

**BHARAT PETROLEUM CORPORATION LTD**

**Letter Ref:**  
**Telephone No.**  
**Fax No:**

**From:**  
**(Address)**  
**Tender No./Tender Issue Date :**  
**Closing Date/Time :**

M/s.

Dear Sir,

**SUBJECT :**  
(SINGLE BID/TWO PART BID)

We are pleased to invite your most competitive offer for the captioned item/job no. \_\_\_\_\_ in complete accordance with the tender documents attached herewith. The following documents are enclosed to enable you to fill your quotation:

1. General conditions of tender
2. Special conditions of tender Part 'A' & Part 'B'
3. Technical specifications along with Annexure-I as Deviation Statement, if any.
4. Schedule of quantities (in duplicate) / Price-Bid along with Annexure-II & III.
5. Standard Payment Terms – Annexure-IV
6. Integrity Pact – Annexure-V
7. Annexure VI to X (Formats for submitting Bank Guarantee towards EMD, Security Deposit, Performance Bank Guarantee, Bank Guarantee towards Retention Money National Electronic Fund Transfer (NEFT) Mandate Form)
8. Safety Requirements at Construction sites
9. Grievance Redressal Mechanism
10. Drawings.
11. Self Addressed envelopes.

In case of single bid the above set of documents shall be submitted in full in the envelope enclosed.

In case of two part bids, the respective documents should be submitted in two parts in separate sealed covers "Part-I (Technical Bid comprising of GCC, Special Conditions of Contract, Integrity Pact, Technical specifications and Schedule of Quantities/price schedule WITH PRICES BLANKED OUT and marked "quoted" against each item. These should be duly stamped and signed by the authorized signatory.

Part –II (Price bid) should contain only the prices in the proforma prescribed in a separate sealed envelope. Both Part-I and Part-II covers shall be sealed in one envelope super scribed with the above tender number, due date and time, description.

Completion time of the job is \_\_\_\_\_ days from the date of issuance of LOI.

Your Bank Draft / Bank Guarantee for the requisite Earnest Money deposit should be forwarded along with the above documents. However this clause is not applicable to the contractors registered with BPCL. The bids should be for valid for six months from the bid due date.

Please ensure that Integrity Pact is signed on all the pages by the authorized signatory (same as that of signatory to the bid). This document is essential and binding. Bidder's failure to return the Integrity Pact duly signed along with the bid documents shall result in the bid not being considered for further evaluation and deemed to be rejected.

The above sealed envelope containing both technical and price bids should reach us positively on or before the due date at the address given below:-

Chief Engineering Manager/Deputy General Manager (Engg)  
Engineering & Projects Department Area (NR/ER/WR/SRs  
Bharat Petroleum Corporation Limited

.....

.....

PIN CODE

However, in cases where tenders are required to be submitted by hand, they should be dropped inside tender box as designated. In case of bulky size tenders, the following persons with their designations as mentioned may be contacted to ensure their receipt. The names of the officers are .....

Located on ..... floor.....Room No..... (Address of the Regional office)

We request you to carefully go through all tender documents before submitting your quotations in two parts i.e. Technical Bid and Price Bid. Any clarification regarding the work can be had from our Engineering Department on any working day during normal working hours.

Please note that any exceptions or deviations to the tender documents is necessarily to be recorded in the deviation statement attached as Annexure-I. Any exceptions/ deviations brought out elsewhere in the bid shall not be considered.

Please send your valuable quote before the deadline

The bids received after the due date and time and without EMD wherever applicable are liable to be rejected.

Please ensure that your name or any other identification mark dose not appear on the envelope as otherwise your tender is liable to be disqualified.

All the bidders to provide their bank details / PAN / Sales Tax /WCT Registration numbers / Service Tax Reg No. / VAT reg. No./ TIN No. for updating vendor master file .

You are also requested to keep us informed of any change in address / status of your business / contact details including email address etc

Please note that Due date of opening of the tender \_\_\_\_\_ is after 2.30 PM on \_\_\_\_\_ ..

In case you are unable to quote for this tender please send us your regret letter citing reasons for not participating.

BPCL reserves the right to accept or reject, any or all tenders received at its absolute discretion without assigning any reason whatsoever.

Thanking you,  
Yours faithfully,

For BHARAT PETROLEUM CORPORATION LTD.,

PROJECT LEADER

**P.S. - Consecutive three non responses (Including regrets to our RFQs) will delist you from our registered vendor list.**

Encl: as above

## CHECKLIST FOR TENDER SUBMISSION

Common Index for whole of the documents submitted with page numbering Tick ✓ (yes) in column 'submitted' if items included in the Tender submission.

NO	TECHNICAL PROPOSAL (As applicable)	SUBMITTED	REMARKS
1	Deviation Statement if any,(Annexure-I)		
2	Statement of Compliance of Base Tender –Price Bid <b>Annexure-II &amp; III</b>		
3	Integrity Pact (Mandatory Annexure-V)		
4	Confirmation of Site Visit, Attachment		
5	Overall Project Execution Plan (Bar Chart / Deployment etc)		
6	Outline of Manning Plan		
7	Proposed Organization Chart.		
8	Resumes of Key Personnel.		
9	General Terms Accepted By Tenderer		
10	Machinery Deployment Plan		
11	List of Equipment and Machinery proposed for the Works		
12	Schedule of Tools Included in the Bid		
13	Details of Information Technology (IT) requirements, (Reporting weekly progress against planned progress)		
14	List of Sub-Contractors & Suppliers etc. for the Works		
15	Information on Current Projects		
16	Quality Assurance Plan and Control Programme		
17	Site Safety and Health Requirement Programme		
18	At the end of the Contracted work, Performance Bank guarantee shall be		

	submitted by us in lieu of retention period		

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## **GENERAL CONDITIONS OF TENDER**

Tender No. :  
Due Date/Time :  
Time for Completion

### **FILLING AND SUBMITTING TENDERS:**

1. Quotations should be submitted only in the prescribed tender schedule forms supplied by the Company together with Drawings and General Conditions of Tender duly signed by the tenderer along with a Bank Draft, if required, as per covering letter ..... dated .....for the amount mentioned in Clause 17, on or before the due date/time of closing of the tender. Quotations received after the due date/time will not be considered
2. The tenderer should study all the tender documents carefully and understand the conditions, drawings specifications etc. before quoting. If there are any doubts, he should obtain clarifications, but this shall not be justification for late submission or extension of opening date/time of the tenders.
3. The tenderer should visit the site and acquaint himself with site conditions, availability of water, electricity, approach road, construction materials as per specifications, shelter for his staff etc. since these are to be provided/arranged by the tenderer (unless otherwise specified) at his cost.
4. The tenderer should quote for all items in the tender schedule. The rates should be expressed both in figures- and in words: where discrepancy exists between the two, the rates expressed in words will prevail. Similarly if there is any discrepancy exists between the unit rate and the amount, the unit rate will prevail. The final amount again should be both in words and figures.

5. The rates should be quoted in the same units as mentioned in the tender schedule.
6. All entries in the Tender Documents should be in Ink/Typed. Correction, if any, should be attested by full signature of the Tenderer. Use of white fluid is not permitted.
7. Every page of the tender documents shall be signed by the tenderer or his authorized representative.
8. The tenderer should indicate the time required to complete the entire work from the date of receiving the order. The time indicated in tender may have a bearing on awarding the contract.
  - a. The Price bids of technically acceptable offers in case of two-part bids and the price offers of single-part bid tenders for all values more than Rs. 10 Lakhs (BPCL In-house estimates) shall be opened in the presence of bidder's representative (duly authorized and having a letter of authority from the bidder's Competent authority)
  - b. In case of Single-part bid tenders, where the BPCL In-house estimate is less than Rs. 10.00 Lakhs, tenders will be opened in-house, on the due date and time mentioned in the tender form.
  - c. The bidders may be present at the time of opening of commercial & Technical bids at the venue intimated. Tenderers are requested to be in the designated tender opening room at least 30 minutes before the scheduled opening time. BPCL shall advise either by e-mail / fax / letter and display it in the BPCL web site, [www.bharatpetroleum.in](http://www.bharatpetroleum.in), the venue / date / time of opening of the price bids. Please note that no separate intimation shall be sent in this regard, unless there is change in the data / time / place of opening. The bidders' representatives, who are present, shall sign in the Statement of tenderer's presence, evidencing their attendance." Tenderer shall specifically mention in covering letter, the name, address, tel. no., e-mail ID, fax of the authorized person's for further communication on the above tender.
  - d. BPCL will subsequently examine the bid to determine whether they are complete, whether any computational errors have been made, whether the documents have properly been signed and whether the bids are generally in order. The bids shall also be loaded as per the loading criteria given in the NIT. BPCL will award the contract to the successful bidders whose bid has been determined to be the lowest evaluated bidder after all corrections / loading if any.

## **9. COST OF BIDDING**

The Bidder shall bear all costs associated with the preparation and submission of the Bid, and BPCL will in no case, be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

## **10. BID DOCUMENT**

The Bidder is expected to examine all the instructions, forms and specifications in the bid document. The invitation for the Bids (IFB) together with the bid document and all its attachments thereto, shall be considered to be read, understood and accepted by the bidder unless deviations are specifically stated seriatim by the bidder. Failure to furnish all information required by the bid document or submission of a bid not substantially responsive to the bid document in every respect will be at Bidder's risk and may result in the rejection of his Bid. Bidder must return the Agreed Terms and Conditions duly filled, signed and stamped along with the unpriced part of Bid.

## **11. BID PRICE-**

- a. Prices shall be quoted, in the prescribed price schedule by the bidder separately for each item of scope and in strict compliance to the format of the price schedule.
- b. Bidders should also submit summary of tenderer's price both in words and figures and shall include rebate offered, if any, also in percentage, figures and in words as per **Annexure-II**.
- c. Grand total price in the summary shall be net of discount, if any
- d. Prices quoted shall be basic unit price exclusive of duties, taxes, levies, cess, fees etc. towards complete scope of work. The applicable rate of statutory taxes & duties must be indicated in Annexure- III of NIT as well as in Price bid. However, Service tax on free issue materials supplied by the company would be paid extra, if applicable.
- e. Conditional Discounts, if offered by the Bidder, shall not be considered for evaluation.

## **12. TAXES AND DUTIES**

- a. All Bidders should have VAT/CST registration in concerned state and provide a copy of their sales tax registration certificate quoting their TIN no. along with the Bid Document.
- b. BPCL may issue concessional form "C" wherever applicable for Central Sales Tax or any concessional form for State Sales Tax as applicable.



- c. CENVAT credit of duty on **Capital Goods** put to use for manufacture shall be considered separately on excise duty, CVD as well as the Cess applicable. These should be quoted separately wherever applicable.
- d. BPCL may claim Cenvat credit on service tax. The bidder should quote service tax as explained in clause 11(d).
- e. Bidder is required to furnish serially numbered and signed invoice/ bill / challan containing the following details:
  - i. Name, address and registration number of service provider.
  - ii. Name and address of person receiving taxable service.
  - iii. Description, classification and value of taxable service provided.
  - iv. Service Tax Payable.
- f. Bidders are required to quote VAT, as applicable in the respective state, as explained in clause 11(d). VAT credit may be considered while evaluation.
- g. The Bidders should mention clearly in his bids whether he has opted for composition scheme or standard deduction method or Actual non-materials value method. Rate and amount of such VAT (WCT) being quoted, has to be given for evaluation. Preferred option to be followed is Composition Scheme.
- h. Any other taxes, duties, levies, rates and Cess, if applicable, should be mentioned as explained in clause 11(d).
- i. The taxes, duties, rates, and Cess shall be final. New tax, if any, introduced later shall be on BPCL account from the date of bid submission (or extended date, if any) upto contract period. During contractual period, any variation in existing taxes, duties, rates and cess shall be borne by BPCL. Any upward statutory variation in taxes, duties rates and cess (including any new tax) beyond contractual completion date shall be borne by the bidder. However, in case of downward variation, the same shall be passed on to BPCL.

### **13. Basic Unit Price:**

The rates quoted should be inclusive of all material, labour, water, electricity, power equipment tools/ tackles, centering, shoring, lifts, leads, scaffolding etc. Once the quotation is accepted, the rates quoted shall be firm till the entire work is completed in all respects..

### **14. PERIOD OF VALIDITY OF BIDS**

The validity of the bids shall be fixed from the last date of submission of bids.

The bidder shall not be entitled during the said period of 6 months, to revoke or cancel its bid to vary the bid given or any term thereof

#### **15.ACCEPTANCE OF TENDER:**

- a. Incomplete/Conditional tender quotations or without valid EMD (whenever applicable) those received late and/not confirming to the standard terms and conditions, the tender documents will be rejected.
- b. The Company reserves the right to reject any or every tender without assigning any reason whatsoever and/or to negotiate with the tenderer (s) in the manner the Company considers suitable.
- c. The Company further reserves its rights to allow to the Public enterprises 'Purchase Preference' (facilities as admissible under the existing policy) as may be decided by the Government.
- d. BPCL reserves its right to award the job to bidders quoting lowest in one or more parts individually or collectively, wherever it is commercially viable and prudent.

Similarly BPCL reserves the right to add one or more parts into one consolidated job on commercially prudent considerations.

#### **16.BIDS BY EMAIL/FAX**

Fax/E-mail Offers will not be considered and shall be rejected

#### **17.EARNEST MONEY DEPOSIT / SECURITY DEPOSIT: (Applicable only for work costing Rs.50,000/- and above in value).**

- a. EMD is not applicable to vendor with valid registration with BPCL. For job whose quoted amount is more than the registration value limit, EMD shall be submitted.
- b. The tenderer shall be required to submit along with this quotation a Bank Draft in favour of Bharat Petroleum Corporation Ltd. for a sum equivalent to 5% of the total tendered value of works as earnest money deposit, subject to a minimum of Rs. 5,000/- and a maximum of Rs.1,00,000/-
- c. The earnest money deposit shall be returned to the unsuccessful tenderer/s within one month after due date for opening of the tender. The earnest money deposit of the successful tenderer will be retained till the commencement of the work. Thereafter the tenderer may opt to adjust the earnest money deposit against security deposit as a money deposit or request return of the earnest money deposit. No interest will be payable on earnest money deposit.

- d. **Security Deposit: (Applicable only for works costing Rs. 50,000/- and above in value).** The successful tenderer before commencement of the work, shall have to provide to the Company, by way of security, a money deposit or a Bank Guarantee in the standard format provided by the Company, for an amount equivalent to 5% of the total tendered value of the works, subject to a minimum of Rs. 5,000/- and a maximum of Rs. 1,00,000/-. The tenderer shall have the option to adjust the earnest money towards security deposit if he so desires.
- e. The security deposit will be retained till the successful completion of the work. In the case of security deposit in the form of a Bank Guarantee, the same shall be kept valid by the tenderer at his cost till the completion of the work under contract and shall be extended from time to time. No interest will be payable on security deposit.
- f. Bidders will be required to submit bid security in the form of demand draft/bank guarantee from any Indian scheduled bank or an international bank of repute having a branch in India or having correspondent banking relationship with an India scheduled bank. The bid security shall be in US \$ for foreign bidders and in Indian Rupees for Domestic Bidders. The bid security shall be valid for six months beyond the bid validity date.

#### **18. INTEGRITY PACT (IP) – applicable for jobs above Rs.1.00 Crore.**

Bidders are requested to sign & return our pre-signed IP document as per Annexure V. This document is essential & binding. Bidder's failure to return the IP duly signed along with Bid Document shall result in the bid not being considered for further evaluation.

#### **19. EXECUTION OF AGREEMENT:**

The successful tenderer shall within 15 days of the Company's communication to him of the acceptance of his tender, execute a formal Agreement with the Company, on the Company's format and on the stamp paper of appropriate value.

#### **20. EXECUTION OF WORKS:**

- a. The successful tenderer should submit detailed construction programme adhering to the completion time quoted in the Agreement. The programme will form part of the contract. However, the Company reserves the right to alter the programme, if necessary, from time to time and no claim of successful tenderer on account of such alteration will be entertained.
- b. All materials required for the execution of work should conform to the standard specification and approved by the Engineer in Charge before actually put to use. Commencement of work without prior approval shall be entirely at the risk and cost of the contractor. No delay due to non-availability of materials, tools, equipment etc.

will be entertained by the Company. In the case of certain machinery/equipment, the Company's site Engineer may inspect the items for approval before they are brought to the site.

- c. The responsibility for the safety, security and accounting of the materials and equipment brought or installed by the successful tenderer or handed over to him by the Company for completion of the work will remain with him till the acceptance of the work by the Company. Any damage caused to the material/ equipment during the execution of work will be made good by the successful tenderer at his cost. The Company may require the successful tenderer to have guarantee/indemnity bond executed for the value of the materials supplied to him free of cost, as per terms of the Agreement.
- d. Quantities shown in the Tender Schedule are approximate and payment shall be made as per actual measurements. The successful tenderer is not entitled for any sort of compensation toward materials procured/stored in excess of the measured quantities.
- e. The Company reserves the right to increase or decrease the tendered quantity or revise specifications, drawing, designs of any or every item or delete them at any stage of work. The successful tenderer's claim for compensation or damages on account of these shall not be entertained. Such deviations will be adjusted at the rates contained in the Agreement or at prevailing market rates, if the rates are not available in the Agreement, by issuing variation order (s). In case it becomes necessary for the Company to temporarily suspend or postpone the work, partly, or fully due to unforeseen circumstances, the Company shall not be liable for any compensation on account of resultant delays.
- f. The entire work will be carried out under the supervision of the authorized representative of the Company, but this will not detract successful tenderer's) full responsibility for quality/period of execution of work.
- g. Detailed measurements of works carried out shall be taken jointly by the successful tenderer and our site Engineer at every stage of work, before proceeding to the next stage. All works shall be measured as per the procedure laid down. Payments will be made as per measured quantities and not as per Tender Schedule quantities.
- h. The successful tenderer shall submit to the office which has awarded the contract, periodic progress reports of his work as stipulated by our Site Engineer.
- i. The successful tenderer shall not undertake himself any change in specifications mentioned in the tender documents. In case of doubts he will refer the matter in writing to the Company and act as per clarifications given by the Company. Any changes in the work involving changes in original specifications quantities/additional items of work, should be covered by obtaining suitable variation order (s) from the Company immediately.

- j. If the performance of the successful tenderer is found to be unsatisfactory, the Company reserves the right to cancel in part or the whole of the contract and get the work executed through alternative means at the entire risk and cost of the successful tenderer.
- k. If the successful tenderer does not complete the work in the stipulated time, the Company reserves the right to recover liquidated damages at 0.5% of the total contract value for every week of delay or part thereof subject to a maximum of 5% of the total contract value until the work is satisfactorily completed and handed over. However for delay in completion of a specific urgent job the maximum compensation will be increased to 15% of the total contract value. Such damages may be deducted by the Company from any money due to the tenderer and any further amount due from the tenderer shall be paid by the tenderer to the company forthwith.

**This is a specific urgent job (☐ Tick box if applicable)**

## **21. SAFETY, SECURITY & RISKS**

- a. Hot work is carried out only in the areas earmarked for the purpose, after required safety precautions have been taken and only after obtaining written permission from the Site Engineer.
- b. Any provision required to be made e.g. wind screens of G.C.I. Sheets etc. to make the area safe for hot work, will be made the successful tenderer at his own cost.
- c. The successful tenderer and his man/men shall abide by all security/safety rules regulations in force at location and the laws, bye-laws and statutes of Government, semi-Government and other local authorities such as requirements/liability under enactments like the Workmen's Compensation Act, Contract Labour Act etc. and the Company shall stand indemnified against any claims on these scores. The successful tenderer and his men shall strictly abide by "no smoking" and other petroleum regulations on the premises.

## **22. WORKING HOURS**

The work in the existing Company's premises should be carried out during the Company's normal working hours and without obstructing day-to-day work in the establishment. If any work is required to be carried out beyond normal working hours, prior permission should be obtained before undertaking such work.

## **23. FAILURE TO COMPLETE WORK**

- a. In the event of the successful tenderer failing to complete the work within the stipulated time, the Company shall have the right to employ any other agency to complete the remaining work at the risk & cost of the successful tenderer.

- b. It will be the successful tenderer's responsibility to get the works approved and obtain all certificates for plumbing, electrical, civil works from local, municipal, Governmental or other required authorities.

#### **24. FREE ISSUE ITEMS BY COMPANY**

Tanks, Pumps, pipelines, Posts, Equipments and/or any other materials to be supplied by the Company will be supplied anywhere within the site premises. Safekeeping, transporting and handling of the same to actual location of the site will be the successful tenderer's responsibility for which no extra payment will be made. Any damage or theft during his handling shall be on contractor's account.

The Contractor shall furnish a Bank Guarantee covering cost of free issue items like Steel plates, line pipes etc while the materials are taken outside BPCL premises for fabrication/execution and are in custody of Contractor at given point of time.

#### **25. RETURN OF UNUSED COMPANY ISSUED MATERIAL**

Unless otherwise specified in the tender, all the unused serviceable scrap materials shall be the property of the owner and shall be returned in good and acceptable condition size wise, category wise by the Contractor at his own cost to Owner's Store(s).

No credit will be given to the Contractor for the return of scrap. The Contractor should quote the rates accordingly.

In case the contractor fails to return unused/scrap materials, then recovery for such quantity of materials, not returned by the contractor shall be affected at 1.5 times of the landed cost of the material or current market price whichever ever is higher as the penal rates from the Contractor's bills or from any other dues of the Contractor to the owner. Contractor shall make his own arrangements for weighing the off cuts to be returned to Owner's stores.

#### **26. OTHER CONDITIONS**

During execution of work if it is found necessary to dismantle a portion of existing bund wall, enclosure wall, compound wall, fencing etc. to facilitate the movement of materials and equipment, the same shall be carried out after obtaining permission in writing from Company's authorized representative and also made good by the contractor at his own cost.

The successful tenderer is expected to co-operate/co-ordinate with other contractor's carrying out the work allocated to them so as to avoid breaking up of work already done by them or causing any hindrance in the progress of their work. In case there is any difficulty/dispute, the same should be immediately brought to the notice of the Site engineer.

If the work is required to be carried out in a working Depot, Installation, retail outlet etc. the progress of work is likely to be interrupted on account of operations in such units. Stowage of work under such circumstances shall not entitle the successful tenderer to claim any compensation for idling, machinery etc. during such interruptions.

The successful tenderer shall arrange for at least one competent supervisor to be present at site at all times during the progress of the work, which shall be duly authorized to take instructions and execute them on his behalf.

The successful tenderer and his man shall abide by all security / Safety rules / regulations in force at locations and the laws, bye laws, and statutes of Government, semi-Government and other local authorities such as requirements / liability under enactment like the workmen's Compensation Act, Contract Labour Act etc. and the Company shall stand indemnified against any claims on these scores. The successful tenderer and his men shall strictly abide by "No Smoking" and other petroleum regulations on the premises.

- a. "All contractors who employ more than 50 works or where the contract value exceeds Rs. 50.00 crores, the following facilities are to be provided by the contractor at site at his own cost":
  - i. Arrangement for first aid
  - ii. Arrangement for clean drinking water
  - iii. Toilet facilities
  - iv. Canteen where tea and snacks are available
  - v. A crèche where 10 or more women workers are having children below the age of 6 years.
- b. "The contractor shall ensure use of protective clothing, safety shoes, uniform, hard hats, safety harness, etc. for workmen employed by them.
- c. "The services of a doctor shall be made available by contractor, at site, on a part time basis".

Contractor will be responsible to provide all statutory benefits to the employees appointed by them and in case the Corporation is liable to make payment of any such statutory benefits to the employees of the Contractor as the principle employer, the contractor will be liable to indemnify the damage and loss suffered by the Corporation to that extent and corporation shall have liberty, without referring to the contractor to deduct such sum as may be suffered as loss or damage due to the aforesaid reason out of the pending bills of the contractor lying with the Corporation.

## **27. LOCAL CONDITIONS**

- a. Bidders are expected to be fully informed about all local conditions and factors, related acts and laws prevalent in India.

- b. No claim for financial adjustment to the Contract/Purchase Order awarded under these specifications and documents will be entertained by BPCL.

## **28. INSURANCE**

BPCL will arrange insurance policy covering Marine cum refecton policy.

## **29. INTERIM PAYMENTS:**

At the sole discretion of the Company, the contractor can receive up to 90% of the payment for the cost of work done. Interim bills should be duly supported by the measurements of work actually done. (All payments shall be subjected to deduction of Income Tax and any other statutory deduction as may be applicable from time to time).

## **30. FINAL BILLS / RETENTION MONEY:**

- a. On completion of the work to the satisfaction of the Company's authorized representative and after clearing the debris, tools, tackles, shoring, centering, materials etc. from the site and obtaining necessary certificates as required from the local authorities, the successful tenderer shall submit his final bill based on the jointly recorded measurements of actual work done.
- b. The final bill of the job done should be raised, unless otherwise agreed by the Corporation in writing, within one month from the date of completion of the total job as per contract. Whether the job has been completed or not will be decided at the sole discretion of the Corporation. Payments of the final bill will be made after adjusting interim payments and retention amount deducted and retained.
- c. The Corporation will be entitled to deduct 10% value of all Interim/running bills and in final bills as Retention Money for all jobs exceeding Rs.1,00,000/- and no interest will be paid on money retained by the Company.
- d. The said retention money will be retained for a period of six months/one year and paid to the Contractor after adjusting any dues of the Corporation against the Contractor under the workmanship/materials provided to the Contractor and/or against any other claims for any reason whatsoever under the Agreement which may arise within the said period upto one year. The retention period of six months/one year will commence from the date of completion of the job (as reckoned by BPCL).
- e. Retention money can be paid before the retention period against Performance Bank Guarantee of equivalent value, provided the tenderer opts for the same at the time of submission of tender.



- f.** The successful tenderer shall not subject or assign any part of the work to another party, without the prior written consent of the Company. In any event the successful tenderer will be solely responsible for the work so sublet or assigned.
- g.** The Contractor undertakes to ensure due and complete compliance with all laws regulations, rules etc. whether of the Central Government or the State Government or any other competent authority applicable to the workmen employed or whose services are otherwise availed of by the Contractor, whether in connection with the construction work at the site or otherwise. The Employer shall have the right to inspect the records maintained by the Contractor concerning such workman from time to time and the Contractor to produce of the Employer's inspection in order to ascertain whether or not the requirements of all such laws regulations, rules etc. have been complied by the Contractor. In the event of the any contravention of such laws, regulations rules etc. coming to light whether as a result of such inspection or otherwise, the Employer shall have the right to require the Contractor to effect such compliance within such time as the Employer may prescribe in that behalf and in the event of the Contractor failing to effect such compliance within the time prescribed by the Employer then the Employer shall without prejudice to his rights be entitled to withhold from the amount payable to the Contractor any amount payable to the workmen under any such laws, regulations or rules and to make payment thereof to the workmen. The Employer shall also have in that event the right to terminate the contract with immediate effect and to exercise powers reserved to the Employer under the contract as result of termination.
- h.** Special conditions, if any, pertaining to the tender is shown in Tender Schedule.

### 31. ARBITRATION CLAUSE

- a) Any 'dispute or difference of any nature whatsoever, any claim, cross-claim, counterclaim or set off of the Company against the Contractor or regarding any right, liability, act, omission or account of any of the parties hereto arising out of or in relation to this agreement shall be referred to the Sole Arbitration of the Director (Marketing) of the Company or of some Officer of the Company who may be nominated by the Director (Marketing). The contractor will not be entitled to raise any objection to any such arbitrator on the ground that the arbitrator is an officer of the Company or that he has dealt with the matters to which the contract relates or that in the course of his duties as an Officer of the Company, he had expressed view on all or any other matters in dispute or difference. In the event of the arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reason, the Director (Marketing) as aforesaid at the time of such transfer, vacation of office or inability to act may in the discretion of the Director (Marketing) designate another person to act as arbitrator in accordance with the terms of the agreement to the end and intent that the original Arbitrator shall be entitled to continue the arbitration proceedings notwithstanding his transfer or vacation of office as an officer of the Company if the Director (Marketing) does not designate another person to act as arbitrator on such transfer, vacation of office or inability of original arbitrator. Such person shall be entitled to proceed with the reference from the point at which it was left by his predecessor. It is also a term of this contract that no person other than the Director (Marketing) of the Company or a person nominated by such Director (Marketing) as aforesaid shall act as arbitrator hereunder. The award of the arbitrator so appointed shall be final., conclusive and binding on all parties to the agreement subject to the provisions of the Arbitration & Conciliation Act, **1996** or any statutory modification or re-enactment thereof and the rules made there under for the time being in force shall apply to the arbitration proceedings under this clause.
- b) The arbitrator shall have power to order and direct either of the parties to abide by, observe and perform all such directions as the arbitrator may think fit having regard to the matters in difference i.e. dispute, before him. The arbitrator shall have all summary powers and may take such evidence oral and/or documentary, as the arbitrator in his absolute discretion thinks fit and shall be entitled to exercise all powers under the Indian Arbitration & Conciliation Act 1996 including admission of any affidavit as evidence concerning the matter in difference i.e. dispute before him.
- c) The parties against whom the arbitration proceedings have been initiated, that is to say, the Respondents in the proceeding, shall be entitled to prefer a cross-claim, counter claim or set off before the Arbitrator in respect of any matter in issue arising out of or in relation to the Agreement without seeking a formal reference of arbitration to the Director (Marketing) for such counter-claim, or set off and the Arbitrator shall be entitled to consider and deal with the same as if the matters arising therefore has been referred to him originally and deemed to form part of the reference made by the Director (Marketing).
- d) The arbitrator shall be at liberty to appoint, if necessary any accountant or engineering or other technical person to assist him, and to act by the opinion so taken.
- e) The arbitrator shall have power to make one or more awards whether interim or otherwise in respect of the dispute and difference and in particular will be entitled to make separate awards in respect of claims of cross claims of the parties.

- f) The arbitrator shall be entitled to direct any one of parties to pay the costs to the other party in such manner and to such extent as the arbitrator may in his discretion determine and shall also be entitled to require one or both the parties to deposit funds in such proportion to meet the arbitrators expenses whenever called upon to do so.
- g) The parties hereby agree that the courts in the city of Mumbai alone shall have jurisdiction to entertain any application or other proceedings in respect of anything arising under this agreement and any award of awards made by the Sole Arbitration hereunder shall be filed (if so required) in the concerned courts in the city of Mumbai only.

Tenderer should mention estimate of time for  
the work shown in the tender.

Weeks/ Months : completing

I/We have read carefully the above terms and conditions of Tender and agree to abide by the same.

Signature of the Contractor..... (Or his  
Authorized representative)

Date:

Name / Seal of the Contractor:

Address:

**STAMP & SIGNATURE OF BIDDER**

## **SPECIAL CONDITIONS OF CONTRACT**

### **PART 'A'**

#### **1. GENERAL**

- a. Special Conditions of contract shall be read in conjunction with general conditions of the Contract, Scope of Work, Deliverables, SOR and any other document forming part of this contract wherever the contract so requires
- b. Notwithstanding the subdivision of the document into these separate sections and volumes, every part of each shall be deemed to be supplementary of every other part and shall be read with and into the contract so far as it may be practicable to do so
- c. Where any portion of the general conditions of the contract repugnant to or at variance with any provision of special conditions of the contract, then unless a different intention appears, the provision(s) of the Special Conditions of contract shall be deemed to override the provisions of General Conditions of the contract only to the extent that such repugnancies of variations in the Special Conditions of the Contract as are not possible of being reconciled with the provisions of general conditions of contract
- d. The materials, designs and workmanship shall satisfy the applicable relevant Indian & International Standards, the job specifications contained herein & codes referred to. Where the job Specifications stipulate requirements in addition to those contained in the standard codes and specifications, these additional requirements shall also be satisfied
- e. The manpower deployed for the project shall be qualified, experienced in the similar field and number of people shall be sufficient to carry out the activities without any delay.
- f. Any addition or deletion from the scope will be regulated through pre-quoted rate by the bidder during execution of the contract.

#### **2. SERVICE CONTRACT**

The entire work as per scope of work, deliverables & included in the SOR covered under this contract shall be treated as "Service Contract"

#### **3. SITE PARTICULARS**

- a. The intending to be tendered shall be deemed to have visited the site and familiarized himself thoroughly with the site conditions before submitting the tender. Non- familiarity with the site conditions will not be considered & reasons other for extra claims or for not carrying out the work in strict conformity with the drawings and specifications.
- b. Non-availability of access roads or railway siding or permits for entry of vehicles and equipment to any specific area shall in no case be the cause to condone any delay in the execution of the works or be the cause for any claims or extra compensations.

#### **4. Schedule of Rates**

SOR shall be read in conjunction with special conditions of contract, general conditions of contract, technical specifications and any other document forming a part of this contract

## **5. TREASURE GROVE**

If treasure, fossils, minerals of art or of antique interest be found during excavation or while carrying out the works, the contractor shall give immediate notice to the site engineer of any such discovery and shall hand over such finds in the custody of the Corporation.

## **6. ACCESS FOR INSPECTION**

The contractor is to provide at all times during the progress of the works and the maintenance period proper means of access, with ladders, gangways etc. and the necessary attendance to move and adapt as directed for the inspector or measurement of the works by the Site Engineer.

## **7. GATEKEEPER AND WATCHMEN**

The contractor from the time of being placed in possession of the site must make arrangement for watching, lighting and protecting all works, materials and workmen on all days including Sundays and holidays at his own cost.

## **8. SHEDS AND MATERIALS**

The contractor shall provide sheds of adequate dimensions for storage and protection of all materials like cement, lime, timber and such other materials including tools and equipment which are likely to deteriorate by the action of sun, wind, rain or other natural causes due to exposure in the open.

All such sheds shall be cleared away and the whole area left in good order on completion of the contract to the satisfaction of the site engineer. All materials, which are stored on the site, shall be stacked in such a manner as to facilitate rapid and easy checking of quantities of such materials.

## **9. COST OF TRANSPORTATION**

The contractor shall include in his quotation the cost of transportation, unloading, stacking and storing of all types of materials for their work on the site and at the places approved by the site engineer.

## **10. MATERIAL WORKMANSHIP AND SAMPLES**

Materials shall be of approved quality and the best of their kind available and shall generally confirm to IS specification. The contractor shall order all materials required to the execution of work as early as necessary and ensure that such materials are on site well ahead of requirement for use in the work. The work-involved calls for high standard of workmanship combined with speed and to the entire satisfaction of the site engineer.

## **11. RATES TO INCLUDE**

The quoted rate shall include cost of all material, like cement structural and reinforcement steel, bitumen, tools, equipment/machinery, manpower for all leads and lifts. The rates shall include all statutory taxes, duties, levies, Octroi, and turnover tax, work contract tax. \* Please refer clause 9, on page 2 of this booklet.

## **12. TEST OF WORK AND MATERIALS**

The contract shall, if required by the site engineer arrange to test materials and / or portions of the works at his own cost in order to prove their soundness and efficiency. If after any such test and work or portion of works are found in opinion of the Site Engineer to be defective or unsound, the Contractor shall pull down and redo the same at his own cost. Defective materials shall be immediately removed from the site.

Please refer covering letter

## **13. FORMEN AND TRADESMEN**

All tradesmen shall be experienced men and properly equipped with suitable tools for carrying out all the work in a first class manner. Where the site in charge deem necessary, the contractors shall provide any such tools, special or ordinary, which are considered necessary for carrying out the work in proper manner. All such tradesmen shall work under experienced and trained foremen, who shall be capable of reading and understanding all drawing, pertaining to this work.

## **14. DRAWINGS**

Drawings accompanying the tender document are indicative of scope of work and issued for tendering purpose only. Purpose of these drawings is to enable the tendered to make an offer in line with the requirements of the owner.

The contractor shall prepare Fabrication / Construction drawings for fabrication of panel's cable routing internal wiring diagram of panels etc. based on relevant standards and get it approved from BPCL. General arrangements drawings on the basis of which actual execution of work is to proceed will be furnished to the contractor progressively based on the detailed execution drawing to be prepared by the contractor. Approval of fabrication drawings, however, will not absolve the contractor of his responsibility for the safety and correctness of the fabrication details. No payment shall be made against fabrication drawings.

## **15. TOOLS & TACKLES**

Contractor shall provide at his cost all types of construction equipment, crane, tools, tackles and all such materials required for timely completion of job in all respects to the entire satisfaction of engineer in charge.

## **16. INCOME TAX RETURN**

Attested copy of the latest income tax return filed should accompany the tender.

## **17. TENDER DOCUMENTS**

Tender should be submitted in the prescribed format supplied by the Corporation.

All entries in the tender documents should be in ink and there should be no erasing or over writing. All corrections should be attested under the full signature of the contractor.

The contractor should study carefully all the tender documents and understand tender / contracts condition and quote their rates.

All the rates given in the tender schedule should be expressed both in words and figures and where there is difference between the two, the rates given in words will be taken as authentic.

The rates quoted against the tender shall be valid up to 180 days from the date of opening of the tender and once the quotation is accepted and the order placed on the successful tendered, the rates shall be valid till the entire work is 100% complete.

## **18. SCHEDULE OF QUANTITIES/RATES**

All transport and handling charges are on contractor account.

Corporation will not reimburse any amount paid by contractor as Excise duty for any contract job including fabrication/ erection/tank construction/bullets etc.

## **19. PAYMENT**

The payment terms shall be as per Standard payment terms for each tender package as given in Annexure IV-\*

Income tax deductions and any other statutory deductions shall be made as per existing practice.

## **20. FIRM PRICE**

The prices quoted by the BIDDER should be firm and not subject to any price escalation.

## **21. INFORMATION REQUIRED**

The following details are required for submission in Two (2) copies along with technical bid of tender

- a. Details of similar works executed in last Two (2) years in the pro forma given in the document with names and postal address of clients along with copies of Letter of Intent work and other documents in evidence of award of work on the tender.
- b. List of equipment proposed to be committed for work in pro forma given in Tender.
- c. Site organization chart with bio-data of resident Engineer. Details of progressive built up envisaged skilled personnel at site.
- d. Details of present commitments giving contract values details of work date of commencement of work, percentage completion as on date and schedule of completion.
- e. Information about tendered in the pro forma given in the tender.

- f. Income tax clearance and sales tax clearance certificate.
- g. Power of Attorney in the name of person who has signed the tender document.
- h. Solvency certificate from bankers.
- i. Audited Balance Sheets and Profit and Loss Account Statements duly certified by Chartered Accountant in practice for the last three (3) years

## **22. STIPULATIONS AND DEVIATIONS TO TENDER CLAUSES**

Tenderer are advised to submit quotations strictly based on the terms and conditions and specifications contained in the tender documents and are not to stipulate any deviations.

## **23. MEASUREMENT OF WORK**

The contractor in the presence of the Engineer in charge or his representative will take the Measurement jointly. Payment will be made on the basis of these measurements. Measurements of weight will be the metric tons corrected to the nearest kilogram and will be made based on execution drawings. (Where weights are not indicated on the working drawings, packing lists as received from the suppliers will be consulted for determining the weights). All other measurements will be as per actual work executed at site. The weld metal weight will not be taken into consideration. Linear measurement will be in meters corrected to the nearest centimeter. If physical measurement is not practicable dimensions as given in the execution drawings shall be adopted.

## **24. LEADS**

In case of variation between the leads mentioned in the specification and schedule of rates, the leads given in the schedule of rates shall prevail.

## **25. RECRUITMENT OF PERSONNEL BY CONTRACTOR**

The contractor shall not recruit personnel of any category from among those who are already employed by other agencies working at site.

## **26. UNDERGROUND AND OVERHEAD STRUCTURES**

All existing structures overhead lines, existing pipeline and utilities will be intimated to the contractor before taking up the execution of work. Contractor shall execute the work in such a manner that the said structure utilities, pipelines etc. are not disturbed / damaged.

## **27. BOUGHT OUT ITEMS**

Regarding bought out items like pressure switches, inline inductor, foam tank, pressure / vacuum gauges, tendered to specify the brand name, Model no., Technical literature



along with technical bid. Further the tenderer to specify the makes of the items - structural steel, bolts/studs/nuts in technical bid. Tenderer will be responsible for the guarantee of the supplied material and will be responsible for any correction during the guarantee period. Guarantee given by the manufacturer will not be sufficient. All test certificates for bought out items to be produced and submitted to BPCL.

## **28. COMPLETION DOCUMENTS**

As a part of completion documents, the contractor shall submit in triplicate the following documents.

- a. The technical documents according to which work was carried out.
- b. Test/Calibration report certifying the details of test / calibration carried out on equipment/materials.
- c. Materials appropriation statement for the materials issued by Owner for work, list of surplus materials returned to Owner's store duly supported by necessary documents.
- d. Six sets of as built drawings include Single line diagrams, Cabling layout, earth layout, lighting layout, internal wiring for all the panels, equipment manuals for all the suitable gears like ACBs etc. duly approved by engineer in charge and one set of reproducible on polyester film (dregs. Prepared by contractor, No payment is payable on this part)
- e. The following documents will be deemed to form the completion documents, as applicable.
  - i. The technical documents according to which the WORK was carried out.
  - ii. Three sets of construction drawings showing therein the modifications and corrections made during the course of execution of work, duly signed by the ENGINEER-IN-CHARGE.
  - iii. Completion Certificate for 'embedded' and 'covered up' works.
  - iv. Certificate of final levels as set out for various works.
  - v. Certificates of tests performed for various works.
  - vi. Material appropriation statement for the materials issued by OWNER for the WORK and list of surplus materials returned to Owner's stores duly supported by necessary documents.
  - vii. Manufacturing drawings of parts which need frequent replacements due to normal wear and tear during operation, if any.
  - viii. Any other documents as stated elsewhere and as per instruction of ENGINEER.
  - ix. Inspection Release notes / Material test certificate / batch certificates for the equipments materials / electrodes etc. supplied and incorporated by the contractor in the work.
  - x. 3 sets of the as-built construction drawings made by the contractor including one set of the original tracing sheets, duly certified by Engineer-in-Charge.
  - xi. Pre-commissioning / Commissioning check list.

## **29. FINAL DECISION AND FINAL CERTIFICATE**

Upon the expiration of the DEFECT LIABILITY PERIOD and subject to the ENGINEER-IN-CHARGE being satisfied that the WORK has been duly completed by the CONTRACTOR and performed all his obligations under the CONTRACT, the ENGINEER-IN-CHARGE shall (without prejudice to the rights of OWNER to retain the provisions of relevant clause thereof) otherwise give a certificate herein referred to as the FINAL CERTIFICATE to that effect and the CONTRACTOR shall be not considered to have fulfilled the whole of his obligations under the CONTRACT until FINAL ACCEPTANCE CERTIFICATE shall have been given by the ENGINEER-IN-CHARGE notwithstanding any previous entry upon the WORK and taking possession, working or using of the same or any part thereof by the OWNER.

### **30. CERTIFICATE AND PAYMENTS NO EVIDENCE OF COMPLETION**

Except the FINAL CERTIFICATE no other certificates or payment against a certificate or on general account shall be taken to be an admission by OWNER of the due performance of the CONTRACT or any part thereof or of occupancy or validity of any claim by the CONTRACTOR.

### **31. LIMITATION OF LIABILITIES**

The final payment by the OWNER in pursuance of the CONTRACT terms shall not mean release of the CONTRACTOR from all his liabilities under the CONTRACT. The CONTRACTOR will be liable and committed under this CONTRACT to fulfill all his liabilities and responsibilities, till such time Contract-cum-Equipment Performance Bank Guarantee is released by the OWNER. The total liability of the contractor shall be limited to the contract value and the contractor shall not be held liable for consequential damages.

### **32. SITE CLEANING**

The contractor shall take care for cleaning the site from time to time for easy access to work site and also from safety point of view. Working site should be always kept cleaned up to the entire satisfaction of the engineer in charge. Before handing over any work to owner, the contractor in addition to other formalities to be observed as detailed in the document shall clear the site to entire satisfaction of engineer in charge.

### **33. QUALITY ASSURANCE / QUALITY CONTROL FOR ITEM WORKS CONTRACTS**

Tenderness shall include in his offer the quality assurance program containing the overall quality management and procedure, which is required to be adhered to during the execution of contract. After the award of the contract detailed quality assurance program to be followed for the execution of contract under various divisions of work will be mutually discussed and agreed to. The contractor shall establish document and maintain an effective quality assurance system as quoted in recognized codes.

Quality Assurance system plans/ procedures of the contractor shall be furnished in the form of QA manual. This document should cover details of the personnel responsible for Quality Assurance,

Plans or procedures responsible for quality control in respect design. Engineer procurement, supply, installation, testing and commissioning. The quality assurance

system should indicate organizational approach for quality control and quality assurance of the construction activities at all stages of work at site as well as at manufacturer's works and dispatch of materials. The owner or their representative shall reserve the right to inspect/witness review any or all stages of work at shop/site as deemed necessary for quality assurance.

#### **34. FINAL INSPECTION**

After completion of all tests as per specification, the work will be subject to a final inspection to ensure that job has been completed as per requirement. If any defects noticed in the work are attributable to contractor the contractor at his own cost as and when the owner brings them to his notice shall attend these. The owner shall have the right to have these defects rectified at the risk and cost of the contractor if he fails to attend to these defects immediately.

#### **35. ADDENDA/CORRIGENDA**

Addenda / Corrigenda to the tender documents may be issued prior to the date of opening of the tenders to clarify documents or to effect modification in the design or contract term. Each addenda / corrigenda will be issued to each person or organization to which a set of tender document has been issued. All addenda /corrigenda issued shall become part of tender document.

#### **36. FIELD MANAGEMENT**

The field management will be responsibility in charge that will be nominated by the owner. The engineer in-charge may also authorize his representative to perform his duties and function. Co-ordination of work: The engineer in-charge shall coordinate the work of various agencies engaged at site to ensure minimum disruption of work carried out by different agencies. It shall be responsibility of the contractor to plan and execute strictly in accordance with the site instructions to avoid hindrance to the works being executed by other agencies.

#### **37. INTERPRETATION OF CONTRACT DOCUMENT**

Except if and the extent otherwise provided by the contract, the provisions of the General conditions of contract and special conditions shall prevail over those of any other documents forming part of the contract. Several documents forming the contract are to be taken as mutually explanatory. Should there be any discrepancy inconsistency error or omission in the contracts or any of them the matter may be referred to engineer in-charge, who shall give his decisions and issue to the contractor, the instructions directing in what manner the work is to be carried out. The decision of the engineer in-charge shall be final and conclusive and the contractor shall carry out in accordance with this decision. Works shown upon the drawing but not mentioned in the specifications or described in the specifications without being shown on the drawings shall nevertheless be included in the same manner as if they had been specially shown upon the drawing and described in the specifications. Headings and marginal notes to be clauses of the General conditions of Contract or to specifications or to any other tender documents are solely for the purpose of giving a concise indication and to a summary of the contents thereof. And they shall never be deemed to be part thereof or be used in the interpretation or construction thereof of the contract.

In these contract documents unless otherwise stated specially, the singular shall include the plural and vice-versa wherever the context so requires. Words indicating persons shall include relevant corporate companies registered as association's body of individuals / firm or partnership.

### **38. FORECE MAJEURE**

Any delay in or failure of the performance of either part hereto shall not constitute default hereunder or give rise to any claims of damages, if any to the extent such delays or failure of performance is caused by occurrences such as Acts of God or public enemy or confiscation of facilities as Govt. authorities compliance with any order or request of any Government authorities acts of war, rebellion or sabotage or fires, floods, explosions, riots or strikes. The contractor shall keep records of the circumstance referred to above and bring these to the notice of engineer in charge in writing immediately on such occasions.

### **39. OWNER'S RISK AND COMPENSATION EVENTS**

a. Owners Risks: The owner is responsible for the excepted risks, which are

- i. War, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection of military or usurped power, or civil war;
- ii. Riot, commotion, disorder, unless solely restricted to employees of the contractor or his sub-contractor and arising from the conduct of the works;
- iii. Contamination by radio activity from any nuclear fuel, or from any nuclear or radioactive toxic explosive;
- iv. A cause due solely to the design of the Works, other than the Contractor's design;
- v. Pressure waves caused by aircraft or other aerial devices traveling at sonic or supersonic speeds;
- vi. Flood, tornadoes, earthquakes and landslides;
- vii. Loss or damage due to the use or occupation by the Employer of any Section or part of the Permanent Works except as may be provided for in the Contract;
- viii. Any operation of the forces of nature (in so far as it occurs on the site) which an experienced contractor could : \* not have reasonably foreseen or could \* reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures :
  1. prevent loss or damage to physical property from occurring by taking appropriate measures; and
  2. Insure against.

b. Compensation Events: The compensation events mutually agreed should be provided in the contract document.

c. In the event of any such loss or damage happening from any of the owner's risks defined in (a) above, as in combination with other risks, the contractor shall, if so required by the owner, rectify the loss or damage. An addition to the contract price shall be determined treating the work done as variation / extra / substituted item, as given in the relevant clauses.

- d. Whenever any compensation event occurs, the contractor will notify the owner, within 14 days and provide a forecast cost of the compensation event. As soon as information demonstrating the effect of such event is available, the owner shall assess the compensation to be paid. In case contractors forecast is deemed unreasonable, the owner shall adjust the contract price and / or extend the completion date based on his assessment.

#### **40. CONTRACTOR'S OFFICE AT SITE**

The contractor shall provide and maintain an office at his own cost at the site for the accommodation of his agent and staff and such office shall be open at all reasonable hours to receive instruction, notice or other communications. After the job is over contractor to remove all the structure, material and hand over the clean site to owner.

#### **41. COMPLETION CERTIFICATE**

Within a month of the completion of the work in all respects the contractor shall be furnished with a certificate by the engineer in charge of such completion, but no certificate shall be give nor shall the work be deemed to have been executed until all scaffolding surplus materials and rubbish are cleared off the site completely or until the work shall have been measured by the engineer in charge whose measurement shall be binding and conclusive. The work will not be considered complete and taken over by the owner, until all the temporary works, labour 'and staff colonies etc. constructed are removed and the work site cleaned to the satisfaction of the engineer in charge.

If the contractor shall fail to comply with the requirements of this clause on or before the date fixed for the completion of the work, the engineer in charge maybe at the expense of the contractor remove such scaffolding, surplus materials and rubbish and dispose of the same as he thinks fit and clean off such dirt as aforesaid and the contractor shall forthwith pay the amount of all expenses so incurred and have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

#### **42. COMPLETION CERTIFICATE DOCUMENTS**

- a. The technical documents according to which the work was carried out.
- b. The sets of construction drawing/as built drawing showing therein the modification and corrections made during the course of execution signed by the engineer in charge along with one set of non- terrible tracing.
- c. Completion certificate for embedded and covered up works.
- d. Certificates of tests performed for various works.
- e. Certificates of final levels as set out for various works.
- f. Material appropriation statement for the materials issued by the owner for the works and list of surplus materials returned to the owner's store duly supported by necessary documents.
- g. Test certificate of materials supplied by contractor.

#### **43. WATER AND POWER**

The owner will provide no water and power. Contractor shall make his own arrangements for the same at his own cost.

#### **44. TIME SCHEDULE**

The works shall be executed strictly as per the time schedule. Monthly / weekly construction programs will be drawn up by the engineer in-charge jointly with the contractor based on availability of materials. Work fronts etc. The contractor shall scrupulously adhere to the targets / programs by deploying adequate personnel, construction equipment, tools and tackles and also timely supply of required materials coming within his scope of supply as per contract. In all matters concerning the extent of targets set out in the monthly weekly program and the degree of achievements. The decision of engineer in-charge will be final and binding on the contractor.

#### **45. PROOF OF PAYMENT IN CASE OF STATUTORY OBLIGATIONS**

Payment will be released on production of documentary evidence for deposit of provident fund and ESI, as applicable.

#### **46. RETENTION MONEY**

This shall be applicable to all Works Contracts above Rs. 1 Lakhs. Payment for each of the running bills of the Contractors shall be limited to 90 % of the value of work certified. At the end of the contracted work, 10% retained value as above will be converted to retention money to protect the company from loss arising from any defects in the contracted work, for a period of not less than 6/12 months as the case may be. On specific confirmation from the USER Department and authorization by the Project Leader, Retention money may be refunded on the completion of retention period. This amount can be paid before the retention period against Bank guarantee for the like amount as per the proforma as per Annexure-IX.

#### **47. EXCISE DUTY ON WORKS CONTRACT**

No excise duty on works contracts for the work done at owner's premises is applicable. BPCL will neither entertain any claim nor reimburse any such amount paid by contractor for the subject work.

#### **48. ESCALATION**

The prices quoted shall be kept firm till the completion of the work and no escalation of whatsoever nature will be allowed on the subject work. The bidders are expected to quote reasonable prices in respect of all unit rate items. They shall be able to explain wherever rates are abnormally very high or very low.

#### **49. USE OF PRODUCT WITH STANDARD SPECIFICATION**

Bidders are advised to provide the product as per the standard specification as laid down in NIT.

#### **50. ABNORMAL RATES**

The Contractor is expected to quote rate for each item after careful analysis of the cost involved for the completion of item, considering all specifications and conditions of contract. This will avoid loss of profit or gain, in case of curtailment or change of specification for any item. In case it is noticed that the rates for any item quoted by the

tenderer unusually are high or unusually low it will be sufficient cause for the rejection of tender unless the owner is convinced about the reasonableness of the rates on scrutiny of the analysis for such rate to be furnished by the tenderer on demand. In the rate contract where the quoted rates for the items exceed 25 % of the owner's estimated rates, such items will be considered as abnormally high rates items(AHRs) and payments of AHR items beyond the SOR stipulated quantities shall be made at the least of the following rates:

1. Rates as per SOR , quoted by the contractor
2. rates of the items , which shall be derived as follows:
  - a. Based on the rates of machines and labour as available from the contract (which includes contractor's supervision, profit, overheads and other expenses)
  - b. In case rates are not available in the contract , rates will be calculated based on prevailing market rates of machine, material and labour plus reasonable escalation to cover contractor's supervision profit, Transportation, overhead and other expenses.

## **A. SCOPE OF WORK**

### **1. VARIATIONS, EXTRA / SUBSTITUTED ITEMS / NEW ITEMS**

- a. Variation permitted should be  $\pm 25\%$  in quantity of each individual item, and  $\pm 10\%$  of the total contract price. Within 14 days of the date of instruction for executing varied work, extra work or substitution, and before the commencement of such work, notice shall be given either (a) by the contractor to the owner of his intention to claim extra payment or a varied rate or price or (b) by the owner to the contractor of his intention to vary a rate or price.
- b. For items not existing in the Bill of Quantities or substitutions to items in the Bill of Quantities, rate payable should be determined by methods given below and in the order given below
  - i. Rates and prices in Contract, if applicable :
  - ii. Rates and prices in the Schedule of Rates applicable to the Contract +/- tendered percentage, where appropriate;
  - iii. Market rates of materials and labor, plus 10% for overheads and profits of contractor
- c. If there is delay in the owner and the contractor coming to an agreement on the rate of an extra item, provisional rates as proposed by the owner should be payable to such time as the rates are finally determined.
- d. For items existing in the Bill of Quantities but where quantities have increased beyond the variation limits, the rate payable for quantity in excess of the quantity in the Bill of Quantity shall be Rates and prices in contract, itself.
- e. All those items which are not covered in the schedule of rates of the contract document, shall be treated as "new item / extra item".
- f. The rates for these items shall be derived based on mutual understanding between the contractor and BPCL on the basis of either of the following or in combination with one another method :
- g. By extrapolating from the available SOR of the contract to derive the new rate.
- h. Adopting the rates of similar items from any other contract being executed in the same vicinity.
- i. Adopting the rates of similar items from any other contract being executed in the same area / region by any other oil industry / PSU.
- j. Adopting the rates from an old / completed contract with suitable escalation.
- k. Working out the new rates from the first principles and surveying the prevailing market rate in the region.

### **2. CONTRACTOR'S SCOPE OF SUPPLY**

The procurement and supply in sequence and at the appropriate time of all materials and consumables including structural steel required for completion of works as per drawing and specification except the materials specification listed under owner's scope of supply shall entirely be the contractor's responsibility. All these materials are to be supplied at site with Test Certificate heat mark and all other related papers. The items to be supplied by the contractor are in general but not limited to the following.

### **3. MATERIALS FOR CONSTRUCTION**

As per the technical specifications enclosed along with the tenders.



#### **4. FREE ISSUE MATERIALS:**

- a. Contractor to arrange for taking delivery of free issue materials from BPCL storage yard / stores to fabrication site.
- b. The Contractor has to furnish indemnity bond (format enclosed) equivalent to the cost of the materials prior to issuance of pipes, pipe fitting, valves etc.
- c. The responsibility of the free issue items rests with the fabricator against theft, damage during transit / fabrication once they have been issued to the contractor.

#### **B. ACCOUNTING**

##### **1. Surplus Material and Scrap**

For Material Supplied by Owner

##### **STANDARD PAYMENT TERMS FOR WORKS CONTRACTS**

The payment terms given below are subjected to the following condition:

- a) Monthly progressive payments shall be made towards the work completed as per the payment terms and as per agreed rates, against running account bills submitted by the contractors.
- b) There will be a deduction of 10% towards retention amount from every running account bills, which may be released against equivalent performance bank guarantee on completion of all jobs. PBG shall be submitted at the time of making agreement (option for PBG in lieu of retention money shall be exercised at the time of submitting bid.
- c) Necessary deductions shall be made towards income tax, works contract tax etc.as applicable as per terms of contract.
- d) All bank charges towards Demand draft, payment through banks etc.if any shall be borne by the contractor.
- e) Payment shall be effected in Electronic mode only.

PLEASE ensure you provide us the Bank details with a copy of crossed cheque to capture MICR CODE. NEFT mandate form duly signed and verified by banker shall be submitted for effecting payments.

## **SPECIAL CONDITIONS FOR TENDER**

### **PART - B**

#### **1. CONTRACT:**

The contractor shall mean the totality of the agreement between BPCL and the successful contractor for the execution of work including all documents such as general condition of contracts, special conditions of contract, specifications, drawings, schedule of rates / quantities, all correspondences between BPCL & Contractor and LOI etc.

#### **2. INTERIM PAYMENTS:**

At the sole discretion of the Company, the contractor can receive upto 90% of the payment for the cost. Of the work done. Interim bills should be duly supported by the measurements of work actually done. (All payments shall be subjected to deduction of Income Tax and any other statutory deduction as may be applicable from time to time)

#### **3. FINAL BILL / RETENTION MONEY :**

On completion of the work to the satisfaction of BPCL and after clearing the debris, tools, tackles, materials, etc. from the site, the contractor shall submit his final bill based on the jointly recorded measurements of actual work done. Payment of final bill will be made after adjusting interim payments, outstanding mobilization advance, recoveries (if any), and retention amount deducted and retained.

a. Retention Money equivalent to 10% of the total cost of works done will be deducted from the final bill. NO interest will be paid on money retained by the Company. Retention money shall be paid to the contractor after 6/12 months from the date of completion of job after adjusting any dues / claims of the Corporation against the Contractor for any reason whatsoever under the agreement which may arise within the period of 12 months. On specific request of the contractor, BPCL may agree to release the retention money on submission of Bank Guarantee (in approved format) of equivalent amount valid till 6/12 months from the date of completion of job.

b. On specific request of the contractor, BPCL may agree to release Retention Money of Running/Final Bill against Performance Bank Guarantee (in approved format), valid till 12 months from the date of completion of job plus a lodgment period of 6 months, provided such request is received in writing at the time of responding to the Tender Enquiry and PBG is submitted along with the duly acknowledged agreement. No mid-course release of Retention Money shall be entertained till the end of defect liability period.

#### **4. SETTING OUT:**

The contractor shall set out the facility in accordance with the plans. All grid / centerlines shall be pegged out to the satisfaction of the Site Engineer. The contractor shall be responsible for the correctness of the lining out and any inaccuracies are to be rectified at his own expense”.

#### **5. INSPECTION OF SITE:**

The contractor shall visit the examine the construction, site and satisfy himself about the Nature of the existing roads or other means of communication, the characteristics of the soil and excavations, the extent and magnitude of the work required and facilities available for obtaining materials and shall obtain generally, his own information on all matters affecting the execution of the work. No extra charge made in consequence of any understanding of incorrect information

or any of the point or on the grounds of insufficient description will be allowed. All expenses incurred by the contractor in connection with obtaining, information for submitting this tender shall be borne by the contractor and no claims for reimbursement, whatsoever shall be entertained.

#### **6. ACCESS FOR INSPECTION:**

The contractor is to provide at all times during the progress of the works and the maintenance period proper means of access, with ladders, gangways etc. and the necessary attendance to move and adapt as directed for the inspection or measurement of the works by the Site Engineer.

#### **7. WATER AND ELECTRIC SUPPLY :**

The contractor will make their own arrangement for water and power required, to complete the job under the scope of this tender. Contractor shall include the cost of water and power in their quotation and no additional payment will be made on this account. If need be the contractor shall mobilize DG sets to complete the work within stipulated time at their own cost.

#### **8. GATEKEEPER AND WATCHMAN:**

The contractor from the time of being placed in possession of the site must make arrangements for watching, lighting and protecting all the works, materials and workmen on all days including Sundays and holidays at his own cost.

#### **9. SHEDS FOR MATERIALS:**

The Contractor shall provide sheds of adequate dimension for storage and protection of all materials like cement, lime, timber and such other materials including tools and equipment which are likely to deteriorate by the action of sun, wind, rain or other natural causes due to exposure in the open. All such sheds shall be cleared away and the whole area left in good order on completion of the contract to the satisfaction of the Site Engineer. All materials which are stored on the site, shall be stacked in such a manner as to facilitate rapid and easy checking of quantities of such materials.

#### **10. COST OF TRANSPORTING:**

The contractor shall include in his quotation the cost of transportation, unloading, stacking and storing of all types of free issue materials issued for their work on the site and at the places approved by the Site Engineer.

#### **11. MATERIALS, WORKMANSHIP & SAMPLES :**

Materials shall be of approved quality and the best of their kind available and shall generally conform to IS specifications. The contractor shall order all the materials required for the execution of work as early as necessary and ensure that such materials are on site well ahead of requirement for use in the work.

The work involved calls for high standard of workmanship combined with speed and to the entire satisfaction of the Site Engineer.

#### **12. TESTING OF WORK AND MATERIALS :**

The contractors shall, if required by the Inspector / Site Engineer, arrange to test materials and / or portions of the works at his own cost in order to prove their soundness and efficiency. If after any such test the work or portion of works are found in the opinion of the Site Engineer to be defective or unsound, the contractor shall pull down and redo the same at his own cost. Defective materials shall be immediately removed from the site.

### **13. MECHANICAL PLANT:**

The contractor will be required to provide and maintain in working order the following power driven equipments during the construction work

- A. Concrete Mixers Hopper type of at least 200 litre capacity.
- B. Immersion type vibrators for consolidating concrete in RCC ring for foundation. Vibrators shall be adequate in number, A set of stand by vibrator shall also be maintained on the site of work
- C. Pumps for bailing out water / pumping in tanks.
- D. Plate rolling m/c, welding equipments, gas cutters.
- E. All equipments required for shot blasting like air compressors, spray guns etc.
- F. Any other machinery ordered by the Site Engineer.

### **14. WORK PROGRAMME:**

After mobilization at site successful contractor shall submit the detail bar chart in consultation with the Site Engineer for approval.

### **15. CLEARING OF SITE:**

The contractor shall after completion of the work, clear all debris and left over materials at site at his own expenses and to the entire satisfaction of the Site Engineer.

### **16. INSPECTION OF RECORDS:**

The owner shall have the right to inspect the records maintained by the contractor concerning workmen and labour laws and regulation from time to time. In the event of any contravention of such laws, regulations, rules etc. the owner shall have the right to require the contractor to effect such compliance within such time as the owner may prescribe in the behalf and in the event of the contract failing to effect such compliance within the time prescribed by the owner then the owner shall without prejudice to his other rights, be entitled to withheld form the amount payable to the workmen under any such laws, regulations or rules and to make payment thereof to the workmen.

The owner shall also have in that event the right to terminate the contract with immediate effect and to exercise powers reserved to the owner under the contract as a result of termination.

### **17. PERFORMANCE / FAILURE OF CONTRACTOR:**

17.1 If the performance of the successful tenderer is found to be unsatisfactory, the Owner reserves the right to cancel in part or whole the contract and get the work executed through alternate means at the entire risk and cost of the successful tenderer.

17.2 The successful tenderer shall not undertake on his own any change in specifications mentioned in the tender documents. In case of doubt he will refer the matter the work involving change in original specifications, quantities / additional items of work should be covered by obtaining suitable variation order(s) from the Owner / Site-in-charge immediately.

17.3 If the contractor after receipt of written notice from the site-in-charge requiring compliance within 10 days fails to carry out and execute any work in accordance with this contract and or to comply with site-in-charge's instructions then the owner with the consent of the site-in-charge.

And without prejudice to its right to terminate his contract and may employ and pay other persons to execute any such work what so ever that may be necessary to give effect there of, and all costs incurred in connection there with shall be recoverable from the contractor by the owner as a debt and may at the option of the owner be deducted from any money due or to become due to the contractor.

## **18. TERMINATION OF CONTRACT BY THE OWNER :**

If the contractor being an individual or a firm commits any "Act of Insolvency" or shall be adjudged as insolvent or being incorporated Company shall have an order for compulsory winding up made against it, or pass an effective resolution for winding up voluntarily unable to carry out and fulfill the contract and to give security therefore, if so required by the Site-in-charge, or if the Contractor (whether an individual firm or Incorporated Company) shall suffer execution to be issued, or shall suffer any payment under this contract to be attached by or on behalf of the creditors of the Contractor, or shall assign or charge encumber or sublet this contract without the consent in writing of the Owner first obtained or shall charge or encumber due to contractor there under, or if the Site-in-charge shall certify in writing to the owner that the Contractor:

A. has abandoned the contract, or

B. has failed to commence the works or has without any lawful excuse under these conditions, suspended the progress of the works for 14 days after receiving from the site-in-charge written notice to proceed, or

C. has failed to proceed with the works with such due diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon or

D. has failed to remove materials from the site or to pull down and replace work for seven days after receiving from the site-in-charge written notice that the said materials or work were condemned and rejected by the site-in-charge under these conditions.

E. has used sub-standard or inferior material or materials not conforming to the specifications or has employed inferior workmanship in carrying out the works or part thereof or has not exercised due diligence in execution of the said works, or

F. has neglected or failed persistently to observe and perform all or any of the acts, deeds, matters or things by this contract to be observed and performed by the contractor for three days

after written notice shall have received by the Contractor requiring the contractor to observe or perform the same.

G. has to be detriment of good workmanship or in defiance of the site-in-charge's instructions to the contrary, sublet or subcontracted any part of the contract, or

H. has failed to comply with the site-in-charge instructions or

I. has in the opinion of site-in-charge committed any breach of this contract then and in any of the said case the Owner with the written consent of the Site-in-charge may notwithstanding any previous waiver, after giving seven days notice to the contractor, terminate the contract, but without hereby affecting the right of the owner or the powers of the Site-in-charge or the obligations and liabilities of the contractors in respect of work, the contract shall continue in force as fully as if the contract has not been so terminated and the obligations of the contractor in respect of work subsequently executed shall continue as if the work subsequently executed has been executed by or on behalf of the contractor. And further, the owner by its agents or servants shall be entitled forthwith to enter upon and take possession of the works and all plant, tools scaffoldings, sheds, machinery, steam and other power implements, machinery, equipments and materials lying upon the site or the adjoining lands of roads and use the same as its owner property and to employ the same by means of its own servants and workmen in carrying on and completing the works or by employing any other contractor and the contractor shall not in any way interrupt or do any act, matter of things to prevent intimidate or hinder such other contractor or other person or persons employed for completing and finishing or using the materials and plant for the works, When the works shall be completed and or as soon as thereafter as convenient, the site-in-charge shall give a notice in writing to the contractor to remove his surplus materials and plant, and should the contractor fail to do so within the period of 14 days after receipt thereof by him, the Owner shall sell the same either by public auction or private sale and shall give credit to the contractor for the amount realized. The site-in-charge shall thereafter ascertain and certify in writing under his hand what ( if any thing) shall be due or payable to or by the Owner for the value of the said plant and materials so taken possession of by the Owner, the expenses or loss which the Owner shall have been put to in procuring the works to be completed and the amount if any, owing to the contractor and the amount which shall be so certified, shall thereupon be paid by the Owner to the contractor or by the contractor to the Owner, as the case may be and the certificate of the site-in-charge shall be final and conclusive and binding on the parties hereto. In the event of termination under this clause, the owner shall not be bound by any provision of this contract to make any further payment tot he contractor until the said works are completed.

## **19. INSURANCE**

Contractor shall at his own expenses carry out and maintain Insurance with reputable Insurance companies to the satisfaction of the Owner as follows:

## **20. EMPLOYEES STATE INSURANCE ACT:**

The contractor hereby accepts all liabilities .for the due compliance with the provisions of the Employees State Insurance Act 1948. The contractor further agrees to defend, indemnify and hold the Owner harmless against any claim, action, suit or proceedings brought against the Owner by the Central and State Authorities and or any person under the said Employees State Insurance Act. The contractor undertakes to file with the

Employees State Insurance Corporation the prescribed forms which may be required in respect of the contractors / sub contractors employees whose or aggregate remuneration is not above Rs.3000/- per month or those covered by the ESI Act or under any amendment of the Act, from time to time. The contractor shall deduct and secure the agreement of the sub contractor to deduct the employee's contribution as per the act from wages and shall also remit the relevant amount to ESI. The contractor shall ensure proper maintenance of all cards and records as required under the act for contributions made by the employees and expenses incurred in this behalf shall be borne by the Contractor / Sub Contractor. The owner shall retain such sum as may be necessary from the total contract value until the contractor shall furnish satisfactory proof that all contributions as required by ESI Act, 1948 have been paid by the Contractor, and or the owner shall have also the right to demand or deduct a fixed sum from each bill payable and retain the same to pay and meet with or adjust any claim or due claimed by any person, including State and Central

Governments, in this respect and the contractor shall have no right claim refund or return of the said money from the Owner except on satisfactorily producing proof of his having already met the same to the Owner.

## **20.1 WORKMEN'S COMPENSATION AND EMPLOYEE'S LIABILITY INSURANCE**

Insurance shall be effective for all Contractors employees engaged in the performance of this contract. If any of the work is sublet, after necessary approval by the owner, the contractor to provide workmen's compensation and Employer's liability Insurance for the latter employees, if such employees are not covered under the contractor's Insurance.

## **20.2 ANY OTHER INSURANCE REQUIRED UNDER LAW OR REGULATION BY OWNER**

Contractor shall also carry and maintain any and all other Insurance, which may be required under any law or regulation from time to time.

## **20.3 AUTOMOBILE LIABILITY INSURANCE**

Contractor will carry and maintain automobile Liability Insurance to cover all risks to Owner for each of his vehicle plying on works of this contract and these insurance shall be valid for the total contract period. No extra payment will be made for this insurance. Owner shall not be liable for any damage or loss not made good by the insurance company should such damage or loss result from unauthorized use of the vehicle.

## **20.4 LABOUR ACTS:**

The Contractor shall comply with all provisions of applicable Labour Acts, such as

- (a) The Minimum Wages Act 1948.
- (b) The Factories Act 1948.
- (c) The Contract Labour (Regulations & Abolition) Act 1970.
- (d) The Building & other Construction Workers Act 1996.
- (e) The Employees State Insurance Act 1948..
- (f) The Employees Provident Funds & Miscellaneous Provisions Act, 1952.

## **20.5 LABOUR WELFARE MEASURES:**

The contractor shall extend all welfare measures to his workmen in line with provisions given in labour acts mentioned in previous para. Some of those are mentioned below :-

First Aid box Treating injuries by a qualified and experienced medical practitioner.  
Arrangement for hospitalization, if needed. Payment of wages / PF / ESI etc. as per relevant labour act and maintaining proof of the same.

Ensuring fitness of workers and maintaining hygiene.

Arrangements for clean & cold drinking water.  
Separate toilet and washing facilities for male and female.

Canteen facility, if obligatory under labour act.  
Crèche, if obligatory under labour act.

## **20.6 SALIENT FEATURES OF SOME MAJOR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK.**

(a) Workmen Compensation Act 1923:- The Act provides for compensation in case of injury by accident arising out of and during the course of employment.

(b) Payment of Gratuity Act 1972 :- Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.

(c) Employees P.F. and Miscellaneous Provision Act 1952:- The Act Provides for monthly contributions by the employer plus workers @ 12%/8.33%. The benefits payable under the Act are:

- i) Pension to family pension on retirement or death, as the case may be.
- ii) Deposit linked insurance on the death in harness of the worker.
- iii) Payment of P.F. accumulation on retirement/death etc.

d) Maternity Benefit Act 1951:- The Act provides for leave and some other benefits to workmen/employees in case of confinement or miscarriage etc.

e) Contract Labour (Regulation & Abolition) Act 1970:- The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The Principal Employer is required to take Certificate or Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labor. **No Labour below the age of eighteen years shall be employed on the work.**

f) Minimum Wages Act 1948:- The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment construction of Building, Roads, Runways are scheduled employment.

g) Payment of Wages Act 1936:- It lays down as to by what date the wages are to be paid when it will be paid and what deductions can be made the wages of the workers.

h) Equal remuneration Act 1979:- The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.

i) Payment of Bonus Act 1965:- The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs. 3500/- per month or less. The bonus to be paid to employees getting Rs. 2500/- per month or above upto Rs. 3500/- per month shall be worked out by taking wages as Rs. 2500/- per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in



certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.

j) Industrial Disputes Act 1947:- The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

k) Industrial Employment's (Standing Orders) Act 1946:- It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). It provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get same certified by the designated Authority.

l) Trade Unions Act 1926:- The Act lays down the procedure for registration of trade union of workmen and employers. The Trade Union registered under the Act has been given certain immunities from civil and criminal liabilities.

m) Child Labour (Prohibition & Regulation) Act 1986:- The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of Children in all other occupations and processes. Employment of Child Labor is prohibited in Building and Construction Industry.

n) Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979:-

The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an Intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home upon the establishment and back, etc.

o) The Building and other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996 :- All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or Construction work and other welfare measures, such as Canteens, First-Aid facilities. Ambulance, Housing, and accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Office appointed by the Government.

p) Factories Act 1948:- The Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, and welfare provisions working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities.

It is applicable to premises employing 10 persons or more with aid of power or 20 more persons without the aid of power engaged in manufacturing process.

q) Implementation of Apprentices Act 1961

## **21. SITE SUPERVISION / FACILITIES AND WORK AT NIGHT**

21.1 The entire work will be carried out under the supervision of the authorized representatives of the Owner, but this will not absolve the contractors from his responsibilities for quality / period of execution of the work.

21.2 The successful tenderer shall arrange for at least one competent supervisor to be present at site at all times during the progress of the work, who shall be duly authorized to take instructions and execute them on his behalf.

21.3.1 In the event that the Contractors scope of work does not include erection, the contractor will be required to provide supervisory services for satisfactory erection, installation, testing and commissioning of the equipment / materials supplied by him. Contractor's supervisory services shall be requisitioned by the Owner as and when required, on "per diem" basis during erection, installation, testing and commissioning.

The contractor will be intimated in advance regarding the time and like duration of the erection, installation, testing and commissioning of the respective equipment / material(s). It will be the duty of the Contractor to depute his competent supervisory staff who will act independently on behalf of the contractor. The supervision service will be deemed as "part a and parcel" of the fabrication and supply contract.

21.4 During the contractor's supervision at site necessary tools, tackles, implements, labour etc. will be provided. However to maintain uninterrupted progress of work Contractor's supervisor will prepare a Schedule and forward to the site-in-charge in writing sufficiently in advance.

21.5.1 The contractor / Contractors supervisor at site may be called upon three shifts basis during erection, installation, testing and commissioning for the over all interest of the project. However no extra cost in this regard will be paid by the owner.

## **22. OBSERVANCE OF RULES AND REGULATION INFORCE**

The contractor and his men shall abide by all security, safety rules / regulations in force at a location and the laws, bye-laws and statutes of Government / Semi Government and any other local authorities such as requirements / liability under enactments like the Workmen's Compensation Act, Contract Labour Act, etc. and the Owner shall stand indemnified against any claim on these scores. The contractor and his men shall strictly abide by "no smoking" and other petroleum regulations on the premises.

22.2 The contractor shall conform to the provisions of Acts of Parliament or State Legislatures and to any bye-laws rules, orders or notifications of any government, Municipal or Local Authority for the time being in force affecting the work undertaken by him and will give all necessary notice to and obtain requisite sanction and permits of and from the Municipal and any other authority in respect of the said work or the material to be used there at and generally will comply with the building and other regulations of such authorities and will keep the company indemnified against all claims, penalties and losses that may be incurred by it by reasons of any breach by the contractor of any statues by laws, rules, regulations, notifications etc.

22.3 The contractor and the sub contractors of the contractor shall obtain authority (ties) designated in this behalf under any applicable law, rule or regulation (including but not limited to the Factories Act and Contract Labour (Abolition and Regulation Act 1970) so far as applicable any and all such license (s) from time to time be or become necessary for or relative to the execution of the work or any part of portion thereof or the storage or supply or any materials or otherwise in connection with the performance of the contract, and shall at all times observe and ensure due to observance by the subcontractor servants and agents of all terms and conditions of the said license (s) consents (s) regulation (s) and other authorization (s) and laws, rules and regulations applicable thereto.

22.4 The contractor undertakes to ensure due and complete compliance with all laws, regulations, rules etc. whether of the Central Government or the State government or any other competent authority applicable to the workmen employed or whose services are otherwise availed of by the contractor, whether in connection with the construction work at site or

otherwise. The owner shall have the right to inspect the records maintained by the contractor shall when ever required by the owner produce such records and as and when the owner may call upon the contractor to ascertain whether or not the requirements of all such laws, regulations, rules, etc. have been complied with the contractor. In the event of any contravention of such laws, regulations, rules etc. coming to light whether as a result of such inspection or otherwise, the owner shall have the right to make the contractor to affect such compliance within such time as prescribed by the owner and the owners shall without adjudicate to his other right, be entitled to withheld from the amount payable to the workmen under any such laws, recommendation or rules and to make payment thereof to the workmen. The owner shall also have in that event of the right to terminate the contract with immediate effect and to exercise powers reserved to the owner under the contract as a result of termination.

22.5 The contractor shall be responsible at his own cost in and relative to performance of the work and contract to observe and to ensure observance by his subcontractors, if any, agents and servants of the provisions of the safety code as herein after appearing and all fire, safety and security regulations, as may be prescribed by the owner from time to time and such other precautions and measures as shall be necessary and shall employ / deploy all equipment necessary to protect all works, materials, properties, structures, installation, communication facilities, whatsoever from damage, loses or any other hazard (including but not limited to fire and exposition and shall during construction and other operations minimize the disturbance and inconvenience to the owner, other contractors, the public and the adjoining land property, crops and vegetation and shall indemnified the owner from all losses, damages, costs, charges expenses, penalties action, claims demand and proceeding whatsoever suffered or incurred by .or against the owner, as the case may be by virtue of any loss, alternation, displacement, disturbance, destruction or accident to any works, materials properties, structure, equipments installation, communication facilities, land property, crops, trees and vegetation as aforesaid with the intent that the contractor shall be exclusively responsible for any accident, loss, damage, alteration displacement, disturbance or destruction as aforesaid resulting directly or indirectly from any breach by the operation, Act or omission of the contractor, his sub contractor sif any agents or servants.

### **23. APPROVALS:**

It will be the successful tenderer's responsibility to get the works approved and obtain all certificates for plumbing, electrical, civil works, etc. from local municipal, governmental or other required authorities at no extra cost to the owner.

### **24. SAFETY / SECURITY OF EQUIPMENT / PROPERTY;**

The responsibility for the safety, security of the components, materials, equipments brought or installed by the contractor or handed over to him by the owner for the completion of the work will remain with him till acceptance of the work by the owner. Any damage caused to the materials / equipment during the execution of the work will be made good by the contractor at his cost. The owner may require the contractor to have a guarantee / indemnity bond executed for the value of the material supplied to him free of cost as per the terms of agreement.

24.2 The contractor should ensure that safety of adjoining property and should make good any loss to product property resulting from his negligence.

### **25. DISMANTLING / DAMAGE TO PROPERTY:**

25.1 During execution to work if it is found necessary to dismantle a portion of existing bund wall, enclose wall, compound wall, fencing etc. to facilitate the or movement of materials and equipment, the same shall be carried out after obtaining permission in writing from owner's authorized representative and shall also be made good by the contractor at his own cost.

25.2 Any material obtained by the contractor consequent upon dismantling of any building, structure or construction whatsoever at the job site other than any building, structure or construction dismantled by the contractor pursuant to the contractor's liabilities for defects as elsewhere herein provided, shall be exclusively property of the owner.

25.3 Contractor shall be responsible for making good to the satisfaction of the owner any loss of and any damage to all structures and properties belonging to the owner or being executed or procured or being procured by the owner or of other agencies within the premises of all the work of the owner, if such loss or damage is due to fault and / or the negligence or will full acts of omission of the contractor, his employees, agents, representative or subcontractor.

25.4 The contractor shall indemnify and keep the owner harmless of all claims for damage to property other than owner's property arising under or by reason of this agreement, if such claims result from the fault and or negligence or will full acts or omission of the contractor, his employees, agents, representative or sub contractor.

## **26. WORKING CONDITIONS SAFETY CODE:**

### **26.1. GENERAL:**

Contractor shall adhere to safe construction practice and guard against hazardous and unsafe working conditions and shall comply with owner's safety rules as set forth herein

### **26.2 FIRST AID AND INDUSTRIAL INJURIES:**

Contractor shall maintain first aid facilities for its employees and those of its sub contractor.

A. Contractor shall make outside arrangements for ambulance or suitable service and for the treatment of industrial injuries. Name of those providing these services shall be furnished to site-in-charge prior to start of construction and their telephone numbers shall be prominently posted in Contractor's field office.

B. All critical industrial injuries shall be reported promptly to site-in-charge and a copy of contractor's report covering each personal injury requiring the attention of physician shall be furnished to owner.

### **26.3 GENERAL RULES:**

Carrying / striking of matches, lighters and smoking inside the hazardous area, is strictly prohibited. Violator of the "No Smoking Rules" shall be discharged immediately. Within the operation area, no hot work shall be permitted without valid gas / safety / fire permits issued by owner. The contractor shall be hold liable and responsible or all lapses of his subcontractor's employees in this regard.

## **26.4 CONTRACTORS BARRICADES:**

A. Contractor shall erect and maintain barricades required in connection with his operations to guard or protect:

- i. Excavations
- ii. Hoisting areas
- iii. Areas adjudged by contractor's or owner inspectors.
- iv. Owner's existing property liable to damage by contractor's operation, in the opinion of owner / site-in- charge.

B. Contractor's employees and those of his subcontractor's shall become acquainted with' owner's barricading practice and shall respect the provision thereof.

C. Barricades and hazardous areas adjacent to put not located in normal routes of travel shall not be marked by red flasher lanterns at nights.

## **26.5 SCAFFOLDING;**

A. Suitable scaffolding shall be provided for workmen for all works that cannot safely be done from the ground or from solid constructions except such short period work as can be done safety from ladders. When a ladder is used, an extra workman shall be engaged for holding the ladder and if the ladder is used for carrying material as well suitable foot holds and hand holds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1 to 4 ( 1 horizontal and 4 vertical).

B. Scaffolding or staging more than 30 cm above the ground or floor swing or suspended from an overhead support erected with stationary support shall have a guard rail properly attached, bolted braced and otherwise rewarded at least 1 meter high above the floor or platform or scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened, as to prevent it from swaying from building structure.

C. Working platform, gangway and stairways should be so constructed that they should not sag unduly or unequally and if the height of the platform or the gangway or the stairway is more than 30 cm above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described above.

D. Every opening in the floor of a building or in a working platform be provided with suitable beam to prevent the fall of persons or materials by providing suitable fencing or failing whose minimum height shall be 1 meter.

E. Safe means of access shall be provided to all working platform and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 10 meter in lengths, while the width between the side rails in ring ladder shall in no case be less than 30 cm for ladder up to and including 3 meters in length. For longer ladders this width should be increased by at least 6 mm for each additional 30 cms of length. Uniform step spacing shall not exceed 15 cms. Adequate precautions shall be taken to prevent danger from the electrical equipment. No materials on any of the size of work shall be so stacking or placed as to cause danger or inconvenience to any person or public.

The contractor shall also provide all necessary fencing and lights to protect the workers and staff from accidents and shall be bound to bear the expenses of the defence of every suit, action or other proceedings, at law that may be brought by any person or injury sustained owing negligence of the above precautions and to pay damages and costs which may be awarded in any such suit or action or proceedings to any such person or which may be with the consent of the contractor be paid to compromise any claim by such.

#### **26.6 EXCAVATION AND TRENCHING:**

A. All trenches 1.3 meters or more in depth shall at all times be supplied with at least one ladder for each 33 meter length or fraction thereof.

B. Ladder shall be extended from bottom of the trench to at least 1 mt. above the surface for the ground.

The sides of the trenches which are 1.5 meters or more in depth shall be stepped back to give suitable slope or securely held by timber bracing so as to avoid the danger of sides to collapse. The excavated materials shall not be placed within 45 cm. Of the edge of the trench or half of the trench depth which ever is more cutting shall be along from top to bottom. Under no circumstances undermining or undercutting should be done.

#### **26.7 DEMOLITION:**

A. Before any demolition works is commenced and also during the process of the work all roads and open areas adjacent to the work site shall either be closed or suitable protected.

B. No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by operator shall remain electrically charged.

C. All practical steps shall be taken to prevent danger to persons, employees, from risk of fire or exposition or flooding. No floor or other part of the building shall be over loaded with debris or materials to render it unsafe.

#### **26.8 SAFETY EQUIPMENTS:**

A. All necessary personal safety equipments as considered adequate by the site-in-charge should be made available for the use to the persons employed on the site and maintained in a condition suitable for immediate used, and contractor shall take adequate steps to ensure proper use of equipment by those concerned.

B. Workers engaged in white washing, in mixing or staking of cement bags or any materials which are injurious to the eyes shall be provided with protective goggles.

C. Those engaged in welding and cutting works shall be proved with protective face and eye shields, hand gloves etc.

D. Workers employed in asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective gloves.

E. Stone breakers shall be provided with protective goggles and protective clothing, and seated at sufficiently safe intervals.

F. When workers are employed in sewers and manholes which are in use, the contractor shall ensure that the manhole covers are opened and are ventilated at least for two hours before the

workers are allowed to get into the manholes, and manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accidents to the public.

G. The contractor shall not employ men below the age of 18 years and women on the work of painting of products containing lead in any form. Wherever men above the age of 18 years are employed on the work of lead painting the following precautions should be taken.

- i. No paint containing lead product shall be used, except in the form of paste or ready made paint.
- ii. Suitable face masks shall be supplied for use by the workers, when paint is applied in the form of spray or a surface having lead paint dry, rubbed and scrapped.
- iii. Overall shall be supplied by the contractor to the workmen and adequate facilities shall be provided to enable the working painter to wash during and on cessation of work.

H. Hot work should be carried out only in the areas earmarked for the purpose after taking required safety precautions and only after obtaining written permission from the Site-in-charge. Any provision required to be made e.g. wind screens of G.I. sheets etc. to make the area safe for hot work, will be made by the successful tenderer at his own cost.

#### **26.9 RISKY PLACES:**

When the work is done near any place where there is a risk of drowning, all necessary safety equipment shall be provided and kept ready for use and all necessary steps taken for prompt reducer of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

#### **26.10 HOISTING EQUIPMENT:**

Use of hoisting machine and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions:

A. These shall be of good mechanical construction sound materials, adequate strength free from patent defect and shall be kept on good conditions and in the good working order.

B. Every rope used in hoisting or lowering material or as a means of suspension shall be of durable quality and adequate strength and free from patent defects.

C. Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any scaffolding, which or give signals to the operator.

D. In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or lowering or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be clearly marked with the safe working load and the conditions under which it is applicable shall also be indicated. No part of any machine or any gear referred to above in this paragraph shall be beyond the safe working load except for the purpose of testing.

E. In case of departmental machine the safe working load shall be notified by the site-in-charge. As regards contractor's machines, the contractor shall notify the safe working load of machine to

the site-in- charge, whenever he brings any machinery to site of work and get it verified by the site-in-charge concerned.

#### **26.11 ELECTRICAL EQUIPMENT:**

Motors, gear transmission, electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load, adequate precautions shall be taken to reduce to the minimum the risk of any part of suspended load becoming accidentally displayed. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves and boots as may be necessary shall be provided. The workers shall not wear any rings, watches and carry key or other material which are good conductors of electricity.

#### **26.12 MAINTENANCE OF SAFETY DEVICES :**

All scaffolding, ladders and other safety devices mentioned or described herein shall be maintained in safe conditions and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near place or work.

#### **26.13 DISPLAY OF SAFETY INSTRUCTIONS:**

Safety provisions should be brought to the notice of all concerned by display on the notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.

#### **26.14 ENFORCEMENT OF SAFETY REGULATIONS:**

To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the contractor shall be open to inspection by the site-in-charge.

#### **26.15 NO EXEMPTION:**

A. Notwithstanding the above clause 19.1 to 19.14 there is nothing in these to exempt the contractor from the operations of any Act or rules in force.

B. The works throughout including any temporary work shall be carried out in such a manner as not to interfere in any whatsoever with the traffic on any roads or footpaths, at the site or in the vicinity there to or any existing works, whether on the property of the owner or of a third party.

C. No men / materials /ent not covered by valid passes shall be permitted within the project area and no material / equipment shall be permitted to be taken out of the project area unless authorized by the concerned authorities of the project. The contractor shall be held fully responsible to any or all delays, losses / damage that may result consequent on any lapse that may occur on the part of his subcontracts / employees in this regard.

#### **27 MISCONDUCT / MISBEHAVIOUR OF CONTRACTOR'S EMPLOYEES:**

27.1 The contractor is expected to co-operate with other contractors carrying out work allocated to them so as to avoid braking up of the work already done by them or causing any hindrance in



the progress of their work. In case there is any difficulty / dispute the same should be immediately brought to the notice of the site-in-charge.

27.2.1 If and whenever the contractor sub contractors employees shall be in the opinion of the site-in-charge be guilty of any misconduct or misbehavior the contractor if so directed by the site-in-charge shall at once remove such person / persons from the employment.

## **28. PATENTS AND ROYALTIES:**

28.1 If an equipment, machinery or materials to be used or supplied or method of processes to be practiced or employed in the performance of the contract is / are covered by a patent under which the contractor is not licensed the contractor shall before supplying or using the equipment, machinery materials, methods processes as the case may be obtain such license (s) and pay such royalty (ies) and license fee as may be necessary in connection with the performance of the contract. In the event license, the contractor will defend at his own expense any suit for infringement of patent, which is brought against the contractor to the owner, as a result of the failure and shall pay any damage and costs awarded in such a suit and will keep the owner indemnified from the against all other consequences thereof.

28.2 The successful tenderer shall not sublet or assign any part of the work to another party without prior written consent of the owner. In the event, the successful tenderer will be solely responsible for the work so sublet or assigned.

## **29. JURISDICTION:**

The successful contractor shall have to enter with an agreement with BPCL. This agreement shall be deemed to have been made in Mumbai and shall be constructed according to the laws of India and the performance by the successful contractor of any act on his part herein contained shall be considered due in MUMBAI for the purpose of jurisdiction.

**ANNEXURE - I**

**DEVIATION SHEET**

1. NIL DEVIATIONS

OR

2. DEVIATIONS AS GIVEN BELOW/ AS PER ATTACHED SHEET

**CONTRACTOR'S SIGNATURE**

**ANNEXURE - II  
(WITH PRICE BID)  
SUMMARY OF TENDERER'S PRICES  
(PI enclose with detailed schedule of quantities and rates)**

NAME OF WORK:

NAME OF TENDERER:

1. TOTAL PRICE AS SHOWN: RS.

(IN FIGURES)

(IN WORDS): RS.

2. REBATE OFFERED (IF ANY)  
PERCENTAGE OF TOTAL  
CONTRACT VALUE (WHICH  
WILL BE APPLICABLE ON  
EACH ITEM OF SCHEDULE  
OF RATES) (IN FIGURES): RS...  
(IN WORDS): RS.

3. GRAND TOTAL PRICE  
AFTER APPLYING REBATE  
(AS SHOWN ABOVE AT  
S.NO. 2)

(IN FIGURES): RS.

(IN WORDS): RS.

**(SIGNATURE & SEAL OF THE AUTHORISED TENDERER)**

### ANNEXURE III

#### BREAK UP OF ALL TAXES, DUTIES AND LEVIES AS APPLICABLE FOR THE SUBJECT CONTRACT

As per the current Laws, acts, rules, regulations etc the tariffs considered by the bidder while estimating the incidence of taxes, duties, fees, charges, levies as included in Price bid.

ITEM	LAW/ RULES/ REGULATIONS/ REFERENCE	ACTS/ RATE OF TAX (%)	REMARKS
Excise Duty			
Custom Duty/ CVD as per tender Document			
Sales tax (VAT/CST)			
Service tax			
Any other Tax / Duties/ Levies and Cess etc.			

**Note:**

1. Bidder may suitably add other heads / columns to indicate all the provisions and related information with regard to above. Strike out the items which are not applicable in this tender or write "**Not Applicable**".
2. For Abated, Composite & Nil rate, please submit the declaration to that effect.
3. Service Tax, if applicable, would be paid separately on free issue material at the quoted rate above.

## **ANNEXURE-IV**

### **STANDARD PAYMENT TERMS FOR WORKS CONTRACTS**

The payment terms given below are subjected to the following conditions:

- a. Monthly progressive payments shall be made towards the work completed as per the payment terms and as per agreed rates, against running account bills submitted by the contractors.
- b. There will be a deduction of 10% towards retention amount from every running account bill which may be released against equivalent performance bank guarantee on completion of jobs.
- c. Necessary deductions shall be made towards income tax, works contract tax etc. as applicable as per terms of contract.
- d. All bank charges towards Demand draft, payment through banks etc. if any shall be borne by the contractor.

#### **1.0 Civil**

- \_ 90% on completed individual item of work.
- \_ 10% on completion of all jobs and final acceptance by site in-charge

#### **2.0 Mechanical**

##### **2.1 Fabrication & erection of tanks (U/G & A/G)**

- \_ 20% after completion of cutting, rolling and fabrication
- \_ 20% after erection
- \_ 40% after welding and radiography
- \_ 10% after hydro testing calibration and other tests
- \_ 10% on completion of all Jobs and Final acceptance by site in-charge

##### **2.2 Supply, Fabrication & erection of LPG Bullets**

- \_ 5% of the total order value on approval of drawings and design calculations for vessel from TPIA/CCOE/owner and submission of bank guarantee for equipment amount valid till completion of job.

#### **Cost of steel plates**

- \_ 85% of the cost of steel plates will be paid on receipt of Plates at the contractor's works all identification of the same by TPIA on prorate weight basis and on furnishing bank guarantee for 100% value of steel Plates valid till completion of job.

#### **Fabrication, erection and transportation**

- \_ 30% of cost of fabrication and erection and cost of transportation after fabricating the sections at shop and against proof of dispatch of materials.
- \_ 25% of cost of fabrication and erection and cost of transportation after assembly, welding, stress relieving of bullet, fixing and welding of saddle supports.
- \_ 20% of cost of fabrication and erection and cost of transportation after erection on the foundation.
- \_ 10% of cost of fabrication and erection and cost of transportation after hydro testing and painting of bullets. Balance 10% of total contract value after completion of all Jobs, handing over of bullets with all studs, nuts, bolts, gaskets etc. and submission of final acceptance certificate of TPIA and documentation as specified in the tender to the owner including CCOE approved "M built drawings".

### **2.3 Fittings**

- \_ 100% after supplying, installation and acceptance by site in-charge

### **2.4 Structural steel works**

- \_ 60% after supply, inspection, acceptance of material and fabrication
- \_ 20% after erection and welding
- \_ 20% on completion of all works and final acceptance by site in-charge

### **2.5 Painting works**

- \_ 30% after surface preparation and application of one coat of primer
- \_ 30% after second coat of primer for each tank
- \_ 40% after application of finish paint, completion of all works and acceptance

### **2.6 Gas Monitoring system (GMS) In LPG**

- \_ 60% after receipt and acceptance of materials at site
- \_ 20% after erection
- \_ 20% on completion, testing, commissioning and final acceptance of the system

### **2.7 Piping**

- \_ 50% after completion of fabrication
- \_ 30% on completion of erection including provision of supports, vents, drains etc., alignment and welding including completion of radiography and other examinations as specified
- \_ 20% after lines are flushed, pressure tested and finally accepted in all respects by site in charge

### **2.8 Equipment erection (supply In contractor's scope)**

- \_ 80% on supply and erection of equipment
- \_ 20% on completion, testing, commissioning and final acceptance

## **2.9 Conveyor system in LPG plant**

- \_ 60% after supply and acceptance of materials at site
- \_ 20% after erection
- \_ 20% on completion, testing, commissioning and final acceptance

## **2.10 Fire protection**

### **2.10.1 Pipelines**

- \_ 50% after completion of fabrication
- \_ 30% after erection Including provision of supports, vents, drains etc. alignment and welding including completion of radiography and other examinations as specified
- \_ 20% after lines are flushed, pressure tested and finally accepted in all respects by site In charge

### **2.10.2 Instrumentation/equipments**

- \_ 60% after receipt and acceptance of materials at site
- \_ 20% after erection
- \_ 20% on completion, testing, commissioning and final acceptance of the system

### **2.10.3 MV spray system**

- \_ 50% on design approval and supply of materials as per approval BOM
- \_ 30% after erection
- \_ 20% on completion, testing, commissioning and final acceptance of the system

### **2.10.4 Cables**

- \_ 80% of agreed rates on supply and laying
- \_ 20% of agreed rates on completion, testing, commissioning and final acceptance

## **3.0 Electrical/instrumentation/automation works**

### **3.1 Instrumentation works**

- \_ 80% of agreed rates on receipt of materials and installation at site
- \_ 20% of agreed rates on completion, testing, commissioning and final acceptance

### **3.2 Automation works**

- \_ 60% of agreed rates on factory acceptance test and receipt of materials at site
- \_ 20% of agreed rates after erection
- \_ 20% of agreed rates on completion, testing, commissioning and final site acceptance

### **3.2.1 Control Room automation job**

#### **1. For supply & erection items**

- 70% of agreed rates on factory acceptance and receipt of material at site
- 10% of agreed rates after erection.
- 5% of agreed rates after completion of trial run for 15 days . BPCL will release the amount incase trial run could not be done within 30 days from the date of erection against submission of performance bank guarantee of equivalent amount with validity of 18 months .
- 15% of agreed rates after completion of testing, commissioning and final site acceptance and completion of following activities
  - I) Supply of spares as per list
  - II) Back to back warranty for two years from the date of system hand over from OEM for major items as per list.
  - III) Placement of competent resident engineer at site.
  - IV) Written guarantee from the TAS vendor for comprehensive warranty and continued back up support for the entire system for 10 years from the date of system hand over
  - V) Handing over of 3 sets of final documents as per the list

#### **2. For design engineering / FAT/SAT/training/documentation & commissioning items only**

- 85% of agreed rates on completion of activity
- 15% of agreed rates after completion of testing, commissioning and final site acceptance and completion of following activities
  - I) Supply of spares as per the list
  - II) Back to back warranty for two years from the date of system hand over from OEM for major items as per the list.
  - III) Placement of competent resident engineer at site.
  - IV) Written guarantee from the TAS vendor for two years comprehensive warranty and continued back up support for the entire system for 10 years from the date of system hand over
  - V) Handing over of 3 sets of final documents as per the list



Note:-

1. Rest of the payment terms as per the original bid document remains same
2. In the event of delay beyond three months from the date of supply/erection, due to reasons not attributable to the TAS vendor, the respective part payment against sat/commissioning will be released on submission of PBG of equivalent amount with 18 months of validity .

Payment for supply of materials will be released only on production of routine test certificates, CCE approval; un priced shipping document (for imported materials), OIML/ W&M approval where ever applicable

### **3.3 HT & LT works & other Jobs**

#### **3.3.1 For supply of items by contractor**

- \_ 60% of agreed rates on receipt and acceptance of materials at site ‘
- \_ 20% of agreed rates after erection
- \_ 20% of agreed rates on completion, testing, commissioning and final acceptance

#### **3.3.2 For supply of Items by BPCL**

- \_ 80% of agreed rates after erection
- \_ 20% of agreed rates on completion, testing, commissioning and final acceptance

## **ANNEXURE-V**

(To be executed on plain paper and applicable for all tenders of value above **One Crore**)

### **INTEGRITY PACT**

#### **Between**

Bharat Petroleum Corporation Limited (BPCL) hereinafter referred to as "The Principal",  
**And**

.....hereinafter referred to as "The Bidder/Contractor/Supplier"

#### **Preamble**

The Principal intends to award, under laid down organization procedures, contract/s for .....The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s, Contractor/s and Supplier/s.

In order to achieve these goals, the Principal cooperates with the renowned international Non-Governmental Organization "Transparency International" (TI). Following TI's national and international experience, the Principal will appoint an Independent External Monitor who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

#### **Section 1 - Commitments of the Principal**

- (1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
  - a) No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for himself/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.
  - b) The principal will, during the tender process, treat all Bidders with equity and reason. The Principal will, in particular, before and during the tender process, provide to all Bidders the same information and will not provide to any Bidder confidential / additional information through which the Bidder could obtain an advantage in relation to the tender process or the contract execution.
  - c) The Principal will exclude from the process all known prejudiced persons.
- (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the relevant Anti-Corruption Laws of India, or if there be a

substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

## **Section 2 - Commitments of the Bidder / Contractor/Supplier**

- (1) The Bidder / Contractor/Supplier commits itself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
  - a) The Bidder / Contractor/Supplier will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person, any material or immaterial benefit which he/she is not legally entitled to, in order to obtain in exchange, any advantage of any kind whatsoever during the tender process or during the execution of the contract.
  - b) The Bidder / Contractor/Supplier will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
  - c) The Bidder / Contractor/Supplier will not commit any offence under the relevant Anti-Corruption Laws of India; further the Bidder / Contractor/Supplier will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
  - d) The Bidder / Contractor/Supplier will, when presenting his bid, disclose any and all payments he has made, is committed to, or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- (2) The Bidder / Contractor/Supplier will not instigate third persons to commit offences outlined above or be an accessory to such offences.

## **Section 3 - Disqualification from tender process and exclusion from contracts**

If the Bidder, before contract award, has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or credibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

- (1) If the Bidder/Contractor/Supplier has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is

also entitled to exclude the Bidder / Contractor/Supplier from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.

- (2) A transgression is considered to have occurred if the Principal after due consideration of the available evidences, concludes that no reasonable doubt is possible.
- (3) The Bidder accepts and undertakes to respect and uphold the Principal's absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
- (4) If the Bidder / Contractor/Supplier can prove that he has restored / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.

#### **Section 4 - Compensation for Damages**

- (1) If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover from the Bidder liquidated damages equivalent to Earnest Money Deposit/Bid Security.
- (2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor/Supplier liquidated damages equivalent to Security Deposit / Performance bank Guarantee.
- (3) The Bidder agrees and undertakes to pay the said amounts without protest or demur subject only to condition that if the Bidder / Contractor/Supplier can prove and establish that the exclusion of the Bidder from the tender process or the termination of the contract after the contract award has caused no damage or less damage than the amount of the liquidated damages, the Bidder / Contractor shall compensate the Principal only to the extent of the damage in the amount proved.

#### **Section 5 - Previous Transgression**

- (1) The Bidder declares that no previous transgression occurred in the last 3 years with any other Company in any country conforming to the TI approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

## **Section 6 - Equal treatment of all Bidders / Contractors /Suppliers/ Subcontractors**

- (1) The Bidder/Contractor/Supplier undertakes to demand from all subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
- (2) The Principal will enter into agreements with identical conditions as this one with all Bidders, Contractors/Suppliers and Subcontractors.
- (3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

## **Section 7 – Punitive Action against violating Bidders / Contractors / Suppliers/Subcontractors**

If the Principal obtains knowledge of conduct of a Bidder, Contractor, Supplier or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor, Supplier or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will initiate appropriate action.

## **Section 8 - Independent External Monitor / Monitors (three in number depending on the size of the contract) (To be decided by the Chairperson of the Principal)**

- (1) The Principal appoints competent and credible Independent external monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- (2) The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal.
- (3) The Bidder/Contractor/Supplier accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Bidder/Contractor/Supplier. The Bidder/Contractor/Supplier will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to this project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder/Contractor/Supplier/ Subcontractor with confidentiality.

- (4) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Bidder/Contractor/Supplier. The parties offer to the Monitor the option to participate in such meetings.
- (5) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or heal the violation, or to take other relevant action. The Monitor can in this regard submit non-binding recommendation. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the Independent External Monitor shall give an opportunity to the Bidder/Contractor/Supplier to present its case before making its recommendations to the Principal.
- (6) The Monitor will submit a written report to the Chairperson of the Board of the Principal within 8 to 10 weeks from the date of reference or intimation to him by the 'Principal' and, should the occasion arise, submit proposals for correcting problematic situations.
- (7) Monitor shall be entitled to compensation on the same terms as being extended to / provided to Outside Expert Committee members / Chairman as prevailing with Principal.
- (8) If the Monitor has reported to the Chairperson of the Board a substantiated suspicion of an offence under relevant Anti-Corruption Laws of India, and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- (9) The word 'Monitor' would include both singular and plural.

## **Section 9 - Pact Duration**

This Pact begins when both parties have legally signed it. It expires for the Contractor/Supplier 12 months after the last payment under the respective contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by Chairperson of the Principal.

## **Section 10 - Other provisions**

- (1) This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. Mumbai. The Arbitration clause provided in the main tender document / contract shall not be applicable for any issue / dispute arising under Integrity Pact.
- (2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- (3) If the Bidder/Contractor/Supplier is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- (4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

.....  
For the Principal

.....  
for the Bidder/Contractor/  
Supplier

Place .....

Date .....

Witness 1: .....

Witness 2: .....

## **ANNEXURE-VI**



**PROFORMA OF BANK GUARANTEE  
(EARNEST MONEY DEPOSIT)  
(On Non-Judicial Stamp paper for appropriate value)**

**BANK GUARANTEE NO. :**  
**BANK GUARANTEE AMOUNT:**  
**EXPIRY DATE :**  
**6 MONTHS CLAIM DATE :**  
**(FROM EXPIRY DATE)**  
**TENDER NO. /DATE :**  
**JOB DESCRIPTION/**  
**LACATION :**

In consideration of the Bharat Petroleum Corporation Ltd' (hereinafter called "the Corporation") having agreed to exempt M/s. \_\_\_\_\_ (hereinafter called "the said Contractor(s)" ) from the payment of Earnest Money against Tender No, \_\_\_\_\_ dated \_\_\_\_\_ issued by corporation on production of a Bank Guarantee for Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ ) only. We (Bank's name \_\_\_\_\_ ) bank do hereby undertake to indemnify and keep indemnified the Corporation by reason of any breach by the said Contractor(s) of any of the terms and conditions contained in the Tender Notice/documents.

We, \_\_\_\_\_ further agree that the guarantee herein contained shall remain in the full force and effect during the period that would be taken for the finalization of the said Tender and that it shall continue to be enforceable till the Tender is finally decided and order placed on the successful Tenderer..

We, \_\_\_\_\_, further agree that the Corporation shall be the sole judge of and as to whether the said Contractor has committed any breach or breaches of any of the terms and conditions of the tender/or the contract and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation on account thereof to the extent of the earnest money required to be deposited by the contractor in respect of the said tender or the contract and the decision of the Corporation that the said Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation from time to time shall be final and binding on us.

Contd...2/-



Notwithstanding anything contained in forgoing, our liability under this guarantee is restricted to Rs\_\_\_\_\_. The Guarantee shall remain in force till \_\_\_\_\_ Months i.e. \_\_\_\_\_. Unless a claim under this guarantee is made within six months from the expiry date herein before mentioned the Corporation shall have not rights under these presents. We, \_\_\_\_\_, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Corporation in writing/.

Dated the \_\_\_\_\_ day of \_\_\_\_\_ 200

*Yours faithfully*  
*For* .....

*Signature*

*Name & Designation*  
*Name of the Branch*

**ANNEXURE-VII**



**PROFORMA OF BANK GUARANTEE  
(SECURITY DEPOSIT )  
(On Non-Judicial Stamp paper for appropriate value)**

**BANK GUARANTEE NO. :**

**BANK GUARANTEE AMOUNT :**

**EXPIRY DATE :**  
**(last date of completion as per LOI)**

**6 MONTHS CLAIM DATE :**  
**(from the date of expiry date)**

**LOI/AGREEMENT NO./ :**  
**JOB DESCRIPTION :**

In consideration of the Bharat Petroleum Corporation Limited ( hereinafter called “ the Owner’s which expression shall include its successors and assigns ) having awarded certain work for and relative to M/s.....  
.....(name and address of the Contractor ) upon certain terms and conditions interalia mentioned in the Owner’s Letter of Intent No..... dated.....for the job ..... (hereinafter collectively called the “the contractor” expression shall include any formal contract entered into between the Owner and Contractor in suppression of the said Letter of Intent and all amendments and/or modifications in the contract) inclusive of the condition that the Owner may accept a Bank Guarantee of a Scheduled Bank in India in lieu of Cash Deposit of the Initial Security Deposit as provided for in Clause 13 (a) of the General Conditions of Tender :

We, ..... (Name of the Bank) .....  
Having registered and head office at ..... (herein after called “The Bank”) at the request of the Contractor and with the intent to bind the Bank and its successors and permitted assigns, do hereby unconditionally and irrevocably guarantee payment to the Owner at New Delhi of the unpaid balance of the initial Security Deposit upto and aggregate limit of Rs. .... (Rupees .....). And

Contd..2

undertake to pay the Owner on demand and without protect or demur the unpaid balance of said initial Security Deposit subject to the aggregate limit of aforesaid of Rs..... (Rupees .....only )

And The Bank does hereby further agree as follows :

- 1) The guarantee/undertaking herein contained shall remain in full force And effect during the period that would be taken for the performance of the said Contract and the claims of the Owner relative thereto satisfied and/or discharged and the Owner accordingly discharges this Guarantee/undertaking subject. However, that the Owner shall have claim under this Guarantee./undertaking after expiry date.....200 , unless a notice of the claim under this Guarantee/undertaking has been served on the Bank before the expiry of the claim date, in which event the same shall be enforceable against the Bank notwithstanding that the same is enforced till..... after the expiry date, namely ( claim date). The claim date shall be valid for six months from the expiry date .
- 2) The Owner shall have the fullest liberty without reference to the Bank and without affecting in any way the liability of the Bank under this Guarantee/undertaking, at any time and/or from time to time to anywise vary the said contract and/or any of the terms and conditions therefore or of or relative to the said initial Security Deposit or to extend time of performance of the said Contract in whole or part or to postpone for any time and/or from time to time any of obligations of the Contract and/or power exercisable by the Owner against the Contractor and either to enforce or for bear from enforcing any of the terms and conditions of or governing the said Contract or the said initial Security Deposit or the securities available to the Owner or any of them and the Bank Shall not be released from its liability under these presents and the liability of the Bank shall remain in full force and affect notwithstanding any exercise by the owner of the liberty with reference to any or/all the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, act or omission on the part of the Owner or any indulgence by the Owner to the contractor or of any other act, matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of releasing the Bank from its liability hereunder or any part.

Contd...3/-

3-

- 3) It shall not be necessary for the Owner to proceed against the Contractor before proceeding against the Bank and the Guarantee/ Undertaking herein contained shall be enforceable against the Bank notwithstanding the existence of any other security for any indebtedness of the Contractor to the Owner (including relative to the said

initial security deposit) and notwithstanding any such security deposit) and notwithstanding any such security shall at the time when claim it made against the Bank or proceeding taken against the Bank hereunder, be outstanding or unreels.

- 4) The amount stated by the Owner in any demand, claim or notice as the unpaid balance of the said initial security deposit for the time being shall be between the Bank and the Owner for the purpose of these presents be conclusive of the said balance.
- 5) The liability of the Bank to the Owner under this Guarantee/undertaking shall remain in full force and effect notwithstanding the existence of any difference or dispute between the Contractor and the Bank/and or the Bank and the Owner, or otherwise howsoever touching or effecting these presents or the liability of the Contractor to the Owner and notwithstanding the existence of any instructions or purported instructions by the Contractor or any other person to the Bank not to pay or for any cause withhold or defer payment to the Owner under these presents, with the intent that notwithstanding the existence of such difference, dispute or instruction, the Bank shall be and remain liable to make payment to the Owner in terms hereof.
- 6) The Bank shall not revoke this Guarantee/undertaking during its currency except with the previous consent of the Owner in writing and also agreed that any change in the constitution of the Contractor or the Bank or the Owner shall not discharge the Bank's liability hereunder.
- 7) The Bank does hereby declare that ..... Name of the person signing on behalf of the Bank) .....who is ....., is authorized to sign this Guarantee/undertaking on behalf of the Bank and to bind the Bank thereby.

Dated this .....day of .....2007

Yours faithfully.

For .....

*Signature*

*Name & Designation    Name of the Branch*

## ANNEXURE-VIII



**PROFORMA OF BANK GUARANTEE**  
**(SECURITY AGAINST FREE ISSUE OF STEEL PLATE )**  
**(On Non-Judicial Stamp paper for appropriate value)**

**BANK GUARANTEE NO.** :

**BANK GUARANTEE AMOUNT :**

**EXPIRY DATE** :  
*(last date of completion as per LOI)*

**6 MONTHS CLAIM DATE** :  
*(from the date of expiry date)*

**LOI/AGREEMENT NO./** :  
**JOB DESCRIPTION** :

In consideration of the Bharat Petroleum Corporation Limited ( hereinafter called “ the Owner’s which expression shall include its successors and assigns ) having awarded certain work for and relative to M/s.....

.....(name and address of the Contractor ) upon certain terms and conditions interalia mentioned in the Owner’s Letter of Intent No..... dated.....for the job ..... (hereinafter collectively called the “the contractor” expression shall include any formal contract entered into between the Owner and Contractor in suppression of the said Letter of Intent and all amendments and/or modifications in the contract) inclusive of the condition that the Owner may accept a Bank Guarantee of a Scheduled Bank in India in lieu of Cash Deposit of the Initial Security against issue of free steel plates for fabrication of Tanks at Contractor site.

We, ..... (Name of the Bank) .....

Having registered and head office at ..... (herein after called “The Bank”) at the request of the Contractor and with the intent to bind the Bank and its successors and permitted assigns, do hereby unconditionally and irrevocably guarantee payment to the Owner at New Delhi of the unpaid balance of the initial Security against issue of free steel plates upto and aggregate value of Steel Plates Rs. .... (Rupees .....). And

undertake to pay the Owner on demand and without protect or demur the unpaid balance of said initial Security against issue of free steel plates subject to the aggregate limit of aforesaid of Rs..... (Rupees .....only )

And The Bank does hereby further agree as follows :

1) The guarantee/undertaking herein contained shall remain in full force

*And effect during the period that would be taken for the performance of the said Contract and the claims of the Owner relative thereto satisfied and/or discharged and the Owner accordingly discharges this Guarantee/undertaking subject. However, that the Owner shall have claim under this Guarantee/undertaking after expiry date.....200 , unless a notice of the claim under this Guarantee/undertaking has been served on the Bank before the expiry of the claim date, in which event the same shall be enforceable against the Bank notwithstanding that the same is enforced till..... after the expiry date, namely ( claim date). The claim date shall be valid for six months from the expiry date .*

- 2) The Owner shall have the fullest liberty without reference to the Bank and without affecting in any way the liability of the Bank under this Guarantee/undertaking, at any time and/or from time to time to anywise vary the said contract and/or any of the terms and conditions therefore or of or relative to the said initial Security against issue of free steel plates or to extend time of performance of the said Contract in whole or part or to postpone for any time and/or from time to time any of obligations of the Contract and/or power exercisable by the Owner against the Contractor and either to enforce or for bear from enforcing any of the terms and conditions of or governing the said Contract or the said initial Security against issue of free steel plates or the securities available to the Owner or any of them and the Bank Shall not be released from its liability under these presents and the liability of the Bank shall remain in full force and affect notwithstanding any exercise by the owner of the liberty with reference to any or/all the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, act or omission on the part of the Owner or any indulgence by the Owner to the contractor or of any other act, matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of releasing the Bank from its liability hereunder or any part.*
- 3) It shall not be necessary for the Owner to proceed against the Contractor before proceeding against the Bank and the Guarantee/ Undertaking herein contained shall be enforceable against the Bank notwithstanding the existence of any other security for any indebtedness of the Contractor to the Owner (including relative to the said initial security deposit) and notwithstanding any such security against issue of free steel plates) and notwithstanding any such security shall at the time when claim it made against the Bank or proceeding taken against the Bank hereunder, be outstanding or unreels.*
- 4) The amount stated by the Owner in any demand, claim or notice as the unpaid balance of the said initial security against issue of free steel plates for the time being shall be between the Bank and the Owner for the purpose of these presents be conclusive of the said balance.*
- 5) The liability of the Bank to the Owner under this Guarantee/undertaking shall remain in full force and effect notwithstanding the existence of any difference or dispute between the Contractor and the Bank/and or the Bank and the Owner, or otherwise howsoever touching or effecting these presents or the liability of the Contractor to the Owner and notwithstanding the existence of any instructions or purported instructions by the Contractor or any other person to the Bank not to pay or for any cause withhold or defer payment to the Owner under these presents, with the intent that notwithstanding the existence of such*

*difference, dispute or instruction, the Bank shall be and remain liable to make payment to the Owner in terms hereof.*

- 6) *The Bank shall not revoke this Guarantee/undertaking during its currency except with the previous consent of the Owner in writing and also agreed that any change in the constitution of the Contractor or the Bank or the Owner shall not discharge the Bank's liability hereunder.*
- 7) *The Bank does hereby declare that ..... Name of the person signing on behalf of the Bank) .....who is ....., is authorized to sign this Guarantee/undertaking on behalf of the Bank and to bind the Bank thereby.*

*Dated this .....day of .....2007*

*Yours faithfully.*

*For .....*

Signature

Name & Designation    Name of the Branch



## ANNEXURE -IX

### PROFORMA OF BANK GUARANTEE

(PERFORMANCE )

(On Non-Judicial Stamp paper for appropriate value)

**BANK GUARANTEE NO.** :

**BANK GUARANTEE AMOUNT** :

**EXPIRY DATE** :  
(12 months defect liability period  
from the completion date)

**6 MONTHS CLAIM PERIOD** :  
(FROM EXPIRTY DATE)

**LOI/AGREEMENT NO./** :  
**JOB DESCRIPTION** :

*In consideration of the Bharat Petroleum Corporation Limited ( hereinafter called “ the Owner’s which expression shall include its successors and assigns ) having awarded to M/s.....*

*.....(name of the constitution).....*

*.....(address).....*

*..... (hereinafter referred to as “ the supplier/contractor” which expression shall wherever the subject or context so permits include its successors and assigns) a supply contract in terms inter-alia, of the Owner’s Purchase Order/LOI/Agreement No.....date..... and the General Purchase Conditions of the Owner and upon the condition of Supplier’s furnishing security for the performance of the supplier’s liability under and/or in connection with the said supply contract upto a sum of Rs..... (Rupees.....*

*amounting to 10% (ten percent) of the total contract value.*

*We,.....(name).....(constitution).....*

*.....*

*(hereinafter called “ the Bank which expression shall include its successors and assigns) hereby jointly and severally undertake the guarantee to pay to the Owner in Rupees forthwith on demand in writing and without protest or demur of any and all moneys anywise payable by the supplier to the Company under,*



*inclusive of all the Owner's losses and damages and costs (inclusive between attorney and client), charges and expenses and other moneys anyway payable in respect of the above and specified in any notice of Demand made by the Owner to the Bank with reference to this Guarantee up to and aggregate limit of Rs.....(Rupees.....)*

*And the Bank hereby agrees with the Owner that :*

The guarantee/undertaking herein contained shall remain in full force And effect during the period that would be taken for the performance of the said Contract and the claims of the Owner relative thereto satisfied and/or discharged and the Owner accordingly discharges this Guarantee/undertaking subject. However, that the Owner shall have claim under this Guarantee./undertaking after expiry date.....200 , unless a notice of the claim under this Guarantee/undertaking has been served on the Bank before the expiry of the claim date, in which event the same shall be enforceable against the Bank notwithstanding that the same is enforced till..... after the expiry date, namely ( claim date). The claim date shall be valid for six months from the expiry date .

- (i) This Guarantee/Undertaking shall be in addition to any other guarantee or security what-so-ever that the Owner may now or at any time anyway have in relation to the Supplier's obligations/liabilities under and /or in connection with the said contract, and the Owner shall have full authority to take recourse to or reinforce this security in preference to the other security (ies) at its sole discretion, and no failure on the part of the Owner in enforcing or requiring enforcement of any other security shall have the effect of releasing the Bank from its full liability hereunder.*
- (ii) The Owner shall be a liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other security in respect of the supplier" obligations and/or liabilities under or in connection with the said supply contract and to vary the terms vis-à-vis the supplier of the said supply contract or to grant time and/or indulgence to the supplier of the said supply contract or to grant time and/or indulgence to the supplier of the said supply contract or to grant time and/or indulgence to the supplier or to reduce or to increase or otherwise vary the prices of the total contract value or to release or to forebear from enforcement of all or any of the obligations of the supplier under the said supply contract and/or the remedies of the Owner under and other security(ies) now or here-after held by the Owner and no such dealing(s), variation(s), reduction(s), increase(s) or their indulgence(s), or arrangement (s) with the supplier or release or forbearance what-so--ever shall have the effect of*

*releasing the Bank from its full liability to the Owner hereunder or of prejudicing rights of the Owner against the Bank.*

- (iii) This Guarantee/Undertaking shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the supplier but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to the Company in terms hereof.;*
- (iv) The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee/Undertaking and obligations of the Bank in terms hereof shall not be anyway affected or suspended by reason of any dispute or disputes having been raised by the supplier (whether or not pending before any Arbitrator, Officer, Tribunal or Court) or any denial or liability by the Supplier or any other order or communication whatsoever by the by the supplier or preventing or purporting to stop or prevent any payment by the Bank to the owner in terms hereof.*
- (v) The amount stated in any notice of demand addressed by the Owner to the Guarantor As liable to be paid to the owner by the supplier or as suffered or incurred by Owner on account of any losses or damages of costs, charges and/or expenses shall as between the Bank and the Owner be conclusive of the amount so liable to be paid to the Owner or suffered or incurred by the Owner, as the case may be, and payable by the Guarantor to Owner in terms hereof.*

For .....

*Signature*

*Name & Designation    Name of the Branch*

## **ANNEXURE – X**

### **National Electronic Fund Transfer (NEFT) Mandate Form**

(Mandate for receiving payments through NEFT from Bharat Petroleum Corporation Ltd)

1	Vendor Name	
2	Vendor Code	
3	Permanent Account Number (PAN)	
4	Particulars of the Bank	
	A. Name of the bank	
	B. Name of the Branch	
	C. Branch Code	
	D. Address	
	E. City Name	
	F. Telephone No.	
	G. NEFT IFSC Code (11 digits)	
	H. 9 digit MICR code appearing on the cheque book	
	I. Type of Account (10/11/13)	
	J. Account No.	
5	Vendor's e-mail id	
6	Date of effect	
7	PAN No.of the Vendor	

(Please enclose a photocopy of the cancelled cheque to enable us to verify the details mentioned above)

We hereby declare that the particulars given above are correct and complete. If the transaction is delayed or lost because of incomplete information, we would not hold the company responsible.

---

Signature of the Vendor

---

**Bank Certificate**

We certify that \_\_\_\_\_ has a Account No. \_\_\_\_\_ with us  
and we confirm that the details given above are correct as per our records.

Date:

Place:

\_\_\_\_\_  
Authorized Official of the Bank

**GRIEVANCE REDRESSAL MECHANISM**

## **PREAMBLE**

Grievance Redressal Mechanism aims at speedy resolution of grievance of tenders and prospective tenders by providing them with a platform to refer their grievances and to seek appropriate remedy to the same.

### **1.0 Definitions**

In this mechanism, unless repugnant to the meaning or context thereof, the following expressions shall have the meaning given to them below :-

1.1 **‘Company’** shall mean Bharat Petroleum Corporation Ltd.

1.1 **‘Grievance’** shall mean a representation complaining of an interference in the rights of a Tendering party or representation complaining of an oppression on a Tendering party by Bharat Petroleum Limited(BPCL) or its representatives, resulting in denial of his rights as a Tendering party.

1.2 **‘Tendering party’** shall mean a party or parties as a group who has / have participated in the tender process and submitted his / their tender in response to an invitation to participate in the tender or a party / parties who is / are prospective tenders qualified to participate in a tender based on notice issued by the Company inviting tender.

1.3 **‘Tender Inviting Authority’** shall mean an employee or committee of BPCL employees authorized to invite and / or to accept a particular tender.

1.4 **‘Grievance Redressal Officer’(GRO)** shall mean respective Functional Director to whom the originator of Tender reports.

### **2.0 Authorities to handle grievances**

2.1 There will be a two -tier mechanism to handle the grievance received from a Tendering party.

2.2 The first level of Grievance Redressal Mechanism (GRM) shall comprise of a Grievance Redressal Committee(GRC) consisting Tender inviting authorities as the Co-ordinator,head of SBU/Entity originating the Tender and the ED (Finance).All the grievance shall be lodged with the Coordinator of the GRC with a copy to the Tender Inviting Authority.

2.3 The second level of GRM shall be Standing Committee of the Board for Tenders (SCBT) to whom appeal against the Orders of the GRO can be filled by the Tendering party in case he is not satisfied with the decision of the GRC.

### **3. Contact details co-coordinator**

Telephone No.

Address:

Fax:

Our Ref:

## **SAFETY REQUIREMENTS : HEALTH, SAFETY & ENVIRONMENT**

### **1.0 HEALTH, SAFETY & ENVIRONMENT POLICY OF BPCL.**

The objective of this document is to provide and establish safe & environment friendly work practices at all construction sites as per our corporate health, safety

and environment policy given below.

### **Commitment**

Together, we have the highest concern and commitment for protecting the Health and Safety of all employees, contractors, customers and the communities in which we operate and for conservation of the Environment.

We will comply with all Statutory Regulations and may even go beyond these for the benefit of our environment.

We consider Health, Safety and Environmental aspects are an integral part of our business planning and operation processes.

### **Policy**

Based on these guiding principles, we shall :

#### **Demonstrate our commitment by .....**

- ☐ Providing and maintaining safe facilities and working conditions.
- ☐ Recognising that all employees have responsibility for their own safety and actions which could affect the safety of others.
- ☐ Adoption of appropriate technologies to minimise the impact of our activities on the Environment.

#### **Establish clear objectives and targets to .....**

- ☐ Improve continuously for prevention of accidents & occupational illnesses and minimising any impact of our activities on the environment.
- ☐ Promote learning through training and sharing of experiences and best practices; including with contractors, customers and the public, wherever required..
- ☐ Inculcate values and attitudes conducive to achieve excellence in Health, Safety and Environmental performance.

#### **Provide means to achieve our mission by .....**

- ☐ Assigning clear roles and responsibilities at all levels and periodically reviewing and recognising contribution to HSE objectives.
- ☐ Allocating adequate resources.
- ☐ Fostering a spirit of participation by all employees in Health, Safety and Environmental conservation efforts.
- ☐ Creating appropriate forums for deliberations on Health, Safety and Environmental issues.

#### **Monitor performance by .....**

- ☐ Periodically auditing work processes, systems & practices and promptly correcting deficiencies.
- ☐ Incorporating HSE performance as a parameter for assessing the overall performance of Employees, Business Units, Contractors and Business Associates.

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Commensurate with above corporate HSE policy, policy of E&P to ensure health, safety and environmental protection at every construction site is as under:

- i. Adopting sound and safe engineering practices for each project at design and construction stage.
- ii. Taking due care to not cause any intentional damage to the environment during process of construction or material handling or both.
- iii. All major projects shall be audited by a multimember team. The time gap between two consecutive safety audits at long duration project sites shall be around six months.
- iv. Every audited construction site and material warehouse shall conform to audit recommendations through compliance report to HQ.

- v. Every near miss and accident at construction site shall be reported immediately on-line by official present at incident location.
- vi. Investigation of any accident at construction site shall be done by a multimember team to determine root cause of accident and to recommend necessary changes in ground condition to prevent repetition of similar incident.
- vii. Workshop for contractors on Factory act, Minimum wages act, ESI & EPF acts, Contract labour and Building workers acts.
- viii. Workshops for contractors on industrial first aid procedures.
- ix. Increasing awareness through holding competitions among all categories of staff and contract workers on safety slogan, safety suggestions and detection of unsafe conditions and near misses.
- x. Delivering safety talks and holding safety committee meetings periodically with active participation from workers.
- xi. Observing National Safety Week and Fire Service week and World Environment day appropriately.

#### **1.1 IMPLEMENTATION OF SAFETY & ENVIRONMENTAL REGULATIONS**

The contractor shall at his own expense arrange and comply with all safety provisions as stipulated by BPCL / Bureau of Indian Standards / Electricity act / OISD / Andhra Pradesh State Pollution Control Board and other acts as applicable in respect of all personnel, directly or indirectly employed by contractor for the work. The contractor shall ensure that he, his sub-contractor and workers employed by him shall comply with all safety / environmental regulations issued from time to time by BPCL.

The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the safety & environmental requirements. If any injury to workers or loss or damage due to accident and / or environmental pollution to any property or a portion thereof occur as a result of failure on part of the contractor to comply with such regulations, the contractor shall be held responsible for the consequences thereof and shall keep BPCL harmless and indemnified.

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#### **2.0 OISD & BIS CODES OF PRACTICES**

*The contractor shall abide by the following OISD codes:*

- i. OISD – STD -105 Work Permit System*
- ii. OISD – GDN – 192 Safety Practices During Construction*

*The contractor shall abide by the following BIS codes:*

- 1) IS:3764-1992- Excavation work-code of safety.
- 2) IS:4014(Part 1&2)-1967-Safety regulations for steel tubular scaffolding.
- 3) IS:3696(Part 1) -1987-Safety code for scaffolds.
- 4) IS:3696(Part2)-1987 –Safety code for Ladders.
- 5) IS:7293-1974-Safety code for working with construction machinery.
- 6) IS:4081-1986-Safety code for blasting and related drilling operations.
- 7) IS:3016-1982-Code of practice for fire precautions in welding and cutting operations.
- 8) IS:4130-1991-Demolition of buildings-Code of safety.
- 9) IS:5216(Part 1&2)-1982-Reccommendation on safety procedures and practices in Electrical work.
- 10) IS:5121-1969-Safety code for piling and other deep foundations.
- 11) IS:10667-1983-Guide for selection of industrial safety equipments for protection of foot and leg.



- 12) IS:1989(Part 2)-1986-Leather safety boots and shoes for heavy metal industry.
- 13) IS:6994(Part 1)-1973-Specification for safety gloves: Part1-Leather and cotton gloves.
- 14) IS:2925-1984-Specification for industrial safety helmets.
- 15) IS:3521-1983-Industrial safety belts and harnesses.

### **3.0 LEGISLATION ON ENVIRONMENTAL POLLUTION CONTROL**

*The contractor shall abide by the following legislation:*

- 1) Water (Prevention & Control of Pollution) Act 1974 & Rules.
- 2) Air (Prevention & Control of Pollution) Act 1981 & Rules.
- 3) Environment (Protection) Act 1986 & Rules
- 4) Hazardous Wastes (Management & Handling) Rules 1989
- 5) Public Liability Insurance Act 1991 & Rules.
- 6) Noise Pollution (Regulation & Control) Rule, 2000

### **4.0 BPCL'S OBLIGATIONS ON SAFETY & ENVIRONMENT**

The layout planning of the site shall be done by BPCL. Suitable and adequate space shall be provided to the contractor for his site office and storage of materials / equipment. However, approach to work spot and road around it, if required for movement of men and machineries for construction purpose, shall be made by contractor at his own cost. Electric power source and drinking water facilities at one point of site shall be provided by BPCL. Disaster Management Plan for the site shall be prepared by BPCL wherein the contractor shall be assigned a role, which shall be obligatory.

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### **5.0 CONTRACTOR'S OBLIGATIONS ON SAFETY & ENVIRONMENT**

Any safety & environmental impact mitigation action plan prepared by BPCL shall be binding on contractor and the contractor shall adhere to the same.

The following practices shall be mandatory on part of contractor::

### **6.0 SAFETY POLICY OF CONTRACTOR**

The contractor shall have a safety policy, which shall deal with the following issues:.

- ☐ Arrangements for training at all levels with particular attention to key workers such as workers working at height, crane operators etc, whose mistakes can be especially dangerous to other workers.
- ☐ Safe methods or systems of working in hazardous condition.
- ☐ The duties and responsibilities of supervisors and key workers.
- ☐ System to circulate all information / instructions / policies.
- ☐ Arrangements for setting up of safety committees.
- ☐ The selection and monitoring of sub-contractors (if any).
- ☐ The upkeep and maintenance of tools/machineries/safety appliances in perfect working condition.
- ☐ Feed back system and corrective measures wherever required.

### **7.0 ENVIRONMENT POLICY OF CONTRACTOR**

The Contractor shall have an environmental policy, which shall deal with following matters

- ☐ Commitment to not to cause adverse impact on ecologically sensitive areas.
- ☐ Environmental Impact mitigation measures.
- ☐ Feed back system & corrective measures, wherever required.

### **8.0 ROLE OF SAFETY CUM ENVIRONMENT IN-CHARGE**

The contractor shall designate a person possessing required experience and skill

in safety and environmental issues as “Safety cum Environment In-charge”. His main duties shall consists of :

- ☐ Observance of safety action plan for the work and conditions stipulated in the tender/agreement.
  - ☐ Providing and maintenance of safety facilities like access roadways, pedestrian routes, barricades and overhead protection.
  - ☐ Providing and installation of safety signs.
  - ☐ Circulating safety practices for each trade.
  - ☐ Testing of lifting machineries such as cranes and goods hoists and lifting gears such as ropes and shackles and obtaining certification from competent authority.
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- ☐ Inspection and maintenance of access facilities such as scaffolds and ladders.
  - ☐ Inspection and cleaning of welfare facilities such as toilets, clothing, accommodation and canteens.
  - ☐ Explaining the relevant parts of the safety plan to each worker group.
  - ☐ Playing role in Disaster management plan.
  - ☐ Identifying unsafe practice / equipment and rectifying the same.
  - ☐ Dissemination of information on safety and environment protection
  - ☐ Attending safety committee meetings and implementing all decisions taken by safety committee.
  - ☐ Ensuring proper use of personal protective equipment.
  - ☐ Delivering Safety talk to workers.
  - ☐ Implementing all Environmental Impact Mitigation measures.

### **9.0 ROLE OF SUPERVISOR**

Good planning and organization at work site and assignment of clear responsibility to supervisors are fundamental to safety and environment protection. Each supervisor shall ensure within his field of competence and domain the following:-

- ☐ Working condition and equipment are safe.
- ☐ Workplace safety is ensured.
- ☐ Workers are trained for the job they are supposed to do.
- ☐ Workplace safety measures are implemented.
- ☐ The best alternative to ensure safety and environment protection is adopted within available resource and skill.
- ☐ Necessary personal protective equipments are available and used by workers.
- ☐ Safety caution boards are displayed at right place.
- ☐ Unsafe practices are eliminated.
- ☐ Arranging rescue of workers, in case of accident.
- ☐ Playing his role in disaster management plan.
- ☐ Arrange tool box safety meeting frequently.
- ☐ Informing safety cum environment in-charge in case of any violation of safety practices.
- ☐ Informing safety cum environment in-charge in case of any violation of Environmental Impact Mitigation measures.

### **10.0 ROLE OF WORKER**

Every worker shall follow safety practices and environmental impact mitigation

measure conveyed to him by the contractor's supervisor. He shall take care of his tools and use personnel protective equipment in accordance with safety practices.

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### **11.0 SAFETY COMMITTEE AT SITE**

The safety committee shall include representative of BPCL, representative of contractor identified as safety cum environment in-charge and representatives of various trades from workers. Ratio between BPCL representatives and that of contractor and various trades taken together shall be 1:1.

#### ***Model code of practice:***

Safety committee is a key part of safety in the workplace. They shall accomplish the following::

- a) Central focus : Overall look at safety requirements and to foresee problems that might otherwise cause difficulties.
- b) Sounding board. The committee is a visible and approachable body for safety or environmental complaints, suggestions, and the like.
- c) Central coordination. The coordination of safety training activities shall be accomplished by the safety committee.

An effective safety committee encourages safety awareness, gets a large number of employees actively involved in the safety program over time, helps motivate employees to follow sound safety practices. An effective employee safety structure provides a feedback mechanism to identify and correct new safety hazards at the earliest stage. Once the safety committee structure is in place and working well, it is a natural vehicle for employee involvement, preparation and introduction of new safety rules, new preventative practices, and safety procedures on new equipment.

Primarily safety committee shall look in to following:

- a) Detection of Hazard and determination of risks to workers, equipment, property and environment.
- b) Deciding actions to mitigate risks
- c) Drawing Disaster Management Plan
- d) How the committee can help management to enforce safety rules and environmental Impact mitigation measures.
- e) How to implement safety suggestions
- f) How to ensure compliance from workers.

Ideally safety committee members should play following roles:

- a) Set a good example. Committee members must set a good example. They must be above average in their safe work habits and their positive attitude about safety and environment..
- b) Be visible. Names of safety committee members should be posted prominently in their departments.
- c) Conduct safety inspections. Safety committee members should perform safety inspections. Members know the safe—and the unsafe—way to perform the jobs. Hence, they are right men to correct unsafe situation.
- d) Investigate accidents. Safety committee should investigates all lost work day accidents and record the findings.
- e) Hold regular meetings. Safety committees must meet at least once a month,

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and for their meetings to be effective the following matters must be considered:

Safety cum environment in-charge shall in general act as chairperson cum

secretary

Preparing agenda & issuing in advance of the meeting to:

- keep discussions on track
- allow members to prepare for the meeting

Issuing Minutes within two days containing:

- written summary of proceedings
- names of attendees
- number of absentees
- responsibilities for implementation assigned
- timing of implementation assigned
- cost of implementation
- any approvals required
- completed recommendations
- uncompleted recommendations
- accident review (if any)
- safety training activities

Duties of Safety Committee members shall be as under:

- ☐ Work safely yourself—set the example in the site.
- ☐ Attend and actively participate in safety committee meetings.
- ☐ Speak to your fellow workers if you believe that they are engaged in an unsafe work practice; report things which you feel you can't handle.
- ☐ Listen to employee suggestions about safety and bring those that appear to have merit to the notice of safety committee.
- ☐ Before each safety committee meeting review minutes and open items affecting your section of job and have answers or a progress report on each item for the meeting.

***Model code of practice for Safety Talks:***

Safety talks should be delivered by any one of Safety Committee members by rotation. Duration could be anything depending on interest of audience and capacity of speaker to deliver oration.

The speaker may like to use this opportunity to convey various decisions taken in Safety Committee to workers. He may prepare talk on following suggested topics or any topic of his choice but of relevance. Political or human relation related topic must not feature in Safety talks.

i. Housekeeping

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ii. Use of Safety Shoes

iii. Use of Safety Helmet

iv. Wearing of Safety Harness

v. Safety from Cement and stone dust.

vi. Checking scaffold before climbing

vii. Right use of ladders.

viii. Use of materials and tools while on scaffold.

ix. Fall protection, i.e. toe boards, anchoring of safety harness, positioning of safety net.

x. Handling of Asphalt

xi. Precautions during excavation.

xii. Electrical faults.

xiii. Safety from hanging live wires and high tension lines.

- xiv. Entering confined space.
- xv. Safety from toxic materials and fumes.
- xvi. Right posture for lifting weights.
- xvii. Slipping, tripping, drowning and falling hazards.
- xviii. Eye protection from arc welding and dust.
- xix. Precautions during operation of lifting appliances.
- xx. Safety during erecting shuttering.
- xxi. Safety during stripping of shuttering.
- xxii. Safety during use of concrete mixers and pouring of concrete.
- xxiii. Precaution during demolition of any structure.
- xxiv. Right storage of safety belts and other PPEs.
- xxv. Working on steep roof.
- xxvi. Safety from vehicles.
- xxvii. Need of communication and looking for safety of one another.
- xxviii. Look around safety.
- xxix. Air and water pollution.
- xxx. Nearby medical facilities.
- xxxi. Sun stroke and remedies
- xxxii. First aid in case of injury.
- xxxiii. Protection from AIDs.
- xxxiv. What to do if accident happens.

## **12.0 WORKING CONDUCT**

No one shall enter any part of the worksite other than for the purpose of carrying out the work. Contractor's personnel shall abide by all rules and regulations stipulated, including the following:

- ☐ Smoking inside the premises of a working location is strictly prohibited except in the designated areas.
- ☐ No source of ignition shall be taken to job site unless covered by a Hot Work Permit.
- ☐ Personnel must also strictly adhere to the approved protective clothing and equipment requirements.

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- ☐ It is essential that good house keeping is practiced at all time to keep the work area neat and clean. No material on any of the site of work shall be so stacked or placed as to cause danger and inconvenience to any person.
- ☐ Consumption of liquor, drugs or any other intoxicating substances shall be totally banned.

## **13.0 SITE PLANNING AND LAYOUT**

Proper advance planning shall be done in all matters including the following:

- ☐ Details regarding location of workshop / fabrication yard/ quality control laboratory / store yard / electrical installations / construction machineries, medical and welfare facilities, lighting etc. shall be decided and identified.
- ☐ The working sequence.
- ☐ Clear access to work location.
- ☐ Identifying and providing emergency exit.
- ☐ Displaying warning notices at vulnerable locations and routes for vehicles..

## **14.0 HOUSE KEEPING**

- ☐ Maintain tidiness during construction by cleaning up rubbish/scrap/spilled oil

and grease.

- ☐ Keeping gangways, working platforms and stairways clear of equipment and material not in immediate use. Removing or hammering down any nails projecting from timber etc.
- ☐ Arrange all machinery such as welding machine, generators, cutting machine etc. in such a way that equipment are segregated and protected.
- ☐ Check all machines at periodic intervals.
- ☐ Do not accumulate saw dust and other combustible waste to avoid fire.

#### **15.0 LABOUR ACTS:**

The Contractor shall comply with all provisions of applicable Labour Acts, such as

- (a) The Minimum Wages Act 1948.
- (b) The Factories Act 1948
- (c) The Contract Labour (Regulations & Abolition) Act 1970
- (d) The Building & other Construction Workers Act 1996.
- (e) The Employees State Insurance Act 1948
- (f) The Employees Provident Funds & Miscellaneous Provisions Act, 1952.
- (g) Any other applicable Act.

#### **16.0 LABOUR WELFARE MEASURES:**

The contractor shall extend all welfare measures to his workmen in line with provisions given in labour acts mentioned in previous clause 15. Some of those are reproduced below:-

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- ☐ First Aid box
- ☐ Treating injuries by a qualified and experienced medical practitioner.
- ☐ Arrangement for hospitalization, if needed.
- ☐ Payment of wages / PF / ESI etc. as per relevant labour act and maintaining proof of the same.
- ☐ Ensuring fitness of workers and maintaining hygiene.
- ☐ Arrangements for clean & cold drinking water.
- ☐ Separate toilet and washing and resting facilities for male and female workers.
- ☐ Canteen facility, if obligatory under contract labour act..
- ☐ Crèche, if obligatory under contract labour act.

#### **17.0 ROLE OF SUB-CONTRACTORS**

It shall be responsibility of the contractor to ensure that all sub-contractors engaged by him in accordance with terms of agreement with BPCL, comply with all safety practices and environment protection measures mentioned here and conveyed to him subsequently.

#### **18.0 PERSONAL PROTECTIVE EQUIPMENT**

Personal protective equipment shall be of approved make and are essential for avoiding injuries to workers on the job. A register showing stock and issue of PPE shall be maintained by the contractor. The most common personal protective equipment are described below.

##### **18.1 SAFETY SHOES**

Suitable safety footwear conforming to relevant BIS code shall be worn by personnel, considering the nature of works and hazards such as:

- ☐ Risk of crushing by heavy objects.
- ☐ Penetration by sharp objects.
- ☐ Penetration by chemicals or harmful liquids.

- Weld spatter.

Leather safety shoes with steel toe caps shall be used for all heavy manual work and general construction. Shoes shall be abrasion resistant and suitable for wet and muddy conditions. Soles shall be slip resistant type.

Light low-cut leather safety shoes with slip resistant soles shall be used for climbing job. Gum boot shall be used while working with bitumen, chemicals, mud and muck etc.

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## 18.2 HAND GLOVES

Hand gloves are mainly used to protect the hand from hazards of material handling, heat, electrical shock. etc. Various types of hand gloves are available. Some of those are described below:

- Flame-resistant gauntlet gloves made of leather or other suitable material. They may be insulated for heat.
- Rubber gloves suitable for working in low voltage, medium voltage and high voltage.
- Hand gloves made of asbestos for handling hot bitumen and other hot work.
- Hand gloves made of special material for protection against chemicals.

Hand Gloves shall conform to relevant BIS code.

## 18.3 SAFETY HELMETS

Safety helmets shall be of yellow colour with chin strap. All workers are expected to wear safety helmet while inside the construction site. Sufficient number of safety helmets shall be kept at site for visitors. Safety helmets used by helpers of excavators shall have suitable arrangement to carry load on head. Safety helmet shall conform to relevant BIS code.

## 18.4 SAFETY JACKET

All workers shall wear yellow colour jackets made of good quality cotton with trade name printed on back and front in bold letters. Safety cum Environment incharge and supervisors shall wear jackets of green colour made of good quality cotton with designation printed on back and front in bold letters.

## 19.0 PROTECTIVE CLOTHING DURING WELDING AND HANDLING TOXIC/HAZARDOUS MATERIALS

Welders shall wear aprons or overalls and gloves made of flame resistant material. Hand held welding face shield shall be used for any welding job. Full face shield with respiratory filters shall be used for specialized welding jobs. For handling toxic or hazardous materials proper impervious overalls, gum boots, gloves; facemask and respiratory equipment like canister masks shall be used. All equipment shall conform to relevant BIS code.

### 19.1 GOGGLES

Goggles shall be used to avoid risk from:

- Flying particles / dust ingress.
- Chemical splash – Radiation glare.
- Hot sparks or metal splatter.
- Harmful vapours.
- Sand / grit blasting.

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Goggles shall be single piece constructed of clear impact resistant plastic and fitted with adjustable elastic straps. Goggles shall conform to relevant BIS code.

## 20.0 HEARING PROTECTION

Hearing protection shall be worn by personnel involved with works in areas where noise level exceed 85 dB (A noise level beyond which normal

conversation becomes difficult) on a continuous or regular intermittent basis. Protection is available in two basic types; 1) an external cup type defender which fits over the outside ear and 2) internal disposable type of ear plugs usually made of compressible foam, which fits inside ear. Whenever practicable, equipment generating high noise levels shall be fitted with sound mufflers and located at maximum possible distance away from any work place .

For overhead welding ear protection in the form of wool or rubber plugs shall be done.

All equipment shall conform to relevant BIS code.

### **21.0 WARNING SIGNS AND BARRIERS**

The contractor shall arrange necessary material to secure the work site and to warn the general public or other workers of hazards. This shall include

- Warning signs.
- Warning lights and signs in traffic control zone.
- Barricades around excavations including illuminating warning signs.

### **22.0 RESPIRATORY PROTECTION / MASK**

Whenever there is doubt about the presence of toxic substances or the gases injurious to health, a respirator must be worn. The type of respirator to be used shall depend upon the hazard and work conditions.

The simplest masks are disposable paper types. These are only effective against nuisance dusts. There are three types of half-face masks with filters.

- ☐ For protection against airborne particles, e.g. stone dust, with a coarse filter fitted in the cartridge (these filters have a specific lifetime and should be changed as necessary).
- ☐ For protection against gases and fumes, e.g. when using paints containing solvents, with a filter containing activated carbon.
- ☐ A combination filter containing both a dust and gas filter. Cartridge must be replaced regularly.

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A full facemask could be fitted with the same types of filter, and it also protects the eyes and face.

Self-contained breathing apparatus with a full-face mask fed with air at positive pressure is another alternative and it must be used in confined spaces and whenever supply of air or oxygen is insufficient.

Users must be trained in the use of self-contained breathing apparatus and must know the manufacturer's specifications.

All equipments shall be thoroughly checked prior to use to ensure:

- ☐ Oxygen Cylinders are full and gauges function correctly.
- ☐ All connections are proper
- ☐ Facemasks are in order.

All equipment shall conform to relevant BIS code.

### **23.0 SAFETY BELTS / HARNESSES**

The majority of fatal accidents in construction sites are due to fall from height. There are many types of safety belt and safety harness available depending on nature of work. A full safety harness should always be used in preference to a safety belt.

Safety belts / harnesses shall conform to relevant BIS code and worn by all workers working at a height greater than 2 mts above ground level.

Details of Safety Belts / Harnesses are given in 26.5 "Working at Height".

### **24.0 LIFE JACKET AND LIFEBUOYS**

For working over or near large and deep-water body this life saving device



should be used. Life Jacket shall be tested for leak and usefulness before start of work. It shall conform to relevant BIS code.

## **25.0 RAIN COAT**

Rain coat shall be provided to workers during rainy season. The colour of rain coat shall be yellow. It shall conform to relevant BIS code.

## **26.0 SAFE CONSTRUCTION PROCEDURES / PRACTICES**

### **26.1 EARTH EXCAVATION**

- i) The site of the excavation or trench should be sloped or battered back to a safe angle of repose usually 45 degree or be supported with shoring by timbering or other suitable means to prevent collapse. The type of support necessary will depend on the type of excavation, type of soil, the nature of ground and the ground water condition. Adequate timbering or sheeting shall be provided where excavation is deeper than 1.5 M. 100 mm wide "Safety tape" of yellow colour with one meter long phosphorescence band after every three meter shall be used to encircle excavated pit of any depth. For any pit of depth one meter or more, one meter high fence with a mid rail made of bamboo or steel pipes shall be provided for preventing people / animals from slipping into the pit. If the pit is by the side of vehicular drive way, in addition a prominent board shall be put up saying "Excavation in Progress".
- ii) Pumping out of accumulated water from pit is to be done at regular intervals. Run-away water shall be prevented from entering the excavated area, as such water can cause erosion of soil and sudden collapse of earth.
- iii) If the excavation is carried out without shoring, necessary angle of repose shall be maintained at all times.
- iv) Labourers shall not be allowed to sleep or take rest inside the pit. Protection against insects / poisonous snake shall be provided.
- v) Excavated earth shall be stacked at least one meter away from cutting edge to avoid collapse of trench and sliding of heaped earth into trench.
- vi) Contractor shall ensure that the excavation does not damage any existing underground cables, pipelines, foundation of adjoining buildings or structures etc. Wherever excavation is near any adjoining building or structure, proper precaution shall be taken.
- vii) Before working / entering inside an existing excavated pit it shall be ensured that it is free from any toxic gasses or explosive gases. The underground water present in the pit shall be checked for acid content, if there is possibility of seepage of industrial affluent.
- viii) Adequate access to and escape from the excavated trench in the form of ladders provided at every thirty meters or less shall be ensured. Crossovers over excavated trench shall be provided at suitable interval for movement of workers.
- ix) If the excavated trench is adjacent to any parking space for vehicles, adequate and well-anchored stop blocks shall be provided on the surface to prevent vehicles from falling in to trench while reversing.
- Relevant BIS codes shall be followed for safe practices.

### **26.2 PILING AND OTHER DEEP FOUNDATIONS**

*The following precautionary measures shall be taken:*

- ☐ Piling machine operators shall be over 18 years of age and properly trained.
- ☐ Prior to piling, all underground services shall be located and made safe
- ☐ There shall be a firm level base for the crane. If necessary crane mats shall be provided.

- ☐ The workers shall use necessary personal protective equipment.
- ☐ All cranes, lifting appliances and lifting gear must have appropriate certificates of testing and shall be of capacity required for the job.
- ☐ Particular attention shall be provided to the risk of damage to lifting gear from sharp edges.

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- ☐ Cranes used for lifting or lowering workers, must be fitted with a dead man's handle and lowering shall be done under power.

Relevant BIS Safety Code for piling and deep foundations shall be followed.

### 26.3 WORKING IN BASEMENT / UNDERGROUND TANK

Fatal and serious accidents could occur if proper precautions are not taken before entering confined space like basement or underground tank.. The following precautions shall be taken:

- i) Entry into the confined space shall be allowed only against Hot work permit.
- ii) Air circulation shall be ensured. Hot work in such places shall be taken up only after ensuring that ample supply of fresh air is available using additional blowers etc.

Proper ventilation shall be ensured by opening manholes (either ends if available) and fixing a wind sail or forced circulation of air. Old tanks shall be filled with water and washed with water before entering into it. Sludge shall be cleared / removed from outside of the confined space, to the extent possible, before entering.

- iii) Workers shall be allowed entry in the confined space, only after ensuring absence of toxic and explosive gases. Purging of gases may be done by filling the underground confined space with water.
- iv) Everyone inside the confined space shall wear rescue harness, with lifelines attached to a point outside the confined space. Whenever workmen are allowed to enter a vessel or underground tank or confined space, it is necessary to keep one person (alert and trained) at each manhole or entry point. The person should keep watch through manhole and offer rescue assistance so as to ensure prompt pulling out of the workers from confined space in case of emergency. Proper communication system between confined space and outside shall be maintained.
- v) A proper procedure for rescue in an emergency shall be laid down, with specific duties allocated to specific persons.
- vii) An experience supervisor shall supervise the entire operation.
- viii) Monitoring of air supply must continue while work in progress.
- ix) Only trained workers shall be allowed entry into confined space..
- x) The following equipment shall be provided.:

- ☐ Toxic gas meter, Oxygen meter and Explosive meter
- ☐ Rescue harnesses with adequate length of rope taking into account the location of work site.
- ☐ Hand torches or lamps safe for use in a flammable atmosphere.
- ☐ Appropriate self contained breathing apparatus.
- ☐ First aid equipment.
- ☐ Fire fighting equipment.
- ☐ An audible alarm for summoning help.
- ☐ Resuscitation equipment.
- ☐ Means of communication between confined space and outside.

- Boards & barricades.

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## 26.4 DEMOLITION

- Demolition is a dangerous process and workers shall use requisite personal protective equipment.
- Demolition must be supervised by supervisor with thorough knowledge not only on demolition procedure, but also on the principles of structural construction.
- A survey of the physical characteristics and design of the structure to be demolished must be carried out in order to choose a safe method of demolishing. The demolition action plan shall be drawn by the contractor including drawings or sketches showing the sequence of operations, the machinery and equipment to be used, personal protective equipment required etc. Before demolition begins, all service connections to the structure shall be disconnected. Arrangements must be made to erect a fence of height two meter encircling the structure under demolition
- It is dangerous to leave isolated walls or parts of a wall standing alone, as those are liable to collapse from the effect of high winds and hence necessary supports should be given in such cases.
- Debris should not be allowed to build up against walls or floors with the consequent risk of the structure getting overloaded.
- Vapour present inside the structure must be checked for toxic nature before starting demolition work.
- Protective measures should be taken against dust, fumes, chemical deposits, asbestos, glass wool etc. while carrying out demolition work.
- Disposal process and pit / yard should be identified for safe disposal of debris.
- Relevant BIS safety code for demolition of structures shall be followed.

## 26.5 WORKING AT HEIGHT

Scaffolds accidents occur primarily to the following reasons:

- Faulty design
- Faulty erection
- Weak foundation
- Inadequate strength of structural members
- Inadequacy of platforms, guard-rails and toe-boards.

Scaffolds are designed for live loads of workers and building materials, besides their own dead weight. However, a scaffold is usually designed only in case of important structures, like bridge girder/slab, very long beam/very large slab in buildings etc. In case of day today scaffoldings for general civil constructions / colour washing / painting / plastering etc., scaffolds are usually not designed, but erected based on experience.

Scaffolds may be constructed of either timber, sal ballies, bamboo, or metal.

Those may be single scaffold or double scaffold for light duty or heavy duty, as

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the case may be. Single scaffolds are recommended for carpenter, painter and similar trade. Double scaffolds are recommended for masons and similar trade. All scaffolds should conform to IS:3696(Pt.1)-1987. As bamboo and metal scaffoldings are used, salient features of those scaffoldings are given below:

Single Pole Bamboo Scaffolds :

Single scaffold consists of one row of upright poles or standards, placed not

more than 1.8mt centres, fixed at suitable distance from the wall and connected horizontally by ledgers (bamboo placed horizontally ) spaced vertically at 1.5 to 1.8mt centres. Cross members (putlogs), supported on ledger on one side and hole in the wall on other side, are provided at 1.2mt centres.

#### Double Pole Bamboo Scaffolds:

It consist of two rows of up-rights or standards. The inner row is placed next to wall and other row placed 1.2 to 1.5mt away from the wall. As in earlier case, ledger is provided every 1.5 to 1.8mt vertically. However, in this case , putlogs shall rest entirely on ledgers at both ends.

Every single or double pole scaffolds, shall be effectively tied with adjacent structure. Diagonal face bracing or zig zag face bracing shall be provided on single pole scaffold and outer row of double pole scaffold. The maximum distance between braced bays in any lift of scaffold shall not exceed 10mt.

#### Quality of Bamboo

Bamboo should be reasonably straight, sound, free from splits, knots dry rot, worm holes and any other defect, which tend to reduce strength of bamboo. The mean diameter shall not be less than 80mm in case of single pole scaffold and 100mm in case of double pole scaffold, subject to minimum diameter of 50mm at thinner end. The slenderness ratio, i.e. L/d ratio shall not exceed 50, where L is the legnth of up-right or standard between putlogs. The diameter of bamboo shall not be measured at knot points.

Where it is necessary to extend a up-right, the overlapping distance between two up -rights shall not be less than 600mm.

#### Maximum Height of Bamboo Scaffolds

IS:3696(Pt 1) has recommended use of Bamboo Scaffolds for heights upto 18mt, subject to conforming to provisions given there-in.

#### Platform Width for Working on Scaffolds

\_ Where platform is not more than 2mt above ground or floor:

For Painters, Decorators etc 300mm (min)

For other types ,i.e., mason etc. 500mm (min)

\_ Where platform is more than 2mt above ground floor:

For Painters, Decorators etc 900mm (min)

For other types ,i.e., mason etc. 1200mm (min)

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#### Railings & Toe Boards

Railings consisting of top rail at a level of around 1000mm above platform and an intermediate rail halfway between top rail and platform shall be provided for all working platforms higher than 2mt above ground or floor.

The platform edges shall be provided with 150mm high toe board to eliminate hazards of toolbar or other objects falling from platform. Where scaffolds are erected over areas, where people work or pass, the space between top rail and toe board shall be enclosed by tarpaulin or PVC sheets.

#### Means of Access

A safe and convenient means of access shall be provided to all platform level of scaffolds. Conventional means of access are the following:

- ☐ Ladder
- ☐ Stairway
- ☐ Ramp

#### Ladder:

- ☐ To ensure safe use of ladder, the following steps should be followed:
- ☐ Erecting ladders in the "four up-one out position" (i.e 75 degree angle

between ladder and ground)

- ☐ Lashing ladder securely with the structure.
- ☐ Using non-slip devices, such as, rubber shoes or pointed steel ferrules at the ladder foot, rubber wheels at ladder top, fixing woollen battens, cleats etc.
- ☐ When ladder is used for climbing over a platform, the ladder must be of sufficient length, to extend at least one meter above the platform, when erected against the platform in "four up-one out position".
- ☐ Portable ladders shall be used for flights not more than 4mt. Above 4mt flights, fixed ladders shall be provided with at least 600 mm landings at every 6mt or less.
- ☐ The width of ladder shall not be less than 300mm and rungs shall be spaced not more than 300mm.

#### Stairway

For scaffolds exceeding 4mt height, stairway are safest means of access.

It shall conform to the following:

- ☐ Treads and risers shall be of uniform width and height in any one flight.
- ☐ Minimum width of 1000mm.
- ☐ No unbroken vertical rise of more than 4mt.
- ☐ Maximum angle of ascent 50 degrees.
- ☐ Stair railings on all open sides.
- ☐ Hand rails on all enclosed sides.
- ☐ Railings and toe boards on all landings.

#### Ramp

Ramp shall conform to the following:

- ☐ Open sides of ramp shall be protected by railing and toe board, where ramp is 1.5mt or more above ground or floor.
- ☐ Where slope is more than 1 in 4, footholds shall be provided by stepping laths of minimum size 50 x 30mm at interclass not exceeding 450mm.
- ☐ Maximum permissible slope is 2 in 3.

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#### Metal Scaffolds

With the evolution of concept of designing multi -storied and long span structures, metal scaffolds came into practice, mainly due to following advantages.

- ☐ Ease of assessing strength of scaffolds structure.
- ☐ Reusable many more times than bamboo.
- ☐ Possibility of human error while erection, is much less than in case of bamboo scaffolding.
- ☐ Aesthetically neat and good looking.

Metal scaffolds shall conform to IS:2750 - 1964, in addition to IS3696(Pt 1).

Scaffold tubes are usually 40mm N.B., mild steel continuous weld conforming to IS:1239 or IS1161, grade YST 210, of lengths varying between 4.5mt to 6mt.

These are manufactured and marketed by various agencies. As such, it is essential to obtain guarantee certificate from the manufacturer about safety and stability of metal scaffolds under likely worst combination of loads.

#### Other General Safety Requirements for all types of Scaffolds

- ☐ Erection, alteration and removal shall be done under supervision of experienced personnel.
- ☐ Use of barrels, boxes, loose bricks etc., for supporting platform shall not be permitted.

- Every platform and means of access shall be kept free from obstruction.
- Each supporting member shall be securely fastened and braced
- Where planks are butt-joined, two parallel putlogs shall be used, not more than 100mm apart, to give support to each plank.
- Platform plank shall not project beyond its end support to a distance exceeding four times the thickness of plank, unless it is effectively secured to prevent tipping. Cantilever planks shall be avoided.
- If Grease, mud, gravel, mortar etc., fall on platform or scaffolds, these shall be removed immediately to avoid slipping.
- Workers shall not be allowed to work on scaffolds during storms or high wind. After heavy rain or storms scaffolds shall be inspected by site-in-charge before reuse.
- All scaffolds or platforms shall be fastened with adjacent structure, and if independent, scaffolds shall be braced properly.
- Scaffolding shall be erected on firm and level ground. In case of loose soil, the soil should be compacted by watering and ramming, besides using wooden base plate of minimum thickness 30mm for erecting standards.
- All members of metal scaffolding shall be checked periodically to screen out defective /rusted members. All joints should be properly lubricated for easy tightening.
- Clear access to scaffolds shall be maintained at all times. For prohibiting entry of unauthorised persons in scaffolds area, barricades should be put up and warning notices prominently displayed.
- If scaffolds are used, where public movement is anticipated, entry of public should be prohibited for the duration of the job.
- Where lifts are provided to hoist premixed concrete, reinforcement etc., to upper floors, barricades should be raised to prevent accidental entry of

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workers under the lift. Such lifts shall not be used for hoisting people, unless those are designed specifically for that purpose.

- Dismantling of scaffoldings shall be done in a pre-planned, sequential manner in order to maintain stability throughout the process. If necessary, additional tying, bracing may have to be done to prevent sudden collapse of scaffolds structure.
- Before initiating dismantling process, precautions should be taken to ensure removal of all loose materials from the scaffolds.
- Use of scaffolds, under dismantling process, must be prohibited.
- Wearing safety helmets shall be made mandatory within 10mt from scaffolds.

#### Dismantling of Form -work

Action for dismantling form-work, used for supporting concrete casting, must be done after expiry of requisite number of days after casting and proper curing.

Untimely dismantling of form-work may cause total collapse of structure.

Bottom shuttering of chajia or sun-shed should not be removed, till the attached lintel is properly secured by brickwork, to avoid failure of lintel due to toppling / torque.

In case of casting of multi-storied framed structure, casting of upper floor should be avoided till expiry of minimum curing period of lower floor. But, if essential, bottom shuttering of the lower floor shall be suitably strengthened by additional props.

#### INDUSTRIAL SAFETY BELTS & HARNESSES

Primary functions of safety belt & harness are to minimise injury after a fall. Despite providing proper scaffolds, railing etc, possibility of slipping and falling can not be over-ruled. This equipment is the last check to prevent worker from getting fatal injury.

Four types of safety belts & harness are available in the market, depending on nature of various jobs. Failure to choose right type of safety belt & harness may lead to endangering life of worker at the time of need. All safety belts and harness shall conform to IS3521-1989.

Type Consists of Permissible fall Used for

I

Waist belt with safety line

Not more than 0.6mt

Building / Structural maintenance.

II

Waist belt with two shoulder straps & safety line

Not more than 1.8mt.

Construction, structural erection.

III

Waist belt with two hoisting straps & safety line, with provision for leg straps.

Not more than 0.6mt.

Working in confined atmosphere and rescuing.

IV

Waist belt with pole strap.

- Working on electric line pole.

Proper choice of anchoring point for anchoring the safety-line is essential. At many instances, the workers have met with fatal accidents due to anchoring with

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weak supports. Sometimes anchoring points are found to be chosen by mistake in such a way, that should a person fall, he would hit against a rigid structure due to swinging action of the safety line. Hence anchoring point for safety-line needs to be judiciously chosen. Where proper anchoring points are not likely to be available, action should be taken in advance to provide for hooks and fixtures.

The shock absorbing capacity of the safety-line is critical for reducing impact of fall. A stiff safety-line, would arrest a fall suddenly, resulting in an abnormal impact load on body of the worker, causing injury. According to IS3521, safetyline should be made of nylon or polyester or synthetic fibre. It shall not break under minimum tensile load of 2000kg. The minimum diameter of test specimen shall be 10mm. Performance test of the Safety belt & Harness shall be carried

out as per annexure - B of IS3521, by dropping an articulated anthropometric dummy weighing 100+5 kg with an overall height of 1.6mt to 1.8mt, and waist not more than 1000mm circumference.

#### INDUSTRIAL SAFETY NETS

Industrial Safety Nets are designed to catch workers and / or debris falling whilst working on high buildings or structural fabrications.

The safety net should be installed as close to the work level as possible.

Sufficient clearance should be maintained between the safety net and the ground or structure below, in order to accommodate full deflection of the net under impact.

IS 11057-1984 specifies requirements for two types of safety nets.

Suitable for use at maximum duty height (\*) upto 6mt

Suitable for use at maximum duty height (\*) upto 1mt

(\* The maximum vertical distance between working level and the level at which safety net is to be placed in use.)

- ☐ Salient features are as under:
- ☐ Minimum nominal size shall be 4mtX 3mt.
- ☐ Shall be made with square or diamond mesh and the length of mesh side shall not be more than 100mm.
- ☐ In case of multi layer nets, all layers shall be joined together and fitted to a common border cord or cords.
- ☐ A continuous length of net, with no joints shall be used.
- ☐ When in use (without any load, except dead weight of the net), the sag at centre of the net shall be between one-fifth and one-fourth of the length of the shorter side.
- ☐ Performance shall be tested by actual drop test of a sand bag weighing 140kg, in accordance with appendix A of IS-11057-1984. (Safety nets are available with an overlay net to catch small tools and debris. But, the performance test shall be carried out only after removing such overlay net.)
- ☐ The deflection at the centre of the net during above drop test, shall not exceed 2mt or one-half of the length of the shortest side, whichever is more.
- ☐ Manufacturer shall declare the duty height at which net conforms to IS11057 by fixing labels marked with indelible ink at two different positions on the net. The labels should also contain following information.

— Manufacturer's name or trade mark

— Nominal size of safety net.

— Date of manufacture.

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— Deflection at centre of the net during above drop test.

#### ROOFTOP LADDERS

Asbestos cement sheets are usually used as industrial roofing material. These are very brittle. In some cases GI sheets are used, which when rusted, become fragile. The collapse of fragile roofs, while walking on it, can cause fall from rooftops. These roofing materials are often laid on slopes, causing additional hazards of slips and falls from edges. For working on fragile and / or slopping roof, the following safety measures shall be taken:

- ☐ Crawling boards or roof top ladders shall be used.
- ☐ While working, the worker should always stay on those and remember not to step on the roof surface, which may give way.
- ☐ Before commencing any work on fragile roof, the site-in-charge shall verify



the availability of crawling board or roof top ladder and competence of workers to use those equipment.

#### 26.6 STORAGE TANKS / SPHERES / BULLETS

The safety of tanks depends more on the standards and quality of inspection applied at all stages of construction than any other single feature. The contractor shall ensure adherence to relevant code and all safe practices required during construction of tanks including handling of plates from storage yard to fabrication yard

##### 26.6.1 FABRICATION

- ☐ Before commencing the fabrication work, work area is to be made free from combustible materials, used asbestos cloth and place proper fire extinguisher near work site.
- ☐ While gas cutting of structural items, there is a possibility of back fire to the portable gas cutting set and hence cutting torch, rubber hoses pressure gauges shall be checked thoroughly at regular intervals.
- ☐ All personal protective equipment shall be worn by welder.
- ☐ Loose nylon or polyester dresses shall not be used during work.
- ☐ All gas cylinders to be kept, in upright position and avoid mishandling.

##### 26.6.2 ERECTION

- ☐ Proper supports to be provided on both sides of plate after erection by guy ropes/wires/cranes to hold the plate in position and to avoid falling of plates on ground.
  - ☐ Only proper structural supports shall be used for workmen standing purpose and not boxes / drums etc. .
  - ☐ Holes in plate work to assist in erection are not permitted. Lugs nuts, clamps etc. to assist in erection may be attached to tank shell plate by welding for erection.
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- ☐ The tank shell shall be safeguarded from damage due to wind by provision of steel wire guy ropes or cables after erection of 3<sup>rd</sup> shell or 3 M height whichever is less until completion of roof.
  - ☐ Support for steel scaffolding shall be checked. Each scaffolding shall be tied up with other to avoid fall of welder from a height due to shifting/sliding of scaffolding from its position.
  - ☐ To avoid accident at height “jacking up method” shall be adopted from safety point of view.
  - ☐ Suitable capacity of crane and authorized driver shall be deployed for operation.

##### 26.6.3 WELDING AND GAS CUTTING

Adherence to relevant codes and employment of qualified and tested welder are two basic requirements for welding and gas cutting process. Hazards such as electricity, heat/flame, flammable gas etc. are present in this process. Hence following precautions must be followed while carrying out these operations.

- ☐ Hot work permit shall be obtained wherever applicable before commencement of the work.
- ☐ All fire precautions as stipulated in IS:3016 (code of practice for fire precautions in welding and cutting operations) shall be followed while welding/gas cutting.
- ☐ Fire extinguishers, sand buckets, water and gunny bags shall be provided when hot work is in progress. Gas cylinders used for gas cutting and welding

shall

- Be of approved make.
  - Be stored upright, and is kept away from hot work and care shall be taken to prevent heating of gas cylinders.
  - Gas cylinder valves shall always be checked and shall be closed when not in use.
  - Be stored in a well-ventilated area.
  - Be fitted with safety caps when not in use.
  - Not be lifted by nozzle and rolled.
  - ☐ All gas and oxygen regulators shall be fitted with Flashback arrestors, being non-return valves designed to prevent an explosive mix developing in cylinder.
  - ☐ Checking for leaks shall be with help of soapy liquid applied to each joint and under no circumstances shall a naked flame be applied to any part of the cylinder.
  - ☐ When working at a height, do not place cylinders directly beneath the working area, as molten metal may fall onto the hoses, causing leaks and possibly igniting the gasses.
  - ☐ During electric arc welding process, very high ultra violet radiation is generated. The welder and any person working in close proximity, in order to prevent permanent damage to the eyes must wear suitable eye protection. When not in use, power supply to the holder and electrode shall be turned off.
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- ☐ Hose shall be in good condition, and properly clamped. Welding cable shall have proper insulation with minimum number of joints.
  - ☐ All equipments shall be properly earthed, and cables properly insulated and connected.
  - ☐ ELCB / RCCB shall be provided in every welding circuit. Earthing shall be dedicated for each circuit. Diesel generating set shall have separate earthing. Circuit shall always be made by cables of right quality and cross section only. Diesel generating set shall be connected with welding transformer through switch board fitted over a rigid support at height of 100 cm from ground with appropriate ELCB / RCCB.
  - ☐ The welder or welding operator shall be insulated from both the work and metal electrode and holder. The bare metal part of an electrode holder shall never be permitted to touch the operator's bare skin or wet clothing. Consistent use of well insulated electrode holders and cables, dry clothing on hands and body and insulation from the ground shall be helpful in preventing contact with electricity.
  - ☐ Electrode should never be changed with bare hand or wet gloves or when standing on wet floor / ground.
  - ☐ Frame of welding unit (portable/stationary) should be grounded using correctly rated wire/strip and earth pit.
  - ☐ Resistance to earthing must be checked daily before start of work.
  - ☐ Receptacles of power cables for portable welding unit should be used so that it is impossible to remove the plug without opening the power supply switch.
  - ☐ If cable is worn, exposing bare conductors, it must be immediately replaced / insulated.
  - ☐ Welding cables shall be kept dry and free of grease and oil to prevent premature breakdown of the insulation.

- ☐ Cables laid on the floor/ground shall be protected in such a way that they will not interfere with safe passage or become damaged or entangled.
- ☐ Welding cables shall be kept away from power supply cable or high tension wires.
- ☐ Welding cables shall not be coiled or looped around any structure.
- ☐ While coupling several lengths of cables for use as a welding circuit, insulated connectors on both the ground and electrode holder line shall be used if occasional coupling and uncoupling is necessary.
- ☐ Supervisor shall ensure that the portion in the circuit of liquid or gas circulation e.g. the storage tank, pipelines, valves, pumps etc. where welding/cutting work is to be carried out, is blanked or isolated and purged with inert gas or washed thoroughly, so as to make absolutely certain that no inflammable liquid/gas is present in an amount, which can catch fire under action of heat, spark, flame, welding spatter or red hot objects. The area shall be checked and ascertained that concentration of combustible gas in the air is within permissible limit.
- ☐ Goggles, if used, shall be for welding with right shade conforming to ANSI Z 87.1 or BIS.

The shade number of the glass to be used for various purpose/ process shall be as under:

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#### OPERATION SHADE NO. OF THE GLASS

Soldering 2

Torch brazing 3 or 4

Gas cutting (1" to 6") 4 or 5

Gas cutting (over 6") 5 or 6

Gas welding 5

Shielded metal arc welding 10

☐ *Other personal protective equipment shall be as under:*

\_ Protective cloth/apron long enough to cover wrists and forearms against heat, sparks, molten metal and radiation. Leather or asbestos apron can be used for this purpose.

\_ Flame resistant gloves

\_ Safety shoes

\_ Helmet / shoulder cover for over head welding as necessary

\_ Safety harness while working at heights

\_ Ear protection (wool or rubber plugs) in case of noise pollution or overhead welding.

\_ In a confined place or where fumes/gas emissions cannot be below the toxic level, respiratory protective equipment duly certified for the exposure by reputed Government organization, like DGFASLI, shall be used.

☐ Space of more than 284 cum. per welder should be provided.

☐ Clothing should be free from oil & grease. Collars and cuffs should be buttoned and turned up inside. Pockets should be eliminated from the front vests, shirts and apron

☐ After welding or cutting is completed a warning sign should be provided to keep workers away from heated surfaces.

☐ Electrode rod stubs should be kept in a proper waste container

☐ Gas cylinders for each type of gas should be stored separately. They should

be kept away from any source of heat and shielded from direct sun light. If stored, the store must be well ventilated. The cylinders in use should be retained upright in a rack or trolley and not be left free standing.

- ☐ While unloading /loading gas cylinder nozzle valve guard cap must be properly fitted and cylinder shall be unloaded over rubber/soft mat.
- ☐ Regulators, noses, torches and other Oxy-fuel gas equipment should be kept free. from grease, oil and other combustibles.
- ☐ Lubricants should never be used on Oxy-fuel gas equipment
- ☐ Oxygen should never be substituted by compressed air
- ☐ Oxygen pressure reducing regulator, hose or other pieces of apparatus should never be used with any other gases.
- ☐ Oxygen cylinder should never be used without first connecting a suitable pressure-reducing regulator to the cylinder valve.

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- ☐ Acetylene cylinder should be turned & kept in such a way that the valve outlet will point away from oxygen cylinder
- ☐ While opening acetylene cylinder valve, key or spindle should not be turned more than one and one-half turns -
- ☐ Gas cylinder should not be lifted by nozzle and rolled
- ☐ All gas and .oxygen regulators shall be fitted with flash back arresters ,being no return valve design to prevent an explosive mix developing in cylinder
- ☐ Checking for leaks shall be by means of soapy liquid applied to each joint and under no circum stance shall a naked flame be applied to any part of the cylinder.
- ☐ When working at height do not place cylinder directly beneath the working area as molten metal may fall on the hoses causing leaks & possibly igniting the gas
- ☐ Acetylene cylinder key for opening valve must be kept on valve stem while cylinder is in use so that it may be quickly turned off in case of emergency
- ☐ Acetylene should never be used at pressures in excess of 15 PS.I. The use of higher pressures is prohibited by all insurance authorities and by law in many localities
- ☐ The gas hoses should be in a good condition and easily distinguishable and protected against heat, sharp objects, dirt, oil & grease.
- ☐ LPG Cylinders, if used, should be stored kept in a well-ventilated place and there should be no excavations, drains or basements nearby.
- ☐ LPG cylinders should never be stored below ground level or closer than 3 M to cylinders containing oxygen or materials which are toxic and corrosive.
- ☐ Cylinders full or empty should never be stored upright with the valve uppermost.
- ☐ The valve of empty LPG cylinders should be kept closed, if they are left open, air will diffuse into the cylinder and may form an explosive mixture.
- ☐ For storage of large numbers of gas cylinders regulations of NFPNA/OISD/CCOE should be observed.
- ☐ If an outlet valve of acetylene cylinder becomes clogged with ice or frozen, it should be thawed with warm water (not boiling), applied only to the valve. A flame should never be used. This is because the fusible safety plugs on acetylene cylinder melts at about boiling point of water.
- ☐ Cylinders are not designed for temperatures in excess of 54°C and hence storage/handling should be done keeping this in mind.

- Never bring cylinders into tanks
- Portable fire fighting facilities and first aid facilities should be made available in ready condition
- Adequate water should be made available at work spot for emergency requirements
- BIS Code IS: 3016-1982 on "code of practice for fire precautions in welding and cutting operations" shall be referred for further safety measures.

## **27.0 PRECAUTIONS IN ELECTRICAL WORK**

Electrical hazards are different from other types of hazard found in construction work because the human senses provide no advance warning. It is the voltage that determines the current through the body. Since reduced voltage reduces the

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severity of electric shock, attempt shall be made to work with reduced voltage of 110 V wherever possible.

Some of the basic safety steps to be ensured by contractor at construction sites are given below:

- 1) Only authorized persons with license issued by State Electricity Boards or any other Government regulatory body, shall carry out operation and maintenance of electrical systems.
- 2) Work permit and isolation of the electrical system before taking up the work must be ensured.
- 3) Proper protective equipments like rubber hand gloves, insulated apron etc. shall be used. FLP fittings /enclosure as per IS: 2148 and certified by CCOE, Nagpur should only be used in Zone-1&2 area. Capacitors should be relieved of charges before working on them
- 4) Check for defective cables, loose joints in conduits, damaged fuse boxes, loose pins, faulty sockets and defective earthwire. Cable joints must be properly insulated and protected.
- 5) Do not overload electrical equipment. All circuits shall be provided with dedicated ELCB / RCCB. There shall also be dedicated earthing for each circuit.
- 6) Use right type of tools for the jobs.
- 7) After maintenance of flameproof fittings, ensure that the fittings meet requirements of flameproof standards.
- 8) Power supply cable shall be laid at least 45 cm below ground level from source to the work place.
- 9) Tag with marking should be provided on each cable for identification and correct connections to terminals must be ensured
- 10) The route and depth of any underground cables should be determined and power should be switched off if possible before execution of work for the existing cable
- 11) Jointing of cable shall always be made using proper junction box and flameproof junction box when in hazardous areas even in case of temporary connections. Power cables should not be tied in knots; it should be looped instead.
- 12) All equipments LT or HT that are likely to cause hazard shall be turned off and segregated. All base terminals etc. shall be insulated, Rubber mats shall be used for LT/HT switch room, where applicable.
- 13) All electrical equipments like wires, switch board etc., shall be protected against rains or leaking water lines etc. In wet condition switches shall not be operated until it is dried up properly. Switches starters shall be placed

well above ground level.

14) Proper earthing shall be provided for all electrical items and effectiveness of earthing shall be checked every time before commencing work/switching on the electrical system.

15) Electrical items shall be handled after isolation and care shall be taken to identify and replace damaged electrical items. Guard wire shall be provided for aboveground HT wires.

16) Ensure all ELCBs and RCCBs are of good quality and conform to correct ratings.

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17) Always plug of right specification should be used for taking connection from a socket.

18) Cables should be kept out of the way of other workers (or with proper guard/warning) and are not in contact with water

19) Moving parts of all equipment should be properly guarded.

20) All electrical transmission and operational equipment must observe safety clearances as stipulated in IE Rules.

21) Fail safe features should be available for interlocking mechanism.

22) Suitable overcurrent tripping device should be provided in the electrical Circuit.

23) Earth leakage relay with high sensitivity should be provided in the electrical system.

24) Earth pits should be tested periodically and certified by the licensed electrician

25) Before working on an electrical line fuse should be physically removed and the line is isolated and a suitable locking mechanism must be provided to prevent accidental switching/fixing fuses by other persons. A notice board displaying "Men at work" message should be placed. The section of circuit under repair should be connected to earth.

26) Temporary switchboards at site must conform to the following:

- ☐ structures are firm and strong
- ☐ fully protected from rain and dust
- ☐ properly grounded
- ☐ all connections are made with right size lugs
- ☐ suitably barricaded
- ☐ rubber mat of correct rating is provided on floor
- ☐ Danger band indicating system voltage should be displayed

27) No electrical equipment /cables/parts should be touched with wet hand/cloths

28) Lightning arrestors should be provided .

29) Electrical maintenance workman working around a wet area near a fuse box must use wooden platform with rubber mat, insulated tools and rubber boots.

30) All electrical installation including incomer line, temporary distribution board, electric motor and machine must be installed as per IE Rules with proper earthing and must be inspected and certified by a licensed electrician at periodic intervals.

31) IS: 5216-1982 -" Recommendations on safety procedures and practices in Electric Works" shall be referred for further safety measures.

## **28.0 SAFETY IN RADIOGRAPHY WORKS**

Planning and procedure for radiography initially shall be formulated by

contractors and submitted to proper authority. Procedure shall be thoroughly discussed by all related persons for familiarization. All radiation equipment and radioactive materials shall be stored, handled, transported or disposed off, so that, no person receives unnecessary dose of radiation. Shield ability of the radioactive materials container shall be inspected every six months. Warning signs and posters shall be displayed. Radiography shall be performed under the

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direction of radioactive supervisors/officer responsible for this work. Supervisor and source must possess valid BARC certificate indicating-

1. Type & strength of source
2. The serial number of radiography camera
3. Names of radiographer
4. Training/competency of person handling the source

All workers shall be experienced and knowledgeable of the work such as radiation procedure, operation of radiation apparatus and effects of radiation on the body.

The following spaces or areas shall be classified as restricted areas.

- a) Storage place of radioactive materials
- b) Any area where the radiation exists at levels such that large portion of the body could receive a dose in excess of 30 milligram per week.
- c) Emergency storage area for radiation apparatus or radioactive material capsules.

Warning signs, labels and fence shall be provided for restricted area to prevent trespassing.

The area covered within a radius of 5 Mts. from the radiation working spot or location and subject to a dose of radiation in anyone hour in excess of 50 milligrams shall be called the radiation area and trespassing in that area shall be strictly prohibited.

All workers entering the restricted area shall wear film badges sensitive to radiation. All workers who could receive a dose of radiation in excess of 100 milligrams per day shall wear a pocket dosimeter and the dose of radiation received shall be recorded everyday. The dose of radiation shall be checked by the supervisor for each radiation exposure when the dose of radiation exceeds 100 milligrams. In such case, suitable alternative for shortening the radiation time, reinforcing the shield plate etc. shall be arranged. During radiation work, dose of radiation at the boundary shall be measured and recorded.

The radiography supervisor shall measure and record the surface dose rate of restricted area every day as under:

- a) Date of measurement
- b) Measuring method
- c) Description and capacity of apparatus
- d) Measured condition
- e) Results of measurement
- f) Name of measurement
- g) Any action taken

Radioactive materials shall be stored separately from other material or equipment. The storage place shall be 10 cm or more above the ground and locked to prevent unauthorized entry. Radioactive materials shall be stored in a case made of lead of ample thickness with a lock on the exterior surface of the

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case. The description of materials, quantity and danger sign shall be distinctly

visible.

## **29.0 WORKING WITH MACHINERIES / MATERIAL HANDLING EQUIPMENT**

### **29.1 General**

Many accidents place while handling materials at site. It is 'highly hazardous operation. Hence special attention by contractor is required in this respect.

Following precautions are essential:

- ☐ Safe working space for all handling equipment shall be provided. Proper material stockyard should be made and all material should be stacked /arranged/kept in orderly manner with proper moving space for handling machinery. Proper wooden sleepers should be provided below steel plates and such other materials.
- ☐ Mixers, winches, cranes, bending machines etc., shall be overhauled regularly as per manufacture's advice/maintenance schedule.
- ☐ Proper warning boards/signs shall be provided when machineries like cranes, hoists are being operated.
- ☐ Brakes, clutches of winches shall be checked on regular basis. Chains, ropes, belts shall be inspected and repaired/changed as necessary.
- ☐ All moving parts of the material handling equipment must be provided with suitable guards.
- ☐ Lifting ropes should be inspected for kinking, loose wires, high strands, corrosion, nicking, lubrication, change in diameter /cross section
- ☐ Slings and other lifting materials, which are not suitable for use should be promptly withdrawn and destroyed
- ☐ Lifting chains should be inspected for bent links, cracks in weld areas or any other section of link, traverse nicks and gauges and corrosion pits.
- ☐ Elongation of the lifting chain link due to over loading should be inspected before using it.
- ☐ Maximum allowable wear at any point of link of the lifting chain is given below: -

CHAIN SIZE (mm) MAXIMUM ALLOWABLE WEAR(mm)

6 1

10 2

12 3

16 3.5

20 4

22 4.4

25 4.8

28 5.5

31 6.4

35 7

40 8

45 8.7

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- ☐ For lifting hook, if the throat opening exceeds 15% of the normal opening, it should be replaced. When inspecting the hook, measurement must be made between the shank and narrowest point of the hook opening
- ☐ A chain used for lifting should not be spliced by inserting a bolt between two links
- ☐ Strain should not be put on a kinked chain
- ☐ Hammer should not be used to force a hook over a chain link



- ☐ A safety hook fitted with a latch to prevent displacement of loads should only be used for material handling/lifting
- ☐ IS: 7293-1974 (Code of Practice for Working with Construction Machinery) shall be referred for further safety measures.

## 29.2 CRANES

All works involving the use of crane shall be properly planned in advance and the following shall be ensured

- ☐ The crane is capable of lifting the load. Safe load capacity should be clearly marked on jibs, winches, pulleys, slings and ropes. All job cranes should have an automatic safe load indicator which alerts the operator
- ☐ The condition of the ground at the crane location is satisfactory to support the crane and the load
- ☐ The rotation of the cab and, therefore the boom is not restricted. Suitable matting or plates are available to protect underground services and paving.
- ☐ All slings shackles, hooks etc. are of correct rating and in good condition
- ☐ Cranes and lifting equipments must be inspected and carry a valid test certificate issued by an accredited testing agency.
- ☐ Crane hooks are to be fitted with properly functioning safety clips to prevent displacement of the sling from the hook during the lift.
- ☐ Driver of the crane must be watchful and must ensure before driving the vehicle either forward or reverse that no one is near the wheel of the vehicle and no one is trying to climb the vehicle while moving. .
- ☐ Crane operators and signalers must be trained and sufficiently experienced. There should always be a signaller or a signaling system such as a telephone, if the crane operator cannot see the load throughout the lift. Hand signal shall be clear and distinct and shall follow recognized code or system. Workers must use safety shoes and helmets. They are also required to wear gloves and other PPE s for handling materials.
- ☐ Raising, lowering and braking of jib should not be done abruptly in order to prevent it from snapping.
- ☐ No part of the crane or crane load should be closer than 4 Mts. to live overhead power lines.
- ☐ For movement of crane or other material handling equipment ,ramp gradient should not exceed 1 in 10
- ☐ No person should be allowed to stand or work under lifted load.

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## 29.3 MANUAL HANDLING

Assistance should be obtained if the load is too heavy or awkward for manual handling. Clear walkway to the destination and safe stack should be ensured before handling the load manually. Following procedure should be followed while lifting a load manually:

- ☐ Stand close to the load on a firm footing and with feet about 30 cm apart
- ☐ Bend the knees and keep your back as straight as you can
- ☐ Take a firm grip on a load ..
- ☐ Breathe in and throw the shoulders backwards
- ☐ Straighten the legs & continue to keep the back as straight as you can
- ☐ Make sure that your view is not obstructed by the load
- ☐ Keep the load close to the body
- ☐ Lift slowly and smoothly

- ☐ When carrying the load ,avoid twisting spine to turn, move your feet instead
- ☐ One person shall not pull more than 63 kg.
- ☐ The weight unit for lifting by a worker is 18 kg and hence should be fixed as upper limit of load to be lifted by worker
- ☐ If two or more workers are lifting, one should give instructions to ensure that the team works together
- ☐ Type of clothing is very important in manual handling of material. Clothing should be such that it allows easy movement of arms and will not catch in machinery or on a load.

### **30 VEHICLE SAFETY**

- ☐ All vehicles used for carrying workers and construction materials must undergo preventive maintenance and daily checks.
- ☐ Contractor shall maintain a register for this purpose for each vehicle.
- ☐ All documents related to the vehicle shall be kept in vehicle for checking. -
- ☐ Driver with proper valid license shall only be allowed to drive the vehicle.
- ☐ Routes shall be leveled, marked and planned in such a way so as to avoid potential hazards such as overhead power lines and steep sloping ground. Speed limit shall be specified.
- ☐ While reversing the vehicle, help of another worker should be enlisted and his instructions should be complied at all times during reversing and sound signal should be provided before reversing
- ☐ An unattended vehicle should have the engine switched off.
- ☐ Foot injuries to drivers and their assistance during loading and unloading are common and they should wear safety boots and shoes.
- ☐ Wherever possible one-way system shall be followed.
- ☐ Head clearance must be ensured on the route of the vehicle and no vehicle shall be allowed to deviate from its route.
- ☐ Overloading, carrying unauthorized passengers etc. shall not be allowed.
- ☐ Load on vehicle should be evenly distributed, properly secured and normally should not project beyond the plan of vehicle. If some degree of projection is unavoidable, it should be clearly shown by the attachment of red flags.
- ☐ Load should be properly secured
- ☐ The body of a tipper lorry should always be lowered before driving the vehicle off.
- ☐ Signs/signals/caution boards etc. should be provided on the routes.

### **31 SAFE OPERATION OF PLANT, TOOLS AND EQUIPMENT**

The following four basic principles shall be applied for the safe use of hand and power tools.

1. To choose right tool for the job
  2. To use only tools in good condition
  3. To use tools correctly, and only for the purpose they are intended
  4. To maintain and store tools properly.
- ☐ Electrical tools shall be checked to ensure that the supply voltage is as per requirement.
  - ☐ Electrical tools shall always be properly earthed.
  - ☐ High speed rotating equipments such as grinders shall be fitted with protective guards.
  - ☐ Static load on shoulder or arm due to continuous holding of a tool at a raised

position or gripping of a heavy tool should be avoided

- ☐ Awkward wrist angles to be avoided
- ☐ Uncomfortable posture and pressure on the palm or joints of the hand should be avoided.
- ☐ Repair or discard the tool, if tool heads mushroom, tool jaws open out and cutting tools loose their edge
- ☐ Tools handle should have a firm grip
- ☐ Tools should be properly cleaned and stored
- ☐ Air connection to pneumatic tools should be clamped and secured properly.
- ☐ Electrical cable/pneumatic tube should be protected against damage
- ☐ Socket, terminal boxes, fuses etc. must be of high quality and properly covered and protected
- ☐ Correct fuse should be used for the electrical tools.
- ☐ Power tools shall never be left operating unattended.
- ☐ Spark arrestor shall be fitted to all equipment exhausts where risk of presence of combustible gases exists.
- ☐ Periodical inspection shall be done.

### **32 WORKING OVER WATER**

Falling into water and drowning and getting carried away by water current is an ever-present danger when working over or adjacent to large water bodies. The following precautions should always be followed:

- ☐ Working platform should be made secured and there shall be no tripping hazards such as tools, wires, timbers, bricks etc. Surface should not be slippery.
- ☐ Access ladders, guard rail and toe board for the working platform should be firmly held.
- ☐ Safety helmet should always be used.
- ☐ A life jacket should be used
- ☐ A safety harness or net shall be used.
- ☐ Lifebuoys fitted with lifelines should be kept ready in hand for immediate use.
- ☐ Availability of safety boat (motor driven with self-starter for tidal/fast flowing river) should be ensured.
- ☐ Availability of alarm system should be ensured

### **33 PIPELINE CONSTRUCTION SAFE PRACTICES**

#### **I. Handling and storage of pipes**

##### **a) Bare Pipes**

- \* Unloading, loading, stockpiling and transportation of bare pipes should be done using suitable means and in a manner to avoid denting, flattening or other damages to pipes
- \* Pipes should not be allowed to drop but should be lifted or lowered from one level to another by suitable equipment
- \* Lifting hooks when used, should be equipped with a plate curved to fit the curvature of the pipe
- \* Pipe when stockpiled, should be placed on a suitable skid to keep it clear of the ground.
- \* The stacks must be properly secured against sliding and should consist of pipes of the same diameter and wall thickness
- \* Personal Protective Equipment like safety shoe and glove should be used by worker while handling pipes.

#### b) Coated Pipes

- \* Coated pipe shall be handled by means of slings and belts of proper width made of non-metallic/ non-adhesive materials
- \* Belts/slings when used should be cleaned to remove hard materials such as stone, gravel etc.
- \* Coated pipes should not be bumped against any other pipe or any other objects
- \* Rolling, skidding or dragging of coated pipes should be strictly avoided
- \* Coated pipes at all times should be stacked completely clear from the ground so that the bottom row of pipes remains free from any ground contact. Pipelines should be stacked at a slope so that during rain, water does not collect inside the pipe.

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- \* The coated pipes may be stacked by placing them on ridges of sand and covered with a plastic film.
- \* Stacks should consist of limited number of layers so that the pressure exercised by the pipe's own weight does not cause damages to the coating
- \* The weld lead of pipes should be positioned in such a manner so as not to touch adjacent pipes
- \* Coated pipes stacked in open storage yard should be suitably covered on top to decrease direct exposure to sunlight
- \* The ends of the pipes during handling and stacking should always be protected with end protectors

#### II. Swabbing and Night capping

To ensure that all dirt and objects likely to cause obstruction in the interior of the pipe are removed, each length of pipe should be thoroughly scrubbed prior to alignment and welding. At the end of each day's work a steel plate or nightcap should be adequately secured over open ends of incomplete section of the pipeline to prevent ingress of extraneous objects and ground or floodwater. .

#### III. Inspection of field welds

In case of cross-country pipeline and where specifically specified, all weld joints should be radiographed to ensure the soundness of welding joints to avoid failure of joints, which may create serious pollution or environmental problem.

#### IV Coating Inspection in the field

Where pipeline coating is carried out in the field, all bare and primed pipe should be kept free from dust and grease, oil etc. Before the pipeline is lowered into the trench the coating should be thoroughly inspected both visually and by using holiday detector. Any visible damage should be repaired and the pipeline shall be retested.

#### V. Lowering and Backfilling

Equipment used for lowering the pipeline from the skids and positioning it finally in the trench should be sufficiently padded at points of contact with the pipe to prevent damage to the protective coating

- \* Slings used for lowering the pipe should be made of canvas or equally non-abrasive material and of a width not less than the diameter of the pipe.
- \* The trench should be clear of loose rocks, lumps or other objects that might prevent the coated pipe from bearing evenly on the trench bottom.

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- \* When digging soil from beneath the pipe in order to remove slings, care

should be taken to avoid damage to the protective coating. The coating should subsequently be inspected and any damage shall be repaired.

- \* In waterlogged areas it may be necessary to provide additional weighting or screw anchors to prevent floatation of pipeline.

- \* No lowering should be done after sunset without proper lighting arrangement

- \* Minimum 3 side booms should be used and mounting of counter weights should be ensured on side booms for lowering the pipes.

#### VI. Road, Rail and Water Crossing

- \* Where work being done either adjacent to or any public or private road; warning signs and night time warning lights should be provided and maintained.

- \* Crossing will frequently necessitate laying the pipeline at greater depth than normal and may therefore call for special measure to support the trench or boring pit.

- \* Where crossings are made by open cut, the work should be programmed so as to minimise the amount of time that the normal traffic or flow is interrupted. Where necessary temporary conduits or pumping system should be provided to maintain the flow in water courses

#### VII. Trenching

- \* Barricading should be made while trenching in heavy traffic area.

- \* Sign boards should be provided while trenching in heavy traffic area

- \* Trench cross over shall be provided at every 30 Mts. of its length while trenching

- \* Lighting should be provided for night working

- \* Shoring should be provided for trench support

- \* Underground service connections should be identified and marked prominently

- \* Excavation tools should be properly insulated to avoid electric shocks

- \* Evacuation of workers should be ensured before blasting

- \* Entry of workers in site, where blasting is planned to be done, should be allowed after inspection and clearance from qualified Blaster

- ☐ Requirements of safe procedure as stipulated in BIS Code IS:4081-1986 for blasting and drilling must be observed during blasting operation.

#### VIII. Pipeline Marks

Distinctive markers should be created at all crossings to indicate the alignment of the pipeline and should give information about ownership, diameter, the nature of content, the normal direction of flow and the location of the crossing. A telephone number for use in emergencies shall also be displayed.

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### **34.0 STORAGE OF HAZARDOUS MATERIALS**

Harmfulness of materials shall be identified and proper care shall be taken against fire/health hazards e.g. against asbestos fibre/rope, sand/shot blasting, paints, handling leaded container and tank, furfural liquid etc. Waste materials and consumables like woods, papers, and plastic pieces etc. shall be cleared on regular basis. Petroleum products/solvents used for cleaning etc. shall be kept away from working site specially when hot work is in progress. No smoking board/signs etc. shall be used in sites where such materials are stocked. Paints shall be stored in separated areas. The quantity of paint stored in actual working areas shall be as minimum as practicable. The ingestion of paint shall always be avoided. Food and drink shall not be brought, stored, prepared or consumed in

areas where paints are stored, handled or used. Smoking in such areas shall be prohibited. The inhalation of paints, dusts or fumes shall always be avoided by the use of local ventilation or extraction. Where fumes or dusts are unavoidable, then suitable approved respirators or facemasks shall be worn. All personnel who handle and use paints shall wear appropriate protective clothing (such as, gloves, eye protection and overalls). Splashes of paint on skin shall be treated promptly by copious washing with water or an approved cleaning agent. (Solvent shall not be used for personal cleaning).

### **35 CLASSIFICATION & WORKING IN HAZARDOUS ZONES**

Hazardous (flammable atmosphere) zones are classified as zone-O, zone-1 and zone- 2. All other areas are unclassified but not necessarily non-hazardous. In these areas, safety precautions must be observed in order to eliminate risk of explosion. Zone-O is defined as the vapour space in and directly around product storage tanks. Zone-1 is defined as an area where vapours, may be expected at all times. For zone 2, flammable vapours may be expected to be present when a failure to equipment or plant occur. Unclassified areas cannot be assumed to be always non-hazardous, therefore must be checked prior to issue of work permits, Following precautions shall be taken while working in hazardous areas.

#### **35.1 NON-SPARKING EQUIPMENT**

Sparks can be produced from electrical tools/devices, and where two surfaces collide. In order to avoid risk of sparking, only tools approved for use in hazardous zone-1 shall be used. The condition of all equipments used within hazardous zones shall be checked by BPCL Engineer. Where chipping or scraping is necessary in a hazardous area, several precautions shall be taken such as; the surface being chipped or scraped shall be kept moist with water at all times ; Air driven jackhammers may be used where atmosphere has been certified to be safe and the impacting surfaces must be submerged in water.

#### **35.2 CHECKING OF WORKERS**

Workers are to be checked for matchboxes, lighters and other spark producing items. If workers are found to be carrying any such item, the same shall be taken into custody by security at the entry point.

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#### **35.3 SAFETY CHECKS**

In all cases where work is to be carried out within hazardous zones, BPCL Engineer shall check the area using an explosimeter for the presence of flammable vapours. The explosimeter shall be verified before each use, for its smooth functioning. Should there be any indication of flammable vapours, steps shall be taken to reduce the vapour content of the surrounding atmosphere. If found safe after re-checking by explosimeter, the work permit shall be issued.

#### **35.4 FIRE SCREEN WALL**

Fire screen shall be provided to segregate area where hot works, such as welding & cutting, is planned to be done from surrounding. To construct fire screen, the following shall be complied with:

- ☐ Members shall be made of appropriate size MS pipes, MS structurals, strong enough to withstand the wind, live and dead loads. The bottom of columns shall be properly grouted.
- ☐ Good quality G.I. Sheets free from damage and holes shall be used as screening wall. G.I. Sheets shall be properly tied up with the structure.
- ☐ The height of fire screen wall shall be decided based on the level at which hot work is supposed to be carried out. For example, in case of above ground tanks fabrication by jacking up method, a fire screen of 6 M height is sufficient

where as in the other case it is required to have a height equal to height of structure to be fabricated.

### **36. WORK PERMIT SYSTEM**

If work is to be performed in a hazardous area, a duly authorized written work permit shall be obtained by the contractor from BPCL or any official duly authorized by BPCL for this purpose. This is a document authorizing contractor to carry out the work concerned, warning him of the possible hazards and spelling out precautions needed for the job to be done safely. The contractor shall be fully aware of the details of the work permit system and shall obtain the same signed by authorized person before starting the job. Based on the nature, the work shall be undertaken either under Cold Work Permit or Hot work / Entry to confined space permit or Electrical isolation and energisation permit.

Permits and certificates are to be issued by BPCL Engineer or any official duly authorized by BPCL for this purpose with overall responsibility for the work area. All work permits shall carry serially printed numbers. The printing of all work permits shall be done by the contractor in adequate quantity at his own cost.

#### **36.1 COLD WORK PERMIT:**

Work falling under the category of cold work such as opening process machinery, blinding & deblinding, tightening of flanges, hot bolting, painting etc. shall be performed through Cold Work Permit.

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This Permit shall be in minimum two copies. The original should be in yellow colour and the copy should have the word "Copy" printed in large yellow letters. Original shall be issued to the contractor, retaining the duplicate in the book. (Ref. Annexure-I)

#### **36.2 HOT WORK / ENTRY TO CONFINED SPACE PERMIT:**

All hot work such as welding, grinding, gas cutting, burning, shot blasting, soldering, chipping, excavation, open fire, use of certain non-explosion proof equipment etc. shall be carried out through Hot Work Permit. Entry and operation of petrol or diesel driven vehicles or equipment without spark arrester in hazardous area also falls in the category of hot work, and shall be performed under the hot work permit.

The confined space entry permit is required for the protection of personnel entering a confined space such as Vessels, boilers, storage tanks, large diameter piping etc against hazards such as oxygen deficiency, toxic and flammable materials, falling objects, power driven equipment etc. Excavation more than 1.2 meter deep, entry on floating roof tank when the roof is more than 3 meter down from the top, space located below ground level such as pits, drain, channels etc. also fall under the confined space.

For excavation work regardless of the depth, permission from various sections shall be obtained with precautions to be taken for the underground facilities viz; sewers, telephone lines, cables, pipelines etc.

This work permit shall be in minimum three copies. The original should be in pink colour and copies should have the word "COPY" printed in large pink letters. Original shall be issued to the contractor, duplicate to the Safety Section and triplicate retained in the book. (Ref. Annexure-II)

#### **36.3 ELECTRICAL ISOLATION AND ENERGISATION PERMIT**

Before issuing any work permit, it is essential that the equipment / facility to be worked on is electrically safe and electrical power is isolated to the extent necessary for the safe conduct of the authorized work.. Permit for electrical isolation and energisation shall be in triplicate and in two sections with tear off

facility. Section-A shall be used for electrical isolation and Section-B for energisation. The original should be in light blue color and copies should have the word "COPY" printed in large letters in light blue colour. Original along with a copy shall be issued to the electrical section for electrical isolation / energisation. Electrical section authorized person on isolation / energisation of the equipment / circuit shall return the original to the issuer keeping copy for record. (Ref. Annexure-III)

#### 36.4 SCAFFOLDING FITNESS CERTIFICATE

For all temporary scaffolds erected by contractor, fitness certificate, in format given in Annexure IV, shall be issued by BPCL site in charge after due checking to his satisfaction .

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#### 36.5 TEMPORARY ELECTRICAL CONNECTION FITNESS CERTIFICATE

For all temporary electrical connections taken by contractor including diesel generating sets, fitness certificate, in format given in Annexure V, shall be issued by BPCL site in charge after due checking to his satisfaction.

### **37. ACCIDENT REPORTING AND CLASSIFICATION**

#### 37.1 ACCIDENT REPORTING

All employees must be encouraged to report any near miss incident that has or could have caused injury, illness, damage to property, or interruption in work. The reporting of such incident helps in analyzing what went wrong and enables steps to be taken to prevent recurrence. The accident reporting forms the basis for objective investigation of the accident and will bring out essential and contributory factors leading to it. The necessary decisions then can be taken to prevent recurrence in future.

#### 37.2 CLASSIFICATION OF ACCIDENTS

Accidents are classified as follows:

##### a) Near Miss

It is a 'narrow escape' where accident, major loss or injury did not occur. Such incidents must be reported locally and the working conditions leading to it must be investigated.

##### b) Fatality

A death resulting from work injury is covered under this category irrespective of the intervening time between injury and death.

##### c) Permanent total disability

Personal injury which incapacitate a person completely and results in termination of employment.

##### d) Permanent partial Disability

Any injury which results in complete loss or permanent loss of use of any part of body or any permanent impairment of the function of the body.

##### e) Lost Work-Day Case

Any injury excepting permanent partial disability which renders the injured person unable to perform any regular job on any day after the day of receiving the injury.

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##### f) Restricted work case

After the injury, the injured person can not perform his normal duties or regular job.

##### g) Lost work days

The number of calendar days on which the injured person was temporarily unable to work.



#### h) Restricted Work days

The total number of calendar days from the start of Restricted work, by the injured persons, till he returns to his regular job.

#### i) Medical treatment cases

The injury requiring medical treatment under order from a physician but does not involve Lost work Days, or restricted workdays.

### 37.3 REPORTING

Contractor shall notify BPCL as under:

Lost time injuries / Fatality / Injury which may cause total or partial disability to injured etc -immediately.

Fire and Miscellaneous Events- immediately.

First Aid injuries-Within a day.

### 38 SAFETY TRAINING

Training is a pro-active measure. The contractor shall engage only those workers who are proficient in their respective jobs. It is responsibility of contractor to impart job knowledge to all workers and supervisors before engaging them for any work. It is also binding to the contractor to depute persons for safety training, if arranged by BPCL.

### 39 DOCUMENTATION

Following documents shall be maintained by contractor at site:

- \_ Safety & Environment Policy
- \_ Safety committee minutes of meeting
- \_ Critical machinery/equipment fitness certificate.
- \_ Stock register of Personnel Protective Equipment.
- \_ Maintenance registers for major machineries/equipment.
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- \_ Accident / incident investigation reports.
- \_ Various work permits.
- \_ Earthing test certificates.
- \_ Materials test certificates.
- \_ P.F., Contract Labour, ESI registration.
- \_ All records & registers as required under Contract Labour (Regulation & Abolition Act) 1970 and Building & Other Construction Workers Act 1996.

### 40 ENVIRONMENT PROTECTION

Contractor should ensure that the work carried out by him does not change the quality of air, water & soil at the work site & surrounding areas. Disposal of surplus earth, rubbish, scrap etc. shall be done in Eco-friendly manner. The contractor shall ensure that the greenery is protected to the extent possible while executing the work.

### 41 ENVIRONMENTAL IMPACT MITIGATION MEASURES

The best way of impact mitigation is to prevent the event occurring. All efforts should be made to locate the developmental activities in a area free of agricultural lands, cyclones, earthquakes, ecologically sensitive, erosion, forests, flooding, human settlements, land slides, natural scenic beauty, water logging. In case this is not feasible, the next step is to look at the raw materials/technologies/processes alternatives which produce least impact i.e. adopting or using processes or technologies which are efficient and produce recyclable wastes/minimum waste/wastes that can be easily disposed, without affecting the environment. However if the developmental activity produce the adverse impact, action has to be taken to mitigate the same. Following are the suggested methods, which shall be taken in to consideration by the contractor to

choose right technology for executing the work:

#### **41.1 AIR**

- ☐ Attenuation of pollution on pathway or protection of receptor through green belts.
- ☐ Particulate removal devices such as : cyclones, settling chambers, scrubbers, electrostatic precipitators, and bag houses.
- ☐ Gas removal devices using absorption (liquid as a media), adsorption (molecular sieve), and catalytic converters.
- ☐ Uses of protected, controlled environment, such as oxygen masks, Houston Astrodome, etc.
- ☐ Control of stationary source emission (including evaporation incineration, absorption, condensation and material substitution)
- ☐ Use of masks
- ☐ Dilution of odourant (dilution can change the nature as well as strength of an odour)
- ☐ Odour counteraction or neutralize (certain pairs of odours in appropriate concentration may neutralize each other)
- ☐ Odour masking or blanketing (certain weaker malodours may be suppressed by a considerably stronger good odour)

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#### **41.2 NOISE**

- ☐ The mitigation measure may include damping, absorption, dissipation and deflection methods. Common technique involve constructing sound enclosures, applying mufflers, mounting noise sources on isolators, and/or using materials with damping properties.
- ☐ Performance specifications for noise represent a way to insure the procured item is controlled.
- ☐ Ear protective devices should be used. When an individual is exposed to steady noise levels above 85-dB (A), in spite of the efforts made to reduce noise level at the source, hearing conservation measures should be initiated.

#### **41.3 WATER**

- ☐ Conjunctive use of ground/surface water, to prevent flooding/water logging/depletion of water resources. Included are land use pattern, land filling, lagoon/reservoir/garland canal construction and rainwater harvesting and pumping rate.
- ☐ Minimize flow variation from the mean flow.
- ☐ Segregation of different types of wastes.
- ☐ Storing of oil wastes in lagoons should be minimized in order to avoid possible contamination of the ground water system.
- ☐ Surface runoff from oil handling areas should be treated for oil separation before discharge into the environment. If oil wastes are combined with sanitary sewage, oil separation will be necessary at the waste water treatment facility.
- ☐ All effluents containing acid/alkali/organic/toxic wastes should be processed by treatment methods. The treatment methods may include biological or chemical processes. The oil water separator of appropriate size based on catchment area shall be provided.
- ☐ The impact due to suspended solids may be minimized by controlling discharge of wastes that contain suspended solids; this includes sanitary sewage and industrial wastes. Also, all activity that increases erosion or

contributes nutrients to water (thus stimulating alga growth) should be minimized.

□ Waste-containing radioactivity should be treated separately by means of dewatering procedures and solids or brine should be disposed of with special care.

#### **41.4 LAND**

□ The environmental impact of soil erosion can best be mitigated by removing vegetative cover only from the specific site on which construction is to take place and by disturbing the vegetation in adjacent areas as little as possible. Land clearing activities should be kept to the absolute minimum.

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□ Disturbing the existing vegetation and natural contour of the land as little as possible can mitigate increases in surface runoff. Vegetation along watercourses should not be cleared indiscriminately. Neither should potholes or swamps be drained unless absolutely necessary for successful completion of the activity.

□ Construction activities that result in the soil being laid bare could be scheduled in such a way that some type of vegetative cover appropriate to the site could be established prior to the onset of intense rain or windstorms. If grass is to be seeded, mulch of straw will help to protect the soil from less extreme erosive forces until vegetative and root development begins.

□ Natural drainage patterns can often be maintained by preparing sodden waterways or installing culverts.

□ Steep slopes can be terraced, thereby effectively reducing the length of slope.

□ Check dams built near construction sites can reduce the quantity of eroded soil particles reaching free-flowing streams or lakes.

□ Use of “floating” foundations and height restrictions in earthquake zones and increased foundation height, wall strength and roof support in areas periodically subject to cyclones can reduce the hazards.

□ All forms of temporary structures should be avoided from the flood plain and all permanent structures should be raised to a height above the level which flood waters can be expected to reach once every 100 years (100-year flood).

□ Installation of underground drainage structures helps to reduce sediment loads.

□ Engineering plans can be drawn to reduce the area of earth cuts on fills below what might otherwise be acceptable, provide physical support for exposed soil or rock faces, concentrate or distribute-as appropriate the weight loading of foundations to areas or state better able to support that weight.

□ Use small charges for mining/blasting.

□ Restricting the number, frequency and area of movement of heavy machinery.

□ Compatibility between adjacent land uses can best be assured by providing a green belt between the proposed activity and nearby properties where any significant degree of incompatibility is likely to result.

#### **41.5 ECOLOGY**

□ Intruding as little as possible on their habitat can best mitigate the impact of activities on animals. If such animals use the area where the activity will take place, the activity should be concentrated to the maximum extent possible in

those parts of the area that they least often frequent.

☐ During the planning phase of an activity, an attempt should be made to avoid extending into the home range wild animals. If this is not feasible, the activity should be completed, as quickly as possible, and regular and sustained use of the area over time should be minimized.

☐ Regular or sustained intrusions of men or equipment into nesting areas of birds should be avoided to the maximum possible extent, especially while are being incubated by the adults and until the young have left the nest. The

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sanitation cuttings of non-commercial individual trees should destroy no known nests.

☐ Restricting the input of polluting substances into watercourse, estuaries and the open sea can mitigate impacts upon fish and shellfish populations.

Additionally, when a part of the activity involves water level control, changes in such levels should be programmed to be extent, it is possible to do so in a way that will minimally disturb nesting and feeding habitat.

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## APPENDIX-I

### COLD WORK PERMIT

Sl.No. \_\_\_\_\_

Work clearance from \_\_\_\_\_ hrs of date \_\_\_\_\_ To \_\_\_\_\_ hrs of date \_\_\_\_\_ (Valid for the shift unless renewed)

Issued to (Department / Section / Contractor) \_\_\_\_\_

Exact Location of work (Area / Unit / Equipment no. etc) \_\_\_\_\_

Description of work \_\_\_\_\_

#### THE FOLLOWING ITEMS SHALL BE CHECKED BEFORE ISSUING THE PERMIT

(Tick mark in the appropriate box. Checklist items marked with asterisk ( \* ) shall be complied by receiver)

Sr

no.

item Don

e

Not

Reqd.

Sr

no.

Item Done Not

Reqd

1 Equipment / Work Area

inspected

6 Equipment water flushed

2 Surrounding area checked,  
cleaned and covered

7 Equipment properly  
steamed / purged

3 Equipment

blinded/disconnected / closed /

isolated / wedge opened

8 Proper ventilation and

lighting provided  
4 Equipment properly drained  
and depressurized

9\*

Area cordoned off & caution  
boards / tags provided.

5 Equipment electrically isolated  
and tagged vide

Permit no. -----

-

10 Gas test: HCs / Toxic etc.

HCs = %

LEL

Toxic gas = ppm

**Remarks:**

1. The activity has the following expected residual hazards (Tick the relevant items): Lack  
of Oxygen / H<sub>2</sub>S, Toxic Gases / Combustible gases / Pyrophoric Iron / Corrosive Chemicals /  
Steam – Condensate / Others \_\_\_\_\_

2. Following additional PPE to be used in addition to standards PPE (Helmet, Safety Shoes,  
Hand gloves, Boiler suit): Face Shield / Apron / Goggles / Dust Respirator / Fresh Air Mask /  
Lifeline / Safety Belt / Airline / Earmuff etc.

3. Additional precaution if any:

---

Issuer Name & Designation Issuer Signature Receiver Name & Designation Receiver Signature

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**Closing of the work permit:**

Receiver : Certified that the subject work has been  
completed / stopped and area cleared

Issuer: Verified that the job has been completed and  
area cleared and is safe from any hazard.

**Date &**

**Time**

**Name &**

**Designation**

**Signature Date &**

**Time**

**Name &**

**Designation**

**Signature**

Clearance renewal

Time

Date

From To

Additional precautions

if any, Otherwise

mention "NIL"

Issuer's Name,

Designation &

Signature

Receiver's Name,

Designation and

Signature

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**General Instructions:**

1. The work permit shall be filled up carefully and accurately in clear handwriting

ensuring that complete information is provided in all the sections / subsections. Sketches should be provided wherever possible to avoid miscommunication.

2. Appropriate safe guards and required personnel protective equipment (PPEs) shall be determined by a careful analysis of the potential hazards and the operations to be performed prior to starting the work.

3. Requirement of standby personnel from Process / Maintenance / Contractor / Fire / Safety etc if any shall be mentioned in the additional requirement.

4. In case of fire alarm / siren, all work must immediately be stopped.

5. For renewal of work clearance, the issuer shall ensure that the conditions are satisfactory for the work to continue. If the conditions have changed, it may be necessary to issue a new permit or amend the existing permit.

6. This clearance on the same permit can be renewed / extended upto a maximum of seven calendar days.

7. This permit must be available at work site at all times.

8. On completion of the work, the permit shall be closed.

The industry may add other relevant instruction based on their operating and maintenance practices.

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## APPENDIX -II

### WORK PERMIT

for

### HOT WORK / ENTRY TO CONFINED SPACE

Sl.No.\_

Work clearance from \_\_\_\_\_ hrs of date \_\_\_\_\_ To \_\_\_\_\_ hrs of date \_\_\_\_\_ (Valid for the shift unless renewed)

Issued to (Department / Section / Contractor)

Exact Location of work (Area / Unit / Equipment no. etc) \_\_\_\_\_

Description of work \_\_\_\_\_

#### THE FOLLOWING ITEMS SHALL BE CHECKED BEFORE ISSUING THE PERMIT

(Tick mark in the appropriate box. Checklist items marked with asterisk (\*) shall be complied by receiver)

Sr

no

Item Done Not

Reqd

.

Sr

no

.

Item Done Not

Reqd

#### A General points B For Hot work / Entry to confined Space

1 Equipment / Work Area inspected 1 Proper ventilation and Lighting providing

2 Surrounding area checked, cleaned and covered

2 Proper means of exit / escape provided

3 Sewers, manholes, CBD etc and hot surfaces nearby covered

3 Standby personnel provided from Process / Maint / Contractor / Fire /

Safety dept.

4 Considered hazard from other operations  
and concerned persons alerted.

4 Checked for oil and Gas trapped behind  
the lining in Equipment

5 Equipment blinded/disconnected / closed /  
isolated / wedge opened

5\* Shield provided against spark

6 Equipment properly drained and  
depressurized

6\* Portable equipment / nozzles properly  
grounded

7 Equipment properly steamed / purged 7\* Standby persons provided for entry to  
confined space

8 Equipment water flushed

9 Iron sulfide removed / kept wet **C For Vehicle Entry**

10 Equipment electrically isolated and tagged  
vide permit no.

1\* Spark Arrestor on the mobile equipment /  
vehicle provided.

11 Gas test : HCs = %LEL

Toxic gas = ppm, O2 =  
%

12\* Running water hose / Fire extinguisher  
provided. Fire water system available.

### **D For Excavation works**

13\* Area cordoned off and Precautionary tags  
/ Boards provided.

1 Clearance obtained for excavation / road  
cutting / Dyke cutting from concerned  
depart.

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### **REMARKS:**

1. The activity has the following expected residual hazards (Tick the relevant items): Lack of  
Oxygen / H<sub>2</sub>S, Toxic Gases / Combustible gases / Pyrophoric Iron / Corrosive Chemicals /  
Steam – Condensate / Others

2. Following PPEs to be used in addition to standards PPEs (Helmet, Safety Shoes, Hand  
gloves, Boiler suit): Face Shield / Apron / Goggles / Dust Respirator / Fresh Air Mask /  
Lifeline / Safety Belt / Airline / Earmuff etc.

3. Additional precautions if

any: \_\_\_\_\_

---

Issuer Name & Designation Issuer Signature Receiver Name and

Designation

Receiver Signature

## **Clearance renewal**

Time

Date

From To

Gas Test Values

for HC's, Toxic,

O<sub>2</sub> etc

Additional

precautions if any,

Otherwise mention

"NIL"

Issuer's Name,

Designation &

Signature

Receiver

Name,  
Designation  
and Signature  
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### **Closing of the work permit:**

**Receiver:** Certified that the subject work has been completed / stopped and area cleaned.

**Issuer:** Verified that the job has been completed and area cleaned and is safe from any hazard.

**Date &**

**Time**

**Name &**

**Designation**

**Signature Date &**

**Time**

**Name &**

**Designation**

**Signature**

### **General Instructions:**

1. The work permit shall be filled up carefully and accurately in clear handwriting ensuring that complete information is provided in all sections / subsections and none of column is left blank. Sketches should be provided wherever possible to avoid miscommunication.
2. Appropriate safe guards and required personnel protective equipment shall be determined by a careful analysis of the potential hazards and the operations to be performed prior to starting the work.
3. In case of fire alarm / siren, all work must immediately be stopped.
4. Only certified vehicle / engines and permitted type of electrical equipment and tools are allowed in operating areas.
5. Welding machines should be located in non-hazardous and ventilated areas.
6. No hot work should be permitted unless the explosive meter reading is Zero.
7. When a person is entering confined space, the receiver must keep minimum two standbydesignated persons at the manhole or entry point.
8. Before box up of any vessel manhole cover, ensure that no men / materials are inside the vessel.
9. For renewal of work clearance, the issuer shall ensure that the conditions are satisfactory for the work to continue. If the conditions have changed, it may be necessary to issue a new permit or amend the existing permit.
10. This clearance on the same permit can be renewed / extended upto a maximum of seven calendar days.
11. This permit must be available at work site at all times.
12. On completion of the work, the permit must be closed and kept as record.
13. The industry may add other relevant instructions based on their operating and maintenance practices.

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## **APPENDIX -III**

### **Electrical Isolation / Energisation Permit**

#### **Section-A: Isolation Permit.**

Sl.No. \_\_\_\_\_

**Request for Isolation:** Date: \_\_\_\_\_

Time: \_\_\_\_\_

Department / Section / Area issuing the permit

Equipment number to be isolated: \_\_\_\_\_

Name of the equipment / circuit to be isolated: \_\_\_\_\_



The above-mentioned equipment / circuit shall be de-energized and isolated from all live conductors to carry out the maintenance work by \_\_\_\_\_ section / for operational requirement.

\_\_\_\_\_  
**Issuer Name Designation Signature**

**Certificate of Isolation:** Date:

\_\_\_\_\_  
Time: \_\_\_\_\_

Certified that Equipment / Circuit no. \_\_\_\_\_ of \_\_\_\_\_ plant has been electrically isolated by switches / isolators / links / fuses (tick as applicable) and the danger tag is put on the supply panel. Actions in respect of electrical isolation have been recorded in the electrical shift logbook.

\_\_\_\_\_  
**Name of Authorized Person Designation Signature**

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### **Section-B: Energisation Permit.**

SI.No. \_\_\_\_\_

***Request for Energisation:*** Date:

\_\_\_\_\_  
Time: \_\_\_\_\_

Department / Section / Area issuing the permit \_\_\_\_\_

Equipment number to be energized: \_\_\_\_\_

\_\_\_\_\_  
Name of the equipment / circuit to be energized: \_\_\_\_\_

Work on the above mention equipment / circuit has been completed and all the applicable permits closed. This equipment / circuit may be energized.

\_\_\_\_\_  
**Issuer Name Designation Signature**

**Certificate of Energisation:** Date:

\_\_\_\_\_  
Time: \_\_\_\_\_

Certified that Equipment / circuit no. \_\_\_\_\_ of \_\_\_\_\_ plant has been electrically energized and the danger tag removed from the supply panel. This is also recorded in the electrical shift logbook.

\_\_\_\_\_  
**Name of Authorized Person Designation Signature**

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### **APPENDIX -IV**

#### **Scaffolding fitness certificate**

(Name of contractor )

Project \_\_\_\_\_

Exact location of scaffolding \_\_\_\_\_

Date of inspection \_\_\_\_\_

Type of scaffolding & height \_\_\_\_\_

Purpose \_\_\_\_\_

We have personally checked the scaffolding and declare it as fit for use.

Signature of site in-charge \_\_\_\_\_

Signature of contractor's representative \_\_\_\_\_

Date: \_\_\_\_\_

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### **APPENDIX -V**

#### **Temporary electrical connection fitness certificate**

(Name of contractor )

Project \_\_\_\_\_

Exact location of electrical temporary connection \_\_\_\_\_

Date of inspection \_\_\_\_\_

Purpose \_\_\_\_\_

We have personally checked the temporary electrical connection and workability of ELCB/RCCB and declare it as fit for use.

Signature of site in-charge \_\_\_\_\_

Signature of contractor's representative \_\_\_\_\_

Date:

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## **GRIEVANCE REDRESSAL MECHANISM**

### **PREAMBLE**

Grievance Redressal Mechanism aims at speedy resolution of grievance of tenderes and prospective tenderes by providing them with a platform to refer their grievances and to seek appropriate remedy to the same.

#### **1.0 Definitions**

In this mechanism, unless repugnant to the meaning or context thereof, the following expressions shall have the meaning given to them below :-

1.1 '**Company**' shall mean Bharat Petroleum Corporation Ltd.

1.2 '**Grievance**' shall mean a representation complaining of an interference in the rights of a Tendering party or representation complaining of an oppression on a Tendering party by Bharat Petroleum Limited (BPCL) or its representatives, resulting in denial of his rights as a Tendering party.

1.3 '**Tendering party**' shall mean a party or parties as a group who has / have participated in the tender process and submitted his / their tender in response to an invitation to participate in the tender or a party / parties who is / are prospective tenders qualified to participate in a tender based on notice issued by the Company inviting tender.

1.4 '**Tender Inviting Authority**' shall mean an employee or committee of BPCL employees authorised to invite and / or to accept a particular tender.

1.5 '**Grievance Redressal Officer (GRO)**' shall mean respective Functional Director to whom the originator of Tender reports.

#### **2.0 Authorities to handle grievances**

2.1 There will be a two-tier mechanism to handle the grievance received from a Tendering party.

2.2 The first level of Grievance Redressal Mechanism (GRM) shall comprise of a Grievance Redressal Committee (GRC) consisting Tender inviting authorities as the Co-ordinator, head of SBU/Entity originating the Tender and the ED (Finance). All the grievance shall be lodged with the Coordinator of the GRC with a copy to the Tender Inviting Authority.

2.3 The second level of GRM shall be Standing Committee of the Board for Tenders (SCBT) to whom appeal against the Orders of the GRO can be filled by the Tendering party in case he is not satisfied with the decision of the GRC.

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#### **3.0 Contact details co-ordinator**

Telephone No. Address:

Fax:

Our Ref: