



**SAFETY
MANAGEMENT
STUDY**

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HSE PLAN

SITE: (Project Location & Name)

REV	DATE	STATUS	REVISION LIST	PREPARED BY	CHECKED BY	VERIFIED BY	APPROVED BY

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HEALTH, SAFETY & ENVIRONMENT (HSE) MANAGEMENT PLAN

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Revision No.	Date	Page no.	Details of Changes	Reason for changes

Sr.No.	CONTENT	Page No.
	INTRODUCTION AND SAFETY MANAGEMENT SYSTEMS	



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1.0 PURPOSE

This Health, safety & Environment Plan has been prepared to provide a framework for (Company Name) personal to plan and develop a program, to achieve the objective contained in the project health safety & environment policy.

Our HSE program sets our requirements to the protection of life and health. It also provides guidelines to eliminate, where possible damage of and to equipment while carrying out specific work task.

We have over the years established ourselves as a HSE oriented Contractor by implementing only the highest standards during the course of any work and have ensured that only qualified and experienced personnel are employed to successfully execute HSE program of the project.

2.0 SCOPE

The health, safety & environment plan reflects the high priority that (Company Name), Senior Management place upon the health, safety and environment at work. It is demonstrating their commitment to ensure that reasonably practicable measures are taken to:

- Protect the Health & Safety of all persons engaged at work site.
- Comply with the relevant statutory and contractual health & safety requirements.
- Ensure the health & safety of all persons is not affected by the work.
- Provide trained, experienced and competent personnel and supervision.
- Provide and maintain plant, places and systems of work that are safe and without risk to health and the environment.
- Provide all personnel with adequate information, instruction, training and supervision.
- Effective control, co-ordinate and monitor the activities of all personnel on the project, including contractors, in respect of health, safety, environment and security.
- Establish effective communication on the health & safety matters with all relevant parties involved in the project works.
- Ensure that all construction- planning takes into account the health and safety of all persons that may be affected by the work.
- Inform all relevant persons with the detail of all method statements and risk assessments that may affect their health and safety.

3.0 LEADERSHIP AND COMMITMENT

(Company Name) Senior Management provides demonstrable management leadership and commitment through active participation in HSE activities.

Their leadership and commitments translate into necessary resources to develop, operate and maintain (Company Name) HSE Management System and to attain HSE Policy and legal requirements as applicable.

4.0 PROJECT HIGHLIGHTS



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Miscellaneous mechanical work at refinery.

5.0 VISIBILITY

The management will provide strong demonstrable visible leadership and commitments towards HSE by personal example and action. The Management will participate in HSE meetings, conduct plant Inspections and HSE Audits, to encourage a positive attitude towards HSE.

No.	TASK	ACTION BY	COMPLIANCE TARGET	VERIFICATION DOCUMENT
1.	HSE Committee Meeting: (Review performance against HSE plans, HSE Objectives & targets and any HSE issues)	SITE IN CHARGE	Frequency: 1 month/	Minutes of HSE Committee Meeting –
2.	HSE Review	SITE IN CHARGE	During their site visit	Minutes of hse Committee Meeting
3.	Internal hse Audit	Internal Auditor	Quarterly	Audit Report
4.	(Motivation) Giving Safety Certificates, with gift to the “Best safety conscious personnel” of the month to recognise good HSE practices.	SITE IN CHARGE	Monthly	Copies of Certificates separate procedure are available for r & r.

6.0 PROACTIVE IN TARGET SETTING

The Site management demonstrates pro-activeness in target setting by:

No.	TASK	ACTION BY	COMPLIANCE TARGET	VERIFICATION DOCUMENT
1.	Jointly developing and discussing improvement targets and indicators for each location with Managers, (eg. Training of Workmen/ Employees – Inspection Compliance etc)	SITE INCHARGE	Every Quarter	MOM of O&M HSE Committee Meeting
2.	Jointly review the Incidence rate of First Aid Cases and set a target for reduction.	SITE IN CHARGE/HSE IN CHARGE	Every Year	MOM of HSE Committee Meeting
3.	Management involvement in Accident review and target setting.	Designed hse Committee Members	As required / Monthly	Investigation Report



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7. COMPANY CULTURE

The management seeks to create and sustain a Company culture in which employees share a commitment to HSE.

No.	TASK	ACTION BY	COMPLIANCE TARGET	VERIFICATION DOCUMENT
1.	Putting HSE as the “First agenda” of all review meetings at Head Office, & plants	ED / Business Head/ Heads / Site in charge	All time	MOM
2.	<p>Empowerment to Stop Work</p> <p>Employees are empowered to stop work when the situation warrants immediate action in view of imminent danger to life / property / environment.</p> <p>O&M Managers must appreciate and reward those employees whose prompt action helps avoid potential incident.</p>	All	All time	Verbal Verification

8.0 HSE TARGETS

(NMS reporting, FR/SR target & Involvement of Senior Management.)

8.1 Individual targets:

- Every individual has to through safety induction training program which is organised by safety team.
- Near miss has to report at last 5 in month.
- TBT must be delivered as per scheduled.
- Follow all safety rules and regulation during job.
- Safety violation has to report at last 3 in a month.

8.2 INJURY FREE WORKPLACE targets:

- Every person has gone through INJURY FREE WORKPLACE orientation once in year.
- SKILL TRAINING must be once in year for all supervisors.
- Allocated members must participate in INJURY FREE WORKPLACE meeting.

8.3 Statistic Targets:



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Near miss identification is the key to avoid incidents. Near miss will report to HSE dept by site personnel & at regular basis & compliance to be checked.

Minimum 5 near misses will be report in a Month.

The site management demonstrates pro-activeness in target setting by:

- **Zero Fatalities**
- **Zero Lost Time Injuries**
- **Zero Medical Treatment cases**
- **Zero environmental non-compliances**
- **Zero Fires**

8.4 Senior management demonstrates its involvement in HSE issues through:

NO.	TASK	ACTION BY	COMPLIANCE TARGET	VERIFICATION DOCUMENT
1.	Review HSE Performance and HSE plan implementation in consultation with Site In charge & HSE.	Business Head / site in charge	MONTHLY	MOM – HSE Review Meeting
2.	Ensure adequate professional HSE support is available for effectively implementing the HSE plan, fulfilling HSE targets and attaining HSE objectives.	HSE OFFICER	As required	Jointly decided by site in charge / Safety officer
3.	Ensure sufficient support and resources are available to meet HSE targets (e.g. Infrastructure, vehicle, communication, PC, etc)	Site In charge	As required	Jointly decided by Site In charge / HSE Officer
4.	Imparting necessary HSE training for the Staff & workmen of the site.	Site In charge /engg	As required	HSE Training record



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9.0 HSE POLICY

HEALTH, SAFETY AND ENVIRONMENT POLICY

(Company Name) is committed to protecting the health and safety of their workforce keeping in view the environment protection so as to achieve sustainable development by implementation of well structured Health, Safety and Environment (HSE) Management System.

We shall achieve continual improvement in our HSE performance with the involvement of all our stockholders through.

- ✚ Compliance with relevant legal and other requirements.
- ✚ Commitment to conserve energy, water, raw materials and other resources, use recycling and reduce waste generation where appropriate.
- ✚ Commitment to be good neighbors in our communities by insuring that the facilities do not pose unreasonable risks and by participating in community activities related to HSE.
- ✚ Developing and propagation HSE awareness amongst employees.
- ✚ Adopting eco-friendly technologies wherever possible and promoting clean and green surroundings.
- ✚ Ensuring safe practices and healthy working environment and around the works place and operating facilities in a manner that prevents harm to the public health and the environment.
- ✚ Setting / reviewing / achieving appropriate objectives and targets to achieve continual improvements to the performance.
- ✚ Educate, trained, motivate and empower employees to conduct their activities in a safe, environmentally responsible and quality oriented manner at all the times during their employment.

[Date]

M.D. (COMPANY NAME)



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10.0 ENVIRONMENT POLICY

We are an engineering construction company serving customers in power plant and refinery sectors in chosen global markets, delivering projects and services in civil & mechanical painting, pipelines, mechanical structures, heaters and process plants & power plant mechanical work. The company strives to minimize environmental pollution during construction activities. We are committed to comply with all applicable environment legislation.

11. ALCOHOL AND DRUG POLICY

We are committed to excellence in all aspects to personal and professional life. We believe that alcohol and drug abuse is a significant obstruction to attending this global. Therefore, (Company Name) as policy does not permit the consumption of alcohol or illegal drugs at the workplace. Those violating this policy are subject to disciplinary action. Drugs for medicinal purposes, however, can be administrated by a medical practitioner.

12. COMMUNITY AFFAIRES POLICY

We are committed to servicing our clients at all locations where the company operators. To this end we believe in developing and maintaining an excellent relationship with the inhabitants of the area we operate in the company encourage all employees to build and nature such a relationship at work and socially. Towards accomplishing this we observe acceptable social responsibilities, respect local customs, laws and traditions, as also religious secularity and political neutrality as a company.

13. WORK FATIGUE POLICY

- **Purpose of the policy**

To manage employee work hours & to minimize the potential for injury through work fatigue, consistent with our aim of achieving a ZERO ACCIDENT Site.

- **Scope of Document**

This applies to all (COMPANY NAME) employees & subcontractors.

- **Actions**

It is recognized that where an employee works long hours, they may be subjected to excessive physical demands liable to increase the risk of injury. In addition, their performance may be impaired by fatigue, reducing efficiency & safety awareness.



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The provision of a safe workplace & system of work are obligation of the employee to work responsibly, including taking positive steps to avoid dangerous situations from developing that could lead to accidents.

- **Normal Works of Hours**

The normal work of hours of work will be up to 12 hours per day with a maximum of 15 hours allowed in some special circumstances, where there is a specific skill requirement, e.g. mechanical work, critical machinery failure, etc.

- **Rest Periods**

All employees working on a roster must have a minimum of 10 hours' rest between shifts.

- **Consecutive Work Days**

The maximum number of hours worked in any 7 days' period shall not exceed 78 hours. Further to this, the number of hours worked in any consecutive 14 days' period shall not exceed 156 hours.

WORK PLANNING

Supervisors and employees should be aware that fatigue could lead to unsafe working conditions. However, fatigue can occur not only as a result in working hours, but occurs during the normal cycle. For example, people accustomed to working day shift, when temporarily transferred to night shifts, will experience symptoms of tiredness between the hours of 0200 hrs – 0600 hrs. It is also common for people to feel sleepy between 1400 hrs – 1600 hrs after taking a midday meal. Critical operations should, so far as practicable, be planned outside of these hours.

- **Breaks**

Regular rest breaks should be taken throughout the shift, and 15 minutes taken after two hours of work would be reasonable, depending on the exigencies of the work. For example, a crane driver should have a break immediately before commencing critical lift activities.

- **LABOUR CAMP**

(COMPANY NAME), shall, at his own expense, make adequate arrangements for the housing, supply of drinking water, canteen and provision of latrines and urinals, for his staff and workmen employed on the Works, directly or through petty contractors or sub-contractors and for temporary crèche (Bal-mandir) where 50 or more women are employed at a time. All camp plants shall be maintained in a clean and sanitary condition, by the Contractor, at his own cost.

These points shall be checked on regular basis for labour camps-



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- Accommodation Facility (Room) – Bed & Mattresses with bed sheet and blankets
- Toilet facility
- Drinking water facility
- Washing & Bathing
- Waste Disposal
- Food Facility
- Electrical arrangement
- Passage / Access
- Fire fighting system
- First Aid Facility

14. TERMS AND DEFINATIONS

- **SAFETY**

Safety can be defined as freedom from those conditions that causes injury or death to personnel or damage to property & environment.

- **INJURY**

Injury can be defined as harmful condition sustained by the body as the results of an accident.

- **FIRST AID**

First aid can be defined as an immediate & essential care given to a person who is injured or suddenly taken ill before he is transported to the hospital.

- **ACCIDENT**

An unplanned or undesired event that can result in harm to people, property or the environment.

- **FATALITY**

Death due to a work related accident or illness regardless of the time between injury or illness and death.

- **EXPOSURE**

The measurement of time during which the subject is at risk from a hazard.

- **HARM**

Includes death injury, physical or mental ill health, damage to property, loss of production, or any combination of those.

- **HAZARD**

A source or a situation with a potential to cause harm, including human injury, or ill health, damaged to environment, or a combination of these.



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- **AUDIT**

A systematic and independent examination of the health and safety management systems and their outcomes to determine the effectiveness of the health & safety management system. Internal audit should be done on quarterly basis lead by Site-In charge and Safety Officer and External audit should be done on half yearly basis conduct by higher management of the company.

- **COMMUNICATION**

It is the process of conveying information to other party or parties, so it can be understood correctly and acted upon.

- **HOUSEKEEPING**

Maintaining the working environment in a tidy manner, it basically follows the principal of “having a place for everything and having each thing in its designated place only”

- **INCIDENT**

An event that:

Result in death or injury to person where the injury requires medical attention (including first aid) result in injury/damage to person, property or process; is not in compliance with statutory requirements, safe work procedures or in-house guidelines includes accidents, property damage, dangerous occurrences, near misses, reportable loss time injuries, first aid, etc. It's responsibility of (Company Name) staff and workers establish the

Target to make **Incident-Injury Free workplace-ZERO ACCIDENT.**

- **NEAR MISS**

A near miss is an event where no contact or exchange of energy occurred and this did not result in personnel injury, asset loss or damage to the environment. Its responsibility of (Company Name) staff and workers at least report 05 NMS in a month.

- **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

All equipment and clothing intended to utilized, which affords protection against one or more risk to health & safety. This induces protection against adverse conditions.

- **RESTRICTED WORK CASE**

Work related injury or illness that renders the injured person unable to perform al normally assigned work function during a schedule work shift or being assigned a another job on a temporary or permanent basis on the day following the injury.

- **RISK**



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A measure of likelihood that the harm from a particular hazard will occur, taking into account the possible severity of harm.

- **RISK ASSESSMENT**

The process of analyzing the level of risk considering those in danger and evaluating whether hazards are adequately controlled, taking into account any measure already in place.

- **RISK MANAGEMENT**

The process of identifying hazards, assessing risk, taking action to eliminate or reduce risk, and monitoring and reviewing results.

- **DANGEROUS OCCURRENCE**

Events where there may or may not be physical injury but other type of damage or loss to the machine, property or environment for e.g., bursting of plant, receiver, collapse of crane, etc.

- **NON-LOSS TIME INJURY**

An injury which requires medical treatment only, without causing any disablement whether of temporary or permanent nature.

- **LOST TIME ACCIDENT (LTA)**

Any work injury which renders the injured person unable to perform his regular job or an alternative restricted work assignment on the next schedule work day after the day on which the injury occurred.

- **HEALTH & SAFETY REVIEW**

A formal recorded management evaluation of the effectiveness of the construction health & safety management systems and identification of action.

- **TYPE OF INCIDENT / ACCIDENT & THEIR REPORTING**

All body injury, damage to property or other loss that may arise out of or in consequence of the execution and completion of works shall be reported to client and relevant Govt. agencies.

The **Two** categories of accidents, which are fallows-

Non Reportable Cases:-An accident, where the injured person are disabled for less that 24 hrs.

Reportable Cases:-In this case the injured person is disabled for 24 hrs or mare and is not able to perform his duty.

- **SR = Severity Rate =**
$$\frac{\text{Total Man Days Lost} \times 1000000}{\text{Total Man Hours Worked}}$$



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- **FR= Frequency Rate = $\frac{\text{Total of Lost time Injury} \times 1000000}{\text{Total Man Hours Worked}}$**
- **TRIR = Total Recordable Incident Rate = $\frac{(\text{Lost time Injury} + \text{Medical Treatment Cases}) \times 1000000}{\text{Total Man Hours Worked}}$**

TERMS

KRE	: Kamna Rakcha Engineers
EIL	: Engineers India Limited
COSHH:	Control of Substance Hazardous to Health
EPF	: Employee's Provident Fund
HSE	: Health safety & Environment
IS	: Indian Standard
BS	: British Standard
MA	: Millie Amperes
JSA	: Job safety Analysis
OSID	: Oil Industry safety Directorate
TBM	: Tool Box Meeting
LEL	: Lower Explosive Limit
UEL	: Upper Explosive Limit
PPE	: Personal Protective Equipment
HV	: High Voltage
LV	: Low Voltage
ESIS	: Employee State Insurance Scheme
SWL	: Safe Working Load

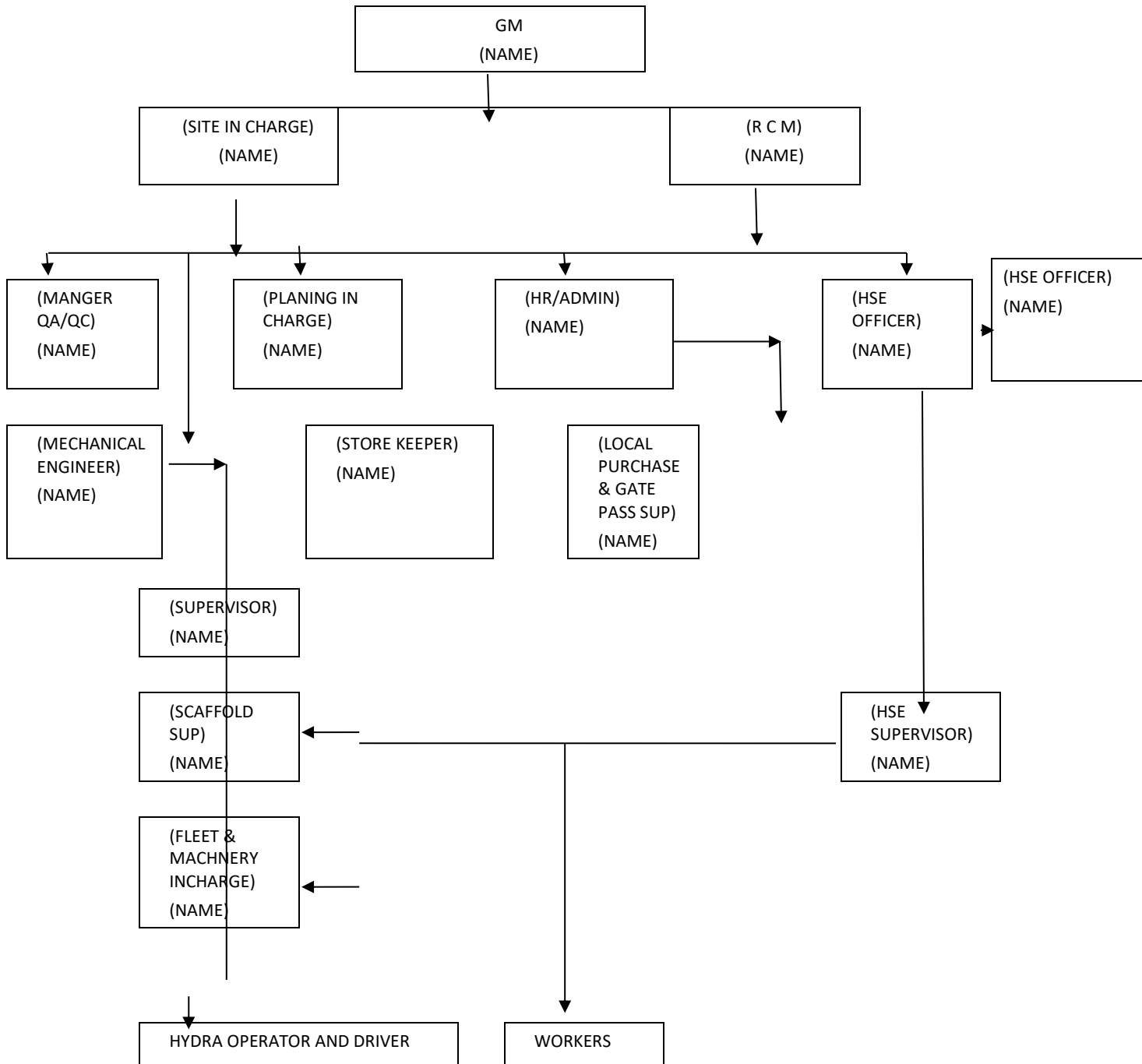


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15.0 ORGANISATION CHART





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16.0 ROLES & RESPONSIBILITIES

HSE management is a line responsibility requiring active participation of all levels of management and supervision.

Individual HSE roles and responsibilities, along with task and target shall be distributed to the individuals for action, as described below.

16.1 SITE IN CHARGE/R C M

NO.	TASK	TARGET	VERIFICATION DOCUMENT
1.	Responsible for project activities of the plant with total implementation of the company's HSE policy requirement, HSE Management System & requirements of this plan and comply with the relevant statutory rules and regulations.	During project	
2.	Responsible to ensure that all staff & workmen are competent to perform their tasks safely in compliance with K. R Engineers HSE Management System and this plan requirement. He shall do so by: <ul style="list-style-type: none"> – Ensuring the screening of workmen is effectively implemented by the time office. – HSE Induction provided for all staff & workmen before deployment by HSE Officer. – Ensure regular monitoring and organise continuous HSE in-house HSE trainings. – Establishing adequate control measures for the employees fitness in order to avoid fatigue, stress, extended working etc. 	During project	Screening Record of workmen HSE Induction for Workmen HSE Training Record
3.	Ensure sufficient resources are available at plant. He shall ensure through: <ul style="list-style-type: none"> – Reviewing HSE Plan implementation and discuss any outstanding issues in HSE Committee Meeting. – Investigating non-compliance and non implemented items. 	During project	1) MOM –HSE Committee Meetings 2) HSE audits
4.	Project HSE Inspection and HSE Plan implementation monitoring	During project	Inspection report
5.	Investigate all high potential incidents and non-compliance and ensure immediate remedial action to stop recurrence.	As & when notified	Investigation Reports and action plans



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16.2 HSE Officer

NO.	TASK	TARGET	VERIFICATION DOCUMENT
1.	Disseminate and Communicate HSE Policy, HSE Management System requirements to plant personnel.	During project	
2.	Provide necessary advice, information and support in the effective implementation of the HSE Management System requirements and this HSE plan.	Project	
3.	Updating the HSE Plan to the requirements of the activities being carried out when there is a revision.	project	hse Plan
4.	Plan and conduct Internal HSE training programs, initiate drive to promote HSE awareness and performance	project	Training Records
5.	Carry out HSE inspection of Work Area, Equipments & Machineries, etc. as per the IMS requirement.	As per Monthly Activity Plan	HSE Inspection Report, P&M Inspection Report
6.	Creating HSE awareness through PEP talks.	Two days in a week	PEP talk Report
7.	Advising line management in preparing HSE Risk Assessment for the new activities.	PROJECT	HSE Risk Assessment Records
8.	Conduct investigation of all incidents / dangerous occurrences & recommend appropriate corrective measures.	When reported	Investigation Report
9.	Convene HSE Committee meeting & minute the proceedings for circulation & follow-up action.	Min Frequency – Once in a month	MOM HSE Committee Meeting
10.	Advice & co-ordinate for implementation of Work Permit Systems.	Whenever work requiring WPS is executed	Completed Work Permit
11.	Plan procurement of PPE & safety devices and inspect before use as per laid down norms.	PROJECT	Requirement & Release of Safety Materials and Delivery Challan Records
12.	Report on all matters pertaining to status of HSE and promotional programme at plant level.	Regular basis	
13.	Facilitate screening of workmen and conduct HSE induction.	PROJECT	Screening & Induction Records
14.	Monitoring administration of First Aid.	PROJECT	Sent to CLIENT OHC
15.	Conduct Fire Drill, Procure, inspect and arrange to maintain Fire Extinguishers. (CLIENT SCOPE)	As scheduled in the monthly activity plan	Fire Drill Register and Fire extinguishers list



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16.	Organise campaigns, competitions & other special emphasis programmes to promote HSE in the workplace.	As and when required	Record of Safety Campaign & Competition
17.	Record, analyse and cascade lateral learning points from First Aid Cases, Near Miss Cases & Accidents to all personnel and analyse the trends & effectiveness.	Monthly	First Aid Register; Accident Investigation Report
18.	Maintain all HSE related documents Update HSE training records	Continues	HSE related Documents
19.	Coordination with CLIENT Safety dept. & reporting monthly HSE statistics as well as incident reports.	Continuous	

16.3 Supervisor/Forman

NO.	TASK	TARGET	VERIFICATION DOCUMENT
1.	Ensure that all the workmen engaged under him are selected through the screening system & have undergone plant HSE Induction before assigning any task at plant.	PROJECT	Screening & HSE induction records
2.	Ensuring compliance of KR Engineers basic HSE rules and applicable specifications by <ul style="list-style-type: none"> – Taking prompt action of plant inspection and hazard findings. – Closing all the points identified in inspection reports – Ensure HSE Risk Assessment is done for all the jobs under him. 	Project	HSE Inspection report HSE Risk Assessment Record
3.	Ensure that all near miss cases / Reportable LTI / Dangerous Occurrence / Fatality are reported promptly.	As & when notified	Reports
4.	Participate regularly in HSE meetings.	As schedule	MOM
5.	Conducted TBT & Pre job discussion on regularly basis	Daily	Attendance sheet

16.4 Site Engineers

NO	TASK	COMPLIANCE TARGET	VERIFICATION DOCUMENT
1.	Understanding the HSE requirements of the project from this Plan, HSE Management Systems, HSE Manual & following the same in execution of the work	Continuous	No of findings in the HSE Inspection
2.	Give toolbox talks to the workmen under him	Daily	toolbox talks Report



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3.	Ensuring the workmen under him wear the necessary personal protective equipments respective to the job	Continuous	Subcontractor Evaluation Report
4.	Eliminating all unsafe conditions in their work area	Continuous	HSE Inspection Report
5.	Keeping the work area neat & clean	Continuous	HSE Inspection Report
6.	Know the critical activities of his job based on the HSE Risk Assessment and ensure implementation of the control measures.	O&M Plant Duration	HSE Risk Assessment Report & Safe work method
7.	Participating with the HSE or the committee Members in the HSE Inspection	As per schedule	HSE Inspection Report
8.	To follow all work permit system as per client requirements or K R Engineers hse Management System before starting of similar work	As and when required	Work Permit System
9.	To report all near miss cases / reportable LTI /dangerous occurrences / fatality to HSE Engineer immediately verbally & submitting the preliminary accident report within 12 hours.	As and when required	Preliminary Accident Report
10.	Informing the concerned authority as per the emergency response plan.	As and when required	Emergency Response Plan

16.5 All Workers

NO.	TASK	TARGET	VERIFICATION DOCUMENT
1.	Report all unsafe acts and condition to the immediate supervisor.	Continuous	
2.	Start work only when conditions are safe and stop work when it is unsafe.	Continuous	
3.	Operate equipment only when authorised and prescribed manner. (If applicable)	Continuous	Inspection records
4.	Report any injury or accident immediately.	Continuous	Reports
5.	Report all near miss /safety violation immediately.	Continuous	Report
6.	Participate in TBT /Pre job discussion.	Continuous	



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16.6 STORE KEEPER

1.	Purchase of material as per standards and specifications.	Continuous	
2.	Maintaining minimum inventory levels for Personal Protective Equipments (PPE's)	Continuous	
3.	Storage of oils, fuels, chemicals, compressed gases and safe handling of the same	Continuous	
4.	Arrangement of safe loading and unloading of materials	Continuous	
5.	Implementing corrective and preventive actions for identified problems	Continuous	
6.	To Act as Resource Conservator & Controller	Continuous	
7.	Supplies & Disposals under the Direct & Indirect Control.	Continuous	
8.	Control over transportation of hazardous and dangerous materials.	Continuous	
9.	Purchase Of Critical Services and Lay Down & Communicate Procedures. HSE Considerations in Purchase of Services.	Continuous	
10.	Material stored according to 5s system	Continuous	

16.7 HSE Committee Members

NO.	TASK	COMPLIANCE TARGET	VERIFICATION DOCUMENT
1.	Attend meeting regularly as per schedule to discuss and decide the ways and means of eliminating the factors affecting HSE.	Once in a month	MOM – HSE Committee Meeting
2.	To analyse all the activities of the forthcoming period and identify the possible hazards and finalizing the precaution to be taken.	Once in a month	MOM – HSE Committee Meeting
3.	To monitor the HSE Performance of the Plant and suggesting improvements whenever needed.	Once in a month	MOM – HSE Committee Meeting
4.	Actively participate in the HSE Committee Inspections & Assessing Key performance indicators on HSE	As per Schedule	HSE Inspection Report

Apart from HSE committee meeting special HSE meeting will be conducted as per requirements.



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17.0 SAFETY COMMITTEE, LEADING & LAGGING INDICATORS:

(COMPANY NAME) SHALL follow a consultative approach to identify, discuss and resolve OHS related issues at site specifically in Safety Committee meeting with committee members- frequency (Monthly).

Apart from Safety committee meeting internal safety meeting will conduct at regular intervals/when required.

Site manager will be the chairman of safety committee.

Secretary will be the safety in Charge.

Leading & lagging indicators

Management had decided some leading & lagging indicator for the site which are follows:

Leading indicator:

Competency of workmen

Trainings

Audit Compliance

ERP

Incident investigation & corrective action

PTW audit & corrective action

Promotional activities

Employee participation

Hazard identification

Near miss reporting

RCA & recommendation

SOP/SMP & its training

Continuous improvement

Lagging indicator:

Deviation of safety system

Failure of safety device

Incidents

Fire

Near miss not communicated

18.0 HSE risk assessment (HIRA)

- Purpose

To assess the risk of the plant activities to be executed, rate the risk levels as per the risk assessment matrix, and identify the control measures.

- **Likelihood of occurrence (Probability)**

Likelihood of occurrence of an accident is classified as per the table given below.



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Probability Descriptions

(The highest category will always be used)

VALUE	Status	Description
5	Certain	Happens regularly on plant.
4	Most likely	Known to have occurred on this plant earlier
3	Likely	Known to occur on other plants
2	Unlikely	Known to occur in the industry
1	Most Unlikely	Minor Damage / No delay

- **Severity**

Severity is the degree or extent of harm that can be caused by the hazards, or the environment aspect as a result of an accident. Severity is classified as per the table given below.

Likelihood	Severity / Consequences
1. Very Unlikely	1. Injury, no time off
2. Unlikely	2. Injury, up to 3 days off
3. Likely	3. More than 3 days off, Hospitalization etc.
4. Very Likely	4. Long term absence
5. Certain	5. Death

- **Matrix for Risk Assessment**

- Once the likelihood and severity have been established, the risk / impact level can be determined.
- To determine the risk / impact level, select the appropriate row for Severity and the appropriate column for Likelihood; the cell where they intersect indicates the Risk / Impact Level.

RISK RATING MATRIX

		IMPACT/ EFFECT				
		1	2	3	4	5
PROBABILITY	A	1	2	3	4	5
	B	2	4	6	8	10
	C	3	6	9	12	15
	D	4	8	12	16	20
	E	5	10	15	20	25

19.0 Training & Procedures:

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19.1 Reference: KRE/CLIENT/HSP/03

19.2. Safety induction for new comers:

Safety induction is compulsory for all new comers. Topic of safety induction shall be covered the following documents.

- a) Road Safety
- b) Housekeeping
- c) Basic PPE's
- d) Permit to work
- e) Basics awareness of Electricity
- f) Golden rule
- g) Emergency response plan
- h) Basic information of chemical safety
- i) Incident/near miss reporting
- j) General site safety rules
- k) Manual/mechanical material handling
- l) Work at height
- m) Basics of guards & barricading
- n) Near miss reporting
- o) Motivational safety

19.3. Safety Training/Job Specific training:

Safety training of different job related topics shall be conducted as per SOP/SMP/SJP/RA/HSE topics as per training calendar prepared at site & validating to be done after each training.

- a) SOP training
- b) SMP training
- c) SJP training
- d) Specific HSE training
 - i) Ladder safety
 - ii) Scaffolding safety
 - iii) Rigging/Lifting
 - iv) Material handling(manual/material)
 - v) Working with rotating parts
 - vi) Safety in Hot work



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- vii) Basic of fire safety
- viii) Star process
- ix) Working at height
- x) Housekeeping
- xi) LFI sharing
- xii) Electrical safety
- xiii) Road safety
- xiv) Basic PTW awareness training
- xv) MSDS
- xvi) Near miss reporting
- xvii) CLIENT HSE Procedure
- xviii) CLIENT PSM procedure
- xix) FIRST AID TRAINING

Matrix should be prepared for all individual according to training needs & refresher training should be organized within 1 year for all.

19.4 SOP/SJP/SMP/RA:

Respective department will prepare all the standard procedure & send to CLIENT for approval & training will also conducted by respective departments as per training schedule.

Refer: CLIENT Procedure for PSM element "Standard operating procedure" (DOC No)

20.0 Storage practices and precautions

- Cylinders shall be stored in a cool, dry, well ventilated place under cover, away from open flames, steam pipes or any potential sources of heat and such place of storage shall be easily accessible.
- Thin wall cylinders such as liquefied petroleum gas cylinders and dissolved gas cylinders shall not be stacked in a horizontal position.
- The storage room or shed shall be of fire resistant construction.
- Cylinders containing flammable gases and toxic gases shall be kept separated from each other and from cylinders containing other types of gases by an adequate distance or by a suitable partition wall.
- Cylinders shall not be stored under conditions, which will cause them to corrode.
- Cylinders shall not be stored along with any combustible material.



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- Open flames, lights, mobile phones, lighting of fires, welding, cutting, heating, smoking, etc. shall be prohibited in close proximity to H2 cylinder.
- Empty cylinders shall be segregated from the filled ones and care shall be taken that all the valves are tightly shut.

20.1 Safety in Storage and Handling of Materials.

20.2 Introduction

Material Handling is a process involving the movement and storage of materials, goods and products. It includes handling of material by person manually or by using mechanized equipments like Cranes, Hoists, Winches, EOTs, Chain Pulley blocks, trolleys, forklifts, power trucks, conveyors, etc.

20.3 Manual Material Handling

A manual handling task refers to any activity requiring a person to use any part of their muscular or skeletal system in their interactions with their work environment.

It includes the following activities:

- Lifting
- Lowering
- Pushing
- Pulling
- Carrying
- Moving
- Holding
- Restraining

20.4 Safe Manual Handling Technique

- ✓ Bring the load close to your body for more power and less effort.
- ✓ Grip firmly with your hand, not just by fingers alone.
- ✓ Make sure you can see where you are going, while moving slowly in small steps.
- ✓ Do not twist your body while handling the load.
- ✓ To unload, face the spot you have chosen and lower the load slowly.
- ✓ Use all mandatory PPE's.
- ✓ Don't lift overload

20.5 Mechanized Material Handling



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There are different types of lifting machines such as Cranes, Hoists, Winches, EOTs, Chain Pulley blocks, trolleys, forklifts, power trucks, conveyors, etc. Mechanized handling of material includes several hazards and so these equipments are required to be used carefully to ensure safety of men and material.

CLIENT Rigging & Lifting procedure (DOC No) must follow for all types of rigging & lifting work.

20.6 Safe Mechanized Material Handling and storage Technique

DO's

- ✓ Check the equipment and connected accessories at the beginning of each shift.
- ✓ Know the capacity of the lifting machine and of the lifting chain/wire rope.
- ✓ Secure the load properly and firmly.
- ✓ Raise the load slowly.
- ✓ Avoid sudden stopping or reversing except in emergencies.
- ✓ Ensure long travel & cross travel brakes are working.
- ✓ Ensure all limit switches are working
- ✓ Ensure power-indication lamps are working.
- ✓ Follow the signals while carrying the load.
- ✓ Ensure that all switches in the pendant box of the pendant-operated crane are in good condition.
- ✓ Stacking of materials must never be against the wall and should be well within 3 meters' height.
- ✓ At least 1.5 meters around the stacking must be kept clear for movement and inspection on regular basis.
- ✓ Yellow line discipline to be adhered where ever applicable.
- ✓ Ensure adequate fire fighting equipment is available in the area.
- ✓ Maintain clean environment in the storage area and avoid Oil/Liquid spillage.
- ✓ Authorized Operator shall only handle Fork Lift trucks; he shall follow instructions as per Equipment manual
- ✓ No one shall be permitted to sit on the fork lift truck other than the truck operator.
- ✓ Fork loft must always be operated at safe speed with caution.
- ✓ Do not leave the Fork Lift Truck with engine on and do not load such that visibility is restricted. Ensure proper Anchoring of the Load on Vehicles.



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- ✓ Avoid using Fork Lift truck where ever trolley can be used.
- ✓ Use proper lifting tackles and associated tools and equipment such as Hoist, Chain Pulley blocks, Jacks etc., for handling heavy loads.
- ✓ Avoid swinging of Hoist chain with or without load and movement of personnel below the overhead load being carried.

DON'TS

- ✓ Do not carry load without properly balancing it.
- ✓ Don't carry load over persons and machines.
- ✓ Don't allow load to remain suspended.
- ✓ Don't overload the equipment beyond its capacity.
- ✓ Don't allow more than one person to give signals.
- ✓ Don't use the equipment for pulling the load.
- ✓ Don't create jerk while transferring the load.
- ✓ Don't ride on the load.
- ✓ Keep clear of suspended loads.
- ✓ Area should not keep without barricading.

20.7 LIFTING OPERATIONS

All crane operations if any and the lifting of loads will be under the sanction of the appointed lift coordinator.

20.8 CRANE AND LIFTING EQUIPMENT / MAN LIFT OPERATIONS

The containers will only employ crane and lifting equipment that has been tested and certified as fit or purpose. All crane operators and riggers will be adequately trained. The container will keep records of tests and certification of all lifting equipment crane employed on the works.

20.9 LIFTING GEAR

Lifting machine, chains, ropes and lifting tackles used at site shall conform to the following.



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- All parts shall be good construction, sound material and adequate strength and free from defects.
- Shall be properly maintained, thoroughly examined and load tested by competent person regularly.

If during the course of construction, a man basket is required, it shall be designed by a structural engineer. All man baskets shall be load tested and approved by client inspection department periodically.

20.10 RIGGING PLAN

A suitably qualified and experienced person shall be appointed as supervising rigger and his responsibilities shall include the preparation of the rigging study and the safe rigging and lifting of the load at the location. All work involving the use of a crane shall be properly planned in advance and a "rigging study" shall be carried out to ensure safe functioning of all crane activities.

21.0 Cutting/Welding

GAS CUTTING WORKS

General:

1. Protective clothing and eye protection should be used.
2. The blowpipe should be shut off when not in use. Lighted blowpipe should never be left on a bench or the floor as the force of the flame may cause it to move.
3. Work piece should not be hold by hand it should be properly clamped or tied.
4. Gas cutting hosepipes should be always kept away from the working area to prevent contact with flames, heat, spark or hot spatter.
5. Hot work permit should be obtained wherever applicable. Permit is given in checklist & format.
6. Gas cylinders shall be transported in trolleys with chain/strap arrangement.
7. Use only IS Standard pressure gauge for gas cylinder.

Safety Precautions to prevent fire:

1. If possible the work piece should be moved to a safe location for carrying out the hot work process.
2. All combustible materials (such as flammable liquids, wood, paper, textiles, packaging or plastics) should be removed from the work area.
3. Proper protection should be provided if any combustible materials that cannot be moved, from close contact with flame, heat, sparks or hot molten metal. Suitable guards or covers such as metal sheeting, fire retardant blankets should be provided.
4. Proper protection to be taken for arresting the falling spatters.
5. Below works area should be barricaded & one person to be deployed for continuous fire watch during the period of the work, and for at least an hour afterwards;
6. Sufficient fire extinguishers, sand buckets to be kept nearby.



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Safety precautions to prevent leaks:

1. All equipment (cutting torch, hoses & regulators) & connections to be checked regularly before starting the job.
2. All hoses should be routed properly keeping clear of sharp edges and abrasive surfaces or where vehicles can run over them;
3. Hot metal or spatter should not be fall on hoses.
4. Gas cylinders should be handled very carefully keeping them in cylinder trolley & upright position. Cylinders should be properly locked by chain.
5. Gas supply should be turned off at the cylinder when the job is finished.
6. Adequate ventilation should be provided during welding and cutting operations.
7. Gas cylinders should be stored outside whenever possible or in a well-ventilated place;
8. Oxygen valves & cylinder fittings should be free from oil or grease.

Backfire:

A backfire is when the flame burns back into the blowpipe often with a sharp bang. This may happen when the blowpipe is held too close to the work piece, or if the nozzle is blocked or partly blocked. The flame may go out or it may re-ignite at the nozzle. Sometimes the flame burns back into the blowpipe, and burning continues at the mixing point. Backfires do not usually cause serious injury or damage but they indicate a fault in the equipment.

If a backfire does occur:

1. Shut off the blowpipe valves, oxygen first and then the fuel gas;
2. Shut off the oxygen and fuel gas cylinder valves;
3. Cool the blowpipe with water, if necessary;
4. Check the equipment for damage or faults, particularly the nozzle.

Flashback:

Flashbacks are commonly caused by a reverse flow of oxygen into the fuel gas hose (or fuel into the oxygen hose), producing an explosive mixture in the hose. The flame can then burn back through the blowpipe, into the hose and may even reach the pressure regulator and the cylinder. The consequences of a flashback are potentially very serious. They can result in damage or destruction of equipment, and could even cause the cylinder to explode. This could end in serious injury to personnel and severe damage to property.

Safety Precautions to prevent flashbacks:

1. Use the correct lighting up procedure. Purge the hoses before lighting the blowpipe to remove any potentially explosive gas mixtures. Use a spark igniters and ignite the gas quickly after turning it on;
2. Ensure the blowpipe is fitted with spring-loaded non-return valves to prevent a backflow of gas into the hoses;
3. Use the correct gas pressures and nozzle size for the job.
4. Maintain the equipment in good condition.
5. Separate Flash-back Arrestors of ISI (IS 6901-1988) specifications and having



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Approval shall be provided for end-connections of each gas supply line. (One at the cylinder end and the other at the welding torch end)

If a flashback does occur:

1. Immediately close the cylinder valves, both fuel gas and oxygen, if it is safe to do so. The flame should go out when the fuel gas is shut off. If the fire cannot be put out at once, evacuate the area and call the emergency fire services;
2. The blowpipe, hoses, regulators, flashback arresters and other components may have been damaged. Check carefully and replace if necessary before reuse. If in doubt, consult the supplier.

WELDING WORKS:

1. All welding m/c should be kept only in standard shed. Proper ventilation should be provided.
2. Body of welding m/c should be properly earthed.
3. All welding m/c should be connected thru ELCB of 30mA sensitivity.
4. The frame or case of the welder shall be properly grounded.
5. Welding shall be done in an area with adequate ventilation.
6. Connection of the welding cable with the output pole of the welding machine shall be suitably done with proper fittings. Welding joints shall be made using ferrule and the joint shall be insulated.
7. Only trained person should be allowed to do the welding job.
8. Electrode holder shall be of good quality with proper insulation. The welder should never be allowed to weld when he is wet. Usage of proper personal protective equipments shall also be ensured.
9. Apron and Helmet with welding screen shall be used by the welder Adequate ventilation shall be ensured at the area.
10. Combustible and inflammable materials shall be removed from the place where welding is to be done. Oil or Paint Drums (empty or with contents) shall never be kept in the vicinity of the welding area.
11. A fire resistant bucket or container should be provided for keeping & disposal of electrode stubs.
12. Proper routing of welding cables to be done. Welding cables shall not be laid along with other electrical cables as; they may damage insulation of other cables.
13. Sufficient fire extinguishers & sand buckets to be provided nearby the welding area.
14. If hot work-permit is applicable, obtain it before starting welding.

21.1 Grinding Work

- ✓ Area should be barricaded while grinding work
- ✓ Skilled and trained grinder man should be operating grinding machine.
- ✓ Check expiry date of grinding wheel always use safe and healthy grinding wheel.
- ✓ Visual inspection have carried out before use of grinding machine just like condition of power cable, physical condition of grinding machine, electrical inspection tag switch control, handle condition etc.



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- ✓ Area should be covered with fire blanket against protect from flammable vapours and flying particles.
- ✓ Power cable routed through overhead.
- ✓ Power cable should be free from any defective or UN even joint.
- ✓ Connection should be from ELCB/RCCB.
- ✓ Use specific tools during grinding wheel putting in grinding machine.
- ✓ Grinder man having good knowledge of how to operate grinding machine.
- ✓ Don't stand in front of running grinding machine.

21.2 Drilling work

- ✓ Drilling machine should be checked and verified
- ✓ Do not support the workplaces by hand. Use a holding device to prevent the work piece from being tom from the operator's hand.
- ✓ Never make any adjustments while the machine is operating.
- ✓ Never clean away chips with your hand. Use a brush.
- ✓ 8Keep all loose clothing away from turning tools
- ✓ Make sure that the cutting tools are running straight before starting the operation.
- ✓ Never place tools or equipment on the drilling tables.
- ✓ Keep all guards in place while operating.
- ✓ Ease up on the feed as the drill breaks through the work to avoid damaged tools or workplaces.
- ✓ Remove all chuck keys and wrenches before operating
- ✓ Always wear eye protection while operating any drilling machines.

22.0 STORAGE OF MATERIALS

22.1 STORES

1. A layout demarcating areas for stacking, storing and disposing the materials to be made.
2. The materials are stacked with passage to reach them. Materials should not protrude beyond the marked area posing tripping hazard.
3. Name boards shall be displayed to mention the place for every item.
4. The racks installed must be supported well to prevent from falling.
5. To reach the rack top person should not climb on the rack shelf, ladder should be used.
6. Adequate lighting to be provided.
7. Flammable materials like LPG cylinders, oils, greases, paint etc to be stored separately under well-ventilated shed.



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8. Sufficient fire extinguishers, sand buckets to be kept at conspicuous places and the path to reach them shall not be blocked anytime.
9. Nail pullers shall be used whenever possible to remove nails from boxes and crates. Metal strapping should be cut with proper safety tool.
10. The scrap material/junk material to be kept in orderly at designated place. & Extreme care to be taken in handling scrap material to prevent personal injury.

22.2 STORAGE OF CYLINDERS

1. Oxygen and LPG cylinders should be stored separately since any mixture of gas leakage could be highly explosive. Storage should be preferably being on hard standing in the open air under a shelter.
2. LPG and oxygen cylinders to be stored minimum a distance of 10feet away.
3. Storage of full LPG cylinder should not exceed 100 kg i.e. 5-cylinder max. At a time.
4. Oxygen cylinders, whether full or empty, should always be kept in upright position.
5. Name boards to be displayed to identify the cylinders. NO SMOKING signs to be displayed
6. All oxygen cylinders should be kept off oil and grease since these will ignite violently in an oxygen concentration.

22.3 OLS

For working in online condition following precaution to be taken:

- Reduce the line pressure as low as possible.
- Barricade the surrounding work area before start the job.
- Execution team will enter the spot from opposite side of leakage flow direction.
- Minimum persons (as per job requirements) are allowed at job spot.
- Safe approach, platform shall be provided for attend the job.
- All executing persons will wear heat resistance full clothing's.
- Distance should be maintaining as possible at the time of work
- Standby emergency rescue team must be available at spot till completion of job.

22.4 LADDER

- a) Ladders shall be of good construction with no missing or defective rungs, of sound material and of adequate strength for its intended use.
- b) No wooden ladder is allowed to be used in site, only metallic ladder with nonskid ding base/anti slippery legs shall be used; and
- c) Ladder shall be erected on level and firm ground at an angle not exceeding 75 Degrees or a 4 (heights): 1 (base) ratio.
- d) All ladders shall be internally inspected by Contractors, suitably tagged and inspection report shall be submitted to (COMPANY NAME) HSE Department.



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23.0 Scaffolding

CLIENT scaffolding safety standard (DOC No) must follow.

- a) The scaffold must be equipped with guardrails and toe-boards installed up to the height of the work along all open sides and ends. The guardrails and toe-boards must be of regulation size as defined in this document;
- b) The work level shall be planked or decked as fully as possible with wooden planks or metal trays, which shall be fastened to its surface;
- c) Wood planks should be at least 2.5 cm (1 inch) thick. They should not be painted and should be free from knots and cracks;
- d) The scaffold shall have a sign that indicates the status of the scaffold: “**READYFOR USE**” or “**DO NOT USE**”;
- e) All scaffolds whose working level is above 1.5 meters (5 feet) shall have an access ladder (fixed, tubular or framed) fastened to the scaffold structure;
- f) Caster scaffolds are only allowed on flat surfaces and they must have wheel lock devices;
- g) The use of caster scaffolds for heights 4 times greater than the minimum base width is prohibited;
- h) All scaffolds except mobile/caster scaffolds should have support bases.
- I) Scaffolds shall be provided with safe means of access such as stairs, ladders, and ramps;

23.1 SCAFFOLD ERECTION AND DISMANTLING

Scaffolding is the structure which supports an elevated working platform. Use of wooden scaffold shall be discouraged. The following general requirements are applicable-

- Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person. Scaffolding work only done by trained and experienced personnel.
- Never interchanges the scaffolding components of different manufactures.
- Maintain scaffold components in clean condition.
- Handle scaffold components with care. Do not throw or drop items.
- Guard rails, mid rails and toe boards must be installed on all open sides and ends of platforms more than 2000 mm above the floor
- Ladder access shall have extended one meter above the landing.
- Overhead protection shall be provided where necessary.
- Slippery conditions on scaffolds shall be eliminated immediately.
- The poles, legs or uprights of scaffolds shall be plumb, and security and rigidly braced to prevent swaying and displacement.
- All planking of platforms shall be overlapped a minimum of 300 mm and secured from moving.
- An access ladder or equipment safe access shall be provided.
- “Safe” or “unsafe” signs placed near to access ladder. Weekly scaffold inspection sheet completed and posted near access ladder.

24.0 PAINTING

Painting includes the application of a protective coating material by the use of a compressed air spray painting systems, the hydraulic atomization (airless) method: the use of brushes, rollers, sponges or



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similar equipments. Hazard associates with painting include dust, noise, fire, explosion and the inhalation/ingestion/absorption of toxic solvents.

- Painting should only be done under the supervision of a competent person. Those personnel doing the painting must also be competent to do the work.
- The supervisor in charge shall ensure that equipment is maintained in safe and good working order.
- Breathable quality air, free from oil mist, moisture and toxic gas shall be supplied to paint personnel if required. This is enabled by passing the compressed air through a suitable paint filter respirator or regulator and suitable pre filter. The pre-filter shall be inspected daily.
- The work place shall be a restricted area and a rope barricade shall enclose it. Warning signs indicating "DANGER-PAINTING AREA" should be posted on the barricade.
- Provide suitable material to act as curtains (tarpaulins, plastic sheeting etc.) to enclose the work area and protect the newly painted surface until it is dry.
- If paint components are flammable, then no painting will be done in the vicinity of electrical lighting and open electrical circuits unless such equipment is explosion/vapors proof or switched off and locked out.
- Symbolic signs for "NO SMOKING" and "NO NAKED FLAMES" posted in areas where paint/flammable liquids are in use.
- Provide suitable and secure covers to protect instruments, gauges, air line valves and other equipment which is not to be painted.
- Establish a good housekeeping system to ensure that excessive debris and paint containers and masking tape is removed as early as possible, and in any case at the end of the day's work.
- Painting within confined spaces or vessels shall always be controlled by the work permit.
- Material safety data sheets for each product held and observed. A product data sheet is inadequate. Copies to be kept by painting supervisor.
- Unwanted flammable materials including paints thinners, rags and cotton waste impregnated with flammable spirits or paint are to be kept in metal drums with close fitting lids and disposed of in a safe manner away from spray painting areas.
- Painting procedure available and communicated to painting personnel.
- Suitable respirator used by crew to protect them from hazard solvent/paint vapors.

25.0 Chemical Safety

Classification of Chemicals

" **Flammable Gases**" Chemical at gaseous state, of boiling point $\leq 20^{\circ}\text{C}$.



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Highly Flammable Liquid” Chemicals having flash-point lower than twenty-three degrees centigrade and boiling point $>23^{\circ}\text{C}$.

Flammable Liquids” means chemicals having a flash-point of sixty-five degrees centigrade ($<65^{\circ}\text{C}$) and remains liquid at pressure.

“Explosive” Chemical that may explode under the effect of flame, heat or photochemical condition or is sensitive to shock.

Routes of Exposure to Chemical Hazards

Inhalation (Breathing) – Chemicals in the air inhaled into the body through the mouth or nose.

Examples: Coal Dust, Chlorine, Ammonia Vapours, Sulphuric Acid Vapours, Hydrochloric Acid Vapours.

Skin Contact – Chemicals absorbed into the body through the skin.

Examples: Fuel Oil, Lube Oil etc.

Eye Contact – Chemicals entering the body through the eyes as dusts, mists, gases, vapours, or when liquids are splashed.

Examples: Chlorine, Ammonia, Fumes of Hydrochloric Acid, Fumes of Sulphuric Acid.

Ingestion (Swallowing) – Chemicals can be ingested through the mouth resulting from hand-to-mouth contact, consuming contaminated food or drink, or smoking cigarettes that have come into contact with a chemical or unclean hands. Sometimes workplace chemicals are swallowed.

Material safety data sheet (MSDS)

In the interest of protecting the Environment, Health & Safety affecting the workers and the general public, a material safety data sheet for all the potentially hazardous materials is retained by respective department and made available at site locations. It covers details about the hazardous substance Handling, Transportation and Storage and mitigating measures in the event of spill, fire or other untoward occurrence. HSE Engineer disseminates the hazard and precaution and remedial measures to all the employees in the project.

26.0 NOISE

1. Organizing schedules so that noisy work is done when, as few people as possible are present.
2. Notify people in advance when noisy work is to be carried out, so they can limit their exposure to it.
3. Keeping people out of noisy area, if their job does not require them to be there.
4. Sign posting noisy areas
5. Periodic rotation of persons working in excessive noisy area shall be carried out
6. Personal hearing protectors shall be used in a noisy area
7. Areas where people may be exposed to excessive noise should be sign pasted as hearing protection areas and their boundaries should be clearly defined. No persons including visitors, supervisors should enter a hearing protection area during normal operation unless wearing appropriate personal hearing protectors.
8. Personal hearing protectors shall be kept in hygienic conditions

27.0 Work at height



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WORK AT HEIGHTS – GENERAL

1. For height works only selected persons will be allowed with height work (medically fit), experienced and screened by the site management.
2. Proper access and working platform should be provided to reach the work spot. Rigid handrails & toe-guard to be provided on all working platform.
3. Only designed gratings will be used for working platform. GI sheets should not be used.
4. Workmen shall wear full body harness safety belt with double lanyard for works above 1.8m heights.
5. No materials will be kept at height in loose condition. Workers shall carry tools in a bag.
6. Proper lifeline to be provided for lanyard hooking during horizontal movements.
7. No materials will be dropped from height. Materials to be lowered by a headline & one person will be deployed at ground level to clear and caution person from coming under the lowering material.

Full Body Harness (Safety Belt)

- a) The harness must be made of synthetic material, with threads and seams in Synthetic material, with colors that contrast the basic material to make Inspection easier;
- b) If the activities involve high temperatures and welding, the harness and its Devices must be made of fire proof material;
- c) They must have rings on the back for general work; a connecting point for fixed Ladders; side rings with lumbar protection for positioning work (for Electricians); an anchorage point on the shoulders for work in confined spaces and rescue, as well as adjustable straps and leggings;
- d) Safety harness shall be used only be used in conjunction with double lanyards;
- e) Lanyards shall be made of fireproof synthetic fiber (except Nylon), with Carabineer and double safety lock;

28.0 RADIOGRAPHY

1. The radiation source should be kept in a closed chamber below the ground level with a proper fencing with radiation damage symbols marked around the fencing.
2. While taking out the sources, the in and 'out' timing should be properly recorded and these operations shall be carried out only by authorized persons.
3. Before starting the radiography operation, radiography information form to be made & submitted to HSE Dept. in one-day advance.
4. During radiography operation, the radius of radiation zone should be properly cordoned with proper signals. No worker shall allow going inside the cordoned area.
5. When the radiography operation is carried out in the night, proper lighting should be ensured.
6. When the radiography operation is at height than the scaffolding made for radiography operation must be sufficient and easy accessibility.
7. When the work is in progress, the operators shall wear the film badges or pocket dosimeters allotted to them and shall undergo periodic medical check-up.
8. The source should never be handled by hand. It should be operated with manipulators only.
9. Survey meters should be kept at the site of work where the radiography work is in progress.
10. When the source is exposed, it is advisable;
 - (a) To stand behind buildings, steel or other shielding materials.
 - (b) To stand away from the source of radiation.



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(c) To limit the exposure time for a particular operator/day.

11. Always take radiographs with a collimated beam exposure technique wherever possible. Hence the beam will be directed towards the object only and the rest of the portion will be protected from direct radiation by the camera. But it should be seen that the operator stands behind the camera only and any part of the body does not come in the direct vicinity of radiation.

12. It is advisable to use panoramic exposure (Source outside the camera technique) only when the source is of lesser strength. (For example, say less than 8 curie)

13. When it is necessary to use higher strength of source for radio graphing higher thickness element, remote operated cameras (Teleflex cameras) are ideal.

14. In free areas, the cordoning distance for 8curie – Ir-192 source is 50m. And for 20curie – Ir-192 is 100m. If attenuating (protective) materials are there in the zone, the cordoning area can be monitored with Survey Meters and the area can be fixed at a distance where we get approximately 1mR/hour.

29.0 House Keeping

- ✓ Good housekeeping is an essential part of every job. Work areas, aisles, walkways, and equipment shall be kept clear of loose materials, tools, scrap material and unobstructed.
- ✓ Never block aisles, traffic lanes, or fire exits with equipment or materials.
- ✓ No stairs, scaffolds and platforms without hand rails.
- ✓ Floors shall not be slippery, wet, oily or worn out.
- ✓ No defective ladders or those not suited to the job.
- ✓ Ensure proper lighting and ventilation.
- ✓ Ensure place for everything, and everything in its place.
- ✓ Use metal container for oily / greasy rags and wastes.
- ✓ No stumbling or protruding hazards.
- ✓ Protruding nails shall be either removed or bent over.
- ✓ Don't keep your personal belongings in a haphazard manner.
- ✓ Compressed gases, chemical products, or other hazardous materials shall not be left unattended in public areas.
- ✓ Gas cylinders, whether full or empty, should always be secured to a wall, bench, or rack.
- ✓ Spills such as grease, water, or oil shall be cleaned up as soon as possible; a delay could result in an accident to you or a fellow worker.
- ✓ Do set example to keep your workplace clean and tidy.

All waste should be kept at identified waste yard & at provide different colour dustbin (Red & Yellow colour dustbin for Non degradable & degradable materials).

30.0 Office Safety

Following safe work procedures in the office can prevent accidents / incident or injuries:



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- ✓ Running in offices is not permitted.
- ✓ Do keep you table and surrounding clean and tidy.
- ✓ When walking in a passageway, keep to the left.
- ✓ Always use handrails on stairways.
- ✓ Proper attention should be given while ascending or descending stairs.
- ✓ Do not get distracted through conversation while on stairs.
- ✓ Do not read or use mobile phone while walking. Watch your path.
- ✓ Prevent fall and trip hazards, by keeping stairways, isles and walk areas clear of boxes, loose materials, wires and other small objects.
- ✓ Stand away from the path of the door swing.
- ✓ Don't propel a chair across the floor while seated.
- ✓ Don't sit on the edges of desks, tables, boxes, or low filing cabinets.
- ✓ Be careful sitting down. Make sure your chair condition is good and is in place before you settle into it.
- ✓ Immediately clean up spilled liquids.
- ✓ Do not attempt to carry stacked materials which are high enough to obstruct vision. Don't stand on a chair, stools, or other unstable surface to reach for an object. Use a ladder.
- ✓ Ensure proper illumination in workplace.
- ✓ Ensure that electrical connections are taken properly. Loose connection may lead to short circuit, fire or electrocution.
- ✓ Do switch of electrical lights, fans, etc. when not in use.
- ✓ Dispose of broken glass properly to prevent injury to others during waste handling. Sharps such as razor blades shall be disposed of in an impermeable closed container. Never keep loose razor blades in desk drawers.
- ✓ Medical waste sharps require immediate deposit in biohazard sharps containers and hazardous materials control for disposal.
- ✓ Keep fingers away from the sharp edge of paper cutters. Never leave a cutting knife in a raised position.
- ✓ Do not indulge in any form of "horseplay", such as propelling paper clips, rubber bands, etc. "Horseplay" is strictly prohibited.

31.0 Traffic Safety

DO's

- ✓ Bikes prohibited inside the plant premises
- ✓ Use seat belt when you are travelling in any vehicles



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- ✓ Follow the indicated traffic signs and symbols inside the plant.
- ✓ As a pedestrian always walk on the foot-path where available
- ✓ Always carry your vehicle license and insurance papers while riding any automobile.
- ✓ Always keep left while driving and walking.
- ✓ Give way to emergency vehicles.
- ✓ Parking of vehicle shall be done at designated place only.
- ✓ Max speed limit is 25 Km/hr
- ✓ Four wheelers are available for transportation of workers/staff from main entry gate to site & site to entry gate.
- ✓ Some workers are also using cycle (single ride) for their own transportation in general shift.
- ✓ For movement of persons from one place to another 4-wheeler are using for long distance otherwise by walking.
- ✓ Approved spark arrester must be fitted with all vehicles entering inside refinery.
- ✓ All Vehicle shall be checked in entry gate
- ✓ Only Diesel vehicles are allowed inside refinery.
- ✓ All vehicles must be checked in daily basis as per checklist.
- ✓ Vehicle shall carry only the number of persons for which it is designed
- ✓ Tractor will only be allowed subject to permission from V.P & higher authority of CLIENT.
- ✓ Lighting of tractors/tailor shall be full (including break lights on trolley).

DONT's

- ✓ Please avoid "no-go" areas in your Power Plant if there are any for automobiles.
- ✓ Do not use cell-phones while driving any automobile,
- ✓ No overtaking is allowed inside plant premises,
- ✓ Do not drive around Fuel storage area, or near Hydrogen Storage area.
- ✓ Do not block the traffic on the road / fire fighting equipments,



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Violation of traffic rules will result in disciplinary proceedings

32.0 Fire Safety

DO's

- ✓ Do inform fire brigade / Emergency Contact Centre in case of any fire no matter how small it may be. Hesitation may lead big fires and disasters.
- ✓ Do know the use of different types of extinguishers.
- ✓ Do use only correct type of fire extinguishers for a particular fire. Never use water on an electrical or oil fire.
- ✓ Do store inflammable materials closed and in its assigned place.
- ✓ Do clean immediately any spillage of inflammable liquids.
- ✓ Do remove immediately your clothes if they are soaked with oils or solvents.

DON'Ts

- ✓ Do not smoke in prohibited areas.
- ✓ Do not store inflammable near any electrical switch boards/ cubicles.
- ✓ Do not obstruct the path leading to fire extinguishers or emergency doors wherever provided.
- ✓ Do not throw cotton waste soaked with inflammable liquids/ solvents/ chemicals in drains or room corners.

Classification of Fire

Class A:

Fires involving solid materials, usually of an organic nature, in which combustion normally take place with the formation of glowing embers. Cooling the burning material with water is the most effective way of extinguishing this type of fire.

Class B:

Fire involving liquids or liquefiable solids. The most effective way of fighting this type of fire is to blanket or smother it, this excluding oxygen. Water must never be used.

Class C:

Fire involving gases. In the event of a gas leakage shutting off the supply or plugging the leak should only extinguish becoming ignited it.

Class D:

Fire involving metals. Powders type fire extinguishers shall be used extinguishing this type of fire. Water foam or CO₂ type extinguishers are not suitable in extinguishing metal fires.

NOTE: Untrained personnel should not tackle 'C' and 'D' type fires.



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33.0 Electrical Safety

DO's

- ✓ Do let Electricians / authorized persons only to attend electrical works.
- ✓ Do switch off the main control and make sure power supply is off by using tester before working on electrical equipment, and put sign board "danger" or "Men on line" etc.
- ✓ Do use non- conductive material ladders only.
- ✓ Do uses fuse pullers to remove fuse.
- ✓ Do use / wear rubber gloves and rubber shoes near or on electrical lines. Avoid wearing finger rings, watch, chains or jewelleryes.
- ✓ Do ensure proper earthling when using portable equipment with exposed metal parts.
- ✓ Do adhere to "Permit to Work" system before working on high voltages.

DON'Ts

- ✓ Do not use defective plugs, sockets and lead wires. Get it corrected.
- ✓ Do not overload fuses. Always use the correct type of fuse.
- ✓ Do not use portable equipment or activate circuits if your hands are wet or if you are standing on wet floor.

Temporary Electrical Installations

Only authorize and competent personnel shall install all site electrical supply systems and shall be responsible for the control of all maintenance. And repairs to any electrical switchboard distribution board, hand tools. All electrical equipment shall be inspected and certified as a safe for use prior to commissioning. The provision of all connections and equipment required shall be in accordance with these safety conditions and comply strictly with applicable electricity rules.

Power Lines

When work is to be performed in the vicinity of overhead power lines, the following precautions shall be observed

- Proper signing identifying the hazard is to be erected.
- Safe clearance distances are to be observed equipment in the immediate area of a power line.
- When working adjacent to a hydro corridor be sure to check for electrical induction and to follow appropriate mitigation procedures

33.1 Portable Electrical Tools & Hand tools

DO's

- ✓ Do check electrical junction box, cords, connection and pin before using them with a portable electrical tools.
- ✓ Do protect the cords from oil, heat and chemicals, they may damage the insulation.
- ✓ Do wear goggles / face shield against flying particles.
- ✓ Do use an extra wire to ground the tool casing when in use if one has not been built in.



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- ✓ Keep the tools and equipment in a proper place.
- ✓ Hand tools must in good sound condition.
- ✓ All tools must be colour coded as per refinery norms.
- ✓ Non sparking tools must use at flammable zone

DON'Ts

- ✓ Do not use a portable electrical tool in presence of inflammable vapours or gases.
- ✓ Do not pull the plug from the socket by cord, hold the plug and pull it.
- ✓ Do not hang an extension cord over nails or other sharp edges, or allow it to become kinked or leave it to be run over by a truck or a trolley.
- ✓ Do not wear hand gloves or loose clothing around a power hand tool-may get entangled in the whirling tool and cause injury.
- ✓ Do not leave tools in stairways, passageways, scaffolds, top of step ladders or any other location where they may fall or cause accidents.

33.0 Machine Operation General

- ✓ Use a Machine when authorized.'
- ✓ Make sure guards and safety devices are in place and in working order.
- ✓ Maintain safe distance from running equipments / machineries.
- ✓ When you start a Machine - See that no one is working around.
- ✓ Run a Machine as instructed – Do not use short cuts.
- ✓ Stop the Machine first to make adjustments.
- ✓ Keep work place clean and orderly.
- ✓ Dress safely. Remove rings, watches, and identification badges, bracelets and roll up sleeves. Wear protective gadgets specified for the job.
- ✓ Do not distract others, do not horseplay concentrate on the job in hand.

35.0 Use of Compressed Air

- ✓ Do remember compressed air is stored up energy, used for hand tools; instrumentations; etc.
- ✓ Do realize that the pressure necessary to remove particles from the machine / equipments will also be strong enough to blow them into eyes, ears of self or of people near ears.
- ✓ Use brush, or brooms to clean dusts.
- ✓ Do not use compressed air for body cleaning / dusting of clothing. If the air enters a scratch or puncture of skin. If it forces its way into the small bloods vessels of the Brain, burst the vessel and cause death. Clothing offers no protections.
- ✓ Do not horse play with the hose.



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36.0 General Safety Rules.

36.1 General DO's

- ✓ Before commencing any job take the time to look at the condition of the work area to determine if you are able to do the job safely — if there is any doubt about safety, consult with your superior before commencing.
- ✓ Understand hazards in your working area.
- ✓ Always keep it in your mind that adhering safety rules and regulations can save you from dangers and ill health.
- ✓ Correct unsafe act by yourself as far as possible.
- ✓ Report the UA / UC if not resolved by yourself to concerned person.
- ✓ Get permits before starting any job, which requires Work Permit.
- ✓ Always follow the Company's procedures and shall take adequate safety measures to ensure that there are no accidents at the work place.
- ✓ Always report any accident / near miss regardless of any injury / damage and attend to getting the necessary first aid or medical treatment immediately.
- ✓ In case of emergency, contact the Emergency Control Centre (ECC) through telephone nos
- ✓ Wear the required Personnel Protective Equipments (PPEs) properly while you being in the plant. Use PPEs always even if you are not under supervision.
- ✓ Obey to the sign board, caution and warning board displayed at the plant.
- ✓ Use right tools and equipments for the job, use them safely.
- ✓ Create a safety zone around you.
- ✓ Remain away from barricaded area / danger area.
- ✓ Seek a secure area while replying a call, avoid Walk & Talk.
- ✓ Use Hand rail while using stairs.
- ✓ CLIENT Colour coding procedure (9111-000-HSE-006-00014) must follow for Lifting tools & tackles, portable electrical equipments, ladder, safety Belt, Scaffolding etc.

36.1 General DON'Ts

- ✓ No defective equipment of any kind shall be used.
- ✓ Avoid Hit and Trial method, in a partially commissioned area.
- ✓ Discourage adopting shortcuts and unsafe means.
- ✓ Avoid unauthorized access to any machine / equipment
- ✓ Do not hesitate to ask, if you do not know the safe procedures
- ✓ Don't sit or lean on the material in the plant area.
- ✓ Don't involve in any of the activity which is not relevant to you.



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- ✓ Photography is not allowed without prior permission.
- ✓ Do not use V-belts as slings.
- ✓ Do not smoke in plant areas.
- ✓ Do not Horse-play.
- ✓ Do not spread false rumour.
- ✓ Child labour is not allowed in any work in plant premises.

15.22. Work permits:

Safety work permit is a written document authorizing person to carry out work, warning them of the concerned dangers and spelling out the precautions needed for carrying out the job safely. It is also referred as **Work clearance document**.

This procedure helps to identify the precautions to be taken and proper work permit procedures to be adopted during the course of the work with a view to:

Understanding nature of the job and Identify related hazards;

Ensure that proper procedures, equipment and precautions are in place;

Ensure safety of personnel;

Avoid damage to equipment and other nearby installations;

Avoid or minimize environmental pollution and;

Comply with statutory requirements.

The permit to work types and procedures for non-routine or maintenance / construction work to be carried out within the plant.

Participants of Permit to Work System:

Issuer (Operations Personnel)

Receiver (Maintenance Personnel)

Approver

Types of Permit:

Two types of permits are using at CLIENT (Cold Work & Hot work).

CLIENT Permit procedure will be followed strictly at site.

38.0 Welfare, sanitation & hygiene

i) Washing facilities:

Adequate and suitable facilities for washing/toilets shall be provided and maintained for the use of all.

ii) Rest Shed:



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Suitable arrangement shall be made for taking rest at different location.

Adequate and suitable shelters or rest rooms and a suitable lunch room, with provision for drinking water, where workers can take lunch & rest.

iii) First- Aid:

Well equipped First aid box should be kept at different location & inspection shall be done monthly. Also First-Aid register should be well maintained.

iv) Drinking water

Drinking water shall be provided and maintained at suitable places. It should be accessible to labour and employees with sufficient water supply provide of cold for summer season and normal for winter season fit for drinking. All water supply or storage shall be away from any latrine drain or other sources of pollution. Regular analysis of water shall be done to ensure its portability.

V) Latrines and urinals

Latrines shall be provided in every work place on the following scale.

Where female is employed there shall be at least one latrine for every 25 females. Where males are employed there shall be at least one latrine for every 25 males. Every latrine shall be so partitioned off as to secure privacy and shall have a proper door and fastenings. Where workers of both sexes are employed there shall be displayed outside each block of latrine and urinal a notice in the language understood by the majority of the workers. For men only or for women only. The urinal and latrine shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

vi) Eating facilities (in plant catering)

Meals shall be provided within a non-metallic container and shall be consumed only in the designed messing area. Proper waste disposal facilities shall be provided. Waste shall be removed immediately from the site after the lunch period and the area kept neat clean at all times.

vii) GOOD HOUSE KEEPING

Used canisters, trash or other materials shall be collected and removed daily. Flammable materials will be properly stored. Areas will be maintained free of tripping hazards or excess materials.

39.0 Personal Protective Equipments-Introduction

For any accident prevention programme, engineering control is the best control method to control the workplace hazards, and consequently, the usage of Personal Protective Equipment (PPE) as an effective control measure should be only as a last resort. PPE therefore, is not a substitute for more effective control methods and its use shall be considered only when all other means of protection against hazards are not adequate or feasible. Also, it will be used in conjunction with other controls unless no other means of hazard control exist.



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Personal protective equipment will be provided, used, and maintained when it has been determined that its use is required to ensure the safety and health of the employees and that such use will lessen the likelihood of occupational injury and / or illness.

39.1 Mandatory PPEs

Safety Shoes, helmets, coverall, goggles, hand gloves & ear plug are mandatory PPE as per this policy. Job specific PPEs like Nose Mask, Face Shield, SCBA sets etc shall be provided to the employees as per the requirements specific to the locations/areas and or as decided by the Management.

Visitors shall be provided 6 PPE's for use during their plant visit. Safety Shoes shall not be insisted upon for visitors if they are accompanied on plant rounds by plant employees.

Guidelines for selection of PPEs:

a) Head Protection: Safety helmets are rigid head gear designed to protect the wearer's head from impact from falling objects, as protection for scalp face and neck from overhead drips and leaks of corrosive chemicals or hot liquids and to shield the hair from exposure to dust. Safety helmets are issued on individual basis to all the employees in all location of the plants. It is important that helmet is correctly adjusted to fit the wearer along with chinstrap. The wearing of helmet is compulsory in plant areas. Replacement of the safety helmet will normally be on condition basis.

b) Foot Protection:

Wearing of appropriate footwear having built in steel toecap can prevent injury to the foot.

Safety Shoes

- Safety shoes are leather ankle boots with steel toe. These are issued on personal basis to all the employees of the plant.
- The wearing of safety shoes is compulsory except where some other protection is used.
- Leather footwear should not be used in situations where exposure to liquid chemicals is severe e.g. cleaning of spillages. Leather is an absorbent and will allow the liquid to penetrate through it.
- Replacement of the safety shoes will normally take place every year.

Gumboot:

PVC gumboots will be issued to all the persons who are liable to be exposed to the conditions for which the leather

Foot wear is unsuitable e.g. wet environment / Horticulture or contact with corrosive chemicals.

c) Eye protection

Goggles:

Goggles protect the eyes from MEL ashes, sprays of chemicals and flying particles which release from the job such as grinding, chipping, hammering etc.

Goggles shall be worn when any activity is done which is having the slightest potential to cause eye injury.

Toughened glass goggles shall be used to get protection from flying particles and MEL inters.

Coverall goggles shall be used to protect eyes from liquid and slurry MEL ashes.



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Face protection must be considered during handling of corrosive, molten and hot liquids in addition to eye protection.

d) Face Protection:

Face Shield:

Face shield protects both eyes and face from the effect of the flying particles; spray of the hazardous liquids and from hot solutions.

Hood: Hood provides protection to head, face and neck from MEL ash of chemicals.

NOTE: It does not provide protection against gas or fume.

e) Hearing Protection:

In certain plant areas the noise levels are such that prolonged exposure could affect hearing; therefore, it is essential that persons working in those areas must wear some form of hearing protection.

Earmuff:

Earmuffs are in the form of a pair of rigid cups designed to completely envelop the ears and are supplied with soft sealing rings to fit closely against the head round the ears. The ear cup is connected by a spring-loaded headband, which ensures that the sound seal around the ears is maintained.

Earplugs: Earplugs are soft plugs inserted in the ears to give protection against noise.

f) Hand Protection:

Hand gloves are worn to prevent injury to hands when handling rough or sharp objects, hot or cold objects or when coming in contact with chemicals. A range of hand gloves is available among which are:

Rubber/PVC gloves Suitable for use against alkalis, acids and solvents.

Synthetic rubber gloves e.g. neoprene, nitrile etc., which displays good resistance to oils and grease.

Fabric gloves such as the canvas glove, which is widely used as a general purpose hand glove.

Leather / chrome leather gloves suitable for rigging and welding.

Kevlar / aluminized gloves suitable for protection against Heat or cold.

g) Body Protection:

Aprons

Aprons (rubber/PVC) with sleeves and without sleeves are used to give protection against chemicals and leather apron are used give protection against slag/sparks.

Suits: Where the chemical MEL ash / spray are more severe complete suit with hood is used.

Pressurized suits with airline connections are also used when highly toxic chemicals are involved.

h) Fall Protection:

Work at height have fall hazard associated with it. Fall from height if not arrested in time leads to fatal injuries. It is very essential to safeguard the employees during work at height.

Safety Belt:

These are required to be worn by the person working at height and the life line/safety line of the safety



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belt must be tied securely to any fixed rigid structure.

Fall arrester:

For climbing on vertical ladders, standard fall arrester system must be used.

Safety net:

Where the severity of the hazard is more to reinforce the fall Protection safety nets are installed beneath the person doing the Work at the height.

Crawling Board:

Where work on fragile roof is to be done, crawling board must be used to prevent the breakage of the roof and consequent fall of the person.

i) Respiratory Protection:

Air Purifying Respirators:

Air purifying particulate filters are to be used for dusts, mists, fumes and smoke etc such as dust mask. Air purifying sorbet filters are to be used for gases and vapours such as canister type and cartridge type gas mask.

Note: Air purifying respirators must not be used, if concentration of the air borne toxic contaminants (dust, mist, fumes, smoke Vapours and gases) is more than 2% and oxygen is less than 19.5%. These are not to be used in emergency.

Caution: Do not use Air Purifying Respirator if concentration is up to IDLH value in confined space.

Airline Respirators:

Airline respirators or supplied air respirator give well protection from the air borne toxic contaminants. Its mask is in positive air pressure. Its limitation is that it can be used only at fixed place and users have restriction in movement. This is also not suitable in emergency handling.

Self contained breathing apparatus:

This is the most widely used respiratory equipment and effectively used in emergency handling also.

39.2 Provision of PPEs and Training:

Safety Representative will ensure that required PPEs are made available in the Dept. He will also make sure that damaged items are replaced. Whenever a person is given/issued any PPE for the first time he will need to be given a clear and responsible explanation as to why the PPE should be worn and limitations associated with its use. Contractor / Plant In-charge shall ensure to provide quality PPEs to his workers and shall also ensure that these PPEs are being worn by his workers at plant. Replacement of the damaged PPEs shall be done by Contractor / Plant In-charge.

PPE should be of good quality & as per IS code.

PPE's reissuing procedure

- i) Helmet :(Min 1 years)
- ii) Coverall: (Min 1 years)-2 nos



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- iii) Shoe: (Min 1 years)
 - iv) Goggles: (Min three months)
 - v) Hand gloves (Min 7 days)
 - vi) Ear Plug: As per condition
- Other job specific PPE's as per site requirements.

- **Maintenance and Up-keep of PPE:**

All respiratory and other PPEs shall be properly maintained. Disposable air purifying particulate filters shall be replaced in 30 days. Defective PPEs shall be replaced immediately. All sections will send the discarded PPE to stores for further action. The discarded PPE except the cartridges shall be disposed off through main stores.

- **Quality Assurance:**

Only BIS approved or other acceptable international standard personal protective equipment shall be used at MEL.

- **Control of PPEs:**

Employees must use the PPEs provided to them and must not misuse the equipment. Any person found misusing should be penalized. Employees shall also ensure that contractor employees on the job use the right type of PPEs.

40.1 Safety Awareness reward & penalties

Safety awareness to all section of personnel ranging from Site In charge to workmen helps not only preventing the risk but also build up the confidence. Time and expenditures also get saved as a result.

Safety awareness basically seeks to persuade / inform people on safety besides supplementing skill also. Awareness programme may include following safety material and same shall be provided by Safety Department with the help of Corporate Communication Department.

- a) **Poster:** Posters with safety slogan in humorous, gruesome demonstrating manner may be used to discourage bad habits attributable to accidents by appealing to the workers' pride, self-love, and affection curiosity or human aspects. These should be displayed in prominent location(s).
- b) **Safety Sign Boards:** Different type of message of cautioning, attention, notice etc. should be displayed at the appropriate places for learning/awareness of the workmen while working at site.



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- c) **Films & Slides:** Film(s) narrating the accident including the causes and possible remedial ways of preventing the recurrence of a similar accident should be displayed at regular intervals. Slides consisting main points of the film show may also be shown to workers.
- d) **Talks, lectures & conferences:** The success of these events would depend much on audience's understandings of the speaker (s). The speakers are to be knowledgeable and good presenter. Speakers should know to hold the attention and to influence the audiences.
- e) **Competitions:** Organize competition(s) between the different departments / categories of workers. The sense of reward/recognition also will improve safety awareness and result in enhancing safety levels.
- f) **Exhibitions:** Exhibitions also make the workers acquainted with hazards and means of preventive measures.
- g) **Safety Drives:** From time to time, an intensive safety drive by organizing a safety day or a safety week etc. should be launched.
- i) **Training:** Training for covering the hazards for different trade should be imparted. Training should also include the specific hazards related to a job in addition to the general safety Training as has been dealt in various chapters and should include all workers.
- j) **TBM:** TBM shall be given by safety officer / supervisors on weekly / fortnightly basis. Site in-charge shall review the TBM records on fortnightly basis and records shall be sent to corporate & client office.

40.2 Safety Rewards and Recognitions

To recognize the safety conscious worker for his efforts and also to motivate other workers, suitable reward and recognition system shall be in place:

- **Safety Conscious worker:** Based on the individual compliance over a month period and the recommendation of respective HOD on monthly basis.
- **Near miss reporting:** Best/maximum near miss reported shall be rewarded.
- **Separate procedures are available for reward and Recognition (KRE/CLIENT/HSP/.....)**

Penalty will impose if person violate the site safety rule/regulation premeditatedly or after given intimation.

41.1 Accident reporting system



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All accident/near miss /Dangerous occurrence/First Aid will be investigate jointly & report send to CLIENT in specified formats. RCA & LFI of all incidents will be prepared & communicate to site personnel. Action to be taken to stop the reoccurrence of the same type of incidents.

All incidents must be informed to CLIENT safety dept. ASAP.

Reporting procedure as per CLIENT incident reporting procedure

Responsibilities

All employees and contractors

- Report all incidents/Near misses to area Field Supervisor or other person in charge of the area as may be applicable for the area.
- Inform near misses ASAP.
- Cooperate during incident investigation process.
- Participate in an incident investigation as and when required.
- Not move anything at the scene of an incident without the permission of unit manager.

Site In charge

- Monitor any incidents / accidents during site and ensure appropriate immediate measures have been taken
- Report the incident to unit manager
- Prepare first information report and send copy of FIR to unit manager.
- Decide action plan on the near misses observes in the shift in consultation with unit manager.
- Conduct a preliminary assessment of incident and preserve conditions where practicable.
- Record Initial incident in A SAP.
- Share the learning from incidents down the line to employees and contractor workers.
- Ensure all the incidents are reported and investigated as per time line.
- Initiate corrective and preventive action are started.
- Monitor progress of corrective and preventive actions assigned.
- Ensure record of all accidents, Incidents and near misses are maintained.

H&S Department:

- Participate in investigation process
- Monitor the quality of incident investigation and ensure root cause is identified.
- Provide training on incident reporting / investigation and establish a core competency in incident investigation techniques in the company
- Share findings from incident and near miss investigations to all relevant persons.
- Assist / advise user departments on reporting / investigation as required
- Maintain and communicate accident / incident statistics

41.2 Accident investigation system

- Site In charge and HSE dept are responsible for any type of incident investigation.
- Make the investigation team and investigate the incident.
- Investigate the incident and report as per CLIENT procedure (9112-000-HSE-006-00033_00)



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42.0 EMERGENCY RESPONSE PLAN

42.1

PURPOSE

To establish a system for identifying the potential for, and responding to, incidents and emergency situations and for preventing and mitigating the associated environmental impacts and risks.

42.2

SCOPE

This procedure is applicable to all activities carried out within the physical boundary of (COMPANY NAME).

42.3

ROLE & RESPONSIBILITY

Site in charge

HR/admin in-charge

HSE in charge

❖ ROLE OF HSE PERSONNEL

- Assess the situation and take action proactively.
- Activate the emergency rescue team.
- Closely monitor the situation, in parallel take the advice from execution team / Site In charge / top management.
- Get the feedback from head count team and identify the missing persons.
- Support the rescue team to rescue the trapped person.
- Guide firefighting team to extinguish the fire.
- Barricade the affected area.
- Bring down from abnormal condition to normal condition

❖ ROLES OF HR/ADMIN DEPARTMENT DURING EMERGENCY

Attendance and vehicle movement registers

- Attendance (inward and outward) registers of all the plant staff / sub-contractor staff / visitors / service providers / suppliers / clients/ customers/ owners / security / workers to be maintained up to date by Plant ADMIN department for use during the head count.
- All the vehicle movement (inward and outward) registers to be maintained at all times.

Tie-up with the nearby hospitals



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- HR/ADMIN-Head needs to have a tie up with nearby hospital / clinic for the necessary emergency treatment.
- He should understand the availability of ambulance / rescue vehicle resources within the project He should identify the nearby places where the ambulance facility is available.
- He should keep the ambulance / rescue vehicles always ready at plant.
- Obtain the following emergency contact numbers for use during the emergency.
 - Hospitals numbers
 - Emergency vehicle number
 - Government fire station number
 - Client / customer / HSE -department Number
 - Nearby police station

42.4 OBJECTIVES

The emergency plan is prepared to ensure the preparedness of people to handle any type of exigencies to avoid or minimize the damage to men and machinery.

The main objective of emergency plan is

1. To localize the emergency and if possible to eliminate it.
2. To minimize the severity of the consequence of the incident on people, property and work place environment.
3. To take correct remedial measures in the quickest possible time, to contain the incident and to control it with minimum damage.
4. To mobilize the internal resources and to utilize them in most effective way.
5. To keep the required emergency equipment in appropriate location and ensure their working condition.
6. To keep the concerned personnel fully trained in the use of emergency equipment.
7. Evacuate all the persons involved in the work place immediately.
8. To rescue, give treatment to injured person and send the seriously injured person to hospital for treatment.
9. To identify the casualties, understand his details.
10. To provide information to statutory agencies in time as per the rules and regulations.
11. To preserve records, evidence of situation for subsequent use in emergency conditions.

42.5 DEFINITIONS



EMERGENCY

A major emergency in an industry is the one which has potential to cause serious injury / loss of life / lives and may cause extensive damage to property and serious disruption both inside and outside the industry.



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The causative factor manifest in the basic form viz., fire, explosion, structural collapse, scaffolding collapse, tower crane collapse, food poisoning & natural calamities such as earth quake / cyclones / floods etc.,

Emergencies are broadly classified into two categories:

On – Plant Emergency and Off – Plant Emergency.



On – Plant Emergency

Emergency is the kind of situation, which can cause damage to men, machinery and material within the plant premises. It may need to take help of outside agencies to bring the situation under control. Operational emergency on equipment failure situation, which may go beyond control with time for long duration, are also put under this category.



Off – Plant Emergency

It is a case of emergency situation endangering human life, plant and equipment where the emergency occurs not only at the work plant of but also extends outside the plant of activity. Help of local administration, Police, State Transport and Medical Center and Hospitals shall be required to control. Emergency situations in neighboring project or industry that may affect our work plant are also included in this category.



RISK SCENARIOS

The prime risk scenarios as evaluated from hazard identification are:



Fires

Fire at fuel storage yard, Trash catching fire, diesel fire, cable fire, Paint fires, construction waste fires, electrical fire in panels, transformer oil fire, Fire in administrative building, combustible gas fire, and flammable liquid fire, etc.,



Explosion

LPG cylinder explosion, air receiver cylinder bursting, bomb explosion, gas pipe line bursting, bursting of new fuel pipe line during testing, etc.,



Leakage

Leakages of toxic gases, combustible gases etc.



Spillage

Spillages of acids / chemicals / flammable liquids/ non-flammable liquids etc.



Contamination

Drinking water contamination with poisonous chemicals.



Building collapse, form work collapse, rubbish chute choke, scaffolding collapse, tower crane collapse, mobile crane/crawler crane topple, Major electrical shutdown (during night time)



Reptile, insect or animal bites

Snakes, scorpion bites, honey bee stings, dog bites etc.



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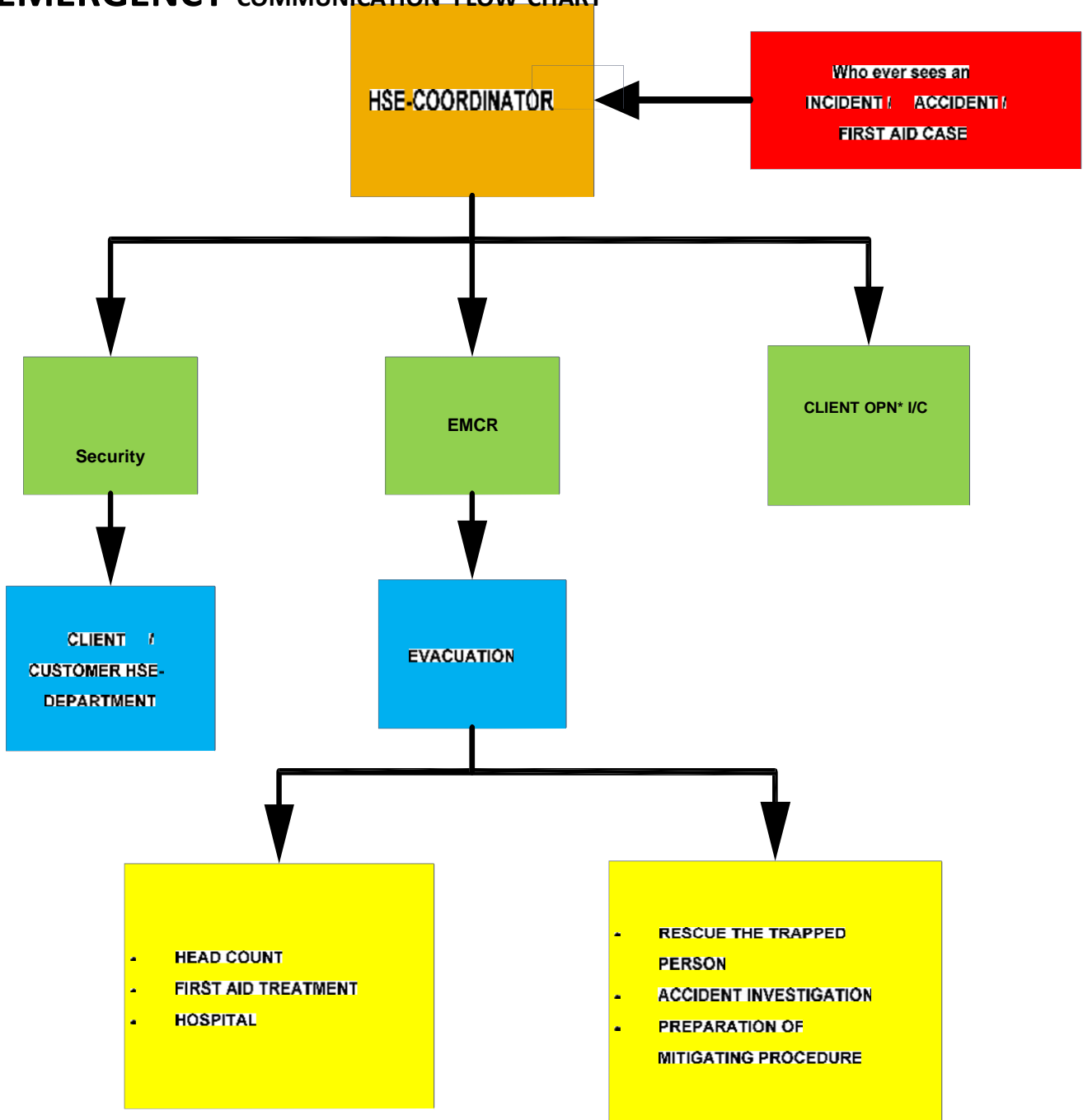
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- ❖ **Road emergencies**
Road accidents

- ❖ **Others**
Cyclonic winds, Flooding, Food poisoning, epidemics, earth quake, etc

42.6 EMERGENCY COMMUNICATION FLOW CHART





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42.7 PROCEDURE

NOTIFYING THE EMERGENCY

Responsibility: Plant Staff / Clients / Owners / Workers

Whoever witness any first aid case /near miss /incident /accident communicates to HSE in-charge immediately by available communication devices (landline /intercom / walky-talky / cell phone / in-person)

42.8 EMERGENCY DECLARATION, COMMUNICATION & ACTIVATION

Responsibility: HSE In-Charge

- HSE in-charge conveys the information regarding the incident immediately to in-charge.
- According to the severity he activates the emergency rescue team at work place.
- He conveys the incident information to Head Office for technical support / financial support / guidelines.
- He intimates the emergency situation to plant staff /worker by means to siren continuous-whistles / public address system (loudspeakers).

42.9 COMMUNICATING TO CLIENT / CUSTOMER

Responsibility: Plant In-Charge

He communicates the incident to Client /customer/HSE department of client.

42.10	EMERGENCY CONTACT NO.	
	CLIENT NO.	
SL NO.	NAME	CONTACT NO.
1	Fire station	
2	OHC	
3	Doctor shift	
4	security	
5	Refinery shift	
6	Superintendent	
7	Manager HSE	
8	HSE head	
9	HR Head	



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10	admin	

42.11

HR / ADMIN. RESPONSIBILITIES

In case of the reportable accident HR/ADMIN. In-charge informs the same through proper channel to statutory authorities (with the concurrency of top- management)
 Insurance assessors are informed to assess the property damaged
 Takes up the follow-up actions with the insurance department to obtain the claim amount
 HR/ADMIN in-charge handles the press / media (with the concurrency of top- management)

42.12

EMERGENCY TOOL BOX MEETING

Emergency tool box meeting is conducted to disseminate the lesson learnt from the occurrence to the Project staff / Client / Customer/ owner / Sub-Contractors / Service Providers / Security / Workers.

42.13

SUPPORT FROM FINANCE DEPARTMENT

Finance department need to support and extend the entire financial assistant during the emergency situations (with the concurrency of project in-charge / top management).

42.14

EMERGENCY ACTION PLANS

The following emergency plans outline procedures that should be followed in the event of any of the emergencies. The specifics of the plans are to be carried out on a case by case basis depending on the situation.

42.15

EMERGENCY ACTION PLANS DURING FIRE IN THE PLANT

Inform the emergency situation to HSE department.
HSE- department activates the plant emergency procedures.
 Disconnect the energy sources.
 Understand the type of fire.
 Clear the combustible material whatever is available near the fire zone as soon as possible.
 Evacuate or extinguish – Decide whether the fire is small enough to fight, and whether you can do so safely. Make sure you have an escape route at all times.
 Confine the fire to the place of origin and contain it by use of extinguishers.



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If the fire is inside a building/ enclosed area, close all the sources (windows) of air entering. To extinguish the fire use the fire triangle concept and isolate or remove any one of 1.fire sources, 2.oxygen or 3.fuel.

If fire goes out of control HR/ADMIN head needs to call government fire office immediately for assistance.

When evacuation decision is taken, go to emergency assembly area calmly without making any noise.

If you become trapped in a building during a fire and a window is available, place an article of clothing (shirt, etc) outside the window as a marker for rescue crews to find you. If there is no window, stay near the floor, where the air will be less toxic. Shout at regular intervals to alert emergency crews to know your location. DO NOT PANIC!

42.16 EMERGENCY ACTION PLAN DURING EXPLOSION (GAS CYLINDER, BOMB EXPLOSION ETC.)

When an explosion takes place

Immediately take cover under tables, desks and other objects that will give protection against falling glass or debris.

After the initial effects of the explosion have subsided, evacuate the area and report the emergency by telephone to HSE department. Give your name and describe the location and nature of the emergency.

HSE department activates the emergency procedure.

When told to leave by emergency team members, walk quickly to the nearest marked exit and ask others to do the same.

Assist the disabled exiting in the building.

Once outside, move to the designated emergency assembly area that is at least 300 feet away and upwind from the affected building(s) as quickly as possible.

Keep streets and walkways clear for emergency vehicles and crews.

DO NOT RETURN TO AN EVACUATED BUILDING until told to do so by an HSE in-charge.

42.17 EMERGENCY ACTION PLAN DURING LEAKAGES OF TOXIC OR COMBUSTIBLE GASES

In the event of being alerted to a toxic gas emergency by the Safety Officer, Personnel shall :

Stop all the works immediately.

Inform to HSE department immediately.

HSE department activates the plant emergency procedure.

Shut down and make safe all the equipment.

Vacate the work place, checking the windsock, proceed in an orderly manner cross wind to the emergency assembly point and wait for instructions.



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Don't return to work until a notification has been received from HSE Department that it is safe to do so.

42.18 EMERGENCY ACTION PLAN DURING CAVE IN / STRUCTURAL COLLAPSE

Immediately activate the plant emergency procedure.

Estimate the number of persons trapped in the pit / building according to the head count. If the occurrence happened in the night time, arrange sufficient lighting system as soon as possible. Rescue the persons who can be easily rescued with the support of rescue team as soon as possible.

Clear the soil / debris in and around the incident location in a safe manner (without using machinery)

According to the severity, machinery needs to be deployed as per top instructions from management /technical team.

While using the machinery to clear the debris it may be possible that the trapped person may get injured.

While clearing the debris, if possible it may be required to do the rebar cutting with the help of gas cutting set. More safety precautions to be taken during Such time as there is a possibility of trapped person catching fire.

42.19 EMERGENCY ACTION PLANS DURING TOWER CRANE/MOBILE CRANE/CRAWLER CRANE COLLAPSE, SCAFFOLD COLLAPSE

Activate the plant emergency procedure for affected area.

Barricade the affected area immediately.

Rescue the crane operator immediately.

If the occurrence happened in the night time, arrange sufficient lighting system as soon as possible.

Estimate the number of persons affected with this occurrence.

Inform this occurrence to the statutory authorities (with the concurrency of top management).

Take the photograph of the occurrence.

With the support of technical team (with the support of outside agency) reinstate the crane / scaffold.



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42.20 EMRGENCY ACTION PLANS DURING SNAKE BITES / SCORPEON / POISONOUS INSECTS

Try and get a good look at the snake. This would help the doctor identify it, and treat the bite accordingly.

Make the person lie down on a bed or mattress.

Make him not to move much. The more he moves, the quicker the venom will spread through the body.

It is important to remember that most snakes are not poisonous, and it is likely that the person has been bitten by a non-poisonous snake. However, if fang marks are visible, the snake was probably of the poisonous variety.

Keep the bitten limb below the level of the heart. This slows down the spread of the poison to the heart. So if he has been bitten on the leg, he could lie down with his leg on a lower level than the mattress, perhaps on a stool.

Wipe the area clean with an antiseptic and retain the wipe for venom traces.

Don't apply ice to the bite.

Tie a band or cloth about two inches width away from the wound. If there has been swelling, tie the band about two inches from the swelling

The band should be at least an inch thick, and it should be tied within 20 minutes of the bite, if it is to have any effect

The band should be firm and tight, but not so tight that it completely blocks blood flow. A good rule of thumb is that the bandage should be loose enough for a finger to slip through

Keep bandaging as much of the area as possible, depending on the amount of bandage you have. You could even bandage around the torso to prevent any poison which may have already started to move towards the heart.

As far as possible, DO NOT LET THE PERSON WALK. Remember, the limb should be moved as little as possible.

Take the person to the hospital as soon as possible.

If the person is bitten by any other animal like a dog or spider, the first aid is relatively the same in either case. Wash the wound with soap and water and apply an antiseptic. Always contact a doctor, whether the bite is big or small, if swelling occurs, the wound gets worse or if the person develops fever. If he gets bitten by a tick, don't squeeze the tick while removing



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it, as this causes the tick to secrete further bacteria.

Maintain the project plant at all time as follows:

The working area shall be kept free from bushes and unwanted grass by removing them periodically.

The working area shall be kept clean by removing unwanted scrap material.

The employee/labour shall be alert while working at bushy areas or scrap yards or fuel yard or at untidy places anticipating the presence of reptiles or other poisonous insects.

The electrical earth pit covers shall be kept fully closed to avoid any hide out place for the reptiles / scorpions. Watch out carefully before working at the electrical earth pits.

While working at bushy areas, always wear full gumboots.

While working at night keep proper lighting for adequately illuminating the area.

Always take assistance of second person while working at above said places and preferably keep walkie-talkie for immediate communication to plant personnel

42.21 EMERGENCY ACTION PLAN DURING SPILLAGE OF ACIDS/CHEMICALS/ FLAMMABLE LIQUIDS

ROLE OF PERSONS AT SPILL AREA

Don't Panic! Do not attempt to clean up the spill without knowledge!

Call HSE Department and inform about the spill.

If the spill presents an immediate danger, evacuate as per the instructions of emergency team.

Protect yourself and then take the injured person(s) to fresh air if they are safe.

HSE In-charge activates the plant emergency procedures, as soon as he receives the information about the spill.

Prior to responding to any spills, emergency team should be thoroughly familiar with the hazards involved.

DO NOT handle a spill without understanding the risks



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Use proper protective equipment, use spill kit to contain the spilled materials.

Remove contaminated clothing of casualties.

Flush the persons with water at least for 15 to 30 minutes.

Dispose wastes as per the guidelines mentioned in the HSE procedures.

NEVER clean up Spills that present an immediate hazard (fire, explosion, chemical exposure, etc.), call for expert help.

42.22 EMERGENCY ACTION PLAN DURING ROAD ACCIDENTS OF OUR OWN VEHICLES / HEAVY MACHINERY

Scenarios

Vehicle collide with public vehicle / private vehicle
Vehicle hit the public
Vehicle topple

Role of person at accident zone

Vehicle operator / driver / banks man (vehicle movement controller) need to provide the traffic cone immediately and monitor the traffic

Inform to safety personnel for further action.

Role of emergency team

HSE In-charge activates the plant emergency procedures, as soon as he receives the information about the road accident.

Admin need to inform to the local authorities (police station etc) for further action.

Injured person need to be identified and sent for treatment.

Mean time with our emergency team members (traffic controller) need to monitor and control the traffic until the traffic comes to normal

This occurrence thoroughly investigated by the technical team and mitigation procedure to be developed.



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For further move the vehicle from the occurrence place and insurance claims action to be taken by Plant and Machinery department.

42.23 MOCK DRILL PROCEDURE

We are follow CLIENT mock drill system.

43.0 FORMATS, WORK PERMIT SYSTEMS, CHECK-LISTS, STATISTICS AND REPORTS

All reporting formats, permit & checklist use as per CLIENT procedure only.

44.0 COMMUNICATION AND REPORTING

Cascading Information

Cascading any HSE messages down the line is vital for the success of any HSE Management System and to ensure that all personnel are aware of HSE issues the following technique shall be adopted.

NO	TASK	ACTION BY	COMPLIANCE TARGET	VERIFICATION DOCUMENT
1.	<p>HSE NOTICE BOARD</p> <p>HSE Notice board will be fixed at plant office and other conspicuous locations for cascading HSE messages such as HSE Notices, Safety Alerts, Posters and accident evaluation etc., shall be regularly updated.</p> <p>Install and maintain HSE performance board showing Safety statistics i.e. days without LTI etc.</p>	HSE Engineer / Officer	Weekly Update Starting From Mobilisation And Daily	HSE Notice Board
2.	<p>PROMOTION</p> <p>Monthly Incentive</p> <p>Safe Man of the month shall be selected on the basis of HSE performance evaluation and will be given a certificate of commendation along with a token gift.</p>	Site in charge / HSE officer	Monthly	Incentive Scheme Record



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45.0 LIST OF JOB SPECIFIC PPE TO BE USED IN THE PLANT

PPE MATRIX

PPE Category	Head Protection	Safety glass	Face shield	Welding helmet	Foot Protection	Safety harness	Hearing protection	Hand Protection	Body Protection	Respiratory Protection	Protection against Dust	Organic mask	Air supplied hood				
Engineers / Supervisors																	
Foreman																	
Unskilled workmen																	
Formwork																	
Scaffolding																	
Grinding/Polishing																	
Rigging																	
Welding/Cutting																	
Handling corrosive liquid																	
Painting																	
Roof work																	
Work shop																	
Work at heights above 1.8 M.																	

Note: This is an indicative matrix; it shall be made plant specific.



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46.0 TRAINING MATRIX

	TRAINING REQUIREMENT	HSE Induction	HSE Plan Briefing	Blasting	Concreting	Electrical safety	Emergency response plan	Environment	Excavation	Fire prevention & Control	Gas Cutting & welding	Grinding	Handling & Storage of building Materials	Hand tools & power tools	Lighting	Managerial aspects	Material handling	Occupational health	Piling	Plant & machinery	PPE	Radiography	Road works	Safety signs	Structural erection	Wood working machines	Work at height
	PM / CM / RE																										
	Plant Engineers																										
	Plant Supervisors & Foreman																										
	HSE Officer																										
	Technician & Helper																										
	Electrician & Electrician Helper																										

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47. WASTE MANAGEMENT

❖ PURPOSE

The purpose of the waste management procedure is to make: -

- To avoid the environmental issues.
- To avoid the over use of resources.
- To create the awareness about its impact and complication on health and environment.

❖ SCOPE

The scope of this waste management procedure (WMP) covers the management of waste generated at various stages of construction.

❖ RESPONSIBILITY:

The overall responsibility of implementing this waste management procedure lies with all concerned staff / personnel including sub-contractors working in project plant. Project plant in-charge shall be responsible for resource allocation such as manpower, material, machinery money etc for implementation of this waste management practices and also shall be responsible in implementing applicable legislative requirements.

❖ PROCEDURE

- The solid waste like glass, paper construction / demolition debris can be segregated
- The hazardous waste will be collected, stored and disposed of to authorized agency
- Ensure that waste can't blow away. Avoid mixing different types of waste until it is known that mixing is harmless and will have no adverse effects on the subsequent management of waste
- No waste burnt on plant All concern

➤ Colour coding of bins

Red Colour Dust Bin

Yellow Colour Dust Bin

❖ ROLES AND RESPONSIBILITY

- Site in charge
- Safety officer
- ALL CONCERN

48.0 HEALTH / MEDICAL FACILITY



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❖ **PRE-EMPLOYMENT MEDICAL EXAMINATION**

100% Pre-employment medical examination shall be carried out for all workmen before their employment. The workers involved in hazardous activity, Crane operation shall undergo medical examination on periodic basis, but not more than six month.

4. Provide first aid emergency treatment.
- 2 Conduct special medical examination for occupational hazard to such workers before their employment.
- 3 Conduct Training of first aid personnel of such medical services.
- 4 Promote health education, including family welfare among workers.

❖ **FIRST –AID BOX**

(COMPANY NAME) shall ensure sufficient number of first –aid boxes or cupboards are provided and maintained for providing first-aid to the workers. First aid box is equipped with the articles mentioned below.

Material inside First-Aid box shall consist of CLIENT standard material list & monthly checklist should be followed.

❖ **HOSPITAL**

(COMPANY NAME) will tie-up nearby Hospital;

- HR/ADMIN-Head needs to have a tie up with nearby hospital / clinic for the necessary emergency treatment.
- He should understand the availability of ambulance. He should identify the nearby places where the ambulance facility is available.
- He should keep the ambulance always ready within the project.

49.0 STATUTORY COMPLIANCES OR LABOUR LAWS AT PLANT;

(COMPANY NAME) shall follow all Statutory Compliances or Labour Laws at plant

❖ **MAIN FEATURES OF THE CONTRACT LABOUR (REGULATION AND ABOLITION) ACT,1970 WITH CENTRAL RULES**

- Application for license in Form-IV
- Form –V to be issued by Principal Employer for obtaining License
- Notice of commencement / Completion of contract work in form-VI A
- Application for Renewal of license in Form –VII
- Return to be sent by contractor to licensing Officer in Form-XXIV
- Format of Notice to be displayed at work plant
- First-Aid material to be made available at work plant
- Master Roll in Form- XVI
- Register of wages in Form –XVII
- Register of advance in Form-XXII



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- Register of overtime in Form –XXIII

❖ **MAIN FEATURES OF THE MINIMUM WAGES ACT**

❖ **MAIN FEATURES OF THE EMPLOYEES PROVIDENT FUND & MISCELLANEOUS PROVISIONS ACT, 1952**

- Summary of the wages paid and P.F. Contribution made

❖ **MAIN FEATURES OF THE BUILDING AND OTHER CONSTRUCTION WORKERS (REGULATIONS OF EMPLOYMENT AND CONDITIONS OF SERVICES) ACT, 1996**

- Application for Registration of Establishment building Workers I Form-IV
- Notice of commencement / Completion of building or other construction work in Form-IV
- Annual Return of Employer to be sent to the registering officer
- Register of building workers employed by employer

❖ **MAIN FEATURES OF THE BUILDING AND OTHER CONSTRUCTION WORKERS WELFARE CESS ACT, 1996**

- Form-I (Information From Employer)

❖ **MAIN FEATURES OF THE WORKMEN’S COMPENSATION ACT, 1923**

- Report of Fatal Accidents in Form-EE
- Deposit of Compensation for Fatal Accident in Form-A

❖ **MAIN FEATURES OF THE EMPLOYEES STATE INSURANCE ACT, 1948**

❖ **MAIN FEATURES OF THE EQUAL REMUNERATION ACT, 1976**

- Format of register to be maintained by Employer in Form-D

❖ **ROLES AND RESPONSIBILITY**

- Project managers
- Plant In Charge
- HR

50. ROAD / TRAFFIC SAFETY, MOVEMENT OF PERSONS & EQUIPMENTS

- PUC certificate is must inside the premises. (Along with copy of Registration Certificate).
- All drivers and operators driving/ operating any vehicle must valid driving license and must clear Medical test.
- Obey speed limit 25 km/h.
- Automatic Reverse Horn of sufficient audibility along with flash lights, horn and other safety gadgets should be in good working condition all the time.
- Passenger vehicles not permitted in construction area and fabrication yard.
- Do not park vehicle haphazardly



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- Four wheelers are available for transportation of workers/staff from main entry gate to site & site to entry gate.
- Some workers are also using cycle (single ride) for their own transportation in general shift.
- For movement of persons from one place to another 4-wheeler are using for long distance otherwise by walking.
- Separate procedure are available ((COMPANY NAME)/ CLIENT/HSP/04)

51. SITE SAFETY ACTIVITY:

To encourage & implement safety standard at site following site activities (Training, inspection, Audit, management walkthrough, safety committee meeting etc) planned.

SI No	Activity	Frequency	Responsibility	
1	Safety Induction	For all new comers	Safety Dept	
2	Site safety Observation	As & When found unsafe	All site personnel	
3	Tool box talk	Daily	All Department	(Safety Dept two days in week at G-shift)
4.	INTERNAL AUDIT	QUARTLY	HSE IN CHARGE/SITE INCHARGE	
5	Training	As per training calendar/As when required	As per scheduled	
6	HO AUDIT	HALF YEARLY	Corporate team	Audit report
7	Permit Audit	Daily	As per schedule	
8	Safety Walk through	monthly	HSE IN CHARGE/SITE INCHARGE	
9	Inspection	Frequency(Internal)		
10	Vehicle	Monthly	HSE Dept	
11	Full body Harness	Monthly	HSE Dept	
12	Ladder	Monthly	HSE Dept	
13	First-Aid Box	Monthly	HSE Dept	
14	RCCB	Monthly	Electrical	
15	Gas cutting set	Monthly	HSE Dept & Maintenance team	
16	Welding machine	Monthly	Electrical & HSE Jointly	



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17	Grinding/Drill machine	Monthly	Electrical & HSE Jointly	
18	Chain pulley block	Monthly	Maintenance Dept	
19	Store	Monthly	HSE Dept with Store In charge	
20	PPE Inspection	Monthly	HSE Dept	
21	Drinking water	Monthly	HR	
22	Cycle inspection	Monthly	Hse dept	

52.0 MAN POWER SELECTION CRITERIA

Job description of each category prepared for every department. Employees are hired according to job-description which are follows.

S.NO.	DESIGNATION	QUALIFICATION	EXPERIENCE IN YEAR	MEDICAL FITNESS	EYE SIGHT
1	SITE IN CHARGE (RCM)	GRADUATE IN TECHNICAL FIELD.	5 YEAR	FIT	NORMAL
2	SAFETY OFFICER	DIPLOMA/GRADUATION AND DIPLOMA in INDUSTRIAL SAFETY	4 YEAR	FIT	NORMAL
3	HR	GRADUATION	5 YEAR	FIT	NORMAL
4	TECHNICIAN	ITI OR DIPLOMA OR EXPERIENCED	2 YEAR OR 2 YEAR OR 4 YEAR	FIT	NORMAL
5	ELECTRICIAN	ITI OR DIPLOMA OR EXPERIENCED	2 YEAR OR 2 YEAR OR 4 YEAR	FIT	NORMAL
6	FITTER	ITI OR DIPLOMA OR EXPERIENCED	2 YEAR OR 2 YEAR OR 4 YEAR	FIT	NORMAL
7	WELDER	ITI OR DIPLOMA OR EXPERIENCED	2 YEAR OR 2 YEAR OR 4 YEAR	FIT	NORMAL
8	RIGGER	EXPERIENCED	2 YEAR OR 4 YEAR	FIT	NORMAL
9	Quality ENGINEER	DIPLOMA/GRADUATION IN TECHNICAL RELAVENT AREA.	2 YEAR	FIT	NORMAL



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10	HELPER/WORKER	READ AND WRITE	KNOWLEDGE OF WORK	FIT	NORMAL
11	STORE	GRADUATION OR +2	KNOWLEDGE OF WORK	FIT	NORMAL
12	GRINDER	EXPERIENCED	2 YEAR OR 4 YEAR	FIT	NORMAL

- ❖ Competency of all manpower should be checked before deployment at site (Interview through CLIENT before recruitment).
- ❖ Internal skill assessment is also carried out