something at risk from a hazard)

- Working with radioactive materials to conduct NDT.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Wind. -Lack of Supervision -Lack of Training -Lack of Lighting.

People	**X**	**Assets**	**x**	**Environment**	**x**

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	NDT personnel to attend the QHSE radiation training.	E	All Quality Department and personnel involved in radiation work
C	Only authorized personnel to handle radioactive sources or materials.	E	
C	Radiation safe working procedure to be adhered to at all times.	E	
C	Warning signs to be installed around work area.	E	
C	Work area to be barricaded if other work activities are conducted near	E	
C	Adequate lighting to be available for night work.	E	
C	Transportation vehicle to be inspected prior work.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
C	Only authorized personnel to be allowed inside radioactive materials	E	
C	Emergency communication system to be available with NDT team.	PE	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Removing Roof Shatters	**EDDLUX-HDS-18**

Activity Description (An action which may put someone or something at risk from a hazard)

- Removing roof shatters after roof's concrete work in completed.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury (Foreign Body, Cuts, Fractures

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Wind. -Fatigue. -Rain.

People	X	Assets	x	Environment	x

Severity	0	1	2	3	4	5	Potential	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	PPE: Harness, gloves, safety glasses or goggles, hard hats & safety shoes.	E	All Site Engineers, Supervisors, Foremen & HSE Officers.
C	Ladders to be available and inspected for stability and suitability.	E	
C	Barricades installed around work site.	E	
C	Warning signs installed around work site.	E	
C	Only authorized, skilled workers allowed to perform the job activity.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
C	Robes to be used for pulling the roof shatters down.	E	
C	Watchman to be available when pulling down roof shatters is in process.	E	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
River Crossing	**EDDLUX-HDS-19**

Activity Description (An action which may put someone or something at risk from a hazard)

- Conducting pipeline river crossing operation..

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Environment Damage.
- Risk of Fire.
- Risk of Assets Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Wind.
- Fatigue.
- Lack of Training and Knowledge.

People	**X**	**Assets**	**x**	**Environment**	**x**

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	River crossing procedure to be explained to all work staff.	E	All River Crossing personnel.
C	Work area to be barricaded and warning signs installed.	E	
C	No non-authorized personnel allowed near winch or other equipment.	E	
C	Maintenance program to be implemented.	E	
C	Toolbox meeting conducted daily.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
R	Fire extinguisher to be available.	E	
R	Man Overboard/Lost plan.	PE	
C	PPE: safety shoes, coveralls, gloves, safety glasses or goggles.	E	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Road Crossing	**EDDLUX-HDS-20**

Activity Description (An action which may put someone or something at risk from a hazard)

- Road Crossing and Working on and adjacent to the Road.
- Third Party Road Users. - High Trafic in Urban Areas
- Narrow Roads and Heavy Machinery in Rural Areas.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Road Trafic accidents resulting in Fatality or multiple Fatalities.Injury.
- Vandalism or Theft Equipment.. -Risk of Assets Damage.
- Legal Consequences.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Sandstorms, Fog etc.. - Fatigue -Excessive Speed on Highways by Locals.
- Poor Mechanical Conditions of Local Vehicles and Machinery (Brakes, Tires etc.)

People	**X**	**Assets**	**x**	**Environment**	

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Reflective (fluorescent) jackets to be worn by all work staff at road	E	All Personnel & HSE Officers.
C	Flagmen located along road to warn oncoming traffic.	E	
C	Flagmen positioned at sides of roads and not in the middle.	E	
C	Warning signs & road cones located to warn oncoming traffic.	E	
C	Guards allocated for night watch.	E	
C	Work area to be barricaded.	E	
R	Selective personnel to be trained on first aid.	PE	
R	Medical coverage & Evacuation procedures in place.	PE	
C	Local police can be contacted.	PE	
C	Fire extinguisher to be available.	E	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Sandstorm	**EDDLUX-HDS-21**

Activity Description (An action which may put someone or something at risk from a hazard)

- Conducting Welding, Grinding, Cutting and Work Activity in Sandstorms Weather.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Assets Damage.
- Risk of Environment Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Lack of Knowledge.
- Lack of Supervision.
- Fatigue.

People	X	**Assets**	x	**Environment**	X

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	HSE Officer to be available at all times.	E	All Site engineers and work staff.
C	Induction to be conducted.	E	
C	Toolbox meeting to be conducted (work staff work instructions	E	
C	Driving and road safety policy to be discussed and explained to all work	E	
R	Good communication.	PE	
C	Long flags fitted on vehicles.	E	
C	Roll over protection bars fitted on vehicles.	E	
R	Medical coverage & Evacuation procedures in place.	PE	

Work Procedures Applicable

Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Scaffolding	**EDDLUX-HDS-22**

Activity Description (An action which may put someone or something at risk from a hazard)

- Erecting and dismantling scaffolds to be used in various construction activities.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Assets Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Lack of Knowledge.
- Lack of Training.
- Wind and Rain.

People	**X**	**Assets**	**x**	**Environment**

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Selective personnel to be trained on scaffolds erection and dismantling.	E	All Site Engineers, Supervisors, Foremen, work staff and HSE Officer.
C	Only scaffolders to be authorized to erect and dismantle scaffolds.	E	
C	Scaffolds to be inspected prior any work is allowed.	E	
C	Tag system to be used on erected scaffolds (Safe For Use & Unsafe for	E	
C	Mobile scaffolds should be erected on firm & flat ground and wheels should be kept locked.	E	
C	High scaffolds should be tied to fixed points.	E	
C	Scaffolds equipment shall be inspected prior erection is allowed.	E	
C	Scaffolds should be stacked properly when not in use.	E	
C	Proper ladders length should be used for scaffolds.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
C	Harness with shock absorbing lanyard should be used all times by work	E	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Scorpions	**EDDLUX-HDS-23**

Activity Description (An action which may put someone or something at risk from a hazard)

- Scorpion bite while welding, lifting and moving equipment, working in desert areas or any day-to-d

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Lack of Knowledge.
- Weather (Inadequate Visibility).
- Inadequate PPE.
- Panic or Trying kill Scorpion.

People	X	Assets	x	Environment

Severity	0	1	2	3	4	5	Potential	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Safety induction and daily toolbox meetings to be conducted.	E	All Personnel
C	Good housekeeping to be performed at work sites.	E	
C	Correct storage and lifting of equipment.	E	
C	Check clothes, shoes and area before using.	E	
R	Selective personnel to be trained on first aid.	PE	
C	Proper PPE to be worn (gloves & safety shoes).	E	
R	Medical coverage & Evacuation procedures in place.	PE	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Security	**EDDLUX-HDS-24**

Activity Description (An action which may put someone or something at risk from a hazard)

- Violent actions of local criminals in work sites.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Violent actions due to misunderstanding operations against work staff.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Permit Problems.
- Recruiting Issues.
- Traveling Alone.
- Darkness.

People				Assets				Environment			
Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Safety Induction and toolbox meetings.	E	All Personnel
C	Camp security (e.g. provision of guards, etc.).	E	
C	Good community relations.	E	
C	Recruiting strategy.	PE	
C	Permit procedures.	PE	
C	Camp rules.	E	
R	First aid training to selective personnel.	PE	
R	Medical coverage & Evacuation procedures in place.	PE	

Work Procedures Applicable

Prepared By	Revised By	Approved By
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Small Tools	**EDDLUX-HDS-25**

Activity Description (An action which may put someone or something at risk from a hazard)

- Violent actions of local criminals in work sites.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Assets Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Fatigue.
- Lack of Knowledge
- Lack of Training.

People		X	Assets		x	Environment		

Severity	0	1	2	3	4	5	Potential	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Small tools should be inspected regularly.	E	All Personnel
C	Small tools should be kept in safe place if not in use.	E	
C	Unsafe small tools should be disregarded from use immediately.	E	
C	All maintenance workshop personnel shall be trained on QHSE workshop awareness.	E	
C	Only competent persons shall be allowed to install grinding wheels, which shall be examined for defects prior being mounted	E	
C	No steel arm hammers shall be allowed for use.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
C	Proper PPE should be used when working with small tools.	E	

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**

Position:	Position:	Position:

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Snakes	**EDDLUX-HDS-26**

Activity Description (An action which may put someone or something at risk from a hazard)

- Snake bite while lifting and moving equipment, working at various work sites & locations and Day-to-day activities.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Weather & Terrain.
- Inaduquate Visibility or PPE.
- Lack of Knowledge
- Panic or Trying to kill Snake.

People	X	Assets		Environment	

Severity	0	1	2	3	4	5	Potential	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Safety induction and toolbox meetings.	E	All Personnel
C	Good housekeeping.	E	
C	Correct storage and lifting of equipment.	E	
C	Check cloth, shoes and work and rest area before use.	E	
C	Proper PPE.	E	
R	Polyvalent Anti-Snake Venin.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
R	Selective personnel to be trained on first aid.	E	

Work Procedures Applicable

Prepared By	Revised By	Approved By
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Steel Structure Erection	**EDDLUX-HDS-27**

Activity Description (An action which may put someone or something at risk from a hazard)

- Erection of steel structure to perform a project.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Assets Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Lack of Training.
- Lack of Knowledge
- Fatigue.
- Lack of Supervision.

People	X	**Assets**	X	**Environment**

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Safety induction and toolbox meetings.	E	All Personnel
C	PPE to be adhered to.	E	
C	Scaffolds to be erected and dismantled by scaffolders, inspected and	E	
C	Personnel to attend the HSE training.	E	
R	Medical coverage & Evacuation procedures in place.	PE	
C	Equipment to be inspected and maintenance program to be	E	
C	Ladders to be approved and inspected.	E	
C	Lifting gear to be inspected regularly.	E	
C	Small tools to be inspected regularly.	E	

Work Procedures Applicable

Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Stringing of Pipes	**EDDLUX-HDS-28**

Activity Description (An action which may put someone or something at risk from a hazard)

- Stringing of pipes along the pipeline trench.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Assets Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Lack of Training.
- Lack of Knowledge
- Fatigue and Horseplay.
- Wind and Rain.

People	X	Assets	X	Environment	

Severity	0	1	2	3	4	5	Potential	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Safety induction and toolbox meetings.	E	All Personnel
C	PPE: hard hats, gloves, safety shoes, coveralls & safety glasses or goggles.	E	
C	Robes to be used to guide the pipes.	E	
C	Foreman to be available at all times.	E	
R	Medical coverage & Evacuation procedures in place.	PE	

Work Procedures Applicable		

Prepared By	Revised By	Approved By
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Transportation	**EDDLUX-HDS-29**

Activity Description (An action which may put someone or something at risk from a hazard)

- Transportation of personnel, equipment, machinery & goods.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Injury.
- Risk of Environment Damage.
- Risk of Assets Damage.

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Excessive Speed.
- Lack of Knowledge
- Fatigue.
- Weather Conditions.

People	X	**Assets**	X	**Environment**	

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
C	Safety induction and training.	E	All Personnel
C	Suitable & equipped vehicle with seatbelts and roll bars shall be used for personnel transport.	E	
C	Loads should be secured firmly with robes or chains.	E	
C	Loads should be inspected prior vehicle departure	E	
C	Drivers to attend the driving training.	E	
C	Driver shall have an assistant accompanying him all times of journey.	E	
C	MSDS shall be discussed with driver and assistant prior departure.	E	
C	Proper PPE shall be used when loading and unloading.	E	
C	Transport vehicles maintenance program shall be implemented and vehicle daily check is carried out prior departure.	E	
R	Communication system to be available with driver if possible.	PE	
C	Towing gear shall be inspected and chains provided.	E	

Work Procedures Applicable

Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**

Position:	Position:	Position:

HAZARD DATA SHEET	
Hazard Description	HDS Reference No.
Welding, Grinding and Cutting	**EDDLUX-HDS-30**

Activity Description (An action which may put someone or something at risk from a hazard)

- Welding Pipes, Brushing, Grinding and Steel Cutting.

Risk Assessment (Description of Hazard in relation to activity, hazardous event, possible consequences, location, etc.)

- Risk of Fire.
- Risk of Body Injury (Burns, Cuts, foreign body in Eyes, etc.).

Escalating Factors (Factors, which may increase the risk of the hazard. (e.g. weather conditions, fatigue, lack of training, etc.))

- Rain.
- Wind.
- Narrow Trench.

People	X	**Assets**	X	**Environment**

Severity	0	1	2	3	4	5	**Potential**	A	B	C	D
	NA	VL	L	M	H	VH		L	M	H	S

C/R	Safety Critical Tasks	PE	By
	PPE – Welding: Face shield, welding jacket, gloves, safety glasses &		All Personnel
	PPE – Cutting: Face shield, safety glasses & gloves.		
	Ladder for welding, grinding or cutting inside trenches.		
	Machine & pipe to be grounded.		
	Fire Extinguisher available.		
	Tent (Sun Shade).		
	Medical coverage & Evacuation Procedures.		
	Machinery & Tools inspection.		
	Helper available		

Work Procedures Applicable		
Prepared By	**Revised By**	**Approved By**
Name:	**Name:**	**Name:**
Position:	**Position:**	**Position:**

CHAPTER -5
PLANNING AND PROCEDURES

1. Asset Integrity Planning

1.1. Maintenance

EDDLUX STEEL MANUFACTURING (EDDLUX) relies greatly on machinery and equipment in commencing its projects. Therefore, the physical condition and safety status of thesemachinery and equipment, which might be used at any required time as the need arise, depends mainly on implementing a strict maintenance program to:

- Meet or surpass defined industry standards appropriate to the expected physical parameters such as pressure, temperature, flow rates, etc.
- Ensure the HSE integrity of the machinery, equipment and products.

Hence, all major machinery (vehicles, bulldozers, backhoes, cranes, etc.) and equipment (welding machines, generators, etc.) are periodically inspected and maintained through the implementation of the EDDLUX Preventive Maintenance Program.

A special focus is defined for the HSE critical systems, or sub-systems (e.g. safety valves, brakes, lifting cables, reverse horns, belts, systems under pressure, etc).

The Preventive Maintenance Program for each piece of machinery and/or equipment is defined as part of the EDDLUX Quality System, which shall be ISO 9001 certified. The implementation of the system procedures is controlled by the Maintenance Manager and followed and understood by all involved parties in the program (e.g. mechanics, machinery drivers, etc.).

The Preventive Maintenance Program is based on a specially designed inspection sheets, which are used through the EDDLUX inspection program, and addresses all sides of the machinery and equipment (i.e. the mechanical and HSE sides) from the HSE side of view.

The inspection sheets includes a specific HSE questionnaire to be answered through a comprehensive inspection to be followed by the person conducing the inspection so as to ensure the proper working physical condition and the HSE integrity of the machinery or equipment.

Other side of the Preventive Maintenance Program is based on the internal machinery and equipment maintenance follow-up program, which is implemented in the Maintenance Department.

Listing below some of the examples followed in the EDDLUX Preventative Maintenance

Program:

Generator	Daily checks are performed along with regular maintenance on weekly basis and documented.
Vehicles	Monthly vehicle inspection and maintenance schedule is in place and documented.

Heavy Machinery — Monthly inspection and maintenance schedule is in place and documented.

All inspection findings are submitted to the HSE department for follow up (i.e. entered as an action item in the location/site Remedial Work Plan). These finding are discussed and closed out through the normal RWP cycle.

1.2. Design and Purchase

HSE requirements are systematically incorporated and taken into consideration when new machinery, equipment and/or products are designed or purchased.

A meeting takes place prior to purchasing of any new machinery or equipment between the Individual/Site Manager, the Maintenance Manager, the HSE Manager and the Project Manager to ensure that whatever machinery or equipment is required, meets the HSE requirements or standards.

The meeting discusses mainly the project operations requirements, EDDLUX future purchasing plans and the HSE standards and specification and accordingly the design or redesign is approved or a selection is made out of the quotations submitted from the Quotation Manager.

The Project Manager is then, based on the meeting's final selection or result, apply for granting the President or the Managing Director approval.

1.3. Modifications

Any kind of equipment modification requires a direct approval and authorization from the Project Manager.

The process of approval of any modification is basically as explained in the Design and Purchasing above section.

Unauthorized modifications to machinery, equipment and products are prevented unless approved by the Project Manager.

2. Health Planning

EDDLUX adopts a Health Plan that includes all work staff whether permanently or temporarily hired (Casual) personnel for all EDDLUX locations, sites and camps. The plan is controlled and monitored by the HSE Manager with the aid of the EDDLUX Doctor and Medics.

2.1. Medical Structure

A medical doctor and assistant Medics are permanently assigned to the EDDLUX locations,sites and facilities (camps) for the duration of the contracts or projects commenced.

The doctor is generally based in the main facility, while the Medics are based full time at the project's work locations/sites and/or camps.

A fully equipped ambulance(s) is kept on the main facility or the work locations/sites

at all times.

A fully equipped clinic(s) is available at the main facility and/or work locations/sites.

The EDDLUX Doctor and Medics carry out all routine medical care duties, the records keeping all patients and drugs used according to instructions. They are assisted where necessary by the First Aiders, who are allotted by comprehensive medical training, to each work force.

Doctor/Medics are responsible for the Clinic and Ambulance ensuring sufficient drugs and medicines are available and are stored correctly and that all medical equipment is serviceable.

They are, in addition, responsible for monitoring hygiene on the facilities/locations/sites assigned to and advising the HSE/Site Managers of their findings, including water testing.

Please refer to the full Doctor/Medics job descriptions in Section 3.5. – Chapter 3.

2.2. Pre-employment Medical

Upon hiring new personnel, whether permanent or temporarily (casual), he/she hand fill and sign a medical form, which is submitted to him/her by the Doctor or Medic(s). This form is called the Newly Arrival Medical Record Form (See attachment 4 – Chapter 8)

Then, the Doctor or Medic(s), using the clinic(s) medical facilities, run a pre- employment medical check up to ensure they are fit for the assigned duties. This will be the responsibility of the EDDLUX Doctor.

It is the responsibility of newly hired personnel to inform the Doctor or Medic(s) of any changes of their medication prescriptions taken, if occur.

The Doctor/Medic will keep and update the record of each employee in the clinic. These records can/will be used in the emergency cases only. These records are considered highly confidential.

A copy of the RG personnel medical record shall be kept in the contracted Hospital. It is the EDDLUX Doctor and Medic(s) responsibility to continuously update this file.

The Catering and Food Handlers Staff are required to undergo a special medical checkup and examination prior to start work on any EDDLUX food facility.

2.3. Medical Treatment and Statistics

Doctor and Medic(s) are available in the clinic(s) during and after the work hours. Any injuries treated are reported immediately to the HSE Department to ensure that an accident/incident and Investigation report is filled and the root cause is identified.

All treatments are carried out in the clinic, if available, which is signed with a Red Crescent. The clinic(s) is air-conditioned and has a running water supply.

If it is difficult on a work site to setup a clinic (e.g. projects of constructing pipelines, etc.), then an ambulance is stationed with a qualified Medic.

The Doctor and the ambulance assigned Medic ensure that medical supplies in the ambulance are always complete and in serviceable condition.

In the occurrence of any serious condition or injury, which requires the use of an outside medical facility (e.g. Hospital, etc.), then the location/site specific Medevac Plan is activated. It is the responsibility of the Doctor or Medic(s) to activate the plan when the need arise.

From the daily patient attendance and treatment records, the Monthly Medical Statistics are generated by the Doctor and Medic(s) and submitted to the HSE Manager. These statistics helps the HSE Manager to track the specific location, site or facility medical problems and to set contingency plans to be put in the prevention and mitigation measures.

2.4. Medical Training and Record Keeping

The HSE Medical and Hygiene Training Program, which is provided by the HSE Department through the various PowerPoint presentations, will be conducted for all Medics and selective employees who will be allocated as First Aiders for their work force sites after successful completion of the training.

The Hygiene HSE Training is also provided to all catering and food handler staff, if available. The Doctor or Medic(s) conducts this program.

The HSE Manager keeps records of the Medical training provided to individual employees and Medics. All and/or any medical training is recorded in an Excel Sheet Database called the Medical Training Matrix.

The Medical Training Matrix is considered as a continual database to the HSE Training Matrix, which is developed and updated by the HSE Manager.

2.5. Prevention Methods

2.5.1. Dehydration

Adequate supplies of re-hydration salts are available in the clinic(s) and Ambulances, which are available at work sites, to the work staff.

All personnel are actively encouraged to ensure they drink plenty of water during the work hours, as there is a risk of dehydration in hot climate, especially that most of our operations requires hard and long physical effort by all personnel.

2.5.2. Vaccinations

All the Catering and Food Handlers Staff are vaccinated for Typhoid.

The HSE Department sets the standard of the health medical checkup that is required from the Catering and Food Handlers Staff prior they commence their tasks and duties.

2.6. Water Testing Program

On each EDDLUX work location, site or facility a Water Testing Program takes place to ensure that safe and healthy water is provided to the work force and/or for the food preparation process.

The Water Testing Program implemented on RG various locations, sites and facilities is to ensures that the used water for drinking and cooking purposes is within the safe standard drinking limits and is not contaminated.

It is the responsibility of the Doctor and or Medic(s) to ensure that water samples from various outlets on each location, site or facility are collected on monthly basis and sent for testing in the identified qualified hospital/laboratory for testing.

The water test result will be provided to the customer/client through the HSE Manager.

3. Environmental Planning

EDDLUX continually strives to minimize the impact of its operations on the environment through the developed and appropriate actions taken to prevent environmental pollution, conserve resources and minimize waste. Where elimination of a pollution source is not practical, appropriate treatment of waste shall be undertaken and monitored to minimize the impactof discharges and disposals on the environment.

Please refer to the full details of the environmental planning and procedures in the RG Environmental Management System (EMS) Manual, which is considered as the non-separated and continual part of this HSE Management System Manual.

4. Emergency Response and Contingency Planning (ERP)

The EDDLUX emergency response and contingency plans are designed (created) to cope with all aspects of an emergency, should they occur, and are regularly practiced to ensure that all parties charged with emergency preparedness and crisis management are aware of their roles and responsibilities and to point the weaknesses and defect areas and set proper recovery measurements for improvement.

An important point to note about recovery measures is that since they are only required to act in emergency situations (i.e. rarely) emphasis is placed upon their reliability.

If possible, plans cover involvement of Authorities and the Public.

The Emergency Response Plans (ERP) applies to all EDDLUX locations, sites and facilities at all times and are considered location or site-specific plans to ensure that EDDLUX various operations are adequately prepared to deal with emergencies to safeguard the safety and

health of

employees, clients and contractors and the protection of the company assets and the environment where we work.

In addition, they are introduced to all new comers or arrivals including visitors (as per the Briefing or Induction training detailed in chapter 3) to ensure that these plans meet their designed objective.

The Emergency Response Plans (ERP) are designed and in place for each operation, location, site or facility to address the following emergencies should they occur:

1) **Medevac Evacuation Plan**
2) **Fire Control Plan**
3) **Man Overboard Plan**
4) **Spill Prevention and Control Plan**

If the need arise, further and or specific site Emergency Response Plans (ERP) can be designed.

The Fire Control Plan is posted in the all offices and workshops in each location, site or bulletin board and is posted in English and Arabic languages to ensure full understanding by all employees.

4.1. Definitions

Emergency

A HSE emergency is a situation resulting from an incident, which has already taken place, but has the potential to escalate further and cause additional damage to:

- Human life
- The environment
- Assets
- The investment and reputation of the company.
- An accident with life-threatening injuries
- Serious injuries in a location without appropriate medical facilities
- Major fire, explosion, or surface blow-out
- Large-scale property or environmental damage

Emergency Control Team

An Emergency Control Team carries out on-site response to an emergency at the scene of an incident.

The senior person in charge of emergency control at the site, often referred to as the Incident Coordinator, may be a Foreman, line Supervisor, Individual Manager or the Site Manager.

Emergency Response Team

The Emergency Response Team, usually located at the nearest site where the emergency took place and is responsible for:

- Provide managerial and technical support in a catastrophic emergency.
- Effectively co-ordinate with external parties such as the clients, medical facilities, police and Fire Fighting Department, Transportation, Families, … etc.
- Recording all conversations with the site where the emergency took place and calls and logging the time of each contact.

In EDDLUX the Emergency Response Team is the HSE Manager, Logistic Manager and theProject Manager.

The following pages, details the main Emergency Response Plans (ERP) that where designed for implementation at all RG locations, sites or facilities.

4.2. Medevac Evacuation Plan

4.2.1. Scope

The scope of this plan is to ensure that, at a specific work location during the execution of a specific project, a proper medical evacuation of injured personnel towards the contracted Hospital takes place.

4.2.2. Procedure

On the occurring of an accident the following procedure to be followed:

- All personnel are to stop work immediately
- One is to proceed quickly and call the Doctor/Medic available on the location, site or facility.
- On the arrival of the Doctor/Medic, he is to select a person from the available personnel around the casualty site), preferable a Manager, Supervisor or most experience person and to appoint him as the Medevac Coordinator.
- He is then to assess the situation and if the case requires an ambulance, then he is to request this option to be taken from the Medevac coordinator.
- The Doctor/Medic is then to request the following from the Medevac Coordinator:

  1) Stop all operations and activities in the immediate surrounding area.

  2) Inform the Location or Site Manager.

3) Inform the EDDLUX main location/camp/office (i.e. HSE Manager) to call the contracted Hospital and inform them of the occurred situation and if an ambulance is required from the hospital or the situation can be contained using the EDDLUX site assigned ambulance.

4) Or to call himself the contracted Hospital and inform them of the situation (if option (2) was impossible to achieve).

- In case (3) or (4), the following information is to be passed to the contracted hospital:
  - Location of accident.
  - Type of accident.
  - Number of casualties and Names, if possible.
  - The situation of each casualty.

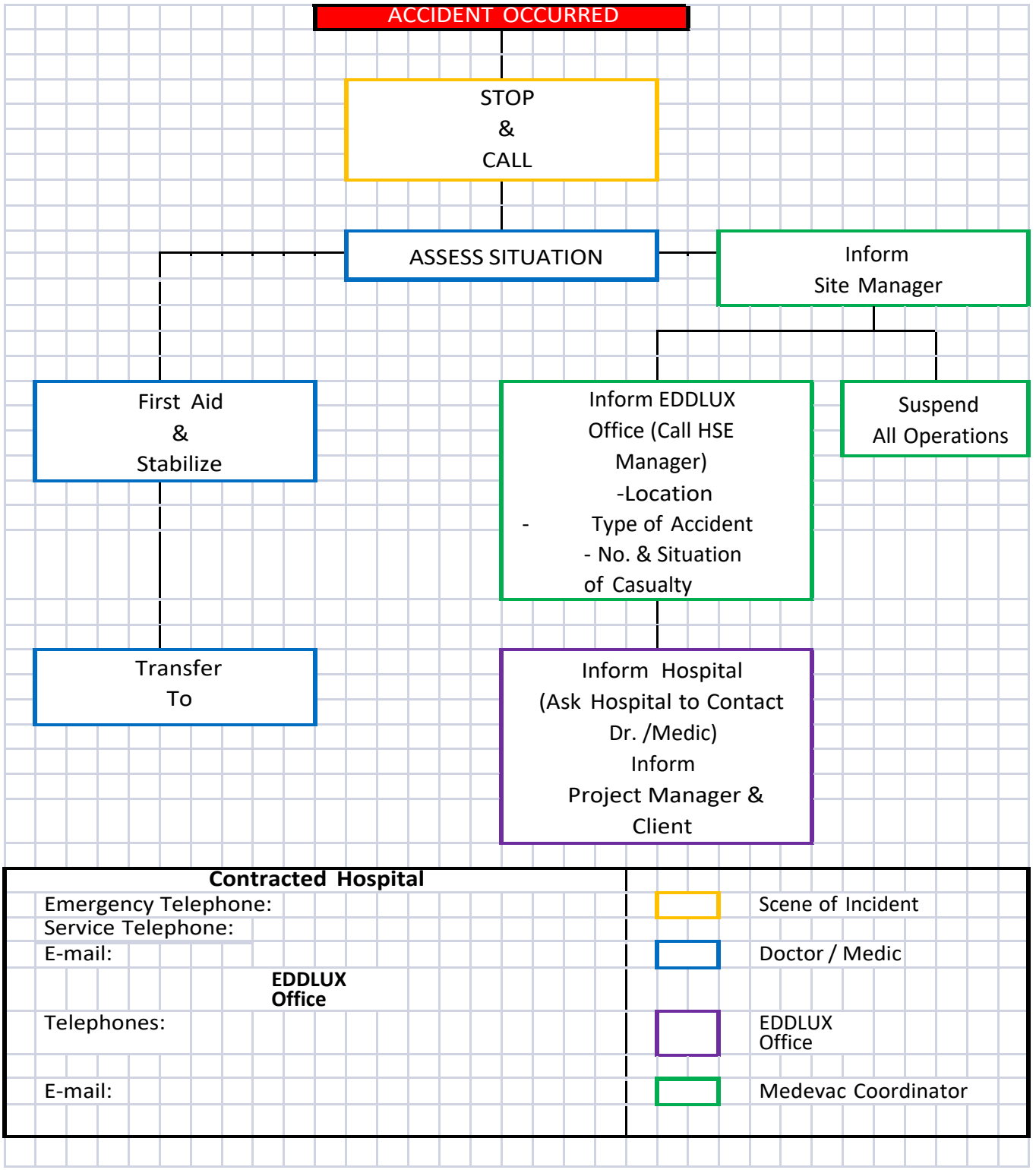
The main responsibility of the Medevac Coordinator is to give full support to the Doctor/Medic.

The Logistic or HSE Manager is responsible for informing the Project Manager and Client of the situation by telephone at their base location respectively.

The Doctor/Medic is responsible for stabilizing the casualty by providing all the possible and necessarily first aid.

On the ambulance arrival, the casualty is to be transferred immediately to contracted hospital, which is normally in the nearest town.

The Following Diagram Illustrates the Medevac Evacuation Process Procedure:


ACCIDENT OCCURRED
STOP & CALL
ASSESS SITUATION
Inform Site Manager
First Aid & Stabilize
Inform EDDLUX Office (Call HSE Manager)
-Location
- Type of Accident
- No. & Situation of Casualty
Suspend All Operations
Transfer To
Inform Hospital (Ask Hospital to Contact Dr. /Medic)
Inform Project Manager & Client
Contracted Hospital
Emergency Telephone:
Service Telephone:
E-mail:
EDDLUX Office
Telephones:
E-mail:
Scene of Incident
Doctor / Medic
EDDLUX Office
Medevac Coordinator

4.3. Fire Control Plan

On discovering a FIRE:

A) In the case of a small Fire:

- If it can be contained immediately, then use the near by available fire extinguisher and put the fire off.
- Push to sound the Fire Alarm and inform everybody of the fire.

B) In the case of a big Fire:

- Run out to the nearest Fire Alarm while shouting " Fire, Fire, Fire ".
- Sound the Fire Alarm.
- Direct the first two arrivals (the Fire Fighting Team) toward the Fire location and make sure you inform them of the fire type and size. And ask them to deal with the fire.
- Direct the third and fourth arrivals to isolate power supply and to inform all personnel in the compound facilities offices and/or rooms, to make sure the complete evacuation of personnel.
- Direct another two persons to work as a backup team to the Fire Fighting Team and to arrange a meeting point for the Ambulance.
- Direct the rest of arrivals toward the Assembly Point.

C) Kitchen Fires

- Fires in the kitchens are particularly dangerous because of the nearby compressed gas cylinders and the likelihood of burning grease.
- If a fire is discovered in the kitchen the internal gas shut-off valves should be closed. If it is not possible to reach the internal valves the external gas manifold valves should be closed, if available.
- If possible deploy the fire blanket or use the fire extinguisher to fight the fire. If the fire is out of control, do not endanger yourself by attempting to fight the fire.
- Grease fires should be smothered with a fire blanket. Do not fight grease fires with water.
- If the fire cannot be contained, leave the kitchen and proceed to the assembly point. Inform other of the fire by shouting "FIRE, FIRE, FIRE" and sounding the fire alarm. Follow procedure (B) as above.

D) Gas Cylinder Fire

- Where there is a gas cylinder fire similar procedures will be followed to alert all personnel of the fire (Procedure B).
- **NO ATTEMPT WILL BE MADE TO EXTINGUISH A GAS CYLINDER FIRE.**

ACTION TO BE TAKEN UPON DISCOVERING A FIRE

Small Fire

- Attempt to extinguish it using the appropriate fire extinguisher-if it is safe to do so

Big Fire

- Run out Shouting "Fire, Fire, Fire..."
- Sound the Fire Alarm (make sure you know the exact fire location).
- Direct the Fire Fighting team and backup team to fire location.
- Direct Personnel to switch off all powered equipment / machines / AC units and Isolate power supply when possible.
- Direct Personnel to evacuate compound rooms and offices (doors to be left open)
- Direct all unnecessary personnel to Assembly Point.

Kitchen Fire

- Use Fire blanket or fire extinguisher to put fire off.
- Close gas internal and / or external valves.
- Follow big fire procedure.

Gas Cylinder fire

- Evacuate the area - Do Not Attempt to fight the fire.

"DO NOT TAKE UNNECESSARY RISK"

WHEN FIGHTING A FIRE, REMEMBER

- Chose the right type of fire extinguisher.
- Keep fire in front of you and your back to exit.
- When using the fire extinguisher, keep low down to avoid breathing in smoke / Fumes and to obtain a good view of fire.
- If the fire becomes out of control, leave the area with all doors open.

ACTION TO BE TAKEN UPON HEARING THE FIRE ALARM SIREN

- Switch off any machine you've been using and secure it properly.
- Close all cylinders valves you've been working with and move away, if possible.
- Leave the area with all doors open.
- Proceed to the Assembly Point taking the safest and shortest passage.

Do Not Run - Do Not Go Slowly

- Do Not leave the Assembly Point unless directed to do so by authorized person.

EMERGENCY CONTACT NUMBERS

Area Manager	**Tel.**	**Mobile**
HSE Manager	**Tel.**	**Mobile**

4.4. Man Overboard/Lost Plan

4.4.1. Precautionary Actions

- All personnel working over the river must wear life jackets.
- When barge work is under way, the safety boat shall be moored to the barge via "quick cast off" line.
- The safety boat shall be located 5-10m downstream of the barge at the opposite end of the barge from the backhoe.
- All personnel assigned to work on the barge or near the water must be in good physical condition, experienced in the type of work they are assigned to perform, must possess good swimming skills and demonstrate basic communication language skills.
- Daily and prior to barge commencing work, the River Crossing Site Manager and HSE Officer shall inspect the barge and personnel, to assure the preventative measures and safety devices in place and that PPE (especially life jackets) are worn by all personnel.

4.4.2. Man Overboard/Lost Action

A) At first report a man overboard by shouting "**Man Overboard**" and indicate to which side of the barge.

All barge personnel to stop all work activities on barge and to remain calm.

Immediately, the nearest person should throw a life ring towards the man in the water.

If successful, then pull "drag" the person in the water towards the barge or stabilize "drift" and direct the safety boat to recover him.

Alert the motorized launch operator, cast the boat and then alert both banks via the red flags.

The boat operator must maneuver the boat to avoid hitting the person in the water, stop engine when near to or use paddles on final approach.

The boat should be stopped at a right angle, up current or upwind of the person in the water, so that it presents a greater surface area to the wind than the person in the water and it will float down towards the subject. This will enable the boat and the subject to make contact at minimum speed.

The boat operator is to throw a life ring to the person in the water keeping him in sight at all times. He can take directions from the

barge personnel and repeat throwing until successful attempt is made.

Note: Do not put a man into water to attempt victim recovery, unless the victim is Unconscious.

The Site Medic should provide First Aid immediately, if necessary. The person should be sent to the site clinic immediately. Medevac evacuation plan can be activated if the site Medic decided the need to.

Note: Do not go near the man in water with outboard motor.

Right and left riverbanks Emergency Response Teams immediately proceed to the bank edges to assist with rescue operation.

Note: Do not go into water without wearing life jacket.

B) If the man overboard is not rescued as per the Man Overboard/Lost Plan, then right and left riverbanks Emergency Response Teams to proceed downstream via vehicle to nearest river entry point and try to sight the lost man.

The rescue motorized boat to proceed to the nearest riverbank and take a second man and proceed downstream in search of lost man.

Maintain search until lost man is recovered.

4.4.3. Further Action

If you are the man overboard – What should you do:

- **Do Not Panic.**
- Look for the life ring thrown towards you and grab it.
- Do not attempt to swim against the current.
- Do not remove your life vest to swim better.
- Do not swim after the boat, stay in sight of the boat operator and area of entry.
- Conserve strength and energy
- Stay with the boat or try to get into the boat if you can.

4.5. Spill Prevention and Control Plan

The Spill Prevention and Control Plans are explained in the EDDLUX EnvironmentalManagement System Manual.

Please refer to the mentioned manual for the full details of these plans.

5. Drills and Exercises

Drills are planned to test the designed emergency procedures (ERP) and the personnel awareness towards the plans safe execution.

The following drills shall be conducted at the specified intervals during the commencement of any project:

- Fire Drill — Monthly
- Medevac Drill — Quarterly (or during the first month of operations)
- Man Overboard Drill — Quarterly (or during the first month of operations)
- Spill Prevention and Control drill — 6 monthly

Account is taken in the increased risk involved in carrying out drills and testing of emergency procedures.

6. Procedures

Work procedure are introduced to the HSE-MS to clearly define the solutions, preventative measures and precautions to be followed by the EDDLUX personnel when conducting the various hazardous activities and operations that can cause asset damage or negatively affect the surrounding environment or when operating an equipment or machinery with a potential to cause harm to people.

The prime work procedures identified in EDDLUX for the hazardous operations and activities carried out by the employees are as listed in this section.

It is the responsibility of the HSE Manager to ensure the circulation of these work procedures between the various departments and related personnel. In addition, he is responsible to identify new hazards and set protective measures to control and recovery.

Each work procedures have a unique reference number, with a title that defines the name of the hazard or the hazardous activity or operation. In addition, it must be approved and signed by the Project Manager.

Each work procedure include three main sections, which are as follow:

- **Purpose** — Explains the reason(s) behind introducing the work procedure.
- **Scope** — Explains on whom the work procedure applies to
- **Actions** — Details the actions to be followed to control the specified risk.

In addition, it can also include a "**Responsibilities**" Section, which details the responsibilities on the various line management within the EDDLUX organization.

It is important to understand that if and when new hazardous activity, operation or

equipment is identified during the commencing of any project, further work procedures can

and will be issued to set controls and define safe working practices and measures to eliminate such risk to be taken during the execution of that specific project.

The following Appendix B, lists in details the EDDLUX prime identified critical activities, operations and equipment or machinery work procedures to be followed during the execution of the project's operations.

Appendix B – EDDLUX STEEL MANUFACTURING Prime Identified Work Procedures

EDDLUX-PRO-01	Coating Operation
EDDLUX -PRO-02	Changing LPG Bottles
EDDLUX -PRO-03	Compressed Gas Cylinder Storage
EDDLUX -PRO-04	Confined Space
EDDLUX -PRO-05	Electrical
EDDLUX -PRO-06	Equipment & Machinery
EDDLUX -PRO-07	Excavation
EDDLUX -PRO-08	Fire Prevention
EDDLUX -PRO-09	Fuel Handling
EDDLUX -PRO-10	Jump Starting Vehicles
EDDLUX -PRO-11	Ladders and Scaffolds
EDDLUX -PRO-12	Lifting Machinery
EDDLUX -PRO-13	Line Pipe Stringing
EDDLUX -PRO-14	Pigging
EDDLUX -PRO-15	PPE
EDDLUX -PRO-16	Radioactive Materials and NDT
EDDLUX -PRO-17	River Crossing
EDDLUX -PRO-18	Sandblasting and Painting
EDDLUX -PRO-19	Side Boom Operation
EDDLUX -PRO-20	Small Tools
EDDLUX -PRO-21	Steel Rebar Cutting
EDDLUX -PRO-22	Tag Out / Lock Out
EDDLUX -PRO-23	Testing
EDDLUX -PRO-24	Testing Condensate Tank
EDDLUX -PRO-25	Thunderstorm & Lightening
EDDLUX -PRO-26	Tie-In
EDDLUX -PRO-27	Transportation
EDDLUX -PRO-28	Transportation of Explosives
EDDLUX -PRO-29	Using Ambulance Vehicle
EDDLUX -PRO-30	Using High Pressure Water Washer
EDDLUX -PRO-31	Vehicle Electrical Accessory Installation
EDDLUX -PRO-32	Welding and Cutting
EDDLUX -PRO-33	Working in Workshops

Procedure Title	Procedure Number	Custodian (Position)
Coating Operation	**EDDLUX-PRO-01**	

Purpose

The purpose of this work procedure is to ensure that coating operations are carried out safely and to prevent possibility of problems and accidents.

Scope

Applicable to all EDDLUX work staff involved in coating operations

Actions

- Fire extinguishers shall be available during operation.
- LPG bottles shall be loaded on trolleys that provide stability (i.e. bottles are secured in an upright position) and provides shading to prevent direct sunrays.
- Flint guns shall only be used to ignite the gun.
- Hoses and valves shall be inspected daily prior to work start and at end of every days work.
- While coating support truck in move, equipment loaded shall be secured properly.
- Coating support truck shall be shaded to prevent direct sunrays.
- Shrink sleeves shall be loaded with great care to avoid any unnecessary damage.
- Coating support truck shall be equipped with first aid kit that include medical accessories to deal with skin burns.
- Coating supervisor shall conduct a daily toolbox meeting daily and prior any work is allowed to commence.
- All work staff shall use proper PPE when performing the operation's activity (i.e. welding gloves, hard hats, safety glasses or goggles& safety shoes).
- Ladders shall be available when coating operation is made at the tie-ins and inside pipeline trench.
- Never leave the gun open when not in use.
- Always make sure that the LPG bottle main valve is closed firmly when not in use or in transportation.

Procedure Title	Procedure Number	Custodian (Position)
Changing LPG Bottles	**EDDLUX-PRO-02**	

Purpose

The purpose of this work procedure is to ensure that changing Low Pressure Gas (LPG) bottles are carried out safely.

This work procedure defines the EDDLUX minimum standard required and should be used as a guideline and adapted to local requirements, laws, directives, regulations and contractual terms.

Scope

Applicable to all EDDLUX catering personnel.

Actions

- LPG gas cylinders should be sheltered from weather (heat, dust, rain, etc.) in building or in a “weather protection cage”.
- When changing LPG bottles, ensure that there are at least two people present while collecting new bottles from the stockpile and whilst changing the cylinders at the kitchens.
- Before changing LPG gas cylinders ensure that all personnel in kitchen are aware that the gas is to be changed. Make sure you switch off gas on stoves prior to changing the LPG bottle.
- At the kitchen the following bottle changing work procedure should be followed:
  - Put out the cigarette.
  - Extinguish all naked flames.
  - Ensure that bottle is empty.
  - Close the main shut-off valve.
  - Close the cylinder valve if fitted firmly.
  - Remove the pipe connection from the cylinder with the correct spanner. Note that Spanner should be non-sparking (as should all tools used for this operation).
  - Remove the retaining chain.
  - Remove the cylinder from the “weather protection cage”.

- Fit valve caps where applicable.
- Pre-inspection of new cylinder.
- Place the new cylinder in the “weather protection cage”.
- Replace the retaining chain.
- Reconnect the pipe to the cylinder.
- Observe for chinked hose and hose stressing (pulling).
- Open the cylinder valve and test for leaks with soapy water.
- If no leaks open the main shut-off valve.
- Remove the empty cylinder to the cylinder stockpile, store and secure properly.

Procedure Title	Procedure Number	Custodian (Position)
Compressed Gas Cylinder Storage	**EDDLUX-PRO-03**	

Purpose

The purpose of this work procedure is to prevent problems caused by the incorrect storage of compressed gas cylinders.

Scope

All workshop and catering personnel

Actions

- Cylinders will be stored in properly constructed racks, which shall be covered as a protection against direct sunrays.
- Cylinder storage areas shall be clearly marked with the names of the gases stored and conspicuously displayed.
- Where gases of different types are stored at the same location, cylinders shall be grouped by type of gas and color coded:
  - **Oxygen - Black**
  - **Acetylene - Maroon**
  - **Nitrogen - Red / Black**
  - **Propane - Blue**
  - **Argon - Gray**
- Charged and empty cylinders shall be stored separately. The storage shall be arranged so that old stock can be removed first, with a minimum handling of the other cylinders.
- The store shall be constructed/located as far as practically possible from buildings and other storage areas, particularly from flammable materials, but not less than 20 meters, from flammable materials.
- Cylinders shall be stored upright and secured (Chained) to prevent them falling or being knocked over.

- Protective caps or guards (i.e. valve caps) over the valves shall be used and secured on all full and empty cylinders in the store to avoid violent movement while transportation.
- No smoking shall be allowed and enforced within 20 meters of the cylinders vicinity storage compound and signs to this effect shall be prominently displayed.
- Combustible gas cylinders shall be stored separately from oxygen ones, with a minimum separation of 5 meters.
- Empty cylinders must be returned immediately to the store.
- Care should be taken during the loading and unloading process from and to the store. Cylinders must not be dropped, thrown or dragged even if they were empty.

Procedure Title	Procedure Number	Custodian (Position)
Confined Space	**EDDLUX-PRO-04**	

Purpose

To ensure the safety of all employees involved in confined space work activities.

Scope

This procedure shall be applicable all the time for all workers involving in confined space entry in the EDDLUX activities.

The following are examples of confined space:

- A construction site that may include crawls spaces, storage tanks, tunnels, wells, sewers, vaults, underground areas, trenches or excavations deeper than 2 meters etc.
- A plant site that may include and not limited to underground areas, piping, tractors, silos, ducts, vessels, columns, boiler or drums.

Definition

Confined Space
- Is a space that is large enough and so configured that an employee can bodily enter and perform the assigned task or job.
- Has a limited or restricted means for entry or exit.
- Is not designed for continuous occupancy.

Authorize Entrant
- A person who is authorized by the supervisor to enter the confined space.

Entry Supervisor
- The person who authorizes the confined space entry permit normally is the supervisor.

Atmosphere
- It is the environment inside the confined space that may expose the entrants to risk of death or injury due to flammable concentration, oxygen deficiency or excess of toxic limits.

Attendant
- An individual stationed outside the entered confined space that monitors and ensures safety of entrants and maintain sign in/out log.

Entry - To action by which a person inserts his head, trunk or part of his body

Responsibilities

The following responsibilities outline the important activities that should be accomplished to satisfy the scope of this procedure.

- Ensuring the identification and evaluation of potential hazard has been done for the space to be entered (STARRT sheet).
- Ensuring that a thorough and careful routine confined space atmosphere test is performed as per the EDDLUX confined space permit stats.
- Ensuring the availability of adequate number of personnel trained to carry the confined space entry requirements.
- Reviewing the preparations taken on job site as necessary prior to authorizing the confined space entry permit.
- Ensuring the provision of written precautions and instructions on the confined space entry. Sketch may be provided to identify the points of isolation and the equipment associated with the space that may present hazards.
- Ensuring preparatory measures are done including cleaning, purging, blanking, inserting ventilation, lock Out / Tag Out and all necessary precautions defined in the RG confined space permit.
- Ensuring positive isolation is carried out for all process and associated lines before maintenance work is done.
- Ensuring a safety watch to maintain a safe working condition while the job is in progress.
- Confirm the availability of adequate light and area is well ventilated before any entry attempt.
- Ensuring that the work to be performed and the tools to be used are adequate for the job to be performed.
- Ensuring the confined space entry permit is properly filled out, signed by all parties and complied with.
- Assigning a trained person as entry attendant and instructing him of the potential associated with the space that may affect the work and the proper action to be taken in case of emergency.
- Signing the confined space entry permit at the job site to ensure that all required actions are taken.

Note: The maximum time maybe allotted for a person to continually work in confined space shall not exceed 2 hours. This is for hot work.

Actions

1. General

When confined space work is necessary, it is vital to be aware of the hazards involved in confined space. Each space is different from the other and has its own hazards and difficulties that must be carefully analyzed and evaluated by a Supervisor or Safety Officer and approved by the HSE Manager.

2. Hazards associated with confined space

2.1. Oxygen Deficiency / Enrichment

Oxygen deficiency means an atmosphere containing less than 19.5% oxygen by volume. Most confined space deaths are caused by this lack of oxygen which is caused by fire, explosion, displacement of oxygen by materials like nitrogen or paint fumes or combining of iron and oxygen to form rust.

Oxygen enrichment means an atmosphere containing more than 23.5% oxygen by volume. This would permit flammable gases and vapors to ignite over a wider range of concentration. In addition, it will pose a health hazards.

2.2. Combustibility / Flammability

When concentration of Combustible/Flammable materials reached its Lower Explosive Limit (LEL), deadly fires and explosion can be caused in a confined space, if ignition occurs by means of sparks from grinding, metal friction or smoking. These materials can be and not limited to chemicals, paints, petroleum products, solvents, vapors, gases or even natural materials.

2.3. Toxic Agent

Toxic agent can destroy human tissues or disrupt vital body functions, which can be fatal if the respiratory system is affected.

Permissible exposure limit of toxic materials must be maintained.

Hydrogen sulfide (example of toxic material) may be found in confined space have contained petroleum product. Traces of hydrochloric acid may be trapped in law sumps in water treatment unit (Demineralizer).

Carbon monoxide (CO) is another example of toxic agent that can be also found in the plant. CO poses a particular hazard because it can cause asphyxiating condition via binding with blood to prohibit the cells from carrying the oxygen.

2.4. Physical Hazards

Below are some of the physical hazards that may be encountered in a confined space:

- Energized equipment and moving parts, which should be locked out and tagged before entry.

- Valves and pipes, which should be blocked and blinded before entering to keep out gases or liquids that could explode, drawn, burn or poison.
- Being buried by finely divided solids, such as sand, this may suffocate the occupants.
- Excessive noise can potentially cause hearing loss or down out important directions or warnings.
- Heat can build up and result in heat exhaustion or heat stroke.
- Electrically energized wires could result in electrocution.
- Entrapment in tight spots or falls from a high location.
- Disorientation in a poorly lit, irregularly – shaped confined space.

3. Pre-Planning

All preparations prior to entry must be well done in advanced to address the hazards associated with confined space.

- The supervisor must prepare a confined space entry permit.
- The confined space manhole cover shall not be removed until all conditions making it unsafe have been eliminated.
- When normal entrance barriers are removed, temporary guarding shall be provided.
- All personnel authorized to enter or involved in the entry operation must be aware of the hazards and precautions required (i.e. attended the toolbox meeting).
- Entry attendant and the safety watch must be decided prior to the entry.
- When there are any changes in the use of the confined space during the work progress, entry supervisor should inform the entrants of any changes, and new permit can be obtained.

4. Confined Space Preparation

The confined space must be practically clear and purged of all hazardous materials and made ready in safe conditions before any entry attempts is made.

Each confined space preparation and isolation varies accordingly.

Each equipment procedures must dictate how the equipment is prepared.

The following guidelines shall be considered:

4.1. Isolation

- Connected pipes to the confined space should be blanked off, physically separated, capped or sealed.

Note: All slips and blinding flanges installed must be of the same pressure rating

of the corresponding flanges.

- Pipelines must be drained, flushed and isolated using block and bleed connection. In addition, all isolation points must be indicated using TAGS.
- Due to the potential leakage of valves, a double blocked bleed system is preferred.
- Lock Out/Tag Out procedure must be implemented to control all hazardous energy sources such as Electricity, Pneumatic System, Hydraulic or Mechanical Power.

4.2. Ventilation

- Mechanical ventilation and purging is the key of entry preparation. If pre-entry monitoring indicates oxygen deficiency or presence of toxic material, the space must not be entered and ventilation must not be resumed.
- Purging must be done via forced mechanical ventilation.
- Exhaust from purging should be routed to ensure that no personnel or equipment are exposed.
- If flammable gas/vapor is to be vented, the blower must be rated for use in explosive atmosphere. It must be intrinsically safe and electrically bonded and grounded.
- Purge space which had previously contained flammable materials with inert gas (normally nitrogen), then purge with air before permitting entry.
- Adequate manholes and vents must be kept open during purging. Make sure that all sewers covers are closed to avoid hydrocarbon vapor.
- Even with atmospheric monitoring indicating no hazards inside the space, air ventilator must be used continuously during occupancy as follows:
  - To eliminate the hazardous atmosphere prior to entering the confined space.
  - To ventilate the immediate area where the entrants is or will be result.
  - The air supply shall be from a clean source that does not increase the hazards in the confined space.

CAUTION: NEVER USE OXYGEN TO VENTILATE CONFINED SPACE.

- To ensure that continuous forced ventilation is preventing the accumulation of a hazardous atmosphere, periodical atmosphere testing is necessary.
- If a potentially toxic or respiratory hazardous atmosphere is detected or in case of motor siren being operated for any reason during the entry operation:
  - Each entrant shall leave the confined space immediately.

- Attendant shall notify the personnel and the responsible supervisor.

- The responsible supervisor should evaluate space in order to determine how the hazardous atmosphere developed.

4.3. Cleaning

- When liquids, solids sludge or other materials are to be removed from the space, a thorough clean up should be performed using water or saturated steam or whatever appropriate.

4.4. Testing of Confined Space Atmosphere

- Atmosphere in confined space could cause accidents due to oxygen deficiency or enrichment or by air contaminants such as flammable materials or toxic or asphyxiating gases or vapors. Space should not be declared safe for entry before verifying the atmospheric condition by testing.

4.4.1 Oxygen Content

- Oxygen deficiency being, when the oxygen level is less than 19.5% by volume in air. This can be caused by bacterial consumption, chemical reaction such as burning or resting or by displacement by gases such as nitrogen used in blanketing or as inner gas.
- Oxygen enrichment begins when the level is greater than 23.5% volume by air. This may be caused by leaking or improper blanked of oxygen line or by ventilation with oxygen instead of air. This condition may create fire or explosion.
- Only atmospheres containing oxygen levels within the range of 19.5-23.5% are considered safe for confined space activities.

NOTE: In general normal level of oxygen in air is (20.8 - 21%). When instrument reads below this level condition must be investigated to determine the cause of the deviation from normal level.

4.4.2 Flammable Atmosphere

- Flammable atmosphere can arise due to combustible dust particles or pyrophoric materials. For fire or explosion to occur inside any confined space, the flammable gas/vapor must be present within the two concentration ranges defined by Lower Explosive Limit (LEL) and Upper Explosive Limit (UEL).
- Excess of 10% of LEL readout in your meter indicates that potential fire hazard exists in the area. Entry in this condition should not be permitted.

NOTE: Although 10% is the benchmark for fire or explosion hazard that must be recognized, investigation for the presence of this level must be made. Hot work should not be permitted on 0% LEL.

4.4.3 Toxic Materials

The health hazards of those agents are regulated by their Threshold Limit Values. TLV values of known toxic gases or vapours can be found in the Material Safety Data Sheet (MSDS).

4.4.4 Monitoring Instruments

- Gas monitoring instruments are of two or three types. Fixed gas monitors to determine the overall area that gives direct reading and alarm to in control room.
- Portable meters to monitor a specific area, these instruments can detect:
  - Gas deficiency.
  - Flammable/combustible in LEL.
  - CO concentration with the use of tubes.
- For other specific toxic agents in specific area, HSE Department is responsible to provide special instruments.

4.5. Testing and monitoring procedure

- Monitoring and testing should be done using calibrated and maintained instrument.
- A trained HSE Officer must perform testing.
- Concentration of air contaminants may increase even if it was initially low.
- Monitoring should be continuous during the confined space activity.
- Atmosphere testing results must be recorded in the confined space entry permit.
- The responsible supervisor should evaluate value.

4.6. Provision and Use of Equipment

4.6.1. For Testing Entry

- Respiratory protection equipment such as self-contained breathing apparatus, online breathing respirator is necessary.
- Harness and appropriate length of lifeline
- PPE as necessary

4.6.2 For Emergency and Rescue

- As the attendant is present at the point of entry while the entrants are inside the confined space, he must be equipped
- With the same equipment. In addition, to air horn, radio, microphone or any communication device.

4.6.3 Equipment to be used within the confined space

- All equipment is to be in good condition and properly maintained and selected before permitting entry.
- All electrical equipment must not be operated on more than 120 volts and explosion proof lightning devices to be operated on 24 volts only.

- All electrical portable tools must be grounded by means of built-in ground wire using three prong-plug or doubly insulated.
- Flash lights, must be approved to be used in hazardous location.
- Pneumatic tools should only be driven by air supplied from a compressor approved of no contaminants.
- Communication devices to communicate with attendant outside at the point of entry. Breathing apparatus is also required.
- Ladders, steps or special hooks must be arranged for safe entry or exit to the confined manhole or into the space.

Note: Some confined spaces are provided with handles, special hooks to the manholes and inside to be used for exit or entry.

- Confined space configuration must be assessed.
- The welding earth should be as near the work as possible, rather than the source of supply.

Entrants Duties

1. Authorized Entrants

Prior to entering the confined space the entrants must:

- Know the hazards that may be encountering him during the activities inside the confined space. Information can be gained from the supervisor or the Maintenance Supervisor.
- Know how to use the required equipment to be used inside.
- Communicate with attendants clearly and understand each other.
- Be capable of entering and exiting from the space immediately in case of emergency.
- Be able to wear the respiratory protection equipment properly and with no difficulties.
- He should be ready to get out from the confined space within the recommended time.

2. Attendant's Duties and Responsibilities

At least one confined space attendant or (Stand by Man) be stationed at the entrance of the confined space, one additional employee within sight or call of the attendant to be called when rescue or emergency arises.

Attendant must be familiar and capable of performing the following activities:

- Attendant shall not be assigned any other duties while acting as attendant, nor shall he leave his post while entrants are inside.

Note: At no time shall the attendant enter a confined space in rescue attempt. He may act so only if he is trained, authorized and equipped for rescue operations. In addition, he must notify the responsible supervisors.

- Continuously maintain an accurate count of authorized entrants using sign in/out log.
- He must know the hazards that may be faced during the activities inside the confined

space.

- Communicate with the safety watch concerning the outside activities if they pose any danger to the entrants inside the confined space.
- Communicate with the entrants inside the confined space as necessary to monitor the entrant's status and to alert them of any emergency or the need of evacuation.
- He must act immediately to order for evacuation in case of:
  - Detection of any abnormal conditions (atmosphere testing and outside conditions).
  - Detection of any behavioral effects on the entrants.
  - Difficulties in performing the activities required by him

- Maintaining and monitoring the rescue equipment and the status of the testing instrument continuously monitoring the atmosphere.
- Call rescue and other emergency service.
- Stop the unauthorized persons from entry or even approaching the confined space.

3. Entry Supervisor Duties

Normally is the area supervisor or the equipment in charge supervisor or the person assigned by the Site Manager. He will authorize the entry permit and in turn he will be responsible for the following activities:

- Knowing the hazards, which might be faced during the confined space activities and the signs and symptoms and consequence of the exposure.
- Issuing and authorizing the proper work permit and the entry permit.
- Verifying and checking the proper work permit and the entry permit.
- Evaluate and determine if entry is permitted based on the initial atmosphere testing and the isolation condition.
- Determines the frequency at atmosphere testing.
- Ensure only employees with proper training perform the confined space activities.
- Suspend all confined space activities if non-idle condition is encountered and keep away unauthorized individuals.
- Ensure the assignment of all personnel servicing for confined space (i.e. attendant, safety watch and rescue team).

Procedure Title	Procedure Number	Custodian (Position)
Electrical	**RG-PRO-05**	

Purpose

The purpose of this work procedure is to define actions to be taken when carrying out electrical works in the EDDLUX performed operations, locations, sites, facilities or camps.

Scope

This procedure applies to all activities involving electrical works as it is considered highly dangerous to other performed activities.

Only authorized personnel shall carry out electrical works.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to and implemented throughout the EDDLUX organization.

Line Supervisors are responsible for ensuring they and all their work force teams fully understand and comply with this procedure at all times.

Actions

- The requirement for varying voltage, phases, current and the type of electrical equipment needed must all be assessed and preplanned.
- A competent electrician shall be the only authorized and responsible person for the maintenance, alterations, extensions and testing of the installation.
- A Permit To Work should be filled for the planned electrical job.
- Before commencing work the supply of electricity must be disconnected.
- Make sure the work area is as dry and clean as possible. This may entail the laying of dry wooden planks or pallets on wet ground or cleaning any grease/oil spills.
- The Lock Out/ Tag Out Work Procedure should be applied at all times before any electrical work is commenced.
- The installation shall be inspected with special emphasis on cable and cords, which are prone to mechanical damage.
- Where joints in cables are required they shall be properly made with connectors; taped joints are not permitted.

- All portable tools and temporary lighting must be grounded.
- The correct type and rating of receptacle breaker and fuses must be used.
- Work on live equipment should not be commenced without prior consultation with HSE Department personnel and the establishment of safe procedures and these following conditions must exist:
  - Exact voltage known
  - STARRT Sheet Prepared
  - The General Permit to Work Form is filled
  - Protective equipment available
  - Second electrician available as stand by watchman
  - Workman clearly understands the job requirements
  - A readily Firefighting equipment is available
  - A readily First Aid equipment and/or ambulance are available
  - Area marked off and warning signs are in position

- Upon completion of the electrical work, ensure that all wires are covered and any Lock Out/ Tag Out is removed.
- Check that all repairs have been carried out correctly and that the equipment is safe.
- After completing the job, connect power and check that all voltages are correct.

Procedure Title	Procedure Number	Custodian (Position)
Equipment and Machinery	**EDDLUX-PRO-06**	

Purpose

The purpose of this work procedure is to define actions to be taken by EDDLUX Employees, Drivers and operator when dealing with equipment and machineries assigned to carry their job tasks in the EDDLUX performed operations, locations, sites, facilities or camps.

Scope

This procedure applies to all types of equipment and machinery used in the EDDLUX activities andoperations.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.

Line Supervisors are responsible for ensuring that only qualified personnel are allowed to operate equipment and that all equipment and machinery are maintained in a safe serviceable condition in accordance with procedures.

Actions

- The company mechanical equipment and machinery will only be operated by qualified and trained personnel in its use and who are in possession of a valid license for that class of machinery.
- Operators are to be assisted prior to start of work.
- Machinery should be inspected before being placed in service and daily by the Supervisor of the operation requesting the machinery.
- The operator/driver will check oil, water, fuel and hydraulic levels prior commencing any kind of work with the machinery.
- Operators/drivers must ensure that machinery is switched off prior any repair, adjustment or refueling is commenced.
- Drivers of mobile machinery must switch off the engine and remove the ignition key prior leaving the controls and step out for any reason.

- Prior commencing work, the operator/driver must check the area around his machinery for men and obstructions.
- Excavator's operators must ensure a clearance of at least 2 ft. from any object when excavating.
- Assistant will be assigned to each excavator to guide the operator during excavations and whilst traveling. Care should be taken by approaching personnel.
- All moving machine parts must be guarded.
- Excavator's operating areas, which are operating in residential areas, are to be marked and lights guided at night.
- Compressors, generators and other static machinery (e.g. welding machines) must be sited in such a position that exhaust fumes will not affect those whom working in the nearby vicinity.
- Care must be taken to differentiate between the requirements of air supplied to tools and that for breathing.
- Compressors must be operated strictly in accordance with the manufacturer instructions and when supplying air for breathing, the apparatus must not be left unattended for any reason.
- A qualified electrician, is the only authorized person, should inspect generators and welding machines to ensure that electrical connections are properly made and that the machine is properly grounded.

Procedure Title	Procedure Number	Custodian (Position)
Excavation	**EDDLUX-PRO-07**	

Purpose

The purpose of this work procedure is to define actions to be taken while commencing excavation works in the EDDLUX performed operations, locations, sites, facilities or camps.

Scope

Some of EDDLUX projects require excavation. Therefore, this process is considered safe only if allstaff and employees follow this procedure.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.

Line Supervisors are responsible for ensuring that all employees under their responsibility fully aware and comply with this procedure at all times.

Actions

- All excavations of a depth of 4 feet or more require being either shored or sloped back to prevent side collapses.
- The design of shoring or angle of slope shall be determined by the Excavation Supervisor and must comply with the Customer's/Client's safety requirements and regulations.
- Other factors affecting the required safety measures must also be considered, as they are:
  - Where underground cables, pipes, etc. are suspected careful hand digging, prior mechanical excavating commences, must first expose such obstructions to surface.
  - Mechanical excavators shall not be used within 10 feet of any underground obstruction.
  - A space of 2 feet shall be kept clear of spoil on all sides of the excavator.
  - Men shall not be permitted to work where mechanical excavator can be expected to become a hazard of striking them.
  - Properly constructed walkways with handrails will be provided to cross over excavations.
  - Ladders for entry and exit from excavations shall be provided at intervals not exceeding 50 feet. Such ladders must confirm with the requirements of EDDLUX-PRO-11 procedure.

- Suitable barriers or edge markers shall be erected around all excavations and where necessary, warning lights shall be provided at night.
- All excavations shall be back filled as soon as operationally practicable.
- No man shall be permitted in the excavated trench/hole whilst back fill is underway, whilst the backfilling machinery is approaching his spot or whilst any other hazard is identified.

- Any excavation within any customer/client facility or near any underground obstruction will require the issue of the General Permit To Work Form prior work is commenced. The supervisor of such operation must be familiar with the requirements of the HSE-MS Manual and comply with them at all times.

Procedure Title	Procedure Number	Custodian (Position)
Fire Prevention	**EDDLUX-PRO-08**	

Purpose

The purpose of this work procedure is to define actions to be taken while commencing excavation works in the EDDLUX performed operations, locations, sites, facilities or camps.

The purpose of this work procedure is to define actions to be taken to prevent fire while commencing the various work activities in the RG performed operations, locations, sites, facilities or camps.

Scope

Keeping in mind that the main three combustion elements required for igniting a fire are: fuel, heat and oxygen, therefore, if we manage to exclude any one of these elements, fire could not continue further more.

The easiest component to remove is normally fire fuel and by applying a good housekeeping and a regular and early removal of flammable/ignitable wastes from site fires can be prevented dramatically.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.

Actions

1. Flammable Liquids

- Flammable liquids must be stored either in secure open compounds or well-ventilated huts.
- The various categories of liquid should be stored separately and clearly marked.
- Storage areas for flammable liquids are to be sited at least 5 meters from any building or other storage area and 10 meters from the boundary fence.
- No smoking, naked lights or flames are permitted within 5 meters of flammable storage areas.

- Flammable liquids must be stored in securely capped or sealed metal containers.
- Transporting of flammable liquids is to be done in close containers.
- The engines of all gasoline or diesel powered equipment are to be switched off during refueling.
- Any spillage of flammable liquid must be contained with sand and removed immediately off during refueling.

2. Fire Prevention Measures

- The usual fire extinguisher issued to site is the 6kg, multipurpose dry powder, of stored pressure or cartridge type. These are effective on A, B and C fire categories.
- A fire extinguisher is only efficient as the person operating it. Therefore, all personnel are to be instructed in their use, using training and fire drill practices.
- Sand Buckets shall also be available on sites where flammable liquids are stored and in workshop areas.
- Water Barrels shall also be available on sites where flammable liquids are stored and in workshop areas.
- The HSE Manager will determine the number of fire extinguishers, Sand Buckets and Water Barrels and their locations for each RG location, site and facility.

Procedure Title	Procedure Number	Custodian (Position)
Fuel Handling	**EDDLUX-PRO-09**	

Purpose

The following procedure is to be followed by the fuel clerk or the person(s) responsible for filling, transferring or emptying fuel containers or tanks at the fuel dump to ensure that the fuel handling process is completed without any risk taken to the fuel handler, other company employees and the environment.

Scope

Maintenance Manager is responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout organization of responsibilities.

Actions

- No unauthorized personnel are allowed in the fuel area.
- Personnel employed in fuel storage and dispensing must be equipped with appropriate PPE, which will include:
  - Coveralls
  - Rubber Gloves (as required)
  - Steel toe Shoes/Boots

- Support Equipment Foam Fire Extinguishers and Sand Buckets
- Ensure that adequate safety advisory signs are visible and in good view at fuel storage area and that safety equipment are accessible.
- Know the fire extinguisher locations, inspect the type and expiration date weekly and have familiarity with the use of the fire extinguishers. Keep sand bucket full of sand and covered. Report any defects in Fire extinguishers to the HSE Officer of the facility.
- Interrogate all visitors for matches and other flammable materials and instruct all persons entering the area not to smoke within 20 meters when the fuel stock is under delivery.

- Allow only authorized personnel (mostly vehicle drivers) near fuel storage area and ask them to remain seated in their vehicles. Exceptions are the machinery operators/drivers who can become an assistant while fueling their machinery.
- Only authorized personnel or as directed by the Maintenance Manager, may enter the fuel storage area for conducting of inspections.
- When fueling, avoid prolonged breathing of vapors and keep face away from fuel nozzle while dispensing fuel.
- Never siphon fuel through a hose by sucking with your mouth.
- Log all fuel and petroleum products dispensed or received daily as per the Maintenance Manager's instructions.
- Keep fuel storage area clean and free of spills at all times.
- Avoid spills by placing fuel nozzle always in its retainer.
- Use drip tray beneath tanks when filling.
- Cover any spills with sand and remove for proper disposal.
- Inspect hoses and tanks daily reporting any problem to the Maintenance Manager.
- Report all unsafe acts or conditions to the Maintenance Manager or the site assigned QHSE Officer immediately.

Procedure Title	Procedure Number	Custodian (Position)
Jump Starting Vehicle	**EDDLUX-PRO-10**	

Purpose

The purpose of this procedure is to ensure the safety of personnel and equipment (assets) when jump-starting vehicles is required or necessarily.

Scope

Applicable to all personnel of Mechanical department.

Actions

- The voltage of the vehicle to be started shall be determined using the following criteria:
  - One battery with six cells = 12 volts
  - Two batteries with six cells each connected in parallel = 12 volts (+ve to +ve & -ve to -ve)
  - Two batteries with six cells each connected in series = 6 volts (+ve to –ve interconnection)
- The voltage of the donor vehicle shall be determined in the same way.
- The polarity of the groundside of the battery shall be determined (positive or negative to ground). This is normally negative to ground on modern vehicles.
- The positive terminal of the battery shall be determined on each vehicle. This will the terminal from which cables lead to the vehicle services (starter motor, etc.), marked normally with red color.
- The red cable of the jumper lead shall be attached first to the donor vehicles positive terminal, then to the positive terminal of the vehicle to be started.
- The black cable of the jumper lead shall be attached first to the donor vehicles negative terminal, then good earth or to the battery of the vehicle being jumped.
- The vehicle can now be started.
- Remove the terminals in reverse order.
- Remember to wear the correct PPE (i.e. Coveralls and Gloves) when carrying out this procedure.

Procedure Title	Procedure Number	Custodian (Position)
Ladder and Scaffolds	**EDDLUX-PRO-11**	

Purpose

The purpose of this work procedure is to define safe actions to be taken while using ladders and scaffolds to perform the various work activities in the EDDLUX performed operations, locations, sites, facilities or camps.

Scope

During the course of work construction, it is often required that men work above ground level in situations where no permanent structure yet exists or is inadequate to provide safe working conditions.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.

Line Supervisors are responsible for ensuring that all such structures are of sound material, correctly erected and comply with EDDLUX safety standards.

Actions

1. Ladders

- Ladders either wood or metal must be of sound construction and in good condition, the Supervisor shall inspect all ladders before use in the following manner:
  - Ladder unpainted.
  - Site rails not split or broken.
  - All rungs tightly in place.
  - Extending ropes in good condition.
  - Hardware secure and movable parts operating freely.
- It is important to select the correct ladder for the job with these conditions:
  - Long enough to extend 3 feet (1 meter) above the landing place.

- Extension ladder sections must overlap by a minimum of 4 rungs when fully extended.
- Do not use a metal ladder or one with metal reinforcing near exposed live electrical equipment.

- When properly positioned and correctly used ladders are safe as any other item of equipment. Therefore, make sure:
  - Side rails evenly supported top and bottom.
  - Head secured by typing or clamping. Where possible, ladder set at an angle of 75°.
  - Rungs shall not be used to support scaffold boards.
  - When a ladder is placed in an area of vehicular or pedestrian traffic a man shall be stationed at the foot of the ladder whilst it is in use.
  - One man at a time on any section of an extension ladder.
  - Suspended ladders must be securely lashed top and bottom.
  - No obstruction to a proper foothold at each rung.
  - Tools and material should be carried in hands when ascending or descending.
  - Stepladders must be spread to their fullest extent when in use to ensure stability.

2. Scaffolds

- The two types of scaffold in use are Tube and Coupling and system scaffold of various manufactures, in certain circumstances the two maybe successfully combined to extend their range of application. In either case the scaffolds should meet as well the Customer's/Client's standards for the height involved.

3. Erection

- Scaffolds shall only be erected, altered and dismantled by trained personnel under the control of an experienced supervisor or the QHSE Officer. Care should be taken for the following:
  - Standards or frames vertical with base and sole plates fitted.
  - Ledgers horizontal and secured at least 6 feet (2 meters) apart vertically.
  - Transoms secured and board bearers placed with regard to the nature of the platform and its probable load.
  - Ledger braces fixed at alternate standards.
  - Longitudinal or "dog leg" bracing to full height.
  - Scaffolds tied in or brace rakers fitted where tying in is impracticable.
  - Working platform fully checked, with planks correctly positioned and secured in place.
  - Guard rails and toes boards correctly positioned.
  - Ladders of adequate length supplied and secured in place.

- System scaffolding will vary in design, method of erection and type of bracing they must be assembled in accordance with the manufacturer instructions.
  - The height of an independent tower scaffold shall not exceed 4 times the minimum base dimension.
  - Tower scaffolds over 32 feet (10 meters) in height must be tied in or otherwise suitably anchored.
  - Mobile tower scaffolds should only be used on firm and level ground.
  - Use of mobile scaffolding on dirt, gravel surfaces, boards or planks will not be allowed.
  - Men and materials must be removed from the platform before scaffold is moved.
  - Wheel brakes must be fitted and must be applied when the tower is in use.

4. Inspection

- Before commencing assembly of any scaffold, the supervisor of the erection crew will inspect all components and reject any item found to be faulty. Therefore, he should:
  - Tubes straight and unit frames square with no signs of damage or excessive rusting.
  - Fittings complete, threads and moving parts operational and unpainted.
  - Planks of rough timber 2” x 9”, straight and unpainted.
  - No end splits or excessive knot wood in any plank.
  - Care must be taken when dismantling, that scaffold material is not damaged by being thrown or dropped from heights.
  - The supervisor of the erection crew will inspect all scaffolds weekly and after periods of inclement weather.
  - If scaffold inspection approves the use of scaffold, then “Safe for Use” tag should be placed on scaffold with date and signature of inspector.
  - When inspection shows that a particular scaffold is not ready for use, then “Unsafe for Use” tag should be placed on scaffold with date and signature of inspector and the Tag can be removed and scaffold put in work only if further inspection shows it is safe for use.

- Scaffolds for special applications such as truss; slung or dead shores must be preplanned and designed in consultation with the Customer/Client site representative.

Procedure Title	Procedure Number	Custodian (Position)
Lifting Machinery	**EDDLUX-PRO-12**	

Purpose

The purpose of this work procedure is to define safe actions to be taken by personnel involved in the various lifting tasks and lifting machinery in the EDDLUX performed operations, locations, sites, facilities or camps.

Scope

Crane accidents usually occur when the crane is being used incorrectly or beyond its designed work capacity.

Therefore, this procedure applies to all types of lifting machinery (i.e. cranes, side boom, etc.) used in the EDDLUX activities.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.

Supervisors must familiarize themselves with the requirements of safety and the capabilities of lifting machinery to be used in operations under their control.

Actions

1. Mechanical

- Lifting machinery must be in good mechanical condition, free from defects and assembled in accordance with manufacturer instructions.
- No lifting machinery maybe operated until first passed as serviceable by a third party qualified and certified crane inspector and the HSE Department is informed and plate number and operator name are logged in the HSE database matrix.
- All lifting machinery is to be equipped with a safe working load indicators at such a position as to be easily observed by lifting machinery operator.
- All controls are to be clearly marked.
- Hooks must be fitted with a serviceable safety catch or with wire.

2. Operator

- The operators must have a lifting machinery operator's license.
- He will only operate the type and rating for which he is certified.
- He will know and comply with the standard lifting hand signals.
- He will check the stability of the ground where he is to operate and if necessary require timber packing.
- He will under no circumstances leave his lifting machinery unattended whilst supporting a load.
- He is responsible for checking the condition of all ropes and the load indicator.
- He is responsible for checking that all controls operate smoothly and safely.
- He is responsible for a clear cap and clean winEDDLUXreens.
- He is responsible for immediate reporting of any defects found or noted to the operation supervisor to the HSE Officer.

3. Rigger

- The position of the rigger is very important, as he is the only person authorized to give signals to the crane operator.
- A trained and competent rigger must only carry out rigger and slinging of loads.
- He must be truly conversant with the capabilities of the crane in use.
- He must be familiar with the standard hand signals and use them.
- He must be aware of the uses and functions of different lifting gear.
- He will normally work with the same operator.
- He must be alert at all times, not only to the operation he is performing but also to other operations nearby.

4. Lifting Gear

- The most commonly used lifting gear is steel wire or eye and eye fiber belt slings and various types of shackles.
- No lifting gear is to be used in work unless is certificated.
- The Supervisor must examine the lifting gear at all items prior commencing work in the following manner:
  - Slings must be stored away from the danger of accidental damage.
  - Any item showing signs of damage or excessive wear shall not be down rated but also withdrawn from service.
  - Bulldog clips, where used, must be correctly fitted with the saddle on the live part of the rope.
  - Shackles will be fitted with the correct pin, rebar or mild steel bolts are not to be used.

5. Operation

- It is the responsibility of the Supervisor of the lifting operation to indicate the weight of the load to the operator and to ensure that it is not exceeding the limits of the lifting machinery at any time.
- Cranes should be operated within a safe distance from any power line. However, should this become operationally essential, the operation shall be preplanned with consultation with the HSE Department
- Loads are to be lifted smoothly and never dragged sideways.
- When slewing, a minimum of 2 feet shall be maintained between any moving part of the crane and nearby fixed objects.
- The angle of slings must never exceed 120° during lifting.
- Tag lines shall be attached to all loads and manned whilst lift is being performed.
- Multiple lifting operations impose their own problems and restrictions. Therefore, no operation of this nature should be commenced without first establishing safe working procedure with consultation with the HSE Department.

Procedure Title	Procedure Number	Custodian (Position)
Line Pipe Stringing	**EDDLUX-PRO-13**	

Purpose

This procedure is to provide a general understanding of EDDLUX minimum requirements for stringing the line pipes along the trench required for the pipeline erection work.

Scope

This work procedure applies to all personnel involved in line pipe stringing operations.

Responsibilities

The Spread Manager is responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.

Supervisors must familiarize themselves with the requirements of safety of the line pipe stringing and that all personnel under their supervision fully aware, understand and comply with the procedure.

Actions

- Pipes shall not be placed directly on the ground, but on sandbags.
- Dragging, skidding or dropping of the pipe is not permitted at any time and for any reason.
- The distance between the trench edge and the pipe string shall be planned such that:
  - Adequate workspace is provided to work around or on the pipe along the trench.
  - The stresses in the pipe string during trenching or lowering-in are minimized.
- In case line pipe is supplied from different manufactures, all line pipe of one manufacture shall be completed before commencing the stringing of line pipe of the second manufacture, etc. No pipes of different manufactures shall be per line section.
- Stringing of line pipes shall be done in such a manner so as to cause no interference with public roads, footpaths, tracks, etc., suitable gaps shall be left at intervals as necessary to permit the passage of live stock and/or equipment across the right-of-way (ROW).

- Line pipes shall be laid out with proper planning, keeping in mind that the number of pieces cut-offs less than 1meter long is kept to the minimum.
- Line pipe caps, when provided, shall not be removed before the pipe is required for pipeline erection (i.e. welding) to ensure cleanliness of pipe interior from weather conditions.
- The stringing foreman in sequential order of stringing shall register in his daily log the manufacture line pipe numbers, which are printed on a sticker on each pipe.
- All damaged pipes shall be marked with red or white paint and the stringing foreman shall log pipe(s) relevant manufacture numbers of such pipes.
- All safety regulations and precautions shall be implemented and adhered to during stringing of line pipes. Special precautions shall be taken when stringing line pipe in the vicinity of overhead power lines, communication lines, ditches, wet soil, etc.
- The Stringing Forman shall ensure that his work force groups carrying sufficient number of robes long enough to hold and steer the pipes while unloading from trucks.
- The Stringing Forman shall ensure that his work force groups are equipped with the proper PPE required for the job (e.g. Safety Shoes, Coveralls, Gloves, Hard Hats, Goggles, etc.)
- The Stringing Forman shall ensure that unauthorized personnel are kept away while unloading pipes from trucks is in progress (e.g. Trucks Drivers, Locals, etc.).
- Shipping documents, which are available with the trucks drivers transporting line pipe shall be signed by the Stringing Foreman after unloading the truck is completed.
- Stringing Foreman shall keep a copy of the shipping documents and shall note on each truck document any damages that caused to the coating or pipes as it could hold legal liabilities to the manufacture or the shipping company, this can be achieved while unloading is under progress from the truck.

Procedure Title	Procedure Number	Custodian (Position)
Pigging	**EDDLUX-PRO-14**	

Purpose

To define the environment and equipment required for the Hydrotest team during the commencing of the pigging operation.

Scope

Pigging operation is dangerous and must be carefully preplanned in consultation with the safety manager and carried out in accordance with this procedure and the applicable safety.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX STEEL MANUFACTURING (EDDLUX) organization.

Action

- For pigging operation when and where ever takes place the following job safety plan must be followed:

  - Barricades to be installed at 10 meters radius with high pressure warning signs placed at both ends.
  - Pigging Supervisor to inspect the compressor machine and hoses shall be properly secured.
  - Pig receiver to be provided to prevent uncontrolled discharge of pigs.
  - Unauthorized personnel shall be kept out from work areas.
  - Both end of the pipeline shall be inspected by the Pigging Supervisor prior start of testing.
  - A safety watch to be stationed at both end.
  - The site medic stationed in the site clinic/ambulance shall be in contact with the operational work group while process is under progress.

- The Pigging Supervisor and the HSE Officer should conduct a detailed toolbox meeting of the hazards associated with the operation to all involved employees prior to start the operation.
- All persons must wear suitable PPE during pigging operation (e.g. Safety Shoes, Coveralls, Gloves, Hard Hats, Goggles, etc.).
- In case of emergency the site Medevac Evacuation Plan can be activated if the Medic decided the need to.

Procedure Title	Procedure Number	Custodian (Position)
PPE	**EDDLUX-PRO-15**	

Purpose

This procedure is introduced to define the applicable PPE to be used in EDDLUX STEEL MANUFACTURING(EDDLUX) various activities.

Scope

Personal Protective Equipment (PPE) is the number one guarantee for all personnel safety in their daily work activities around their work areas.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.
Line Supervisors are responsible for ensuring they and all their work teams fully comply with this procedure at all times.

Actions

- All employees will be provided with items of Personal Protective Equipment (PPE) appropriate to the task being performed and as required by the customer's/client's Safety regulations.
- All staff and employees are obliged to use the adequate and correct PPE while performing their work activities in the operations assigned to and as per the PPE signs or as instructed by their immediate supervisors or the HSE Department personnel.

1. **Hard Hats (Safety Helmets)**
   - Safety Helmets (Hard Hats) will be issued by everyone and must be worn at all times on the job site.
   - Helmets shall not be painted or drilled for any purpose.
   - Any helmet displaying cracks, splits or sever abrasions must be exchanged immediately.

2. **Gloves**
   - Gloves, of the appropriate type, should be worn whenever danger exists of injury to the workers hand.
   - Gloves will be issued to all staff and employees per the task they are performing.
3. **Safety Glasses, Goggles, Welding Helmets and Face Shields**
   - Safety Glasses and/or Goggles will be available for any employee engaged in cutting, chipping and grinding operations or working in areas affected by sandstorms.
   - Welder's helmets will be issued to all welders.
   - Face shields will be issued, where full-face protection considered necessary.
4. **Safety Boots / Shoes**
   - The wearing of sandals, flip-flops or athletic bumpers is considered prohibited on EDDLUXwork sites.
   - Safety boots/shoes are to be worn at all times during work operations, in work facilities and as per the safety signs indicate.
5. **Safety Belts / Harnesses**
   - Safety Belts and/or Full Body Harnesses with shock absorbing lanyards will be issued to all personnel working at heights of 6 feet or more above the ground level, where it is impracticable to erect a proper scaffold or staging.
   - The following regulations must be followed if safety Belts or Full Body Harnesses are to be used:
   - Belts/Harnesses should be adjusted to fit snugly and while performing work activity must be fixed to a firm anchor point.
   - After use, belts/harnesses should be stored in a clean dry place (the normal practice is to return to site store, if available).
   - Supervisors will inspect belts/harnesses for incipient faults before use and on each shift.
6. **Ear Muffs / Ear Plugs**
   - Ear Muffs will be supplied to operators of noisy equipment, jackhammers or rock drills and to those persons assigned as attendants of compressors and generators.
   - Ear Plugs will be issued to personnel working in conditions where the noise level maybe considered an aggravation.
7. **Respirators**
   - There are many types of respiratory protective equipment, each with a particular application. It will be necessary to determine the individual requirements of any operation, which involves the creation of fumes or dust or where a hazardous atmosphere is likely to exist.
   - To determine the correct respirator type, the following 3 information must be

known:

- The type of operation and its probable duration.
- Type of contamination, particulate, vapor or asphyxiate.
- The location of the hazardous area.

8. Coveralls

- Coveralls will be supplied to all EDDLUX STEEL MANUFACTURING (EDDLUX)employees and isconsidered obligatory to be worn on the work sites.

Procedure Title	Procedure Number	Custodian (Position)
Radioactive Materials & NDT	**EDDLUX-PRO-16**	

Purpose

This procedure is introduced to define the safe working actions to be taken during handling of Radioactive Materials and executing the Non Destructive Testing (NDT) operation in the RG various activities.

Scope

Handling radioactive materials can become highly dangerous if safe actions are not followed. This work procedure, the Radiation Safety and Emergency Procedures approved by the QA/QC Manager shall apply to all personnel involved in these operations.

Responsibilities

It shall be the responsibility of the QA/QC Manager to ensure that this procedure is in place and implemented at all or any EDDLUX project requires handling radioactive materials or commencing a NDT.

Actions

1. **Radioactive Storage**
   - Radioactive storage should be constructed at a safe distance (i.e. exceeding 300 meters) from any facility (refer to the design diagram in the Radiation Safety Procedure).
   - The storage should be constructed of solid concrete pit with lockable cover to prevent unauthorized removal of radioactive source.
   - The storage facility should be double fenced with barbwire.
   - Warning signs shall be located at strategic places on the area outside fence warning approaching personnel.
   - One set of keys of the radioactive locker and fence lock should be kept with the Radioactive Supervisor and the other set with the QA/QC Manager.

- Only authorized and qualified personnel fitted with dose rate meters are allowed inside the outer fence.

2. Transporting Radioactive Source

A specially fitted vehicle shall be used to ensure the radioactive source (projector) is secure and safe; the vehicle shall meet the following requirements:

- The vehicle shall be clearly marked with applicable warning signs.
- A rotating warning light shall be fitted on top of the vehicle roof.
- A special safe container with lockable cover for holding the projector shall be fitted and bolted to ridge part of the vehicle floor.
- The container shall be constructed from steel with lead lining to ensure that no radiation will escape in case projector malfunction resulting from vehicle vibration or an accident.
- Special unused and used film storage shall be fitted and bolted to the vehicle floor.
- The radioactive projector should be properly placed inside the safe container and the container shall be locked.

3. Conducting NDT

- Work area shall be closed and warning signs located at 100 meter from NDT area.
- Only authorized and qualified NDT personnel are allowed in the NDT area.
- Watchman should be assigned during the commencing of the NDT equipped with red flags and emergency flash lights.
- NDT personnel should follow the inspections as detailed in the Radiation Safety Procedure prepared and approved by the QA/QC Manager and Customer/Client.
- NDT personnel to attend the HSE Training for Radioactive Awareness.
- Dose Rate Meters shall always be worn when approaching, handling, transporting or conducting NDT by the NDT personnel.
- Inspect all cables for signs of external damage and sharp kinks.
- Inspect the projector for signs of damage or loose parts.
- Clean the equipment at end of each working day or when the job is completed.
- Insure that the protective caps are in position to prevent dust and dirt inclusion into cables and source openings.
- Do not place/store dosimeters and film badges next to radioactive sources when not working or resting, they should remain with the NDT person at all times.

4. Emergency Procedure

Due to the nature of the work and the complexity of the radiation projectors, it is possible to have a projector fail during operation in the field, such as the radioactive source could not be returned into the projector after completion of the radio-graph weld.

If such incident occurred, the following steps shall be followed:

- Immediately move all personnel away from the faulty equipment to a safety area outside the boundary markers.
- Instruct your assistants (e.g. Watchman, etc.) not to let any person entering the area, then find the nearest telephone and inform the NDT Supervisor.
- Use the survey meter and enlarge the restricted area boundaries till you reach zero reading.
- Wait till the NDT supervisor arrives at your work site.
- Never attempt to repair the faulty equipment without the presence of the NDT supervisor.

Procedure Title	Procedure Number	Custodian (Position)
River Crossing	**EDDLUX-PRO-17**	

Purpose

This procedure is introduced to define the safe actions during the execution of river crossing projects in EDDLUX various activities.

Scope

The following River Crossing Emergency Action Plan procedure shall be implemented on both right and left riverbanks and at the river crossing work location.

Responsibilities

It shall be the responsibility of the River Crossing Site Manager to ensure that this procedure is in place and implemented at the pipeline easement and the river crossing work area.
The EDDLUX Manager shall review this procedure with the Site Supervisor prior to commencing work.
The Site Supervisor shall ensure that this procedure is implemented for all river crossing operations and that all personnel fully understand and comply with it.

Actions

1. **Emergency Ambulance at the Left Riverbank**
   - Telephone communications shall be made available at river crossing for emergency calls to hospital.
   - A stationed clinic or Ambulance shall be kept at the left riverbank at all working times.
2. **Emergency Transport at the Right Riverbank**
   - It is preferable to have an ambulance stationed at the right riverbank site. However, in the absence of an ambulance on the right riverbank, there shall be a minimum of one vehicle equipped with emergency first aid kit present at the right riverbank site at all times during work activity.

- The vehicle shall be utilized for emergency and/or medical transport in case of serious injury.
- The vehicle driver shall know the route to the contracted Hospital.
- Medevac drill shall be practiced as per the HSE-MS Standards.

3. Emergency Response Team (ERT)

- Two Emergency Response Teams shall be organized to manage emergency actions, one at the right riverbank and the second at the left riverbank.
- Both ERT shall be fully capable of managing "Man Overboard" recovery and emergency actions, refer to the "Man Overboard Plan".

3.1. Right Riverbank Emergency Team

Team Leader On site Construction Manager
Team Co-Leader Foreman
Team Members Surveyor
Safety Watchman
Excavation Watchman

3.2. Left Riverbank Emergency Team

Team Leader On site Manager / Inspector
Team Co-Leader PTPS Project Engineer
Team Members PTPS Barge Operator PTPS
Launch Operator
PTPS Barge Hand
HSE Officer

4. Barge/Launch and Near Water Work

4.1. Drowning prevention and Rescue Gear

- All personnel must wear life jackets at all times when working onboard barge, motorized launch or boat.
- The barge shall be equipped with two life rings (USCG approved or equal) with 20m lifeline attached.
- At all times, the life rings shall be stored in an accessible location and shall be maintained in good order (no tangled line, etc).
- The life rings shall be of "white" or "fluorescent orange" color.
- Experience personnel shall only operate the motorized recovery launch.
- The launch shall be equipped with two life jackets and two life rings (same type as for barge) on board at all times.
- One life ring with 20 meters robe shall be maintained on shore at both right and left riverbanks, in a clearly marked location adjacent to the riverbank and downstream of the work area. This life ring shall be utilized by respective

emergency response team in man overboard rescue.

4.2. PPE

- All personnel, at all work sites, are subject to the safety rules and regulations applicable to on shore work.
- PPE shall include, but not limited to, hard hats, safety boots/shoes, safety glasses or goggles, gloves and coveralls or proper clothing.
- All personnel shall use PPE at all times whilst working.

4.3. First Aid Kits

- First aid kits shall be maintained in all operation' vehicles, ambulance and on board barge at all times.

5. Man Overboard Plan

- Please see the plan details at Chapter 5 – Section 4.4.

6. Incident Investigation

- The HSE Manager to be informed of the accident within 24 hours.
- The HSE Manager to lead the investigation immediately and together with the Construction Manager.
- The process of Accident/Incident and Investigation reporting is to be carried out as detailed in this HSE manual chapter 4 – Section 7.

Procedure Title	Procedure Number	Custodian (Position)
Sandblasting & Painting	**EDDLUX-PRO-18**	

Purpose

The purpose of this work procedure is to define safe actions to be taken by personnel involved in the Sandblasting and Painting operations.

Scope

This procedure applies to all personnel involved in these operations within EDDLUX various activities.

Actions

- Sandblasting and Painting shops shall be located as far as possible from the concentration of work and offices.
- Proper PPE shall be enforced while sandblasting or painting.
- Sandblasting approved vest with appropriate respirators fitted air hood and dust collar, coveralls and gloves shall be used in Sandblasting operation.
- Coverall, gloves, face shields, gas masks, air filters and goggles shall be used in Painting operation.

1. **Sandblasting**
   - Grit shall be used for sandblasting operations.
   - Sandblasting area shall be covered, preventing scatter and overspread of grits, jeopardizing other work and harming personnel and the environment.
   - All employees in the sandblasting area must wear approved filter mask. This includes employees who are exposed to dust even for short, intermittent periods (i.e. during cleanup, dumping dust collectors or moving shipments of abrasive at any point).
   - Peripheral equipment used in blasting operations (i.e. scaffolding, staging, ladders, work baskets, cranes, lighting and air movers) must be used in accord with the related safety procedures and guidelines detailed in other work procedures in this chapter.

- When a crane is used as the supporting medium and no suitable lifeline to tie point is available on the permanent structure, the crane hook should be used as a lifeline tie point.
- Full body harness with shock absorbing lanyard PPE shall be enforced when sandblasting operation is performed on heights exceeding 6 feet.

2. Painting

- Only authorized personnel are allowed to enter the sandblasting and painting area and only after they adhere to the PPE required for such approach.
- Smoking shall be strictly prohibited in painting area and indication signs shall be located at obvious spots.
- Naked flames and open lights are not permitted in the painting area.
- All air hose connection, from air receiver or from any other hose, shall be with a lock pin to prevent from coming adrift from the connection.
- Paint material stock shall be stored in a covered store facility to prevent direct sunrays.
- Great care shall be taken when mixing, decanting and transferring paint/solvents.
- Adequate ventilation must be provided for paint shops.
- All rags saturated with thinner or paint shall be removed from the jobsite daily and disposed properly.
- Empty or redundant paint and solvent containers should be disposed as per the regulations and standards stated in the EDDLUX Environmental Management System (EMS).

Procedure Title	Procedure Number	Custodian (Position)
Side Boom Operations	**RG-PRO-19**	

Purpose

The purpose of this work procedure is to define safe actions to be taken by personnel involved in the Side Boom operations.

Scope

This procedure applies to all Side Booms operating in the EDDLUX STEEL MANUFACTURING (EDDLUX)activities.

Responsibilities

Side Boom mechanics are responsible for ensuring that this procedure is communicated to and implemented throughout the EDDLUX organization.

Supervisors and mechanics are responsible for ensuring that only qualified and certified operators are allowed to operate the Side Booms and that all machinery are maintained in a safe and serviceable condition in accordance with procedures.

Actions

- Personnel trained and qualified in Side Boom operation and certified by EDDLUX HSE Department shall be the only operators authorized to use and operate the company Side Booms.
- Operators are to be assist prior to start of work by the Maintenance Manager and the HSE Manager.
- Side Boom should be inspected before being placed in service and daily by the assigned operator.
- The operator will run the Vehicle Daily Checklist on a daily basis and prior commencing work to ensure that all defects and faults are immediately reported to the Maintenance Manager.
- The daily checklist is to be handed over to the assigned responsible mechanic at the end of the day.

- The mechanic is to pass the daily checklist to the Maintenance Manager.

- In the case of occurring any accident, it is the Maintenance Manager responsibility to report the accident and be part of the investigation team.
- Operators must ensure that Side Boom is maintained properly and any repair or adjustment is commenced prior commencing work.
- Operator shall wear protective gloves, safety glasses or goggles and safety boots at all working.
- The Side Boom must be switched of, if operators are to leave the Side Boom for short periods or longer periods of time.
- Prior switching off, operator is to ensure that the Side Boom hydraulic system is disengaged as well the transmission boxes.
- Only qualified mechanic should run the maintenance to ensure that the machinery is safe for use.
- Prior commencing work, the operator must check the area around the Side Boom for people and other obstructions.
- When crossing underneath power/telephone lines, the operator is to take directions from the watchman only.
- The operating key must be kept in the mechanic's custody at the end of the working day.

Procedure Title	Procedure Number	Custodian (Position)
Small Tools	**EDDLUX-PRO-20**	

Purpose

The purpose of this work procedure is to define safe actions to be taken by personnel working with various small tools while performing their assigned jobs and tasks.

Scope

The classification small tools are applied to all hand and small power tools.

EDDLUX will provide an adequate supply of tools of the best quality, manufactured of sound material free from patent defects. All such tools shall comply with the requirements of safety.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the RG organization.

Supervisors must familiarize themselves with the requirements of safety of all small tools to be used in their workshops.

Actions

1. **Storage and Maintenance**
   - A clean dry store shall be provided and a record issues and receipt maintained.
   - Tools in store shall be regularly inspected and cleaned. In the case of electrically powered tools, a competent electrician shall perform this inspection.
   - Damage and excessively worn tools shall be withdrawn from use for repair or replacement.
2. **Regulations**
   - Hammers should have a smooth and unbroken wooden handle and the head secured with wedges.
   - Chisels must have sharp edges, no mushrooming of heads.

- Picks and shovels must have sharp points and blade and shafts free from cracks or splinters.
- Spanners and wrenches, jaws unsprayed or split, no cracks, heads of slugging wrenches not mushroomed. Pipe wrenches jaw teeth, knurl, pin and spring, clean and undamaged.
- Hacksaws fitted with correct type of blade suitably tensioned, wood saw teeth properly set, sharp, clean and lightly oiled.
- All electrically powered tools must be of double insulation type or properly grounded. The lead is to be as short as practicable fitted with grounded plug and any splices made off properly not merely taped.
- Prior to use any electrically powered tool, every tool must be checked to ensure it confirms with the supply voltage and switches or controls function correctly.
- Grinders must be fitted with a protective guard and inspected regularly and prior of any use.
- The maximum running speed of grinders must be clearly displayed and only grinding wheels of a suitable periphery speed shall be used.
- Only competent persons shall be allowed to install grinding wheels, which shall be examined for defects prior being mounted.
- Circular saws shall be fitted with spring-loaded guard.
- Pneumatic powered, the air compressor used to supply these tools should always be attended and hoses of the correct size supplied. In addition, any joint in the hose should be made with a coupler and an inline filter should be fitted in each line.
- The use of cartridge-operated tools is restricted to those personnel who have applicable training.
- The HSE Safety Office is to be informed of the intention to use any cartridge operated tool, for safety precautions.

Procedure Title	Procedure Number	Custodian (Position)
Steel Rebar Cutting	**EDDLUX-PRO-21**	

Purpose

The purpose of this work procedure is to define safe actions to be taken by personnel involved in steel rebar cutting performed on mechanical and electrical machines.

Scope

This procedure applies to all types of steel rebar cutting equipment and machinery used in the EDDLUX activities.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.

Supervisors are responsible for ensuring that only qualified personnel are allowed to operate steel rebar cutting equipment and that all equipment and machinery are maintained in a safe and serviceable condition in accordance with procedures.

Actions

- Personnel trained in its use shall only operate the company mechanical equipment and machinery.
- Operators are to be assisted prior to start of work.
- Machinery should be inspected before being placed in service and daily by the supervisor of the operation and/or the equipment.
- The operator will check all electrical wiring priors commencing work.
- Operators must ensure that machinery is perfectly isolated prior any repair or adjustment is commenced.
- Operator shall wear protective gloves at all working times when operating the electrical cutting machine and/or the mechanical one.
- Only the manual device shall be used for cutting rebar shorter than 60 cm.

- Qualified electrician should inspect the electrical cutting machine to ensure that electrical connections are properly made and the machine is grounded.
- Prior commencing work, the operator must check the area around his machine for men and obstructions.

Procedure Title	Procedure Number	Custodian (Position)
Tag Out/Lock Out	**EDDLUX-PRO-22**	

Purpose

The Control of Hazardous Energy Program is intended to provide general procedures necessary for protecting employees working on energized equipment or maintaining processes where a release of stored energy could cause injury to employees in the workplace.

Scope

This procedure applies to RG field personnel performing service or maintenance on equipment or processes.
This Control of Hazardous Energy Program can also be referred to as Lock Out / Tag Out (LOTO) during program descriptions and training.
Contractors working for RG are requested to follow the guidance of their EDDLUX representative.

Roles and Responsibilities

1. Employee

It will be each employee's responsibility to follow the established safe work practices and to familiarize herself/himself with the information provided in this procedure.
The employee is responsible for performing his/her duties as detailed below:

- Understand the dangers of hazardous energy and where stored energy may exist.
- Follow procedures identified in this program and encourage others to do the same.
- Make entries in/on program documentation for lock out / tag out projects you are responsible for (e.g. LOTO tags, logbooks, wipe boards).
- Maintain LOTO equipment and inform supervisor of diminishing supplies or the need for replacement equipment (e.g. locks, tags, wire wraps).
- Attend scheduled training courses and pre-job safety meetings covering Control of Hazardous Energy.
- Report unusual conditions to your supervisor.

2. Supervisor

It will be the supervisor's responsibility to ensure that workplace hazards have been recognized and the employee is knowledgeable of the proper lock out / tag out procedures to use while performing service or maintenance tasks.

- Conduct an analysis/evaluation to determine if there is the potential for a stored energy releases, which will require lock out / tag out protection prior to performing a specific task.
- Prepare and implement site-specific lock out / tag out procedures for specific types of equipment or routine maintenance operations to protect employees.
- Evaluate, prior to service and maintenance projects not covered by site-specific procedures, the need to implement lock out / tag out practices during the project.
- Provide equipment necessary to comply with this program.
- Ensure employees are given the opportunity to attend scheduled lock out / tag out training.
- Advise contractors of the applicable portions of this program.

3. Site Management

Each Site Manager is responsible for the documentation associated with this program and assuring program provisions are observed.

Implementation and maintenance of this program will include the following:

- Maintain the site-specific lock out / tag out program and associated documents.
- Perform and document periodic evaluations of the lock out / tag out program.
- Provide training opportunities for employees on control of hazardous energy and the site's lock out / tag out program.
- Maintain associated training records.
- Consult with HSE Department when presented with control of hazardous energy program questions.

4. HSE Officer

It is the responsibility of the HSE Officer to:

- Publish and maintain the Control of Hazardous Energy Program.
- Consult on the contents and objectives as needed.
- Track regulatory requirements and amend program as needed.
- Review this program during by applicable site audit program.

Definitions Authorized

Employee

- Is an individual who has responsibility for servicing or maintaining a machine or equipment that may necessitate the use of the lockout procedure.

- Or is an authorized employee has been trained in the site-specific lockout procedure and the machine or equipment's potential energy dangers. This individual may be EDDLUX employee or Contract personnel.

Affected Employee
An employee whose job requires him/her to operate or use a machine or equipment on which service or maintenance is being performed or whose job requires him/her to work in an area in which such service or maintenance is being performed.

Energized
Connected to an energy source containing residual or stored energy.

Energy Controlling Device
The installation of a lockout and/or tagout device, in accordance with an established procedure, thus ensuring the equipment cannot be operated until these devices are removed.

Energy Isolating Device
A mechanical device that physically prevents the transmission or release of energy, including but not limited to manually operated electrical circuit breakers, disconnect switches, blinds, and valves.

Note: The term does not include push-button or selector switch devices.

Energy Source
Any source of energy whether electrical, mechanical, pneumatic, pressure, chemical, hydraulic, or thermal.

Lock Boxes

- Lock boxes are devices designed to secure the keys for group locks.
- Keys for group locks may be placed inside and secured by attaching the personal locks of authorized employees working on the equipment.

Lock Out Device
Is a device that utilizes a positive means to prevent the energizing of a machine or equipment. Included in this definition are locks, either key or combination type, car seals, blind flanges, slip blinds, chains, wedges, key blocks, adapter pins, and self-locking fasteners.

Servicing and/or Maintenance
Are workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, maintaining, and servicing machines or equipment.

Tag Out Device
Is a prominent warning device, such as a tag and a means of attachment to an energy- isolating device, which warns of the hazardous condition and indicates the equipment, may not be operated until the device is removed.

Action

1. **Written Procedures**

- Site-specific lockout/tagout procedures are to be developed to specifically address each type of energy source in operation. This includes, but is not limited to, procedures for electric motors, electrical panels, combustion engines, pumps, compressors, pipelines and vessels. General procedures may cover groups of similar machines as long as energy control methods and required isolations are identical.
- Procedures should contain the following elements.
  - Identify equipment to be isolated.
  - Contain specific procedural steps for shutting down, isolating, blocking and securing energy sources.
  - Specify steps for placement, removal and transfer of lockout/tagout devices.
  - Specify requirements for testing to verify effectiveness of energy control measures.
- If a piece of equipment is found which will not accept a lock, then a procedure must be implemented, which provides equal or greater protection.
- Cord and plug connected equipment such as power tools, office machines, etc., do not require the use of lockout/tagout as long as the plug end is unplugged and kept in the control of the person working with such equipment.

2. **Control Strategy**

Implementation of this program should follow the below common elements to ensure against unexpected energizing, start up, or release of stored energy.

- **Notification**

  Notification to all affected employees, RG and Contractors, should be carried out prior to shutdown or deactivation of any equipment.

- **Shutdown and Deactivation**

  Equipment should be shut down or deactivated by RG personnel or contract personnel knowledgeable and authorized to do so in a manner that will not result in an increased hazard to employees.

- **Isolation of "Energy" to the Equipment**

  Energy isolating devices should be physically located and securely isolated.

- **Attachment of an Energy**

  Controlling Device- Lockout/Tagout must be accomplished using a lock and a tag unless a specific procedure has been developed, documented, and utilized for the control of hazardous energy. The energy-controlling device is to be affixed in a manner that will maintain the equipment in a "safe" or "off" position.

- **Release of Potentially Hazardous or Stored Energy**

  After the energy-controlling device is attached, all potentially hazardous or stored energy is to be released. This includes the discharge of capacitors, the bleeding of

pressure, and securing weights against physical stops so that no potential energy remains downstream of the point of isolation.

- **Verification of Isolation**

  The control of hazardous energy is not complete until isolation has been verified. Each person involved in the lockout/tagout should attempt to start, or witness the attempt to start the equipment as a means to verify that the energy sources have been isolated and the equipment will not operate.

  It is suggested that equipment isolation be verified following breaks when activity has been unmonitored or if there is a possibility of re-accumulation of stored energy. These verification attempts should be made when all personnel and equipment are safely prepared for and informed of the attempt.

- **Release From Lockout/Tagout**

  Before lockout/tagout devices are removed and energy restored to the machine or equipment, the following actions shall be taken:

  - The work area shall be inspected to ensure that tools and parts have been removed, guards restored, and the equipment components are operationally intact.
  - The work area shall be inspected to ensure that all personnel are safely positioned.
  - All affected employees shall be notified that the lockout has been removed.

3. Tag Out Only Procedures

- A tagout device must be used on any energy-isolating device that is not capable of being locked out.
- Limitations of using tags only include; tags are warning devices and do not provide physical restraint, tags must be legible to be effective, tags may evoke a false sense of security, and they must be securely attached.

4. Group Lock Out / Tag Out Procedures

- Group lockout may be performed when a task requires multiple work groups to accomplish a common work objective. The principal function of the group lockout is to maintain equipment isolation when work requires the services of several individuals over an extended period of time.
- Site-specific procedures should identify which group has primary responsibility for overall lockout/tagout control and employee protection. Group locks should be attached and removed by an authorized employee with responsibility for the equipment being secured.
- The presence of a group lock does not prevent any employee or contractor from attaching his or her personal lock while working on the equipment. In all instances, each employee should personally verify that isolation and de-energization has been

completed.

5. Removal of Locks

- The individual attaching the lock should be the only one to remove it.
- The employee who has attached the lock should be located and requested to remove his or her lock
- If the situation becomes critical and an employee is unavailable, then a lock may be removed following site-specific procedures for such a removal.
- These procedures should be documented; incorporated into the energy control program and all affected personal should be trained on them.
- Once an individual's lock is removed following these site specific procedures, the employee must be informed of its removal prior to returning to work in that area

6. Testing Prior to Lock Removal

- In some situations a lockout or tagout device must be temporarily removed to test or position the equipment. In these situations:
  - Clear the machine of materials and tools.
  - Make sure all affected employees are clear of the equipment and aware of the actions.
  - Energize the equipment.
  - Proceed with testing or positioning.
  - De-energize all systems and reapply energy control for the remainder of the lockout/tagout project.

7. Control Burns

- "Controlled burns" may be used as a method to ensure that there will not be a collection of hydrocarbon vapor in an immediate work area.
- If isolation (e.g. double block and bleed valve, full thickness skillet, or blind flange) will provide a greater degree of safety and is feasible, isolation should be utilized.
- Any controlled burn must be authorized with a Permit To Work and have Site Management approval.

8. Hardware

Whenever replacement or major repair, renovation or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, they should be equipped with energy isolating devices designed to accept a lockout device.

9. Shift Change Procedure

- It is sometimes necessary to establish procedures to ensure continuity of lockout/tagout protection during shift or personal changes.

- This should be evaluated for each job, which may span a shift change, and both "outgoing" and "incoming" workers should be informed of the change out procedure.

10. Turnaround Procedures

- Turnarounds require equipment, piping and/or energy sources to be taken out of service for maintenance and plant shut down.
- To facilitate this effort, a specific lockout/tagout procedure can be created for each turnaround to identify in advance and clearly communication the process to perform this safely.

11. Vessels, Tanks & Compressors

- Typically, this type of work requires the use of lockout/tagout procedures specifying positive isolation by using a double block and bleed valve, a full thickness skillet, or a blind flange.
- In special circumstances adequate protection can be achieved utilizing a single, non-leaking valve as long as a site-specific procedure is followed giving adequate protection to the worker.
- If the equipment is to be left unattended beyond a normal work shift, then the utilization of double block and bleed valve, a full-thickness skillet, or blind flange is required.

Requirements

1. Record keeping

A method to identify which equipment is locked out or the "user" or "owner" of the lock and the applicable dates of work should be developed. This can be accomplished by providing this information on the tag or by using a color-coded lock method, logbook, dry-erase board, form, or any method suitable for the site.

2. Inspection

- An inspection must be performed at least annually to assure that the specific lockout tagout procedures are being followed.
- This inspection should be completed by the Site Manager or designee, but should not be done by the individuals typically responsible for installing and removing locks and tags.
- During this inspection, the written procedures should be reviewed to assure that they are complete and correct.
- Lockout procedures should be revised as identified during the inspection or following changes in equipment or conditions.
- The lockout procedures should then be reviewed with those individuals responsible for performing lockout to assure that the requirements and

responsibilities are understood.

3. Contractors

- Whenever contractors are to be engaged in activities covered by this program, the EDDLUX Site Supervisor and the contractor's representative must communicate to each other their respective lockout tagout procedures.
- Contractors will be expected to follow the direction of their EDDLUX Supervisor during EDDLUX activities.
- The contractor company will be responsible for training of their employees, providing lockout and tagout devices, and including these employees in a control of hazardous energy program.

Education and Training

1. General

- The purpose and function of this program is to ensure that employees are protected against the possibility of injury from the accidental startup or energizing of machinery and equipment.
- Essential to the success of this program is an understanding of the program's principles and procedures by all employees involved.
- Training will be conducted for employees based upon their work responsibilities. The information provided during training should include recognition of hazardous energy sources, the type and magnitude of the energy sources in the workplace, the methods and means necessary for energy isolation and control, the general provisions of this program, and the specific local lockout / tagout procedures.
- A record of the control of hazardous energy training shall be kept in the facility training files or in the electronic training management system database.
- This record should contain the course name, level of training (e.g. initial, refresher), date and duration, instructor's name, names of the participants, method of verification of understanding, and an outline of material content.
- Training records should follow the records retention guidelines outlined in the training program.

2. Training

- Retraining shall be provided for all authorized and affected employees when there is a change in their job assignments, change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.
- Retraining will also be conducted whenever a program audit revels, or whenever there is reason to believe that there are deviations from or inadequacies in an employee's knowledge or use of lockout procedures.

Procedure Title	Procedure Number	Custodian (Position)
Testing	**EDDLUX-PRO-23**	

Purpose

The purpose of this work procedure is to define safe actions to be taken by personnel involved in the hydro testing process of the various instructed construction of the EDDLUX performed projects.

Scope

Pressure testing is extremely dangerous and must be carefully preplanned in consultation with the HSE Manager and carried out in accordance with this procedure and the applicable safety standards.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the RG organization.

Line Supervisors are responsible for ensuring they and all their work teams fully comply with this procedure at all times.

Actions

- A General Permit To Work should be issued prior to any pressure testing.
- The Supervisor of any pressure testing must be fully conversant with the safety standards and shall instruct all other persons involved in the test of the hazards involved and precautions to be taken.
- The correct preparation can greatly assist in assuring a safe efficient test procedure in the following manner:
  - Support adequate.
  - Valves of adequate rating correctly calibrated and placed upright in position.
  - Adequate drainage directly away from the area.
  - Expansion joints restrained.
  - Barriers and warning signs in position.

1. During test

- The area must be isolated and marked to make sure everyone is aware of the process running and to forbid unauthorized personnel from entering the operation area when equipment under pressure.
- Never test against a closed valve that is a part of the system.
- Rate of pressure increase must not exceed 10.5 PSI per minute, or as per the specifications.
- Equipment, which are not under test to be isolated.
- Ensure that the proper gasket/nut and stud bolt are used for testing.
- Ensure that tubing used for pressurizing and monitoring of the equipment to be hydrotested is suitably rated for the maximum test pressure.
- Water is normally used for testing, but in some cases other media maybe specified.
- Maintain a 3 meters safe distance between the tested miscellaneous fittings and the hydrotest personnel during the build-up of test pressure.
- Always wear a face shield during inspection within test boundary.
- When inspecting flanged nozzles for leaks, always face the blind. At no time should inspection be done from the side to be safe in case gasket failed.
- When inspecting coupling type nozzles (plugged), always inspect from the side (i.e. avoid standing in front of the plug).
- On large volume vessels, consider use of suitable wetting agent to reduce surface tension. This reduces air pockets.
- The pressure shall be increased gradually in steps, providing sufficient time for all the piping to equalize strains during test.
- Draining (depressurizing) should proceed gradually to avoid excessive vacuum buildups.

Procedure Title	Procedure Number	Custodian (Position)
Testing Condensate Tank	**EDDLUX-PRO-24**	

Purpose

This procedure has been developed and will be implemented to ensure the safety and well being of the work as host workers in the immediate area during hydro testing of the condensate tank.

Scope

This procedure shall apply to the entire hydro-test operation from the time of clearing and charging the condensate tank with water to its pressurization and final depressurization.

Responsibilities

- Hydrotest Supervisor shall bear the full responsibility for the implementation and maintenance of this procedure.
- This shall include but not be limited to:
  - Inspection of test area
  - Barricading and posting of test area with required signage.
  - Verifying the establishment and integrity of all test safeguards.

Action

Following are the basic safe practices that are to be followed during Hydrotest:

- The safe zone shall be defined by warning tape.
- Warning signs in Arabic and English shall be posted at spaced intervals of the safe zone.
- Pressure gage to be installed on the top of the tank.
- Evacuate condensate tank area when process is under progress.
- Required PPE should be used, especially the Harness for elevated work with lifeline installed on the roof of the tank.
- Personnel involved in the process must tie off the harness to the lifeline at all working times.

- Suitable wetting agent should be used to reduce surface tension. This reduces air pockets.
- Pressurization of the condensate tank shall be done gradually until 1.5 PSI is reached.
- Depressurization of water from the tank must be done gradually.
- Personnel applying soapy solution on the tank roof shall start from the side of the roof working backward to the center of the roof.
- The used crane in this operation must be certified and fitted with a certified by inspection Man basket when applying the soapy solution on the tank roof is under progress.

Procedure Title	Procedure Number	Custodian (Position)
Thunderstorm & Lightning	**EDDLUX-PRO-25**	

Purpose

To outline the work procedure for what should be done in case of thunderstorms or lightening.

Scope

This work procedure is applicable to all RG personnel, activities and operations.

Actions

- Protect Yourself
  - Switch off welding machine and keep it grounded.
  - If possible – get inside a large building.
  - Don't use phone or radio and don't disconnect radio aerials.
  - Stay away from metal objects.
  - Get inside a metal roofed vehicle if possible.
  - Do not shelter underneath a vehicle.
- If outside, follow these rules:
  - Don't stand near tall objects in open areas and avoid using umbrellas.
  - Avoid standing up on hilltop, open field near water or in boat.
  - Get away from open water unless in metal roofed vessel.
  - Don't stand in small isolated structures in open area.
  - If in the open, try go to low area such as ditch.
  - If isolated in an open area and hair stands on end, lightning could strike – drop to knees, bend forward, put hands on thighs, and do not lie flat on the ground.

1. How far away is the storm

Upon seeing a lightning strike, begin counting saying the words, one second, two seconds, three seconds and so on, until thunder is heard.

Watching for Lighting	Count	Listen for Thunder	Distance Storm Away	What to Do
See Lighting	8 Seconds	Heard Thunder	2.5 km	Protect Yourself
See Lighting	16 Seconds	Heard Thunder	5 km	Shutdown Operations
See Lighting	32 Seconds	Heard Thunder	10 km	Inform Direct Manager

Procedure Title	Procedure Number	Custodian (Position)
Tie-in Operations	**EDDLUX-PRO-26**	

Purpose

To outline the safe working procedures for what should be done when executing the Tie-In operation.

Scope

This work procedure is applicable to all EDDLUX personnel Tie-In activities and operations.

Actions

- When Tie-In operation is planned for an operational system the following should be done:
  - The EDDLUX Operation's Supervisor to ensure that the main station is shut down prior anywork is allowed to commence (i.e. contact customer/client for this purpose).
  - The EDDLUX Operation's Supervisor to ensure that the system lines are completelydrained prior any work is allowed to commence.
- STARRT sheet should be filled a head of commencing operation, to identify the hazards involved in the process and the safe practices and preventative measures to be taken by the personnel involved in the operation.
- Ensure shutting down of ignition source (i.e. welding machines, generators, vehicles, cranes, etc.) prior commencing the job.
- All personnel involved in the operation should wear proper PPE as per the HSE Department and/or customer/client instructions.
- Tie-In area should be barricaded to prevent unauthorized personnel from approaching.
- Warning signs should be placed at strategic locations to warn people.
- Assign a standby fire watchman.
- Ensure all fire equipment is available and fire extinguishers are charged.

- Tools used in operation should be inspected and approved by QHSE Officer prior work is allowed to commence.
- When the operation is completed, a proper cleanup job should take place for the work site, rubbish collected in plastic bags and returned to a proper dump area.

Procedure Title	Procedure Number	Custodian (Position)
Transportation	**EDDLUX-PRO-27**	

Purpose

Driving presents one of the highest risks in operational work, with the chance of many serious accidents and fatalities.

All drivers are expected to drive in a safe, responsible and defensive manner with courtesy and consideration for other road users.

Scope

This procedure applies to all activities involving vehicles in EDDLUX operations, inclusive of subcontracted activities, subcontracted drivers and subcontracted vehicles.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.

Vehicle drivers are responsible for ensuring they and all passengers under their responsibility fully comply with this procedure and with the applicable country laws and regulations at all times.

Actions

1. Requirements and Regulations

- No driver is allowed to drive any company's vehicle unless he poses a driver's permit issued by the EDDLUX HSE Department.
- Driver's permit shall be valid for the class of vehicle to be driven. And only this class or lower weight ones can be driven.
- Driver's permit should always be in the driver's possession whilst driving the vehicle.
- No vehicle shall be driven in access of the legal speed limit and in accordance with the country regulations.

- All government and site-specific traffic signs are to be complied with and at all times.
- Vehicles are to be parked in the designated parking areas where provided in a reverse way or as signs define.
- No hitchhikers to be picked up, only company or client personnel will be carried in the company's vehicles.

2. Drivers and Passengers

- All drivers are to attend the company's driving training program.
- After the completion of the required training for the job, the driver to be assisted prior to start work, only then a driving permit will be issued. The assessment records are to be kept on file with a copy of the driving permit.
- Seat belts are to be worn whenever the vehicle in motion, except for jobs requiring the driver to drive short distances in the field at low speeds.
- Most skilled driver shall be used for personnel carriers.
- No smoking is allowed whilst fuelling or working on ignitions.
- Driver should be familiar with his vehicle, especially the use of 4-wheel drive and differential lock.
- Driver is requested to securely park his vehicle before walking away from it. Use the parking brake.
- Drivers should avoid reversing whenever possible. When it is necessary to reverse, have someone to direct you, or walk around your vehicle to make sure nothing is in your way.
- Passengers can assist in the driver's assessment by filling the Formal Complain Form that is if or when the driver is not adhering to the regulations.
- All passengers shall wear seat belts except in buses where it is only required for the driver.
- No standing passengers are allowed to travel in bus.
- Under no circumstances may persons ride on cranes, side booms, etc. or other parts of any machinery not designed to carry passengers.
- Passengers must not mount or alight from moving vehicles.
- No one should rest, sleep, lie or otherwise recline under a vehicle. The only exception being for mechanical work with ignition key removed.

3. Vehicles

- It is the responsibility of the driver that his vehicle is safe to operate and is properly maintained, by delivering it to workshop for service at correct intervals.
- Smoking is prohibited inside any vehicle.
- All pick-up and station wagon vehicles shall have roll bars for protection of its driver and passengers.

- All vehicles to be equipped with a serviceable dry powder fire extinguisher inspected regularly by the HSE Department. However, the driver can and should report the defect or fault signs of his vehicle fire extinguisher if he noted any.
- All vehicles to be equipped with a first aid kit inspected regularly by the HSE Department Medical personnel.
- Seatbelt, no smoking and speed limits signs shall be posted in all vehicles.
- All heavy vehicles shall be equipped with a reversing alarm.
- Drivers will inspect their vehicle prior to use for the following:
  - Satisfactory steering and brakes.
  - Tires correctly inflated and free from defects, including spare (walk around the vehicle).
  - Seat belts installed and operable.
  - Working horn.
  - All lights including signal indicators operating.
  - Rear view mirrors correctly positioned.
  - Windshield wipers and washers correct and windshield clean.
  - Oil and water levels are sufficient.
  - Jack, wheel brace, spare wheel, warning triangle and basic hand tools all available.
  - Fire extinguisher charged.
  - First aid kit is available.
  - Winch cable for off road vehicles available, if vehicle equipped with, or proper winch robe is available.
- Drivers are to fill the vehicle daily logbook, the original to be sent to the HSE Department at the end of day work. After the HSE Department review the sheets and written comments, it will be transferred for maintenance department for servicing process.
- Speed limits are as follow:

Black Top

- **Station Wagons 100km/h**
- **Pick-ups 80km/h**
- **Heavy Trucks 60km/h**

Off Road

- **Station Wagons 80km/h**
- **Pick-ups 60km/h**
- **Heavy Trucks 40km/h**

4. Winching

- Winch cable should be run out and inspected frequently.

- Always wear gloves when handling the cable.

- Always use a person to guide you through the winching operation.
- Inspection sheets to be handed to the HSE Department and accordingly the HSE Manager will issue the change of cable order to the stores.

5. Accidents

- Any driver involved in a vehicle accident, shall not leave the scene or move his vehicle until permitted to do so by the police.
- Exception to the above, in the necessity to remove the injured person(s) to hospital, following which he shall report to the nearest police station and if so instructed to return to the scene of the accident.
- An accident/incident and investigation report to be hand filled and submitted to the HSE Department.

6. Training

- All drivers are to attend the company's driving training program.
- After the completion of the required training for the job, the driver to be assisted prior to start work (Commentary Driving) by a qualified personnel from the HSE Department, only then a driving permit will be issued.
- The assessment records are to be kept on file with a copy of the driving permit.

<u>Defensive Driving and Commentary Courses</u>

- The defensive driving course introduce the five safe seeing habits which are:
  - Aim high in steering
  - Get the big picture
  - Keep your eyes moving
  - Leave yourself an out
  - Make sure they see you

Procedure Title	Procedure Number	Custodian (Position)
Transportation of Explosive	**EDDLUX-PRO-28**	

Purpose

The purpose of this work procedure is to ensure a fully controlled and the safe transportation of explosives.

The following procedural guidelines apply to the personnel involved in transporting explosives to and from the main explosive magazine to work site.

Scope

This Work Instruction is applicable to all Loading and Explosives Truck Personnel.

Actions

It is the responsibility of the Spread Manager to ensure that the loading foreman is fully aware of this work procedure.

1. Vehicles

- It is the responsibility of the supplier to provide transport in keeping with local legislation in the delivery of explosives to supplier's magazine. EDDLUX site transportation provided for the daily movement of explosives will be diesel powered, whether hired or company-owned, inspected and equipped as follows:

Lights	Headlights, running lights, brake lights, and reflective clearance lights.
Tires	Good tread all around and spare tire; jack, lug wrench, and tire chuck.
Fuel System	Ensure that fuel tank and lines are not leaking. Tank must be filled prior loading of explosives.
Mirrors	On both driver and passenger sides

Fire Extinguisher One 9 kg dry powder fire extinguisher mounted outside on truck body.

Seatbelts One for each seat in Company vehicle. Hire truck MUST have seatbelts sufficient for the number of passengers.

Magazine Constructed with Fully wood-lined, reinforced metal box with locking hasps. Detonators and explosives are loaded in individual and segregated magazines. No metal fittings within box that may contact with stored contents.

- Detonators are carried apart in wood-lined metal transport box.
- Grounding Chain-chain, attached to vehicle chassis and magazine, used to ground the vehicle to the earth.
- The following equipment and advisories must be supplied - *Unless - Security reasons negate advisories referring `Explosives' to minimize attention. "Comply with federal, state and local laws that define use of advisories":

Advisories - Post Explosives and `NO SMOKING' signs

Safety Triangle - Safety reflective triangles to be placed at front and back of vehicle when stopped for any reason.

First Aid kit - Available in the Passengers cabin.

2. Personnel

- A minimum of two persons is required while transporting explosives. Explosives cannot be left unattended and security guard will always remain with vehicle in the case of a breakdown or accident while the explosives foreman seeks assistance.
- The driver and licensed shooter, whether a government personnel or direct RG employee, must receive the following written instructions:
  - Never leave the vehicle unattended at any time. If vehicle breaks down, driver only goes for help.
  - Follow a 60 km/h speed limit; in adverse weather conditions reduce speed accordingly.
  - Do Not Overtake vehicles.
  - Stay away from fuel trucks and/or trucks with hazardous materials.
  - Use Earth Ground while loading and/or unloading explosives.
  - Load and Unload only one component (Explosives or Detonators) at a time. This means only one magazine can be open during load/unload activities. Never mix dynamite with detonators at any period during handling.
  - No other Passengers or goods such as fuel or batteries may be carried with the explosives.
  - No Smoking in or near the vehicle.

- No stopping in townships, at side of highly trafficked roads or near high-tension power lines.

In Emergency situations only is this permissible:

- No Unauthorized Persons in vicinity while explosive transfers are conducted.
- No Radio Transmitters in vicinity (50 meters) of vehicle while explosive transfers are conducted.
- No hand held radios to be carried in the explosives truck.
- Vehicle will be shut off when loading or unloading explosives.

3. Contingency Measures

Vehicle Breakdown

- Try to move vehicle as much as possible to side of road.
- Place triangles at front and back of vehicle, enable warning flashers and raise hood of vehicle to indicate vehicle is not mobile.
- Accompanying vehicle to call for assistance, local authorities are to be informed.
- On no account will the vehicle be left unattended.

Fire Emergency

- In the case of a vehicle fire, stop vehicle and attempt to put out fire with the supplied fire extinguisher.
- If the fire extinguisher is exhausted and fire not contained, clear the area.
- Accompanying vehicle to call for assistance, local authorities are to be informed. Do not permit anyone to approach anywhere within 500 meters of vehicle.
- If vehicle is stopped at the side of main highway, attempt to seal section of highway before and after burning vehicle to a distance of at least 500 meters. This can be done, by putting rocks, branches on and across road. Do not stand in road and try to flag down the traffic, as this is too hazardous.
- Leave fire burn itself out.
- Should local fire response teams arrive on site they must be warned of contents of vehicle so that they may take precautionary measures and safe standoff distances while attempting to combat the fire - or - they may elect not to combat the fire and will assist in clearing the area to safeguard the local population.
- Under no circumstances try to be a hero.

4. Storage of Explosives in Trucks Over Night:

- Explosives trucks must be parked away from any EDDLUX Camp, Facility, Location or Siteor Village or Structure (Not less than 100 meters).
- Truck will not be parked near or under overhead power lines (100 meters safe distance to be followed).
- An arm guard to accompany the truck at all times.

Procedure Title	Procedure Number	Custodian (Position)
Using Ambulance Vehicle	**EDDLUX-PRO-29**	

Purpose

The ambulance is solely for the use in emergencies and must not be used for operations other than emergencies.

Scope

This work procedure is applicable to all HSE Medical staff and Ambulance driver on the EDDLUX Organization.

Actions

- The ambulance must not be used without the consent of the HSE/Site Manager or their designate; this includes test runs.
- The driver should run the ambulance each day for engine check and making sure the vehicle is in a ready status at all times.
- The fuel tank will always be full.
- An area map should be stored in the ambulance.
- The ambulance driver will report any malfunctions immediately to the HSE Department or directly to the Maintenance Manager.

1. In an Emergency

- The ambulance driver, Doctor or Medic will be informed immediately of the emergency as or when it occurs.
- The ambulance driver will test the radio of the ambulance, and then leaves it on, if radio ambulance is equipped with one.
- When the ambulance departs for the scene of the incident, the following will accompany the ambulance, the HSE advisor, extra medical help and police (if required).

- The emergency light and siren on the ambulance should be run intermittently to warn other drivers of the emergency.
- Ambulance driver's room shall be displayed at conspicuous place in the site clinic. He should keep the site Doctor/Medic informed of his where about.
- Spare set of Ambulance keys should be available in the Site Manager's office

Procedure Title	Procedure Number	Custodian (Position)
Using High Pressure Water Washer	**EDDLUX-PRO-30**	

Purpose

The purpose of this procedure is to define the safe operating technique for a high-pressure water washer.

Scope

This work procedure applies to all Maintenance Department personnel and all EDDLUX drivers.

Actions

- Any person when using the High Pressure Water Washer should wear the following PPE:
  - Safety Glasses or Goggles
  - Full coverage clothing (Coverall)
  - Safety Boots/Shoes
- Inspect pump and diesel engine for cracked hoses; any damage, all water and oil levels are at safe levels.
- Ensure adequate water supply to pump, ask to be sure.
- Open gate valves to allow water to high-pressure washer.
- Start engine; switch on circuit breaker to high-pressure washer
- Turn on high-pressure water washer, give trigger squeeze (turn on) on hand piece till water flows rapidly, release trigger once water spray appears. Ensure pump runs and cuts off automatically once hand trigger has been released.
- Wash vehicle or article; ensure that splash does not spray back into face or onto engine or high-pressure water pump, danger of electricity.
- **Never spray yourself or anybody with water spray; very high pressure can cause injury!**
- Clean down concrete pad and drains when finished cleaning job.
- Turn off high-pressure water pump, turn off diesel pump, turn off all water taps to high-pressure water washer. Roll up hoses out of the way tidily.

Procedure Title	Procedure Number	Custodian (Position)
Vehicle Electrical Accessory Installation	**EDDLUX-PRO-31**	

Purpose

This work procedure is introduced to provide safe installation and regular maintenance of any EDDLUX STEEL MANUFACTURING (EDDLUX) vehicle accessories.

Scope

This work procedure applies to all Maintenance Department personnel and all EDDLUX drivers.

Responsibilities

Maintenance Department personnel are the only authorized department and personnel to provide the hardware to be installed in any EDDLUX vehicle.

Actions

- All mechanical installation work shall be the responsibility of the Senior Mechanic or Mechanic authorized by him.
- Mechanical installation work shall include but not limited to the following activities:
  - Drilling holes in any part of the vehicle or its attachments.
  - Removal of any part of tile vehicle or its attachments.
  - Addition of any type of fixture (e.g. mountings, brackets, etc.).
  - Installation of nuts, bolts, screws, etc.

- All electrical installation work shall be the responsibility of the Maintenance Manager, Senior Mechanic or a Mechanic authorized by him.
- All electrical accessories fitted to vehicles shall have a suitable fuse fitted, as close as possible to the battery connection, in the power supply cable.
- All mechanical and electrical installations shall be examined and signed off by the Mechanic who carries out the installation. These jobs will be done after a job card is filled out.

- All accessory installations shall be examined and signed off by the person responsible for the accessory.
- All installations, mechanical, electrical and accessories, shall be inspected as part of the normal vehicle service.
- Upon installation completion, the Maintenance Manager shall be informed that vehicle is ready.
- The Maintenance Manager can inspect the work at his well.

Procedure Title	Procedure Number	Custodian (Position)
Welding and Cutting	**EDDLUX-PRO-32**	

Purpose

Generally arc welding and gas cutting are safe operations and not injurious to health providing necessary precautions are taken and basic safety rules are observed.

Scope

This work procedure applies to all Maintenance Department personnel and all EDDLUX welders.

Responsibilities

Individual Managers are responsible for ensuring that this procedure is communicated to all work forces and is implemented throughout the EDDLUX organization.

Line Supervisors are responsible for ensuring they and all employees under their responsibility fully comply with this procedure.

Actions

The Line Supervisor of any operation, which involves gas cutting and/or electric welding, must ensure that the equipment to be used complies with the safety standards.

The Line Supervisor is to issue a Hot Permit To Work prior to starting any welding or cutting job.

1. Storage and Handling

Please refer to the work procedure reference number EDDLUX – P02 for full details.

2. Inspection and Operation

- Only approved equipment shall be used and should be inspected immediately before work commences and faulty items replaced.
- Cylinders, valves and regulators must be kept clean and free from grease and oil.
- Cylinders in use should be in a trolley and secured in upright position with a chain or similar device.

- Connections and valves should be examined weekly for leakage using soapy water.
- Hose connections must be made with clamps or by crimping. Never use wire.
- Ignition is to be by use of a flint gun, not a naked flame.
- Do not allow the torch flame to come in contact with cylinders or hang lighted torch on the regulator.
- Acetylene under pressure can become unstable and explode; the pressure at the regulator must never exceed 15 PSI.

3. Emergency Action

- Occasional small explosions and flameouts can occur during use and usually are quite harmless and easily corrected. A flashback can, however, be dangerous and in this event the operator must take the following immediate corrective actions:
  - Close both torch valves, oxygen first.
  - Close both cylinder valves.
  - Extinguish hoses if alight.
  - Remove regulators and check the damage.
  - Inform supervisor and do not resume work until his equipment inspection is completed.
- If on inspection, the acetylene cylinder appears to be over heated or to have developed a Hot Spot, the supervisor must:
  - Clear all unnecessary personnel from the area.
  - Remove the cylinder to an open space and open the valve.
  - Apply copious quantities of water or if possible immerses the cylinder completely in water.
  - Inform the HSE Manager or the site HSE Officer or the Customer/Client Site Representative.

4. Electric Arc Welding

- Only approved equipment shall be used and should be inspected before work commences and any faulty item replaced.
- All connection must be secure and make good electrical contact.
- Cable insulation should be free from cuts or abrasions.
- Where possible cables to be supported overhead or covered to protect them from damage.
- Any joints will be made with cable couplings and fully insulated.
- Machine is to be well grounded prior to commencing any kind of welding.
- Fire extinguisher to be available and charged.

5. General Requirements

- Fire can be serious hazard whenever welding or gas cutting operations is in progress.
- Remove all flammable material from the work area or cover with a fire blanket.
- Provide metal bins for spent electrode stubs and other scrap.
- Never weld or cut on old empty drums, they may have contained volatile liquids and remaining vapors can be highly explosive.
- Dry powder fire extinguishers must always be available whilst work is in progress and all mobile welding generators should be equipped with a similar type operational fire extinguisher.

6. Personal Protective Equipment PPE

- Tinted goggles are to be worn whilst cutting and goggles with clear lenses when clipping or grinding.
- Welder's Helmets with approved dark lens must be used during electric arc welding.
- Leather gloves, aprons and jackets or protective sleeves should be used as protection from sparks, molten metal and hot slag.
- Safety boots with steel toecap should be worn.
- If cutting and welding performed at some height where the provision of full scaffolding is not practical, all personnel involved in the operation must wear safety hats.
- Harness with shock absorbing lanyards should be worn at heights exceeding 6 feet.

7. Confined Spaces

- All welding and gas cuttings, produces dust and fumes many of which are irritants or toxic.
- In normal operations there is ample ventilation to ensure that the welder does not inhale enough of these substance to cause a problem, when working inside confined spaces however this does not apply and forced ventilation may be required.
- No operation of this nature should be commenced without first establishing a safe working practices (STARRT Sheet) and a Hot Work Permit.

Procedure Title	Procedure Number	Custodian (Position)
Welding in Workshops	**EDDLUX-PRO-33**	

Purpose

The mechanical workshop supports and maintains all aspects of machinery and equipment used in the EDDLUX operations and, as such, the only activities conducted here are by qualified and trained personnel.

This document outlines general procedures for the safe operation of this area.

Scope

Maintenance Department

Actions

- No unauthorized personnel are allowed in this area.
- Only personnel equipped with the required PPE will be allowed to enter within the designated work area.
- Wear appropriate Personal Protection Equipment at all times, this will include:
  - Coveralls, gloves (as required), steel toed boots and safety glasses.
  - Face shield when grinding and welding.
  - Goggles when grinding or using the oxy-acetylene torch.
  - Rubber gloves, aprons and goggles when handling chemicals and acids.
- Always clean and replace tools after use.
- Always use drip tray when changing oil.
- Keep the workshop tidy, free from obstruction and the floor free from grease and oils, clean if necessary to achieve.
- Weld only in designated areas and ensure adequate screening is used to shield other workers from the arc.
- Never work in an isolated area alone or unattended.
- Always use a designated work schedule for location awareness of personnel.

- No smoking near fuel storage, fuel tanks or oil storage areas. Smoking will ONLY be allowed in safe, designated areas (refer to the site-specific Smoking Policy).
- Never leave electrical equipment lying around in the open or connected to a power source when not in use.
- Proper lifting equipment must be used when moving heavy equipment.
- Lifting equipment must be in good condition and checked regularly for defects.
- All used oil must be disposed of properly and in designated waste oil containers.
- All oil drums will be equipped with suitable dispensing equipment or spigots and drip trays.
- All waste (scrap metal, old parts, oils, cleaning rags, etc.) will be sorted in the designated collection containers, to allow collection for controlled disposal. Never put oil soaked waste or cleaning rags in receptacles containing paper, cardboard, etc, where spontaneous combustion may occur.
- Personnel will all be aware of the locations of fire extinguishers for their work areas and be familiar with emergency escape routes. If anyone is unsure of procedures in case of fire or other emergency: ASK YOUR SUPERVISOR.

Chapter 6

Implementation and Monitoring

1. Scope

EDDLUX STEEL MANUFACTURING (EDDLUX) organization, having identified the HSE risks and controls will ensure that objectives are met by conducting its activities in accordance with the defined standards mentioned in the previous chapters of this HSE manual to manage the risks and provide supervision to assist individuals, and continuous improvement shall be promoted always and monitored through active employee participation and initiating corrective actions where necessary.

This chapter describes the execution of HSE critical activities and operations and how performance is measured and monitored.

2. Performance Review

HSE data is recorded at the various locations, sites and facilities by the allocated HSE Officers and collected by the HSE Manager at each month end.

After the HSE Manager analyzes the data, he will review it with the Project Manager to assess the performance and identify and assign action items to address any deficiencies noticed. Such actions items can be identify training requirements, writing new work procedures or updating the existence ones or issuing new HDS's, etc.

HSE performance reviews will be displayed on the HSE bulletin boards and later communicated to all work staff through the QHSE and toolbox meetings process.

Each HSE activity has a responsible person assigned to it and is defined in terms of required activity input, tasks to be executed and activity output. In addition, each task within the activity has a standard(s) identified as being applicable to it.

The EDDLUX STEEL MANUFACTURING will apply both a **Proactive** and **Reactive** performance indicators.

1) **Proactive** performance indicators are the straight forward looking. They are aimed at raising awareness of the possibility of incidents.

Listing below the examples of this approach:

- The ratio of Unsafe Acts (STOP) card participating.
- Number of newly introduced Hazards Data Sheets.
- Number of prepared STARRT.
- Number of PTW forms issued.
- Kilometers driven with fuel consumption rate.
- Water consumption.
- Waste disposed.
- Training statistics.
- Number of audit and inspections completed and overdue.

- Number of drills practiced.

- Number of HSE meetings conducted.

- Number of Toolbox meetings conducted.

2) **Reactive** performance indicators highlight deficiencies in the HSE performance. Listing below the examples of this approach:

- Complaints received.
- Waste generated.
- Number of reported incidents.
- Lost Time Injuries rate or frequency.
- Clinic Statistics.

HSE performance proactive and reactive indicators versus objectives will at least be measured on quarterly basis for the completion of the yearly plan. This will be done on the following manner:

1) Measured on monthly basis for the HSE bulletin boards display purpose.
2) Monthly results accumulated to generate the quarterly basis performance for the communication process purpose.

The proactive and reactive indicators of the HSE performance will be prepared and issued in graphical format for the ease display on the HSE bulletin boards and the meetings communication process.

3. Behavior Based Safety

General Requirements:

EDDLUX shall establish, document, implement, maintain, collect data and continuallyimprove a B-BS Process in accordance with the B-BS requirements.

The management shall define, document and authorize the organization's B-BS policy and mission and ensure that within the defined scope of B-BS Process:

a) includes a commitment to prevention of injuries and illness and continual improvement;

b) is communicated to all persons working under the control of the organization with the intent that they are made aware of it;

c) define the main activities the organization does and supports;

d) define the objectives of the B-BS Process in order to be periodically verified;

e) is reviewed periodically to ensure that it remains relevant to the organization;

f) define the areas and departments involved in the B-BS Process;

g) defines behavioral measures and outcome statistics (e.g., incidence rates)

h) define the schedule of the reviews for verifying the achieved results.

Planning:

EDDLUX shall identify and document all hazards after an analysis of its activities and risks.

EDDLUX shall record and document all injuries and accidents occurred in its facilities, including near misses, first aid interventions, lost time injuries, injuries producingpermanent damages, fatalities.

The data have to show improvement or sustained maintenance of safe behavior and outcomes.

Objectives and Plan:

EDDLUX shall establish implement, document and maintain a plan for achieving its B-BSobjectives.

The plan shall include as a minimum:

a) designation of accountability of B-BS process activity at relevant functions and levels of the organization (e.g. conduction of observations, providing paper checklist at dept. level, entering data in the system, conducting review meetings with workers, etc.)

b) designation of accountability and authority for achieving objectives at relevant functions and levels of the organization

c) the means and time-frame by which the objectives are to be achieved The

program shall be reviewed at regular and planned intervals and adjusted to ensure that the objectives are achieved.

Implementation and Operation:

EDDLUX shall ensure that all risks and accidents are taken into account when establishing,implementing and maintaining its B-BS Process.

EDDLUX shall have in place, documented and updated behavioral checklists for the on-siteobservation of safety actions and conditions.

Behavioral checklist shall be customized and refreshed for the organization activities and plants: behaviors included in the checklists shall prevent specific risks and accidents of the organizations.

Resources, Roles, Responsibility, Accountability and Authority:

Management shall demonstrate its active commitment to B-BS process by:

a) evaluating data on both behavior change and safety outcomes to gage the effectiveness of the BBS process

b) ensuring the availability of resources essential to establish, implement, maintain and improve the B-BS process - resources includes human resources

and specialized skills, organizational infrastructures, technology and financial resources;

c) defining, documenting, communicating roles, responsibilities, accountabilities and delegating authorities to facilitate effective B-BS management.

Safety Leaders shall demonstrate its active commitment to B-BS process by:

a) assembling and analyzing behavioral observation data and reporting results to managers

b) making personal observations according to the defined plan and assuring quality and reliability of the observations made by observers;

c) organizing and conducting safety meeting with his/her direct reports;

d) solving or addressing proposals to management for a necessary improvement of safety conditions elicited from the behavioral observations;

e) reinforcing and motivating his/her direct reports for their safe behaviors, observation activities, suggestions for the safety facility improvement and all other behaviors that support safety values.

Observers shall demonstrate its active commitment to B-BS process by:

a) making personal observations according to the defined plan;

b) assuring quality and reliability of the observations.

c) actively participating to safety meetings and training sessions

Workers:

a) maintain safe behaviors, above all those included in behavioral checklist;

b) actively participating to safety meetings and training sessions.

Competence, Training and Awareness:

EDDLUX shall identify training needs associated with B-BS Process implementation. It shallprovide training and take other actions to meet these needs, evaluate the effectiveness of the training or action taken and retain associated records (i.e. training for Observers and for Safety Leaders).

EDDLUX shall establish, implement and maintain a procedure for the participation of:

a) workers by their appropriate involvement in

   a. the identification of task-related risks and respective safe behaviors to be included in the behavioral checklists;

   b. the observation process;

   c. investigation on causes of at-risk behaviors, at-risk conditions,

accidents, first aids, near misses;

d. any changes that affect safety of working environment or B-BS process.

b) contractors whenever the B-BS process involves them

The documentation of B-BS Process shall include:

a) the B-BS policy and general objectives (e.g. Mission & Values)

b) behavioral checklists for the on-site observation of safety actions and conditions, consistent with internal safety procedures;

c) graphic or tabular depictions of behavioral observation data and outcome data (rates of near-misses, first aid cases, lost time cases, fatalities)

d) rules of the B-BS Process (e.g. features of observation process, of the workers meeting reviews, reward and celebration plan, discipline policy, etc.)

Checking:

EDDLUX shall establish, implement and maintain a procedure to monitor and measure of the B-BS effectiveness and efficiency on a regular basis. This procedure shall provideand document:

a) quantitative measures of safe/at-risk behaviors and safe/at-risk conditions;
b) organization safety indices, goals based on results (e.g. reduction of safety indicators as frequency of lost time injuries index, frequency of first aids index, severity, near miss), and other indices for specific kind of activity (e.g. in transportation the rate of accidents per 100,000 miles driven);
monitoring the implementation of the B-BS activities at each level of the organization (e.g. number of observation, number of safety meetings, etc.);
c) list of undertaken actions facing at-risk conditions and barriers to safe behaviors reported in behavioral observations and in analysis of accidents, job-related illnesses, near misses, first aids;

4. Accidents Reporting, Investigation and Review

EDDLUX works on the principle that all accidents, near accidents (Incidents) and hazardous situations must be reported regardless of result or severity to ensure that all accidents and incidents undergo appropriate, accurate and adequate analysis (i.e. investigation), identifying both cause and consequences, and to develop and implement suitable actions to prevent reoccurrence both by eliminating causes, where possible, and by protecting against their consequences.

However, effective remedial action can only be applied when the basic problem is clearly defined. The investigation, submission of detailed factual reports and the evaluation of these facts are the basic tools for establishing the real cause of any accident and directing our accident prevention activity in the most efficient way.

We need to realize that the difference between a near accident and a serious one is often intangible. In addition, we are often able to identify future hazard areas and apply preventative measures through the accurate and adequate analysis of previous accidents.

All accidents, incidents and hazardous situations investigation and analysis will follow the investigation guidelines stated in Section 7 of Chapter 4 of this HSE manual.

EDDLUX implements a system of unsafe act and hazard (unsafe condition) reporting based on the STOP program as part of HSE plan. Hence, minor hazardous situations, incidents and non-conformances identified or observed by the individuals, may also be reported, and are encouraged, on a STOP card.

All STOP cards reports, which are collected in the designed boxes found throughout the location, site or facility; will be reviewed by the HSE department and immediate actions assigned to the respective departments.

EDDLUX relies on immediate corrective action or a planned response with details logged in the location's/site's/facility's Remedial Work Plan.

A "No Blame Culture" is promoted, which encourages the work staff to report accidents without fear of reprisals from superiors and peers.

It is the HSE Manager to build and holds a database for capturing the accidents/incidents that occur and reported, participate in the investigations and building related risk profiles.

All accidents that cause harm to people (e.g. all injuries requiring hospital treatment, illness, cases of contagious diseases, fires, fatalities, etc.), asset damage (e.g. property damage, fires, automotive accidents, etc.), environment effects (e.g. spills of hazardous materials, etc.), hazardous situations and near misses irrespective of size, magnitude or severity, which occur during the course of work and involved any machinery, equipment or personnel associated with the work; SHALL be promptly reported to the Customer/Client representative on site.

A copy of the full detailed written EDDLUX accident/incident and investigation report is tobe submitted within 48 hours to the Customer's/Client's site representative.

5. Inspections

Systematic inspections are implemented in EDDLUX to ensure the compliance to HSE defined policies, standards, procedures and HSE regulations and guidelines, identify problem areas and assess these areas to determine whether additional or modified safety requirements are necessary.

In general, inspections are applied to all EDDLUX locations, sites and facilities constructions and operations and machinery and equipment used for the execution of projects.

In addition they are designed in a way to ensure that any violations of HSE regulations

and/or any hazards are identified and that appropriate corrective actions are

implemented (i.e. to improve the weaknesses in the HSE performance in the specified targets).

In most cases where a project involves site work, the client's contract requirements requests that EDDLUX work activities are governed according to client's HSE regulations and guidelines to ensure the protection of the employees, equipment and the environment.

In these cases, following the designed and implemented inspection forms and process will be the tool used in our operations to meet any client's requirements. Furthermore, any unique working conditions of individual projects can be met by designing and implementing project-specific inspections.

The inspection system implemented is called "**HSE Cross-Inspection System**" and is carried out on monthly basis following a designed and planned calendar where each department inspects other department's operations, activities, machinery, equipment, location, site or facility.

The Monthly HSE Cross-Inspections Calendar is planned by the HSE Manager and approved by the Project Manager, where selective (nominations) personnel are assigned to carry specific HSE inspections on a particular day of the month calendar. This way the system involves all line management in the Cross-Inspection System process.

The calendar is then distributed to all departmental managers and posted on the HSE bulletin board to ensure the full awareness of all personnel of the planned and approved HSE inspections.

Later, the HSE inspection forms are distributed via the HSE Department to the selected (i.e. nominated) personnel as per the dates stated on the Monthly HSE Cross-Inspections Calendar to enable them to perform their assigned task in time.

All inspection forms are handed back, after completion, to the HSE Department, where inspectors noted deficiencies and weaknesses of any HSE item of the inspection form are logged in the site-specific Remedial Work Plan (RWP) database and follow the RWP cycle for closure.

Although the HSE Officers are the appointed coordinators of the HSE Cross-Inspections System, all line management is responsible for cooperating with the HSE Department to ensure that their effort to perform the system is fulfilled.

Listing some of what line managers are expected to do as to demonstrate their cooperation to the system:

- Perform the assigned inspections as early as possible and before month end.
- Accompany the inspector while performing the inspection.
- Discuss the deficiency or weakness with the person responsible for operation,

machinery or equipment.

- Discuss action items with the HSE Department.

Appendix C – at end of this chapter (i.e. Chapter 6) lists in details the inspection sheets, which are to be used by the selected (i.e. nominated) personnel to perform the HSE Cross Inspection, within the EDDLUX Organization.

6. Corrective Actions and Continuous Improvement

EDDLUX has established the "Remedial Work Plan" process for defining responsibility and authority for handling and investigating nonconformance where and when deviations of performance against plan are found; taking action to mitigate any impacts caused and for initiating and completing corrective and preventive action.

The Remedial Work Plan (RWP) is a powerful tool designed and purposed for ensuring required corrective actions are captured and completed as faster as possible.

The Remedial Work Plan (RWP) is a site-specific living document and is controlled and updated regularly by the QHSE Department.

Any corrective or preventive action recorded in the location, site or facility Remedial Work Plan must follows the following main guidelines:

1) Is taken to eliminate the causes of actual and potential non-conformances.
2) Is appropriate to the magnitude of problems.
3) Is adequate with the HSE impact encountered.

Various sources can have an input in the Remedial Work Plan, which reflects tasks that require action, the actions itself, the person or department responsible and accountable for ensuring tasks are completed and the agreed time scale for completion.

The entire process is made faster through the communication process that is developed and implemented to ensure completions or further updates are immediately captured.

Please refer to the full mechanism details of the Remedial Work Plan process in Section 8 of Chapter 4 of this HSE Manual.

7. HSE Recognition Program

We in EDDLUX believe that recognition programs encourage personnel involvement in the process of HSE performance improvement. Therefore, we shall recognize outstanding efforts in the HSE by means of award programs

The sole purpose of the HSE Recognition Program is for the company to give recognition to individuals for their active and positive participation in the QHSE

program (e.g. HSE suggestions, reporting, etc.) rather than end results of HSE performance (man days without LTI).

Site Managers select or nominate the person(s) they feel are eligible to receive awards from their sites and print their names and reason on the HSE Award Nomination Form available in the HSE-MS Manual. Form should be handed over to the HSE Department for final approval.

A special award ceremony is conducted on regular basis (normally on monthly basis) on the work site, location or facility to distribute the awards or prizes to the selected or nominated personnel.

Certificates signed by either the Area, Project or Site Manager and the HSE Manager shall accompany these awards or prizes.

Attachment 12 – Chapter 8 shows the Award Nomination Form used by the various EDDLUX locations, sites or facilities Managers to select or nominate individual to receive a HSE award.

8. Records

8.1. Records

Records are those that comprise all documentation that demonstrates the ability of EDDLUX to meet client requirements, statutory (i.e. legal) needs and company standards.

These records are identified in the documentation from which they are generated and are indexed, filed, maintained and retained in a logical manner to:

- Facilitate easy retrieval of information.
- Ensure that critical information is collected and analyzed.
- Assess compliance with policies, standards and procedures.
- Monitor improvements in our processes.

In addition, and where necessary, records are stored in an environment designed to avoid loss of, or damage to the records.

Hard copies filling are implemented in EDDLUX. In addition, electronic storage media is preferred in EDDLUX for records keeping.

The mentioned HSE performance indicators in section 2 of this Chapter depend on the collection of data in an accurate and timely manner.

All HSE documents shall be kept safely in the HSE Department offices and computers. These records shall include the following:

- Unsafe Act/Condition (STOP) Cards.
- Accident/Incident and Investigation Reports.
- Daily Toolbox Meeting Forms.
- Induction Records.

- Newly Arrival Briefing Records.

- HSE Training Records.

- Pre-employment Medical Records.
- Food Handler's Investigation Records.
- Food Handler's Vaccination Records.
- Occupational Health (Clinic Statistics).
- Monthly QHSE Cross Inspections.
- Audit Reports.
- HSE Meeting Records.
- HSE Drills.
- STARRT Sheets.
- Number of HDS Prepared/Issued.
- PTW Records.
- Quality Improvement Projects Records.
- Machinery and Working Hours.
- Departmental Head Count and Man-hours.
- Vehicles and Number of Kilometers Driven.
- Water Analysis Records.
- Waste Disposal Records.
- Pre-occupation and Final Exit Reports.
- Month End HSE Reports.

8.2. Reports

The allocated HSE Officer generates daily HSE Report for the location, site or facility he is assigned to.

The HSE Manager collects the daily HSE reports and accordingly the Monthly HSE statistics and report are prepared.

The HSE monthly statistics and report are then reviewed by the Project Manager prior distribution to the various departmental Managers and/or the client.

8.2.1 Weekly HSE Report Template
8.2.2 Monthly HSE Meeting Report Template

Minutes of Meeting

Subject: _____ **Date:**
Time: _____ **Location:**
MOM #

Participant's Name:	Position:
Absent:	

Topic	Discussion	Action By
	Topic Name Heading	

Next Meeting
The next meeting is scheduled for:
Time:
Location:

USE ADDITIONAL PAGES AS NECESSARY

Weekly HSE Minutes of Meeting

Project #
Project No.:
Project Manager:
Contractor:
Time:
Location:

Attendance:

1.	**6.**
2.	**7.**
3.	**8.**
4.	**9.**
5.	**10.**

Safety Items Discussed: _____

_____

_____

_____

Employee Suggestions _____

_____

_____

_____

_____

Corrective Action _____

_____

_____

_____

Safety Talk Used:
Project Manager:
Reviewed By:

USE ADDITIONAL PAGES AS NECESSARY