

TENDER SPECIFICATION NO: : BHE/PW/PUR/VIOCI-MECH/1030

RECEIPT/COLLECTION, UNLOADING, HANDLING, STACKING, VERIFICATION OF ENTIRE PROJECT MATERIALS INCLUDING ELECTRICAL, CONTROL & INSTRUMENTATION EQUIPMENTS / ITEMS AND OTHER MATERIALS IN BHEL/CUSTOMER'S STORES/STORAGE YARD AS RECEIVED BY ROAD FROM MANUFACTURING UNITS/ TRANSPORTERS GODOWN UNDER MATERIALS MANAGEMENT, RECEIPT / COLLECTION / LOADING / UNLOADING/ TRANSPORTATION OF MATERIALS FROM BHEL / CLIENT'S STORES / STORAGE YARDS TO SITE OF WORK, ERECTION, TESTING, COMMISSIONING, APPLICATION OF THERMAL INSULATION, FINAL PAINTING AND HANDING OVER OF 1X125 TPH HEAT RECOVERY STEAM GENERATOR WITH AUXILIARIES, STACK/ STEEL CHIMNEY WITH ASSOCIATED AUX, 1X30 MW(Fr6B) GAS TURBINE-GENERATOR SET WITH THEIR AUXILIARIES, BALANCE OF PLANT EQUIPMENTS / SYSTEMS WITH RELATED AUXILIARIES, INTEGRAL PIPING, FIELD / EXTERNAL / PIPING ETC. FOR 1X30 MW GTG + 1X125 TPH HRSG, BASED CO-GEN, IOCL (IRUP), GUJARAT REFINERY, IOCL VADODARA PROJECT (GT#6).

AT
INDIAN OIL CORPORATION LIMITED
GUJARAT REFINERY, JAWAHAR NAGAR
VADODARA (GUJARAT)

**TECHNICAL BID - VOLUME- I E (SAFETY MANUAL &
PAINTING SCHEME)**



Bharat Heavy Electricals Limited
(A Government of India Undertaking)
Power Sector - Western Region

TENDER SPECIFICATION ISSUED DETAILS

RECEIPT/COLLECTION, UNLOADING, HANDLING, STACKING, VERIFICATION OF ENTIRE PROJECT MATERIALS INCLUDING ELECTRICAL, CONTROL & INSTRUMENTATION EQUIPMENTS / ITEMS AND OTHER MATERIALS IN BHEL/CUSTOMER'S STORES/STORAGE YARD AS RECEIVED BY ROAD FROM MANUFACTURING UNITS/ TRANSPORTERS GODOWN UNDER MATERIALS MANAGEMENT, RECEIPT / COLLECTION / LOADING / UNLOADING/ TRANSPORTATION OF MATERIALS FROM BHEL / CLIENT'S STORES / STORAGE YARDS TO SITE OF WORK, ERECTION, TESTING, COMMISSIONING, APPLICATION OF THERMAL INSULATION, FINAL PAINTING AND HANDING OVER OF 1X125 TPH HEAT RECOVERY STEAM GENERATOR WITH AUXILIARIES, STACK/ STEEL CHIMNEY WITH ASSOCIATED AUX, 1X30 MW(Fr6B) GAS TURBINE-GENERATOR SET WITH THEIR AUXILIARIES, BALANCE OF PLANT EQUIPMENTS / SYSTEMS WITH RELATED AUXILIARIES, INTEGRAL PIPING, FIELD / EXTERNAL / PIPING ETC. FOR 1X30 MW GTG + 1X125 TPH HRSG, BASED CO-GEN, IOCL (IRUP), GUJARAT REFINERY, IOCL VADODARA PROJECT (GT#6).

AT
INDIAN OIL CORPORATION LIMITED
GUJARAT REFINERY, JAWAHAR NAGAR
VADODARA (GUJARAT)

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender
LAST DATE FOR Refer Notice Inviting Tender
TENDER SUBMISSION .

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I AND VOLUME- II ARE ISSUED TO:

M/s.

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PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

DEPUTY GENERAL MANAGER (Purchase)

Place: Nagpur

Date :



Indian Oil

**INDIAN OIL CORPORATION LIMITED
(REFINERIES DIVISION)**

VOLUME – I (COMMERCIAL)

**SECTION - 2.2
SPECIAL CONDITIONS OF CONTRACT**

(BIDDING DOCUMENT NO. JC11ELT194)

APPENDIX- 7 TO SCC

SAFETY AND ENVIRONMENTAL
SYSTEM

APPENDIX -7 TO SCC

Safety Practices during Construction

Note :

LSTK Contractor shall be responsible for ensuring adherence of all safety requirements. In addition to price reduction and deductions as provided for in the contract the OWNER shall be entitled to deduct from any payment due to the LSTK Contractor, for violations of safety provisions by the LSTK Contractor and/or any of the other Contractors under his supervision, as per details given below:

- 1) Violation of applicable safety, health and environment related norms, a price reduction of Rs.5000/- per occasion.
- 2) Violation as above resulting in:
 - a) Any physical injury, a price reduction of 0.5% of the Lumpsum Price (maximum of Rs.2,00,000.00) per injury in addition to Rs.5,000.00.
 - b) Fatal accident, a price reduction of 1% of the contract value(maximum of Rs.10,00,000.00) per fatality in addition to Rs.5,000/-.

**SPECIAL CONDITIONS OF CONTRACT –
SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM**

1. Safety, Fire & Security Regulations:

1.1. No smoking:

1.2. The Contractor shall instruct his personnel/ employees NOT TO SMOKE except at the prescribed smoking booths as provided by the Gujarat Refinery. The contractor shall be responsible for all defaults of his workers in this regard and Engineer-in-Charge / Project Engineer reserves the right to TERMINATE the work of the contractor and forfeit any or all the amounts which may be due to him.

1.2.1. Carrying of matchboxes, lighters or any other means of ignition is strictly prohibited.

1.2.2. Any contractor's employee who is found smoking or in the possession of match box or lighter or any other means of ignition in a prohibited area will be turned out from the premises of the refinery. Suitable action as decided by the management will also be taken.

1.3. Operational Area:

1.3.1. Refinery is an operational area, therefore, contractor and his employee shall observe all fire & safety regulations of the Refinery and shall so organise his work as not to interfere with the running of the Refinery in any manner whatsoever. The contractor shall ensure that their staff/ workmen carry with them valid passes/ work permits etc. for proper identification inside the battery area.

1.3.2. The contractor shall not commence the job without the valid permit for the area and for the job. The following are the types of permits / clearances to be obtained by the contractor as per the requirement of the job :

- Clearance from the Area-In-charge and Shift Engineer.
- Cold work / excavation permit
- Hot work permit
- Working at height / depth permit
- Working in confined area / Vessel entry permit
- Any other permits.

1.3.3. Before starting any work, contractor shall apply at least one day ahead for fire & safety permit for excavation, electrical, gas welding and cutting work to Engineer-in-Charge of work/ works who in turn will arrange for such permits. The contractor shall take all the precautions given in the permit before starting of the work to the full satisfaction of the Engineer-in-Charge of the sections. On account of operational problem it is possible that the clearance and permit may get delayed for which the contractor shall not ask for the idle charges. Equipments such as fire extinguishers, the hoses and nozzles required for such precautions can be had from the Gujarat Refinery's Fire Station free of cost and shall be returned after completion of the work/ works in working conditions, to the full satisfaction of the Fire & Safety Officer.

In case of any damage to the fire & safety equipments issued or used by the contractor, the contractor shall bear the cost of such damage in full and the same will be recovered from his bills.

- 1.3.4. The Engineer-in-Charge reserves the right to terminate the contract and forfeit any or all amounts due to him in case he finds that the precautions written on the permit are not strictly adhered to by the Contractor.
- 1.3.5. The complete job is to be carried out within the running unit of Gujarat Refinery. The Contractor shall take all necessary safety precautions and obtain required certificates/ fire permits / safety/ work permits etc. from the competent authority before carrying out any hot works during the execution of the entire works covered by this tender. Safety barricade wherever necessary are to be put up at his own cost.
- 1.4. Contractor's employees shall abide by the Fire & Safety rules and regulations of the Refinery since the job is to be done in the operational area. The contractor shall ensure smooth construction activities/ hot works may be suspended temporarily as per the instruction of the Engineer-in-Charge / Site Engineer. Any extra claim for whatsoever reasons for such suspension of the work will not be entertained.
- 1.5. The Contractor shall make his own arrangements of Gate Pass with photo for his employees as prescribed and instructed by the Security deptt. i.e. CISF, Gujarat Refinery at his own cost, each gate pass has to be endorsed by the Security Officer of the Refinery before the pass be used by any employee. In case of termination of the service of any of his employee during the contractual period, the contractor shall have to surrender the Gate Pass issued to the employees to the Security Deptt. At the end of the project all the gate passes endorsed by the Security Deptt. for use of the contractor's employees shall have to be returned.
- 1.6. For any damage done by the contractor's employees to the existing facilities of the Refinery, the contractor shall be solely responsible to make good as per the instruction of the Engineer-in-Charge or full satisfaction of the Gujarat belt for his workman at his own cost.
- 1.7. For any hazardous/ overhead work contractor has to arrange necessary full body harness for his workman at his own cost.

2. SPECIAL CONDITIONS OF CONTRACT ON SAFETY REGULATIONS

- 2.1. The following is a list of Rules and Regulations which must be observed by the contractor working in the Refinery.
- 2.2. **Safety :**
 - 2.2.1. The contractor shall ensure that all labourers/ supervisor engaged by him will carry identify Card/ Photo Pass displayed on their person during working hours at the work place in/ outside Refinery for their easy identification.
 - 2.2.2. The Contractors shall ensure that their supervisors must undergo Fire & Safety Training & subsequent Test at Fire Station before starting the job. All contractors

must disclose to CISF the name of supervisors and arrange safety training at GR Fire Station, before obtaining a gate pass. CISF will issue the gate pass meant for supervisor, only after getting the confirmation from Fire & Safety. It is the duty of supervisor to train his work force in Fire & Safety on regular basis. The violation of this will be viewed seriously.

- 2.2.3. The contractor shall ensure that their workmen/ supervisors shall not move to other places other than their work premises without proper permission/ authorisation.
- 2.2.4. The contractor shall ensure verification of antecedents of the labourers/ supervisors from Polices / Sarpanch/ other officials before they are engaged by him. No person having adverse antecedent shall be employed by the contractor. The contractor shall be held responsible for all the acts carried out by his workmen.
- 2.2.5. The contractor shall ensure that the workmen working with him are given Do's and Don'ts for strict adherence.
- 2.2.6. The contractor/ his workmen/ supervisor shall fully adhere to the security instructions issued by Management from time to time.
- 2.2.7. Persons below the age of 18 (Eighteen) will not be employed in any part of the Refinery.
- 2.2.8. The weekly safety report should be submitted in the prescribed format without fail.

2.3. Work Permit :

- 2.3.1. Any work carried out within the refinery must be covered by a work permit issued by the concerned department or area-in-charge. In addition, a clearance must be obtained from the concerned department's officer or supervisor prior to commencement of any job. A fire permit is required for all the hot jobs .
- 2.3.2. Any work involving open flames and spark such as welding, gas cutting, soldering, grinding ,concrete breaking, use of hurricane lamps and internal combustion driven vehicles/equipment.
- 2.3.3. Sand blasting, trucks, Jeeps, Cranes, Lifts, Cars or any kind of vehicle/equipment driven by an internal combustion engine or by batteries.
- 2.3.4. Use of gasoline, diesel or electrical power engines or tools.
- 2.3.5. Entry of vehicles inside battery limits of process area, within tank dykes and adjacent to pump houses / API separator and loading gantries.
- 2.3.6. Open fire such as burning of wood, coal etc. is strictly prohibited inside the Battery area.
- 2.3.7. While carrying out the hot job, the contractor and his workmen must ensure the following safety measures and job should not be carried out without these:
 - Valid hot job permit.
 - Availability of Tested and proper Fire Extinguisher at the work places.
 - Provision of running fire water hose at the work place.

2.3.8. All Flammable / combustible materials should either be removed from the work place or should be properly protected.

2.4. Safety Permits:

2.4.1. The contractor must obtain the safety permit from the area-in-charge of the concerned department, prior to the starting of the job as stated below.

2.4.2. Entry of personnel into any process area of storage facilities that has been in service etc. Entry into hazardous area like TEL blending, 012 dosing area or any other area where chemicals and hazardous materials are either in use or kept as store.

2.5. Vessels Entry Permit :

2.5.1. Contractor must obtain this permit prior to the start up of the job, column, vessels, tanks or any enclosed area where the chemicals and hazardous materials is either used or stores into it. It is the contractor's duty to ensure daily that the above permits are obtained from the area-in-charge till the completion of the job. All precautionary points stipulated in the permit and instruction of the Area-In-charge/ Engineer-In-charge must be strictly complied with.

2.5.2. Contractor shall ensure the following at the time of entry into the vessels:

- standby persons
- provision of exhaust fan
- use of breathing apparatus

2.6. Excavation :

2.6.1. All the areas where the existing grading is disturbed in the course of work by the contractor shall be made good by him to the full satisfaction of the Engineer-in-Charge.

2.6.2. This job must be executed only after obtaining a valid excavation permit for the particular area where the excavation is required to be done. The permit shall be considered valid only when it is signed by the authorized person of IOCL in addition to other signatories like F&S officer, Civil Engineer, the electrical section and supervising Engineer-in-Charge of the particular area where the excavation is to be carried out

2.6.3. The company reserves the right to cancel a permit without assigning any reasons. When called upon to stop the work by any personnel of the company, contractor shall immediately cease to continue the work. Before re-commencement, a fresh permit must be obtained.

2.6.4. If any excavation job is being done at the depth, then following precaution needs to be taken up.

- Contractor has to obtain the permit "Working at Depth" duly authorised by competent authorities.
- Proper barricading shall be provided at all sides of the opening.

- Excavation shall be done with adequate slop instead of vertical to avoid collapse of wall.
- Proper shoring / strutting shall be provided without fail.
- At least two no. of escape ladders shall be provided at two sides.
- Adequate illumination shall be provided as per site requirement.
- Minimum person shall be kept inside the pit. All idle workers should be removed from there.
- Heavy machinery like crane etc. should not be used near the pit.
- The excavated earth shall be dumped at a distance of 0.90 metre from the edge of the pit to avoid the earth collapse

2.7 Working at Heights :

2.7.1 While working at height, at more than 2 mtrs. from floor level, following safety precautions has to be followed :

- Contractor has to obtain the permit for working at height duly approved by competent authority
- Proper type of scaffolding / platform /ladder should be made to facilitate the job at height. Minimum 2 nos. of ladders should be provided at opposite sides.
- Use of bamboo scaffolding is strictly prohibited inside the Battery area. Only steel scaffolding shall be used for work inside the Refinery. The steel scaffolding material and it's erection shall be done as per relevant IS specification
- The contractor shall ensure the use of full body harness by the person who is working at heights. Full body harness to be used should be of good quality (IS marked) and shall be hooked up with firm support.
- Safety nets also to be used as per site conditions.
- Before starting the job, scaffolding shall be inspected by competent person and a record of the same shall be kept at site.

2.8 Working with Electrical system :

2.8.1 Contractor or his nominated subcontractor should have valid electrical contractor's license for working in Gujarat State. Contractor shall furnish a copy of the same to Engineer-in-Charge before commencement of any work pertaining to Electrical System. In any case, no work shall be permitted to be executed at site without a valid Electrical Contractors Licence, and the decision of the Engineer-in-charge in this regard shall be final and binding and no claim / compensation whatsoever shall be entertained on this account.

2.8.2 While working on electrical system, the contractor and his workmen shall ensure that the following safety measures are in place :

- Proper & valid Electrical line clearance is obtained for the equipment.
- The cables are properly insulated and are without any temporary joint.
- All Flammable / combustible materials should either be removed from the work place or should be properly protected.

- Suitable Earth leakage Circuit Breaker (ELCB) is provided for incoming and all outgoing feeders.
- Proper earthing is provided to distribution board and other electrical equipments like welding machines & grinding machines etc.
- Pipe sleeves are provided for road crossings of temporary cables laid by the contractor for his work.
- The power connection should not be overloaded and suitable overload protection should be provided.
- The tools used by the contractor personnel should be properly insulated and in good condition
- The grinding machine & other power tools should have proper guard.

2.9 **Electrical Apparatus :**

- 2.9.1 The contractor should ensure that the portable electrical equipment like grinding machine, drilling machine etc. is in healthy condition. The contractor should take all precautionary safety action, as providing of earth leakage circuit breakers for their portable electric machines. In lieu of the above, double insulated portable equipment may be used.
- 2.9.2 All portable electrical apparatus shall be regularly examined, tested and maintained to ensure the apparatus and leads are in good order.
- 2.9.3 Ensure that all portable appliances are provided with 3 pin plug and socket connections and that all the metallic parts of the apparatus are effectively earthed. All loose wiring such as flexible cables for portable lamps, tools and trailing cables and other portable and transportable apparatus shall be tested regularly at frequent intervals to ensure safety.
- 2.9.4 No dry battery or accumulator, type of electric hand lamp or torch which is not of flameproof safety type shall be taken inside the Refinery.

2.10 **Use of Company Facilities :**

- 2.10.1 Under no condition shall any contractor personnel temper with or use any property belonging to the refinery without obtaining prior sanction from the supervisor of area concerned.

2.11 **Radiography :**

- 2.11.1 The radiography agency employed by the contractor shall be duly approved by BARC.
- 2.11.2 Specific approval from the Engineer-in-charge for the radiography agency shall be obtained by the Contractor prior to any radiography work.
- 2.11.3 The contractor shall ensure the following safety precautions for the work to be done by the radiography agency.
- The radiography work shall be carried out under the supervision & guidelines of their site in-charge duly approved by BARC.

- As far as possible, field radiography should be done only during night time when there is little or no occupancy around.
- Field radiography during day time may be permitted with due permission of EIC when the occupancy around is minimum i.e. during lunch interval or on holidays.
- A suitable area around the radiography job should necessarily be cordoned off, so that the radiation level outside the area does not exceed the permissible radiation level. The radiation level along the cordon should be monitored by suitable & calibrated survey meter.
- Radiation warning symbol during day time & red warning light during the night to be prominently displayed while carrying the radiography work.
- The concerned radiographer shall remain physically present outside the cordoned area during exposure.

2.12 Temporary Structure / Fixtures:

- 2.12.1 Before erecting temporary shelters like sheds or tents anywhere within the refinery premises, written permission of the concerned authorities must be obtained.
- 2.12.2 Temporary fixtures like; sheds, tents, etc. shall be erected in conformity with normal safety standards. Thatched roof to such fixtures will not be permitted.
- 2.12.3 Temporary piping, hose connections and electrical wiring must be laid in such manner that they do not cause tripping or hitting hazard.
- 2.12.4 Temporary sheds can be constructed only for the storing of the material / site office. It should not be used for any other purpose.
- 2.12.5 However, for all jobs having value more than Rs. One crore, no temporary sheds shall be allowed for office / stores of the contractor and instead the contractor shall arrange for portal cabin for site office / stores.
- 2.12.6 Following information shall be clearly written on the shed.
- Name of the contractor
 - Work Order No.
 - Working under the Department
 - Name of the Engineer-in-charge.
 - Permit No. & it's validity period.
- 2.12.7 The shed shall be made of safe construction material and good aesthetic view. The shed shall be made strictly at the authorised location and size.
- 2.12.8 All windows shall be either of wire mesh or glass.
- 2.12.9 IOCL has the right to open or break the door at any time to inspect the shed.
- 2.12.10 After completion of the job, shed must be demolished within 10 days and area must be cleaned.

2.12.11 All precautions should be taken to ensure that any temporary electrical wiring used within the Refinery will not cause spark or shock.

2.13 Compressed Gas Cylinders :

2.13.1 Compressed gas cylinders should be used in upright position. They must be firmly located on the ground or to a sturdy stand and the cylinder should be chained to prevent accidental fall.

2.13.2 Rolling or throwing of cylinders is strictly prohibited. Cylinders shall be handled carefully and transported through hand trolleys.

2.13.3 Cylinders shall be stacked properly. Empty cylinders shall be stacked separately and filled cylinders separately. After completion of job, all cylinders must be removed.

2.14 Housekeeping :

2.14.1 Good House Keeping must be practiced by the contractor personnel at all times while within the plant. During and after completion of the work, they are to ensure that their work area is kept clean and tidy. Materials and equipment should be stored in a safe and orderly manner so that they will not block exits to roads, buildings, aisles, passage and approach to fire fighting equipment such as fire hydrants, fire hose and fire extinguishers or area where emergency safety showers, electrical switch panels and switch rooms are located.

2.14.2 The work / construction sites are to be cleaned daily and all debris / scrap generated is to be kept at the designated place only every day by the contractor as directed by the Engineer-In-charge. The scrap / debris so generated shall be disposed off to the designated places once a week as per the direction of Engineer-in-charge.

2.14.3 A job will not be considered completed until all surplus material, scrape and debris / rubbish are removed from the job site.

2.14.4 In case the Contractor does not clear the area within 5 days of completion of work, the same shall be got done by IOCL and recoveries shall be made from the bills of the Contractor at double the rate at which the IOCL has got it done.

2.14.5 Any failure by the contractor in maintaining good house-keeping / clearing the site as above shall be recorded in the performance report of the contractor.

2.14.6 At all work sites, contractor has to display a board containing following information:

- Name of the Contractor
- Name of the work
- Work Order No.
- Job site warning instruction
- Emergency Telephone Number
- Do's and don'ts on safety and security
- Working under the Department

- IOC site in-charge name
- Permit No. & Validity period.

2.14.7 The contractor has to maintain the following at job site :

- First Aid Box with required medicines
- Safety Register
- Injury record
- Records of Weekly Staff safety meeting.
- Record for Safety briefing / Training at site by contractor.

2.15 Personal Protective Equipment:

2.15.1 For the safe conduct of any job, contractor has to arrange personnel protective equipments for his personnel as per requirement. The equipment's shall be approved type, good condition and adequate numbers. Use of PPE such as helmets, safety shoes, full body harness., hearing aids, hand gloves, aprons, safety goggles, etc, is a must. Gujarat Refinery shall not provide any personal protective equipment. However, in certain cases, personal protective equipment maintained by the Refinery will be made available for this purpose in which event such equipments shall be returned to the authorities in good condition.

2.15.2 Contractor shall arrange all Non-Respiratory Type of Personal Protective Equipment (PPE) (e.g. Safety Goggles, Welding Helmets, Full body harness etc.) at their own cost and shall ensure use of these PPE by their workmen/ personnel during execution of the job as per Fire & Safety Rules and Regulations of the Refinery and as directed by the Site Engineer-in-Charge. Fire & Safety Dept. may be contacted for any clarification on Safety Regulations.

2.15.3 Special precautions and personal protection shall be taken as per Refinery Safety Regulation during the following jobs:

- Handling of Hazardous Chemicals, gases and Materials etc. (e.g. TEL, Acids, Chlorine, Ammonia, Pyrophoric Iron etc.)
- Working in presence of Suspended Solids (e.g. Catalyst, Refractory, Sand, Dust etc.)
- Cleaning / Maintenance of equipments in Lead/ Sulphur/ Phenol rich Hydrocarbon service.
- Cleaning/ handling of oily sludge.
- Welding/ Grinding/ Gas cutting jobs.
- Radiography of Mechanical jobs.

2.16 Clothing & Personal Protection :

2.16.1 Contractor personnel shall not wear loose clothing while working around moving or rotating machinery and equipment, and must wear helmets and safety shoes while working in Refinery area.

2.17 Unsafe Practices :

2.17.1 Any unsafe practices in disregard of normal safe working practices by contractor personnel when pointed out by company personnel shall be immediately corrected.

2.18 Personal Conduct :

2.18.1 Working under influence of alcohol/ narcotics and entering Refinery premises while in the influence of alcohol/ narcotics is strictly forbidden. The contractor should ensure compliance of above by him and all his workmen.

2.18.2 Horseplay:

- Fooling on the job, mock fighting within the refinery premises will not be tolerated.
- Gambling within the refinery premises is strictly forbidden.
- Entering the refinery while in possession of weapons such as knives etc. is prohibited.
- Contractor personnel shall not pick up quarrel or get into arguments with Refinery personnel or act in any manner, which is in violation of plant discipline. In case of any misunderstanding, such problems should be referred to appropriate Refinery personnel.

2.19 Driving of Motor Vehicles :

2.19.1 Contractor shall ensure that all State traffic rules and regulations are complied with while motor vehicles are driven inside the refinery premises. In addition, the following points are also outlined for compliance :

- Speed Limit: Speed limit within the refinery is 25 KMPH except around the process area where the speed limit is 20 KMPH. In any case, vehicle drivers should take cognizance of road, weather and vehicle condition and adjust their driving accordingly. All vehicles must be mechanically sound and have an efficient exhaust with approved spark / flame arrestor, silencer, horn, breakers and fuel cap.
- Parking: Park vehicles only in approved area. Vehicles must be parked in such manner that they will not move while unattended. As a general rule, vehicles should not be parked at road bends; in front of fire equipment sheds and fire fighting equipment thereby blocking access to them.
- No vehicles should enter into any operating area without valid fire permit followed by a safety clearance from the area-in-charge (this includes process areas, tank farms and loading racks).
- Vehicles driven inside the refinery premises should have effective brakes horns, lights, mufflers, flame arrestors etc.
- Vehicles shall carry only the number of passengers or weight of load it is authorised to carry as per law. Loads carried in trucks shall be properly secured so that they will not accidentally fall off while vehicle is in motion.
- Tractors and trucks should not be used for transporting personnel.
- Vehicle drivers shall always check overhead and side clearance while driving vehicles.

- Any kind of repair work on Contractor's vehicle is not allowed inside the Battery area.
- The contractors shall prominently display the name of their company on all the vehicles including tractor trolleys, trucks, open jeeps, cranes which are allowed by the Engineer-in-charge to enter inside the Refinery for carrying out the job. The display board shall be put on front and rear side of each of the vehicle.
- Hand cart, tractor-trolley etc should also bear the name of the contractor clearly.
- Only open type of vehicles like jeep etc are allowed inside the Refinery having fitted with approved spark arrestor.

2.20 Use of heavy equipment:

2.20.1 If hoists, cranes, derrick, mixer machine, pumps etc. are used by the contractor, the following are to be ensured by the contractor and his workmen:

- Testing of crane for its capacity.
- Inspection & maintenance logs
- Crane operation logs
- Safety latch is provided on the hooks.
- The area is notified through display of Sign boards/ barricades
- Over head power cables is removed or kept at a safe distance.
- The exhaust of machines should have a proper flame arrester
- Carrying material by hydra inside refinery.
- No change of boom length beyond permissible limit.

2.21 Fire Protection Equipment:

2.21.1 The Refinery will provide fire protection equipment wherever it is required. Contractor personnel who are working on such jobs will be instructed by the concerned department about the operation of such standby fire protection equipment. In the event of an accidental fire, it is expected of such personnel to make efforts to extinguish the fire with the standby equipment made available and the contractor personnel should immediately get in touch with any the Refinery personnel available or inform (Phone 7333) or break the nearest fire alarm point glass. In all cases, accidental fires shall be reported to the supervisor of the area concerned.

2.21.2 A work permit must be obtained prior to contractor personnel drawing water from the refinery fire water loop.

2.21.3 All efforts should be made by contractor personnel to prevent occurrence of any unwanted fire, Gasoline driven engines, trucks, tractors etc. shall not be filled with fuel while the motor is still running.

2.21.4 Gasoline, naphtha, benzene or toluene must not be used as a cleaning agency or solvent.

2.22 Report on Accidents :

2.22.1 All accidents such as personal injuries sustained by contractor personnel and damages to vehicle and property, no matter how slight they are, shall be immediately reported to the engineer-in-charge / RSM & Fire & Safety in writing. It is the responsibility of the contractor to fulfill all legal formalities.

2.22.2 Medical treatment for injured contractor personnel will be entirely the responsibility of contractors. However, if required, emergency first aid treatment may be given by Refinery hospital.

2.22.3 Any questions or doubts on the safety regulations enumerated in this tender or the generally accepted safety working practices may be clarified with the concerned department of safety section.

2.23 The following actions shall be taken by the contractor and his employees/workmen about Bombs, Unattended baggage / Objects lying in secluded places in the Plant :

2.23.1 On noticing any bomb/ unattended baggage or object lying in the plant area, they should immediately inform the CISF control room on Telephone No.7971 & 7972 (Auto).

2.23.2 They should not touch the object or try to open the baggage or fiddle with the wires or battery if found attached to the object.

2.23.3 They should move away to a safety distance of approximate 100 mtrs. without creating any panic.

2.23.4 In case of unattended baggage, they should help CISF personnel in identifying the claimant.

2.23.5 They should not move to the area unless clearance is given by security personnel.

2.24 Do's and Don'ts- Safety

Do's and Don'ts in case of Bomb/ Unattended baggage lying secluded places in the Plant.

Do's
<ul style="list-style-type: none"> • On noticing any bomb or CISF unattended baggage, inform Control Room by quickest possible means or on Telephone no.7971 & 7972 (Auto) and P&T 272329 and IOC (GR) Fire Control Room on 7333 and 6333 • Move away from the bomb/ unattended baggage. • Help security personnel in identifying unattended baggage. • Move back to your place of work after clearance has been given.
Don'ts
<ul style="list-style-type: none"> • Do no touch the bomb/ unattended baggage. • Do not lift any attended baggage.

- Do not go very close to the object.
- Do not create panic.
- Do not fiddle with wires or battery if found attached with any object.
- Do not open any unattended baggage.
- Do not try to defuse any bomb of explosive material.

3.1 Penalties in case of non - compliance to safety rules and regulations

The contractor has to follow all Safety, Health and Environment rules & regulations of the Refinery. In case of non-compliance of any of these rules and regulations by contractor or his employees, the contractor shall be held responsible. **If any violation or non-fulfillment of these Safety, Health and Environment rules and regulation is observed by Refinery authorities during checking at any time, a penalty of Rs. 5000.00 (Rs. Five Thousand Only) shall be imposed on the contractor for each occasion of non-compliance to these rules and regulations by him or his employees.** The decision of Refinery authorities shall be final and binding on to the contractor in this regard . The amount of penalties so imposed shall be recovered from the next R.A. Bill of the work or any other dues payable to the contractor by Refinery.

In case any violation or non-compliance of the safety, health & environment norms, rules and regulations, is observed during checking / audit by DGMs, CM(F & S), CM(SA) and HODs at any time, following penalties shall be imposed on the contractor:

First violation : Rs.5000 for each type of violation / each occasion. **Second**

violation: Rs.10,000/- for each type of violation / each occasion **Third**

violation: Rs.50,000/- for each type of violation / each occasion **Fourth**

violation: The agency shall be put on holiday list for a period 1 year.

The decision of Refinery authorities shall be final and binding on the contractor in this regard. The said clause stands modified to that extent

S.No.	Clause Ref.	Actions for Compliance by Contractors
1.	2.14.6 & 2.14.7	<p>A. The contractor has to display the following information at the job site on a notice board :</p> <ol style="list-style-type: none"> 1) Name of the Contractor 2) Name of the Work & Contract No. 3) Job site warning instructions 4) Emergency telephone Number 5) Do's and Don't on Safety & Security <p>B. The contractor has to maintain the following at job site :</p> <ol style="list-style-type: none"> 1) First Aid Box with required medicines 2) Safety Register 3) Injury record 4) Records of Weekly Staff safety meeting. 5) Record for Safety briefing / Training at site by contractor.
2.	1.3.2	<p>The contractor shall not commence the job without the valid permit for the area and for the job. The following are the types of permits / clearances to be obtained by the contractor as per the requirement of the job:</p> <ol style="list-style-type: none"> 1) Clearance from the Area-In-charge and Shift Engineer. 2) Cold work / excavation permit 3) Hot work permit 4) Working at height / depth permit 5) Working in confined area / Vessel entry permit 6) Any other permits.
3.	2.15.1	<p>The contractor shall ensure that he and all his workmen shall use the following (minimum) personal protective equipment</p> <ol style="list-style-type: none"> 1) Helmet - while working in the Refinery or any other hard hit area. 2) Full body harness - Working above 2.50 m height 3) Eye shields / goggles & Face protecting equipment-while welding / grinding etc. 4) Hearing Aid - while working in noisy area 5) Hand gloves and aprons - as per job requirement 6) Any other as required:
4.	2.6.4	<p>While carrying out excavation or working at depth in pit, trench etc, the following safety measures are to be followed:</p> <ol style="list-style-type: none"> 1) Proper barricading for the floor opening / excavated area 2) Adequate side slope 3) Proper shoring / strutting 4) Provision of escape Ladder 5) Provision of Sufficient lighting arrangement

S.No.	Clause Ref.	Actions for Compliance by Contractors
5.	2.7	<p>While working at height, the contractor and his workmen shall ensure that the following safety measures are taken:</p> <ol style="list-style-type: none"> 1) Sufficient approach to work area and proper scaffolding. 2) The person working at height is wearing the full body harness which is firmly secured to a proper place. 3) The Scaffolding shall be made of steel as per norms. 4) The ladder / scaffolding shall be properly secured to prevent sliding / failing. 5) The clamps and tiring are properly secured. 6) The Safety net is provided. 7) Inspection of final scaffolding before use has been done by competent authority and the inspection report in this regard should be available with the contractor.
6.	2.5	<p>While working in a confined space the contractor and his workmen shall ensure the following :</p> <ol style="list-style-type: none"> 1) Provision of Exhaust fan on the confined place. 2) A standby man should always be available standing near the confined space entry / exit point when the other worker is carrying on job inside the confined space. 3) Use of breathing apparatus.
7.	2.3.7	<p>While carrying out the hot job, the contractor and his workmen must ensure the following safety measures and job should not be carried out without these:</p> <ol style="list-style-type: none"> 1) Valid hot job permit. 2) Availability of Tested and proper Fire Extinguisher at the work places. 3) Provision of running fire water hose at the work place. 4) All Flammable / combustible materials should either be removed from the work place or should be properly protected.
8.	2.19	<p>A. The contractor's vehicles like jeep, cars, trucks and tractors should maintain the prescribed speed limits and should not over speed. B. Obstacles for fire fighting and blockage of road etc.</p>

S.No.	Clause Ref.	Actions for Compliance by Contractors
9.	2.8.2	<p>While working on electrical system, the contractor and his workmen shall ensure that the following safety measures are in place:</p> <ol style="list-style-type: none"> 1) Proper & valid Electrical line clearance is obtained for the equipment. 2) The cables are properly insulated and are without any temporary joint. 3) All Flammable / combustible materials should either be removed from the work place or should be properly protected. 4) Suitable Earth leakage Circuit Breaker (ELCB) is provided for incoming and all outgoing feeders. 5) Proper earthing is provided to distribution board and other electrical equipments like welding machines & grinding machines etc. 6) Pipe sleeves are provided for road crossings of temporary cables laid by the contractor for his work. 7) The power connection should not be overloaded and suitable overload protection should be provided. 8) The tools used by the contractor personnel should be properly insulated and in good condition 9) The grinding machine & other power tools should have proper guard.
10.	2.20.1	<p>If hoists, cranes, derrick, mixer machine, pumps etc. are used by the contractor, the following are to be ensured by the contractor and his workmen:</p> <ol style="list-style-type: none"> 1) Testing of crane for its capacity. 2) Inspection & maintenance logs 3) Crane operation logs 4) Safety latch is provided on the hooks. 5) The area is notified through display of Sign boards/ barricades 6) Over head power cables is removed or kept at a safe distance. 7) The exhaust of machines should have a proper flame arrester 8) Carrying material by hydra inside refinery. 9) No change of boom length beyond permissible limit.
11.	2.14	<p>The contractor shall maintain good house keeping at his area of work and must ensure the following :</p> <ol style="list-style-type: none"> 1. Passage, walkway and working area should be free from any blockage are maintained neat and clean 2. Debris, scrap etc is removed daily and put to a proper

S.No.	Clause Ref.	Actions for Compliance by Contractors
		place. 3. The temporary structure are removed after completion of job.

3.2. In case the violation / non-compliance of above Safety , Health & Environment rules results in results in any Physical Injury or Fatal Accident, an additional penalty as given below shall also be imposed on to the Contractor :

3.2.1 For any physical injury: Additional penalty of 0.5 % of the contract value subject to a maximum of Rs.2,00,000 (Rs. Two Lakhs Only)per injury in addition to the penalty of Rs.5000 as per cl.No.3.1 above

3.2.2 For Fatal accident: Additional penalty of 1 % of the contract value subject to a maximum of Rs.10,00,000 (Rs. Ten Lakhs Only) per fatality in addition to the penalty of Rs.5000 as per cl.No.3.1 above

4. Compensation in case of accidents:

In case of any accidents/injury of a contractor's workmen, the contractor shall pay a suitable compensation (subjected to the minimum compensation as mentioned below) to the affected person / his family members in the presence of Engineer-in-charge and in consultation with Chief Medical Officer of the Refinery. The said compensation shall depend on the seriousness of injury, etc, and shall be in addition to the hospitalization / treatment charges and Group Insurance Amount payable to the effected person. The following are the minimum compensation shall be paid to the affected person / his family as stated above :

4.1 In case of fatal accidents: Rs.1.0 lacs (Rs. One Lakhs) within 5 days of accident.

4.2 In case of loss of both the limbs (hand / legs/eyes/ ears) : Rs.50,000/- (Rs. Fifty Thousand) within 1 week

4.3 In case of loss of one limb (hand / legs/eyes/ ears) : Rs.25,000/- (Rs. Twenty Five Thousand) within 1 week

4.4 In case of any injury not specified above, Rs.1000/- (Rs. One Thousand) to Rs.5000/- (Rs. Five Thousand)as directed by Engineer-in-charge within 1 week

5.0 EMERGENCY RESPONSE PLAN

5.1 Contractor has to adhere and respond to the on-site emergency plan and co-ordinate with the site main controller of Gujarat Refinery.

5.2 Contractor personnel shall stop their work and proceed to a safe area in the event an emergency arises in the area where they are working like, in case of fire, oil spillage, power failure etc. Before re-commencement of the job they should obtain clearance of supervisor of area involved.

- 5.3 In view of the hazards associated with Hydrocarbon processing, on site emergency plan has been prepared in the event of major accident occurring on site. The plan envisages handling emergency situation, which shall be communicated through siren, based on nature of emergency as mentioned below.
- 5.4 In case of major emergency, it is the responsibility of the contractor to head count his personnel and take them out with the help of concerned Gujarat Refinery Co-ordinator. Contractor must confirm the safe evacuation of his personnel to Gujarat Refinery Co-ordinator. In case of any missing person, it must be brought into the notice of Gujarat Refinery authorities immediately.

TYPES OF COMMUNICATION, IN CASE OF EMERGENCY:

TYPE OF EMERGENCY	SIREN
Air raid warning	Siren for two minutes on a wailing note or intermittent blasts each of four seconds duration followed by four seconds silence.
All clear or Raiders Passed warning	Continuous siren for two minutes at steady pitch.
Small fire	No siren
Major Fire	Wailing type siren: three times for 30 seconds with an interval of 15 seconds in between (Total duration: 2 minutes).
Disaster	Same type of siren as in the case of Major Fire except that it will be sounded three times at the interval of two minutes.
All clear	Straight siren for two minutes
Siren testing	Straight siren for two minutes (daily at 0815 hrs) First Monday of every month, all sirens will tested in all the modes

EVACUATION AND SHELTERING:

In case of emergency/major accident or disaster, following 8 Nos. of Muster points have been identified for assembling of people for head counting / transportation to a safe place. The contractor site-in-charge shall coordinate with Site Main Controller for sheltering and evacuation and advise his workmen to rush to the identified locations of muster points as given below

MUSTER POINTS

S. NO.	AFFECTED AREA	LOCATION
1.	For Administration Staff	At the garden outside the Technical building
2.	LPG, OM&S, TTL Area and nearby Tank farm area.	Outside the office of OM&S control room.
3.	For GR tank farm area, GRE & FCC Units	At Civil Office on Road No.6
4.	For KAPL, SMPL, ONGC Staff & people working GRE tank farm area.	At the crossing of Road No.7 & 8.
5.	Bitumen area & GRE tank farm.	At Bitumen Weigh Bridge on Road No.8
6.	For TPS/AU-1, 2, CRU, AU V & DHDS area.	Near Old Main Gate
7.	For PDF/Udex/FGH/ MTBE, Butene-I, CETP, SRU, Flare and connected tank farm.	At the junction of Road No.2 & 11
8.	For GHC, CGP & tank farm area.	At the crossing of Road No.23 & 26.

6.0 Special Conditions of Contract on Environmental Management System

- 6.1 Contractor shall inculcate environmental awareness among their workmen/ personnel and strive for enhancement of systems and skills for minimizing the environmental impact out of their activities/ services.
- 6.2 Contractor shall avoid wastage of water, compressed Air and Steam supplied to them from owner's source of supply for execution of the job and close the supply valves properly while not in a use.
- 6.3 Contractor shall ensure that while carrying out Modification/ Repair/ Replacement jobs of any equipment of pipeline, the spillage of Hydrocarbon Oily sludge etc. are cleaned and routed to nearby OWS, at regular interval as well as after completion of jobs. Contractor must ensure that the spillage of hydrocarbon oily sludge etc. are not drained in Storm water channel or open channel.
- 6.4 Before attending any blinding/ de-blinding jobs, all tools, tackles and spares shall be kept ready at site in order to minimise Hydrocarbon spillage.
- 6.5 Contractor shall clear and level the job-site and remove all metallic and non-metallic surplus materials, scrap and other waste materials generated out of his job, from time to time as well as after completion of job to a specific location as per Engineer-in-charge.
- 6.6 Contractor shall ensure to avoid idle running of all electrical equipments e.g.

welding machines etc. used for execution of the job.

- 6.7 Contractor's vehicles, trucks, tractor, cranes and other portable equipments e.g. Air Compressor, DG Set, Dewatering pumps etc. used inside Refinery premises (where Hydrocarbon is used as fuel) for execution of the job must be mechanically sound and have an approved spark arrester and have exhaust complying pollution norms. Idle running of those vehicles and equipments shall be avoided.