

HSE CONDITIONS


at a GLANCE (for bidders)



Health Safety and Environment Management



Transmission Business Group, Noida

	Transmission Business Group HSE Department, HQ, Noida	Doc No. TBG/HSE/NIT-01 Rev No. : 00 Date: 03.05.19
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BHEL TBG through its long experience and policy, has developed a culture to consider wellbeing of the society, protection of environment and occupational health and safety of its workers first. TBG has also a culture of transparency in all its business activities. In line to this culture, this NIT annexure is prepared as a peeping window in to the TBG HSE requirements which need to be 100% complied by the successful bidders while executing the contract. Interested bidders should go through these HSE conditions:

1. BHEL HSE Policy



HEALTH SAFETY ENVIRONMENT POLICY


In BHEL, Health, Safety and Environment (HSE) responsibilities are driven by our commitment to protect our employees and people we work with, community and environment. BHEL believes in zero tolerance for unsafe work/non-conformance to safety and in minimizing environmental footprint associated with all its business activities. We commit to continually improve our HSE performance by:

- Developing safety and sustainability culture through active leadership and by ensuring availability of required resources.
- Ensuring compliance with applicable legislation, regulations and BHEL systems.
- Taking up activities for conservation of resources and adopting sound waste management by following Reduce/Recycle/Reuse approach.
- Continually identifying, assessing and managing environmental impacts and Occupational Health & Safety risks of all activities, products and services adopting approach based on elimination/substitution/reduction/control.
- Incorporating appropriate Occupational Health, Safety and Environment criteria into business decisions, design of products & systems and for selection of plants, technologies and services.
- Imparting appropriate structured training to all persons at workplace and promoting awareness amongst customers, contractors and suppliers on HSE issues.
- Reviewing periodically this policy and HSE Management Systems to ensure its relevance, appropriateness and effectiveness.
- Communicating this policy within BHEL and making it available to interested parties.

June 5, 2018


Atul Sobti
 Chairman & Managing Director


Creating  of tomorrow

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2. Legal Compliances:

- a. Statutory Provisions:** All the sub-contractors are to comply with client specific rules and procedures, the National legislations and codes, in particular the following or their revised versions:


Srl. No	Acts/Rules Name	Srl. No	Acts/Rules Name
1	The Factories Act 1948, Amendment Act 1947	11	Contractor labour Act, 1970 (Regulation and abolition)
2	The Environment Act 1986	12	Provident fund Act, 1952
3	Workmen's Compensation Act, 1923	13	Payment of gratuity Act, 1972
4	Building and Other Construction Workers (Regulation of employment and condition of service) Act, 1996	14	Indian Explosives Act and the explosives Rules 2008
5	Buildings and Other Construction Workers Welfare Act, 1996	15	The Gas Cylinder Rules, 2016, Static and Mobile Pressure Vessels (Unfired) Rules 2016
6	Payment of wages Act, 2017 Equal remuneration Act,	16	The Indian Electricity Act 2003 and Indian Electricity Rules 2005
7	Minimum wages Act.1948	17	The Atomic Energy Act, 2015
8	Employers liability Act, 1938	18	The atomic energy (Radiation Protection) Rules. 2004
9	Industrial dispute Act, 1947	19	National Fire Protection Association (NFPA),
10	maternity benefit amendment act 2017	20	National Building Code of India 2016 etc.

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b. Indian Standard (IS) Codes related to HSE

All the sub-contractors are to comply with client specific rules and procedures, the National legislations and codes in particular the following or their revised versions:

Srl	IS Code	Applies on
1	IS: 4081 -1986	Safety code for Blasting and Related Drilling operations
2	IS: 3764 -1992	Safety code for excavation work
3	IS: 5121 -1969	Safety code for piling and other deep foundations
4	IS: 2750 -1964	Specification for steel scaffoldings
5	IS: 3696 (Part-I)-1987	Safety code for scaffolds and Ladders: Part- I Scaffolds
6	IS: 3696 (Part-II) -1991	Safety code for scaffolds and Ladders: Part –II Ladders
7	IS: 4082 -1977	Recommendations on stacking and storage of construction materials at site (First revision)
8	IS: 4130-1976	Safety code for demolition of building (First revision)
9	IS: 4912-1978	Safety requirements for floor and wall openings, railings and toe boards (First revision)
10	IS: 5916- 1970	Safety code for constructions involving use of hot bituminous materials
11	IS: 7205 -1974	Safety code for erection of structural steel work
12	IS: 7969 -1975	Safety code for handling and storage of building materials
13	IS: 8989 -1978	Safety code for erection of concrete framed structures
14	IS: 7293 -1974	Safety code for working with construction machinery
15	IS: 2212 -1991	Pipe lines –Identification –Colour code
16	IS: 5216 -1982	Recommendations on safety procedures & practices in Electrical works (Part -I & II)
17	IS: 875 -1964	Code of practice for structural safety of buildings and loading standards
18	IS: 10386 -1983	General aspects Part-1 -1983, Part-2 -1982, Part-6 -1983, Part-10 -1983- Amenities, Protective clothing and equipment, construction, storage, handling, detection and Safety measures for gases, chemicals and flammable liquids
19	IS: 10500-1991	Drinking water (Specification)

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20	IS: 10291 -1982	Code of dress in civil engineering works
21	IS: 2925-1984	Safety helmets
22	IS: 1179-1967	Welding helmets
23	IS: 7524 -1979 (Part-I)	Safety goggles
24	IS: 9167 -1979	Ear muff /Ear plugs
25	IS: 6994 -1973 (Part-I)	Canvas hand gloves, Cotton hand gloves, Chrome leather gloves
26	IS: 4770 -1991	Rubber hand gloves tested for 15,000 volts
27	IS: 3521 -1999	Full body safety harness
28	IS: 11057 -1984	Specification for Industrial safety nets
29	IS: 13415 -1992	Protective Barriers in & around buildings (Code of safety)
30	IS: 13416 -1992	Preventive measures against Hazards at work places-Recommendations part-I Falling materials hazards Prevention part-I
31	IS: 13416 -1992	Preventive measures against Hazards at work places-Recommendations part-II Fall Prevention
32	IS: 15298 -2011 (Part 1&2)	Personal Protective Equipment -Safety shoes
33	IS: 12254 -1993	Poly vinyl chloride (PVC) industrial boots
34	IS: 5557:2004	Industrial and Protective Rubber knee and Ankle boots
35	IS: 2878 -2004	Co2 Type fire extinguisher
36	IS: 2171 -1999	Dry chemical powder fire extinguisher
37	IS: 13849 – 1993	Fire extinguisher for ABC fires
38	IS: 10204-2001	Mechanical Foam type extinguisher (Foam used shall conform to IS: 4989 -1974 and Co2 cartridge shall conform to IS: 4947 -1985)
39	IS: 3786 -1983	Methods for computation of Frequency rate and Severity rates for Industrial injuries and classification of Industrial accidents (First revision)

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c. The Sub-contractors need to

- Request for issuance of Form-V in their name from customer on behalf of BHEL
- Get the Labour license registration from concerned Labour office.
- Get the BOCW Registration done along with the labour license.
- Get their labourers registered under BOCW for benefits provided by the office.
- Maintain Seven registers of labours as per BOCW requirement.
- Ensure payment of wages to labours not less than the current minimum wages applicable in the premises.
- Ensure PF deduction of labourers and submission of proof to BHEL office (Wage sheet, ECR & Challan copies) duly signed.
- Submit Labour Payment Certificate by 10th of Every month.
- File timely returns, get renewals done and submit a copy to BHEL office.
- Get Workmen's Compensation policy before the start of work, covering all the labourers and staff,
 - Policy should clearly mention the project name and location,
 - should be as per labour class and wage.
 - Should cover all the height workers with clear mention of Max. height.
 - Policy should be submitted to BHEL office and renewal before expiry.
- Issue employment card to every worker.

3. Labour Welfare and Medical Facilities

a. Labour Welfare

1. Declaration of normal working hours and weekly off day, Payment day & intervals
2. Paid rest days & holidays.
3. Payment of overtime @ twice the normal wage rate.
4. No labour shall be allowed overtime >12 hrs/week, limited to 48 hrs/month.
5. Rest and lunch area.
6. Separate Male/Female Toilets and Lavatories, clearly marked in local Language and provided with signage.
7. Cold and clean drinking water facility suitable to strength and near workplace
8. Creche for children of female workers as per BOCW requirements

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9. Arranging labour accommodation in hygienic environment with the facilities of Water (Drinking, Sanitation), washing and bathing area, toilets in sufficient nos., clean and safe camps and surrounding, access road, well illuminated camp and roads, mode of contact, transport facility, first aid centre, 24x7 Security etc.
10. Cooking and eating place to be maintained in hygienic condition
11. General awareness of health and hygiene.

b. Medical facilities and Health centres

- Availability of first aid box at every work location and agency office, with contents as per BOCW requirement.
- Emergency vehicle (four wheeler) at work place
- Availability of stretchers in emergency vehicle and in office.
- Trained first aider
- Medical check-up for all the supervisors and workers including cooks, at the time of induction and annually thereafter.
- Tetanus Vaccination for all in every six months.
- Identification and tie-up with nearby reputed hospital(s) and display of their contact number in Emergency contact list.

4. House Keeping & Storage

Housekeeping is a continuous process and is the part of work. Agencies shall maintain safe and presentable housekeeping all the time in their respective areas, common work locations and passage areas. Roads, passages, staircases, entrance/exit gates shall always be maintained obstruction free. No material shall be left or stacked at the roof edges. Agency shall make arrangements to remove scraps on regular basis and dispose them at a space provided by customer, clearly fenced and marked by the sub-contractor as **“SCRAP YARD”**. Suitable arrangement like dedicated housekeeping team and tractor/hydra should be identified for this work.

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Construction materials like shuttering materials, staging materials, cables, re-bars, cements bags, earthing flats and rods, FF pipes, surplus soil etc should be stored/stacked properly such that it should neither pose threat to safety of man nor should obstruct the free movement of man and machineries.

Every sub-contractor should have separate and well maintained storage area for his own materials, T&Ps, PPEs and BHEL issued materials. Consumables like diesel, cotton, grease, oil, paint, admixtures and other fire potential materials should be stored separately with suitable firefighting facility.

Fire capacity of store area to be assessed and accordingly fire extinguishers shall be planned suiting the class and capacity of fire. Sand heaps may also be stacked in open store yards suitably to use in case of fires.

5. Site Safety

a. Induction and others safety trainings

Every sub-contractor shall make arrangement to provide induction training as per BHEL and/or customer requirement on a pre-approved and fixed module to all its new inductees irrespective of class or grade of appointment/hire. He shall also arrange the required facilities for induction training such as board, marker, dummy, posters/banners with all the mandatory PPEs.


Sub-contractor shall also arrange for periodic trainings on fire-fighting, first aid, CPR, importance and use of PPEs, electrical safety, hot work safety, Height work safety, confined space, deep excavations and barricading, concreting work safety etc.

b. Appointment of Safety Officer

Every sub-contractor shall appoint at least one full time qualified safety officer having qualification and experience as specified in Schedule-VIII of BOCW Act-1996. He shall not be assigned any duty/work other than assisting in upliftment of safety practices. He shall perform his duties in accordance with the requirements of Schedule-VIII of BOCW-1996. He shall ensure daily TBT, induction training and other such programs on regular basis.

c. Safety organisation, Safety committees and meetings

Safety officer shall report directly to the head of the projects of the sub-contractor management. There shall be some appointed or nominated safety stewards from each sub-group like shuttering, bar-bending, concreting, brick work, material handling, structure erection, cable laying, pipe work, maintenance, batching plant, housekeeping etc.

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A safety committee shall be formed including members from different agencies, BHEL and customer covering at-least 50% participation from workers. Safety committee shall meet on weekly basis or as may be decided by customer, outcomes shall be complied as committed.

d. Personal Protective Equipments.

Unless mentioned otherwise, there will be three mandatory PPEs- Safety shoes, Safety Helmet and Reflective jackets conforming to relevant IS codes as mentioned above.

Every person entering in the project premises shall use above mandatory PPEs.

There will be other PPEs too based on the work requirement like:

Twin lanyard full body harness, fall arresters and life lines for height workers, Face shield for welders and grinders, Induction helmets and Electrical resistant shoes with FRP/PVC toe for electricians and commissioning engineers, Gum boots for concrete workers and manual excavators, Goggle for gas cutters and grinders, Aprons for welders, shoulder pads for material handlers, Hand gloves – Leather for binders/welders/grinders, certified Rubber gloves for electricians, PVC for concrete/cement handlers, cotton-housekeeping team/brick coolies/erectors, cable laying men and other material handlers. Dust mask for cement handlers.

e. Material Handling

BHEL as a policy discourages continuous manual handling. Material handling contributes a major portion in the project and hence proper means (mechanical/ electrical powered) should be deployed appropriately for this work. Cranes/Faranas/hydras should not be used for material transportation for long distances(>100m), if such movement is un-avoidable, it must be accompanied by a trained signal man. Long materials should be guided by tagline. Roads for material movement should be free from obstructions. Lifting appliances must be in good condition and must have test/inspection certificates.


Lifting tackles like- D-shackles, chains, ropes, slings, belts shall be periodically inspected and shall have valid test certificate and/or third party inspection certificates.

Painted/galvanized structures/materials to be lifted by adequate capacity nylon belts only.

If a machine undergoes a major maintenance, fresh TPI shall be required before use. Hydraulic/pneumatic machines shall be free from leakages. Daily checklist to be filled and witnessed by the concerned supervisor before start of the work.

f. Vehicle/Machinery Documents and other safety requirements

- Crawler mounted boom cranes/Tyre mounted telescopic cranes/tower cranes
 1. Valid third party inspection certificate.
 2. Valid Insurance policy
 3. Registration Certificate (if applicable)
 4. Valid Pollution under control (PUC) (if applicable)

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5. Fitness certificate from RTO (if applicable)
6. Operator's valid license, experience and/or competence certificate.
7. Swing horn
8. Reverse horn
9. Boom aviation light
10. Approved Load chart (inside cabin)
11. Fire extinguisher (inside cabin)
12. First aid kit (inside cabin)
13. Boom angle indicator
14. Hook Latch
15. Reflector strips on around cabin and on boom


- **Loader backhoe (JCB), crawler excavators (Poclain), Hydra,**

1. Valid third party inspection certificate.
2. Valid Insurance policy
3. Registration Certificate (if applicable)
4. Valid Pollution under control (PUC) (if applicable)
5. Fitness certificate from RTO (if applicable)
6. Operator's valid commercial license, experience and/or competence certificate.
7. Reverse horn
8. Approved Load chart (inside cabin) (Hydra)
9. Fire extinguisher (inside cabin)
10. First aid kit (inside cabin)
11. Hook Latch (Hydra)
12. Reflector strips on around cabin and on boom

- **Tipper, Transit mixtures (TM), Self-loading concrete mixture (Ajax Fiori), Tractors**

1. Valid third party inspection certificate.
2. Valid Insurance policy
3. Registration Certificate
4. Valid Pollution under control (PUC)
5. Fitness certificate from RTO
6. Operator's valid commercial Heavy license, experience and/or competence certificate.
7. Reverse horn
8. Fire extinguisher (inside cabin)
9. First aid kit (inside cabin)
10. Reflector strips on around cabin and on body

Note: 1. Tractors may be allowed with Light Commercial/non-commercial license on customer's consent.

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- **Cars, Taxis, scooters, motor cycles and other public carriers**
 - Valid 2/4 wheeler license (as applicable- commercial/non-commercial)
 - Registration Challan
 - Valid Insurance
 - Pollution under control

g. Man-lifts (Cherry pickers), Scissors Lifts

1. Trained operator with experience/competence certificate and license
2. Valid third party inspection certificate.
3. Valid Insurance policy
4. Registration Certificate (if applicable)
5. Valid Pollution under control (PUC) (if applicable)
6. Swing horn
7. Reverse horn
8. Boom aviation light
9. Fire extinguisher (inside cabin)
10. First aid kit (inside cabin)
11. Reflector strips on around cabin and on boom

Note:

1. No one shall ride man-lift bucket without safety belt, safety shoes, helmet and reflective jacket.
2. Not more than 3 persons at a time will board in bucket of man-lift (without any heavy materials) including operator.
3. Operator will not leave the machine while persons are elevated and working.
4. No one other than the authorised operator will operate the man lifts/Scissors lifts.

h. Excavation

Prior permission/clearance from customer is a must for excavations in areas where underground service services such as gas/water/oil/chemical/electrical lines may be routed. Due precautions shall be taken during excavation in such area. Excavations near water bodies (ponds/canals etc.) shall be done with sand/soil bags ready to plug water from accidental damaged/burst of edges. All the excavations shall be done by either step cutting (min. 600mm step at every 1.5m depth) or slope cutting at 1:2(X:Y axis) (or greater depending upon the soil condition). Where step cutting/slope cutting is not possible due to space constraints, shoring/shuttering or sheet piling to be used to check collapse of soil.

Excavated soil shall be stacked away from edge of the pit, at-least 1.5 meters or half of the depth whichever is higher. Height of the stack shall not exceed 2m in height.

Ramps shall be provided for access of the workers in large pits and ladder of metal/good built for small pits. Ladders shall be of sufficient length protruding at least 1m above the ground level.

Pumps of adequate capacity shall be available for pumping out of water. No lone worker shall be allowed to work in any excavation. Overloaded vehicle shall not be allowed near excavated pits.

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i. Bar bending and Binding

Bar bending machine shall be installed under shed/roof. It shall be properly earthed and maintained for operation. Housekeeping of the area shall be team's responsibility on daily basis. All the bar benders shall be given hand gloves (leather/cotton) in addition to mandatory PPEs. Scrap shall be segregated and moved to scrap yard on regular basis. Bar bending station shall be located away from Main plying roads/passages. The station shall be well illuminated, shall have a maintained first aid kit and potable water. Station shall be located in such a way that the movement of the material be minimised.

j. Concreting

No electric vibrators shall be allowed to use. All the concrete workers shall be issued gum boots, safety helmets, reflective jackets and PVC hand gloves. Free fall of concrete from chute shall not exceed 1m in height. Heavy machineries/ vehicles shall be kept at least 2m away from the edge. Emergency vehicle shall be available near concreting work. Late night works shall be avoided, if it is unavoidable, a prior permission from BHEL/Customer is mandatory.

k. Welding, Gas Cutting & other hot works

Welding: Only experienced welders should be deployed for welding jobs. Welders shall be provided with apron, hand gloves, arm pads, leg pads, face shield and safety shoes. Welding leads shall be joint less and insulated. Power input point shall be fully covered at machine.


Gas cutting: If LPG is being used, domestic cylinder is strictly prohibited inside the project premises, (not allowed for site kitchen too). Hose pipes shall be in good condition without cracks, cuts, punctures or joints. Ends should be clamped with worm clamps. Dial gauges shall be of good quality and duly calibrated. Flash back arresters is a must for both oxygen/acetylene or LPG/Oxygen combination. Cylinders shall be stored, transported and used in vertical position only. When not in use, they shall be capped. Empty and filled cylinders to be stored separately with distinct marking.

Cylinders shall neither be rolled on the ground nor thrown during loading/unloading.

Grinding: Grinder shall be given clear glass face shield, apron, safety shoes, ear muffs and hand gloves. Grinder machines shall have wheel guard. Plug tops to be used for power connection preferably three wire type. Only trained persons shall be allowed to use grinders, abrasive cutters. Electrical connection shall be free from cuts, joints etc.

l. Erection & Height Work

Only trained filters and experienced helpers shall be engaged in erection work. Step bolts of lattice towers shall be checked for full tightness with spring washers before use. Height pass shall be issued to the identified group of erectors who have passed medical test and have working experience at height. Name of such workers shall be displayed at appropriate place. These workers only shall be allowed to work at height. Height work shall not be permitted in high wind/bad weather condition, during raining or in night/dark.

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m. Electrical Safety

BHEL usually provided single point power source and sub-contractors draw power from there. Otherwise agencies make their own arrangement for construction power like DG sets etc. Sub-contractors shall submit their load requirement (amperage & phase) to BHEL before start of work. Accordingly, they shall make arrangements to draw power and distribution arrangements too in a safe way. MCCBs and HRC fuses to be put in circuit for short circuit and overload protections and RCCBs of 30mA sensitivity to be put at each distribution panel for human safety. Earthing pits shall be installed at each distribution point and maintained below three Ohm resistivity which shall be inspected randomly. The distribution points shall be clean, free from vegetation and water logging, easily accessible and covered/protected from three sides and top for rain. Earthing of DBs shall be done by 25x3mm GI flats connected from proper earth pits. Insulation mat, PVC Sheet/Wooden plank to be placed before DBs as platform. DB Sheds shall be legibly marked with name of agency, contact no of electrician and SLD of that DB. Only industrial plugs and sockets shall be allowed. Three wire (Phase, neutral and earth) system shall be used for tools, lights and machineries and two wire power draw shall be strictly prohibited. PTW and LOTO system shall be maintained to work on LT system. Name and contact no of authorised electricians who will be responsible of electrical power facility maintenance shall be submitted to BHEL by Agencies. Unauthorised sharing of power from one agency to other is strictly prohibited. Electricians shall use standard PPEs and insulated tools only. Standard and tested/certified discharge rods to be used in the areas where there is a possibility of residual current or induction charge. The induction rod to be connected to the earth first and removed in the last. Induction helmets only to be used in the charged area. Electricians to be provided with electrical resistant safety shoes having FRP/PVC toe.

n. Dust Gases and fumes


Sub-contractor shall make arrangements to avoid accumulation of dust fumes and gases. Cement handlers inside store or at batching plant and gravel spreader shall be given effective nose masks and jaggery (at least 200g per person per day). DG sets and other machineries like cranes excavators etc. shall have valid and effective PUC certificate and shall have maintained engine with silencer. No IC engine operated machine shall be used in confined and covered area like hall, sheds, store etc. where accumulation due to lack of ventilation can increase to harmful levels. Dedicated arrangements (tanker or tractor with sprinkler) shall be made by the sub-contractors (individual or jointly) to continuously subside the dusts arising out of the movement of the vehicles roads/passages. Welding activities near roof accumulates harmful gases. Welders in such positions shall be provided with effective masks conforming to IS standards.

o. Vehicular Traffic

Speed limits defined within the premises shall strictly be followed by the drivers/commuters of construction as well as other vehicles.

Every construction machinery, man-lift shall display the name, contact no and passport size photograph of the authorised operator (There can be one or more authorised operators).

No one other than operator and co-operator shall sit inside the cabin of any construction machine while it is working.

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Construction machineries (tractor, trucks, tippers, JCBs, hydra, Fassi cranes etc. shall never be used as mode of public transport. Machineries like Ajax Fiori and hydra shall not be driven in back direction except for small distances. No overloaded vehicle shall be permitted entry in the project premises.

Over speeding shall be reported and driver/operator shall be barred from entry or shall be penalised.

Drunken drivers shall be barred from entry in the project.

Carrying harmful weapons like knives (>6"), guns etc. shall permanently disqualify the person from entry in project premises.

p. Barricading and floor openings

Every pit deeper than 4 feet (1.2m) shall be barricaded immediately after excavation and will remain barricaded till backfilling.

Pits/trenches drains near roads, passages whether temporary or permanent shall be hard barricaded and well illuminated. Roof edges and openings shall be strictly hard barricaded and illuminated. Height works like masonry works, structure erection, erection by cranes, Lattice tower/beam erection areas shall be barricaded to restrict entry. Areas under charging/commissioning shall be barricaded and caution boards shall be displayed on newly charged areas.


q. Scaffold & Ladder

No bamboo/wooden scaffold shall be allowed to be used. Only tubular steel scaffolds with couplers conforming to the relevant IS codes shall be allowed with base plates. Standard steel or wooden planks to be used as platforms and no packing materials shall be used. All the platforms shall be built with provisions of **top rail at 1m height, mid rail at 0.5m height and toe boards of min 6" height** at floor level. Minimum width of platform shall be 900mm and if wheel barrow is to be used then 1200mm. Means of access to be provided in the form of ladders, ramps or staircase. Multilevel work platforms or those platforms having passage underneath shall be provided with safety net, screen or canopy at each level for protection from falling objects. Platforms shall be free from concrete, debris or other materials. Platforms shall not extend out of the putlogs and shall be secured and fastened. Decking shall be made non-skidding.

Scaffolds under erection shall be tagged "**RED**", under repair/maintenance/inspection shall be tagged "**YELLOW**" and ready for use shall be tagged "**GREEN**"

Only metal ladders in the construction site and FRP ladders in charged areas shall be allowed. Ladders made from packing materials shall not be used. Ladders shall be securely fixed at bottom, top and long ladders at middle points too at an interval not more than 2400mm and must have a landing at every 6m. Inclination angle should be approximately 1:4 (X:Y) or 75deg. Ladder must extend at least 1m above the platform/access area. Gap between two rungs shall not exceed 300mm. Portable ladder should not be more than 4m in length. Minimum width of the ladder shall not be less than 300mm.

Use of Mobile aluminium scaffold is preferably advisable for erection of transformers/reactors.

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r. Illumination

The sub-contractor shall ensure that the areas such as work stations, buildings, batching plants, passages/roads, stores, rest areas, power sources, staircases etc. are illuminated sufficiently to make safe work conditions at site and shall not be less than the relevant IS standards. Excavations/ below ground level structures near passages/roads shall also be sufficiently illuminated.

s. Safety banners/posters, caution boards

Sub-contractors shall display boards and banners in sufficient quantity having safety signs, slogans, important messages, pictures, cautions at prominent locations to promote safety and spread awareness for important precautions such as “Deep Excavation Ahead”, “Speed Limit”, “Charged Area”, “Do not operate”, “Hard hat area”, “No smoking Zone” etc. Boards containing messages of Emergency contacts, First aid facility, rates of minimum wages, working hours, rest day etc. should be displayed at specific areas.

t. Waste management and disposal

Sub-contractor shall make suitable and effective arrangement to remove waste material from site on regular basis and store them in an identified and safe location. Disposal of wastes shall also be done as per manufacturer’s instructions or as per the guidelines laid by legal authorities. Re-bars, Cement bags, packing material (wooden/metal/plastic/paper), paint, oil, grease, cables (armour, sheathing, insulation), civil debris, metal chips, GI sheet scraps, batteries etc. are the common waste materials. Sub-contractor shall arrange disposal of the hazardous wastes/materials in conformance to the legal and contractual requirements only.


u. Inspection of PPEs, T&Ps, Machineries and lifting appliances

All the PPEs, T&P and lifting appliances purchased newly by sub-contractors shall have test certificates which shall be submitted to BHEL office periodically or on demand. There shall be at least monthly joint inspection schedule for inspection of healthiness of all the PPEs, T&Ps and lifting appliances. All the lifting appliances shall be tested and examined by a competent person before taking into use for the first time or after it has undergone any alterations or repairs liable to affect its strength or stability

and also once at least in every twelve months. To confirm quality of the PPEs as per the relevant IS codes, BHEL may ask sub-contractors to get any or all types of PPEs tested through NABL approved lab as per relevant IS codes. At any stage, the 100% cost of such tests shall be in the scope of respective sub-contractors.

v. Cable Laying

Sub-contractor shall ensure cable trenches free from water, mud, debris, snakes, Scorpions, lizards before start of the work in trenches. Cable drum rollers shall be used to pull cables out of drums to avoid twisting of cables. Hand gloves, Safety shoes/gum boots, reflective jackets, safety helmets shall be provided to the workers. Cable laying area shall be well illuminated.

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w. Fire Protection

Every sub-contractor has to maintain their working area, store and office area free from bushes. Stacking of flammable materials like wood, paper, plastic, paint, oil, grease, fuel, cotton, gases etc. at isolated place disconnected from other storage and office areas. Adequate arrangements of firefighting means like suitable extinguishers, fire/water buckets, water tanks, sand dunes etc. shall be made by the agency depending upon the fire capacity assessed or as per MSDS. Fire drills and trainings on how to operate fire extinguishers and how to react in case of fire breakouts shall be the part of regular training program. Guards and store persons must be a regular participant of such training programs. A list of trained firefighting persons and periodicity of such training programs shall be submitted to BHEL by every agency and same to be adhered. Sufficient number of fire extinguishers with suitable class shall be placed at such locations where there can be fire hazard like stores, pantry, office, DG set, electrical distribution panels etc.

x. Fencing of exposed rotating parts

Exposed rotating parts poses great threat to the person in vicinity. Such parts need to be fenced/covered. Guards are mandatory of grinders, abrasive cutters. Flywheels of the engines of heavy machines, Diesel engines, DG sets need to be covered. Electric winch machines, pulleys, chains, shafts, exhaust fans at reachable height, table fans, need to be caged/fenced. Such fencing/guard shall not be removed while machinery is in operation.

y. Emergency preparedness response plan and periodic mock drills.

Sub-contractor shall comply JSA (Job Safety Analysis) and arrange to mitigate the effects of identified possible hazards. He shall also define following in response to emergency preparedness:

An emergency assembly point and put a board of the same with information to all in induction training. Have facility of ambulance or tie-up with nearest hospital for service in minimum possible time (Max-30min) if there is not ambulance inside the premises.

Ensure availability of emergency vehicle with driver all the time at site during work.

Conduct mock-drills on possible risks like electrocution, fall from height, fire, heat stroke etc., record responses and take photographs to submit in BHEL office. Stretchers availability in emergency vehicle or at work place should be well accessible. Provide fire extinguishers of right type at right place in right quantity with information to all. Display emergency contact nos. to various risk locations and at office, service building or at major work locations. Provide first aid training by doctors for and display names of such trained first aiders and fire fighters. Rescue kit with trained staff or man lift or both to rescue a man hanging by safety belt at height. Provide running water tap near chemical storage and handling points. Agencies shall follow emergency response plan prepared by BHEL in each area of work, store and office.

z. Safety reports & Reporting of accidents

BHEL will provide “formats and checklists” for the purpose of records/documents pertaining to the compliance of aforesaid clauses. Agencies shall be responsible for strict adherence and compliance for timely generation and fill-up of the checklists and reports. These shall be submitted on weekly and monthly basis as specified in the formats.

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Agency shall also promote such an environment that the near misses, incidents and accidents are reported by every person, whosoever witnesses them. These shall help in analysing the trend and taking measures in reducing/stopping the accidents/incidents. Initial reporting can be in any form-by call, SMS, WhatsApp, e-mail, letter etc.

Major and fatal accidents or high potential incidents shall be investigated for root cause and outcomes shall be immediately implemented to check recurrences.

6. General conditions and penalty clauses

Following are the general conditions:

PPEs shall not only bear the ISI mark but also be conforming to the required standards, 100% compliance of the PPEs is mandatory.

Over speeding of vehicles shall attract penalty/notice and recurrence will attract debarring from entry into project premises.

Hiding of facts like incidents, accidents, fake/forged reports/certificates shall also attract penalty/ notice or both. Only approved third party agencies shall be allowed to inspect the machines, T&Ps. Reports shall directly be sent to BHEL/customers by the third parties.

Insurance and TPIs to be renewed before expiry. Machines, T&Ps shall not be allowed to work if renewal delayed. Continuity of WC policy to be maintained religiously by the respective agencies.

Agency shall submit the status report of his labour license, BOCW registration, WC Policy, insurance & TPI validity on monthly basis with list of machineries and T&Ps

Sub-contractors shall also maintain a buffer stock of all the PPEs in at least 20% excess to the present strength of the work force.

If construction power is not drawn as per the guidelines laid in clause no. 5(m), given above, BHEL may take-up this work at the risk and cost of the agency and/or may withhold a sum of min. Rs. 50,000/- (Rs. Fifty Thousand) or more as the site in-charge deems fit till the system is aligned as per aforesaid requirement.

Agencies shall be responsible for the compliance of the above requirements. Failure in one or more clauses/area shall attract a notice or monetary penalty or a combination of above.

Monitory penalty will be

- Rs. 1000/- per person/incident per day for non-conformity in above areas.
- A Major/severe accident shall attract a penalty of Rs. 2,00,000/- per head
- Fatality or permanent disability with total loss of earning capacity, if any, will attract a penalty of Rs. 5,00,000/- (Rs. Five Lakh).
- Further fatality/permanent disability shall attract double the last penalty imposed on the agency.
- Above penalties are exclusive of medical expenses of the victim or compensation to the family through insurance policy (WC Policy or group insurance).
- **Penalties imposed by customer shall be fully transferable to the sub-contractor. In the event of above cases, penalties shall be imposed whichever will be higher.**

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- Evaluation of agency's performance on HSE compliance shall be done as per BHEL guide lines/system.

Revision History

Revision Date	Revision No.	Old Text	New Text	Reason	Revised by (with sign)

CUSTOMER'S (IOCL)

**SPECIAL CONDITIONS ON SAFETY REGULATIONS AND
ENVIRONMENTAL MANAGEMENT SYSTEM**

PANIPAT REFINERY

**SPECIAL CONDITIONS
ON
SAFETY REGULATIONS
AND
ENVIRONMENTAL MANAGEMENT SYSTEM**

SPECIAL CONDITIONS OF CONTRACT ON SAFETY

REGULATIONS & ENVIRONMENTAL MANAGEMENT SYSTEM

These Special Conditions of Contract shall be read in conjunction with General Conditions of Contract and all other documents forming part of the tender

The contractor working in the refinery area shall strictly observe the following rules & regulations and other rules, in addition to the law of the land which are in force/may come into force during the pendency of the Contract. Any violation will call for penalty as stated here under & will entail termination of the contract depending on severity.

A: SAFETY REGULATIONS

1. GENERAL

- 1.1 The contractor shall ensure that all workers/supervisors engaged by him will carry identity Card/Photo Pass along with safety training card. The same is to be displayed on their person during their presence inside the Refinery. However, if the display of the photo pass creates difficulty in execution of work, the pass is to be kept in safe custody to avoid damage/getting spoiled
- 1.2 The contractor shall ensure that their workers/supervisors shall not move to any place other than their work premises without proper permission/authorisation. A daily report is to be submitted to the Engineering-in-Charge (E-I-C) mentioning the locations where the job is being executed along with no. of workers.
- 1.3 The contractor shall ensure verification of antecedents of the workers/ supervisors from Police/ Sarpanch/ Gazetted officers before they are engaged by him. No person having adverse antecedent shall be employed by the contractor.

At the time of submission of application as per enclosed Annexure No. A, for issuance of gate passes, the contractor shall give the detailed antecedents/credentials of their workers in writing to CISF for verification. In case of any adverse report, the contractor shall be held responsible for all acts carried out by his workmen.

In addition to above, workers & supervisors shall give an undertaking along with the application for issuance of gate passes to CISF as per the enclosed Annexure – B. No gate pass shall be issued, unless the contractor employees go through safety briefing and produces safety briefing card to security and Medical examination certificate.

- 1.4 The contractor shall ensure that the workmen deployed by him comply with safety rules mentioned in the "safety booklet for contractor and their employee." Booklet can be had free of cost from IOCL's Fire & Safety Deptt.

The contractor shall "Designate Safety & Environment Supervisor" for a contract having value upto and including Rs. 50.00 Lacs and for all ARCs irrespective of their values during entire period of contract including the work carried out beyond normal working hours/in shifts.

The contractor shall deploy an "Exclusive Safety & Environment Supervisor" for a contract having value above Rs. 50.00 Lacs during entire period of contract including the work carried out beyond normal working hours/in shifts.

The contractor shall inform in writing to the Engineer-in-Charge about the nomination/deployment of the designated/exclusive safety & environment supervisor. The supervisor should have requisite qualification and experience to carry out the job. Such supervisors shall have to submit safety supervisor training certificate issued by RLI or equivalent certificate and also to pass the test conducted by F&S Dept. for assessing their knowledge on safety aspects and competence to supervise the job.

The Engineer-in-Charge shall forward the same to F&S Deptt. which shall impart the training for the purpose before commencement of work.

- 1.5 Carrying of match boxes, lighters or any other means of ignition is strictly prohibited.

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 against the contractor/contractor's employees.

- 1.6 No dry battery or accumulator type of electric hand lamp or torch, which is not flame proof shall be taken inside the refinery.

- 1.7 A job will not be considered complete until all surplus materials, scrap, rubbish etc. are removed from the job site and disposed of at a location pre-designated by the E-in-C and area is to be made safe for operation.

- 1.8 Before processing of final bill, the contractor shall return the gate passes to CISF and obtain NOC and submit the same to E-in-C.

- 1.9 The loads hanging on the sides or at the rear of the vehicles during transportation of the material is highly unsafe and is not allowed. However, in case this type of loading is unavoidable, particular care must be taken on all roads of Refinery to ensure the safety of all men & materials. The contractor shall obtain prior permission for the same from E-in-C.

- 1.10 Person below the age of 18 years are not to be employed for execution of any job.

- 1.11 Workers shall not be allowed to bring their child to workplace inside refinery premises. The contractor shall make suitable arrangement in case of any such need, outside refinery premises at his own cost.

- 1.12 No shelter is to be taken under the equipment/ vehicles inside the refinery. No one shall take food or rest inside process units/ operating areas.

- 1.13 Hazardous-materials are to be stacked only at the earmarked places. The instructions to be followed for handling/transporting of the hazardous material are to be displayed

2. WORK PERMIT:

The contractor shall have a valid Work Permit from the concerned department/area-in-charge before commencement of any work. In addition a shift clearance must be obtained from the concerned department's officer(s) prior to commencement of any job

Daily safety tool box talk to contractor employee is mandatory for the contractor supervisor, before start of work and the record should be maintained.

- 2.1 **HOT WORK PERMIT:** A Hot Work permit is required for following:-

- a) An activity that can produce a spark or flame or other source of ignition having sufficient energy to cause ignition, where potential of flammable vapours, gases, dust exists. Jobs such as welding gas cutting, soldering, grinding, drilling, riveting, chipping, concrete breaking, camera flashing, use of hurricane lamps and internal combustion engine or battery driven vehicles.
- b) Grit blasting shot blasting, sand blasting, radiography, etc.
- c) Use of gasoline, diesel or electric power engines, mixer, grinder or power tools.
- d) Entry of vehicles such as Trucks, Jeeps, Cranes. Lifts, Cars or any kind of vehicle driven by an internal combustion engine or by batteries inside battery limits of process area, within tank dykes and adjacent to pump houses and loading gantries etc.

2.2 COLD WORK PERMIT:

An activity which does not produce sufficient heat to ignite a flammable air-hydrocarbon mixture or flammable substance.

The contractor shall obtain a cold work permit for all maintenance/construction activities which are not covered under the scope of hot permit.

2.3 VESSEL ENTRY PERMIT:

Contractor must obtain this permit prior to entry in columns, vessels, tanks, sump, drain or any enclosed area where the chemicals or hazardous materials is either used or stored into it. It is the contractor's duty to see that daily", the above permits are obtained from the area-in-charge / shift in-charge till the completion of the job

2.4 EXCAVATION PERMIT:

The contractor shall obtain an excavation permit before commencement of the job, which must be signed by the concerned authorities as mentioned in the permit. All excavations must be roped or railing placed around the opening. In addition to work permit, specific work permit shall be required to be obtained depending upon the nature of work.

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

2.6 CONFINED SPACE ENTRY PERMIT

Confined space is an enclosure with known or potential hazards and restricted means of entrance and exit, is not normally occupied by people, and usually not well ventilated.

This permit is required for entry and work in confined spaces such as vessels, boilers, storage tanks, large dia. Pipes, columns etc. against hazards such as oxygen deficiency, toxic and flammable gas, falling objects, power driven equipment etc. Excavation more than 1.2M deep, entry on floating roof tanks when the roof are more than 3M down from top, space below ground level such as pits, drain channels etc. also fall under the confined space.

All entries to confined space is subject to issue of Confined Space Entry work permit and clearance their after. All entrants shall undergo medical examination and fitness certificate from Doctor (Qualified Medical Practitioner) for entry into confined space. Such certificate shall be valid for a period not exceeding 6 months. Any worker can be medically examined by Factory Medical Officer and advised either to reduce the periodicity of medical examination or may suggest unfit for the job, as the case may be.

The maintenance of attendance in prescribed form at entry of confined space will be responsibility of Standby person at entry of confined space. He will remain in contact with person working inside confined space. For the purpose he may suitable walkie talkie set.

2.7 RADIOGRAPHY WORK PERMIT

This permit is required for any radiography jobs (leading to ionizing radiation) within the premises.

2.8 Work at Height Permit

This permit is required for working at a height of 2M and above the surface/ floor, at a place not designed for safe working of human being and has not been provided with proper access/ work platform to carry out work safely at height.

The jobs such as erection and dismantling of scaffold above 2M, working on scaffold, working at pipe rack, cable racks, painting above 2 M etc. comes under this category.

All persons appointed to carry out jobs at height under work at height permit shall undergo medical examination and get fitness certificate from Doctor (Qualified Medical Practitioner). Such certificate shall be valid for a period not exceeding 6 months. Any worker can be medically examined by Factory Medical Officer and advised either to reduce the periodicity of medical examination or may suggest unfit for the job, as the case may be.

Use of fall protection and fall restraint equipment/ devices are mandatory while working at height.

3 USE OF ELECTRICAL EQUIPMENT / APPARATUS:

- 3.1 Do not attempt to work on / operate electrical apparatus unless authorised by electrical department, and without obtaining clearance or permit from the area-in-charge.
- 3.2 Use only approved / certified electrical fitting gadgets or equipment. Obtain clearance from electrical personnel and produce the clearance to area-in-charge prior to obtaining permit to start the work. Electrical personnel will check the norms and should sign the register/permit. The register/permit shall be kept at the work site. Times to time the equipment are to be checked by contractor's authorised electrical supervisor and necessary entry shall be made in the register. If any kind of norms are found violated, the work of those equipment to be stopped till the equipment is either rectified or replaced, the norms are as below:
 - a) Contractor should use approved quality earth leakage circuit breakers (ELCB) on their portable distribution board for all type of electrical equipment used including welding sets etc.
 - b) Also use ELCB on their main distribution board for each feeder. Contractor should ensure the healthiness of their Electrical Portable Apparatus by competent electrical supervisors. Contractor shall provide proper earthing for their distribution board.
 - c) Contractor should engage Licensed electrical supervisors for certifying their equipment and ensuring safety of their connection.
- 3.3 All portable electrical apparatus shall be regularly examined, tested and maintained to ensure the apparatus and leads are in good order. Temporary jointing of extension wire, power cables etc. is not allowed.
- 3.4 Ensure that all portable appliances are provided with 3 pin plug and socket connections and that the metal body of the apparatus is 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. Industrial type shocked and plug assembly shall only be used.
- 3.5 Special care is to be taken while working on high voltage system i.e. hand gloves, properly insulated tools, HT insulation tapes, discharge rods and danger boards etc. must be used as per requirement.
- 3.6 In case of flame proof equipment, no change is allowed in its construction, size and type of nuts, bolts etc.

4 EMERGENCIES:

- 4.1 The contractor's personnel shall stop their work and proceed to a safe area in the event an emergency arises in the area they are working like in case of fire, oil spillage, power failure, gas leak etc. All electrical equipment shall be switched off immediately before proceeding to the safe area. They will also inform to E-I-C and area in-charge.
- 4.2 Before re-commencement of the job, a fresh clearance is to be obtained from the site engineer/ E-I-C/ Area in charge.
- 4.3 Contractor supervisor must brief the workers at site about Fire Order, Nearest MCP/ telephone with emergency no., nearest hydrant/ monitor, safety shower, wind sock, Assembly Point etc. The siren code

of PRPC premises is as follows:

Siren Code:

Sl. No	TYPE OF EMERGENCY	SIREN CODE
1	Small Fire	No siren will be sounded
2	For Major Fire / Major Emergency	Wailing type Siren for continuously two minutes
3	On-Site Disaster	Repetition of Major fire siren 3 times with a gap of 1 minutes in between. Total duration– 8 minutes.
4	All Clear Siren	Straight jetting sound for two minutes
5	Testing of Siren	Straight jetting sound for two minutes (daily at 8.00 Hours). Sirens are checked on “Disaster” Mode as “Major Fire” mode along with “All Clear” Mode on alternate months on 1 st day of every month.

4.4 Assembly Points:

Panipat Refinery has 9 nos. of designated Assembly Points, whereas Naphtha Crack has 12 Assembly Points.

These points are identified with Assembly Point Boards with bacon lights.

These locations are meant for safe assembly of evacuated personnel during emergencies in plant. In case of major emergencies or as per instruction of plant in-charge, all contractor personnel should proceed to nearest Assembly Point and wait for the instruction of designated Assembly Point In-charge. While evacuating the area, they must consider wind direction. Moving in cross wind direction is safe option.

5 TEMPORARY FIXTURES :

- 5.1 Before erecting / constructing temporary shelters like shed, tent etc. anywhere within the refinery premises, written permission of the Engineer-in-Charge is to be obtained. No wooden structures shall be allowed for this purpose.
- 5.2 Temporary fixtures like sheds, tents etc. shall be erected / constructed in conformity with normal safety standards. Thatched roof to such fixtures will not be permitted.
- 5.3 Temporary piping, hose connections and electrical wiring must be laid in such manner that they do not cause tripping or hitting hazard.
- 5.4 All precautions should be taken to ensure that any temporary electric wiring used within the refinery will not cause sparks or shock.

6 COMPRESSED GAS CYLINDERS:

- 6.1 Rolling of cylinders is not permitted. All cylinders are to be transported in upright position. All cylinders shall be painted as per colour code.
- 6.2 Compressed gas cylinders should be used in upright position. They must be firmly located on the ground or a sturdy stand and the cylinder should be chained to prevent accidental fall. Valves of cylinders shall be protected by shrouds/ valve protection cap.
- 6.3 Contractor shall produce a valid test certificate for each gas cylinder from an agency authorised to do so.
- 6.4 No LPG cylinder shall be allowed inside the refinery. However, in case it is essential, the contractor shall obtain written permission from the Engineer-in-Charge and Fire & Safety Deptt. and shall comply with all the safety norms.
- 6.5 Empty and filled cylinders should be stacked vertically separately at designated places, away from heat and rain water in a shed. Cylinders shall be stacked vertically in a well secured manner in such a way that each cylinder is easily accessible during emergency.

7 HOUSEKEEPING:

- 7.1 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, 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 exit to roads, building, 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.

8 PERSONAL PROTECTIVE EQUIPMENT (PPE):

- 8.1 Personnel working in the process area and those engaged in any type of work shall wear industrial safety helmets, safety shoes, Dust Mask and safety glasses. When working at height they shall use full body safety harness with double lanyard (with snap hooks). They should use proper goggles when engaged in welding or gas cutting.
- 8.2 For the safe execution of job, personal protective equipment will be stipulated in the work permit. Contractors shall provide such equipment to their personnel. However, in certain cases, personal protective equipment maintained by the refinery will be made available for this purpose. Such equipment shall be returned to the authorities in working condition to the full satisfaction of Fire & Safety Officer. In case any damage, to the Fire Protective equipment i.e. Fire hoses, breathing apparatus, gas monitors, nozzles, fire extinguishers etc., the contractor shall bear the cost of such damage in full as decided by the Fire & Safety Deptt. and will be recovered from his bill.
- 8.3 Fire & Safety Deptt. shall issue special protective clothing for handling hazardous materials to the contractor. The same is to be returned without any damage otherwise contractor shall bear the cost as decided by F & S Deptt. NOC is to be obtained from F & S and to be submitted to Engineer-in-Charge before processing the final bill.
- 8.4 Contractor personnel shall not wear loose clothing while working around rotating machinery and equipment. Use of synthetic clothing in unit is strictly prohibited. Contractor personnel should use Boiler Suit/ Dagar with the Tag of Agency Name.
- 8.5 Contractor shall provide standard PPE (BIS/ EN marked) PPEs to their employees, manufactured by reputed vendor (Refer Annexure- C) to their workers. All PPEs shall be maintained in good condition and should be fit to the wearer.
- 8.6 PRPC complex follows policy of "Wear 3 and Carry 3" for PPE. Wear three includes use of Safety Helmet, Safety Shoe and Safety glass, whereas Carry Three includes Noise protector, Respirator and Hand Gloves. One and all need to follow this policy. Contractors must ensure that requisite PPE in good condition have been made available to their employees.

In addition to that the PPE prescribed for particular job and mentioned in work permits must be used.

9 UNSAFE PRACTICES :

- 9.1 Any unsafe practices or disregard of normal safe working practices by contractor personnel when pointed out by company personnel shall be immediately corrected. Contractor supervisors need to observe task and activities of their employees closely and encourage them for safe behaviour. The employees performing safe behaviour should be suitably awarded/ appreciated.

10 PERSONAL CONDUCT :

- 10.1 Entering refinery premises while in the influence of alcohol/narcotics is strictly prohibited.

11 HORSEPLAY:

- a) Fooling on the job, mock fighting or fighting within the refinery premises is strictly prohibited.
- b) Gambling within the refinery premises is strictly forbidden.
- c) Entering the refinery premises while in possession of weapons such as knives etc. is prohibited.
- d) Contractor personnel shall not pick up quarrel or get into arguments with refinery personnel or act in any misunderstanding. Such problems should be referred to appropriate refinery personnel.

12 MOTOR VEHICLE DRIVING :

- 12.1 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.
- 12.2 No vehicle will enter into any operating area without valid permit and safety certificate issued by the area incharge.
- 12.3 **Speed limit:** Speed limit within the refinery is 25 KMPH. In any case, vehicle drivers should take cognizance of load, weather and vehicle condition and adjust their driving accordingly. Use of seat belt is mandatory for all in vehicle.

All vehicles must be mechanically sound and have an efficient exhaust, silencer, horn, brakes, lights and filler cap. Approved type of spark arrestor shall be fitted on exhaust of vehicles.

- 12.4 **Parking:** Vehicles should be parked at the area marked specifically as parking area and on the road side towards non-operational area.
- 12.5 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 locking access to them, entrance of units/operational facilities, No parking areas etc.
- 12.6 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.
- 12.7 Tractors, trucks, and cranes (including hydra cranes) should not be used for transporting personnel.
- 12.8 Vehicle drivers shall always check overhead and side clearance while driving vehicles.
- 12.9 Driver shall keep valid driving license, RC book, Insurance papers. Vehicle fitness certificate from RTO, Pollution Under Control Certificate (PUC) and the same are to be produced on demand.

13 FIRE PROTECTION EQUIPMENT :

- 13.1 Panipat Refinery will provide fire protection equipment on returnable basis wherever it is required. Contractor personnel who are working on such jobs will be instructed by the concerned department 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 Panipat Refinery personnel available or, inform (Phone - 101/4333) or break the nearest fire alarm points glass. In all cases, accidental fires shall be reported to the supervisor of the area concerned
- 13.2 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 engine is still running.
- 13.3 Highly flammable & toxic material such as gasoline, naphtha, benzene or toluene etc. must not be used as a cleaning agent or solvent.
- 13.4 The contractor shall not use water from any fire hydrant water point for execution of the work without permission of F & S Deptt.

14 RADIOGRAPHY :

- 14.1 The source of radiography should be kept in secured designated place. Area should be cordoned off and display board to be provided. Before starting the radiography job, permission is to be obtained from Production / Operation Deptt.

15 DO'S & DONT'S IN CASE OF BOMB / UNATTENDED BAGGAGES LYING IN SECLUDED PLACES IN THE PLANT:

Sl. No.	Do's	Sl. No.	Don'ts
1.	On noticing any bomb or unattended baggage, inform CISF Control Room by quickest possible means or on Telephone No. 4221/4223 and IOCL Fire Control Room on 101/4333.	1.	Do not touch/lift/fiddle the bomb/unattended baggage.
2.	Move away from the bomb/unattended baggage	2.	Do not go very close to the object.
3.	Help security personnel in identifying	3.	Do not create panic
4.	Remain at a safe distance of approx. 300 mtrs from suspected object	4.	Do not fiddle with wires or battery
5.	Move back to your place of work after clearance has been given.	5.	Do not try to defuse any bomb or explosive material

16 REPORT OF ACCIDENT :

- 16.1 All personal injuries sustained by contractor personnel and damages to vehicle and property, no matter how minor they are, shall be promptly reported to the concerned department and fire & safety department during normal working hours and to the Refinery Shift Manager (**RSM**) , other than normal working hours.
- 16.2 Medical treatment for injured contractor personnel will be entirely the responsibility of contractors.
- 16.3 First aid medical facilities is available round the clock at the Medical Centre. All injuries or any gas leak hazards should be treated within minimum delay. The personnel should follow the advice given for subsequent treatment.

- 16.4 Any questions or doubts on the safety regulations enumerated in this booklet or the generally accepted safety working practices may be clarified with the concerned department/ Fire & Safety Deptt.

17 SAFETY, FIRE & SECURITY REGULATIONS:

17.1 Operational Area:

Refinery is an operational area, therefore, contractor and his employees shall observe all fire & safety regulations of the Refinery and shall so organize his work as not to interfere with the running of the Refinery in any manner whatsoever. Before starting any work, contractor shall apply one day ahead for work permit for excavation, electrical, hot work, confined space entry, radiography, vehicle entry work to Engineer-in-Charge of work/ works who in turn will arrange for such permits. The contractor shall make all the precautions given in the permit before starting of the work to the full satisfaction of the Engineer-in-Charge. 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 labour for that work and no such claim will be entertained by the owner. All equipment such as fire extinguishers, fire hoses and nozzles required for such precautions can be had from the Panipat Refinery's Fire Station and shall be returned after completion of the work/works in working conditions, to the full satisfaction of the Fire & Safety Officer. In case any damage, to the fire equipment, the contractor shall bear the cost of such damage in full and will be recovered from his bills. Contractor shall require obtaining no due certificate from F&S Department.

- 17.2** The complete job is to be carried out within the running units of Panipat Refinery. The contractor shall take all necessary safety precautions and obtain required permits from the competent authority before starting any job. Safety barricade wherever necessary are to be put up at his own cost as per instruction of Engineer-In-Charge / Site Engineer.
- 17.3** 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.
- 17.4** The contractor shall make his own arrangements of Gate Pass with photo for his employees as prescribed and instructed by the Security Department and CISF Panipat 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 employees. No gate pass shall be issued unless the contractor employees attend safety briefing and obtained a safety briefing card. In case of termination of the service of any of his employee during the contractual period, the contractor shall have to return the Gate Pass issued to the employee to the Security Department. At the end of the project all the gate passes endorsed by the Security Department for use of the contractor's employees shall have to be returned.
- 17.5** 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 Panipat Refinery, Panipat.
- 17.6** For any hazardous/ overhead work contractor has to arrange necessary fall protection

devised (such as full body safety harness- with Double Hooked Lanyard, safety net etc.) for his workman at his own cost.

- 17.7** The contractor is to produce the royalty clearance certificate if applicable; from the concerned authority before the final bill payment is made.

B: SPECIAL CONDITIONS OF CONTRACT ON ENVIRONMENTAL MANAGEMENT SYSTEM (EMS):

- 1 The contractor shall perform their jobs in an eco-friendly manner and inconsonance with the objective of Panipat Refinery Environment System.

The 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.
- 2 The contractor shall avoid wastage of water, compressed Air, electric power. Steam etc. supplied to them from owner's source of supply for execution of the job
- 3 The contractor shall ensure that while carrying out Modification/Repair/Replacement jobs of any equipment *or* 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.
- 4 Before attending any blinding/deblinding jobs during pipeline transfer operation all tools, tackles & spares shall be kept ready at site in order to minimise Hydrocarbon spillage.
- 5 The contractor shall clear and level the work site and remove all metallic and non-metallic surplus materials, scrap, debris and other waste materials generated out of his job, from time to time as well as after completion of job. The contractors shall not throw away cut gaskets, used electrode pieces, hand gloves, cotton bags, polythene bags, etc. into open channel drains or pipelines system. They are to be collected and to be deposited in bins/waste collectors earmarked for the purpose or disposed off in the areas as per the direction of Engineer-in-Charge.
- 6 The contractor is responsible for keeping his place neat and clean. Also all temporary office shall be maintained in a healthy and hygienic condition.
- 7 Contractor shall return all surplus materials & scrap to the owner's stores. Contractor's vehicles, trucks, tractor, cranes and other portable equipment 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 exhaust complying pollution norms. The contractor shall ensure to avoid idle running of vehicles and equipment used for execution of the job.
- 8 Special precautions and personal protection shall be taken as per Refinery Safety Regulation during the following jobs.
 - 8.1 Handling of Hazardous Chemicals, Gases & Materials etc. (e.g. TEL, Acids, Chlorine, Ammonia, Pyrophoric Iron etc.).
 - 8.2 Working in presence of Suspended Solids (e.g. Catalyst, Refractory, Sand, Dust etc.)
 - 8.3 Cleaning/maintenance of equipment in Sulphur/Phenol rich hydrocarbon service.
 - 8.4 Cleaning/handling of Oily Sludge.
 - 8.5 Welding/Grinding/Gas Cutting jobs.
 - 8.6 Radiography of Mechanical jobs.
- 9 Panipat Refinery is having "SAFETY ENVIRONMENTAL, OH&SMS AND QUALITY POLICY." Copy of the same is enclosed in the contract document. Contractor will educate their personnel

working inside the refinery w.r.t. Environmental & Quality Policy of the refinery and all out efforts shall be made for compliance to the above policy.

- 10 The contractor has to prepare and submit a comprehensive and documented plan for implementation, monitoring and reporting of Health, Safety & Environment (HSE) System for work order value above 50 Lakh before starting the work and the same should be approved by Engineer In Charge. The approved HSE plan should be strictly followed during execution of work.
- 11 The contractor has to maintain and submit HSE performance data for each work order value above 50 Lakh on yearly basis or at the completion of work in case of short duration work orders.

The submitted data should be evaluated by Engineer In Charge.

C. PENALTY FOR NON-COMPLIANCE OF SAFETY REGULATIONS & ENVIRONMENTAL MANAGEMENT SYSTEM (EMS):

PENALTY FOR NOT FOLLOWING THE SAFETY RULES:

Contractor's employees and their supervisor shall follow all safety rules and regulations laid down by the owner from time to time. On any occasion, if, it is noticed by the Engineer-In-Charge/Safety Officer that contractor's employees/supervisors are not wearing the safety helmet, safety harness, safety shoe, safety goggles, ear plug or any other required Personal Protective Equipment, Rs.200/- per occasion per person shall be fined on the contractor and such amount shall be recovered from his running bill or other dues.

As no lapses on Safety Regulations & EMS are tolerable, the contractor shall be penalised for violation of the same.

- On account of any violation of use of PPE, a penalty of Rs.200/- per violation shall be levied on the contractor.

Contractor to ensure adherence to safety systems & procedures in force. Their non-compliance will attract the following penalty:

1. Violation of applicable Safety, Health & Environment related norm, a penalty of Rs.5,000/- per occasion shall be levied.
2. Violation as above resulting in:
 - Any physical injury, a penalty of 0.5% of the contract value (maximum value of Rs. 2,00,000 /-) per injury in addition to Rs.5,000/- as in item no.1.
 - Fatal accident, a penalty of 1% of contract value (maximum Rs.10, 00,000/-) per fatality in addition to Rs.5,000/- as in item no.1.

Contractor to take appropriate Insurance Policy to cover the above requirements.

In case of accidents depending on the seriousness of injury etc. in addition to the hospitalization / Treatment charges and Group insurance amount, compensation shall be paid by the Contractor

to the affected person / his family members in presence of Engineer-in-charge as per Workmen Compensation Act.

The aforesaid Penalty Clause is over and above the applicable statutory requirements.

- In case of repeated violations or violation of very serious nature resulting in direct loss to the corporation/threatens to cause severe consequences, higher penalty rate may be imposed including suspension / termination of the contract

(I) RULES FOR CONTRACTORS SITE OFFICE

S.N.	Description
1.	The conditions included in this section are in addition to the conditions covered in GCC/SCC w.r.t. the contractor site office.
2.	The contractor shall take written approval of EIC for land allotment for setting up of site office. Land will be allotted for making temporary structure only if available. The charges for the land shall be as per GCC.
3.	The contractor shall set up their site office at their own cost on land allotted for the purpose and make suitable arrangement for water, electricity, sanitary, drainage and dewatering arrangement etc. The temporary structure made by contractor shall be safe and stable.
4.	The contractor shall maintain their site office premises in neat & clean condition and there shall not be any harm to the surrounding areas.
5.	Contractor to ensure that they shall not create any unsafe condition in the area allotted to them.
6.	The site office premises shall have board which shall include the name of work, duration of work, name of contractor, work order number, name of EIC etc.
7.	After completion of work the contractor shall vacate the land allotted to IOCL in original condition.
8.	There shall not be any hindrance to IOCL / any other contractor due to activities of contractor, their manpower , material or machinery etc.

D. UNDERTAKING :

I/We have gone through all the terms & conditions on Safety Regulations & Environmental Management System (EMS) and undertake to strictly enforce the same during the execution of this work including mobilisation period, if any. In case of violation of these terms & conditions, the owner is free to take action as deemed fit.

Signature of Tenderer

ANNEXURE – A

(To be typed on Contractors' Letter Head)

Indian Oil Corporation Limited

Panipat Refinery

Dear Sir,

REF : Contract No. _____ Dated _____.

Issue of Gate Passes

We have been awarded the above contract on _____

_____ for the performance of which we would require to enter into the premises of Corporation at Panipat Refinery. For the performance of the said employees whose names and designations are given in the annexed statement declaration to enter into the said Refinery for the period of maximum 6 (Six) months commencing from _____. Also, enclosed are two passport size photographs of each of our employees for whom the Gate Pass is sought. (One photograph to be appended on the Gate Pass and the other to be kept for record).

The annexed statement contains a declaration by each of our employees by whom a Gate Pass is requested disclaiming any right to make any claim on employment or otherwise against the Corporation.

It is understood that Gate Pass will be counter-signed by us as the employee the person to whom the Gate Pass is issued and by our employee to whom the Gate Pass is issued. We undertake to present our authorized representative and the employee(s) with proper identification at the time of issue of the Gate Passes physical verification and counter-signature.

It is understood that the issue of Gate Passes shall not impose any liability on Indian Oil Corporation Limited and that we as employers of persons for whom Gate Passes are sought assume full responsibility for all acts and omission for persons to whom the Gate Passes are issued.

Yours faithfully,

Signature of Contractor

Place:

Date:

ANNEXURE – B

DECLARATION / UNDERTAKING

Contract No. _____ at _____

Name of Employer : M/s. _____

(M/s. of Indian Oil Corporation Ltd.)

We, the undersigned employee (s) of the above named employer and his establishment do hereby undertake that if the Gate Pass (es) applied for in the accompanying application of the above named employer is / are issued to me / us. I/We shall:

- i) Duly and faithfully observe all safety and other regulations applicable to the Refinery to which the gate Pass (es) relate (s).
- ii) Not anywhere do any act or omission that can cause any fire or other hazard or loss or damage to any property or harm or injury to any person within the said premises.
- iii) Not indulge in any act or activity except such activities as necessary and in the ordinary course of my duties assigned to me/ us by my / our employer above-named.
- iv) Not make any claim against Indian Oil Corporation Ltd. for any loss damage or injury to me / us while in the premises
- v) Not make any claim against Indian Oil Corporation Ltd. employment, compensation, absorption or otherwise.
- vi) I shall not claim any right for issuance of Gate Pass if it is found during the course of antecedent verification that there is adverse remarks against by the District / Police authorities and / or any criminal case is pending against me or I have been convicted for any criminal offence by any or of law either before taking up employment or after getting employment with the present employer.
- vii) Not use the Gate Pass for any purpose other than for entry into designated premises for the bona fide performance of such duties as be assigned to me / us by our aforesaid employer.

Name _____ Designation _____ Signature _____

Annexure-C**Specification of Personal Protective Equipment**

S.N	ITEM	SPECIFICATIONS	Suggested VENDORS
1	Safety Shoe	<p>Industrial safety shoe shall be suitable for oil refinery & having resistance to oil, acids/alkali, antistatic & electrical resistant. The shoe should meet the requirements of relevant <u>IS 15298 (Part 2) : 2011 / ISO 20345 : 2004/ DIN EN 344-1,345 #1 (1997)</u> and DIN 4843 part 100 having the following broad specification: -</p> <p>Upper Leather- The Shoe upper should be made of water penetration & absorption resistant leather having properties as follow:</p> <p>a) Thickness-2.0 to 2.5 mm</p> <p>b) Tensile Strength-1.55 kg.mm2 (min.)</p> <p>c) Elongation-45-75%</p> <p>d) Tongue Tear Strength- 45 kg.cm2(min.)</p> <p>e) Colour Fastness -Fast</p> <p>f) Flexibility Test -No damage / crack till 100000 cycles (min.)</p> <p>The upper should have padded collar for ankle protection, bellow tongue to prevent water slippage & suitable D-rings for lace</p> <p>Bottom Sole -Bottom sole should be made with Poly Urethane Rubber (<u>PU/PUR/ TPR/TPU</u>) as per relevant <u>DIN/IS/ISO</u> Specification of flexing/ Abrasion/oil Swelling/electrical resistance & hardness. Cushion in the sole to be provided. The sole should have Anti Skid & Anti Static Design. There should not be any nails in the shoe.</p> <p>The material should be resistant to Oils, alkalis & Acids.</p> <p>Toes Cap- Steel / Alloy Toe cap.</p> <p>Threads- Nylon twisted threads resistant to Oil, Acids & Alkali should be used.</p> <p>Laces -Brown colour round shape Nylon laces of 100 cm length should be used which shall meet following requirement:</p> <p>Breaking Strength-500 N (Min.)</p> <p>Elongation-25-30%</p> <p>Slip Resistance-12 N (Min.)</p>	<p>M/s Liberty,</p> <p>M/s BATA,</p> <p>M/s Karam,</p> <p>M/s Rahman,</p> <p>M/s Allen Cooper,</p> <p>M/s Red Chief,</p> <p>M/s Myco.</p>

		<p>Bodkin Strength-150 N (Min.)</p> <p>Color: Dark Brown/ Black</p> <p>Test Required -Vendor shall carry out the tests as per DIN/IS/ISO standard or produce the test Certificate from Govt. approved Test Lab</p> <p>Guarantee- Vendor should give a guarantee of maximum period in months against any manufacturing defects from the date of supply of the material</p> <p>General: Year of Manufacturing shall be embossed at suitable location on the sole.</p>	
2	Industrial Safety Helmet	<p>Industrial safety helmet of tough light weight made of superior quality HDPE.</p> <p>It should have minimum 6 points STAZ on suspension with LDPE cross member on head.</p> <p>It should have adjustable headband and black nylon double, V- shape chinstrap to reduce the risk of the helmet coming off as a result of impact during a fall (head band range 530 - 600 mm).</p> <p>Helmet should be provided with appropriate sweatband to absorb and dry sweat from the forehead and must have the facility/ slot to fix earmuff.</p> <p>Helmet should have arrangement for side attachments.</p> <p>The safety helmet shall be provided with of adjustable knob mechanism such as ratchet facility.</p> <p>Helmet shall be approved by Directorate-General of Mines Safety (DGMS) and having ISI mark (IS: 2925) and EN 397 certified.</p>	<p>M/s Joseph Leslie & Co.,</p> <p>M/s Sure Safety,</p> <p>M/s Karam,</p> <p>M/s 3M,</p> <p>M/s MSA</p>
3	Dust Mask	<p>NIOSH N-95 DUST/ MIST RESPIRATOR SPECIFICATIONS</p> <p>Description: Should be NIOSH N95 filtering face piece particulate respirator for Dust/Mist applications.</p> <p>Construction: It should have a Superior molded cup shaped design with special stiffened inner shell to allow retention of shape after repeated use. Triple layer non-woven micro-fiber filters material. The construction should incorporate metal free welded headbands (Staple/Stitching free), a aluminum nose clip and foam around the nose section.</p> <p>Filter Media: Melt blown polypropylene micro fibres charges with a stable charge during drawing the fiber. This should give high filtration efficiency with lowest possible breathing resistance. The filter media should be the whole respirator surface & additionally should also have Electro-statically charged filter media capable of filtering 0.3 micron, which is the most penetrating particle size.</p> <p>Head Bands: Should have, Staple/Stitching Free; Twin</p>	<p>M/s Joseph Leslie & Co.,</p> <p>M/s 3M,</p> <p>M/s Sure Safety,</p> <p>M/s Karam,</p> <p>M/s Voltech,</p> <p>M/s ABN Equipments,</p> <p>M/s Kewalson.</p>

		<p>welded head bands made of poly-isoprene (devoid of skin irritation caused by LATEX), having very good elastic retention properties. The Band should also provide constant tension to the wearer throughout the usage life for good face seal Fit and should also not cause irritation to the wearer.</p> <p>Nose Clip: The nose clip should be made of strengthened aluminium with high quality adhesive to ensure uniform adhesion to the respirator surface and long rust free life. The aluminium nose should be soft and pliable and conform to the nasal contours of the wearer to provide comfort, secure face seal and reduce the potential for eyewear fogging. The clips should adjust easily for fewer pressure points and helps secure fit over variety of face sizes.</p> <p>Nose Foam: The nose clip should be supported underneath with a hypoallergenic nose foam pad, which helps to give a good fit and does not cause skin allergies at the point of contact.</p> <p>Weight: The weight of the respirator should not be more than 9 grams.</p> <p>Filtering efficiency: It should provide at least 95% filtration efficiency against solid and liquid aerosols that do not contain oil.</p> <p>Breathing Resistance Must not exceed 10 mm of water column. Test certificate must be submitted along with offer, duly attested by manufacturer. Photocopy without manufacturer's attestation shall not be considered.</p> <p>Fit Test: The manufacturer shall provide fit testing facility and relevant training to ensure proper fitting and compliance of the respirator. Details of fit testing procedure must be submitted along with offer. Fit testing of the respirator on users must be carried out as per OSHA Fit Testing protocol for the samples, before the order placement.</p> <p>Training: The manufacturer / supplier should provide extensive training on usage, maintenance and limitations of the product to the users.</p> <p>Approvals: Should meet NIOSH. N95 /IS 9473:2002 / EN149 specification requirements. Batch Test certificate (of past production lot) on manufacturer's original letter head must be submitted detailing the tests conducted at the time of offer.</p>	
4	Ear Plug	<p>Ear plug for protection against noise(NRR to be minimum 29db) made of soft sponge(e.g. 3M make)material, non-allergic, smooth, comfortable, tapered shape to fit into the ear canal closely, longer length to facilitate fitting & removing, attached with nylon thread packed in good quality self sealing plastic pouch.</p>	<p>M/s Joseph Leslie & Co.,</p> <p>M/s 3M,</p> <p>M/s Sure Safety,</p> <p>M/s Karam,</p>

			M/s Voltech, M/s ABN Equipments, M/s Kewalson.
5	Safety Goggles for Acid/ Splash protection	<p>PANORAMA type Safety Goggles with clear vision for use while handling Acid/Alkali & other chemicals. Safety goggles shall be made of polycarbonate with proper sealing arrangement to prevent entry of chemicals from sides. Material used for frame shall be resistant to chemicals. It should have ventilating ports on sides. It should be able to be worn over prescription spectacles</p> <p>Frame: Soft vinyl Goggle body</p> <p>Lens: Hard coated scratch resistant High impact polycarbonate anti fog lens</p> <p>Compliance: CE Marked to EN 166 / ANSI Z87.1-2003</p>	M/s Joseph Leslie & Co., M/s 3M, M/s Sure Safety, M/s Karam, M/s Unicare, M/s ABN Equipments, M/s Kewalson.
6	Safety Goggles for flying particle protection	<ol style="list-style-type: none"> 1. The spectacles shall confirm to requirements of EN-166 standard or relevant ANSI standards. 2. The lens of spectacles shall be either CE marked or Z-87+ marked as applicable. 3. The safety spectacles shall be made of poly carbonate lens of optical class-1 or equivalent. 4. Safety spectacles shall have the protection against the 99% of harmful UV radiation. 5. The spectacles will have Plain clear lens without any shade for ease to wear & work during dark/ night hours. 6. The spectacles will have good impact resistance to external forces. 7. Spectacles should be able to provide complete eye protection including sides of the eyes as well & should fit comfortably on the face of the wearer. 8. The spectacles shall have frame with length adjustable temple/arms. 9. The spectacles shall have a good quality cord attached with the frame for hanging around neck of the user. 10. Safety spectacles to be supplied in a cover / pouch. 	M/s Joseph Leslie & Co., M/s 3M, M/s Sure Safety, M/s Karam, M/s Unicare, M/s ABN Equipments, M/s Kewalson.
7	Full body Safety Harness	<ol style="list-style-type: none"> 1. CE marked Full Body Harness with Double Lanyard Integrated with Energy Absorber shall conform to EN 361 latest edition (EN Standard for Personal Protective Equipment against fall from heights- Full body harness), Lanyards shall conform to EN 354 latest edition (EN Standard for Personal Protective Equipment against fall from heights- Lanyards) and Energy Absorber shall conform to EN 355 latest edition (EN Standard for Personal Protective Equipment against fall from heights- Energy 	M/s Udyogi Plastics, M/s Joseph Leslie & Co., M/s 3M,

		<p>Absorber).</p> <p>"Full body harness shall have front attachment at chest level (two textile loops) for fall arrester and back attachment (Dorsal steel alloy D ring), conforming to EN 362 (EN Standard for Personal Protective Equipment against fall from heights- Connectors) latest edition, fall arrest lanyard.</p> <p>"It should be with two adjustable shoulder and thigh straps with roller buckles for easy adjustment.</p> <p>"It should have sit strap ideally positioned for extended comfort.</p> <p>2. Double Synthetic fiber rope Lanyard with hooks Integral with Energy Absorber shall carry CE marking.</p> <p>"Both Lanyards shall be permanently attached with Full Body Harness at one end and with ready to use scaffold hook connectors separately one for each lanyard conforming to EN 362 having CE marked at other end, with minimum opening of 50mm and closure mechanism with protection against inadvertent opening.</p> <p>"Length of lanyards including Energy / Absorber, terminations and connectors shall be of 2 meters.</p> <p>3. Along with supply, following documents shall be submitted:</p> <p>a) Copies of valid documents from the certified / notified body that allow a product to carry CE mark /EN certification for full body harness (EN361,) Lanyard integral with energy absorber (EN 354/EN 355) and connector (EN 362).</p> <p>b) Copy of valid EN Certificates.</p> <p>c) Instruction manual(s) Document(s) for applications / limitations, safe use, pre use checks, periodic examinations and maintenance / repairs of supplied materials/items.</p>	<p>M/s Sure Safety,</p> <p>M/s Karam,</p> <p>M/s Unicare,</p> <p>M/s ABN Equipments,</p> <p>M/s Kewalson.</p>
8	Hand Gloves (Cotton Polka Dotted for Mechanical Grip)	<p>1) Made out closely and thickly woven cotton knitted hand gloves having have four fingers and the thumb with coating of co-polymer of butadiene - acrylonitrile called polka dots at palm side for very good dry grip and uncoated back to allow the air circulation for keeping the hands cool.</p> <p>2) The Polka dot cotton knitted hand gloves will be little elastic in nature for better grip and will have very good mechanical resistance for abrasion, cut, wear & tear.</p> <p>3) The Polka dot cotton knitted hand gloves will confirm to EN-388 or relevant ANSI standard.</p> <p>4) The overall length of the hand gloves will be from: 210 mm to 280 mm.</p> <p>5) The Polka dot cotton knitted hand gloves should be suitable for Better Grip during Material Handling, packaging & General Maintenance work.</p>	<p>M/s Midas Safety,</p> <p>M/s H K Safety,</p> <p>M/s Ganeshi Lal Sumerchand,</p> <p>M/s Joseph Leslie & Co.,</p> <p>M/s Sure Safety,</p> <p>M/s Karam,</p> <p>M/s Voltech,</p> <p>M/s Kewalson,</p> <p>M/s Swastik Industrial Services.</p>

9	Hand Gloves (Cotton-Canvas Type for Material Handling)	<p>The gloves will be made of unbleached cotton drill cloth. Gloves will be of the four fingers and thumb design having a one-piece palm including the front of all four fingers and back of the index finger also. The seam on the back of the hand shall be an in-seam. The design shall be generally Clute pattern as per is: 6994 (part-i)-1973 with inside blanket lining on the front side of fingers, thumb and palm. Overall finished length shall be 14 inch. The stitching of fingers, thumb and cuff shall provide a comfortable wear to the user. The cuff shall also be of cotton drill, the edges of which shall be hemmed. All stitching shall be lock-stitch type with cotton sewing thread confirming to variety no-23 of is: 1720-1969. There shall be 6-8 stitches per 25 mm. the ends shall be securely back stitched.</p>	<p>M/s Midas Safety, M/s H K Safety, M/s Ganeshi Lal Sumerchand, M/s Joseph Leslie & Co., M/s Sure Safety, M/s Karam, M/s Voltech, M/s Kewalson, M/s Swastik Industrial Services.</p>
10	Hand Gloves (Nitrile- for handling chemicals)	<p>CE Marked fully Nitrile rubber hand gloves (In pair) shall have inside soft cotton flocked lining. It shall be able to resist Acid, alkali & solvent while providing solid protection against snags, abrasion, puncture & cuts. Nitrile Rubber hand glove should meet requirement of EN-388 & EN-374. The overall length of the Gloves shall not be less than 12 Inches (from middle finger to end of the sleeve).</p>	<p>M/s Midas Safety, M/s H K Safety, M/s Ganeshi Lal Sumerchand, M/s Joseph Leslie & Co., M/s Sure Safety, M/s Karam, M/s Voltech, M/s Kewalson, M/s Swastik Industrial Services.</p>
11	Hand Gloves (Heat Resistant- for welding etc.)	<p>CE/ ANSI approved five fingers Hand Glove with heat resistant upto 250 deg C, as per EN-407.</p> <p>Overall length of the Glove (from middle finger to other end) shall not be less than 10 inch.</p> <p>Heat resistance hand glove to be soft & comfortable for use in petrochemical operations.</p>	<p>M/s Midas Safety, M/s H K Safety, M/s Ganeshi Lal Sumerchand, M/s Joseph Leslie & Co., M/s Sure Safety, M/s Karam, M/s Voltech, M/s Kewalson, M/s Swastik Industrial Services.</p>

PROCEDURE FOR RADIATION WORKS IN THE REFINERY PREMISES

Following procedures shall be adopted for all the radiography works to be executed in the refinery premises. This includes the Projects/ Modifications / Maintenance activities under Panipat Refinery.

1. The Engineer in charge under whom radiography jobs are to be done shall forward all the documents related to radiography activity to the Inspection Department (Panipat Refinery) for the approval and certifications. The documents shall be as follows:
 - Name and address of the radiography agency.
 - BARC certificate for approval of site, radiation source
 - Type of radiation source and strength. Camera details
 - Names and certificates of radiation workers to be deployed
 - Site in charge and the certificate from BARC
 - BARC radiation exposure level certificates of radiation workers (latest)
 - Radiation survey meter and its calibration certificate
 - List of safety gadgets like film badges, cordoning arrangement, safety signals etc.
2. Inspection Department shall register the radiography agency and issue a clearance letter (as per enclosed format) for carrying out Radiography jobs by the agency at Panipat Refinery site.
3. The clearance issued as above shall remain valid for maximum 6 months, subject to the condition that there is no change in the documents submitted by contractor. Change of site incharge, radiography workers, radiation source, camera, survey meter and any change in BARC certification/ authorization shall be intimated by radiography contractor for issue of fresh clearance by Inspection.
4. Meeting all radiation safety norms and BARC procedures / requirements is the responsibility of contractor, irrespective of the clearance issued by Inspection.
5. Based on the clearance issued, necessary work permit may be raised as per the job requirement and clearance shall be taken from area incharge/Fire & Safety Dept. etc. as per the prevailing procedures.
6. The work permit shall include following also in addition to the usual format requirements :-
 - Source strength
 - Cordon off distance
7. The contractor / supervisor has to keep the clearance letter and produce on demand all the time during radiography activities at the site.
8. It will be the responsibility of Radiography contractor to intimate to Inspection Deptt. for any change in the documents and certificates earlier submitted by them.
9. Inspection clearance may not be issued if there are reasons / conditions that may lead to radiation hazards, discrepancy in documents / Certification / authorization by BARC.
10. Clearance will become automatically void and withdrawn if the radiography contractor is debarred / disqualified by BARC for doing radiography work, irrespective of the reasons thereof.

11. An officer of inspection department may do renewal of inspection clearance by endorsing on the previous clearance letter issued or Issuing a fresh clearance letter. In each case, fresh register serial no. and date will also be recorded by the officer issuing the clearance
12. The Engineer in charge shall inform Inspection Department after completion of the job/demobilization of the Radiography agency for the record.

INSPECTION DEPARTMENT

PANIPAT REFINERY

Register Serial Number:

Dated :

CERTIFICATE FOR RADIOGRAPHY JOBS AT PANIPAT REFINERY

1. NAME OF THE RADIOGRAPHY CONTRACTOR:

2. ADDRESS:

3. SITE IN CHARGE-NAME:

BARC CERTIFICATE NO. AND VALIDITY DATE:

4. RADIOGRAPHERS NAME AND THEIR BARC CERTIFICATE VALIDITY:

5. VALID UPTO:

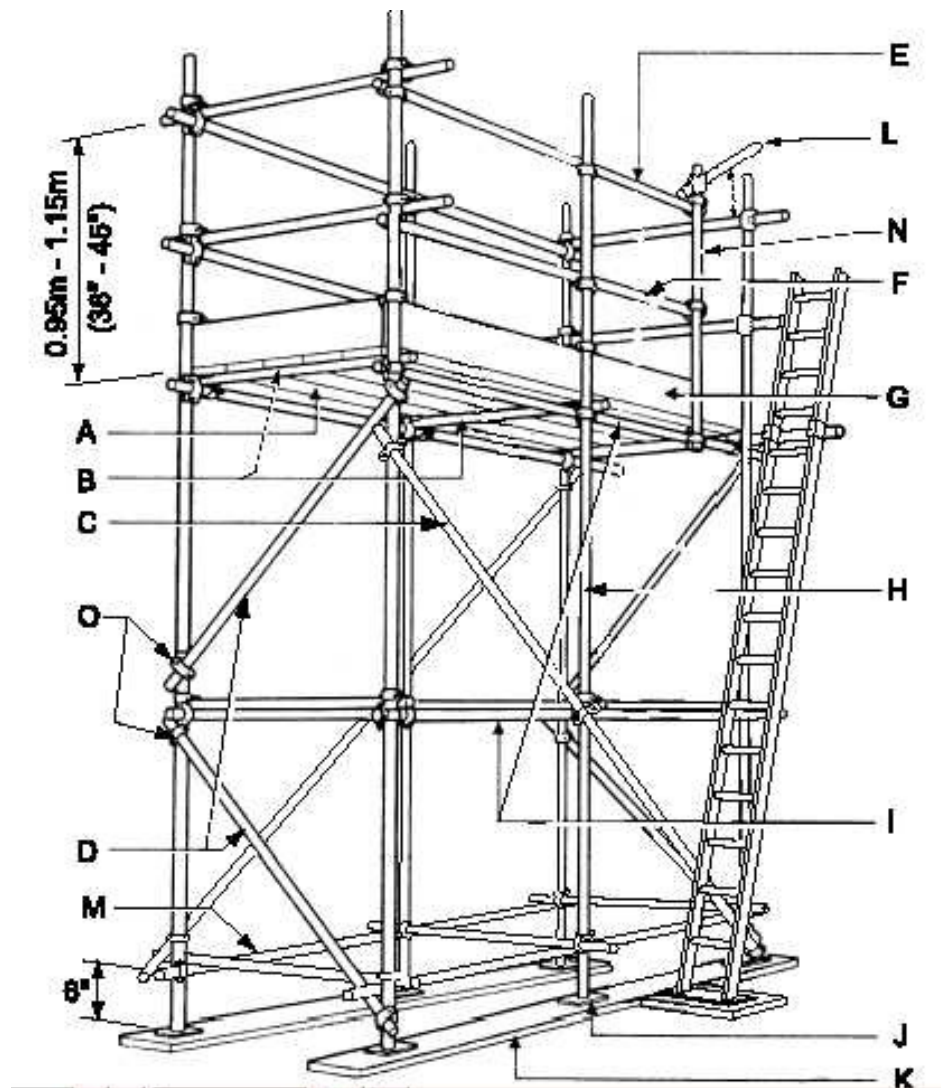
INSPECTION MANAGER

ERECTION OF SCAFFOLDING

Do's and Don'ts in the erection of scaffolding

Sl. No.	Do's	Don'ts
1	Clear the area of unwanted material	Equipment or parts must not be allowed to rest on any part of the scaffolding.
2	Before erection, ensure the ground is firm.	No one should be authorised to climb any scaffolding (except the erection crew) unless Scaffold has been certified with "GREEN TAG" after checking in prescribed format
3	All upright (standard) should rest on metal base plate at least 150 mm* 150 mm* 5mm thick	Don't allow people to work on elevated platform above 2.0M height without wearing full body safety harness.
4	The distance between uprights is dependent upon the height & load but never exceed 2.5 inch	Don't allow work on a scaffolding without a standard aluminium ladder.
5	Except on side adjacent to the site of work, all uprights to extend at least 900 mm above the topmost working platform to enable fitting of handrail. Hand rails shall be 900 mm above the platform level.	Don not remove ladders from erected and certified platforms.
6	Vertical distance between ledgers may vary between 1.3 m to 2.1 m.	The horizontal centre distance between transoms and putlogs carrying 32 mm board shall not exceed 1.5 m
7	End of the scaffold board shall not extend more than 150 mm or less than 125 mm beyond transoms of putlogs.	Never work on scaffold with RED tag or uncertified scaffold

INDEPENDENT SCAFFOLD



- A) SCAFFOLD PLANKS (BOARDS)
- B) BEARER (TRANSOM)
- C) LONGITUDINAL (FACADE) BRACING
- D) TRANSVERSE (SECTIONAL) BRACING
- E) TOPRAIL
- F) MIDRAIL
- G) TOEBOARD
- H) POST (STANDARD)

- I) RUNNER (LEDGER)
- J) BASE PLATE
- K) SILL (SOLE BOARD)
- L) SELF-CLOSING DROP BAR (INSIDE POSTS)
- M) BASE LIFT (KICKER LIFT)
- N) FALSE UPRIGHT (PUNCHEON)
- O) COUPLER