Section23: Welfare facility

SR. NO.	DESCRIPTION	OBSERVATIONS BY AUDIT TEAM
23.1	Are the welfare related facilities as per factories act provided, not limited to following: -Canteen (Neat & Hygienic) -Drinking water facilities - Shelters for rest room - Toilet facilities(ladies/gents) -First Aid Boxes	
23.2	Does the system exist for review of basic amenities on the labour camps viz.: -Drinking -Washing facilities -Adequate carpet area for family members. -Protection from mosquitoes menace. -Clean to lets	
23.3	Are the first aid & rescue facilities available at each site like: -First aid boxes -Qualified first aider -Ambulance (s) -Visiting doctor	

Section24: General

SR. NO.	DESCRIPTION	OBSERVATIONS BY AUDIT TEAM
24.1	Does the system exist to encourage reporting of near miss, unsafe act & unsafe condition.	
24.2	Does the system exist for encouraging the house keeping at site?	
24.3	Whether any system is available for construction waste management?	
24.4	Are there adequate safety promotion displays at the site (i.e. posters, Banners, Signages, Slogans etc.)?	
24.5	Whether waste bins are provided at each site for collection & regular disposal of wastes.	
24.6	Is communication system adequate?	
24.7	Are road barriers being used for blocking any roads/passage?	
24.8	Has the structure been adequately secured against storm/high winds during construction/ erection?	
24.9	Are only proper clothes and not loose clothes being used while working around machinery?	
24.10	Is the speed limit for vehicles inside the plant duly notified & followed. Please mention speed limit.	
24.11	Does the system exist for checking of vehicles before their deployment at site and regular checking thereafter.	
24.12	Does the system exist for penalty in case of violation of safety norms.	
24.13	Whether all moving parts of equipment provided with safety guards	
24.14	Are the floor openings, service pits etc. always covered or protected by guard rails or equivalent system.	
24.15	Whether adequate covered area is provided at each site to Confirm smooth & safe working during unfavourable weather conditions. Please mention the ratio of total area Vs covered area.	

24.16	Whether separate area is earmarked for warehousing the combustible materials (i.e., diesel, lube oils etc.), with adequate fire extinguishing equipment. Are the statutory provisions complied?	
24.17	Whether Boundary wall / Barrication constructed surrounding the project area?	
24.18	Is access system available for contract workmen and employees?	
24.19	Whether motorable access road is available for all the sites?	
24.20	Whether fire and rescue tender is available?	
24.21	What type of security system available i.e., CCTV, security guards, Drone vigilance?	

WRITE A BRIEF ABOUT HSE PRACTICES OF YOUR SITE

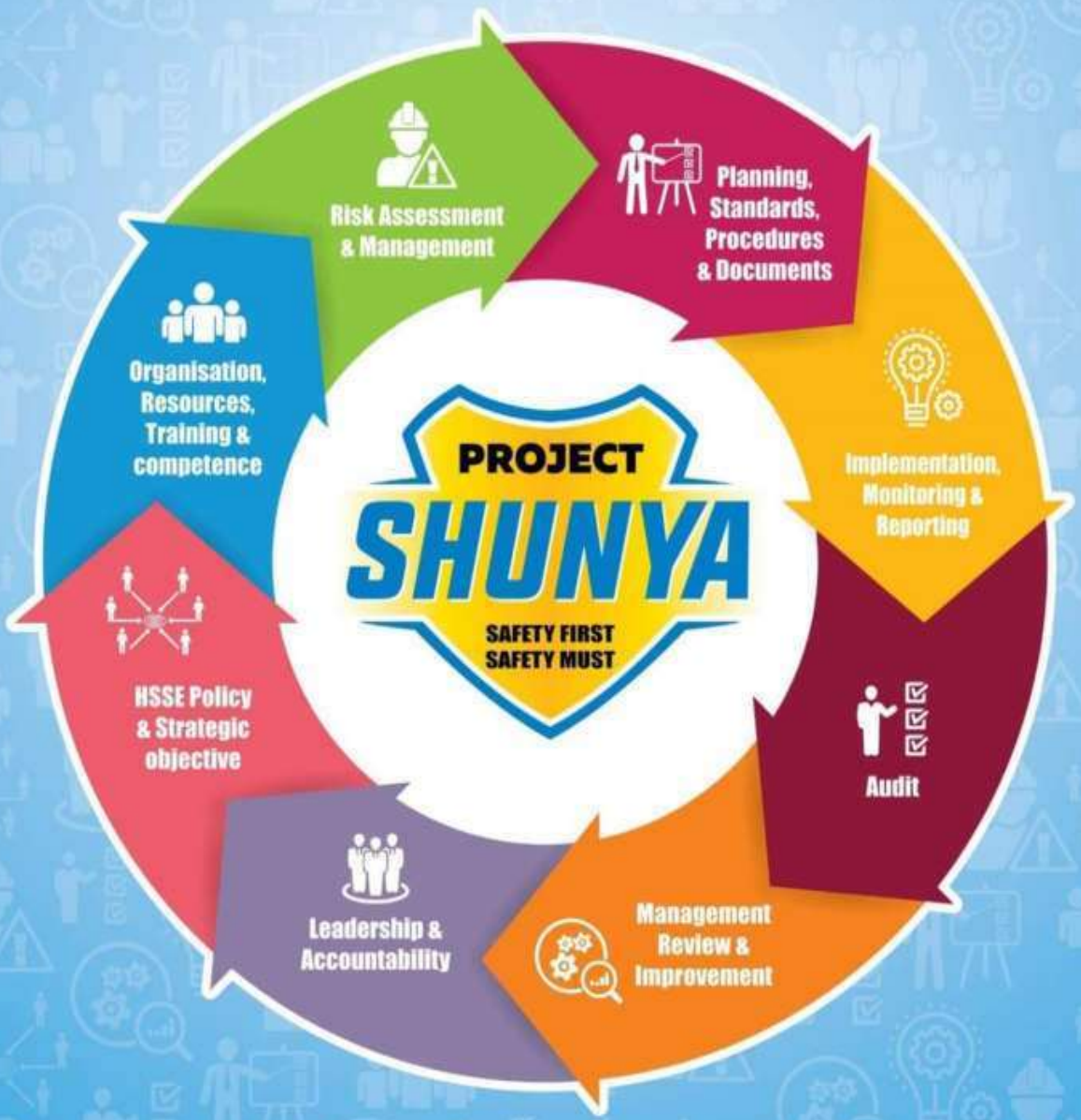
Bharat Petroleum

energising lives

BPCL CORPORATE SAFETY MANAGEMENT SYSTEM

Technical Standard on Project Safety Management

(BPCL /CSMS/TS/05)



Approved By	**ED,Corporate -HSSE**
Issued By	**GM, Corporate -HSSE**
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Corporate HSSE
Bharat Petroleum Corporation Limited
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Document History		
Date	**Revision Number**	**Change Summary**
01.04.2018	V-1	Initial Version

Contents

1.0 Purpose

BPCL has developed Corporate Safety Management System (CSMS) which defines specific requirements for managing OHS risks across its operations in accordance to its HSE policy and stakeholders expectations. The **Element 5 of Corporate Safety Management System : Planning, Standards and Procedures** requires that BUs establish project safety management plans and procedures to ensure safety during construction and commissioning of new installations or modernization/ expansion projects.

This Technical Standard outlines project safety management requirements,which should be integrated in all new (i.e. green field projects) as well as modernization or expansion projects (i.e. projects within or adjacent to existing locations/plants).

2.0 Applicability

This Techniacl Standard applies to Project Functions of respective Business Units and their project locations. **The scope of Tehnical Standard covers both i.e. new projects at greenfield locations and modernization/expansion projects within or adjacent to existing BPCL plant/location .** The project contracts includes here combination of all activities such as Construction, Erection, Modifications, Expansions, Maintenance, Demolishing, etc to be done within specific budget and time frame. These are typically managed by project function and can be a very large projects at times. The TS shall apply to all contractors/sub-contractors hat provide services solely to the Project.

The plan is to be implemented by the Contractors/ project management consultant, if applicable and its application will be monitored/ audited by BPCL.

3.0 References

BPCL HSE Policy
BPCL Corporate Safety Management System
BPCL Technical standard on Risk Assessment and Management
BPCL Technical standard on Contractors Safety Management (TS/01)
The Building and Other Construction Workers (Regulations of Employment and Conditions of Services) Act and State Rules as applicable to BPCL Project Site

4.0 Responsibilities

Corporate HSSE shall be responsible for training , communicating and monitoring of this technical standard in BU and their project locations.

BU- HSSE/ Location- HSSE shall be responsible for implementation of this technical standard at their project locations.

BPCL Project Leader responsibility shall include(but not limited to)

- Ensuring legal compliances related to project activities;
- Ensuring that tenders/bids for contracts contain sufficient information to enable an evaluation of the safety risk and control measures associated with the work activity;
- Ensuring a contractor pre-prequalification process is applied that evaluates the safety systems, capability and performance of companies prior to work commencing;
- Provide information relating to the hazards associated with project activities and the risk control measures designed to prevent injury and/or loss;
- Review , monitoring and enforcement of a documented project safety plan of EPC contractor;
- Establish a system for daily job safety planning, risk assessments, training, performance monitoring, auditing and inspection of contractor activities at the project location;

- Ensuring that workers get adequate instruction, information, training and supervision;
- Sharing good practices to promote continuous improvement in contractor and BPCL safety performance;
- Effective motivation and disciplinary policy.

Project Leader shall define the project management organizational structure , roles, responsibilities and accountabilities for all personnel who play a role implementing the Project Safety Management , including:

- Project Management Consultant, if applicable
- Area In-charges;
- BPCL HSSE Professionals;
- Human Resource
- Any other department under project
- Supervisors;
- Safety staffing of contractors

Refer **Appendix 1** for Guidance on Responsibilities.

5.0 Existing Applicable Laws

BU/ Locations shall ensure that their operations comply with all relevant Indian Environmental, Health and Safety laws and regulations and obtain statutory permissions/approvals prior to start of the work.

6.0 Project Safety Management

a. Contractors' safety Management is vital to prevent any accidents and incidents that have harmful impact on employees, the community, assets and the environment. This can be achieved by:

- Clear communication of BPCL's safety management system(SMS) requirements to Contractor(s)
- Verifying the gap(s) between the Contractor's SMS and BPCL's Requirements and
- Establishing and implementing Mechanism for monitoring and ensuring compliance of BPCL SMS requirements

b. Key areas for project safety management include but not limited to:

- Project team leadership and commitment
- Prequalification and selection of competent project contractor
- Communication of project specific safety requirements in contract documents
- Comprehensive project safety plan preparation by contractor or project management consultant and approval by BPCL project owner / owner's representative
- Pre-job meetings / Tool box talks
- Induction and specialized training
- Daily job plan
- supervisory safety responsibility
- Monitoring/supervision of critical tasks
- Daily equipment and work area inspections
- Active project safety committee
- Joint safety walks
- Method statement
- Safe equipment and tools
- Effective control and monitoring on alcohol and drug abuse policy
- Execution of the work &performance Monitoring
- Post contract evaluation
- Effective motivation and disciplinary policy

6.1. Management Commitment & Accountability

BPCL project team at all levels, is dedicated to assuring that its employees and others are provided a safe and healthy place to work on each of its projects and ensuring that the Zero Harm philosophy is executed. The management should take the lead and demonstrate commitment throughout the project by:

Treating safety management as a core value of the project and demonstrating leadership throughout the project.

Developing shared objectives and promoting team building between BPCL Project Management Team and Contractors organization's / Project Management Consultant.

- Providing adequate resources and competent safety professionals
- Visibly promoting safety in regular meetings and by doing regular safety walks /**Location** visits with their counterparts.
- Setting safety objectives and targets and by measuring and reviewing performance.

6.2. Pre-Qualifications & Selection of Project Contractors

a. BU/ Locations shall develop and maintain a process for pre-qualification and selection of project contractors relevant to their needs and demonstrate continual improvement of the same.

b. While selecting / pre-qualifying the contractors, consideration shall at least be given to:

A. Contractor's Past Safety Performance

a. Worker's Compensation Payout (last 3 years)
b. Number of Fatal Incidents (last 3 years)
c. Reportable Lost Time Injury Frequency Rates (last 3 years)
d. Pending court cases, if any

B. Safety Capabilities Assessment

a. Contractor's Company Safety Policy
b. Contractor's Company Safety Organization
c. Safety Management System Manual of the contractor
d. Hazard Identification & Risk Management Program
e. Accreditation (ISO 9001/ ISO 14001/ OHSAS 18001) / Performance Awards
f. 3rd Party / Client Audits Report of similar previous jobs undertaken by them

c. Contractors safety pre-qualification evaluations shall be performed by a team of designated officials from Contract Owners / Owners Representative; Procurement, HSSE, Finance etc. considering the other risks such as commercial etc.
d. Procurement / Owner department shall ensure the completion of any requirement, further highlighted by HSSE Staff before qualifying the contractor.
e. Once the contractor is qualified, his name shall be maintained in contract department's database of competent project contractors and their safety pre-qualifications information.

6.3. Communicating Project Specific Safety Requirements in Contract Documents

a. Locations shall determine project specific work specific safety requirements. These Project Specific Safety Requirements shall be communicated to all pre-qualified contractors in bid documents by contracting department.

The project specific work specific safety requirements, which may be included are (but not limited to):

- Valid Registration Letter issued by BPCL
- Contractor's Safety Organization specific to project

- Hazard Identification and Risk Management Procedures
- Applicable Risk Assessment Studies like HAZOP, HAZID etc.
- Project Safety Management Plan
- Method Statement(s)/(safe work procedure) for all hazardous or potentially jobs as defined by owner department.
- Any additional document/procedure/study as identified by BU/location.

Contracting department shall ensure that contractor submit all the applicable safety requirements as listed above. HSSE department shall be consulted if needed.

6.4. Project Safety Management Plan

Contractor shall submit a detailed Project Safety Management Plan in BU prescribed template. This shall be a comprehensive document defining safety management system for the project and shall be reviwed/approved by BPCL project owner/ representative, prior to start of the work (Refer **Appendix 2** for a sample Template for a Project Safety Management Plan) .

Note : BU/Location may not require a detailed Project Safety Management Plan as per Appendix 2 for a small or short term project. However, a shorter version of plan shall always be necessary to show that that the hazards are recognized and understood is likely to be adequate.

6.5. Project Safety Organization

The project safety organization shall vary according to size and complexity of projects. A typical project, however should include :

A. Chief Project HSSE Manager- HQ

B. Senior Project HSSE Managers- Region

C. Project Engineers

D Fire and Electrical Officer (as may be applicable)

E. Contractor's Safety Officers

F. Contractor's Safety Supervisors

6.6. Contractor's Safety Organization

Contractors must provide a nominated manager, supervisor or foreman with authority to give and receive safety instructions at project location as mentioned below.

- If a contractor is employing less than 30 employees, he shall designate one dedicated supervisors as a safey steward.
- For every 30 persons or more contractor shall appoint one qualified safety steward (diploma in industrial safety from recognized government institute). For more than one safety steward, one of them shall be appointed as Chief safety steward.
- In addition to above contractor shall also appoint one safety officer, if he employs more than 100 workers. Safety officer shall have Diploma in Industrial Safety or any equivalent qualification from Government Recognized Institute and minimum 2 years of experience. For more than one safety officer, one of them shall be appointed as Chief safety steward.

NOTE: BPCL shall reserve the right to prescribe the number and qualification of contractor's safety personnel.

Appendix 3 provides description of Contractor's Roles and Responsibilities. **Appendix 4** provides list of facilities /equipment for the contractor's safety function.

6.7. Inadequate Safety Personnel

In case if the contractor fails to provide the minimum required manpower or fail to fill up vacancies created within 30 days, the same shall be provided by BPCL at contractor's cost. Any administrative expenses involved providing the same like paper advertisement or manpower consultant charges, etc shall also be at the cost of contractor.

6.8. Approval of Safety Personnel from BPCL

The name of the nominated person(s) must be given to the BPCL Representative before work commences along with their educational qualification and training certificates. The Contractor shall be fully responsible for supervision of Contractor personnel to ensure that they strictly adhere to all applicable safety requirements. The Contractor shall provide, and fix in place, all caution and hazard notices required for the project location in accordance with the applicable laws in force and industry practice.

6.9. Subcontractors Control

The Contractor shall provide the BPCL Representative with the names of the Sub-Contractors and obtain approval to this Code of Practice prior to their engagement. Contractor shall ensure that the sub contractors shall also be governed by the requirements as applicable to them. The contractor shall ensure that the Sub-Contractors receive safety induction briefings. The Contractor shall regularly check the Sub-Contractors' compliance with safety requirements and be held accountable for their safety performance including requirement to use Personal Protective Equipment (PPE).

6.10. Kickoff Meeting

The contractor shall facilitate a formal safety kickoff meeting prior to commencement of Location works along with subcontractors and BPCL representative. The contractor shall inform the BPCL a minimum of seven (07) days in advance of these formal kickoff meetings and the BPCL.

6.11. Project Safety Committee

A project safety management committee shall be constituted with representation from senior management representation from the contractors, subcontractors (if permitted in contract).The meeting shall be held at least once per month and record maintained. The meeting shall be chaired by BPCL project manager and convened by Location HSSE Manager.

The large contractors/ sub-contractors may also be asked to constitute their own safety committees. will provide the BPCL the minutes of the same.

The outcome of pre job meeting shall be documented and record maintained.

6.12. Hazard Identification and Risk Assessment

The contractor shall ensure that a specific hazards are identified, which have the potential to cause harm in terms of human injury, ill health, damage to property or the environment, or a combination of these and risk is properly assessed, control measures are identified prior to start of work. The record shall be maintained at Location office.

6.13. Safety Instruction & Training

Project Leader shall establish safety training plan & procedures (example given below).

Training Profile Discipline: Scaffolder	Initial Training
Safety Orientation & BPCL HSE Policy, Life Saving Rules, Roles & Responsibilities, Incident Reporting, Emergency management, Project description, hazards & risks, Project Safety Management Plan etc.	Prior to starting work- All BPCL and Contractors Employee

Scaffolder Practical Assessment	Prior to starting work
New Start Orientation	Prior to starting work
Correct use of PPE	Prior to starting work
Safe use of Safety Harness and 100% Tie-Off	Prior to starting work
Working at Height & Dropped Object Controls	Prior to starting work
Toolbox Talk	Prior to starting work
Hazard Identification and Safety Intervention	Prior to starting work
JSP and Work Permit System	Prior to starting work
First Aid	As required
Worker Welfare Program	Prior to starting work
Environmental Awareness Program	Prior to starting work
Transport Safety Awareness	Prior to starting work
Safe Commissioning and Start up to concerned personnel	Prior to Commissioning and Start up

The contractor shall ensure that all personnel attend the Safety Induction Training / Instruction, Tool Box talks before they start to work on the project. The contractor's workman shall attend Refresher Training Periodically and shall take advantage of the various Safety training courses provided by BPCL.

A record of the Safety training undertaken by staff shall be maintained and available to Employers Representative on demand.

6.14. Daily Job Safety Plan

The Contractor Job Representative shall prepare daily job safety plan to identify specific tasks, their hazards and risks and control measures. This is a joint formal review of all tasks and to be documented. This shall be reviewed and approved by owner or his authorized representatives.

6.15. Safety Communication

The Table 1 below outline the indicative methods and schedule for Contractor Specific Health and Safety communication for processes identified for all employees.

Table 1 : Indicative Communication Workplace Schedule:

Communication Process	Schedule	Participants	Facilitator
Toolbox Meeting	Daily	Contractors and its subcontractors	Respective Contractors Supervisors in charge of work activities
Safety Meetings	As scheduled	Contractors	BPCL HSSE Manager
Project kick Off Meeting	Prior to project commencement or first day on-Location	BPCL Construction Team, Contractors and its subcontractors	BPCL HSSE Manager/ Contractors Safety Officers/ Stewards

Mass Tool Box Meeting	Weekly	BPCL Construction Team, Contractors and its subcontractors	BPCL Project Manager Contractor Front Line Supervision and Contractor safety stewards
Safety "Stand Down"	As and when required	Specific task group	Contractor project Manager / Contractor Construction Manager
Emergency drill exercise	Monthly	As per emergency response plan	Contractor Project Manager / Contractor Construction Manager

6.16. Toolbox Meetings and Mass Tool Box Meeting

Daily toolbox meetings shall be conducted prior to commencement of operations to raise the safety awareness of all project personnel- Meetings shall be carried out at the workface. Toolbox meetings shall comprise information of discussions concerning any inherent hazards associated with planned works as well as precautions that will be initiated. Topics for toolbox meetings shall include risk assessments conducted for work activities. Toolbox meetings shall be conducted at the common resting shed and designated Contractor personnel will provide assistance to Contractor Supervisors in the preparation and delivery of safety talks and other relevant matters. Refer **Appendix 5** for Guidance on Tool Box Talk.

Mass Tool Box Meetings will be conducted by BPCL Project Manager /Contractors to address workforce common issues, communicate corporative messages, and discuss Lesson Learns and / or safety programs new initiatives.

6.17. Monthly Location Walk Through

Contractors shall conduct Monthly Location Walk Troughs comprising Contractors Location Management and Safety Coordinators. BPCL project management and HSSE role holders will join these inspections on regular basis.

6.18. Safety Audits

Internal Project Safety Audits will be undertaken in accordance with the Project Safety Management Plan. Regional Project Head shall decide about the external safety audit from Indepdent third party agencies or BPCL auditors (other than Project) as may be required on case to case basis.

6.19. Safety Statistics

Contractors' safety statistics shall be gathered on a monthly basis and reported to the BPCL HSSE Manager. Contractors and its subcontractors shall provide details regarding their monthly statistics to BPCL for collation by the 5 th calendar day of every month. Monthly Statistics shall be communicated at a prominent place. Refer Appendix 6 for indicative safety statistics to be maintained at each BPCL project Location as minimum.

6.20. Project Safety Management Basic Rules

Refer **Appendix 7** for Project Safety Basic Rules.

6.21. Equipment and Machinery Safety

All plant and equipment intended to be used at the project contractors and its subcontractors shall conform to the manufacturer's specifications shall have a proof of adequate maintenance regime. In

addition to these requirements, Contractor shall comply with all regulatory authority standards for machinery guarding and warning devices shall be adhered to prior to the operation of the plant and or equipment on the project.

Contractor shall keep records of all inspections; third party certifications (when applicable) and maintenance activities inclusive of breakdowns shall be recorded using the logbook provided for the relevant item of plant.

All plant items shall be provided with a logbook that contains:

- Current copy of registration/certificate or licence, where applicable,
- Records of service,
- Operation manual,
- Daily pre-start inspection checklists (as applicable),Maintenance records for prior history and provision for future entries, and
- Mobilization inspection checklist completed by en appropriately qualified or competent person.
- Authorized operators record

Vehicle and Plant maintenance will be carried out to manufacturer's specifications and maintenance schedule.

Colour-coding and frequency of maintenance are to be indicated clearly in the maintenance regime of all equipment and machinery.

Unless all the required licenses required to operate any equipment are held by the operating employee and have obtained the necessary work permit approval, then that equipment will not be operated.

BPCL and Third parties will audit the inspection protocols and inspection records.

6.22. Pre-Start Inspections

Supervisors and operators shall ensure equipment and vehicles are inspected prior to operation each shift. The operator shall enter details of the inspection into the logbook or daily checklist of the person delegated to complete the inspection. All safety devices shall be operative and at all times used. All required certificates should be available, current and valid

6.23. Equipment and Machinery Inspection Register

Contractor construction team shall maintain a Plant and Equipment Register to systematically record each item of plant brought to the project location, which will determine inspection levels, registration details and logbook requirements. All safety devices shall be operative and at all times used as well as all required certificates, all required certificates should be available current and valid

BPCL Team and Third parties will audit the inspection protocols and inspection records

6.24. Lifting Machines (Cranes, Rigging, Lifting and Mobile platform)

The use of lifting machines in the project location shall abide by the following conditions:

- Current applicable regulation shall be complied with at all times.
- Lifting machines (i.e. cranes, piling machines) shall possess a valid Inspection Certificate and such certificate must be displayed on the machines.
- Contractor Project engineer and lifting supervisor shall inspect the lifting machines upon arrival at project location before being permitted to be used.
- A statutory competent person shall examine the lifting machines at least once in every 12 months. All required certificates should be available, current and valid.
- The Load Capacity Chart (manufacturer or certified by Authorized Examiner) shall be displayed on the lifting machines and understood by the operators.

- Lifting machines shall be marked with its safe working load (maximum and minimum radius)
- Lifting machines shall be used in accordance with manufacturer's operating instruction and/or the Authorized Examiner's instructions
- Lifting machines shall be provided with.

  -An adequate braking mechanism
  -A swing lock or swing brake capable of prevention of rotation;
  -A brake or other device adequate to bring the crane to a stop from any travel for which it is designed, together with a means of locking the crane so as to hold its stationary
  - a load and/or radius indicator with warning alarm
  -a load/radius table to be available in the crane cab of every variable radius jib crane
  -an automatic safe load indicator (Load Moment Indicator)
  -anti two blocking devices
  -crane hook with a safety catch to prevent displacement of the sling or load from the hook
  -an anemometer or a wind speed meter (for new cranes) for measuring wind force and velocity
- Lifting machines shall be examined by an Authorized Examiner after any major repair or any repair done on the hoisting or operating mechanism, boom jib and after over loading incident
- Excavators shall not be used for lifting operations.
- No lifting machine shall be operated unless all measures are taken to prevent toppling or overturning or contact with overhead obstruction (such as structure, power lines)
- When moving lifting machines, the boom shall be lowered and traffic controller/guide shall be required to guide the lifting machine operator.
- When lifting machines are reversing, an additional person shall be required to ensure that the path of travel is clear.
- Lifting machines cabin shall be locked when it is not attended by the operator. Unauthorized person(s) shall not be permitted to enter in the cabin or operate the crane.
- Fire extinguisher shall be provided in the lifting machines. Operator shall be trained to use fire extinguishers.
- Good housekeeping of the lifting machine shall be exercised and maintained.
- Safe access (with proper foot and hand holds/supports) to the cabin and deck of the lifting machines shall be provided and identified.
- Lifting machines shall be maintained to ensure that all components of the lifting and operating mechanism are in good, safe and sound functioning condition.
- A maintenance program shall be required and implemented effectively for the lifting machines and the maintenance records shall be kept in the cabin.
- The operator shall carry out daily inspection of the crane and testing of the safety devices In accordance to manufacturer's recommendations.
- The maintenance section of respective supplier shall inspect the lifting machines at least once every month.

6.25. Lifting Operations

- BPCL requires that all lifting to be executed as a minimum, under compliance with applicable regulations and approved code of practices.
- Contractors shall appoint trained and competent Lifting Supervisors Riggers, Signalman and Crane Operators In accordance to statutory requirements.
- Contractors shall also appoint a Responsible Person to coordinate lifting activities.
- Method statements, risk assessments and Work Permit System shall be implemented for all lifting operations.
- A Lifting Plan shall be established and implemented for all routine and non-routine operations.

- The Lifting Plan shall be submitted together with the Lifting Checklist prior to commencing lifting operations. Designated lifting points and the lifting path shall be drawn in the Lifting Plan .o The Lifting Plan shall also indicate the followings:
  - Location of lifting operation;
  - Description of lifting operation;
  - Weight of load;
  - Description of lifting equipment to be used;
  - Personnel involved in the lifting operation
- Appointed lifting supervisor shall also check and ensure that all safety provision are in place before the lifting operation is commenced with checklist(s) provided.
- The lifting operation area and other areas with potential hazard / danger must be cordoned off to prevent access for all unauthorized personnel. Only authorized persons and personnel involved in the lifting are allowed in the lifting operation area.
- The load shall be controlled by means of tag lines to prevent the load from turning, swaying or swinging.
- The crane operator/lifting machine operator shall be medically and physically fit for the job and possess the following qualifications.
  - valid crane operator license issued by Government department; and
  - certificate of competency for the type class/capacity of the crane.
- Contractors shall submit the respective documents and certificates on the above for verification to BPCL

6.26. Safe Work Procedures

The contractor shall develop and implement a safe system of work and procedure/ method statement at each Location. A copy of procedures shall be submitted to BPCL Representative prior to commencement of the work.

This shall include but not be limited to:

- BPCL 12 Life Saving Rules
- Safety Signage
- Hazard Identification and Risk Assessment Procedure
- General Safe System of Work
- Lay out, Housekeeping and Traffic
- Working at heights, ladders, Scaffold and Working Platform
- Use of electrical plant and hand tools
- Material Handling
- Heavy earth moving equipment
- Digging and Excavation
- Hot work
- Dust & Fumes
- Control of hazardous Substances
- Electrical hazards, especially in the connection of equipment supplied by BPCL, or their Subcontractors, to power sources provided by others
- Confined spaces (as applicable)
- Noise, Lighting, Heat Stress, Extreme whether
- Store & waste management
- Portable tools & equipment
- Induction Checklist Drugs and Alcohol
- Safe Lifting & Rigging Procedures
- Material Handling Equipment Operations Ladder Safety

- Portable Hand Tool / Power Tools Safety
- Personal Protective Equipment (Selection, Use & Maintenance)
- Waste Storage, segregation & disposal procedures
- Competency Criteria for High Risk Activities (Qualification / Experience / Training / Skills)

6.27. Scaffolding and Work Platforms

Erection, alteration and dismantling of any scaffold shall be carried out by a person holding the appropriate certificate of competency and under the direct supervision of a qualified scaffold supervisor. The use of scaffolds shall be governed by the IS codes.

6.28. Personal Protective Equipment (PPE)

PPE that shall be required for all personnel including visitors whilst they enter project Location. Areas where personal protective equipment is required to be worn shall be prominently displayed with signs. Instruction on the correct use and maintenance of personal protective equipment shall form part of the nominated training and toolbox sessions and reiterated through the pre-start meeting process. Contractors shall establish and implement a PPE maintenance programme.

The Contractor shall remove from the location any worker who consistently refuses to wear the appropriate personal protective equipment. The PPEs and safety appliances provided by the contractor shall be of the standard as prescribed by Bureau of Indian Standards (BIS) or equivalent standard.

All construction workers should be provided with high visibility Jackets with reflective tapes confirming to the requirement specified under BS EN 471: 1994. The contractor shall at all time maintain a minimum of 10% spare PPEs and safety appliances and maintain proper record. The standard PPE may include:

- High visibility Vests
- Fire Retardant Clothing (particular activities and designated areas)
- Portable gas detector (particular activities and designated areas)
- Toe Protection and steel capped safety footwear with ankle support
- Hearing protection (particular activities and designated areas)
- Respiratory protection (particular activities and designated areas)
- Hand Protection (particular activities and designated areas)
- Safety helmet with chinstrap
- Safety Goggles.
- Eye protection for grinding, welding and cutting, compressed air use and chemical interaction
- Full body harnesses attached to a shock absorbing device and with double lanyard ("Y" type)
- Life Jackets (designated area)

Safety Induction shall be used as a forum to advice on the general personal protective equipment.

6.29. Location Familiarization

Location familiarization is an essential part of the Location Safety arrangements. The contractor shall provide its employees a familiarization tour to their work area for their personnel prior to commencement of the work. This shall include:

- Boundary of work location.
- Authorized safe access / egress routes.
- Authorized walking Routes.
- Storage areas for various materials in particular where dangerous materials or substances are concerned.

- Location of key Personnel, e.g. BPCL Project Manager, HSSE office etc.
- Arrangements for sanitary conveniences and washing facilities.
- Location security arrangements.
- Identification of physical hazards associated with BPCL operational or other work activities.
- Assembly points during emergency.

6.30. Certificates of Competency

BPCL requires the Contractors to maintain a register with all statutory certificates of competence as their qualified personnel. These records shall be kept on Location for auditing purposes.

Where BPCL requires personnel to have certificates of competency to perform designated tasks, a record of the certificates will be taken at the time of employment or induction prior to employees being able to perform those tasks. The records shall be maintained in a register for Auditing purposes

Competency certificates shall be maintained for:

- Issuing work permits
- Conducting Electrical Work
- Scaffold work
- Lifting Operations / Safe Slinging & Rigging
- Crane / forklift operators
- Fire Fighting

6.31. Location Access Control and Traffic Management

Contractors shall manage the security at BPCL project premises. Security guards, traffic patrols, traffic wardens, heavy equipment escorting, vehicle access, warehouses, access and exit gates will be managed by Contractors under procedures and regulations agreed with BPCL Project Team Management.

Only authorized employees with a current and valid driver's license will be allowed to operate vehicles on the project. Contractors shall train all their drivers in defensive driving principles.

6.32. No Smoking Policy

BPCL follows No Smoking Policy at the work Location and same shall be practised at all its project locations. The cigarettes / bidis, lighters, match boxes etc. shall not be permitted to the project Location.

6.33. Drugs and Alcohol

The use, possession, distribution or sale of illegal drugs and controlled substances by any BPCL employee, visitors, contractors or sub-contractors and their employees while on BPCL premises or while performing services on the BPCL project Location is strictly prohibited. Breath analyzer test shall be conducted at the Location regularly.

6.34. Notices and Signs

Contractors shall display prominently relevant safety notices and signs in such a manner as to ensure personnel in the vicinity are made obviously aware of the potential hazard. Posters shall be utilized within amenities as a general reminder and changed on a regular basis to reduce familiarity. Signs shall be generated following Indian regulations.

6.35. Barricading and Shuttering

Barricades are designed to restrict access into work areas where hazardous conditions are prevalent. Shutters and roof supports are designed to protect access to trenches, tunnels, drains, sewers etc.

Contractors shall identify and adequately highlight potentially hazardous areas or processes and particular risky activities by displaying appropriate tag, warning sign and where deemed necessary, bunted off with fixed rail barricades. Contractor shall erect fixed temporary guardrails at entry points to areas requiring the removal of permanent guard railing or other means of fall protection, Other situations include:

Overhead Work

- Confined Space Entry;
- Scaffold erection and protection;
- Chemical and product spills;
- Traffic and pedestrian control;
- Blasting and charging situations;
- Excavation
- Hot work
- Painting
- Electrical equipment

6.36. Working at Heights

Working at heights may cause serious injuries or fatalities. It is therefore essential to ensure the following measures are taken by Contractors prior to commencing any work at height:

- Permit to work system shall be implemented for working at height
- Where work is performed/or lifted to heights greater than 2 metres above the ground, the potential drop zones must be cordoned off
- Pipe work and structures that could deflect falling objects will be considered when assessing the potential drop zone
- All work areas, walkways, platforms etc. elevated 2 meter or more, must be encompassed by an approved guard rail or rope
- All barriers such as guardrails, opening covers are adequately provided with warning signage must be to protect all workers and public from injury
- Tools and materials will be raised and lowered in secured containers
- When work is carried out at elevated levels, the area below must be cordoned off and warning signs must be posted up
- All openings in floors must be covered temporarily or securely fenced.
- Appropriate Personal Protective Equipment (PPEs) for fall arrest such as full body harnesses attached to a shock absorbing device and with double lanyard ("Y" type) shall be used for work at heights. It is to be used at height of 2 meters and above.

6.37. Housekeeping

Housekeeping shall be considered an extension of every activity on the project. Contractors shall ensure maintaining a high standard of housekeeping in the Project at all times. Contractors' supervisors shall be responsible for ensuring housekeeping inspections are conducted on a daily basis and corrective actions are taken accordingly. The areas within their control are to be maintained

in a tidy, safe condition, materials and equipment not in use are neatly stacked away from the work areas and clear of access ways and emergency exits.

Housekeeping shall be constantly monitored to ensure a safe and productive work environment. The following shall be complied at all times:

- Emergency exits, stairway, roadways, walkways and fire points must be identified and kept free of obstruction
- Place of work shall be kept free from any obstruction and from any substance likely to cause a person to slip, trip or fall
- Equipment for use or installation placed on Location and work area shall not cause any obstruction unless otherwise approved
- Wires, cables, and gas hoses shall not be laid across floors, steps, stairs, passages, gangways and means of access.
- Construction materials shall be stored or placed at demarcated areas, and stacked in a safe, stable and orderly manner
- Cleaning of offices canteens, and sanitary facilities shall be carried out daily on e routine basis
- All waste shall be categorized and disposed to designated containers, bins, or designated places only.
- Construction and engineering waste and scraps shall be collected and place into designated bins at the end of the work day
- Surplus waste civil material such as soil, stone etc. must be dumped at the designated dumping areas or remove from Location
- Mass housekeeping exercise shall be carried out once every week, and as and when
- Contractors Project Managers or HSSE personnel deemed necessary
- Chemicals shall be stored in a designated area and locked to prevent unauthorized usage

6.38. Hazardous Substances

Any material or substances that are or may be considered hazardous to Personnel or the environment shall be handled, stored, transported, used or applied according to:

- Manufacturer's Recommendations
- Statutory Requirements
- Contractor shall keep a register of all chemicals used in the Project. Contractor HSE Manager shall approve all chemicals to be used in the Project before they brought into Project premises. It is advisable for the Contractor to generate an Internal Chemical Approval and Control Procedure

6.39. Portable Electrical Power Tools and Equipment

- Earth Leakage Circuit Breakers (ELCB) ere standard devices to be used on project locations. Contractors shall use ELCBs when using portable tools and/or equipment. This ensures the maximum safety and protection for all personnel.
- All their tools shall be tagged and tested.
- Double adaptors and piggy-back plugs shall not be used.
- Electrical extension leads and cables shall be, where practical, kept off the floors or ground and be secured at a height by insulated hangers that does not interfere with or hinder the work area.
- Electrical cords, as much as possible, shall not be coiled when in use, they shall be inspected daily before they are used
- Electrical extension leads across pedestrian access ways / floors shall be adequately protected from damage and to reduce trip hazards.
- All equipment shall be visually inspected by the operator prior to use and by a licensed electrician on a three-monthly basis with details of the inspection being recorded in the "Electrical Inspection Register" and on the appropriate colour coded tag for the period.

Common types of power tools used are:

- Drills Rivet
- Grinders
- Guns
- Circular saws

6.40. Electrical work

- For all works that require the identification and control of electrical energy, an approved Log Out - Tag Out (LOTO) Procedure shall be utilized. Contractor shall ensure to generate and utilize a LOTO procedure to manage the intervention on electrical equipment. As minimum, this procedure shall include:
  - Selection and appointment of competent personnel
  - Roles and responsibilities
  - Training requirements
  - Approved tools
  - Safety devices and mechanisms
  - Communication protocols
  - Authorization protocols
  - Administration and physical controls
  - Precautionary measures
  - Maintenance and testing protocols
  - Consideration on simultaneous operations
- All pertinent personnel shall be trained, If energized equipment, installation, or electrical system must be intervened it shall be de energized and/or isolated prior to commencement of work on them by using the Log out Tag Out Procedure
- All practicable measures shall be taken to protect any person against the risk of electric shock arising from or in connection with the use of any electrical installation or equipment.
- Underground or concealed electrical power lines must be identified and marked prior to any work to be carried out onto the ground or wall.
- In work areas where the exact location of underground electric power lines is unknown, person using hand tools which may contact a line must be provided with insulated protective gloves and insulated protective footwear.
- All dangerous occurrences and electrical incidents shall be reported to the Contractors Project Manager and HSSE personnel immediately and followed by submission with an appropriate written report.
- Electrical installation and equipment shall be of good construction, sound material and free from defect.
- Electrical installation shall be performed, tested and checked by a Licensed Electrical person.
- Testing, inspection and maintenance on electrical installations shall be done by a licensed electrician.
- All temporary electrical in building and work location shall be provided with earth leakage circuit breakers (ELCB).
- All wiring shall be made of weatherproof types, properly insulated and provided with adequate mechanical protection.
- No bare wires or other unprotected conductors shall be located within 4 meters of any surface where employees may work or pass, unless completely guarded by a fence or other barrier.
- No person shall work in such proximity to any part of an electric power circuit that he may be in contact with in the course of his work unless he is protected against electric shock.
- Person shall be advised of the location of such lines, the hazards involved and the protective measures to be taken. No extension to the electrical wiring system shall be made without the Contractor Project Manager and HSE Manager approval.

- Underground and/or concealed cables shall be identified on Location layout drawings and other related drawings, and shall also be Identified with markers on location.
- All electrical , testing or alterations to any electrical equipment shall only be undertaken by a suitably licensed electrician.
- All electrical equipment including cables, leads or extension cords are to be examined and tested at regular intervals. The findings of these inspections are to be recorded and action taken for the repair, replacement or destruction of the damaged equipment after suitable approval has been granted.
- Switchboards shall be kept locked at all times. The key shall be secured in a safe place to prevent unauthorized access.
- Mobile portable lighting shall be inspected daily for broken switches, exposed or damaged wiring, blown bulbs and damage to trailer and trailer frame. Portable items which are damaged are to be tagged and the details of the damage recorded and then action taken for the repair, replacement or destruction of the damaged equipment after suitable approval has been granted.
- Conductors, switchgear and electrical apparatus is always regarded as being alive until it is proved to be dead by means of approved test lamps, suitable indication devices or voltmeters.
- All electrical equipment and tools are to be inspected by a Licensed Electrician on a monthly basis.

6.41. Working on or near Exposed Live Circuits and Equipment

When working on exposed Live Low Voltage Mains and Apparatus adequate precautions must be taken, otherwise may result in injury or death,

- Insulating mats and hose are to be used by Construction staff when working on or adjacent to exposed Live Low Voltage Mains and Apparatus. When insulating mats and hose are used to cover conductors or earthed metal, the mats and/or hose must be securely fixed to prevent displacement. Conductors and apparatus taken out of service must be proven" dead h by testing
- Precautions must be taken to ensure that the supply remains de-energized by Locking Out the main control switch and any other control points which are capable of restoring supply.
- "Danger" Notices are to be securely attached to the operating lever or push buttons so there is no risk of them becoming dislodged, or of an operator being able to restore power or operate the equipment whilst being unaware of the danger by doing so

6.42. Isolations

Electrical Isolations shall be co-ordinated via Local Electrical Authority, appointed Responsible Competent Person, HSSE appointed personnel and respective Supervisor.

Contractors will adopt its internal Isolation and Lockout procedure.

6.43. Lock-out & Tag-out of Equipment

A lock-out and tag-out procedure shall be in place for machinery or equipment at the Location for the purpose of inspection, maintenance, routine servicing, or repair. During this period, if the machinery or equipment is inadvertently activated or energized leading to a start-up, it is liable to cause bodily injury to any person who may be working on the machinery, by the sudden release of energy.

The lock-out & tag-out procedure is a set of procedures established for the following purposes:

- To ensure that all energy sources to the relevant part of the machinery / equipment, shall be isolated or disconnected.
- To prevent any interconnected part of the machinery / equipment from being inadvertently activated or energized.
- To implement for the inspection, cleaning, repair or maintenance of any plant, machinery or equipment

Note: The Contractor Log Out and Tag Out Procedure shall integrate all pertinent piping, mechanical, pre-commissioning, commissioning activities as well as communication and joint activities at battery limit form multiple contractors/service providers

6.44. Work Permit System

The intention of the permit to system is to control construction activities having the potential to result in personnel injury, property damage or environment impact.

Locations shall implement a Work Permit System to be applied during construction stage and communicate to contractors. The work permit system shall cover;

- Entry into confined spaces
- Work at Height
- Excavation
- Use of explosive devices
- Hot work
- Electrical work
- Radiography
- Piling work
- Demolition
- Lifting operations involving lifting machines and appliances
- Tunneling work
- Working at height where a person could fall more than 2 meters
- Any other high risk activities, as identified by risk assessment shall also be included It may extend into cold commissioning activities, which may require a Clearance Certificate.

6.45. Hot Work

"Hot Work" is any work activity which requires or involves open flames or any other sources of heat that could ignite flammable or combustible materials in the work area. Such work shall include but not be limited to, welding, burning, grinding, soldering etc. The following requirements shall be in place prior to commencing any hot work activity.

- A work permit system shell be implemented for hot work activities o An adequate number of dry powder fire extinguishers shall be located within close proximity to hot work areas
- A trained fire watchman shall be assigned to be positioned at the area where hot work is being carried out
- All Slags and sparks shall be contained within the work area. Fire blankets shall be used to contain the sparks, if required.

No hot work close to operating plant and in commissioning areas shall be done by Contractors without BPCL permission.

6.46. Welding

- Welding works shall comply with Indian Standard requirements. Only competent and authorized workers use welding and cutting equipment. Welders and fire watchers shall be competent in the operation of fire extinguishers, fire hoses and any other fighting equipment.
- No Welding and gas cutting close to operating plant and in commissioning areas shall be done by contractors without BPCL permission.
- Fumes and gases evolved shall be identified and exposure controlled. Welders and other persons in the vicinity shall be protected against exposure to ultra violet light and infra-red radiation emitted from the welding operation.
- Welding sets shall be in good condition, properly maintained and earthed.

- Terminals and live components shall be adequately protected.
- Cables shall be inspected to ensure the insulation is intact.
- Damaged cables or electrical holders shall be properly repaired or replaced
- Welders shall wear face mask, appropriate face shields and welder gauntlets during welding activities
- Only competent and authorized workers shall use welding equipment.
- Precautions shall be taken against exposure for welder and other personnel to ultraviolet radiation, fire, explosion, asphyxiation, or exposure to toxic gases, fumes or dust during welding activity.
- Adequate ventilation shall be furnished when working with welding equipment.
- Fire extinguisher/charged hoses/firefighting equipment must be provided at the welding work locations.
- Welders and fire watch personnel shall be competent in using the fire extinguisher/fire hoses/fire fighting equipment.
- Welding shields must be used to protect the eyes of nearby workers and visitors from ultraviolet exposure.
- Welders shall not wear metal rings, bracelets or necklaces during work as these might be heated by induced currents from the welding equipment.
- The welding equipment shall be checked for defects by the welder prior to usage:
- Damaged insulation on welding leads electrode holders and connections;
  - Faulty earth clamps and earth leads,
  - Torn insulation mats/cradles;
  - Worn or damaged hoses;
- Welding equipment shall be installed in such a manner that it can be continuously seen by the welder during welding activities.
- The welding equipment shall be placed at ground level only. The welding equipment shall not be placed in the path of falling sparks or in elevated structures.
- Diesel welding machines, generators and transformers must be protected by suitable covers for general protection.
- Such equipment must be turned off when not in use.
- Welding machines shall be inspected by a licensed electrician on a monthly basis
- Metal frames and casings of mains powered welding rectifiers, transformers and voltage regulators shall be earthed.
- Welding leads and return leads shall be well protected against mechanical damage.
- The earthing cable shall be attached to the work area as close as possible.
- The earthing cable shall not be attached to an existing installation or apparatus.
- Welding of the earthing cable is prohibited. No concrete reinforcing steel bar shall be used as earth point.
- The work piece shall be positively earthed, using a well-protected earthing wire connected at both ends by bolted lugs or secured by screwed clamps.
- Grounding to plant equipment pieces is prohibited.

6.47. Gas cutting

- Gas cutting shall comply with Indian Standard requirements.
- Gas cylinders shall be in good condition and free from corrosion
- Gas cylinders shall be properly colour-coded and individually identified
- Hoses shall be properly colour-coded to the internationally recognized standard for the gas being used, in good condition and fitted with hose connectors attached with permanent clips. Jubilee clips shall not be used

- A suitable non-return valve or any other similar device which prevents the backflow of gas shall be fitted in accordance with the manufacturer's instructions between each gas torch inlet and gas hose of every oxygen-fuel gas equipment.
- A flashback arrestor which stops flashbacks shall be fitted in accordance with the manufacturer's instructions at the pressure regulator outlet of each gas cylinder
- Gas cutting equipment must be inspected on a daily basis for leaks, damaged hoses, regulators and pressure gauges, etc, Defects must be reported.
- Suspected leaks may be confirmed with a soap solution. Equipment must be replaced if leak cannot be repaired
- There shall be a designated area for proper storage of cylinders. Cylinders shall not be left lying around, They must not be stored or used in a horizontal position, but must be secured in an upright position, Cylinders must not be taken into confined spaces for use or storage, and shall not be placed on scaffolds
- Cylinder storage area shall be well ventilated and away from heat source or direct sunlight, "No Naked Flame", II NO Smoking" and "Flammable" sign boards shall be displayed
- Cylinders must be handled with care and must not be misused. They must be properly shut off when not in use and safety cap must be fitted when being moved
- Cylinders must be placed in a cylinder cage or frame prior to lifting by crane. Manual lifting of cylinder should be minimized. Cylinders shall not be subjected to drop, knocks, and roll during handling
- Cylinders must be placed in trolleys. A bottle key shall be kept with cylinders in use. Cylinders not in use shall be fitted with a safety cap.
- Oxygen and fuel gas cylinders shall be kept separate with a minimum distance of 5m. Empty cylinders must be separated with full cylinders, and shall be marked "Empty" or 'Full"
- Gas cutting equipment, including hoses shall not cause obstruction. Hoses not in use must be coiled up and put in a safe place. Hoses should be supported off the ground
- Gas cutting equipment, including hoses must be removed from confined spaces and excavations during any break or at the end of the day

6.48. Hazardous Areas

- Hot work shall not be carried out in a hazardous area unless a hot work permit is issued.
- Before hot work in a hazardous area is performed, the Contractor and person(s) performing the hot work shall:
    - Provide suitable locations for equipment including emergency fire fighting equipment.
    - Consider any possible changes in circumstances during the hot work, which may render the area unsafe..
    - Ensure fire watchman and fire fighting equipment are available.
    - If required, fire blankets will be used to protect areas that could com**bu**st due to sparks
    - Issue hot work permit.
    - Ensure that when hot work is performed, welders will not work alone and shall be provided with assistance as considered necessary. One of the duties performed by the assistance shall be of trained fire watcher.
    - Ensure that on completion of the hot work, the permit has been signed off by the issuing officer.

6.49. Confined Spaces

All conditions, precautions, etc. as outlined in the Regulations and relevant code of practice shall be adhered to. In addition, the requirements as defined in Additional requirements are as follows:

- A competent Confined Space Assessor shall be engaged to closely monitor and supervise the safe work operations in the confined space. He shall be the assessor of the confined space where works are intended to be carried out
- The Confined Space Assessor shall test the atmosphere of a confined space prior to entry by any person into the confined space. The results, indicating the levels of oxygen content, flammable and toxic gases shall be recorded and attached to the work permit system.
- A copy of the approved work permit system shall be displayed at the entrance of the confined space.
- Atmospheric testing of the confined space shall be carried out prior to start of confined space works and subsequently at 6-hourly intervals if the work is continuous. The work permit system will be revoked if independent testing shows the confined space to be an unsafe hazardous environment Re-entry into the confined space shall only be allowed with the issuance of a new PTW
- Confined Space workers (entrants) shall have passed the BPCL approved Safety Orientation
- Confined space attendant(s) who have to communicate regularly with the entrants shall be trained in the same areas as the entrants He shall also be trained in rescue efforts so that he can coordinate rescue efforts in times of emergency. The attendant shall not leave his position at the outside entrance of the confined space at any time.
- Forced ventilation shall be provided at all times to a confined space when work activity is being carried out. The ventilation system would consist of a blower connected to flexible ducting. Only explosion proof blower shall be used for combustible atmospheres. The requirement and determination of equipment to be used and its set up while obey a Contractor Confined Space Assessor ventilation plan.
- Appropriate respiratory, breathing apparatus and proper PPE shall be provided to protect the entrants from inhaling contaminants in the confined space
- A retrieval system consisting of a retrieval line, body harness and a lifting device, or other suitable means shall be used by entrants who are authorized to enter into a confined space and tended at all times by the attendant.
- Illumination of not less than 50 lux shall be provided for access and passage into the confined space.
- All portable hand-held lightings provided in confined space shall be operated at an AC voltage not exceeding 55 volts between the conductor and earth or DC voltage not exceeding 1 10 volts
- Warning signs shall be displayed at or near every access point to warn persons of the existence of a confined space.
- A confined space entrant shall always wear a safety harness with a retractable lifeline, abrasion resistant gloves, protective non-slip footwear and safety helmets.
- A tripod or crane should be used to lower workers where possible.
- Breathable air cylinders to be used shall be properly certified and tested before each use
- If Air compressor will be used to supply breathable air, the compressor shall be for that purpose only and it should be provided with CO, moisture, temperature and oil in line monitor and deficiency alarms.

6.50. Excavation

Contractor shall authorize all excavation work by means of an excavation permit; it includes on-shore pile driving and soil testing. Proper checks, e.g. by hand excavated test holes, shell be made for the presence of underground cables or services before machine excavation work is authorized. Drawing checks are insufficient. On project locations within or adjacent to operating plants , all machine excavation shall be done with a dedicated and properly trained banksmen observing the actual soil cutting and removal. The following conditions shall be in place for excavation works:

- Excavations shall be barricaded with signs and shall have warning lights at night

- Excavations with a depth of more than 1.5 meters must be shored, sheet piled or sloped. Excavation more than 1.5 meters depth must have a barrier constructed from the edge of the excavation
- Materials shall be placed more than 1.5 meters away to prevent collapse. Vehicles shall not be parked near excavation areas ▪ Exposed cables or services shall be supported
- Exits points shall be provided
- Excavations shall be inspected by the supervisor daily before work start. Any shoring for excavation depth exceeding 4 metres shall be designed by a professional engineer
- Excavations and trenches more than 1.2 meters depth shall be considered as a confined space and subject to work permit control, both on existing operating and green field project locations
- A designated person who has completed adequate training in safety and health shall supervise the excavation works. He shall also carry out daily inspection of the excavated area before commencement of work, and after every rainstorm or other hazard occurrence
- Access ladders must be provided for excavation depth exceeding 1.2 meters and at least every 25 meters around the perimeter of all excavations
- Ground water must be pumped and kept out from the bottom of all excavations
- Gas cylinders must not permitted in any excavation
- Edge line of excavation, ropes, chains and other tripping hazards must be marked in order to be clearly visible during day or night
- Starter bars or other protruding objects must be covered or removed
- Personnel removing shoring after completion of work must not be at the bottom of the excavation
- Only a trained and competent excavator operator is allowed to operate the excavator. The excavator operator shall have completed a training course on the operation of excavators
- Excavation machinery must be positioned and operated in a manner that will not endanger any person involved in the excavation works
- No person shall be permitted to work or to be at vicinity where he may be struck or endangered by excavation machinery or by material dislodged by it or falling from it. A safe distance must be maintained between the excavator machine and any person(s) working near to that machine. Person(s) must be prevented from entering the safe operational envelope of the machine; if no-one is there than no-one can get injured.
- visible barrier shall be erected around the excavator to prevent person(s) from walking close to its operating envelope
- Excavations must be gas checked before any personnel enter if evidence of gaseous elements is suspected
- Excavators shall not be used for lifting purposes at any time
- Excavation machinery shall be subjected to daily inspection and regular maintenance

6.51. Security

Contractor shall include the provision of full-time security personnel to manage Security measures at the Location. These personnel form part of the Emergency Response Team (ERT) and assist in emergency evacuation of personnel. The security department shall take the following measures daily.

- Attendance record for all Location personnel including sub-contractors and visitors
- Issuing of visitor pass as per location procedure
- Vehicle movement record for all vehicles entering and leaving the Location
- Records for all incoming and outgoing machineries such as cranes, excavators, piling rigs, etc,
- Stop and conduct checks on all persons, their identities, and any items in their possessions, custody or control
- Declaration form by persons carrying personal phones, pagers, walkie-talkies
- Control and management of unauthorized parking at Location premises

- Location patrol
- Support the Contractor Drug & Alcohol Monitoring and testing Procedure
- Support Contractor Management in handling cases of workers involved in misconduct /violations at the project location.

6.52. Location traffic & Transport of Material

Contractors shall ensure the following conditions are in place for transportation of materials:

- All vehicles must be roadworthy and conform to local legal requirements.
- Inspection and maintenance of all vehicles and construction equipment before mobilization on Location. Periodic maintenance to be conducted after mobilization on-Location. All vehicles must be wellmaintained, and exhaust emissions must be clean, with no visible black smoke. All safety features/devices shall be fully operative at all times.
- Risk assessment on the 'transport of materials to include as a minimum: loading, securing, unloading of materials, escorting heavy loads, escorting loads in complicated/congested routes, use of banksmen and spotters as needed, peak hour mobilizations, pre-checks of heavy loads routes and areas impacted by inclement weather.
- Training and authorization of drivers of all classes of vehicles and construction equipment. Contractors must ensure that only licensed and authorised personnel are allowed to drive
- Designating Location personnel to act as traffic controllers. Traffic controllers to be briefed on roles and responsibilities.
- Demarcation of areas on-Location where traffic is allowed to be made known to all Location personnel and visitors. Contractors must erect barricades and install signs to separate pedestrians from vehicles. Particular attention must be paid at entrances to the Location.
- Reverse sensors to be fitted on all vehicles where practicable. In the event where fitting of the sensors are impractical, traffic controllers should be deployed.
- Seat belts are compulsory for the drivers and passengers of all classes of vehicles.
- Vehicles must be parked at a designated car park and shall not block access or emergency points
- Traffic management will be coordinated through the BPCL project manager.
- Only authorised routes must be used to and from the Location- Mobilization route drawings must be communicated and update accordingly.

6.53. Piling

Contractor shall carry out Piling operations shall be carried out, as a minimum, in accordance with the following requirements:

- Method statements risk assessments and emergency procedure for piling works
- Structure adequately supported by sheet piling or other means of shoring in accordance with the design of a professional engineer (PE)
- Contractors shall assign an area for pile preparation at a safe distance away from the piling zone
- To determine the piling machine's safe working area/access on Location during operation/movement based on type of machine operated and the ground load bearing capacity e Provision of suitable PPE to protect rig operators and workers from falling objects, noise, etc, Inspection of the piling machine daily prior to start work. Ensure all safety mechanism/devices are well known by involved personnel and are in good working condition
- Submit the Work Permit for piling prior to work commencement and proceed work subject to approval from the Project Manager
- Suitable footing such as steel plate and hard core to be provided if piling rig is to be driven on soft ground
- Only trained and competent persons to operate piling machines With valid LM certificates
- Bored holes to be properly barricaded and/or effectively covered.

- The piling machine shall be subjected to regular inspection and maintenance regime programme. It shall have updated and valid certification.

6.54. Demolition

Contractor shall perform demolition work in accordance with the following requirements:

- Method statements and risk assessments for demolition work shall include exposure to hazardous chemicals such as dust and toxic chemicals
- De-energize all electrical supply prior to commencement of demolition works
- Protection of adjacent structures against premature collapse
- Disposal of all types of waste in accordance to local authority requirements
- Demarcation for no-entry zones to prevent unauthorized entry into the structure being demolished.
- Appropriate PPE requirements such as safety harnesses, anchoring points, respirators, etc.

6.55. Commissioning

It is vital to mobilize commissioning managers and other key persons early, and to maintain continuity of people, planning and work processes from construction through cold commissioning to hot commissioning to start-up. Cold commissioning involves cleaning and functional testing of utility and process systems without the introduction of nitrogen and hydrocarbons. Hot commissioning involves introduction of hydrocarbons or other process materials for testing purposes and the functional testing of all remaining utility and process systems. During commissioning, BPCL work permit system will be used.

6.56. Environmental Management

BPCL Project team should audit the implementation of adequate environmental protection plan, procedures, protocols and actions.

Environmental management shall include the following.

- Waste management
- Chemicals management
  - Fugitive dust controls
- Noise and vibration controls
- Traffic management ensuring "clean wheel policy"
- Reinstatement of land after temporary works
- Vector controls (e.g. by dewatering, water treatment, use of water-based spraying of mosquitoes instead of thermal fogging, others)
- Rodent and pest controls
  Hygiene controls of office f and warehouse facilities and canteens
- Waste and spoil management to include hazardous waste (e.g. keeping a list of hazardous substances used and SDS, keeping a list and utilizing approved waste collectors, implementing programs to minimize waste by programme for recycling, reusing and recovering, others)Reporting of environmental incidents
- Training on environmental principles end procedures
- Effluent discharge controls
- Pollution prevention training
- Complying with all Pollution Control Board requirements
- Taking timely and adequate actions to resolve any potential audit observation

6.57. Waste Management

All Contractors shall take provision for proper disposal of general and industrial waste at the Location. Collection of garbage and industrial waste should be conducted on a regular basis. Waste should be segregated based on the different types such as metal, wood, food, hazardous and general waste. General guidelines on disposal of waste should include the following.

Hazardous waste to be disposed in separate containers and clearly labelled. Contractors should engage a licensed industrial waste collector to dispose all hazardous waste. Hazardous waste includes waste generated from clinics such as

- Signs are to be placed at designated areas for the storage of waste bins or containers
- Batteries should be segregated and subsequently disposed in a safe and controlled manner
- Only approved contractors should be engaged for the recycling of scrap metal.
- Chemical containers and drums should be reused if still in good condition
- Disposal of garbage shall meet local legislative requirements and public health standards. Solid waste management shall be managed by the collection of refuse by licensed general waste collectors
- There shall not be any overloading or spillage of construction wastes from skips
- Refuse bins shall be properly covered
- Organic food wastes and construction wastes must not be stored together and shall be removed daily
- Waste/used oil shall be properly collected and sent to a pollution control board licensed collector/agency.
- dressings, swabs, used syringes, needles, cartridges, medicines, tablet and other chemical waste used in OHS centre.

6.58. Air Pollution Control by Contractors

- Lorries and vehicles carrying construction materials must be properly and adequately covered
- There shall not be any emission of dark smoke from construction equipment and machinery
- Open burning of construction waste is strictly prohibited.
- Dust preventive measures such as water sprinklers/spray, shielding, netting, covers/hoarding for aggregate/sand stores shall be provided and maintained.

6.59. Noise Pollution Control by Contractors

- DG sets at Location shall be with acoustic enclosure.
- Regular maintenance shall be carried out for all equipment and machinery to prevent excessive noise emission
- Noise monitoring activities may be needed/required on particular cases.

6.60. Toilet & Washing facilities by Contractors

Sufficient toilet and washing facilities at the Location office shall include the following facilities:

- Wash basins and showers shall be provided with hot and cold water, with soap and paper towels, continuous roller type towels or hand dryers
- Continuous supply of water should be provided at all times
- Toilet and washing facilities shall be kept clean and in working order
- Floors, walls, ceilings and fittings in the facilities should be of a finish that can be cleaned easily
- Waste water should be connected to a disposal drain and discharged to a drain

6.61. Canteen& Food Hygiene

Contractors shall maintain a high level of food hygiene at the Location. The necessary steps are to be taken to prevent food contamination that may lead to case(s) of food poisoning:

- Provision of a designated area for consumption of food away from the Location.
- All Location personnel are to be briefed on good hygiene habits prior to consumption of food.
- Consumption of food at any other area other than the designated area should be strictly prohibited.
- Only food catering operators that are licensed are allowed to deliver food to the Location.
- Food handlers shall wear gloves or use tongs or other suitable implements when handling ready-to-eat or cooked food

6.62. Drinking Water

Contractors shall ensure the availability of sufficient potable drinking water for all personnel at the Location. Drinking water standards should meet WHO quality standards. Provision of potable drinking water and water stations shall also meet the following requirements:

- The stations for the drinking water and potable water tanks are to be labeled "Drinking Water" to differentiate from water used for industrial purposes
- Drinking water stations are to be indicated on the general Location layout plan to inform all personnel.

6.63. Lighting

Contractors shall provide sufficient and suitable lighting at every part of the Location as well as in the office. The requirements shall conform to the requirements stated in National building Code/OISD codes.

- General lighting requirements shall be as follows:
- Minimum 50 lux — for passageways, corridors and stairways
- Minimum 100 lux — for store rooms, toilets and wash rooms
- Minimum 200 lux -- moderate discrimination of detail required (eg. rough bench and machine work)
- Minimum 300 lux - close discrimination of detail required (eg. medium bench and machine work)
- Emergency lighting shall also be provided in the event of a power failure affecting the general lighting.

6.64. Health Monitoring

Health surveillance will be provided for staff where there is a legislative requirement or for staff who have been identified as having exposure to hazardous substances and the exposure to the hazardous substance is such that it is likely that an adverse effect on the staff's health may occur under the particular conditions of the work.

6.65. Procedures, Records Storage

BPCL HSSE procedures will be used as reference for Contractors compliance during the Construction Stage. Stringent of the two shall be complied with. Contractors Procedures will be aligned with BPCL Procedures. BPCL HSSE procedures will be fully in use during the commissioning stage,

Contractors shall ensure that the following records are obtained and kept on file:

- Insurance details for each contractor including Workers Compensation and Public Liability;
- Licenses and Permits
- Drivers license (motor vehicle and plant);
- Electrical contractors license;
- Crane drivers, signalmen, riggers, etc;

Contractors shall ensure that as a minimum the following documentation is maintained on the project:

- Details of HSSE training (external & In-house) and induction records, attendance records;
- Hot Work Permits and Confined Space permits; •Records of all accidents and near misses;

- Details of all inspections, hazard/risk assessments;
- Copies of all Health & Safety reports

6.66. Emergency Response Plan (ERP)

Location shall develop and implement a comprehensive Emergency Response Plan to be used during the construction and commissioning phase. Communication with external authorities and Emergency Response Organizations shall be clearly defined.

A copy of the up-to-date Emergency Preparedness and Response Plan for each Area shall be made available as guide of the Emergency Response Team (ERT).

Specific high risk activities that require potentially complex rescues e.g. Confined Space within confined space or confined space requiring ventilation entry into a vessel loaded with trays or activities conduct from particularly high structures, such as flares, will be requires to have "Stand By" rescue personnel.

Locations shall ensure that contractors properly communicate the Emergency Respond Plan to their all personnel. Contractors will be responsible to ensure safety of all their supplier and short term service personnel and escort them at all time on Location.

All visitors and personnel entering the work Location shall be provided with instructions in what action to take in the event of a potential emergency situation. Key subject areas will be.

- Locations of medical facilities
- Overview of emergency plan and procedures
- Potential emergency threats on project
- Action to take in the event of an emergency
- Emergency notification alarms and their location
- Location of " Assembly Area"
- Action to be taken at a " Assembly Area"
- Medical Emergency response requirements
- First aid requirements
- Emergency Telephone numbers

6.67. Emergency Alarm System

Locations shall evaluate the need to install alarm systems. This could consist of the following.

- Gas Detection Alarm Systems
- Office Building Alarm System

6.68. Medical Facilities

Location shall maintain an OHS centre, equipped ambulance and first aid boxes at project Location as per the Building and Construction Workers Rules as applicable . Any project location more than 500 workers shall have one fully equipped ambulance van.

6.69. Incidents and Near Misses Reporting and Investigation

All accidents and dangerous occurrences shall be reported/ recorded as per BPCL IRIS system, regardless of whether or not personnel injury occurs.

- Fatal accident
- Lost Time Injury accident
- Dangerous occurrence
- Any incident involving a member of the public
- Near Misses

BPCL shall conduct in-depth investigations into all fatal accidents, Lost Time injury, accidents, incidents involving a member of the public, dangerous occurrences. Copies of these investigations shall be forwarded to the contractor Representative.

6.70. Dangerous occurrence Reporting

- Bursting of a revolving vessel, wheel, and grindstone or grinding wheel moved by mechanical power.
- Collapse or failure of a crane, derrick, winch or other appliance used in raising or lowering persons or goods or any part thereof (except the breakage of chain or rope slings), or the overturning of the crane;
- Explosion or fire causing damage to the structure of any room or place in which persons are employed, or to any machine or plant, resulting in the complete suspension of ordinary work.
- Electrical short circuit or failure of electrical machinery, plant or apparatus, attended by explosion or fire, causing structural damage involving its stoppage or disuse.
- Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression of gas.
- Collapse in whole or part from any cause whatsoever of any roof, wall, floor, structure or foundation forming part of the construction Location in which persons are employed.
- Total or partial collapse of any overburden, face tip or embankment on the construction Location.
- The overturning of, or collision with any object by any bulldozer, dumper, excavator, grader, lorry or shovel loader, or any mobile machine used for the handling of any substance on the construction Location.

6.71. Reporting of Fires to BPCL

The contractor shall report to the BPCL Representative all fires which occur on Location including any fires that have been extinguished by the contractor, and the Employers Representative may send staff to investigate such fires. The following information shall be provided:

- Time of fire;
- Location of fire;
- Means of extinguishing fire;
- Injury to any person / damage to any property; and
- The probable cause of fire.

6.72. Monthly Safety Submittal to the BPCL

The contractor shall submit following monthly reports to BPCL (but not limited to)

- Monthly report of total number of workmen.
- Total Man hours worked
- Number of LTI incidents
- Minutes of Location safety committee Meeting.
- Safety Inspection report
- Electrical Inspection Report
- Scaffold Inspection Report
- Crane Inspection Report
- Any potential concern

6.73. Safety Record to be maintained by contractor

The contractor shall submit following monthly reports to BPCL (but not limited to)

- Accident / Incident / Dangerous Occurrence report form.

- Accident Statistic – Monthly report form.
- Contractors Monthly Safety report.
- Work permit records
- Risk Assessment worksheet.
- Safety Training Attendance record.
- Weekly Fire Fighting Equipment checklist.
- Electrical Inspection Report
- Scaffold Inspection Report
- Crane Inspection Report

6.74. Safety Inspections

Contractor shall establish following schedule of inspections as a minimum at each project Location and submit inspection checklist

Inspection Category	Inspection Type	Periodicity
Planned General Inspection	Contractor and subcontractor Location safety committee	Monthly
	Daily safety inspection by contractor Location safety Team	Daily
Routine Inspection	Inspection of equipment	Daily
Special inspection	As per equipment manufacturer's manual (scaffold, crane, HEMM, Electrical etc.)	----

6.75. Safety Recognition

Locations shall develop and implement recognition scheme to recognize outstanding safety performance of workers, supervisors and subcontractors. This recognition shall l be given out on a monthly basis.

BU/ Locations may award contractors who have performed well in best safety practices and achieved "Zero harm to People and Assets Incident" target.

7.0 Review

Corporate HSSE shall review this technical standard once in 2 years and need based in consultation with BU HSSE Role Holders.

8.0 Definitions

Project	A project, by definition, is a temporary activity with a starting date, scope, specific goals and conditions, defined responsibilities, a budget, a planning, fixed end date, parties involved. It means here a EPC project related to construction and commissioning of a new installation at a new Location or expansion / modernization of existing installation at the existing Location. The project work activities may include but not limited to activities related to Construction, Erection, Modifications, Expansions, Maintenance, Demolishing, etc.
Project Safety Management Plan	A comprehensive document defining entire safety management system for the proposed activities. This shall be submitted by contractors in BU prescribed template and shall be approved by project owner/his representative prior to start of the work.
Project Locations	It includes A. New projects such as greenfield Locations as well as B. Projects within or adjacent to existing installation/plant (but separated by a fence with an independent access control. In case of project work , within or adjacent to existing installation/plan , prior work permit shall be required.

9.0 Abbreviations

API	American Petroleum Institute
ANSI	American National Standard Institute
ALARP	As Low As Reasonably Practicable
BPCL	Bharat Petroleum Corporation Limited
BU	Business Unit
EPC	Eraction, Procurement and Commissioning
FEED	Front-End Engineering Design
HSSE	Health, Safety, Security , Environment
HAZOP	Hazard and Operability Analysis
HIRA	Hazard Identification and Risk Assessment
IRIS	Incident Reporting and Investigation System
ISO	International Organization for Standardization
IS	Indian Standards
JSP	Job Safety Plan
OISD	Oil Industry Safety Directorate

RLTIFR	Reportable Lost Time Injury Frequency Rate
OHSA	Occupational Health and Safety
P & ID	Piping & Instrument Diagram
PSP	Project Safety Plan
QRA	Quantitative Risk Assessment
SWP	Safe Work Procedure / Standard Operation Procedure
TS	Technical Standard
WPS	Work permit system

Appendix 1 : Project Personnel Responsibilities

BPCL Project Leader : Specific Responsibilities may include:

- Ensure Project Safety Management Plan is developed and implemented for the project and actively promote safety via personal example and supervision.
- Ensure the allocation of adequate resources for implementation of the Project Safety Management Plan
- Promote the reporting of all incidents (including non-injury) by all employees
- Ensure an audit plan is in place to monitor the compliance and effectiveness of the Project Safety Management Plan
- Endorsement of the BPCL HSSE Policy

BPCL Project Engineers

Specific Responsibilities may include.

- Ensure the effective communication of the Project Safety Management Plan to all employees, Contractors and its subcontractors
- Ensure the Project Safety Management plan as documented is implemented and to actively promote via personal example and supervision
- Familiarization and compliance of legislation as applied to the project
- To ensure safety training and induction programme are formulated and exercised to all employees, Contractors and its subcontractors
- Promote a recognition Scheme for personnel and Contractors with outstanding safety performance
- Promote a safety accountability scheme to deal with personnel with under expectation safety performance
- Promote the reporting of all incidents (including non-injury) by all employees.
- Ensure that the Contractors and their subcontractors have undertaken their Health and Safety obligations
- Undergo necessary safety training and induction of each construction Location

BPCL Project HSSE Role Holders

- Daily job planning with contractors job representatives
- Audit / inspection the implementation of the BPCL Location Project Safety Management Plan as defined herein.
- Liaison with Contractors' safety personnel and line managers.
- Audit Contractor Line Management implementation of the Project Safety Management Plan
- Participate inspections of the work areas with Contractors Management
- Advise supervisory staff and employees in the implementation of strategies to identify and control potential hazards.
- Liaise with Contractor's Safety Role Holders to request to the Contractors action plans for safety performance improvement as needed
- Audit Contractors equipment and machinery inspection process
- Audit Contractors' Hazardous Materials storage and controls
- Conduct internal safety training

- Participate in safety meetings, including the Project Safety Committee Meetings
- Incident recordings and investigations
- Safety discipline

Appendix 2: Sample Template for Project Safety Management Plan

Project Details:

CLIENT/COMPANY	
PROJECT	

Prepared by:

Reviwed by:

Approved by:

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12	Selection , Control & evaluation of Sub contractor	
13	Issuing I Card & Maintaining Register of workman	
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17	Pre start up meeting	
18	List of Safe Work Procedure to be maintained at Location	
19	Hazard Reporting & Rectification Procedure	
20	Work Permit Systems	
21	Lockout & Tag out followed, if yes details	
22	Details of Persons Having "Certificate of Competency" on high risk activities including: • Work permit issuer • Electrical work • Operators- Crane, Hydra / Derrick • Drivers • Slinging & Rigging • Scaffold • Any other Note : Provide copies of certificates of competent persons	
23	a. Contractor's Safety Training , Promotion & Recognition b. Induction Training to project managers / officers/ supervisors (Prior to start the work) c. Induction Training to contractors (Prior to start the work) d. Training plan and agenda e. Competency assessment training f. Safety Internal auditor training g. Mandatory Safety Training to selected employees/	

	workmen (Firefighting / First aid / Emergency drill) h. Safety Intranet i. Quarterly Safety Campaign j. Safety Signage k. List of Days to be celebrated l. Safety Rewards	
24	**Contractor's Safety Inspection System** a. Management Walk b. Daily Safety inspection by SAFETY Representative c. Daily Safety Inspection by contractor Safety Officer d. Scaffolding & Platform inspection (weekly) e. Lifting machines / tools inspection by Competent Authority –Annually f. Lifting appliances (Quarterly) – Inspection & color coding g. Electrical safety inspection – Monthly h. Heavy Earth moving machineries	
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Appendix 3: Contractors Roles & Responsibilities

Contractor's Project Manager

The contractor's Manager has overall responsibility for the development and implementation of appropriate Location Managing and Health and Safety Standards of BPCL. He shall also keep all team members of their responsibilities, current, new and amended statutory requirements.

The contractor's representative shall inform the name of Location Manager to BPCL at least 3 weeks prior to commencement of work. He shall work closely with BPCL Project manager and BPCL Location Safety officer.

Contractor's Managers/ Supervisors

All managers / supervisors employed by the contractor shall conform to the following requirements:

i. The understanding and acceptance of their responsibilities under the BPCL health and Safety Policies and current Indian Health and Safety Legislation.

ii. Make themselves fully conversant with the contents of this document copy and operate within all legal and BPCL requirements applicable to the project location. This requires the continual and regular checking of these requirements in actual practice and taking any necessary corrective action.

iii. Ensuring that all newly engaged or transferred personnel under their control are made fully aware of any known hazards or processes within the project location and the preventative measures to be taken or provided to reduce the risk to personnel.

iv. Ensuring that all employees, including Supervisors, are properly trained for the specific tasks allotted to them. That all newly engaged and transferred employees receive the Health and Safety induction training prior to commencing work at the project location, and that they receive on the job training in health and Safety matters.

v. Ensuring that all personnel under their control are made fully aware of the emergency and evacuation procedures and that the locations of firefighting equipment, alarms, emergency doors and exit routes and assembly areas are pointed out to them.

vi. Making sure that all plant, tools and equipment at the location are maintained in a condition that is safe to use, that all the necessary Safety equipment is readily available, issued, used and maintained and that there is a safe means of access and egress to and from the work location at all times.

vii. Ensuring that the entire relevant safe operating procedures and systems of work instructions are generated, made known to all respective personnel and strictly adhered to. This includes the continual review of these procedures and instructions in practice and discussions with the employees concerned to ensure that they are workable and understood.

viii. Ensuring that all personnel under their control are adequately trained and capable of carrying out their duties correctly and safely, and that no newly engaged or transferred employees are required to undertake any task without the appropriate training, instruction and supervision.

ix. Knowing and thoroughly implementing the accident and incident reporting investigation procedure and taking prompt remedial action to prevent recurrences.

x. Assisting BPCL on investigations, complying with instructions given by him, and co-operating on areas recommended for improvement.

xi. Demonstrating a personal interest in the health, Safety and welfare of personnel, applying a good standard of housekeeping within the work location and encouraging a positive response from other personnel by showing a high standard of self-discipline in respect of health and Safety.

xii. Maintaining a high standard of health and Safety at project location by the day to day Safety training, no matter how small the requirement, by individual instructions, as necessary.

xiii. Assisting the BPCL Representative on work location inspections and taking action any recommendations made, provided they are able to do so. Ensuring that in the event that any matter raised be unresolved, even with the facilities available to them, they refer the issue to the location Incharge/ Head.

xiv. Where new plant, equipment, process or changes are to be implemented within the work area, they are to make BPCL Representative(s) aware of the details and the potential effect such plant / equipment / practices are likely to have on the health and Safety of personnel in the work area.

xv. Seek the advice of the Location Incharge on matters of health and Safety, protective equipment, clothing, systems of work and procedures wherever any doubt exists.

xvi. Determine the requirements for protective equipment or clothing for operations and processes and requisition the same from stores and issue same to those requiring use of such equipment.

xvii. Notify their immediate superior of any defective, damaged or missing guards on machinery or plant and request that the matter be dealt with immediately prior to permitting the use of any such plant or machinery, etc.

xviii. Notifying the Location Incharge of all personnel whom they intend to employ on operations involving contact with hazardous process.

xix. The contractor's managers/ supervisors have an overall responsibility to ensure that all machinery, plant and equipment under their direct control are safe and without risk to employees.

xx. In the event of the contractor's managers/ supervisors not being able to resolve a health and Safety problem, especially ones reported to him by employees, he shall refer the matter to the BPCL project manager.

xxi. The contractor shall maintain Portable First Aid Boxes in fully equipped state at various places. The contractor shall ensure that at least one employee on every working shift, is a trained First Aider, capable of administering First Aid competently until the arrival of professional help, in an accident situation.

Contractor's Safety Officer

The contractor's Safety officer is primarily responsible for writing and the upkeep of his Safety Plan, and any other identified required procedures as the project progresses. Other responsibilities include, but are not limited to, advising the SM and any members of the project team on Safety matters, assuring compliance with BPCL Safety Manual and any other relevant Safety related documents, ensuring audits and inspections are conducted on a regular basis as required, ensure that personnel, at all levels within their scope receive appropriate Safety training through organized induction and refresher courses and activity toolbox talks , provide assistance to assure they fully comply with their responsibilities for Safety, chairing Safety committee meetings and constant liaison with the BPCL Safety Engineer. PSE shall be appointed and notified to the Employer in due course.

Appendix 4 : Facilities /Equipment for the Contractor's Safety Function

The following minimum facilities shall be provided:

S.No	Safety monitoring and Audio-Visual equipment details	Quantity
1	Portable hand held Digital Sound Level Meter (SLM)	
2	Portable hand held Digital Lux Meter	
3	Laptop computer with standard configuration including multimedia facilities.	
4	Colour Printer	
5	Computer Projector with Screen	
6	Overhead Projector	
7	35mm Camera	
8	Digital Camera with flash (4 Mega pixel minimum) with video facility	
9	Digital still Camera with flash (4 Mega pixel minimum)	
10	Portable loud speaker (for tool box talk and emergency purpose)	
11	Communication facilities like mobile phones and Walky talky	
12	Accident Investigation kit	

Appendix 5: Indicative Contractor Toolbox Meeting Structure

TOOLBOX MEETING STRUCTURE	
Coordinator	Contractor Supervisor
Attendees	Entire Work Crew for the workplace / work activity (Assemble workforce in groups of manageable size so the talk is effective)
Agenda	Supervisors shall consider the following when formulating the daily agenda: Work Permit Conditions PPE Requirements Area and Task risk analysis Emergency protocol, numbers and Assembly Areas Emergency Exit Routes (for new personnel) Equipment Condition and inspection Emergency Exit Routes (for new personnel) Dissemination of Safety Bulletins Significant Incidents / Near Misses / Preventive actions / Incident reports, safety trends & findings of incident investigations
Frequency	Daily/Weekly
Minutes	Toolbox meetings shall be considered a formal communication process and the recording of minutes with the standard Project Toolbox meeting record form shall be used