

**Office of the General Manager(E&M),
E&M Department**

**CMPDI Ltd, 2nd floor, Old Building, Gondwana Place, Kanke Road,
RANCHI-834031(JHARKHAND), INDIA;
Ph.: 91-651-2230876 (O), FAX: 91-651-2230127
E-mail– eandm@cmpdi.co.in
WEB SITE: www.cmpdi.co.in**

TENDER DOCUMENT

FOR

**Central AC plant with VRF system for CMPDI, RI–VI office building
At Singrauli**



**MAY, 2015
Central Mine Planning And Design Institute Ltd.
(A Subsidiary of Coal India Ltd.) Gondwana Place, Kanke Road,
Ranchi - 834031 (Jharkhand)**

SEC- 1

TENDER NOTICE

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WEB SITE: www.cmpdi.co.in

NIT No.: NIT No.: CMPDI (HQ) / TENDER/GM (E&M)/2015/ 01 Dated :30.4.2015

e-TENDER NOTICE

(NIT for works requiring electrical contractors license having estimated value of Rs.1.00 crore & above)

1. Tenders are invited on-line on the website <https://mcltenders.gov.in> from the eligible bidders having Digital Signature Certificate (DSC) issued from any agency authorized by Controller of Certifying Authority (CCA), Govt. of India and which can be traced up to the chain of trust to the Root Certificate of CCA, for the following work:

Name & Description of Work	Estimated/ Indent Value (In Rs.)	Earnest Money (In Rs.)	Application fee (In Rs.)	Period of completion (In Days)
Design, Supply, Installation, Testing & commissioning of Central AC plant with VRF system for CMPDI, RI-VI office building at Singrauli consisting of all Civil, Structural, Electrical and Mechanical Works and all other accessories and facilities required to make it complete in all respects.	7500000	75000	Nil	180

(The above tendered item is eligible for CENVAT Credit)

2. Time Schedule of Tender :

Sl. No.	Particulars	Date	Time
a.	Tender e-Publication date	05.05.15	5 pm
b.	Document download start date	06.05.15	1 pm

CMPDI

c.	Document download end date	27.05.15	11 am
d.	Bid Submission start date	07.05.15	11 am
e.	Bid submission end date	27.05.15	11 am
f.	Start date for seeking Clarification on-line	07.05.15	11 am
g.	Last date for seeking Clarification on-line	17.05.15	5 pm
h.	Date of Pre-bid Meeting	NA	
i.	Technical Bid Opening date	27.05.15	3 pm

For details of qualification requirements, bid security and complete tender document, visit our website www.cmpdi.co.in. or <http://eprocure.gov.in/cppp> Detailed tender notice is available at <https://mcltenders.gov.in>,

NOTE : End user portal agreement of MCL is applicable for CMPDI also.

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DETAILED E -TENDER NOTICE

NIT No.: NIT No.: CMPDI (HQ) / TENDER/GM (E&M)/2015/ 01 Dated : 30.04.2015

(NIT for works requiring electrical contractors license having estimated value of Rs.1.00 crore & above)

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NOTE : End user portal agreement of MCL is applicable for CMPDI also.

3. **Deposit of Application fee and EMD:**

Deposit of Earnest Money: ₹ 64908.00 (INR Sixty Four thousand and Nine hundred Eight only) as Earnest Money can be deposited online on e-Procurement portal of MCL by following mode :

- a) Online fund transfer from Axis Bank.
- b) NEFT from any Scheduled Bank.

(EMD through NEFT has to be paid strictly as per the challan generated by the respective bidder on e-procurement portal of MCL. The EMD payment through NEFT mode should be made well ahead of time to ensure that the EMD amount is transferred to MCL account (Pool Account) before bid submission).

II. Alternatively, bidders can also deposit EMD in the form of irrevocable Bank Guarantee (BG) from any scheduled Bank, in the format given in the bid document. The validity of such BG should be minimum 28 days beyond the validity of the bid.

Note : The BG against EMD shall be taken only for the tenders where EMD is amounting to Rs. 5 lakhs or more. In tenders with EMD less than Rs. Five lakh, only online mode of payment shall be enabled.

In case of offline submission of EMD through BG, the bidder has to furnish the BG Number, date of issue, expiry date, amount and name of issuing bank, while submitting the tender online. The bidder has to deposit the original BG against EMD in person or by postal means, which must be received in the office of the General Manager (TE & CM), Central Mine Planning & Design Institute Limited, Gondwana Place, Kanke Road, Ranchi Pin-834031, (JHARKHAND), INDIA. (Complete Address of Tender Inviting Authority) on any working day after e-publication of NIT and upto three working days after the last date of submission of bid. The Company shall not be responsible for any postal delay in receipt of EMD. In case the EMD is not received within the aforesaid period, the bid will be out rightly rejected.

III. In case of online payment of EMD, the bid submission can be made only when the EMD is received by MCL (Pool Account).

IV. In case of online payment of EMD, if the payment is made by the bidder within the last date & time of bid submission but not received by MCL (Pool Account) within the specified period due to any reason then the bid will not be accepted. However, the EMD will be refunded back to the bidder.

(Note : In tenders where BG is not applicable Clause-II (above) shall not be applicable and should not be included).

The bidders should submit MANDATE FORM for e-payment along with EMD, if not submitted earlier, as per the format given in the bid document at Annexure V.

4. **Pre-bid Meeting** : ~~The pre-bid meeting shall be held in the office of the Tender Inviting Authority (.....), on the scheduled date & time, if specified in the NIT. The purpose of the pre-bid meeting is to clarify the issues and to answer the questions on any matter that may be raised at that stage. Non-attendance at the pre-bid meeting will not be a cause for disqualification of bidder and it shall be presumed that the bidder does not require any clarification. The management shall not circulate proceedings of the pre-bid meeting.~~
5. **Clarification of Bid**: The bidder may seek clarification on-line within the specified period. However, the management will clarify as far as possible the relevant queries.
6. The bidders have to accept the on-line user portal agreement which contains the acceptance of all the Terms and Conditions of NIT and tender document, undertakings and the e-Procurement system through <https://mcltenders.gov.in> in order to become an eligible bidder. This will be a part of the agreement.

General Instructions for Submission of Tender: A bidder should strictly comply with the following instructions:

- (a) Bidders are required to submit offers on line giving reference to this Tender Notice No. and date, containing offers in two parts.
- (b) Two Parts of the bid should contain the details as follows: -
Part-I –
i) Letter of Bid,
ii) Details of Earnest Money Deposit.
iii) Information regarding Eligibility criteria.

- a) Maximum three nos. of completed work of similar nature with value during the last seven years
- b) Financial turnover of the bidder in the last three years
- c) General technical evaluation (GTE) is to be agreed as mandatory

Part-II - Prices only in the Excel format as indicated in the tender document.

7. **Eligible Bidders** : The invitation for bid is open to all bidders including an individual, proprietorship firm, partnership firm, company or a Joint Venture having eligibility to participate as per eligibility criteria stipulated in clause No.8 of NIT and having Digital Signature Certificate (DSC) issued from any agency authorized by Controller of Certifying Authority (CCA), Govt. of India and which can be traced up to the chain of trust to the Root Certificate of CCA

Note: Joint Venture: Two or three companies/contractors may participate in the tender as Joint Venture (JV). Joint Ventures must comply the following requirements:

- i). The minimum qualification requirements for Joint Ventures : The qualifying criteria parameters e.g. experience, financial resources etc. of the individual partners of the J.V. will be added together and the total criteria should not be less than as spelt out in qualification criteria.

- ii). The formation of Joint Venture or change in the Joint Venture character/partners after submission of the bid and any change in the bidding regarding Joint Venture will not be permitted.
- iii). Joint Venture Agreement should legally bind all partners jointly and severally.
- iv). The pre-qualification of a joint venture does not necessarily pre-qualify any of its partners individually or as a partner in any other joint venture or association. In case of dissolution of a joint venture, each one of the constituent firms may pre-qualify if they meet all the pre-qualification requirements, subject to written approval of the employer.
- v). The JV Agreement must include the relationship between joint venture partners in the form of JV Agreement to legally bind all partners jointly and severally for the proposed agreement which should set out the principles for the constitution, operation, responsibilities regarding work and financial arrangements, participation (percentage share in the total) and liabilities (joint and several) in respect of each and all of the firms in the joint venture. Such JV Agreement must evidence the commitment of the parties to bid for the facilities applied for (if pre-qualified) and to execute the contract for the facilities if their bid is successful.
- vi). One of the partners responsible for performing a key component of the contract shall be designated as Lead Partner. This authorization shall be evidenced by a Power of Attorney signed by legally authorized signatories of all the partners.
- vii). The JV Agreement must provide that the Lead Partner shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the Joint Venture and the entire execution of the contract shall be done with active participation of the Lead Partner.
- viii). The contract agreement should be signed jointly by each Joint Venture Partners.
- ix). An entity can be a partner in only one Joint Venture. Bid submitted by Joint Ventures including the same entity as partner will be rejected.
- x). The J.V. agreement may specify the share of each individual partner for the purpose of execution of this contract. This is required only for the sole purpose of apportioning the value of the contract to that extent to individual partner for subsequent submission in other bids if he intends to do so for the purpose of the qualification in that tender.

8. Eligibility Criteria :

- A. Work Experience :** The intending tenderer must have in its name as a prime contractor experience of having successfully completed similar works during last 7 (seven) years ending last day of month previous to the one in which bid applications are invited (i.e. eligibility period) should be either of the following:-

Three similar completed works each costing not less than the amount equal to 40% of the estimated cost.

Or

Two similar completed works each costing not less than the amount equal to 50% of the estimated cost.

Or

One similar completed work costing not less than the amount equal to 80% of the estimated cost.

(Work experience in any Government/Semi-Government/Public Sector Undertakings (Central/ State) will be considered for eligibility. Work Experience in a Private firm shall be considered for eligibility only if the Private firm is a Company registered under Indian Companies Act'1956)

(In case the bidder is not a prime contractor but a sub-contractor, the bidder's experience as sub-contractor will be taken into account if the contract in support of qualification is a sub-contract in compliance with the provision of such sub-contract in the original contract awarded to prime contractor.)

The work experience of the bidder for those works only shall be considered for evaluation purposes, which are completed on or before the last day of month previous to one in which e-Tender has been invited (i.e. e-Publication date of NIT). The experience of incomplete/ongoing works as on the last date of eligibility period will not be considered for evaluation.

While considering the value of completed works, the full value of completed works will be considered whether or not the date of commencement is within the said 7 (seven) years period.

The cost of completed works shall be given a weightage to bring them at current price level by adding 5% for each completed year (total number of days/365) after the end date of experience (date of completion of work) till one year before the last day of month previous to one in which e-Tender has been invited.

The definition of Similar work shall be as follows :

Similar work means the work of HVAC i.e. supply, installation and commissioning, testing of Air Conditioning system.

In respect of the above eligibility criteria the bidders are required to furnish the following information on-line:

- i). Start date & end date of each qualifying experience (similar work)
- ii). Agreement Number/Work Order Number of each experience
- iii). Work Order Issuing authority of each experience
- iv). Percentage (%) share of each experience (100% in case of an individual/proprietorship firm or a partner in a partnership firm and the actual % of share in case of a Joint Venture)
- v). Executed Value of work against each experience
- vi). Confirmation in the form of Yes/No regarding submission of similar work experience as defined in the NIT.

Note : In case the bidder is a Joint Venture, the work experience of any one, two or three of the individual partners of JV may be furnished as the work experience of the bidder.

- B. Financial Turnover:** Average annual financial turnover during the last 3 (three) years ending 31st March of the previous financial year should be at least 30% of the estimated cost.

(The "Previous Financial Year" shall be computed with respect to the e-Publication date of NIT).

If any bidder does not furnish the turnover value for any financial year out of the last 3 financial years, the turnover for that financial year shall be taken as 'Zero' and the average annual financial turnover shall be calculated accordingly.

Financial turnover shall be given a weightage to bring them at current price level by adding 5% in the financial turnover for the 2nd year and 10% for the 3rd year. No weightage will be given in the turnover for the 1st year.

In respect of the above eligibility criteria the bidders are required to furnish the following information on-line :

- i). Annual financial turnover of each of the last 3 years ending 31st March of the previous financial year.
- ii). Name of the Chartered Accountant issuing the Profit and Loss A/c or the Turnover certificate
- iii). Membership Number of the Chartered Accountant
- iv). Date of issue of financial turnover certificate by CA

Note: In case the bidder is a Joint Venture, the turnover of the individual partners of the JV will be added together for each financial year and is to be furnished as the turnover of the bidder for that particular financial year. However, the information against Sl.No.(ii), (iii) & (iv) above will be given w.r.to the lead partner of JV only.

C. Permanent Account Number(PAN) : The bidder should possess Permanent Account Number (PAN) issued by Income Tax department, Govt. of India.

In respect of the above eligibility criteria the bidders are required to furnish the following information on-line :

- i) Confirmation regarding possessing of Permanent Account Number(PAN) issued by Income Tax department, Govt. of India in the form of Yes / No.

Note : In case the bidder is a Joint Venture, each individual partner of JV should possess Permanent Account Number (PAN) issued by Income Tax Department, Govt. of India.

D. VAT/Sales Tax Registration on Works Contract : The bidder should possess a VAT/ Sales Tax Registration on works contract issued by Sales Tax department of any Indian State.

In respect of the above eligibility criteria the bidders are required to furnish the following information online:

- i). Confirmation regarding possessing of VAT/ Sales Tax Registration on Works Contract issued by Sales Tax department of any Indian State in the form of Yes / No

Note : In case the bidder is a Joint Venture, the TIN/Sales Tax Registration Number of each individual partner of JV will be furnished.

E. Service Tax Registration Certificate : The bidder should possess a Service Tax Registration Certificate issued by Govt. Dept of any Indian State.

- i). Confirmation regarding possessing of Service Tax Registration Certificate issued by Sales Govt. Dept. of any Indian State in the form of **Yes / No**

F. Provident Fund : The bidder should possess a Provident Fund Registration Certificate issued by Govt. Dept of any Indian State.

- i). Confirmation regarding possessing of Provident Fund Registration Certificate issued by Govt. Dept of any Indian State in the form of **Yes / No**

G. An Affidavit on a non-judicial stamp paper of minimum value of Rs.5 regarding genuineness of the information furnished by him on-line and authenticity of the scanned copy of documents uploaded by him on line in support of his eligibility, as per the format given in the bid document at Section - 3

H. Legal Status of the bidder:

Any one of the following document:

1. Affidavit or any other document to prove proprietorship/individual status of the bidder.
2. Partnership deed containing name of partners.
3. Memorandum & Article of Association with certificate of incorporation containing name of bidder
4. Joint Venture agreement containing name of partners and lead partner, Power of Attorney to the Lead Partner and share of each partner.

I. Digital Signature Certificate (DSC): If the bidder himself is the DSC holder bidding on-line then no document is required. However, if the DSC holder is bidding online on behalf of the bidder then the Power of Attorney or any sort of legally acceptable document for the authority to bid on behalf of the bidder.

J. Banning: Declaration by the bidders that they have not been banned or delisted by any govt. or quasi-govt. agencies or PSU, as per the Affidavit format given in the bid document at Section 3

K. The tenderers should have valid electrical contractor's licence issued by Govt. licensing Board. In case tenderer is a partnership firm, the licence shall be valid for that partnership firm. The tenderer shall submit photocopy of complete license showing name of the firm, name of the contractor/s, name and address of the firm. The tenderer shall provide proof of validity of his electrical contractor's license for proprietorship firm or partnership firm or limited company as the case may be.

9. Submission of Bid:

- a. In order to submit the Bid, the bidders have to get themselves registered online on the e-Procurement portal of MCL (<https://mcltenders.gov.in>) with valid Digital Signature Certificate (DSC) issued from any agency authorized by Controller of Certifying Authority (CCA), Govt. of India and which can be traced up to the chain of trust to the Root Certificate of CCA. The online Registration of the Bidders on the portal will be free of cost and one time activity only. If the bidder is an individual person then he should register himself under "Individual" category and if the bidder is a partnership firm/Joint venture/ Company then registration should be under "Corporate" category. The registration should be in the name of bidder, whereas DSC holder may be either bidder himself or his duly authorized person.

b The bidders have to accept unconditionally the online user portal agreement which contains the acceptance of all the Terms and Conditions of NIT including General and Special Terms & Conditions and other conditions, if any, along with on-line undertaking in support of the authenticity of the declarations regarding the facts, figures, information and documents furnished by the Bidder on-line in order to become an eligible bidder. No conditional bid shall be accepted.

NOTE : End user portal agreement of MCL is applicable for CMPDI also.

- c. **Letter of Bid: Letter of Bid:** The format of Letter of Bid (as given in the NIT) will be downloaded by the bidder and will be printed on Bidder's letter head and the scanned copy of the same will be uploaded during bid submission in cover-I. This will be the covering letter of the bidder for his submitted bid. The content of the "Letter of Bid" uploaded by the bidder must be the same as per the format downloaded from website and it should not contain any other information.

The Letter of bid will be digitally signed by DSC holder submitting bid online and it does not require any physical signature. However, if the Letter of Bid (LoB) bears the physical signature in addition to the digital signature of DSC holder, it will be accepted without questioning the identity of person signing the Letter of Bid.

- d. **Price bid:** The Price bid containing the Bill of Quantity will be in Excel format and will be uploaded during tender creation by tender inviting department. The bidder will download the same BoQ file and will quote the rates for all items on this Excel file and thereafter will upload the same Excel file during

bid submission in cover-II. The Price-bid will be in Item rate BOQ format and the bidder will have to quote for all the tendered items and **competitiveness of the bides would be evaluated on the basis of total cash flow towards F.O.R. destination landed value of all the items, installation, testing, & commissioning of the system and annual comprehensive maintenance charges for 9 years. Evaluation of the L1 bidder would made after arriving at the preset value through discounted cash flow method where discounting would be made @ 12% p.a..** The Price-bids of the tenderers will have no condition. The Price Bid which is incomplete and not submitted as per instruction given above will be rejected.

“In cases where the system does not read the values of any of the BOQs submitted against a tender while generating BOQ comparative chart, a manual comparative statement will be prepared based on the data available in the BOQs uploaded by the bidders and the same shall be considered for evaluation and uploaded on the system for viewing by the public”.

The Price Bids of the bidders will have no condition. The Price Bid which is incomplete and not submitted as per instruction given above (and also online) will be rejected. Any alteration/ modification in the excel format may lead to rejection of the bid.

In case of any default / delay in payment of Service Taxes, wrong claim of CENVAT credit etc. by the Contractor / Service Provider, the CMPDI would not be responsible and in no case any such claim of the Contractor / Service Provider will be entertained by the CMPDI.

- e. **Bid Capacity:** The system of determination of bid assessment capacity as given below will be used only in case of works of estimated value of Rs.1.00 Crore and above.

Bidders who meet the minimum qualifications criteria will be qualified only if their available bid capacity is more than the tendered value (estimated cost) of the work. The available bid capacity will be calculated as under:

$$\text{Assessed Available Bid Capacity} = (A \times N \times 2 - B) \quad \text{where,}$$

A = Maximum Financial Turnover in any one financial year during the last five financial years ending 31st March of the previous financial year (updated to present level @ 5% per year) with respect to the date of NIT/e-publishing date.

N = Number of years (Completion period in days/365), prescribed for completion of the works for which bids are invited.

B = Value at present price level, of existing commitments and ongoing works to be completed during the period of completion of work for which bid is invited.

If any bidder does not furnish the turnover value for any financial year out of the last 5 financial years, the turnover for that financial year shall be taken as 'Zero' and the maximum annual financial turnover shall be calculated accordingly.

Financial turnover shall be given a weightage to bring them at current price level by adding 5% in the financial turnover for the 2nd year, 10% for the 3rd year, 15% for the 4th year & 20% for the 5th year. No weightage will be given in the turnover for the 1st year.

In respect of the above eligibility criteria the bidders are required to furnish the following information on-line :

- i). Annual financial turnover of each of the last 5 years ending 31st March of the previous financial year.
- ii). Name of the Chartered Accountant issuing the Profit and Loss A/c or the Turnover certificate
- iii). Membership Number of the Chartered Accountant (CA)
- iv). Date of issue of financial turnover certificate by Chartered Accountant (CA)

- v). Value at present price level, of existing commitments and ongoing works to be completed during the period of completion of work for which bid is invited i.e. “B”.

Note: In case the bidder is a Joint Venture, the turnover of the individual partners of the JV will be added together for each financial year and is to be furnished as the turnover of the bidder for that particular financial year. In case of Sl.No.(v), the value of existing commitments of each individual partner of JV shall be added together and to be furnished as the value of “B” for the bidder. However, the information against Sl.No.(ii), (iii) & (iv) above will be given w.r.to the lead partner of JV only.

10. All bids are to be submitted on-line on the website <https://mcltenders.gov.in>. No bid shall be accepted off-line.
11. It is the bidder's responsibility to comply with the system requirement i.e. hardware, software and internet connectivity at bidder's premises to access the e-tender website. Under any circumstances, CMPDI shall not be liable to the bidders for any direct/indirect loss or damages incurred by them arising out of incorrect use of the e-tender system or internet connectivity failures.
12. After receipt of EMD as stated in clause No.3, the Technical-bid will be decrypted and opened on-line, on the scheduled date and after the pre-scheduled time by the *Bid Openers* with their Digital Signature Certificate(DSC). The bidder can view bid opening remotely on their personalized dash board under “Bid Opening (Live)” link. Thereafter, the Technical-bid shall be evaluated by the system on-line based on the information furnished by bidders on-line in accordance with clause No.8 (Eligibility Criteria). This on-line evaluation will be validated by CMPDI.
13. After evaluation of Technical-bid, all the bidders will get the information regarding their eligibility on website. Thereafter, a system generated e-mail confirmation will be sent to all successful bidders communicating the date and time of opening of Price-bid.
14. The Price-bid of the successful bidders (qualified in Technical-bid) will be decrypted and opened on-line, on the scheduled date and after the pre-scheduled time by the *Bid Openers* with their Digital Signature Certificate (DSC). The bidder can view bid opening remotely on their personalized dash board under “Bid Opening (Live)” link. The bidders will get the information regarding the status of their financial bid and ranking of bidders on website.
15. After opening of Price-bid, the list of documents required to be submitted by L-1 bidder as enlisted in the NIT will be specified on-line by Evaluator indicating the start date and end date allowing 7 days (7 x 24 hours) time for on-line submission by bidder. The L-1 bidder will get this information on their personalized dash board under “Upload confirmatory document” link. Additionally, information shall also be sent by system generated e-mail and SMS, but it will be the bidder's responsibility to check the updated status/information on their personalized dash board at least once daily after opening of Price-bid. No separate communication will be required in this regard. Non-receipt of e-mail and SMS will not be accepted as a reason of non-submission of documents within prescribed time. The bidder will upload the scanned copy of self certified and attested by notary public of all the specified documents in support of the information/ declarations furnished by them on-line within the specified period of 7 days. However, the affidavit may be scanned and uploaded as it is, without any additional self certification and attestation by Notary public.

Sl. No.	Eligibility Criteria	Scanned copy of documents (self certified and attested by Notary Public) to be uploaded by L-1 bidder in support of Information/ declaration furnished online by the bidder against Eligibility Criteria (CONFIRMATORY DOCUMENT)
1.	Work	Satisfactory Work Completion Certificate issued by the employer

	Experience (Ref. Clause No.8(A) of NIT)	against the experience of similar work containing all the information furnished by bidder on-line.
2.	Financial Turnover (Ref. Clause No.8(B) of NIT)	Financial Turnover certificate for last 3 (three) financial years issued by a Practicing Chartered Accountant having a membership number with Institute of Chartered Accountants of India. (In case of JV, turnover certificate for each individual partner of JV)
3.	Permanent Account Number (Ref. Clause No.8(C) of NIT)	PAN card issued by Income Tax department, Govt. of India (In case of JV, PAN card for each individual partner of JV)
4.	VAT/Sales Tax Registration on Works Contract (Ref. Clause No.8(D) of NIT)	VAT/Sales Tax Registration Certificate on works contract from any Indian State (In case of JV, VAT/S.T. Registration certificate for each individual partner of JV)
5.	Service Tax	Service Tax Registration Certificate issued by Govt. Dept of any Indian State/Union Territory (self authenticated and attested by Public Notary)
6.	Provident Fund	Provident Fund Registration Certificate issued by Govt. Dept of any Indian State/Union Territory (self authenticated and attested by Public Notary)
7.	Banning	Declaration by the bidders that they have not been banned or delisted by any govt. or quasi-govt. agencies or PSU
8.	Sub Contracting	Proposals for sub contracting components of the works amounting to more than 10 percent of the Contract Price
9.	Information regarding any litigation	Information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties concerned and disputed amount including status of final settlement of contracts including claims/ counter claims, liquidated damages, bonus etc., if any;
10.	Electrical Contractor's Licence (Ref. Clause No.8(E) of NIT)	Valid Electrical Contractor's Licence issued by Electrical Licensing Board/ Authority of any Indian state. (In case of JV, the Electrical Contractor's Licence of any one partner of JV)
11.	Bid Capacity (for tendered value of Rs.1.00 Crore and above) (Ref. Clause No.8(F) of NIT)	1. Financial Turnover certificate for last 5 (five) financial years issued by a Practicing Chartered Accountant having a membership number with Institute of Chartered Accountants of India. (In case of JV, turnover certificate for each individual partner of JV) 2. Self declaration certificate for the value of "B" as per Annexure VII of the Bid document. (In case of JV, self declaration certificate of each individual partner of JV)
12.	Legal Status of the bidder	Any one of the following document : 1. Affidavit or any other document to prove proprietorship/Individual status of the bidder 2. Partnership deed containing name of partners

		3.Memorandum & Article of Association with certificate of incorporation containing name of bidder 4.Joint Venture agreement containing name of partners and lead partner, Power of Attorney to the Lead Partner and share of each partner.
13.	Digital Signature Certificate (DSC)	If the bidder himself is the DSC holder bidding on-line then no document is required . However, if the DSC holder is bidding online on behalf of the bidder then the Power of Attorney or any sort of legally acceptable document for the authority to bid on behalf of the bidder
14.	An Affidavit on a non-judicial stamp paper of minimum value of Rs.10 regarding genuineness of the information furnished by bidder on-line and authenticity of the documents submitted online in support of eligibility, as per the format given in the bid document at Annexure II.	
Note: Only one file in .pdf format can be uploaded against each eligibility criteria. Any additional/ other relevant document(s) to support the information/declaration furnished by bidder online against eligibility criteria may also be attached by the bidder in the same file to be uploaded against respective eligibility criteria.		

The Tender Committee will examine the uploaded documents against information/declarations furnished by the L1 bidder online. If it confirms to all of the information/ declarations furnished by the bidder online and does not change the eligibility status of the bidder then the bidder will be considered eligible for award of Contract.

In case the Tender Committee finds that there is some deficiency in uploaded documents or documents have not been uploaded by L1 bidder within the stipulated period then the same will be specified online by Evaluator clearly indicating the omissions/shortcomings in the uploaded documents and indicating start date and end date allowing 7 days (7 x 24 hours) time for online re-submission by L1 bidder. The L-1 bidder will get this information on their personalized dash board under “Upload confirmatory document” link. Additionally, information shall also be sent by system generated email and SMS, but it will be the bidder’s responsibility to check the updated status/information on their personalized dash board at least once daily after opening of Price-bid. No separate communication will be required in this regard. Non-receipt of e-mail and SMS will not be accepted as a reason of non-submission of documents within prescribed time. The bidder will upload the scanned copy of self certified and attested by notary public of those specified documents within the specified period of 7 days.

No additional time will be allowed to the bidder for on-line submission of documents.

The tender will be evaluated only on the basis of documents uploaded by L-1 bidder online. The L-1 bidder is not required to submit hard copy of any document through offline mode. Any document submitted offline will not be given any cognizance in the evaluation of tender.

- In case the L-1 bidder submits requisite documents online as per NIT, then the bidder will be considered eligible for award of Contract.
- In case the L-1 bidder fails to submit requisite documents online as per NIT or if any of the information/declaration furnished by L-1 bidder online is found to be wrong by Tender Committee during evaluation of scanned documents uploaded by bidder, which changes the eligibility status of the bidder (for the first time), then the EMD of L-1 bidder will be forfeited and re-tender will be done. (with the same or different quantity, as per the instant requirement) In this retender, offer from this bidder will not be accepted.

The Penal action of debarring the bidder in Retender will be restricted to first Retender only. If the first Retender is not finalized and there is second time Retender, then this penal action will not be applicable.

- If the L-1 bidder fails to submit the requisite documents online as per NIT or if any of the information/declaration furnished by L-1 bidder online is found to be wrong by Tender Committee during evaluation of scanned documents uploaded by bidder, which changes the eligibility status of the bidder,

in two tenders, floated by the same tender inviting authority, within a span of one year (to be counted with respect to date of e-publication of NIT), then the EMD of L-1 bidder will be forfeited and this bidder will be debarred for one year from participating in tenders in CMPDI and re-tender will be done.

- d. It is responsibility of L-1 Bidder to upload legible/clearly readable scanned copy of all the required documents as mentioned above.

16. One Bid per Bidder : Each Bidder shall submit only one Bid, either individually, or as a partner in a partnership firm or a partner in a Joint Venture or a public limited firm. A Bidder who submits or participates in more than one Bid (other than as a sub-contractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

17. Refund of EMD :

- a) If EMD is paid by the bidder in online mode (Direct Debit / NEFT) then the EMD of rejected bidders will be refunded directly to the account from where it had been received (except the cases where EMD is to be forfeited). However, if the EMD is received through BG then it will be returned by registered / speed post on rejection of bid (except the cases where EMD is to be forfeited).
 - b) No claim from the bidders will be entertained for non-receipt of the refund in any account other than the one from where the money is received.
 - c) If the refund of EMD is not received by the bidder in the account from which the EMD has been made due to any technical reason then it will be paid through conventional system of e-payment. For this purpose, if required, Tender Inviting Authority will be obtain the Mandate Form from the Bidder.
 - d) In case the tender is cancelled then EMD of all the participating bidders will be refunded unless it is forfeited by the department.
 - e) If the bidder withdraws his/her bid online (i.e. before the end date of submission of tender) then his/her EMD will be refunded automatically after the opening of Part I tender.
 - f) The EMD of successful bidder (on Award of Contract) will be retained by CMPDIL and will be adjusted to Performance Security Deposit. However, EMD deposited by the L-1 bidder in the form of BG will be discharged when the bidder furnishes the required Performance Security Deposit (PSD) and signs the agreement.
- 18.** Every tenderer is expected, before quoting his rates, to go through the requirements of materials/workmanship under specification/requirements and conditions of contract and to inspect the site/area of the proposed work at his own cost.

It shall be deemed that the tenderer has visited the site/area and got fully acquainted with the working conditions and other prevalent conditions and fluctuations thereto whether they actually visited the site/area or not and have taken all the above factors into account while quoting his rates.

19. All Duties taxes and other levies, payable by the contractor under the contract or for any other cause as applicable on the last date of submission of tender shall be included in the rates, prices and the total bid price submitted by the bidder. All incidentals, overheads etc. as may be attendant upon execution and completion of works shall also be included in the rates, prices and total bid price submitted by the bidder

However, such duties, taxes, levies etc. which is notified after the last date of submission of tender and / or any increase over the rate existing on the last date of submission of tender shall be reimbursed by the company on production of documentary evidence in support of payment actually made to the concerned authorities.

The company reserves the right to deduct/withhold any amount towards taxes, levies, etc. and to deal with such amount in terms of the provisions of the Statute or in terms of the direction of any

Statutory authority and the company shall only provide with certificate towards such deduction and shall not be responsible for any reason whatsoever

- 20. Cost of Bidding** : The bidder shall bear all costs associated with the preparation and submission of his bid and the Employer will in no case be responsible and liable for those costs.
- 21.** The tenderer shall closely study all specifications in detail, which govern the rates for which he is tendering.
- 22. Currencies of Bid and Payment:** The unit rates and prices shall be quoted by the Bidder entirely in Indian Rupees only.
- 23.** The work should be completed within the stipulated period. For the contract value upto Rs.5.00 lakh, the date of commencement shall be reckoned from the 10th day of issue of work order and for the contract value more than Rs.5.00 lakh, the date of commencement shall be reckoned from the 10th day of issue of work order or the date of execution of agreement, whichever is later.
- 24.** On completion of the work all rubbish, debris, brick bats etc. shall be removed by the contractor(s) at his/their own expense and the site cleaned and handed over to the company and he/they shall intimate officially of having completed the work as per contract.
- 25.** The tenderer(s) will deploy sufficient number and size of equipments/machineries/vehicles and the technical/ supervisory personnel required for execution of the work.

26. Change in Constitution of the Contracting Agency :

Prior approval in writing of the company shall be obtained before any change is made in the constitution of the contracting agency, otherwise it will be treated as a breach of Contract.

- 27.** Canvassing in connection with the tenders in any shape or form is strictly prohibited and tenders submitted by such tenderers who resort to canvassing shall be liable for rejection.
- 28.** The Bidder, whose Bid has been accepted, will be notified of the award on-line and also by registered post by the employer prior to expiration of the bid validity period. The successful bidder/s will get the information regarding award of work on their personalized dash-board on-line. On receipt of Letter for Acceptance (LOA)/Work Order of the tender issued by the Company, the successful tenderer shall execute contract agreement (for contract value more than Rs.5.00 lakh) in the company's prescribed form (**as per Annexure-III**) for the due fulfillment of the contract.

Performance Security Deposit (PSD) must be submitted by the contractor within 28 days of receipt of work order, failing which the award of work will be cancelled with forfeiture of EMD. The agreement should be executed within 7 days of receipt of PSD from the contractor. In case the PSD is submitted in the form of bank Guarantee (BG) and needs verification from the issuing bank, then agreement should be executed within 10 days of receipt of PSD. The written contract to be entered into between the contractor and the company, shall be the foundation of the rights of both the parties and the contract shall not be deemed to be executed until the contract is signed by both the parties i.e. Contractor and the Company.

- 29. Bid Validity** : The validity period of the tenders shall be 150 (one hundred & fifty) days from the last date of submission of bid.

In exceptional circumstances, prior to expiry of the original time limit, the Employer may request the bidders to extend the period of validity for a specified additional period. The employer's request and

the bidder's responses shall be made in writing. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid but will be required to extend the validity of his bid security/EMD (if submitted in the form of BG) for a period of 28 days beyond the extended validity of the bid.

The tenderer shall not, during the said period or within the period extended by mutual consent, revoke or cancel his tender or alter the tender or any terms/conditions thereof without consent in writing of the company. In case the tenderer violates to abide by this, the Company will be entitled to take action as per clause No.30 (Modification and Withdrawal of Bid) of NIT.

30. Modification and Withdrawal of Bid :

Modification of the submitted bid shall be allowed on-line only before the deadline of submission of tender and the bidder may modify and resubmit the bid on-line as many times as he may wish.

Bidders may withdraw their bids online within the end date of bid submission and their EMD will be refunded. However, if the bidder once withdraws his bid, he will not be able to resubmit the bid in this tender. For withdrawal of bid after the end date of bid submission, the bidder will have to make a request in writing to the Tender Inviting Authority. Withdrawal of bid may be allowed till issue of work order/LOA with the following provision of penal action:

- a. If the request of withdrawal is received before online notification for opening of price bid, the EMD will be forfeited and bidder will be debarred for 6 months from participating in tenders in CMPDI. The Price-bid of remaining bidders will be opened and the tender process shall go on.
- b. If the request of withdrawal is received after online notification for opening of price bid, the EMD will be forfeited and the bidder will be debarred for 1 year from participating in tenders in CMPDI. The Price-bid of all eligible bidders including this bidder will be opened and action will follow as under
 - i). If the bidder withdrawing his bid is other than L 1, the tender process shall go on.
 - ii). If the bidder withdrawing his bid is L-1, then re-tender will be done.

(The penal action against clause (a) & (b) above will be enforced from the date of issue of such order)

- 31.** The Company reserves the right to postpone the date of receipt and opening of tenders or to cancel the tenders without assigning any reason whatsoever.
- 32.** The Company reserves its right to allow Public Enterprises purchase preference facility as admissible under prevailing policy.
- 33.** This Tender Notice shall be deemed to be part of the Contract Agreement. The "General Terms & Conditions", Additional Terms & Conditions, Special Terms & Conditions(if any), Technical Specifications, drawings(if any) and any other document uploaded on portal as NIT document forms an integral part of this NIT and shall also form a part of the contract agreement.
- 34.** No subletting of work as a whole by the contractor is permissible. Subletting of work in piece rated jobs is permissible with the prior approval of the department.

The Contract Agreement will specify major items of supply or services for which the contractor proposes to engage sub-contractor/sub-vendor. The contractor may from time to time propose any addition or deletion from any such list and will submit proposals in this regard to the Engineer-in-Charge/Designated Officer-in-charge for approval well in advance so as not to impede the progress of work. Such approval of the Engineer-in-Charge/Designated Officer-in-Charge will not relieve the contractor from any of his obligations, duties and responsibilities under the contract.

35. If the tenderer gets the work order he will have to submit VAT Registration certificate on works contract from the state of Orissa, before execution of agreement.
36. If the tenderer gets the work order he will have to submit electrical contractor's license issued by the Electrical Licensing Board of Orissa (ELBO) or electrical contractor's license of any Indian state duly recognized and endorsed by ELBO, before execution of agreement.
37. The tenderer shall have to ensure implementation of CMPF/EPF, if applicable, in respect of the workers deployed by him as detailed in the tender document.
38. The Company does not bind itself to accept the lowest tender and reserves the right to reject any or all the tenders without assigning any reasons whatsoever and to split up the work between two or more tenderers or accept the tender in part and not in its entirety.
39. Matters relating to any dispute or difference arising out of this tender and subsequent contract awarded based on this tender shall be subject to the jurisdiction of District Court, where the subject work is to be executed.
40. ~~Integrity Pact:~~ The bidders are requested to go through the integrity pact which is a part of the tender document.

~~Name, address and contact Number of the Independent External Monitor :~~

Name	Address	Contact Number

Tender Inviting Authority

**GM (E&M)
CMPDI (HQ), Ranchi**

ANNEXURE I**PROFORMA OF BANK GUARANTEE IN LIEU OF PERFORMANCE SECURITY DEPOSIT.**

The Regional Director

RI-6, CMPDI.

CWS Colony, P.O Jayant

Distt. Singrauli-486890

Dear Sir,

In consideration of M/s CMPDI having its Registered Office at **CWS Colony, P.O Jayant**

Distt. Singrauli-486890 (hereinafter called “the Company” which expression shall unless repugnant to the subject or context includes its successors and assigns) having agreed under the terms and conditions contained in letter No..... dated..... issued in favour of M/s. for

(hereinafter referred to as “the contract” to accept the Deed of guarantee as herein provided for

Rs..... from the Schedule/ Nationalised Bank in lieu of security deposit to be made by M/s.....

(hereinafter called “the Contractor”) or in lieu of deduction to be made from the contractor’s bill, for the due fulfillment of the terms and conditions contained in the said contract by the contractor, we the

..... Bank (hereinafter referred to as the said Bank) having its Registered Office at..... do

hereby undertake and agreed to pay the company to the extent of Rs..... on demand stating that

the amount claimed by the company is due and payable by the contractor for the reasons of

failure/negligence in performing the terms and conditions contained in the contract by the buyer and to

unconditionally pay the amount claimed by the company on demand without any demur to the extent aforesaid.

We..... Bank agree that the company shall be the sole judge as to whether the said contractor has failed/neglected in performing any of the terms and conditions of the said contract and the decision of the company in this behalf shall be final and binding on us.

We the said Bank further agree that the Guarantee herein contained shall remain in full force and effect upto and any claim received after the said date shall in no case bind the Bank.

The Company shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee or indemnity from time to time vary any of the terms and conditions of the said contract or to extend the time of performance by the said contractor or to postpone any time and from time to time any of the powers exercisable by it against the said contractor and either to enforce or to forbear from enforcing any of the terms and conditions governing the said contract or securities available to the company and the said Bank shall not be released from its liability under these presents.

Notwithstanding anything contained herein the liability of the said Bank under this guarantee is restricted to Rs..... and this Guarantee shall come into force from the date hereof and shall remain in full force and effect till

Unless the written demand or claim under this guarantee is made by the Company with us on or before all rights of the company under this guarantee shall cease to have any effect and we shall be relieved and discharged from our liabilities hereunder.

We the said Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the company in writing and agree that any change in the constitution of the said contractor or the said bank shall not discharge our liability hereunder.

This guarantee issued by Sri who is authorised by the Bank.

Under jurisdiction of court only.

Note:

- i) Bank Guarantees issued by outstation Banks shall be operative at their local branch (Ranchi in case of HQ).
- ii) Bank Guarantees shall contain complete Postal Address, Telephone Number, FAX Number and e-mail address of both the outstation bank issuing the BG as well as its local operating branch.

ANNEXURE. II

PROFORMA FOR AFFIDAVIT TO BE SUBMITTED BY THE L-1 Bidder

(For genuineness of the information furnished by bidder on-line and authenticity of the documents submitted online in support of eligibility)

Non Judicial Stamp Paper (minimum value of Rs.10).

AFFIDAVIT

I/We, -----, Partner/Legal Attorney/ Accredited Representative of
M/s -----, solemnly declare that :

1. I/We am/are submitting Tender for the Work -----
-----against Tender ID----- dated -----, vide Bid ID -----
2. All information furnished by me/us on-line in respect of fulfillment of eligibility criteria and qualification information of this Tender is complete, correct and true.
3. All scanned copy of documents uploaded by me/us in support of the information furnished online by me/us towards eligibility, are valid and authentic.
4. If any information furnished by me/us on-line and scanned copy of documents uploaded in support of the information furnished online by me/us towards eligibility , is found to be false/incorrect at any time, the department may cancel my Tender and action as deemed fit may be taken against me/us, including termination of the contract, forfeiture of Earnest Money and banning/ delisting of our firm and all partners of the firm for a minimum period of 01 (one) year.

5. I/We have never been banned or delisted by any Govt. or Quasi Govt. Agency or any Public Sector Undertaking.

OR

I/We have been banned by the organization named “-----“ for a period of ----- year/s, effective from ----- to -----

Signature of the Tenderer

Dated-----

Signature & Seal of Notary

ANNEXURE-III.**PROFORMA FOR EXECUTION OF AGREEMENT.****STAMP PAPER.**

This agreement is made on day of between (Name of Company) having its registered office at (hereinafter called the ‘COMPANY’ which expression shall, unless repugnant to the subject or context, include its successors and assignees) of the one part and (Name of the Contractor) carrying on business as a (partnership/proprietorship/ Ltd. Co. etc.) firm under the name and style (hereinafter called the ‘said Contractor’ which expression shall, unless the context requires otherwise include them and their respective heirs, executors, administrators and legal representatives) of the other part.

Whereas the Company invited tenders for the work of “.....” and whereas the said Contractor/Firm submitted tender for the said work and deposited a sum of Rs..... as Earnest Money and whereas the tender of the said contract has been accepted by the Company for execution of the said work.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

- 1) In this agreement words and expressions shall have the same meaning as are respectively assigned to them in the tender papers hereinafter referred to.
- 2) The following documents which are annexure to this agreement should be deemed to form and be read and construed as part of this agreement viz.
 - i) Annexure-A Tender Notice (Page .. to ..)
 - ii) Schedule –A General terms & conditions. Special conditions and General technical specification (Page to ...)
 - iii) Schedule-B The probable Quantities and Amount (Page ..to ...)
 - iv) Schedule-C Negotiation letters –
 - iv) Schedule-D Letter of Acceptance/Work Order (Page .. to ..)
 - v) Schedule-E Drawings (Page .. to ..)
- 3) In consideration for the payment of the sum of Rs.....(W/O Value; both in words and figures) or such other sum as may be arrived at under the clause of the specification relating to Payment by items measurements at unit prices by the Company, the said Contractor shall, subject to the terms & condition contained herein execute and complete the work as described and to the extent of probable quantities as

indicated in Schedule B with such variations by way of alteration, addition to or reduction from the said works.

4. The company has converted a sum of Rs. only, from the amount of Rs. deposited by the said contractor as Earnest Money, into 'Initial Security Deposit' of 1% of the awarded work value. The excess/balance amount of earnest money shall be adjusted in the RA Bill(s).
5. The said contractor hereby covenants with the company that the Company shall retain a sum of Rs. or such sum as may be arrived at based on the executed value of the work, as security deposit for the fulfilment of the contract to the satisfaction of the Company.

IN WITNESS WHEREOF THE parties herein have set their hands and seals the date and year above written.

1 Partner. Signature

2 Partner Signature

On behalf of M/S.....

The Contractor, as one of the constituted attorney,

In the presence of –

1. Name _____ Signature

Address:

Occupation:

Signed by Srion behalf of Signature

(Name of Company) in presence of -

1. Name :
2. Address:

Signature

ANNEXURE-IV

PROFORMA OF BANK GUARANTEE IN LIEU OF EARNEST MONEY.

The Regional Director
RI-6, CMPDI.
CWS Colony, P.O Jayant
Distt. Singrauli-486890

Dear Sir,

- 1) In consideration of **M/s. CMPDI** having its Registered Office at **kanke, road, Ranchi** (hereinafter called “the Company” which expression shall unless repugnant to the subject or context includes its successors and assigns) having agreed to exempt M/s..... having its Registered Office at (hereinafter called “the said tenderers” which expression shall unless repugnant to the subject or context includes its successors and assigns) from the demand under the terms and conditions of Tender No..... for (hereinafter called “the said Tender”) of each earnest money for the due fulfillment of the terms and conditions contained in the said Tender by the said Tenderer on production of Bank guarantee for Rs.....). We Bank (hereinafter referred to as “the Bank”) do hereby undertake to pay to the company an amount not exceeding Rs.....on demand by the company for the reason of any breach by the Tenderer of any of the terms and conditions contained in the said Tender. The decision of the company as to any such breach having been committed by the Tenderer shall be final and binding on us.
- 2) We, Bank do hereby undertake to pay an amount due and payable under this guarantee without any demur merely on a demand from the company stating that the amount claimed is due from the tenderer for the reason of breach by the said tenderer of any of the terms and conditions contained in the said Tender or for the reason of the Tenderer failing to keep the Tender open. Any such demand made on the Bank shall be conclusive. As regard the amount due and payable by the Bank under this Guarantee shall be restricted to an amount not exceeding Rs.....

- 3) We, the said Bank further agree that the Guarantee herein contained shall come into force from the date hereof and shall remain in full force and effect till a demand or claim under this Guarantee is made on us in writing on or before the We shall discharge from all liability under this Guarantee thereafter..
- 4) We, the said Bank lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the company in writing and agree that any change in the constitution of the said Tenderer or the Bank shall not discharge our liability hereunder.
- 5). This guarantee is issued by Sri who is authorized by the Bank.

Under jurisdiction of court only.

.....

Note:

- i) Bank Guarantees issued by outstation Banks shall be operative at their local branch (Singrauli).
- ii) Bank Guarantees shall contain complete Postal Address, Telephone Number, FAX Number and e-mail address of both the outstation bank issuing the BG as well as its local operating branch.

ANNEXURE-V

**MANDATE FORM FOR ELECTRONIC FUND TRANSFER/INTERNET BANKING
PAYMENT.**

To
The Regional Director
RI-6, CMPDI.
CWS Colony, P.O Jayant
Distt. Singrauli-486890

Sub: Authorization for release of payment due from Mahanadi Coalfields Limited, Burla. **The Regional Director RI-6, CMPDI, Singrauli-486890** through Electronic Fund transfer/Internet Banking.
 (SBI-NET)

Ref: Order No. _____ Date _____ and/or Tender/Enquiry/Letter No. _____ Date _____
 (Please fill in the information in CAPITAL LETTERS, Please TICK wherever it is applicable).

1. Name of the Party : _____

2. Address of the Party : _____

City _____ PIN Code _____

E- Mail Id _____

Permanent Account Number _____

3. Particulars of Bank

Bank Name		Branch Name	
Branch Place		Branch City	
PIN Code		Branch Code	
MICR No.			
(9 Digits code number appearing on the MICR Band of the cheque supplied by the Bank. Please attach Xerox copy of a cheque of your bank for ensuring accuracy of the bank name, branch name and code number)			
RTGS			

CODE																				
Account Type	Savings				Current				Cash Credit											
Account appearing in the Book)	Number(as in the Cheque																			

4. Date from which the mandate should be effective.

I hereby declare that the particulars given above are correct and complete. If any transaction is delayed or not effected for reasons of incomplete or incorrect information. I shall not hold Mahanadi Coalfields Limited responsible. I also undertake to advise any change in the particulars of my account to facilitate updation of records for purpose of credit of amount through SBI Net.

Place:

Date:

Signature of the party/Authorized Signatory.

Certified that the particulars furnished above are correct as per our records.

Banker's Stamp :

Date :

(Signature of the Authorized official from the Banks)

ANNEXURE-VI

FORMAT OF "Letter of Bid" (for MM Tenders)

LETTER HEAD OF BIDDER (As enrolled on the e-Procurement Portal of MCL)

To,
The Tender Committee
CMPDI, Ranchi

Sub. : Letter of Bid for Supply of "-----"(to be filled by the department)

Ref. : 1. NIT No.: "-----" (to be filled by the department)

2. Tender Id No. : "-----" (to be filled by the department)

Dear Sir,

I/We offer to supply the material as per our offered rate/price in accordance with the conditions of the NIT document as available in the website.

This Bid and your subsequent Supply/Purchase Order shall constitute a binding contract between us.

I/We hereby confirm our acceptance of all the terms and conditions of the NIT document unconditionally.

If any information furnished by **me/us** online towards eligibility in this tender is found to be incorrect at any time, penal action as deemed fit may be taken against **me/us** for which **I/we** shall have no claim against CMPDI.

(This document is digitally signed by the DSC holder authorised by the bidder and therefore no physical signature is required)

~~ANNEXURE – VII~~

Existing commitments and on going works

Description of work	Place & State	Contract No. & Date	Name and address of the Employer	Value of Contract (Rs Lakh)	Stipulated period of completion	Value of works remaining to be completed	Anti da com
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

--	--	--	--	--	--	--	--

ANNEXURE - VIII

**SPECIMEN OF LETTER OF CONTRACTOR’S ACCEPTANCE OF PROVISIONAL REDUCTION OF
RATE FOR SUBSTANDARD WORK.**

No. dated:

To
.....
.....

Sir,

Subject: (Complete name of work).....

Reference: Your letter No.....

I/We have carefully read the terms and conditions offered in your letter dated..... and they are acceptable to me/us.

Pending the decision of the Engineer in Charge of the final rates of payment against the items of work specified in the statement attached to your above letter, which will be final and binding. I/We agree to the same being paid at the provisional rates indicated against each of the said item of work for the above work as mentioned in your statement.

Yours faithfully,

Contractor(s)

ANNEXURE IX

**PROFORMA OF BANK GUARANTEE FOR REMOVAL OF PLANT & EQUIPMENT FROM THE
SITE OF COAL INDIA LIMITED/SUBSIDIARY COMPANY.**

In consideration of M/s CMPDI (hereafter called “the Company” which expression shall repugnant to the subject or context includes its successors and assigns) having agreed to under the terms & conditions of the Contract No..... dated..... entered into between the company and M/s..... having its Office at..... (hereinafter called “the Contractor”) to permit the Contractor to remove the plant & equipment as fully described in the Schedule of the Hypothecation Deed dated..... executed by the Contractor in favour of the Company from the site to any other works of the Contractor on its furnishing the Bank Guarantee for Rs..... We, the Bank (hereinafter referred to as the said Bank) having its Registered Office at do hereby undertake and agree to pay the Company to the extent of Rs. on demand stating that the amount claimed by the Company is due and payable by the contractor for its failure in bringing back the said plant & equipment or any part thereof to the site and to unconditionally pay the amount claimed by the company on such demand without any demur to the extent aforesaid.

We, the Bank agree that the Company shall be the sole judge as to whether the said contractor has failed/neglected in bringing back the plant & equipment to the site and the amount has become due for such failure and the decision of the company in this behalf shall be final and binding on us.

We, the said Bank further agree that the Guarantee herein contained shall remain in full force and effect up to..... and any claim received after the said date shall in no case be bind the Bank.

Notwithstanding anything contained herein the liabilities of the said Bank under this Guarantee are restricted to Rs..... and this Guarantee shall come into force from the date thereof and shall remain in full force and effect till unless the written demand or claim under this guarantee is made by the company with us on or before..... all the rights of the Company under this guarantee shall cease to have any effect and we shall be retrieved and discharged our liabilities hereunder.

We, the said Bank lastly undertake not to revoke this guarantee under its currency except with the previous consent of the Company in writing and agree that any change in the constitution of the said Contractor or the said Bank shall not discharge the liabilities hereunder.

This Guarantee is issued by Sri..... who is authorized by the Bank.

Under jurisdiction of Court only.

Note:

- i) Bank Guarantees issued by outstation Banks shall be operative at their local branch (Singrauli).
- ii) Bank Guarantees shall contain complete Postal Address, Telephone Number, FAX Number and e-mail address of both the outstation bank issuing the BG as well as its local operating branch.

ANNEXURE X

PROFORMA OF BANK GURANTEE FOR PERFORMANCE SECURITY

OF THE CONTRACT

(FOR TURNKEY CONTRACT)

To

.....

.....

Re: Bank Guarantee in respect of Contract No.....

Dated..... Between (Name of the)
and (Name of the Contractor)

M/s. (Name and address of the Contractor) (hereinafter called “the Contractor” with M/S. (Name of the Company) (hereinafter called “the Company”) to execute (Name of the contract and brief description of work) on the terms and conditions contained in the said contract.

It has been agreed that the Contractor shall furnish the Bank Guarantee from a Nationalised Bank for a sum of Rs..... as security for due compliance and performance of the terms and conditions of the said contract.

The (Name of the Bank) having its Office at..... has at the request of the Contractor agreed to give the Guarantor hereinafter contained.

We, the Bank (hereinafter called “the Bank” do hereby unconditionally agreed with the Company that if the contractor shall in any way fail to observe or perform the terms and conditions of the said contract or shall commit any breach of its obligation thereunder, the Bank shall on demand and without any objection or demur to pay to the company the said sum of Rs..... or such portion as shall then remain due with interest without requiring the Company to have recourse to any legal remedy that may be available to it to compel the Bank to pay the sum, or failing on the company to compel such payment by the contractor.

Any such demand shall be conclusive as regards the liability of the Contractor to the company and as regards the amount payable by the Bank under this Guarantee. The Bank shall not be entitled to withhold payment on the ground that the Contractor has disputed its liability to pay or has disputed the quantum of the amount or that any arbitration proceeding or legal proceeding is pending between the company and the Contractor regarding the claim.

We, the Bank further agree that the Guarantee shall come into force from the date hereof and shall remain in force and effect till the period that will be taken for the performance of the said Contract which is likely to be day of but if the period of Contract is extended either pursuant to the provisions in the said contract or by mutual agreement between the contractor and the company the Bank shall renew the period of the Bank Guarantee failing which it shall pay to the company the said sum of Rs..... or such lesser amount of the said sum of Rs..... as may be due to the company and as the company may demand.

This Guarantee shall remain in force until the dues of the company in respect of the said sum of Rs..... and interest are fully satisfied and the Company certifies that the Contract has been fully carried out by the Contractor and discharged the guarantee.

The Bank further agrees with the company that the company shall have the fullest liberty without consent of the Bank and without affecting in any way the obligations hereunder to vary any of the terms and conditions of the said contract or to extend time for performance of the said contract from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the contractor and to forbear to enforce any of the terms and conditions relating to the said Contract and the Bank shall not be relieved from its liability by reason of such failure or extension being granted to the Contractor or to any forbearance, act or omissions on the part of the company or any indulgence by the Company to the Contractor or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of relieving or discharging the Guarantor.

The Bank further agrees that in case this Guarantee is required for a longer period and it is not extended by the Bank beyond the period specified above the Bank shall pay to the company the said sum of Rs..... or such lesser sum as may then be deemed to the Company and as the Company may require.

Notwithstanding anything contained herein the liability of the Bank under this Guarantee is restricted to Rs..... the guarantee shall remain in force till the day of and unless the guarantee is renewed or claim is preferred against the bank within six months from the said date all rights of the Company under this guarantee shall cease and the Bank shall be relieved and discharged from all liabilities hereunder except as provided in the preceding Clause.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.

The Bank has under its constitution power to give this Guarantee and Sri..... who has signed it on behalf of the Bank has authority to do so.

Dated., this day of

Signature of the authorized person

For and on behalf of the Bank

Place

Under jurisdiction of court only.

(This is applicable for Turn Key Contracts Only)

Note:

- i) Bank Guarantees issued by outstation Banks shall be operative at their local branch (Singrauli).
- ii) Bank Guarantees shall contain complete Postal Address, Telephone Number, FAX Number and e-mail address of both the outstation bank issuing the BG as well as its local operating branch.

ANNEXURE XI

**PROFORMA OF BANK GUARANTEE FOR MOBILISATION/
LUMP SUM ADVANCE.**

To
The Regional Director
RI-6, CMPDI.
CWS Colony, P.O Jayant
Distt. Singrauli-486890

Dear Sir,

In consideration of **M/s CMPDI** having its Registered Office at **Kanke Road, Ranchi-834031** (hereinafter called “the Company” which expression shall unless repugnant to the subject or context includes its successors and assigns) having agreed under the terms and conditions of the contract no..... dated..... entered into between Coal India Limited/Subsidiary Company and M/s..... having its Registered Office at (hereinafter called “the Contractor” to make mobilization advance lump-sum advance to the tune of Rs..... subject to submission of the Bank Guarantee for equal amount from any Nationalized Bank(referred to as the said Bank)having its registered Office at do hereby undertake and agree to pay the company to the extent of Rs..... on demand stating that the amount claimed by the Company is due and payable by the contractor for the reasons of non refund and or non-recovery of the amount with interest thereon and to unconditionally pay the amount claimed by the company on such demand without any demur to the extent aforesaid.

We..... Bank agree that the company shall be the sole judge as to whether the said contractor has failed/neglected in performing any of the terms and conditions of the said contract and the decision of the company in this behalf shall be final and binding on us.

We the said Bank further agree that the Guarantee herein contained shall remain in full force and effect upto and any claim received after the said date shall in no case bind the Bank.

The Company shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee or indemnity from time to time vary any of the terms and conditions of the said contract or to extend the time of performance by the said contractor or to postpone any time and from time to time any of the powers exercisable by it against the said contractor and either to enforce or to forbear from enforcing any of the terms and conditions governing the said contract or securities available to the company and the said Bank shall not be released from its liability under these presents.

Notwithstanding anything contained herein the liability of the said Bank under this guarantee is restricted to Rs. and this Guarantee shall come into force from the date hereof and shall remain in full force and effect till Unless the written demand or claim under this guarantee is made by the Company with us on or before all rights of the company under this guarantee shall cease to have any effect and we shall be relieved and discharged from our liabilities hereunder.

We the said Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the company in writing and agree that any change in the constitution of the said contractor or the said bank shall not discharge our liability hereunder.

This guarantee issued by Sri who is authorized by the Bank.

Under jurisdiction of Court only.

Note:

- i) Bank Guarantees issued by outstation Banks shall be operative at their local branch (Singrauli).
- ii) Bank Guarantees shall contain complete Postal Address, Telephone Number, FAX Number and e-mail address of both the outstation bank issuing the BG as well as its local operating branch.

GENERAL TERMS AND CONDITIONS

1. Definitions

- i) **"Employer"** or "Company" means the Coal India Limited or any of its subsidiaries who will employ the contractor represented by the appropriate authority.
- ii) **"Principal Employer"** means the Coal India Limited or any of its subsidiaries or the officer nominated by the Company to function on its behalf.
- iii) The word **"Contractor/ Contractors"** wherever occurs means the successful tenderer/ tenderers who has/have deposited the necessary Earnest money and has/have been given written intimation about the acceptance of tender and shall include legal representative of such individual or persons composing a firm or a company or the successors and permitted assignees of such individual, firm or Company, as the case may be.
- iv) **"Site"** means the land and places including any building and erection thereon, over, under, in or through which the Permanent works or Temporary works designed by the Engineer in Charge are to be executed and any other lands and places provided by the Employer for working space or any other purpose as may be specifically designated in the Contract as forming part of the site.
- v) The term **"Sub-Contractor"** as employed herein, includes those having a direct contract with Contractor either on piece rate, item rate, time rate or any other basis and it includes one who furnishes work to a special design according to the plans or specifications of this work but does not include one who merely supplies materials.
- vi) "Accepting Authority" shall mean the management of the company and includes an authorized representative of the company or any other person or body of persons empowered in this behalf by the company.
- vii) **"Engineer-in-charge"** shall mean the officer nominated by the company in the E&M Engineering cadre/ discipline who is competent to direct supervisors and authorised to be in charge of the works for the purpose of this contract. The Engineer in Charge /Designated Officer in Charge who is of an appropriate seniority, will be responsible for supervising and administering the contract, certifying payments due to the contractor, valuing variations to the contract, awarding extension of time and valuing compensation events. The Engineer in Charge /Designated Officer in Charge may further appoint his representatives i.e. another person/Project Manager or any other competent person and notify to the contractor who is directly responsible for supervising the work being executed at the site, on his

behalf under their Delegation of Powers of the company. However, overall responsibility, as far as the contract is concerned, will be that of the Engineer in Charge/Designated Officer in Charge.

viii) The **"Contract"** shall mean the notice inviting tender, the tender as accepted by the Company, the work order issued to the contractor, and the formal contract agreement executed between the company and the contractor together with the documents referred to therein including general terms and conditions, special conditions, if any, scope of work, frozen terms & conditions/technical parameters/scope of work and revised offer, if any, specifications, drawings, including those to be submitted during progress of work, schedule of quantities with rates and amounts

ix) A **"Day"** shall mean a day of 24 hours from midnight to midnight.

x) The **"Work"** shall mean the works required to be executed in accordance with the contract/work order or parts thereof as the case may be and shall include all extra or additional, altered or substituted works or any work of emergent nature, which in the opinion of the Engineer-in-charge, become necessary during the progress of the works to obviate any risk or accident or failure or become necessary for security.

xi) **"Schedule of Rates"** referred to in this conditions shall mean the standard schedule of rates prescribed by the company and the amendments issued from time to time.

xii) **"Contract amount"** shall mean:

a) in the case of turnkey contracts the total sum for which tender is accepted by the company.

b) in the case of other types of contracts the total sum arrived at based on the individual rates quoted by the tenderer for the various items shown in the "Schedule of Quantities" of the tender document as accepted by the Company with or without any alteration as the case may be.

xiii) **"Written notice"** shall mean a notice or communication in writing and shall be deemed to have been duly served if delivered in persons to the individual or to a member of the contractors firm or to an office of the company for whom it is intended, or if delivered at or sent by registered mail to the last business address known to him who gives the notice.

xiv) **"The constructional plant"** means all appliances, tools, plants or machinery or whatsoever nature required in or about the execution, completion or maintenance of the works but does not include materials or other things intended to form part of the permanent work.

xv) **"Letter of Acceptance of Tender"** means letter giving intimation to the tenderer that his tender has been accepted in accordance with the provisions contained in that letter.

xvi) **"Department"** means the E&M Department of Coal India Limited or any of its subsidiary companies/units represented by the appropriate authority.

xvii) **"Act of insolvency"** means as it is designed by Presidency Town Insolvency Act or Provincial Insolvency Act or any act amending such originals.

xviii) The words indicating the singular only also include the plural and vice-versa where the context so requires.

2. Contract Documents:

The following documents shall constitute the contract documents :

- i) Notice Inviting Tender/Detailed Tender Notice.
- ii) Articles of Agreement / Letter of Acceptance of Tender/ Work Order.
- iii) General Terms & Conditions of contract/ Commercial Terms & Conditions of contract.
- iv) Additional Terms & Conditions of contract, if any.
- v) Schedule of quantities (or Bill of Quantities)/ Schedule of work/ Scope of work and schedule of deviation *(to be provided by the contractor.)*
- vi) Specifications.
- vii) Frozen terms & conditions / technical parameters/ scope of work and revised offer, if any.
- viii) Contract drawings and work programme.
- ix) Safety Code etc. forming part of the tender.

N.B. Deviations: (NOT APPLICABLE)

Deviations sought by the bidders, whether they are technical or commercial deviations, must only be given in the schedules prescribed for them. Any willful attempt by the bidders to camouflage the deviations by giving them in the covering letter or in any other documents than the prescribed schedules may render the bid itself as non-responsive.

- 2.1** The contractor shall enter into and execute contract agreement in the prescribed form. The cost of the stamp papers for the contract agreement shall be borne by the contractor. Two sets of contract document/agreements shall be prepared and signed by both the parties. One of the sets shall be stamped "Original" and the other "Duplicate". The duplicate copy will be supplied to the contractor free of cost and the original is to be retained by the company. For any additional copies required by the contractors the price to be charged would be that of the cost of the Tender Document.

All additional copies should be certified by the Engineer in Charge.

The contractor shall keep copy of these documents on the site/place of work in proper manner so that these are available for inspection at all reasonable times by the Engineer-in-charge, his representatives or any other officials authorised by the company for the purpose.

- 2.2** The contract document shall not be used by the contractor for any purpose other than this contract & the contractor shall ensure that all persons employed for this contract strictly adhere to this and maintain secrecy, as required of such documents.

2.3 Tender Evaluation & Bid Assessment:

If the bid of the successful bidder is seriously unbalanced in relation to the estimate of the

cost of work to be performed under the contract, the company may require the bidder to produce detailed price analysis for any or all items of the Bill of quantities to demonstrate the internal consistency of these prices with the construction method and the schedule proposed. After evaluation of the price analysis, the company may require that the amount of the performance security/security deposit is increased at the expense of the successful bidder to a level sufficient to protect the company against financial loss in the event of default on the part of the successful bidder under the contract.

2.4. Abnormally High Rate (AHR) & Abnormally Low Rate (ALR) Items

Abnormally High Rates & Abnormally Low Rates, if quoted by the contractor, in item rate tenders will be identified & dealt with as under:

- i) For identification of AHR & ALR items the ceiling of $\pm 20\%$ respectively, when compared with the updated estimated rate, will be considered.
- ii) Variation in Quantity on quoted rate during execution for AHR & ALR items shall be permitted upto $\pm 25\%$ ($+25\%$ for AHR & -25% for ALR) of the quantity provided for items of work.
- iii) Quantity variation beyond the limit mentioned at ii) above shall be dealt by arriving at new rate based on prevalent market rates of materials & labour analysed as per standard analysis of rate of N.B.O./ C.P.W.D. Payment of extra quantity over the permitted quantity of $\pm 25\%$ would be made on the basis of the new analysed rate.
- iv) For identified abnormally low rate (ALR) items, the contractor will be required to deposit with the company the difference in amount calculated between the departmental justified rate multiplied by the quantity of a particular ALR item and the ALR rate quoted by the contractor multiplied by the quantity of the same item.

The total amount to be deposited will be the sum total of all the identified ALR items calculated as per the method outlined above.

The amount so retained will be refunded on successful completion of individual ALR items of work.

2.5 Negotiations:

Negotiations will be held only if the lowest rate received is not reasonable and the decision of the company regarding reasonableness of rates quoted will be final & binding on the bidders. Work will be awarded to the lowest bidder (L1) without post tender negotiations if the rates are reasonable.

If rates are not reasonable, negotiations with L1 only may be undertaken to arrive at a reasonable rate.

2.6 Acceptance of Offer :

Letter of Acceptance is an acceptance of offer by the company and it need not be accepted by the tenderer. But the tenderer should acknowledge the receipt of the order within 15 days of mailing of work order and any delay in acknowledging the receipt will be treated as a breach of contract and compensation for the loss caused by such breach will be declared by the company by forfeiting EMD.

2.7 Banned or delisted Contractors:

The bidders would give a declaration that they have not been banned or delisted by any

Govt. or Quasi Govt. agencies or PSU's. If a bidder has been banned or delisted by any Govt. or Quasi Govt. agencies or PSU's this fact must be clearly stated and it may not necessarily be a cause for disqualification. If the declaration is not given, the bid will be rejected as non-responsive.

3. Discrepancies in contract documents & Adjustments thereof

The documents forming part of the contract are to be treated as mutually explanatory of one another and in case of discrepancy between schedule of quantity, the specifications and/or drawing, the following order of preference shall be observed;

- a) Description in Bill of Quantities of work.
- b) Particular specification and special conditions, if any
- c) Drawings.
- d) General specifications.

3.1 In the event of varying or conflicting provision in any of the document(s) forming part of the contract, the Accepting Authority's decision/clarification shall hold good with regard to the intention of the document or contract as the case may be.

3.2 Any error in description, quantity or rate in Bill of Quantities or any omission there from, shall not vitiate the contract or release the contractor from discharging his obligations under the contract including execution of work according to the Drawings and Specifications forming part of the particular contract document.

3.3 Any difference detected in the tender/ tenders submitted resulting from:

- a) Discrepancy between description in words and figures, the rate which corresponds to the amount worked out by the contractor shall be taken as correct.
- b) Discrepancy in the amount quoted by the contractor due to calculation mistake of the unit rate and quantity, the unit rate shall be regarded as firm and amount corrected.
- c) Discrepancy in totaling or carry forward in the amount quoted by the contractor shall be corrected.

The tendered sum so corrected and altered shall be substituted for the sum originally tendered and considered for acceptance instead of the original sum quoted by the tenderer alongwith other tender/tenders. Rounding off to the nearest rupee should be done in the final summary of the amount instead of in totals of various sections of the offer.

4. Security Deposit:

4.1.1 Security Deposit shall consist of two parts;

- a) Performance security to be submitted at award of work and
- b) Retention Money to be recovered from running bills.

The security deposit shall bear no interest

4.1.2 Performance Security should be 5% of contract amount and must be submitted within 28 days of receipt of LOA by the successful bidders in any of the form given below

☐ A Bank Guarantee, for Rs 1.00 Lakhs and above, in the form given in the bid document

- ☐ Govt. Securities, FDR or any other form of deposit stipulated by the owner
- ☐ Demand Draft drawn in favour of CMPDI, Ranchi A/C on any Scheduled Bank payable at its Branch at Ranchi.

The Earnest Money/Bid Security deposited in the form of Bank Guarantee shall be discharged when the Bidder has signed the Agreement and furnished the required Performance Security/Security Deposit. The bid security deposited in the form of Demand Draft/cash shall be adjusted against the security deposit. If performance security is provided by the successful bidders in the form of bank guarantee it shall be issued either -

- a) at Bidder's option by a nationalized/Scheduled Indian Bank or by a foreign bank located in India and acceptable to the employer, subject to the condition that Bank Guarantees issued by outstation Banks shall be operative at their local Branch (Ranchi).
- b) the validity of the Bank Guarantee shall be for a period of one year or ninety days beyond the period of contract, whichever is more.
- c) No extension of Bank Guarantee for a period of less than 3(Three) months shall be accepted.

Performance Security Deposit (PSD) must be submitted by the contractor within the period specified above, failing which the award of work must be cancelled with forfeiture of EMD. Similarly for submission of deposit against ALR items the same time limit and action as above will be enforced. However, in exceptional circumstances, if the bidder fails to submit the PSD & ALR amount (as the case may be) within the specified period due to some valid reason, but submits the same within the next 10 days, then agreement may be executed with the approval of the next higher authority who has approved the award of work. In case CMD, CMPDI or CMPDI Board is the approving authority, the approval for the above is to be obtained from CMD, CMPDI.

4.2.1 All running on account bills shall be paid at 95% (ninety five percent) of work value.

This 5% (five percent) deduction towards Retention Money will be the second part of security deposit.

4.2.2 5% Performance Security should be refunded within 14 days of the issue of defect liability certificate (taking over certificate with a list of defects). Retention Money should be refunded after issue of No Defect Certificate. Retention Money should be deducted at 5% from running bills.

4.3 The Bank Guarantee towards security deposit shall be acceptable only for values Rs.1,00,000/- and more, and the Bank Guarantee shall also be valid for a minimum period of one year or ninety days beyond the period of contract, whichever is more. Bank guarantee is to be submitted in the format prescribed by the company. Bank guarantee shall be irrevocable and will be from amongst the list of Banks (Scheduled Banks) provided in the bid document.

Note:

1. ~~For the co-operative societies formed by PAPs Performance security deposit @0.25 % of the contract value to be deposited within 28 days of award of work and additional 4.75 % of the work value as retention money to be deducted from each running on a/c bills.~~
2. (a) No Bank Guarantees submitted for any purpose shall be accepted for amount less than Rs1.00 Lakh (Rupees one lakh) only. EMD/ SD / Additional Security for ALR items /

Performance Security etc for less than Rs1.00 Lakh shall be accepted only in other modes as mentioned in the NIT.

(b) Bank Guarantees shall contain complete Postal Address, Telephone Number, Fax Number and e-mail address of both the outstation bank issuing the BG as well as its local operating branch.

4.4 The Company shall be at liberty to deduct/appropriate from the security deposit such sums as are due and payable by the contractor to the company as may be determined in terms of the contract, and the amount appropriated from the security deposit shall have to be restored by further deduction from the contractors subsequent on account running bills, if any.

The refund of security deposit shall be subject to company's right to deduct/ appropriate its due against the contractor under this contract or under any other contract.

4.5 *On completion of the entire work and issue of defect liability certificate, (taking over certificate with a list of defects) by the Engineer-in-charge, one half of the security deposit remaining with the company shall be refunded. The other half shall be refunded to the contractor after issue of No Defect Certificate by the Engineer-in-Charge on the expiry of Defect Liability Period of One year, subject to the following conditions:*

a) Any defect/ defects in the work, if detected after issue of defect liability certificate is / are rectified to the satisfaction of the Engineer-in-charge within the said period .

~~b) In the case of building work/other work of similar nature, the refund shall be made on the expiry of the said six months period or at the end of one full monsoon period i.e. June to September, whichever is later in point of time and any defects such as leakage in roof, efflorescence in walls, dampness, defects in drainage etc. should be rectified to the satisfaction of Engineer In Charge.~~

5. Deviations/Variations in Quantities and Pricing

The quantities given in the "Schedule of Quantities" are based on estimates and are meant to indicate the extent of the work and to provide a uniform basis for tendering and any variation either by addition or omission shall not vitiate the contract.

5.1 The company through its Engineer In Charge or his representative shall, without radically changing the original scope and nature of the work, under contract, have power to make any alterations in or additions to or substitution of the original specifications, drawings, designs and instructions that may appear to be necessary or advisable during the progress of the work.

The contractor shall be bound to carry out the works in accordance with the instructions given to him in writing by the Engineer In Charge or his representative on behalf of the company. Such altered or additional or substituted work, which shall form part of the original contract, shall be carried out by the contractor on the same terms and conditions in all respects on which they agreed to do the main work and at the same rate/rates as are specified in the contract/ work-order.

5.2 The right is reserved to cancel any items of work included in the contract agreement or

portion thereof in any stage of execution if found necessary to the work and such omission shall not be a waiver of any condition of the contract nor invalidate any of the provisions thereof.

5.3 If the additional, altered or substituted work includes any class of work for which rate/rates is/are not specified in the contract/work order, rates for such items shall be determined by the Engineer In Charge as follows:

- a) In the case of percentage tenders, if the rate for the item of work executed is available in the company's approved SOR, it will be paid at the schedule rate plus or minus the accepted percentage as per contract,
- b) In case of item rate tenders, the rate for extra item shall be derived from the rate for similar item or near similar item of work available in the agreement schedule of work or by analysis of rates as at (c) below and the lower rate out of the above two shall be considered.
- c) In case the rate for extra item is to be derived by analysis of rate, the same shall be done by analysis on prevalent market rate of materials and labour based on standard norms of analysis of rate of C.P.W.D.
- d) In case of combined tender with partly item rate for non-schedule items & partly percentage tenders for SOR items, the rate for extra item shall be derived as at (b) above in case of non-schedule items rates and in case of percentage rates for SOR items the rate for extra item shall be derived as at (a) above.

In case of any difference between the contractor and the Engineer-In Charge as to the fixation of rates, the matter shall be referred to the accepting authority of the company i.e.

CGM (E&M)/GM(E&M)/CE(E&M) of the company or Staff Officer(E&M) for the work awarded at Company Hqrs. level and Area level respectively, whose decision shall be final and binding on the contractor.

5.4 Payment for such deviated items (additional/ altered / substituted items of work or excess quantities of work beyond +/- 25% of the agreement schedule) shall be made in the contractors running on account bills, till the revised estimate regularising these items are sanctioned by the competent authority of the company, at the provisional rates and shall not exceed :

- a) 75% of the rate recommended by the Engineer In Charge to the accepting authority of the company i.e. CGM(E&M)/GM(E&M)/CE(E&M) of the company or Staff Officer(E&M) of the Area , if the rate is directly available in the SOR of the company.
- b) 50% of the rate recommended by the Engineer In Charge to the accepting authority of the company, i.e. CGM(E&M)/GM(E&M)/CE(E&M) of the company or Staff Officer(E&M) of the Area , if it is analyzed item rates based on prevalent market rates of materials and labour following NBO/CPWD norms.

5.5 The time for completion of the originally contracted work shall be extended by the company in the proportion that the additional work (in value) bears to the original contracted work (in value) plus 25% of the time calculated as explained above or such further additional time as may be considered reasonable by the Engineer in Charge.

5.6 The company through its Engineer In Charge or his representative, on behalf of the company, shall have power to omit any part of the work in case of non-availability of a portion of the site or for any other reason and the contractor shall be bound to carry out the rest of the work in accordance with the instructions given by the Engineer In Charge. No claim from the Contractor shall be entertained/ accepted on these grounds.

5.7 In the event of any deviation being ordered which in the opinion of the contractor changes radically the original scope/nature of the contract, the contractor shall under no circumstances suspend the work, either original or altered or substituted, and the dispute/disagreement as to the nature of deviation and the rate/rates to be paid for such deviations shall be resolved separately with the company as per the procedures/ norms laid down hereafter.

6. Time for Completion of Contract, Extension thereof, Defaults and Compensation for Delay

Time is the essence of the contract and as such all works shall be completed within the time stipulated in the contract/ work order. Immediately after the contract is executed/the work order is issued, the Engineer In Charge and the contractor shall agree upon a detailed time and progress chart prepared based on BAR CHART/ PERT CPM techniques on the basis of a construction schedule submitted by the contractor at the time of executing contract showing the order in which the work is proposed to be carried out within the time specified in the contract document/work order. For the purpose of this detailed time and progress chart, the work shall be deemed to have commenced from the day of execution of agreement.

6.1 If the contractor, without reasonable cause or valid reasons, commits default in commencing the work within the aforesaid time limit, the company shall without prejudice to any other right or remedy, be at liberty, by giving 15 days notice in writing to the contractor to commence the work, to forfeit the Earnest Money deposited by him and to rescind the Letter of Acceptance of Tender/Work Order. Additionally, the Company will reserve the right to debar such defaulting Contractors from participating in future Tenders for a minimum period of 1 (One) year.

6.2 If the contractor fails to maintain the required progress in terms of the agreed time and progress chart or to complete the work and clear the site on or before the contract or extended date of completion, he shall without prejudice to any other right or remedy available under the law to the company on account of such breach, pay as compensation (Liquidated Damages) @ half percent (1/2%) of the contract price per week of delay. The aggregate of such compensation/compensations shall not exceed 10(ten) percent of the total value as shown in the contract.

This will also apply to items or group of items for which separate period of completion has been specified. The amount of compensation may be adjusted or setoff against any sum payable to the contractor under this or any other contract with the company.

6.2.1 The company, if satisfied, that the works can be completed by the contractor within a reasonable time after the specified time of completion, may allow further extension of time at its discretion with or without the levy of L.D. In the event of extension granted being with L.D, the company will be entitled without prejudice to any other right or remedy available in that behalf, to recover from the contractor as agreed damages equivalent to half percent of the contract value of the

works for each week or part of the week subject to a ceiling of 10% of the contract price.

6.2.2 The company, if not satisfied that the works can be completed by the contractor, and in the event of failure on the part of the contractor to complete work within further extension of time allowed as aforesaid, shall be entitled, without prejudice to any other right, or remedy available in that behalf, to rescind the contract.

6.2.3 The company, if not satisfied with the progress of the contract and in the event of failure of the contractor to recoup the delays in the mutually agreed time frame, shall be entitled to terminate the contract.

6.2.4 In the event of such termination of the contract as described in clauses 6.2.2 or 6.2.3 or both the company, shall be entitled to recover L.D. upto ten percent (10%) of the contract value and forfeit the security deposit made by the contractor besides getting the work completed by other means at the risk and cost of the contractor.

6.3 a) The company may at its sole discretion, waive the payment of compensation on request received from the contractor indicating valid and acceptable reasons if the entire work is completed within the date as specified in the contract/work order or as validly extended date without stipulating any compensation for delay. **or**

b) If the progress of the work or of any portion of the work is unsatisfactory, the Engineer In-charge shall be entitled, after giving the contractor 15 days' notice in writing, to employ another Agency for executing the job or to carry out the work departmentally either wholly or partly debiting the contractor with the cost involved in engaging another Agency or the cost involved in executing the work departmentally, as the case may be. The certificate to be issued by the Engineer In-charge for the cost of the work so done shall be final and conclusive and the extra cost, if any, shall be borne by the contractor.

6.4 Extension of date of completion: On occurrences of any events causing delay as stated hereunder, the contractor shall intimate immediately in writing to the Engineer In Charge.

a) Force Majure:

i) Natural phenomena, including but not limited to abnormally bad weather, unprecedented flood and draught, earthquakes & epidemics.

ii) Political upheaval, civil commotion, strikes, lockouts, acts of any Govt. (domestic/foreign) including but not limited to war, proprieties, quarantine embargoes

The successful bidder/ contractor will advise in the event of his having to resort to this clause by a registered letter duly certified by the local chamber of commerce or statutory authorities, the beginning and end of the cause of delay, within fifteen days of the occurrence and cessation of such Force Majure condition.

In the event of delay due to Force Majure for more than one month the contract may be terminated at the discretion of the company. Termination under such circumstances will be without any liability on either side.

b) Serious loss or damage by fire.

c) Non-availability of stores which are the responsibility of the company to supply as per contract.

- d) Non-availability of working drawings in time, which are to be made available by the company as per contract during progress of the work.
- e) Delay on the part of the contractors or tradesmen engaged by the company not forming part of the contract, holding up further progress of the work.
- f) Non-availability or breakdown of tools and plant to be made available or made available by the company.
- g) The execution of any modified or additional items of work or excess quantity of work.
- h) Any other causes which, at the sole discretion of the company, is beyond the control of the contractor.

6.4.1 A **HINDRANCE REGISTER** shall be maintained by both department and the contractor at site to record the various hindrances, as stated above, encountered during the course of execution. Hindrance register will be signed by both the parties. The contractor may also record his observations in the Hindrance Register. In case the contractor has a different opinion for hindrance and a dispute arises then the matter would be referred to the EIC and or the next higher authority whose decision would be final & binding on the contractor & the decision to be communicated within 15 days.

6.4.2 The contractor shall request the company in writing for extension of time within 15 days of happening of such event causing delay stating also, the period for which extension is required. The company may, considering the genuinity of the request, give a reasonable extension of time for completion of the work. Such extension shall be communicated to the contractor in writing by the company through the Engineer In Charge within 1(one) month of the date of receipt of such request.

6.4.3 The opinion of the Engineer-in-charge, whether the grounds shown for the extension of time are or are not reasonable, is final. If the Engineer-in-charge is of the opinion that the grounds shown by the contractor are not reasonable and declines to the grant of extension to time, the contractor can not challenge the soundness of the opinion by reference to arbitration.

The opinion of the Engineer-in-charge that the period of extension granted by him is proper or necessary is not, however, final. If the contractor feels that the period of extension granted is inadequate he can appeal to the CGM(E&M)/ GM(E&M)/ CE(E&M) of the company for consideration on the question whether the period of extension is or is not proper or necessary.

6.4.4 Provisional extension of time may also be granted by the Engineer In Charge during the course of execution, on written request for extension of time within 15(fifteen) days of happening of such events as stated above, reserving the company's right to impose/ waive penalty at the time of granting final extension of time as per contract agreement.

6.4.5 When the period fixed for the completion of the contract is about to expire, the question of extension of the contract may be considered at the instance of the Contractor or the Department or of both. The extension will have to be by party's agreement, express or implied.

In case the contractor does not apply for grant of extension of time within 15(fifteen) days of the hindrance occurring in execution of the work and the department wants to continue with the work beyond the stipulated date of completion for reason of the work having been unavoidably hindered,

the Engineer-in-charge can grant extension of time even in the absence of application from the contractor. Such extension of time granted by the Engineer In Charge is valid provided the contractor accepts the same either expressly or implied by his actions before and subsequent to the date of completion. Such extension of time shall be without prejudice to Company's right to levy compensation under the relevant clause of the contract.

The contractor shall however use his best efforts to prevent or make good the delay by putting his endeavors constantly as may be reasonably required of him to the satisfaction of the Engineer In Charge.

7. Material Supply & other facilities

7.1 The company does not undertake any responsibility for supply of any materials to the contractor.

7.2 If the steel is issued by the department, the wastage of steel shall be the barest minimum. The wastage allowed from theoretical quantity will be upto a maximum of 5% to cover the wastage due to cutting into pieces, bending and other factors. No cut pieces or scrap less than 2 mtr. in length will be taken by the department. Efforts should be made to use the cut pieces of 2 mtr. or above length as far as possible.

If the wastage of steel is more than the permissible variation mentioned above the cost of excess wastage made by the contractor shall be recovered at double the issue rates indicated above, or 115% of prevailing market rate including sales tax and general tax during the period of work, whichever is more.

No allowances shall be entertained on account of Rolling Margin for the steel either issued by the department or procured by the contractor.

7.3 If the cement is issued by the department, the variation of 5% will be permitted over the theoretical consumption of cement for value of work upto Rs.10.00 lakhs and 3% for value of work above Rs.10.00 lakhs. In the event of cement consumed is more/less than specified above, the recovery for the quantity of cement consumed in excess or less than the specified quantity shall be made at double the issue rate or 115% of prevailing market rate including sales tax and general tax during the period of work, whichever is more.

7.4 In case the department is not able to supply cement/steel as per the provisions of the contract, the Engineer In Charge may allow, with the approval of CGM(Civil)/ GM(Civil)/ CE(Civil) of the company, the contractor in writing for procurement of cement/ steel from the approved sources and the extra on this account including transport charges, if any, over the issue rate shall be reimbursed to the contractor on production of authentic documents. Transportation of cement/ steel from the place of purchase to the site of work and proper storage of cement/steel at site shall be contractor's responsibility. He should maintain proper account of cement/steel issued/procured by him and should allow inspection of his godown and his cement/steel account by the concerned Engineer-in-charge or any other authorized officers of the company. Contractor should draw materials from the company on the basis of actual requirement as assessed by the Engineer In Charge on "as and when required" basis.

7.5 Recovery of cost of materials issued on sale A/c will be made as per actual consumption basis but the Engineer In Charge will have the discretion for making full recovery while processing a particular bill or asking for the return of the balance materials if the work is not progressing satisfactorily.

The contractor shall keep accurate record of materials issued by the company, maintain proper account for the materials received and consumed in the work and shall be open to check by the Engineer In Charge or his authorised representative. The contractor shall ensure that such materials are consumed for the contract works only and the Register for the aforesaid account shall be signed both by the representatives of Engineer In-Charge and the contractor.

7.6 All materials, tools and plants brought to site by the contractor including the materials supplied by the company shall be deemed to be held in lien by the company and the contractor shall not have the right to remove the same from the site, without the written permission of the Engineer In Charge. The company shall not however be liable for any loss, theft or damage due to fire or other cause during this period of lien, the responsibility for which shall lie entirely on the contractor.

7.7 The contractor shall bear the cost of loading, transportation to site, unloading, storing under cover as required etc. as may be necessary for the use and keeping the materials in good condition.

7.8 Any surplus materials issued by the company, remaining after completion or termination of the contract, shall be returned by the contractor at his cost to the place of issue and the Engineer In Charge shall accept the same at the rate not exceeding the rate at which these were originally issued taking into consideration the deterioration or damage, if any, that may have been caused during the custody of the contractor. In the event, the contractor fails to return the surplus materials out of those supplied by the company, the Engineer In Charge may, in addition to any other liability which the contractor would incur in this regard, by giving notice in writing require the contractor to pay the amount at double the issue rate for such unreturned surplus materials or 115% of the prevailing market rate including Sales Tax & General Tax during the period of work, whichever is more.

7.9 On completion or on termination of the contract and on complete recovery of secured advance paid by the company, if any, in respect of materials brought to site, the contractor with due permission of the Engineer In Charge shall be entitled to remove at his expenses all surplus materials originally supplied by him and upon such removal, the same shall become the property of the contractor.

7.10 All charges on account of octroi, terminal or sales tax and other duties on materials obtained for the works from any source (excluding materials supplied by the company) shall be borne by the contractor.

7.11 The contractor shall arrange necessary electricity at his own cost for the work and his own establishment. However, if available and feasible the company may arrange electricity at one point near the work site and necessary recovery of cost of energy consumed will be made at rates prescribed by the company from time to time. Energy meter for this purpose shall be provided by the contractor.

7.12 The contractor shall arrange necessary water for the work and his own establishment. However, if available and feasible the company may arrange water at one point near the work site for which recovery @ 1% of the contract value of work done will be made from the contractor's bills.

7.13 Coal required for manufacturing of bricks to be used in the work will be issued @ 25 tonnes per one lakh of bricks on payment at the rate prevailing on the date of issue. Requirement of coal may vary depending on the quality of coal. Transportation of coal and the charges thereof shall be contractor's responsibility.

7.14 Explosives, detonators and other inflammable materials shall not be used in the execution of the work at site by the contractor without prior written permission of the Engineer In Charge. Transportation and storage of such materials shall be done in specified manner in accordance with the law in force. The contractor shall also obtain licence under such laws for, transportation, storage, use and all other operations, connected with the handling of the same.

8. Quality Assurance - Materials and Workmanship

The contractor shall carry out and complete the work in every respect in accordance with the contract and shall ensure that the work conforms strictly to the drawings, specifications, instructions of the Engineer In Charge. The Engineer In Charge may issue, from time to time, further drawings, detailed instructions/ directions in writing to the contractor. All such drawings, instructions/directions shall be consistent with the contract documents and should be reasonably inferable there from, along with clarifications/ explanations thereof, if necessary.

8.1 For Quality Assurances of all the Civil Engineering Works the norms/ guidelines laid down by the company herein and elsewhere will form part of the contract for the purpose of quality of works.

8.2 The contractor shall be responsible for correct and complete execution of the work in a workman like manner with the materials as per specification which shall be subject to the approval of the company. All work under execution in pursuance of the contract shall be open to inspection and supervision by the Engineer In Charge or by his authorised representative or any other official of higher rank or any other person authorised by the company in his behalf & the contractor shall allow the same.

8.3 All materials to be provided by the contractor shall be in conformity with the specifications/schedule of work as per the contract and the contractor shall furnish proof, if so required by the Engineer In Charge to his satisfaction that the materials do so comply.

8.4 The contractor shall immediately after the award of work draw up a schedule giving dates for submission of samples as required or necessary as per the specification for approval of Engineer In Charge who shall approve, if found acceptable, promptly so that there is no delay in the progress of the work of the contractor or of the work of any of the sub-contractor.

On receipt of samples as per schedule, the Engineer In Charge shall arrange to examine/test with reasonable promptness ensuring conformity of the samples with the required specification and complying with the requirements as per contract documents keeping in view that the work shall be in accordance with the samples approved by him. The contractor shall not start bringing materials at the site unless the respective samples are approved. Materials con-forming to approved samples shall only be brought to site.

Samples are to be supplied by the contractor at his own cost. The cost involved in tests shall be borne by the contractor. If any test is ordered by the Engineer In Charge which is to be carried out by any independent person or agency at any place other than the site even then the cost of materials and testing charge etc. shall be borne by the contractor. If the test shows that the materials are not in accordance with the specifications, the said materials shall not be used in the work and removed from the site at contractors cost.

8.5 The company, through the Engineer In Charge, shall have full powers to reject any materials or work due to a defect therein for not conforming to the required specification, or for materials not being of the required quality and standard or for reasons of poor workmanship or for not being in accordance with the sample approved by him. The contractor shall forthwith remedy the defect/replace the materials at his expense and no further work shall be done pending such rectification/replacement of materials, if so instructed by the Engineer In Charge.

In case of default on the part of the contractor, the Engineer In Charge shall be at liberty to procure the proper materials for replacement and/or to carry out the rectifications in any manner considered advisable under the circumstances and the entire cost & delay for such procurement/rectification shall be borne by the contractor.

8.6 The Engineer In Charge shall be entitled to have tests carried out for any materials, according to the standard practice followed for such tests, other than those for which satisfactory proof has already been furnished by the contractor who shall provide at his expense all facilities which the Engineer In Charge may require for the purpose.

The cost of any other tests, if so required by the Engineer In Charge, shall be borne by the contractor only, if the test shows the workmanship or materials not to be in accordance with the provision of the contract or the instruction of Engineer In Charge, but otherwise by the company.

8.7 Access to the works: The Engineer-in-charge and any person authorised by the company shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles are being obtained for the works and the contractor shall afford every facility for and every assistance in or in obtaining the right to such access.

8.8 Inspection of works: i) No work shall be covered up or put out of view without the approval of the Engineer-in-charge or the Engineer-in-charge's representative or any other officer nominated by the company for the purpose and the contractor shall afford full opportunity for the EIC or EIC's representative or any other officer nominated by the company for the purpose to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon. the contractor shall give due notice to the Engineer-in-charge's representative whenever any such work or foundations is ready or about to be ready for examination and the Engineer-in-charge's representative shall, without unreasonable delay, unless he considers it unnecessary and advises the contractor accordingly, attend for the purpose of examining and measuring such work or foundations.

ii) The contractor shall uncover any part or parts of the works or making openings in or through the same as the Engineer In Charge may from time to time direct and shall reinstate and make good such part or parts to the satisfaction of Engineer-in-charge.

If any such part or parts have been covered up or put out of view after compliance with the requirement of sub-clause above and are found to be executed in accordance with the contract, the expenses of uncovering, making openings in or through and making good the same shall be borne by the Employer, but in any other cases all costs shall be borne by the contractor.

8.9 Removal of Improper Work and Materials:

i) The Engineer-in-charge shall during the progress of the works have power to order in writing from time to time :

- a) The removal from the site, of any materials which in the opinion of Engineer-in-charge, are not in accordance with the contract/ work order/ approved sample.
- b) The substitution with proper and suitable materials.
- c) The removal and proper re-execution, notwithstanding any previous test thereof or interim payment there from, of any work which in respect of materials or workmanship is not in accordance with the contract.
- ii) In case of default on the part of the contractor in carrying out such order, the Engineer-in -charge shall be entitled to employ and pay other agency to carry out the same and all expenses consequent thereon shall be recoverable from the contractor or may be deducted from any amount due or which may become due to the contractor.

8.10 Devaluation of Work : In lieu of rejecting work done or materials supplied not in conformity with the contract/work order/approved samples , the Engineer-in-charge or any other officer nominated by the company for the purpose may allow such work or materials to remain, provided the Engineer In Charge/ the officer nominated by the company is satisfied with the quality of any materials, or the strength and structural safety of the work, and in that case shall make such deduction for the difference in value, as in his opinion may be reasonable.

8.11 Final Inspection of Work: The Engineer-in-charge and any other officer nominated by the company for the purpose shall make final inspection of all work included in the contract/work order, or any portion thereof, or any completed structure forming part of the work of the contract, as soon as practicable after notification by the contractor that the work is completed and ready for acceptance. If the work is not acceptable to the Engineer-in-charge at the time of such inspection, he shall inform the contractor in writing as to the particular defects to be remedied before final acceptance can be made.

8.12 Defects appearing after acceptance: Any defects which may appear within the defect liability period and arising, in the opinion of the Engineer-in-charge, from lack of conformance with the drawings and specifications, shall, if so required by the Engineer-in-charge in writing, be remedied by the contractor at his own cost within the time stipulated by the Engineer-in-charge. If the contractor fails to comply, the Engineer-in-charge may employ other persons to remedy the defects and recover the cost thereof from the dues of the contractor.

8.13 Site Order Book : A Site Order Book is a Register duly certified by the Engineer-in-charge regarding number of pages it contains, each page being numbered, name of work, name of contractor, reference of contract/ work order and the aforesaid certificate should be recorded on its first page.

Site Order Books shall be maintained on the sites of works and should never be removed there from under any circumstances. It shall be the property of the company. The Engineer In Charge or his authorised representative shall duly record his observations regarding any work which needs action on the part of the contractor like, improvement in the quality of work, failure to adhere to the scheduled programme etc. as per contract/work order. The contractor shall promptly sign the site order book and note the orders given therein by the EIC or his representative and comply with them. The compliance shall be reported by the contractor in writing to EIC in time so that it can be checked.

The Site Order Book will be consulted by the Engineer In Charge at the time of making both running on account and final bills of the contractor. A certificate to this effect should be given in the Measurement books by the Engineer In Charge or his representative.

8.14 Samples and Testing of Materials: All the materials to be procured by the contractor and to be used in work shall be approved by the Engineer In Charge in advance, and shall pass the tests and analysis required by him, which will be as specified in the specifications of the items concerned and or as specified by BIS or the IRC standard specifications acceptable to the Engineer In Charge. The method of sampling and testing shall be as per the relevant BIS, IRC and other relevant standards and practices. Minor minerals like sand, stone chips etc. shall be conforming to relevant BIS standards. All bought out items including Cement and Steel shall be procured from such manufacturers who hold valid license conforming to relevant BIS standards for manufacturing of such items.

8.15 Storage of Materials: Materials shall be so stored as to ensure the preservation of the quality and fitness for the work. When considered necessary by the Engineer-in-charge, they shall be placed on wooden platforms or other hard, clean surfaces and not directly on the ground.

Materials shall be placed under cover when so directed and the contractor shall erect and maintain at his own cost temporary weather-proof sheds at the work site for the purpose. Stored materials shall be so located as to facilitate prompt inspection. All stored materials shall be inspected at the time of use in the work, even though they may have been inspected and approved before being placed in storage or during storage.

8.16 Defective Materials: All materials not conforming to the requirements of the specifications shall be considered as defective, and all such materials, whether in place or not shall be rejected. They shall be removed immediately by the contractor at his expenses and replaced with acceptable material.

No rejected material, the defects of which have been subsequently corrected, shall be used on the work until approval in writing has been given by the Engineer In Charge. Upon failure on the part of the contractor to comply with any instruction of the Engineer-in-charge made under the provisions of this article within the time stipulated by the Engineer-in-charge, the Engineer-in-charge shall have authority to remove and replace defective material and recover the cost of removal and replacement from the contractor.

Further all such defective material lying at site not removed and replaced within 30 days after issue of notice by the Engineer-in-charge, if the Engineer-in-charge so decides shall dispose off such material in any manner without any further written notice to the contractor.

9. Measurement and Payments

Except where any general or detailed description of the work in the Bill of Quantities or specifications of the contract/ work order provides otherwise, measurement of work done shall be taken in accordance with the relevant standard method of measurement published by the Bureau of Indian Standards (BIS) and if not covered by the above, other relevant Standards/practices shall be followed as per instructions of the Engineer In Charge.

9.1 All items of work carried out by the contractor in accordance with the provision of the contract having a financial value shall be entered in the Measurement Book as prescribed by the company so that a complete record of the measurements is available for all the works executed under the contract and the value of the work executed can be ascertained and determined therefrom. Measurements of completed work / portion of completed work shall be recorded only in the Measurement Books.

9.2 Measurement shall be taken jointly by the Engineer-in-Charge or his authorised representative and

by the contractor or his authorised representative.

9.3 Before taking measurements of any work, the Engineer In Charge or the person deputed by him for the purpose shall intimate the contractor to attend or to send his representative to attend the measurement. Every measurement thus taken shall be signed and dated by both the parties on the site on completion of the measurement. If the contractor objects to any measurements, a note to that effect shall be made in the Measurement Book / Log Book and signed and dated by both the parties.

9.4 The measurement of the portion of work/items of work objected to, shall be re-measured by the Engineer In Charge himself or the authority nominated by the company for the purpose in the presence of the contractor or his authorised representative and recorded in the M.B. which shall be signed and dated by both the parties. Measurements so recorded shall be final and binding upon the contractor and no claim whatsoever shall thereafter be entertained.

In case the contractor or his authorised representative does not attend to the joint measurements at the prefixed date and time after due notice, the measurements taken by the Engineer In Charge or his representative shall be final and binding on the contractor.

Measurement of the extra items of work or excess quantities of work duly authorised in writing by the Engineer In Charge shall also be taken and recorded in the M.B. based on the existing items in the SOR of the company and if such items do not exist in the company's SOR, the description of the work shall be as per actual execution. Payment for such extra items will be based on the rates to be derived as described in the relevant clauses of the contract/ work-order

9.5 No work shall be covered up or put out of view without the approval by the Engineer In Charge and recording of measurements and check measurement thereof duly accepted by the contractor. The contractor shall provide full opportunity to the Engineer In Charge or his representative to examine and measure all works to be covered up and to examine the foundations before covering up.

The contractor shall also give notice to Engineer In Charge whenever such works or foundations are ready for examination and the Engineer In Charge shall without unreasonable delay arrange to inspect and to record the measurements, if the work is acceptable and advise the contractor regarding covering of such works or foundations.

9.6 In case of items which are claimed by the contractor but are not admissible according to the department, measurements of such items, will be taken by for record purposes only and without prejudice so that in case it is subsequently decided by the department to admit the contractor's claims, there should be no difficulty in determining the quantities of such work. A suitable remark should, however, be made against such measurements to guard against payment in the ordinary way.

9.7 Payments: The running on account payments may be made once in a month or at intervals stipulated in the work order/ contract agreement.

9.7.01 Running on account bill/bills for the work executed/ materials supplied in accordance with the work order/ contract shall be prepared on the basis of detailed measurements recorded as described hereinbefore and processed for payments.

9.7.02 Payment of on account bill shall be made on the Engineer In Charge's certifying the sum to which the contractor is considered entitled by way of interim payment for the following:

a) The work executed as covered by the bill/bills after deducting the amount already paid, the

security deposit and such other amounts as may be deductible or recoverable in terms of the work order/ contract.

b) (i) Payment for excess quantity of work done with the written instructions of the Engineer In Charge for items already appearing in the bill of quantities of work with approved rates, will be made alongwith the on account bills only upto 10% of the quantity provided in the agreement subject to overall value of work not exceeding the agreement value.

(ii) CGM (E&M)/GM (E&M)/CE(E&M) of the company and/or Staff Officer(E&M) of the Area may authorise interim payment for excess work done upto 20 % of the quantity of work provided in the Bill of Quantity of the work awarded from Company level and Area level respectively subject to overall value of work done does not exceed the contract value.

c) Extra items of work executed will be paid on specific written authorisation CGM(E&M)/GM(E&M)/CE(E&M) of the company or Staff Officer(E&M) of the Area provided that the value of such extra items of work when added together is not more than 10% of the contract value and the total gross payment including excess quantity does not exceed the contract value.

Balance amount on account of excess quantity and extra items of work executed shall be paid after the deviation estimate / revised estimate regularising the extra items and excess quantities of work is sanctioned by the competent authority of the company with the concurrence of the Finance Department of the company.

d) On the Engineer In Charge's certificate of completion in respect of the work covered by the contract/ final measurements of the work certified by the Engineer In Charge or his representative.

9.7.03 The measurements shall be entered in the M.B for the work done upto the date of completion and evaluated based on the approved rates for the items in the contract agreement/sanctioned revised estimate. In case of extra items of work, the rates shall be derived as stated in the relevant clause of the contract.

The payments shall be released against the final bill subject to all deductions which may be made on account of materials supplied, water supply for construction, supply of electricity and any other dues payable by the contractor to the company, and further subject to the contractor having given to the Engineer In Charge a no claim certificate. The contractor shall indemnify the company against proof of depositing royalty on account of minor minerals used in the work before the final bill is processed for payments. The final payment to be made will also be subject to Clause-4.5 of the General Terms & Conditions of the contract.

9.7.04 Any certificate given by the Engineer In Charge for the purpose of payment of interim bill/bills shall not of itself be conclusive evidence that any work/materials to which it relate is/are in accordance with the contract and may be modified or corrected by the Engineer In Charge by any subsequent certificate or by the final certificate.

9.7.05 The company reserve the right to recover/enforce recovery of any over payments detected after the payment as a result of post payment audit or technical examination or by any other means, notwithstanding the fact that the amount of disputed claims, if any, of the contractor exceeds the amount of such overpayment and irrespective of the facts whether such disputed claims of the contractor are the subject matter of arbitration or not.

The amount of such over payments shall be recovered from subsequent bills under the contract, failing that from contractor's claim under any other contract with the company or from the

contractor's security deposit or the contractor shall pay the amount of over payment on demand. In case of contractor's non-payment on such demand, the same should be realised from the contractor's dues, if any, with Coal India Limited or any of its subsidiaries.

9.7.06 The contractors are required to execute all works satisfactorily and according to the specifications laid down in the contract/ work order. If certain items of work, executed by the contractor, are below specifications, the contractor should re-do them according to the specifications and instructions of EIC and if the contractor fails to rectify the defect within the time and in the manner specified by the EIC, the work shall be got re-done or rectified by the department at the risk and cost of the contractor. Engineer In Charge may accept such work of below specifications provided the department is satisfied with the quality of such works and the strength/ structural safety of such works. In that case Engineer In Charge shall make such deductions for the difference in value, as in his opinion is reasonable and is approved by the accepting authority of the company i.e. CGM(E&M)/GM(E&M)/CE(E&M) of the company in this case or any other officer nominated by CGM(E&M)/GM(E&M)/CE(E&M) for the purpose.

9.7.07 Payment Stage: The payment stage involved will be as under,

- i) Signature of EA(E&M)/ Sr. Overseer(E&M) / Overseer(E&M) in MB"s both in pages recording measurements, abstract of bill & the duly filled in bill form.
- ii) Signature of Engineer (E&M)/ EE(E&M) with appropriate check measurements in the MB"s and the bill form.
- iii) Signature of Sr. EE (E&M)/ SE (E&M) with appropriate check measurements in MB"s and the bill form.
- iv) Signature of Engineer in Charge as per definition as at clause 1(vii) of the General Terms and Conditions, as a token of acceptance for payment of the bill. The EIC may sign in the abstract of the bill in the MB & the bill form. In between stage iii) and iv) accountal checking may be made by the concerned Accounts Officer/ Accountant.

9.7.08 Secured Advance: (NA) Secured advance can be paid for items of materials required for execution of the work and covered under categories A & B and supplied by the contractor at work site, supported by necessary vouchers, challans, test certificates etc. after execution of indemnity bond as per prescribed Form of the company on non-judicial stamp paper of prescribed value.

This advance shall be recovered in four equal installments or as per consumption whichever is higher. Engineer In Charge shall recover at his discretion all or any part of secured advance paid, if in his opinion the work is not progressing satisfactorily or the security of these materials at site is not adequately taken care of by the contractor. Secured advance shall be payable for contracts of value above Rs.10.00 lakhs only. Secured advance for structural steel sections, reinforcement steel and cement, collected at site, will be paid upto 75% of the corresponding stock yard prices of SAIL for the corresponding steel items and Govt. approved/ D.G.S.D. prices for cement, if the same exist.

In case of non-availability of Govt. approved prices of cement & steel and for the materials falling under Category - A and B the secured advance will be paid at the basic rate available in the approved schedule of rates of the company plus or minus the overall percentage on which the work was awarded, provided such rate is not more than 60% of the quoted rate of the contractor for the actual work.

At any point of time the outstanding recoverable secured advance shall not be more than 10% of the contract value.

Items against which secured advance can be granted:

Category-A

Civil:

1. Bricks
2. Stone and brick aggregate
3. Stones
4. Finished products of brass, iron and steel such as doors & windows frames, wire mesh, gate, GI Sheets.
5. Pre-cast R.C.C. products such as pipes, jali, water storage tanks etc.
6. Doors & Window fittings.
7. Pipes and sanitary fittings of CI, SCI & HCI

Electrical:

1. Steel conduits
2. G.I. Pipes
3. I.C. Boards
4. Switchgears (Air circuit breakers and Air break switches)
5. C.I. Boxes.
6. A.C.S.R. Conductors
7. A.C. Plant & Machinery
8. Pumps
9. Generating sets (without oil)

Items against which secured advance can be granted: (NA)

Category- B

Civil:

1. Glazed tiles, terrazzo tiles and similar articles.
2. Marble slabs
3. Asbestos cement products
4. Finished timber products such as doors, windows, flush doors, particle boards (subject to mandatory test being satisfactory) etc.
5. Bitumen in sealed drums
6. Bitumen felt
7. Polythene pipes and fittings and tanks.
8. Sanitary fittings and pipes of S.W., porcelain and chinaware materials
9. Laminated / Safety, one way vision, and bullet proof glasses.
10. Chemical required for anti-termite treatment (in sealed drums)
11. Paints, varnishes, distempers, pigment, spirits etc.

Electrical:

1. Transformers
2. Oil-filled switch gears.
3. L.T. & H.T.Cables
4. Fans
5. Storage and Dry Batteries
6. Insulation tapes
7. Epoxy cable compounds
8. Electric light fittings
9. Wooden battens, casing & capping and wooden boards
- 10.Flexible wires
- 11.PVC materials
- 12.Oil and lubricants
- 13.Rubber materials
- 14.Glass wool, thermocole & other insulating materials
- 15.Porcelain H.T. and L.T. insulators.

In addition to indemnity bond, for materials listed under Category-B, the contractor shall be required to provide necessary insurance cover of equivalent value of materials.

Items against which no secured advance shall be granted:

Civil:

1. Glass products other than those indicated in Category-B.
2. Sand and moorum
3. Chemical compounds other than those indicated in Category-B.

Electrical:

1. Glass gloves and shades
2. Bulbs and tubes
3. Petrol and diesel
4. Freon and other refrigeration gases.

9.8 Income tax deduction @ 2% (Two percent) of the gross value of each bill or at the rate as amended from time to time, shall be made unless exempted by the competent authority of the Income Tax Department

Sales tax on works contract shall be payable by the contractor. If, however, the company is asked to make deduction from the contractor's bills, the same shall be done and a certificate to this effect shall

be issued to the contractor for dealing with the State Govt. and the company does not take any responsibility to do anything further in this regard.

9.9 No interest shall be payable on the amounts withheld, under the terms of the Contract Agreement/Work-order.

10. Termination, Cancellation, Suspension and Foreclosure of Contract

The company shall, in addition to other remedial steps to be taken as provided in the conditions of contract be entitled to cancel the contract in full or in part, if the contractor :-

a) makes default in proceeding with the works with due diligence and continues to do so even after a notice in writing from the Engineer In Charge, then on the expiry of the period as specified in the notice

Or

b) commits default/breach in complying with any of the terms and conditions of the contract and does not remedy it or fails to take effective steps for the remedy to the satisfaction of the Engineer In Charge, then on the expiry of the period as may be specified by the Engineer In Charge in a notice in writing.

Or

c) obtains a contract with the company as a result of ring tendering or other non-bonafide methods of competitive tendering

Or

d) shall offer or give or agree to give any person in the service of the company or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for act/acts of favour in relation to the obtaining or execution of this or any other contract for his company.

Or

e) fails to complete the work or items of work with individual dates of completion, on or before the date/dates of completion or as extended by the company, then on the expiry of the period as may be specified by the Engineer In Charge in a notice in writing.

Or

f) transfers, sublets, assigns the entire work or any portion thereof without the prior approval in writing from the Engineer In Charge. The Engineer In Charge may by giving a written notice, cancel the whole contract or portion of it in default.

10.1 The contract shall also stand terminated under any of the following circumstances:

a) If the contractor being an individual in the case of proprietary concern or in the case of a partnership firm any of its partners is declared insolvent under the provisions of Insolvency Act for the time being in force, or makes any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors amounting to proceedings for liquidation or composition under any Insolvency Act.

b) In the case of the contractor being a company, its affairs are under liquidation either by a resolution passed by the contractors company or by an order of court, not being a voluntary liquidation proceedings for the purpose of amalgamation or reorganisation, or a receiver or manager is appointed by the court on the application by the debenture holders of the contractor's company, if any.

c) If the contractor shall suffer an execution being levied on his/their goods, estates and allow it to be continued for a period of 21 (twenty-one) days.

d) On the death of the contractor being a proprietary concern or of any of the partners in the case of a partnership concern and the company is not satisfied that the legal representative of the deceased proprietor or the other surviving partners of the partnership concern are capable of carrying out and completing the contract. The decision of the company in this respect shall be final and binding which is to be intimated in writing to the legal representative or to the partnership concern.

10.2 On cancellation of the contract or on termination of the contract, the Engineer In Charge shall have powers:

a) to take possession of the site and any materials, constructional plant, equipments, stores etc. thereon.

b) to carry out the incomplete work by any means at the risk and cost of the contractor.

c) to determine the amount to be recovered from the contractor for completing the remaining work or in the event the remaining work is not to be completed the loss/damage suffered, if any, by the company after giving credit for the value of the work executed by the contractor upto the time of cancellation less on a/c payments made till date and value of contractor's materials, plant, equipments, etc. taken possession of after cancellation.

d) to recover the amount determined as above, if any, from any money due to the contractor on any account or under any other contract and in the event of any shortfall, the contractor shall be called upon to pay the same on demand. The need for determination of the amount of recovery of any extra cost/expenditure or of any loss/damage suffered by the company shall not however arise in the case of termination of the contract for death/demise of the contractor as stated in clause 10.1(d) of the contract.

e) to give the contractor or his representative of the work 7 (seven) days notice in writing for taking final measurement for the works executed till the date of cancellation or termination of the contract. The Engineer In Charge shall fix the time for taking such final measurement and intimate the contractor in writing. The final measurement shall be carried out at the said appointed time notwithstanding whether the contractor is present or not. Any claim as regards measurement which the contractor is to make shall be made in writing within 7 (seven) days of taking final measurement by Engineer-In-charge as aforesaid and if no such claim is received, the contractor shall be deemed to have waived all claims regarding above measurements and any claim made thereafter shall not be entertained.

10.3 Suspension of Work:

i) The company shall have power to suspend the work or any part thereof and the Engineer In Charge may direct the contractor in writing to suspend the work, for such period and in such manner as may be specified therein, on account of any default on the part of the contractor, or for proper execution of the work for reasons other than any default on part of the contractor, or on ground of safety of the work.

ii) In the event of suspension for reasons other than any default on the part of the contractor, extension of time shall be allowed by the company equal to the period of such suspension and the contractor shall properly protect and secure the works to the extent necessary during such suspension.

The contractor shall carry out the instructions given in this respect by the Engineer-In Charge & if such suspension exceeds 45 (forty five) days, the contractor will be compensated on mutually agreed terms.

10.4 The work shall, throughout the stipulated period of contract, be carried out with all due diligence on the part of the contractor. In the event of termination or suspension of the contract, on account of default on the part of the contractor, as narrated hereinbefore, the security deposit and other dues of this work or any other work done under this company shall be forfeited and brought under the absolute disposal of the company provided, that the amount so forfeited shall not exceed 10 (ten) percent of the contract value.

10.5 Foreclosure of contract:

If at any time after acceptance of the tender the company decides to abandon for any reason whatsoever the company, through its Engineer In Charge, shall give notice in writing to that effect to the contractor. In the event of abandonment the company shall be liable :-

a) to pay reasonable amount assessed and certified by the Engineer In Charge of the expenditure incurred, if any, by the contractor on preliminary works at site e.g. temporary access roads, temporary construction for labour and staff quarters, office accommodation, storage of materials, water storage tanks and water supply for the work including supply to labour/ staff quarters, office etc.

b) to pay the contractor at the contract rates full amount for works executed and measured at site upto the date of such abandonment.

c) to pay for the materials brought to site or to be delivered at site, which the contractor is legally liable to pay, for the purpose of consumption in works carried out or were to be carried out but for the foreclosure, including the cost of purchase and transportation and cost of delivery of such materials. The materials to be taken over by the company should be in good condition and the company may allow at its discretion the contractor to retain the materials in full or in part if so desired by him and to be transported by the contractor from site to his place at his own cost with due permission of the Engineer In Charge.

d) to take back the materials issued by the company but remaining unused, if any, in the work on the date of abandonment/reduction in the work, at the original issue price less allowance for any deterioration or damage caused while in custody of the contractor.

e) to pay for the transportation of tools and plants of the contractor from site to contractor's place or to any other destination, whichever is less.

10.5.01 The contractor shall, if required by the Engineer In Charge, furnish to him books of accounts, papers, relevant documents as may be necessary to enable the Engineer In Charge to assess the amounts payable in terms of clauses 10.5(b) (c) & (e) of the contract. The contractor shall not have any claim for compensation for abandonment of the work, other than those as specified above.

11. Completion Certificate / Defect Liability Certificate

Except in cases where the contract provides for "Performance Test" before issue of **defect**

liability certificate, in which case the issue of **defect liability** certificate shall be in accordance with the procedure specified therein, the contractor shall give notice of completion of work, as soon as the work is completed, to the Engineer In Charge. The Engineer In Charge and or any other Officer, nominated for the purpose by the company, shall within 30 (thirty) days from the receipt thereof, inspect the work and ascertain the defects/deficiencies, if any, to be rectified by the contractor as also the items, if any, for which payment shall be made at reduced rate.

If the defects, according to the Engineer In Charge are of a major nature and the rectification of which is necessary for the satisfactory performance of the contract, he shall intimate in writing the defects and instruct the contractor to rectify the defects/remove deficiencies within the period and in the manner to be specified therein. In such cases **defect liability** certificate will be issued by the Engineer In Charge after the above rectifications are carried out/ deficiencies are removed by the contractor to the satisfaction of Engineer In Charge.

In the event there are no defects or the defects/ deficiencies are of a minor nature and the Engineer In Charge is satisfied that the contractor has already made arrangements for rectification, or in the event of contractor's failure to rectify the defects for any reason whatsoever, the defects can be rectified by the company departmentally or by other means and the 50% of the security deposit of the contractor shall be sufficient to cover the cost thereof, he shall issue the **defect liability** certificate indicating the date of completion of the work, defects to be rectified, if any, and the items, if any, for which payment shall be made at reduced rate indicating reasons therefore and with necessary instructions to the contractor to clear the site/place of work or all debris/ waste materials, scaffoldings, sheds, surplus materials etc. making it clean.

11.1 In cases where separate period of completion for certain items or groups of items are specified in the contract, separate **defect liability** certificate for such items or groups of items may be issued by the Engineer In Charge after completion of such items on receipt of notice from the contractor only in the event the work is completed satisfactorily in every respect.

Refund of security deposit and payment of final bill shall, however, be made on completion of the entire contract work, but not on completion of such items of work.

12. Additional Responsibilities of the Contractor(s)

The cost on account of the "Additional Responsibilities of the Contractors" under this clause is deemed to be included in the tendered rates.

i) The company reserves the right to let other contractors also works in connection with the Project and the contractor/contractors shall co-operate in the works for the introduction and stores and materials and execution of his/their works.

ii) The contractor/contractors shall keep on the work site during the progress a competent and experienced Resident Engineer exclusively for the work and necessary assistants who shall represent the contractor(s). The contractor shall employ, on the site in connection with the execution and maintenance of the work, the following technical staff :

For Buildings Roads, Water Supply & Sanitary Works:

- | | |
|---|---|
| 1) For value of work ranging from Rs.10 lakhs to Rs.20 lakhs. | 1 Experienced Diploma holder. |
| 2) For value of work above Rs.20 lakhs and upto Rs.1 crore. | 1 Experienced Graduate Engineer in addition to Diploma holder as per sl.no.4 below. |
| 3) For value of work in excess of Rs.1 crore & for every additional Rs.2 crores or part thereof. | 1 Graduate Engineer extra in addition to Graduate Engineer and Diploma holder as per sl.no.1 & 4. |
| 4) For value of work in excess of Rs.20 lakhs & for every additional Rs.50 lakhs or part thereof. | 1 Diploma holder extra. |

For Industrial Structures :

- | | |
|---|---|
| 1) For value of work ranging from Rs.5 lakhs to Rs.15 lakhs. | 1 Experienced Diploma holder. |
| 2) For value of work above Rs.15 lakhs and upto Rs.75 lakhs. | 1 Experienced Graduate Engineer in addition to Diploma holder as per sl.no.4 below. |
| 3) For value of work in excess of Rs.75 lakhs & for every additional Rs.1.5 crores or part thereof. | 1 Graduate Engineer extra in addition to Graduate Engineer and Diploma holder as per sl.no.1 & 4. |
| 4) For value of work in excess of Rs.15 lakhs & for every additional Rs.50 lakhs or part thereof. | 1 Diploma holder extra. |

The contractor shall intimate the Engineer In Charge in writing the names, qualifications, experience and full postal address of each and every technical personnel employed at site by him.

The contractor(s) shall not be allowed to execute the work unless he/they engage the required technical staff at site as stated above. The delay on this account, if any, shall be the contractor's responsibility.

Important instructions shall be confirmed to the contractor(s) in writing. If the contractor/contractors in course of the works finds/find any discrepancy between the drawing, forming part of the contract documents and the physical conditions of the locality or any errors or omissions in drawings except those prepared by himself / themselves and not approved by the Engineer In Charge. It shall be his/their duty to immediately inform the Engineer In Charge in writing and the Engineer In Charge shall verify the same. Any work done after such discovery and without intimation as indicated above will be done at the risk of the contractor/contractors.

iii) The contractor / contractors shall employ only competent, skillful and orderly men to do the work. The Engineer In Charge shall have the right to ask the contractor/ contractors to remove from the work site any men of the contractor/contractors who in his opinion is undesirable and the contractor/contractors will have to remove him within 3 (three) hours of such orders.

The contractor shall employ apprentices in the execution of the contract work as required under Apprentices Act.

The contractor shall further be responsible for making arrangements at his own cost, or accommodation and social needs of the staff and workers under his employment.

iv) Precautions shall be exercised at all times by the contractor(s) for the protection of persons (including employees) and property. The safety required or recommended by all applicable laws, codes, statutes and regulations shall be observed by the contractor(s). In case of accidents, the contractor(s) shall be responsible for compliance with all the requirements imposed by the Workmen's Compensation Act or any other similar laws in force, and the contractor(s) shall indemnify the company against any claim on this account.

All scaffoldings, ladders and such other structures which the workmen are likely to use shall be examined by the Engineer In Charge or his authorised representative whenever they want and the structure must be strong, durable, and safe and of such design as required by Engineer In Charge.

In no case any structure condemned by the Engineer In Charge or his authorised representatives shall be kept on the work and such structure must be pulled down within three hours of such condemnation and any certificate or instructions, however, shall in no way absolve the contractor/contractors from his/their responsibility, as an employer, as the company shall in no way be responsible for any claim.

The contractor / contractors shall at all times exercises reasonable precautions for the safety of employees in the performance of his/their contract and shall comply with all applicable provisions of the safety laws drawn up by the State Govt. or Central Govt. or Municipalities and other authorities in India. The contractor/contractors shall comply with the provision of the safety hand book as approved and amended from time to time by the Government of India.

v) The contractor / contractors shall familiarise themselves with and be governed by all laws and rules of India and Local statutes and orders and regulations applicable to his/ their work.

vi) The contractor shall maintain all records as per the provision made in the various statutes including Contract Labour (Regulation & Abolition) Act, 1970 and the Contract Labour (Regulation & Abolition) Central Rules, 1971, Minimum Wages Act, Workmen Compensation Act etc. and latest amendment thereof. Such records maintained by the contractor shall be opened for inspection by the Engineer In Charge or by the nominated representative of the Principal Employer.

vii) The contractor/ contractors shall provide facilities for the sanitary necessities of all persons employed on the

work shall be constructed and maintained in the number, manner and place approved or ordered by the Engineer In Charge. The contractor/contractors shall vigorously prohibit committing of nuisance at any other place. Cost of all works under this item shall be covered by the contractor/contractor's tendered rates.

viii) The contractor/contractors shall furnish to the Engineer In Charge or his authorised representative with work reports from time to time regarding the contractor / contractors organisation and the progress made by him / them in the execution of the work as per the contract.

ix) All Duties taxes and other levies, payable by the contractor under the contract or for any other cause as applicable on the last date of submission of tender shall be included in the rates, prices and the total bid price submitted by the bidder. All incidentals, overheads etc. as may be attendant upon execution and completion of works shall also be included in the rates, prices and total bid price submitted by the bidder. However, such duties, taxes, levies etc. which is notified after the last date of submission of tender and / or any increase over the rate existing on the last date of submission of tender shall be reimbursed by the company on production of documentary evidence in support of payment actually made to the concerned authorities.

The company reserves the right to deduct/withhold any amount towards taxes, levies, etc. and to deal with such amount in terms of the provisions of the Statute or in terms of the direction of any statutory authority and the company shall only provide with certificate towards such deduction and shall not be responsible for any reason whatsoever.

In case the company land is used for manufacture of bricks or extraction of gravels etc. the contractor will have to pay compensation to the company (apart from the liability of the contractor to make the payment of royalty etc. to the State Government) at the same rates or royalty fixed by the State Government or an appropriate deduction may be made in the rate to be paid to the contractors.

x) The contractor / contractors shall make his / their own arrangement for all materials, tools, staff and labourer required for the contract, which shall include cost of lead, lift, loading, unloading, railway freight, recruiting expenses and any other charges for the completion of the work to entire satisfaction of the company.

xi) The contractor / contractors shall make their own arrangement for carriage of all materials to the work site at his/their own cost.

xii) The work shall not be sublet to any other party, unless approved by Engineer In Charge, in writing.

xiii) a) No fruit trees or valuable plants or trees with trunk diameter exceeding 150mm shall be pulled, destroyed or damaged by the contractor/contractors or any of his/their employees without the prior permission of the company, failing which the cost of such trees or plants shall be deducted from the contractor/contractors dues at the rate to be decided by the company. The rates quoted are supposed to include clearance of shrubs and jungles and removal of such trees upto 150 mm dia., as will be permitted by the Engineer In Charge in writing.

b) Anything of historical or other interest or of significant value unexpectedly discovered on the site is the property of the employer. The Contractor is to notify the Nodal Officer or his nominee of such discoveries and carry out the Nodal Officer or his nominee's instructions for dealing with him.

xiv) The contractor / contractors shall not pay less than the minimum wages to the labourers engaged by him/them as per Minimum Wages Act or such other legislation or award of the minimum wage fixed by the respective State Govt. or Central Govt. as may be in force.

xv) All accounts shall be maintained properly and the company shall have the right of access and inspection of all such books of accounts etc., relating to payment of labourer considered necessary and the company may arrange for witnessing the payment to the labourer by its representatives.

xvi) The contractor shall in additions to any indemnity provided by the relevant clauses of the agreement or by law,

indemnify and keep indemnified for the following :

a) The company or any agent or employee of the company against any action, claim or proceeding relating to infringement or use of any patent or design right and shall pay any royalties or other charges which may be payable in respect of any article or material included in the contract.

However, the amount so paid shall be reimbursed by the company in the event such infringement has taken place in complying with the specific directions issued by the company or the use of such article or material was the result of any drawing and/or specifications issued by the company after submission of tender by the contractor. The contractor must notify immediately after any claim being made or any action brought against the company, or any agent or employee of company in respect of any such matter.

b) The company against all claims, damages or compensation under the provisions of payment of Wages Act, 1938, Minimum Wages Act, 1948, Employer's Liability Act, 1938, The Workmen's Compensation Act, 1923, Industrial Dispute Act, 1947, Mines Act as applicable, Employees State Insurance Act 1948 and Maternity Benefit Act, 1961, Acts regulating P.F. or any modification thereof or any other law relating thereto and rules made there under from time to time, as may be applicable to the contract which may arise out of or in consequence of the construction or maintenance or performance of the work under the contract and also against costs, charges and expenses of any suit, action or proceedings arising out of any accident or injury.

c) The company against all losses and claims for injuries or damages to any third party or to any property belonging to any third party which may arise out of or in consequence of the construction or maintenance or performance of the work under the contract and against all claims/demands proceedings/damages, cost charges and expenses whatsoever in respect of or in relation thereto.

xvii) The contractor is under obligation to hand over to the company the vacant possession of the completed building structures failing which the Engineer In Charge can impose a levy upon the contractor upto 5% of the total contract value for the delay in handing over the vacant possession of the completed works after giving a 15 (fifteen) days notice to the contractor.

xviii) **a) INSURANCE:** The contractor shall take full responsibility to take all precautions to prevent loss or damage to the works or part thereof for any reasons whatsoever (excluding act of God e.g. flood, riots, war, earthquake, etc.) and shall at his own cost repair and make good the loss/damage to the work so that on completion, the work shall be in good order and condition and in conformity with the requirements of the contract and instructions of the Engineer In Charge.

In case of construction works without limiting the obligations and responsibilities under the contract, the contractor shall take insurance policy for the total value of work for the period from commencement to completion including defect liability period against risk of loss/ damage to the extent as permissible under the law of insurance.

The contractor shall arrange necessary insurance and pledge the same in the name of the company and all moneys payable by the insurers shall be recovered by the company which shall be paid to the contractor in installments as may be certified by the Engineer In Charge for the purpose of rebuilding or replacement or repair of the works and/or goods destroyed or damaged for which payment was received from the insurers.

b) Where any company building or part thereof is used, rented or leased by the contractor for the purpose of storing or using materials of combustible nature, the contractor shall take separate insurance policy for the entire building and the policy shall be deposited with the company.

c) The contractor shall at all times during the tenure of the contract indemnify the company against all claims, damages or compensation under the provision of the Workmen's Compensation Act and shall take insurance policy covering all risk, claims, damages, or compensation payable under the Workmen's Compensation Act or under any other law relating thereto.

d) The contractor shall ensure that the insurance policy/ policies is/are kept alive till full expiry of the contract by timely payment of premiums and it/they shall not be cancelled without the approval of the company and a provision is made to this effect in all policies, and similar insurance policies are also taken by his sub-contractors if any. The cost of premium shall be borne by the contractor and it shall be deemed to have been included in the tendered rate.

e) In the event of contractor's failure to effect or to keep in force the insurance referred to above or any other insurance which the contractor is required to effect under the terms of the contract, the company may effect and keep in force any such insurance and pay such premium/premiums as may be necessary for that purpose from time to time and recover the amount thus paid from any moneys due to the contractor.

THE CLAUSE 12 xviii SHALL BE APPLICABLE FOR WORKS OF ESTIMATED VALUE OF OVER Rs. 50 LAKHS.

xix) **Setting Out:** The contractor shall be responsible for the contract and proper setting out of the works and correctness of the position, reduced levels, dimensions and alignment of all parts of the work including marking out the correct lay out in reference to the permanent bench mark and reference points. Only one permanent bench mark and basic reference lines shall be marked and shown to the contractor as basic data.

The contractor shall have all necessary instruments, appliances and labour in connection therewith. If at any time during the progress of work any error is detected in respect of the position, levels, dimensions or alignment of any part of the work, the contractor on being required to do so by the Engineer In Charge or his representative shall at the expenses of the contractor rectify such errors to the satisfaction of Engineer In Charge unless such error is due to incorrect data supplied by the Engineer In Charge.

xx) On receipt of Letter of Acceptance of Tender / Work Order the contractor shall forthwith Register and obtain License from the competent authority under the Contract Labour (Regulation & Abolition) Act 1970, the Contract Labour (Regulation & Abolition) Central Rules, 1971 and submit certified copies of the same to the Engineer In Charge and the Principal Employer.

xxi) The contractor shall be registered with the concerned State Govt. and the Central Govt. in respect of Sales Tax Act and the certificate having details of Registration No., period of validity etc. should be submitted to the Engineer In Charge.

xxii) The contractor shall, in connection with works, provide and maintain, at his own cost, all lights, security guards, fencing when and where necessary as required by the Engineer In Charge for the purpose of protection of the works, materials at site, safety of workmen and convenience of the public.

xxiii) All materials (e.g. stone, moorum and other materials) obtained in the course of execution of the work during excavation and dismantling etc. shall be the property of the company and the same may be issued to the contractors, if required for use in the works at the rates to be fixed by the Engineer In Charge.

xxiv) Unless otherwise specifically provided for, dewatering of excavation pits, working areas etc. shall be the contractor's responsibility and is to be carried out at his own cost as per instructions of EIC. The rates quoted by the contractor shall be deemed to include the dewatering costs.

xxv) Approval by the Nodal Officer/Engineer in Charge or his nominee: The contractor shall submit specifications and drawings showing the proposed temporary work to the Nodal Officer/Engineer-in-Charge or his nominee, who is to approve them if they comply with the specifications and drawings.

The contractor shall be responsible for design of Temporary Works.

The Nodal Officer/Engineer-in-charge or his nominee's approval shall not alter the contractor's responsibility for design of the Temporary Works.

13. Defects Liability Period:

In addition to the defect/s to be rectified by the contractor as per terms of the contract/ work order, the contractor shall be responsible to make good and remedy at his own expense the defect/s mentioned hereunder within such period as may be stipulated by the Engineer In Charge in writing :

- a) Any defect/defects in the work detected by the Engineer In Charge within a period of 1 (one) year from the date of issue of defect liability certificate/completion certificate.
- b) In the case of building works or other works of similar nature any defect in the work detected by the Engineer In Charge within a period of 6 (six) months from the date of issue of defect liability certificate/completion certificate or before the expiry of one full monsoon period i.e. June to October whichever is later in point of time. (NA)

13.1 A programme shall be drawn by the contractor and the Engineer In Charge for carrying out the defects by the contractor detected within the defect liability period and if the contractor fails to adhere to this programme, the Engineer In Charge shall be at liberty to procure proper materials and carry out the rectifications in any manner considered advisable under the circumstances and the cost of such procurement of materials and rectification work shall be chargeable to the contractor and recoverable from any of the pending dues of the contractors.

The defect liability period can be extended by the company on getting request from the contractor only for valid reasons.

There will be no defect liability period for works like Grass Cutting, Jungle Cutting, Surface Dressing & any other work of similar nature to be decided by the Engineer in Charge.

14. Operating and Maintenance Manual:

If "as built" drawings and/or Operating and Maintenance Manual are required the contractor shall supply them by the dates as per instruction of the Engineer-in-charge.

If the contractor does not supply the drawings and/or Manual by the dates as stated above, or they do not receive the Nodal Officer or his nominee's approval, the Nodal Officer or his nominee shall withhold the amount as stated in the agreement.

15. Settlement of Disputes/Arbitration :

15.1 *It is incumbent upon the contractor to avoid litigation and disputes during the course of execution. However, if such disputes take place between the contractor and the department, effort shall be made first to settle the disputes at the company level. The contractor should make request in writing to the Engineer-in-Charge for settlement of such disputes/claims within 30 (thirty) days of arising of the cause of dispute/claim failing which no disputes/claims of the contractor shall be entertained by the company.*

15.2 *If differences still persist, the settlement of the dispute with Govt. Agencies shall be dealt with as per the Guidelines issued by the Ministry of Finance, Govt. of India in this regard. In case of parties other than Govt. Agencies, the redressal of the dispute may be sought in the Court of Law.*

ADDITIONAL TERMS AND CONDITIONS

(This section is not applicable for this Tender)

The following additional terms and conditions are also acceptable to the company. The tenderers are requested not to quote any further additional conditions in the tender.

1. Mobilisation Advance

- i) ~~No mobilization advance~~ is payable for works whose estimated value is less than Rs.100.00 lakhs.
- ii) In the case of turn key work whose estimated value is more than Rs.100 lakhs a maximum of 10 % of the total contract value of work will be paid as mobilisation advance subject to submission of Bank Guarantee for equal amount.
- iii) In case of other civil works valued more than Rs.100 lakhs mobilisation advance will be paid upto 5% of the contract value subject to submission of Bank Guarantee for equal amount.
- iv) However, such mobilisation advance will carry interest on the basis of CIL's borrowing rate under cash credit arrangement as varying from time to time.
- v) The mobilisation advance shall be recovered from the bills of the contractor from the 2nd running account bill onwards @ 20% of the advance amount paid and full recovery would be ensured before or with the Final Bill.
- vi) The value of Bank Guarantee may be reduced to the extent such advance is recovered by the company subject to the conditions that the value of Bank Guarantee amount at any time is more than the recoverable outstanding advance. Bank Guarantee shall be irrevocable and from a Bank as per the list provided with the document.

2. Application of Price Variation Clause.

If the prices of materials (not being the materials supplied at fixed issue rates by the company) and wages of labour required for execution of the work increase or decrease, the contractor shall be compensated for such increase or recoveries will be made from the bills for such decrease, as per provisions detailed hereafter:

(A) The amount of the contract shall accordingly be varied subject to the condition that such compensation for escalation/ de-escalation in price shall be available only for the work done during the stipulated period of the contract including such period for which the contract is validly extended under the provisions of the contract without any penal action.

(B) The Applicability of Price Variation Clause to different items of work will be as follows :

a) Price Variation for items except BITUMEN and STEEL:

i) The Price Variation clause in respect of MATERIALS, LABOUR and POL shall be applicable for works having stipulated period of completion more than 6 (six) months. The Price Variation clause shall not be applicable for works for which stipulated period of completion is 6 (six) months or less.

ii) The compensation for escalation or recoveries to be made shall be worked out at quarterly intervals and shall be with respect to the cost of work done (for items except Bitumen & Steel) during the

previous 3 (three) months. The first such payment will be made at the end of 3 (three) months after the month (excluding) in which the tender was accepted and thereafter at 3 (three) months' interval.

b) Price Variation for BITUMEN:

- i) The Price Variation clause in respect of MATERIAL shall be applicable for works having stipulated period of completion more than 1 (one) month.
- ii) The compensation for escalation or recoveries to be made for variation in the price of MATERIAL (BITUMEN) shall be worked out at monthly intervals and shall be with respect to the quantity of Bitumen consumed in the work during the previous 1 (one) month. The first such payment will be made at the end of 1 (one) month after the month (excluding) in which the tender was accepted and thereafter at 1 (one) months' interval.
- iii) The Price Variation clause in respect of LABOUR and POL shall not be applicable.

c) Price Variation for STEEL:

- i) The Price Variation clause in respect of MATERIAL shall be applicable for works having stipulated period of completion more than 1 (one) month.
- ii) The Price Variation clause in respect of LABOUR shall be applicable for works having stipulated period of completion more than 6 (six) months.
- iii) The compensation for escalation or recoveries to be made for variation in the price of MATERIAL (STEEL) shall be worked out at monthly intervals and shall be with respect to the cost of work done (for Steel Items) during the previous 1 (one) month. The first such payment will be made at the end of 1 (one) month after the month (excluding) in which the tender was accepted and thereafter at 1 (one) month's interval.
- iv) The compensation for escalation or recoveries to be made for variation in the wages of LABOUR shall be worked out at quarterly intervals and shall be with respect to the cost of work done (for Steel Items) during the previous 3 (three) months. The first such payment will be made at the end of 3 (three) months after the month (excluding) in which the tender was accepted and thereafter at 3 (three) months' interval.
- v) The Price Variation clause in respect of POL shall not be applicable.

- d) The summarized position in respect of the applicability of Price Variation clause as stated above shall be as under -

Types of Items	Contract period	Price Variation for Materials.	Price Variation for Labour.	Price Variation for POL.
For Items except BITUMEN and STEEL	Six months or less	Nil	Nil	Nil
	More than Six months.	Applicable	Applicable	Applicable
For BITUMEN	One month or less.	Nil	Nil	Nil
	More than One month.	Applicable	Nil	Nil
For STEEL	One month or less.	Nil	Nil	Nil
	More than One month and upto Six months.	Applicable	Nil	Nil
	More than Six months.	Applicable	Applicable	Nil

- (C) The base date for working out such escalation/de-escalation shall be the last date on which the price bids or revised price bids were stipulated to be received.
- (D) Job specific modification in the formula of Price Variation given in the following para(s) can be done with the approval of the CMD of the company.

2.1 Escalation/De-escalation for Labour: The amount paid to the contractor for the work done shall be adjusted for increase or decrease in the cost of labour and the cost shall be calculated quarterly in accordance with the following formula :

$$VL = W \times \frac{A}{100} \times \frac{L - Lo}{Lo}$$

Where:

VL = Variation in labour cost i.e., increase or decrease in the amount in rupees to be paid or recovered.

W = Value of work done during the period under reckoning to which the escalation/de-escalation relates as indicated in clause-2.4 of the Additional Terms & Conditions of the contract.

A = Component of labour expressed as percentage of the total value work adopted from the Table-1.

Lo = Minimum wages for unskilled workers payable as per the Minimum Wages Act/Rules of the State or Central Govt., whichever is more, applicable to the place of work as on the last date stipulated for receipt of the price bids or revised price bids, whichever is later.

L = Revised minimum wages of unskilled worker corresponding to Lo during the

period to which the escalation/de-escalation relates.

2.2 Escalation/ De-escalation on Material :

(a) Escalation/ De-escalation on Materials for Items except Bitumen & Steel:

The amount to be paid to the contractor for the work done will be adjusted for increase or decrease in the cost of materials and the cost shall be calculated quarterly in accordance with the following formula:

$$V_m = W \times \frac{B}{100} \times \frac{M - M_o}{M_o}$$

Where :

V_m = Variation in the material cost i.e. increase or decrease in the amount in rupees to be paid or recovered.

W = Cost of work done during the period under reckoning to which the escalation / de-escalation relates as indicated in clause-2.4 of the Additional Terms & Conditions of the contract.

B = Component of material expressed as percentage of the total value of the work adopted from the Table -1.

M = Average All India Wholesale Price Index for all commodities for the period to which escalation/de-escalation relates as published by the RBI Bulletin, Ministry of Industry & Commerce, Govt. of India.

M_o = All India Wholesale Price Index for all commodities as published by the RBI Bulletin, Ministry of Industry & Commerce, Govt. of India, relating to the last date on which the price bids or revised price bids whichever is later were stipulated to be received.

(b) Escalation/ De-escalation on Materials for BITUMEN :

- a. Escalation / De-escalation on Bitumen is applicable exclusively for the item of "Supply/Consumption of Bitumen of specified grade", provided separately in the estimate.
- b. The amount to be paid to the Contractor for the quantity of Bitumen consumed in the work will be adjusted for increase or decrease in the cost of Material (BITUMEN) and the cost shall be calculated monthly in accordance with the following formula:

$$V_B = Q (B - B_o)$$

Where -

V_B = Variation in the cost of Bitumen i.e. increase or decrease in the amount in rupees to be paid or recovered.

Q = Quantity of bitumen consumed in the month under reckoning to which the escalation / de-escalation relates.

B = Average basic rate of packed & bulk bitumen of grade as mentioned in the BOQ from IOC, Ex-Haldia (excluding the cost of Tax etc.) for the month to which escalation / de-escalation relates by taking into

account the rate of bitumen (average rate of packed & bulk bitumen of grade as mentioned in the BOQ) on the first day and last day of the month and finding their average.

B_o = The basic rate of bitumen (average rate of packed & bulk bitumen of grade as mentioned in the BOQ) from IOC, Ex-Haldia (excluding the cost of Tax etc.) relating to the last date on which the price bids or revised price bids whichever is later were stipulated to be received.

(c) Escalation/ De-escalation on Materials for STEEL (Reinforcement Steel & Structural Steel):

- a. Escalation/de-escalation on steel is applicable exclusively for STEEL items provided separately in the estimate.
- b. Price Variation for Steel items in the estimate shall be calculated by considering 15% labour component and 85% material component.
- c. The amount to be paid to the Contractor for the Steel work done will be adjusted for increase or decrease in the cost of Material (STEEL) and the cost shall be calculated monthly in accordance with the following formula:

$$V_s = W \times \frac{B}{100} \times \frac{S - S_o}{S_o}$$

Where :

V_s = Variation in the cost of steel i.e. increase or decrease in the amount in rupees to be paid or recovered.

W = Cost of steel work done during the month under reckoning to which escalation / de-escalation relates as indicated in clause- 2.4 of the Additional Terms and Conditions of the contract.

B = Component of material expressed as percentage of the total value of the work (85% in case of Steel Items).

S = Average All India wholesale Price Index for IRON AND STEEL for the month to which the escalation / de-escalation relates as published by the Economic Advisor, Ministry of Industry & Commerce, Govt. of India.

S_o = Average All India wholesale Price Index for IRON AND STEEL as published by the Economic Advisor, Ministry of Industry & Commerce, Govt. of India relating to the last date on which the price bids or revised price bids, whichever is later, were stipulated to be received.

2.3 Escalation/ De-escalation on POL :

The amount to be paid to the contractor for the work done shall be adjusted for the increase or decrease in the cost of POL and the cost shall be calculated quarterly in accordance with the formula given below :

$$V_f = W \times \frac{C}{100} \times \frac{F - F_0}{F_0}$$

Where :

V_f = variation in the cost of fuel, oil and lubricants i.e. increase or decrease in the amount in rupees to be paid or recovered.

W = Value of work done during the period under reckoning to which the escalation/de-escalation relates as indicated in clause 2.4 of the Additional Terms & Conditions of the contract.

C = Component of POL expressed as percentage of the total cost of the work taken from Table -1.

F = Average Index Number for wholesale price for the group of 'Fuel, Power, Light & Lubricants' as published by the Economic Adviser, Ministry of Industry, Govt. of India for the period to which the escalation/de-escalation relates.

F_0 = Index number of wholesale price for the group, "Fuel, Power, light & lubricants" as published by the Economic Adviser, Ministry of Industry, Govt. of India prevalent on the last date of receipt of price bids or revised price bids, whichever is later.

2.4 While calculating the value of "W" the following may be noted : The cost on which the escalation will be payable shall be reckoned as 85 % of the cost of work as per the bills to which escalation relates, and from this amount the value of materials supplied or services rendered at the prescribed charges under the relevant provisions of the contract, and proposed to be recovered in the particular bill, shall be deducted before the amount of compensation for escalation or de-escalation is worked out. In the case of materials brought to site for which any secured advance is included in the bill, the full value of such materials as assessed by the Engineer In Charge (and not the reduced amount for which secured advance has been paid) shall be included in the cost of work done for operation of this clause. Similarly, when such materials are incorporated in the work and the secured advance is deducted from the bill, the full-assessed value of the materials originally considered for operation of this clause should be deducted from the cost of the work shown in the bill, running or final. Further the cost of work shall not include any work for which payment is made at prevailing market rates.

2.5 In the event the price of materials and / or wages of labour required for execution of the work decreases, there shall be downward adjustment of the cost of work so that such price of materials and/or wages of labour shall be deductible from the cost of work under this contract and in this regard the formulae herein before stated under this clause shall mutatis/mutandis apply provided that no such adjustment for the decrease in material price and / or wages of labour before mentioned would be made in case of contracts in which the stipulated period of completion of the

work is Six (6) months or less, except for decrease in material prices for Bitumen and Steel.

In respect of the items for Bitumen and Steel, no such adjustment for the decrease in material price would be made in case of contracts in which the stipulated period of completion of the work is One (1) month or less.

2.6 Application of Price Variation Clause during extended period of Contracts.

The Price Variation Clause as stated above will be applied for extended time frame of a contract by following the principle stated as under,

i) Normally, if and when it is understood that a contract is not going to be completed within the scheduled time period, the contract is kept operative by extending the time of completion provisionally. During this provisional extended period the operation of the Price Variation Clause will remain suspended.

ii) If and when it is decided at the end of successful completion of the work that the delay was due to causes NOT attributable to the Contractor, then the Price Variation Clause will be revived and applied as if the scheduled date of completion has been shifted to the approved extended date.

iii) If it is decided at the end of completion of the work that the delay was due to the fault of the Contractor, then the Price Variation Clause will not be revived and NO PAYMENT will be made to the Contractor on this account. Additionally the Clause related to Compensation for Delay will be applied.

No payment will be made by applying “**FROZEN INDICES**” under any circumstances.

Table - 1

Value of A, B & C in the Escalation formula in the Additional Terms & Conditions for Civil Works:

Sl. No.	Particulars	A [%] (Labour Component)	B [%] (Material Component)	C [%] (POL Component)
1.	For Building works	25	75	Nil
2.	For Road works	15	80	05
3.	For external sewerage, external water supply and external electrification	10	90	Nil
4.	For external water supply, external sanitary and external electrification (through labour rate contract)	75	25	Nil
5.	For Steel structural works	15	85	Nil
6.	For Steel structural works with Deptt. free supply of	75	25	Nil

	rolled (through contract)	steel labour	sections rate			
7.	For Coal Handling Plant		25	75	Nil	
8.	For under-ground Civil works such as Incline Drivage, Shaft Sinking etc.		35	65	Nil	

NOTE : For BITUMEN [Clause No. 2.2 (b)] and for STEEL [Clause No. 2.2 (c)] are to be referred in place of Table - 1.

For all other works not listed above, the component of labour, material and POL of the total cost of work shall be as specifically indicated in the tender document.

Continuation of Clause No. 2.4:

The Bank Guarantee is acceptable against deposit for 'Abnormally Low Rated (ALR)' Items, subject to following conditions:-

- i) If the deposit against 'ALR' items is provided by the successful bidders in the form of BG, it shall be issued either –at Bidder's option by a nationalized/Scheduled Indian Bank or by a foreign bank located in India and acceptable to the employer, subject to the condition that Bank Guarantees issued by outstation Banks shall be operative at their local Branch Singrauli of M.P, India
- (ii) The validity of the Bank Guarantee shall be for a period of one year or ninety days beyond the period of contract, whichever is more.
- (iii) No extension of Bank Guarantee for a period of less than 3(Three) months shall be accepted.
- (iv) The format of BG shall be same as that of the format of Performance Security Deposit.
- (v) The deposit against „ALR“ items, if provided by the bidder in the form of BG, should be refunded within 14 days of defect liability certificate (taking over certificate with a list of defects).

Bank guarantee for any purpose shall be accepted for amount Rs.1.00 lakhs and above only. Amount less than Rs.1.00 lakhs shall be deposited in other modes as mentioned in the NIT.

Continuation of Clause No. 8.4 :

Testing of Materials for Civil Engg. Works :

1. Testing of different building materials is to be done as per the list of mandatory tests& frequency of v testing appended below.
2. Laboratory/field test of other materials should be done as per norms and as decidedby EIC.
3. The testing charges should be deposited to the concerned Engineering Schools /Colleges or Govt. Laboratories, directly through the department and this amount should be deducted from the Contractor' s R/A bills.

LIST OF MANDATORY TESTS & FREQUENCY OF TESTING

LIST OF MANDATORY TESTS & FREQUENCY OF TESTING

SN	Materials	Nature of Test	Frequency of testing	Remarks
1	Sand	Bulking of sand Silt content Particle size distribution	Every 20 cum or part thereof as decided by EIC. Every 20 cum or part thereof as decided by EIC. i. Every 40 cum of sand required in RCC work only ii. Every 80 cum of sand required for other items.	
2	Stone aggt.	Particle size distribution 10% fine value	For every 45 cum or part thereof as decided by EIC. Initial test for 45 cum and subsequent test as and when required by EIC	
3	Cement concrete or RCC(not leaner than 1:3:6)	Slump test Cube test/compressive strength (7 th day & 28 th day)	15 cum or part thereof or more frequently as decided by EIC. i. Every 20 cum of a day"s concreting in slab and beams & connected columns. ii. every 5 cum of a day"s concreting in columns.	For all other small items and where RCC done in a day is less than 5 cum, test may be carried out as required by EIC.
4	Water for construction	Chemical & physical properties	Before commencement of work and thereafter every 3 months till completion of work	If more than one source, Water from each source is to be tested.

SN	Materials	Nature of Test	Frequency of testing		Remarks
5	Bricks	Water absorption Efflorescence Compressive strength	Minimum 1 test for each lot.		
			Lot size	No. of bricks to be tested	
			2001-10000	5	
			10001-35000	10	
			35001-50000	15	
6	Steel	Tensile strength (ultimate/yield stress)	Every 20 tonne or part thereof as decided by EIC.		

		Bend test	Every 20 tonne or part thereof as decided by EIC.	
7	Terrazo tiles	Transverse strength	One test for every 10,000 nos. or part thereof for each type and size from a single manufacturer.(one test to be done even if the number of terrazzo tiles of any type and size from a single manufacturers is less than 50000 nos. provided the total number of terrazzo tiles of all types and sizes from all manufacturers used in a work exceed 5000 nos.)	
		Water absorption		
8	Cement	i) Initial and final setting time	One test per lot of each manufacturer.	
		ii) Comp. strength		
9	Flush door	End immersion test	Upto 50 - 1 sample	Minimum qnty. Of work for carrying out the test - 26 shutters
		Knife test	50 to 150 - 2 “	
		Glue adhesion test	151 to 300 - 3 ”	
			301 to 500 - 4 ”	
10	White glazed tiles(for floor and wall)	Water absorption		
		Impact strength test	3000 nos. or part thereof	

Laboratory/Field Test of other materials should be done as per norms and as decided by EIC.

CMPF / EPF CLAUSE

- (i) If the contractor deploys labourers for less than 30 days, he has to submit an affidavit to the effect that he has not engaged any contractual labourer beyond 30 days during execution of work in the said contract and the same has also to be certified by the authority issuing labour payment certificate as well as bill accepting authority prior to payment of final bill.
- (ii) If the case does not fall in (i) above, the contractor has to deposit amount in CMPF/EPF as per the provisions and necessary proof of payment of PF dues is to be submitted before the authority issuing labour payment certificate as well as bill accepting authority prior to the payment of final bill. The payment against the PF (Contractor's share only) is reimbursable to the contractor on submission of proof of payment.

SAFETY CODES

(Additional Safety measures to be taken by the Contractor)

(i) Suitable scaffold should be provided for workmen for all works that cannot safely be done from the ground or from solid construction except for such short period of work as can be done safely from ladders. When a ladder is used in carrying materials as well, suitable foot holds and hand holds shall be provided on the ladder. The ladder shall be given an inclination not steeper than used 1/4.

(ii) Scaffolding or staging more than 3.60 metres above the ground or floor, swung or suspended from & overhead support or erected with stationary support shall be having a guard rail properly attached, bolted, braced and otherwise secured atleast 0.90m above floor or platform of such scaffolding on staging 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 a swaying from the building or structure.

(iii) Working platform, gangways and stairways should be so constructed that they should not gap unduly or unequally and if the height of the platform or the gangway or the stairway is more than 3.60m above ground level or floor level, they should be closely board should have adequate width and should be suitable fenced as described in (i) above.

(iv) Every opening in the floor of building or in working platform be provided with suitable means to prevent the fall of persons, materials by providing suitable fencing or railing whose minimum height shall be 0.90m.

(v) Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be provided security fixed. No portable single ladder shall be over 9m. in length, while the width between side rails in rung ladder shall in case be less than 0.29m for ladder upto and including 3.0m in length. For longer ladder this width should be increased at least 1/4% for each additional foot of length uniform step spacing shall not be exceeding 0.30m. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sisters of work be stacked or placed as to cause danger or inconvenience to any person of the public. The contractor shall also provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defence of every suit. Action or other proceedings at all that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceeding to any such person or which may with the consent of the contractor, he has paid to compromise any claims by any such person.

(vi) All trenches 1.20m or more depth shall at all times be supplied with atleast one ladder for each 30m. in length or traction thereof. Ladder shall be extended from bottom of the trench to at least 0.08m above surface of the ground. The side of trenches which are 1.50m or more in depth shall be slopped back to give suitable sloped or securely held by timber branching, so as to avoid danger of side collapse. The excavated materials shall not be placed within 1.50m of the edge of trench or half of the trench whichever is more. Cutting shall be done from top to bottom, under no circumstances undermining or undercutting shall be done.

(vii) Before any demolition work is commenced and also during the progress of work.

(a) all roads & 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 or no cable or apparatus used by the operator shall remain electrically charged.

(c) all practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so over loaded with debris or materials as to render it unsafe,

(viii) All necessary personal safety equipment as considered adequate by the Engineer-in-charge should be kept available for use of the person employed on the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by those concerned.

(a) Workers employed on mixing asphaltic materials cement and lime mortars shall be provided with protective footwear and protective goggles.

(b) Those engaged in welding washing and mixing or stacking of cement bags or any material, which is injurious to the eye, shall be provided with protective goggles.

(c) Those engaged in welding work shall be provided with protective goggles etc.

(d) Stone breaker shall be provided with protective goggles and protective clothing & seated at sufficiently safe intervals.

(e) 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 an hour before the workers are allowed to get into the manholes and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.

(f) The contractor shall not employ men below the age of 18 years and woman on the work of painting with products containing lead in any form. Whenever man above the age of 18 years are employed for the work of lead painting the following precautions should be taken:

1. No paint contained lead or products should be used except in the form of paste of readymade paint.

2. Suitable face masks should be supplied for the use of workers when paint is applied in the form of spray or a surface having lead paint dry rubber and scrapped.

3. Oil shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during the process of work.

ix) When the work is done near any place where there is risk of (drowning, necessary equipments should be provided and kept ready for prompt rescue 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 risk.

x) Use of machines tackle including their attachments, anchors and supports shall conform to the following standard or conditions:

1]

a) Those shall be in mechanical good condition of sound material and adequate strength and free from patent defect and shall be kept in good required and in good working order.

b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality, adequate strength and free from defect.

2] Every crane driver or hoisting appliance operator shall be properly qualified and no person under an age of 21 years should be in charge of any hoisting machine including any scaffold which give signals to the operators.

3] In case of every hoisting machine and on every chain ring hook, shackle swivel and

pullyblock 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 plainly marked with the safe working load. In case of hoisting machine having a variable/safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

4] In case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-charge. As regards contractors machine, the contractor shall notify the safe working load of the machine to engineer-in-charge. Whenever he brings any machinery to site of the work he must get it verified by the Electrical Engineer concerned.

(xi) Gearing, Transmission, Electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguard. Hoisting appliances should be provided with such means as will reduce to minimum risk of accident independent of the load. Adequate precautions should be taken to reduce to the minimum risk of any part of suspended load becoming accidentally displaced.

When workers employed on electrical installations which are already energised insulating mats wearing apparel, such as Gloves, sleeves and boots as may be necessary should be provided, the workers should not wear any ring, watch & carry key or other materials which are good conductors of electricity.

(xii) All scaffolds ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder equipment shall be altered or removed while it is used. Adequate washing facilities shall be provided at or near places of work.

(xiii) These safety provisions shall be brought to notice to all concerned by display on a Notice Board at a prominent place at the worksite. The persons responsible for compliance of the safety codes shall be named therein by the contractor.

(xiv) To ensure effective enforcement of the rules regulations relating to safety precaution the arrangements made by the contractor shall be open to inspection by the labour Officer, Engineer-in-charge of the department or their representatives.

(xv) Notwithstanding to above clause from (i) to (xiv) there is nothing in these to exempt contractor from the operations of any Act or Rule in force in Republic of India.

SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

01.0 INTRODUCTION

Climate

The following are the climatic conditions prevailing at Bhubneswar.

- | | | |
|------|-------------------------------|---------|
| i. | Maximum ambient temperature : | 50.0°C. |
| ii. | Minimum ambient temperature : | 4.0°C. |
| iii. | Maximum relative Humidity : | 97% |

Both maximum temperature and maximum relative humidity may not occur.

This specification is a part of tender enquiry for supply of air conditioning systems and shall be read along with the other related documents of the general conditions of contract.

The Bidder shall strictly agree and adhere to all the terms and conditions mentioned in the technical specification and other related documents as a whole and any deviation from them shall be categorically stated in the tender along with relevant clause No.

02.00 SCOPE OF WORK

The scope of work of this specification covers design, engineering, manufacture, procurement, assembly, shop testing, shop inspection, shop painting, packing and supply of all equipment & accessories, transportation of all materials to site, transit insurance, unloading, storage, transportation from stores to site and handling at site, erection, testing, commissioning, final painting and power supply system from substation for air conditioning system and performance guarantee of all the equipment & accessories of air conditioning systems for the premises mentioned in this technical specification for office building at Singrauli.

The air conditioning system is consisting of VRF/VRV air conditioners with accessories.

The scope of work by the Bidder shall include but shall not be limited to the following:

- To select, design, engineering, manufacture and supply the complete air-conditioning systems and associated equipment specified under this technical specification.
- Electrical wiring from switch to cassette and any other wiring necessary for completion of work.
- To make arrangement to take off power from substation to air-conditioning system including supply and laying of cables, installation of panel and bus bar,

MCCBs and MCBs and any other works require for power supply to air conditioning system.

- Be liable and responsible for the completeness of the air conditioning system with ducting and air distribution system.
- Shall not be allowed to damaged false ceiling, if any and interior of the office building.
- Bidder are requested to visit the site and check the requirement.
- To supply at site all required materials in order to execute incidental works at site associated with air-conditioning systems specified under this technical specification.
- Providing first charge of consumables like oil, grease, refrigerant etc. as required. The quantity and specification of such consumables shall be indicated.
- Supply of commissioning spares as may be required during erection, start up and initial operation of all the units / systems till successful completion of commissioning. The price for the commissioning spares shall be deemed to be included in the contract price for the system.
- Preparation and submission of all necessary general arrangement drawings, design drawings, fabrication & erection drawings, as built drawings etc. Approval shall be taken on the system layout drawings and general arrangement drawings for equipment before manufacturing.
- Erection of all the equipment and accessories as per approved drawings and instructions of site engineer of purchaser / consultants.
- Minor civil work like making openings in wall / floor / roof for passage of duct / pipe and adjustment to civil foundations as required for erection and finishing and making good of the same after erection work.
- Any other item / nature of work which is specifically not appearing in the technical specification but directly or indirectly associated with the efficient working of the systems covered in the specifications.
 - Submission of operation, maintenance and service manuals.
- Inspection by purchaser / consultant at works and at site.
- Performance testing of various equipment associated with air-conditioning and ventilation systems at manufacturer's works and also performance testing of complete air-conditioning systems at site.
- All necessary skilled/ unskilled personnel, cranes, hoist, tools and tackles, instrument and accessories shall be arranged free of cost by the Bidder for assembly, erection, performance testing and commissioning of the systems.

Bidder must note that completeness of all systems for safe, smooth and trouble free operation is the sole responsibility of the Bidder i.e. the successful Bidder. With this objective in mind, the Bidder shall include all the items essential for the efficient operation of the systems and the other items which are required to complete the erection and foolproof commissioning of air-conditioning and ventilation systems in all respects. Whether the items are mentioned in the specifications or not, all such items are treated / considered to be included in the specifications.

The successful Bidder shall be solely responsible to provide all the above items at site without any extra cost implication.

Work by Purchaser

- Providing space for installation of air conditioning systems.
- Except for Providing space as mentioned above which are in the scope of the purchaser, rest of all works directly or indirectly associated with completion of air conditioning systems shall be within the scope of successful Bidder.

03.00 APPLICABLE CODES AND STANDARDS

The execution of the work covered under this specification shall conform to the latest Indian Standards or the reputed standards acceptable to the purchaser. In case such specification is not available, the work shall be done according to good engineering practice & norms acceptable to purchaser.

The following reputed / accepted publications, norms / guidelines, standards, acts & rules etc. shall be followed for execution of the works:-

- a) B.I.S Publications
- b) ASHRAE handbook
- c) ACGIH publication, USA
- d) ARI publication
- e) I.S.O Publications
- f) VDI stipulation for vibration level
- g) Occupational safety and health act (OSHA)

In the cases where norms/ standards/ guidelines other than those listed above are followed, the Bidder shall furnish a copy of such document in support for the purchaser's perusal and acceptance. Wherever a contradiction is found between different documents being followed, the decision of the purchaser will be final and binding.

04.00 DESIGN CRITERIA

04.01 General

The selection / design and manufacture of plant and equipment shall be suitable for the intended service and the atmospheric / environmental conditions prevailing at the plant site.

Design and selection of equipment shall be made with the following also in view of

- a) Safety of personnel
- b) Uninterrupted operation
- c) Long life of equipment
- d) Easy maintenance at low cost
- e) Spares shall be easily available

Every Endeavour shall be made to achieve standardisation and unification in designing components and sub assemblies.

All working parts shall be arranged / located for convenience of operation, inspection, lubrication, ease of repair, replacement and maintenance of parts and sub-assemblies with minimum downtime, without dismantling other equipment / components / structures.

Components shall be designed to meet the specified mechanical properties like hardness, strength, rigidity, wear resistance, heat resistance, resistance to vibration, etc.

Equipment shall be provided with lifting attachments (wherever applicable) like lugs, bolts etc. to facilitate handling and lifting during erection and maintenance.

The equipment shall be suitable to operate satisfactorily under variations of load, pressure and climatic conditions as may occur during working. The total working unit capacity i.e. 200 TR capacity shall have feature of part load operation through microprocessor.

All equipment shall be of acceptable modern design and free from all inherent defects.

All the rotating parts shall be statically and dynamically balanced.

The finish of the equipment and its components shall be of first class quality.

To the extent possible, models and sizes of equipment shall be identical to ensure minimum inventory and interchange ability of parts, equipment and systems.

While designing the layout of the equipment and system, the following points shall be covered / considered:

- Co-ordinates and location of the building.

- Equipment, piping and ducting layout with description.
- Maintenance access and neatness of layout.
- Interference
- Equipment handling and removal facility
- Floor drain, cable trenches and conduits.
- MCC, IPBS, DB etc. location.

While designing the equipment and systems, the following maintenance aspects shall be taken into consideration: -

- Sufficient space for maintenance in the layout.
- Access to the equipment.
- Inspection and maintenance doors for equipment.

Air conditioning systems shall be designed to operate continuously round the clock twenty four (24) hours a day for all seasons of the year

DETAILS SPECIFICATION OF THE SYSTEM OFFERED

VARIABLE REFRIGERANT FLOW (VRF) SYSTEM

1.0 System Description

The variable refrigerant flow (VRF) system should be air cooled, split type air conditioning system, consisting of singular condensing units connected to multiple indoor units each having the capability of individual set point control. The system should have the ability to connect each condensing unit to minimum 68 indoor units of different types and capacities on one refrigerant circuit. The system is to be of the cooling/heating type. Each Condensing unit should incorporate at least one inverter scroll compressor, to obtain enhanced power saving. The compressor installed in the outdoor units shall be equipped with at least one inverter scroll compressor up to 16 H.P, two inverter scroll compressor up to 32 HP, three inverter scroll compressor upto 48 HP and four inverter scroll upto 64 HP subject to a minimum of total capacity of inverter scroll compressor of 33% of total capacity. Vender to confirm above facility in their offered equipment.

The indoor units should be provided with Cordless Remote Control as a standard accessory.

The Indoor and outdoor units should be BMS Compatible and it should be possible to monitor upto 1024 indoor units from a single PC.

1.1 Indoor Units :

The indoor units shall be Ceiling and Floor Mounted/Cassette type/ wall mounted type as per the aesthetic requirements of the client. All indoor units should be provided with Cordless Remote Controllers for ease of operation.

1.1.1 Electronic Expansion Valve :

Each indoor unit should be fitted with an electronic expansion valve, which controls the refrigerant flow in response to the load variations in the room. The electronic expansion valve is to be controlled via a computerized control sensing the return air temperature, refrigerant inlet outlet temperatures. During the cooling operation the electronic expansion valve controls the refrigerant superheat degree of the evaporator.

1.1.2 Refrigerant :

The Entire Condensing unit and Evaporating unit should be Factory assembled and tested. The units should come with an initial charge of refrigerant R 410a from the factory. Any additional refrigerant is to be added at site.

1.1.3 Refrigerant Piping Distance Limits :

To be capable of refrigerant piping runs upto 150m between the condensing unit and fan coil units with 50m level difference without any oil traps or double risers. The Oil Equalizing line should be inside the Condensing unit to avoid 'inverted' oil traps at site. The level difference between fan coil units connected to the same refrigerant circuit can be extended to 15m.

1.1.4 Refrigerant Pipe work :

The scope of Refrigerant Piping work shall include supply, installation, testing and commissioning all interconnecting pipe work between the condensing unit and the fan coils units. Use refrigerant quality seamless copper tube with brazed connections and the appropriate Distributing joints and headers. The piping should be routed at site in such a manner, that brazed joints in the Ref. Piping are kept to a minimum. During brazing, dry nitrogen through the pipe work shall be passed. The gas used for the brazing process must necessarily be dry nitrogen (oxygen, carbon dioxide and fluoron gases are not acceptable).

1.1.5 Joint Orientation :

Install the proprietary Distribution refrigeration pipe joints and headers in an appropriate orientation to enable correct distribution of refrigerant. The Distribution joints should be factory insulated with pre-formed sections of Expanded Polystyrene/Equivalent.

1.1.6 Cleanliness of piping :

All pipe work must be kept clean and free from contamination to prevent breakdown of the system. The end seal of pipes shall only be removed just prior to making a joint.

1.1.7 Pressure Testing :

Immediately after installation of pipe work and prior to sealing of insulation joints and start up of equipment, vacuum dehydrate the pipe work, pressure test to 3,800 kpa; hold for a minimum of 24 hours, check for leaks and repair if necessary. Following this, vacuum dehydrate the pipe work to (-75mm Hg) and hold for one or four hours depending on the pipe length.

1.1.8 Additional charge :

Additional refrigerant charge weight must be calculated based on the actual length of the refrigerant pipe work. The refrigerant charging process must be carried out with an appropriate charging station and under supervision.

1.1.9 Piping insulation :

Insulate all suction lines in the refrigerant pipe work with Nitrile Rubber elastomeric pipe insulation having a wall thickness of not less than 19mm. Insulation must be protected when exposed to the atmosphere by special paint or covering. Glue all insulation (after pressure and leak testing) to provide a complete seal to prevent any condensation.

Where indoor refrigerant pipe work is located in roof spaces or spaces that may exceed 30°C and 80% RH the thickness of pipe insulation shall be 20mm or more.

1.1.10 Fixing Pipe work :

Fix and support pipe work at a minimum of 2 metre centres suitable saddling arrangement. Cover the exposed Refrigerant pipes on the terrace with openable GI cable trays.

1.1.11 Indoor Unit Fans :

Direct driven of the DIDW (Double Inlet Double Width) multi-blade type, statically and dynamically balanced to ensure low noise and vibration free operation.

1.1.12 Coils :

To be direct expansion, constructed from copper tubes expanded into aluminium fins to form a mechanical bond.

1.1.13 Supply Air Discharge Louvers :

The indoor units should be provided with auto swing of the supply air louvers for cassette and under ceiling type fan coil units. The louvers should be capable of providing continuous swing operation or to be fixed in any direction required.

1.1.14 Unit Control Board :

Included in the fan coil unit a printed circuit board compete with address switches for a variety of operation controls, emergency operation switch and fault/operation indication LED's. The fan motors shall be thermally protected.

1.1.15 Unit Casing :

The fan coil unit casing (ceiling mounted units) to be fully insulated and sealed to prevent condensation.

1.1.16 Condensate Drain :

The Drain connection of each Fan coil unit to the main Header should be of 25mm dia. The Header pipe should be of 40mm dia. The drain pipe should be of Hard PVC, whereas the connection of the Fan coil unit to the hard PVC Pipe should be flexible braided pipe. The Drain piping should be insulated with 9mm thick tubular Nitrile Rubber Elastomeric insulation.

1.1.17 Unit Control :

In case of individual and group control, set the addresses of each fan coil unit to minimize commissioning time. In case of centralized control, set the addresses by the remote Controller.

1.1.18 Condensing Units :

All necessary electronic and refrigerant controls to be fully weatherproofed, factory assembled and pre-wired. Casing shall be constructed from mild steel panels coated with a baked enamel finish. Provide the condenser coil fins with a corrosion resistant finish.

1.1.19 Larger Condensing Units:

Larger Condensing units of suitable rating as per requirement can be incorporated. However atleast one compressor in each module shall be inverter scroll.

1.1.20 Modular design :

Allow for side-by-side installation, by the modular design of the condensing units. The outdoor units size upto 16 HP shall have one module, upto 32 HP shall have minimum 2 modules, upto 48 HP shall have minimum 3 modules and upto 64 HP 4 nos. of modules should be used for flexibility and user friendly operation. However atleast one compressor in each module shall be inverter scroll compressor.

1.1.21 Fan Motor Speed Control :

The condensing unit fan motors to have at least two speed operation to maintain constant head pressure control in all ambient temperatures and modes of operation.

1.1.22 Compressors :

Provide highly efficient hermetic scroll type compressors. Provide the DC inverter scroll compressor with electronic controls, capable of loading and unloading to follow the variations on cooling and/or heating loads. The microprocessor panel should incorporate control for precise monitoring of status of the system.

1.1.23 Heat Exchanger :

Construct the heat exchanger from seamless copper tubes mechanically bonded to aluminium fins to form a cross fin coil. Treat the aluminium fins with an anti-corrosion film.

1.1.24 Refrigerant Circuit :

Complete the refrigeration circuit of the condensing unit with refrigeration compressors, motors, fans, condenser coils, electronic expansion valve solenoid valves, 4 way valve, distribution headers, capillaries, filters, shut down valves, sieve ports, receivers and accumulators and all other components which are essential for safe and satisfactory operation.

1.1.25 Safety Devices :

Provide the following safety devices as a part of the outdoor unit:

High –pressure switch, fuses, crank case heater fusible plug, over current protector.

1.1.26 Selection switches :

Fit the condensing unit printed circuit board (PCB) with selection switches for the length of pipe work, emergency operation switches and service mode switches together with LED indications for operation/fault indication.

1.1.27 Control :

Use computerized control to maintain a correct form of temperature. For the fan coil units incorporate on/off switch, fan speed selector, thermostat setting and liquid crystal display which indicates temperature setting; operational mode, malfunction codes etc.

1.1.28 Fan coil control :

Accomplish by the use of individual controllers for each fan coil unit.

1.1.29 Fault Diagnosis :

Equip the system with a diagnostic function for quick and easy maintenance and service.

1.2 APPROVED VENDORS

Original equipment manufacturers (OEM) of Central AC Plant or their authorized dealer having VRF/VRV technology should submit their offer against this tender.

TECHNICAL SPECIFICATIONS

2.1 GENERAL INFORMATION

- 2.1.1 The supply and installation of equipments specified herein are required for both indoor and outdoor.
- 2.1.2 The successful tenderer shall furnish all, but not limited to, equipment, materials and accessories and services specified herein to complete this work. The work shall have to be completed and operative in all details.
- 2.1.3 The successful tenderer shall supply and/or erect the addition or modification as will be agreed upon in writing after mutual discussion.
- 2.1.4 The equipment to be furnished under this specification shall be packaged for shipment so as to meet the space and weight limitations to transport facilities, right up to destination.

2.1.5 STANDARDS

- 2.1.5.1 All workmanship, materials and work items shall conform to relevant Indian Standards. In case of items not covered by Indian Standards, other relevant Indian Standards shall be followed. In case of items not covered either by Indian Standards or other relevant Standards, the CPWD practices shall be followed.
- 2.1.5.2 The equipment covered under these specifications shall comply with all the latest applicable statutory rules, regulations, acts and safety codes which may be in force during the period of execution and which are related with design, construction and operation of equipment in the locality where the equipment is to be installed.
- 2.1.5.3 The electrical installation shall meet the requirement of Indian Electricity Act 1910 and Indian Electricity Rules, 1956 as amended up-to-date and also the applicable section of the latest revision of the relevant IS code of practice.
- 2.1.5.4 All works shall be carried out as per design / drawing supplied by the company and / or as per the direction of the Engineer-In-Charge.
- 2.1.5.5 In addition, any relevant regulations applicable to the work shall be followed. In case of any discrepancy, the decision of purchaser will be final.
- 2.1.5.6 Relivent BIS or other international code in case BIS code is not available.

2.1.6 SERVICE CONDITIONS

Ambient air temperature :	40C to 500C.
Altitude :	Maximum upto 1000 M above MSL.
Relative Humidity :	Approximately 97 %.
Pollution degree :	

2.1.7 INSPECTION

The bidder/manufacturer shall carry out a comprehensive inspection and testing program during manufacture for all bought out items and also workmanship during this stage. The bidder/manufacturer shall submit the inspection program at least four weeks prior to the purchaser.

The bidder/manufacturer shall carry out all standard routine tests in accordance with relevant IS. The bidder/manufacturer shall also carry out type tests in accordance with relevant IS on one piece of one rating. While the routine tests shall be carried out at manufacturer's works under prior information to purchaser, the type test certificates from reputed test houses shall be submitted for purchaser's approval giving details of each test and evaluation of test data.

Tests which are common to both type and routine tests may be covered under routine test in the presence of purchaser's representative, if required.

2.1.8 TEST CERTIFICATE

The equipment covered under these specifications shall be Type tested in accordance with relevant codes. The bidder shall supply at the time of execution the routine test certificates from the manufacturer indicating the type of tests conducted and the test results in accordance with relevant codes.

2.1.9 OPERATING CONDITIONS

Nominal system Voltage	415 V (+ 10%)	6.6 kV (+ 10%)
Supply Frequency	50 Hz (+3%)	50 Hz (+3%)
Highest Fault Level	31 MVA	150 MVA
System earthing	Effectively earthed	Effectively earthed

2.1.10 NAME PLATE

The name plates of the circuit breaker and its operating device shall have suitable marking as under (which is applicable) :

Manufacturer

Type designation and serial number

Rated voltage

Rated frequency

Rated normal current

Short circuit withstand capacity

Rated short circuit breaking current

Rated supply voltage of closing and opening devices

Rated supply frequency of closing and opening devices

Operating duty

Supply voltage of auxiliary circuits

Supply frequency of auxiliary circuits

Weights

Rated operating sequence

Year of manufacture

2.2 PAINTING

The sheet steel work shall be pre treated, in tanks, in accordance with relevant code. Finishing paint on panels shall be shade in accordance with relevant code. The inner surface of the panels shall be glossy white. The finishing paint thickness shall not be less than 50 microns. All hardware shall be nickel chromium plated or zinc passivated.

2.3 GASKETS

The gaskets wherever specified shall be of good quality synthetic rubber with good ageing, compression and oil resistant characteristic suitable for panel application.

GENERAL TECHNICAL CONDITIONS OF CONTRACT

1.0 GENERAL

This part covers technical conditions pursuant to the contract and will form an integral part of the contract. The following provisions shall supplement all the detailed technical specifications and requirements brought out in the accompanying technical specifications. The Bidder's proposal shall be based on the use of equipment and materials complying fully with the requirements, specified herein. It is recognized that the Bidder may have standardized on the use of certain components, materials, processes or procedures different than those specified herein.

2.0 LIMIT OF CONTRACT

Equipment furnished shall be complete in every respect with all mountings, fittings, fixtures and standard accessories normally provided with such equipment and / or needed for installation, completion and safe operation of the equipment as required by applicable codes though they may not have been specifically detailed in the technical specifications unless included in the list of exclusions. All similar standard components / parts of similar standard equipment provided, shall be inter-changeable with one another.

3.0 EQUIPMENT PERFORMANCE GUARANTEE

- 3.1** The performance tests of the equipment under the scope of the contract are detailed in the technical specifications. These guarantees shall supplement the general performance guarantee provisions covered under general terms & conditions of contract in clause entitled "Guarantee".
- 3.2** Liquidated damages for not meeting performance guarantee during the performance and guarantee tests shall be assessed and recovered from the Bidder, as detailed in the technical specifications. Such liquidated damages shall be without any limitation whatsoever and shall be in addition to damages, if any, payable under any other clauses of conditions of contract.

4.0 ENGINEERING DATA

- 4.1** The furnishing of engineering data by the Bidder shall be in accordance with the schedule for each set of equipment as specified in the technical specifications. The review of these data by the engineer will cover only general conformance of the data to the specifications and documents, interfaces with the equipment provided under the specifications, external connections and of the dimensions which might affect plant layout. This review by the engineer may not indicate a thorough review of all dimensions, quantities and details of the equipment, materials, any devices or items indicated or the accuracy of the information submitted. This review and/or approval by the engineer shall not be construed by the Bidder, as limiting any of his responsibilities and liabilities for mistakes and deviations from the requirements, specified under these specifications and documents.
- 4.2** All engineering data submitted by the Bidder after final process including review and approval by the engineer shall form part of the contract documents and the

entire works covered under these specifications shall be performed in strict conformity, unless otherwise expressly requested by the engineer in writing.

5.0 DRAWING (Applicable for L-1 Bidder only)

- 5.1** All drawings submitted by the Bidder including those submitted at the time of bid shall be sufficiently detailed to indicate the type, size, arrangement, weight of each component, break-up for packing and shipment, the external connections, fixing arrangements required, the dimensions required for installation and inter-connections with other equipment and materials, clearances and spaces required between various portions of equipment and any other information specifically requested in the specifications.
- 5.2** Each drawing submitted by the Bidder shall be clearly marked with the name of the owner, the unit designation, the specifications title, the specification number and the name of the project. If standard catalogue pages are submitted the applicable items shall be indicated therein. All titles, noting, markings and writings on the drawing shall be in English. All the dimensions should be in metric units.
- 5.3** The Bidder shall make his drawings in Auto CAD format and shall supply the drawings in CDs along with hard copies.
 - 5.3.1** Copies of drawings returned to the Bidder will be in the form of a print with the owner's marking or print made from CDs for computer based drawings.
- 5.4** The drawings submitted by the Bidder shall be reviewed by the engineer as far as practicable within four (4) weeks and shall be modified by the Bidder if any modifications and/or corrections and submit the final drawings for approval. Any delay arising out of failure by the Bidder to rectify the drawings in good time shall not alter the contract completion date.
- 5.5** Approval by the Nodal Officer or his nominee : the Bidder shall submit specifications and drawings showing the proposed Temporary Works to the Nodal Officer/Engineer-in-Charge or his Nominee, who is to approve them if they comply with the specifications and drawings. The Bidder shall be responsible for design of Temporary Works.

The Nodal Officer/Engineer-in-Charge or nominee's approval shall not alter the Bidder's responsibility for design of the Temporary Works.
- 5.6** The drawings sent for approval to the engineer shall be in quintuplicate. One print of such drawings will be returned to the Bidder by the engineer marked approved/approved with corrections. The Bidder shall thereupon furnish the owner with nine prints and one reproducible original of the drawings after incorporating all corrections.
- 5.7** Further work by the Bidder shall be in strict accordance with these drawings and no deviation shall be permitted without the written approval of the engineer, if so required.
- 5.8** All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawings shall be at the Bidder's risk. The Bidder may

make any changes in the design which are necessary to make the equipment conform to the provisions and intent of the contract and such changes will again be subject to approval by the engineer. Approval of Bidder's drawings or work by the engineer shall not relieve the Bidder of any of his responsibilities and liabilities under the contract.

- 5.9** Drawings shall include all installation and detailed piping drawings wherever applicable. All piping 100 mm and larger shall be routed in detail and smaller pipe shall be shown schematically or by isometric drawings. All drawings shall be fully corrected to agree with actual as built construction.

5.10 Diagrams & Manual :

Owner's Manual, Wiring / Schematic wiring diagrams etc. shall be supplied by the Bidder.

6.0 FIRST FILL OF CONSUMABLE, OILS AND LUBRICANTS

All the first fill of consumable such as oils, lubricants and essential chemicals etc., which will be required to put the equipment covered under the scope of the specifications, into successful trial operation, shall be furnished by the Bidder unless specifically excluded under the exclusions in the specifications and other document.

7.0 REFERENCE STANDARDS

7.1 The codes and/or standards referred to in these specifications shall govern, in all cases wherever such references are made. In case of a conflict between such codes and/or standards and the specifications, the latter shall govern. Such codes and/or standards referred to shall mean the latest revisions, amendments/changes adopted and published by the relevant agencies. In case of any further conflict in this matter, the same shall be referred to the engineer whose decision shall be final and binding.

7.2 Other internationally acceptable standards which ensure equal or higher performance than those specified shall also be accepted.

8.0 ENGINEER'S SUPERVISION

8.1 To eliminate delays and avoid disputes and litigation it is agreed between the parties to the contract that all matters and questions shall be referred to the engineer and his decision shall be final.

8.2 The work shall be performed under the direction and supervision of the engineer. The scope of the duties of the engineer, pursuant to the contract, will include but not be limited to the following :

- a. interpretation of all the terms and conditions of these documents and specification.
- b. review and interpretation of all the Bidder's drawings, engineering data etc.
- c. witness or authorize his representative to witness tests and trials either at the manufacturer's works or at site, or at any place where work is performed under the contract.
- d. inspect, accept or reject any equipment, material and work under the contract.
- e. issue certificate of acceptance and/or progressive payment and final payment certificates.
- f. review and suggest modifications and improvements in completion schedules from time to time.
- g. to receive and endorse the dispatch documents enabling the Bidder to clear the consignments.

9.0 INSPECTION, NON DESTRUCTIVE TESTING AND INSPECTION CERTIFICATE

- 9.1 The engineer, his duly authorized representative and/or outside inspection agency acting on behalf of the owner shall have at all reasonable times access to the Bidder's premises or works and shall have the power at all reasonable times to inspect and examine the materials and workmanship of the works during its manufacture or installation and if part of the works is being manufactured or assembled at other premises or works, the Bidder shall obtain for the engineer and for his duly authorized representatives permission to inspect as if the works were manufactured or assembled on the Bidder's own premises or works.
- 9.2 The Bidder shall give the Engineer/Inspector fifteen (15) days written notice of any material being ready for testing. Such tests shall be to the Bidder's account except for the expenses of the Inspector. The Engineer/Inspector, unless witnessing of the tests is virtually waived, will attend such tests within fifteen (15) days of the date on which the equipment is notified as being ready for test/inspection, failing which the Bidder may proceed with the test which shall be deemed to have been made in the Inspector's presence and he shall forthwith forward to the Inspector duly certified copies of tests in triplicate.
- 9.3 The Engineer or Inspector shall within fifteen (15) days from the date of inspection as defined herein give notice in writing to the Bidder, of any objection to any drawings and all or any equipment and workmanship which in his opinion is not in accordance with the contract. The Bidder shall give due consideration to such objections and shall either make the modifications that may be necessary to meet the said objections or shall confirm in writing to the Engineer/Inspector giving reasons therein, that no modifications are necessary to comply with the contract.

- 9.4 When the factory tests have been completed at the Bidder's or sub-Bidder's works, the Engineer/Inspector shall issue a certificate to this effect within fifteen (15) days after completion of tests but if the tests are not witnessed by the Engineer/Inspector, the certificate shall be issued within fifteen (15) days of the receipt of the Bidder's test certificate by the Engineer/Inspector. Failure of the Engineer/Inspector to issue such a certificate shall not prevent the Bidder from proceeding with the works. The completion of these tests or the issue of the certificate shall not bind the owner to accept the equipment should it on further tests after installation, be found not to comply with the contract.
- 9.5 In all cases where the contract provides for tests whether at the premises or works of the Bidder or of any sub-Bidder, the Bidder, except where otherwise specified, shall provide free of charge such items as labour, materials, electricity, fuel, water stores, apparatus and instruments as may be reasonably demanded by the Engineer/Inspector or his authorized representative to carry out effectively such tests of the equipment in accordance with the contract and shall give facilities to the Engineer/Inspector or to his authorized representative to carry out effectively such tests of the equipment in accordance with the contract and shall be given facilities to the Engineer/Inspector or to his authorized representative to accomplish testing.
- 9.6 The inspection by Engineer and issue of Inspection Certificate thereon shall in no way limit the liabilities and responsibilities of the Bidder in respect of the agreed quality assurance programme forming a part of the contract.

10.0 TEST

10.1 Start up

- 10.1.1 On completion of installation of the equipment and before start-up, each item of the equipment shall be thoroughly cleaned and then inspected jointly by the Engineer and the Bidder for correctness and completeness of installation and acceptability of start-up, leading to initial pre-commissioning tests at site. The list of pre-commissioning tests to be performed shall be as mutually agreed and included in the Bidder's quality assurance programme.
- 10.1.2 The Bidder's commissioning/start-up engineers specifically identified as far as possible shall be responsible for carrying out all the pre-commissioning tests. On completion of inspection, checking and after the pre-commissioning tests are satisfactorily over, the complete equipment shall be placed on initial operation during which period the complete equipment shall be operated integral with sub-systems and supporting equipment as a complete AC plant referred hereinafter as AC plant.

10.2 Trial Operation

- 10.2.1 The AC shall then be on trial operation during which period all necessary adjustments shall be made while operating over the full-range enabling the AC to be made ready for performance and guarantee tests.
- 10.2.2 The duration of trial operation of the complete equipment shall be seven (07) days out of which at least twelve (12) hours shall be continuous operation

on full load or any other duration as may be agreed to between the engineer and the Bidder. The trial operation shall be considered successful, provided that each item of the equipment can operate continuously at the specified operating characteristics, for the period of trial operation. Party has to show temperature at 23 ± 10 C inside office building uniformly. Interruptions occurred, adjustments made and any minor repairs done during the trial operation. Based on the observations, necessary modifications/repairs to the lift shall be carried out by the Bidder to the full satisfaction of the engineer to enable the later to accord permission to carry out performance and guarantee tests on the AC. However, minor defects which do not endanger the safe operation of the equipment, shall not be considered as reasons for withholding the aforesaid permission.

10.3 Performance and guarantee test

- 10.3.1 The final test as to the performance and guarantees shall be conducted at site, by the owner. Such tests will be commenced within a period of 07 (seven) after successful completion of trial operations. Any extension of time beyond the above 15 (fifteen) days shall be mutually agreed upon. Party has to show temperature at 23 ± 10 C inside office building uniformly.
- 10.3.2 These tests shall be binding on both the parties of the contract to determine compliance of the equipment with the performance guarantees.
- 10.3.3 The available instrumentation and control equipment will be used during such tests and the engineer will calibrate all such measuring equipment and devices as far as practicable. However, immeasurable parameters shall be taken into account in a reasonable manner by the engineer for the equipment of these tests. The tests will be conducted at the specified load points and as near the specified cycle condition as practicable. The engineer will apply proper corrections in calculation to take into account conditions which do not correspond to the specified conditions.
- 10.3.4 Any special equipment, tools and tackles required for the successful completion of the performance and guarantee tests shall be provided by the Bidder free of cost.
- 10.3.5 The guaranteed performance figures of the equipment shall be proved by the Bidder during these performance and guarantee tests. Should the results of these tests show any decrease from the guaranteed values, the Bidder shall modify the equipment as required to enable it to meet the guarantees. In such case, performance and guarantee tests shall be repeated within one month from the date the equipments ready for re-tests and all cost for modifications including labour, materials and the cost of additional testing to prove that the equipment meets the guarantees shall be borne by the Bidder. Liquidated Damage to be charged as stipulated under Clause 14.1 of General Terms and Conditions.
- 10.3.6 The specific tests to be conducted on equipment are to be done as per relevant Indian Standards and Indian Electricity Rules mentioned in Technical Part.

- 10.3.7 Performance and guarantee test shall make allowance for instrumentation errors as may be decided by the engineer-in-charge.

10.4 TEST CODES

The provisions outlined in the performance tests codes or other international and Indian approved equivalents shall generally be used as a guide for all the above test procedures unless otherwise specified in the technical specifications.

11.0 PACKING

All the equipment shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at site till the time of installation. While packing all the materials, the limitation from the point of view of availability of railway wagons sizes in India should be taken into account. The Bidder shall be responsible for any loss or damage during transportation, handling and storage due to improper packing.

12.0 PROTECTION

All coated surfaces shall be protected against abrasions, impact, discoloration and any other damages. All exposed threaded portions shall be suitably protected with either a metallic or a non-metallic protecting device. All ends of all valves and piping and conduit equipment connections shall be properly sealed with suitable devices to protect them from damage. The parts which are likely to get rusted, due to exposure to weather, should also be properly treated and protected in a suitable manner.

13.0 PRESERVATIVE SHOP COATING

- 13.1 All exposed metallic surfaces subject to corrosion shall be protected by shop application of suitable coatings. All surfaces which will not be easily accessible after the shop assembly, shall before hand be treated and protected for the life of the equipment. All surfaces shall be thoroughly cleaned of all mill scale, oxide and other coatings and prepared in the shop. The surfaces that are to be finish painted after installation or require corrosion protection until installation, shall be shop painted with at least two coats or primer. Transformers and other electrical equipment, if included shall be shop finished with one or more coats of primer and two coats of high grade resistance enamel. The finished colours shall be as per manufacturer's standards, to be selected and specified by the engineering at a later date.
- 13.2 Shop primer for all steel surfaces which will be exposed to operating temperature below 950C shall be selected by the Bidder, after obtaining specific approval of the engineer regarding the quality of primer proposed to be applied. Special high temperature primer shall be used on surfaces exposed to temperatures higher than 950C and such primers shall also be subject to the approval of the engineer.

- 13.3 All other steel surfaces which are not to be painted shall be coated with suitable dust preventive compound subject to the approval of the engineer.

14.0 PROTECTIVE GUARDS

Suitable guards shall be provided for protection of personnel on all exposed rotating and/or moving machine parts. All such guards with necessary spares and accessories shall be designed for easy installation and removal for maintenance purposes.

15.0 DESIGN CO-ORDINATION

The Bidder shall be responsible for the selection and design of appropriate equipment to provide the best coordinated performance of the entire system. The basic design requirements are detailed out in Technical Specifications. The design of various components, sub-assemblies and assemblies shall be so done, so that it facilitates easy field assembly and maintenance. All the rotating components shall be so selected that the natural frequency of the complete unit is not critical at or close to the operating range of the unit.

16.0 DESIGN CO-ORDINATION MEETING

The Bidder will be called upon to attend design co-ordination meetings with the engineer, other Bidders and the consultants of the owner during the period of contract. The Bidder shall attend such meetings at his own cost at Ranchi or at mutually agreed venue as and when required and fully co-operate with such persons and agencies involved during those discussions.

17.0 TAKING OVER

Upon successful completion of all the tests to be performed at site on equipment furnished and installed by the Bidder, the engineer shall issue to the Bidder a taking over certificate as a proof of the final acceptance of the equipment. Such certificate shall not unreasonably be withheld nor will the engineer delay the issuance thereof, on account of minor omissions or defects which do not affect the commercial operation and/or cause any serious risk to the equipment. Such certificate shall not relieve the Bidder of any of his obligations which otherwise survive, by the terms and conditions of the contract after issuance of such certificate.

18.0 INDIAN STANDARDS

Normally Indian Standards as published by BUREAU OF INDIAN STANDARDS shall be followed. Wherever relevant Indian Standard is not published by the BIS, International Standards or American Standard or German Standard or British Standard, as decided by the Engineer in consultations with the Consultants employed by the Owner, shall be followed.

19.0 LUBRICATION

Equipment shall be lubricated by systems designed for continuous operation. Lubricant level indicators shall be furnished and marked to indicate proper levels under both stand-still and operating conditions.

INSTALLATION CONDITIONS OF CONTRACT

1.0 GENERAL

- 1.1 The following shall supplement the conditions already contained in the other parts of these specifications and documents and shall govern that portion of the work of this contract to be performed at site.
- 1.2 The Bidder upon signing of the contract shall, in addition to a project coordinator, nominate another responsible officer as his representative at site suitably designated for the purpose of over responsibility and co-ordination of the works to be performed at site. Such person shall function from the site office of the Bidder during the pendency of contract.

2.0 REGULATION OF LOCAL AUTHORITIES AND STATUTES

- 2.1 The Bidder shall comply with all the rules and regulations of local authorities during the performance of his field activities. He shall also comply with the minimum wages act, 1948 and the payment of wages act (both of the Government of India and the local State Government) and the rules made there under in respect of any employee or workman employed or engaged by him or his sub-Bidder. The Bidder shall make all necessary payments of the Provident Fund for the workman employed by him for the work as per the laws prevailing under provisions of CMPF and Allied Schemes and CMPF and Miscellaneous Provisions Act 1948 or Employees Provident Fund (EPF) and Miscellaneous Provisions Act 1952 as the case may be.
- 2.2 All registration and statutory inspection fees, if any, in respect of his work pursuant to his contract shall be to the account of the Bidder. However, any registration, statutory inspection fees lawfully payable under the provisions of the rules and regulations of the Government and any other statutory laws and its amendments from time to time during installation in respect of the AC plant ultimately to be owned by the owner, shall be to the account of the owner. Should any such inspection or registration need to be arranged due to the fault of the Bidder or his sub-Bidder, the additional fees for such inspection and/or registration shall be borne by the Bidder.

3.0 OWNER'S LIEN ON EQUIPMENT

The owner shall have lien on all equipment including those of the Bidder brought to the site for the purpose of installation, testing and commissioning of the AC Plant. The owner shall continue to hold the lien on all such equipment throughout the period of contract. No material brought to the site shall be removed from the site by the Bidder and/or his sub-Bidders without the prior written approval of the engineer.

4.0 INSPECTION, TESTING AND INSPECTION CERTIFICATES

The provisions of the clause entitled inspection testing and inspection certificates under section GTC shall also be applicable to the installation portion of the works. The engineer shall have the right to re-inspect any equipment though previously inspected and approved by him, at the Bidder's works, before and after the same are constructed and/or installed at site. If by the above inspection, the engineer rejects any work or equipment, the Bidder shall make good for such rejection either by replacement or modifications/repairs as may be necessary to the satisfaction of the engineer. Such replacement will also include the replacement or re-execution of such of those works of other Bidders and/or agencies, which might have got damaged or affected by the replacements or re-work done to the Bidder's work.

5.0 ACCESS TO SITE AND WORKS ON SITE

- 5.1 Suitable access to and possession of the site shall be accorded to the Bidder by the owner in reasonable time.
- 5.2 The works so far as it is carried out on the owner's premises, shall be carried out at such time as the owner may approve and the owner shall give the Bidder reasonable facilities for carrying out the works.
- 5.3 In the execution of the works, no persons other than the Bidder or his duly appointed representative, sub-Bidder and workmen, shall be allowed to do work on the site, except by the special permission, in writing of the engineer or his representative.

6.0 CO-OPERATION WITH OTHER BIDDERS

- 6.1 The Bidder shall co-operate with all other Bidders or tradesmen of the owner, who may be performing other works on behalf of the owner and the workmen who may be employed by the owner and doing work in the vicinity of the works under the contract. The Bidder shall also so arrange to perform his work as to minimise, to the maximum extent possible, interference with the work of other Bidders and his workmen. Any injury or damage that may be sustained in the employees of the other Bidders and the owner, due to the Bidder's work shall promptly be made good at his own expense. The engineer shall determine the resolution of any difference or conflict that may arise between the Bidder and other Bidders or between the Bidder and the workmen of the owner in regard to their work. If the works of the Bidder is delayed because of any acts or omissions of another Bidder, the Bidder shall have no claim against the owner on that account other than an extension of time for completing his works.
- 6.2 The engineer shall be notified promptly by the Bidder of any defects in the other Bidder's works that could affect the Bidder's works. The engineer shall determine the corrective measures if any required to rectify this situation after inspection of the works and such decisions by the engineer shall be binding on the Bidder.

7.0 DISCIPLINE OF WORKMEN

The Bidder shall adhere to the disciplinary procedure set by the engineer in respect of his employees and workmen at site. The engineer shall be at liberty to object to the presence of any representative or employees of the Bidder at the site, if in the opinion of the engineer such employee has mis-conducted himself or be incompetent or negligent or otherwise undesirable and then the Bidder shall remove such a person objected to and provide in his place a competent replacement.

8.0 BIDDER'S FIELD OPERATION

- 8.1 The Bidder shall keep the engineer informed in advance regarding his field activity plans and schedules for carrying out each part of the works. Any view of such plan or schedule or method of work by the engineer shall not relieve the Bidder of any of his responsibilities towards the field activities. Such reviews shall also not be considered as an assumption of any risk or liability by the engineer or the owner or any of his representatives and no claim of the Bidder will be entertained because of the failure or inefficiency of any such plan or schedule or method of work reviewed. The Bidder shall be solely responsible for the safety, adequacy and efficiency of lift and equipment and his installation methods.
- 8.2 The Bidder shall have complete responsibility for the conditions of the work site including the safety of all persons employed by him or his sub-Bidder and all the properties under his custody during the performance of the work. This requirement shall apply continuously till the completion of the contract and shall not be limited to normal working hours. The construction review by the engineer is not intended to include review of Bidder's safety measures in, on or near the work-site, and their adequacy or otherwise.

9.0 PROTECTION WORK

The Bidder shall have total responsibility for protecting his works till it is finally taken over by the engineer. No claim will be entertained by the owner or the engineer for any damage or loss to the Bidder's works and the Bidder shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the Bidder's works occur because of other party not under his supervision or control, the Bidder shall make his claim directly with the party concerned.

If dis-agreement or conflict or dispute develops between the Bidder and the other party or parties concerned regarding the responsibility for damage to the Bidder's works the same shall be resolved as per the provisions of the clause 6.0 above entitled cooperation with other Bidders. The Bidder shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such disputes. The Bidder shall proceed to repair the work immediately and the cause thereof will be assigned pending resolution of such dispute.

10.0 EMPLOYMENT OF LABOUR

- 10.1 The Bidder will be expected to employ on the work only his regular skilled employees with experience of his particular work. No female labour shall be employed after darkness and no persons below the age of eighteen years shall be employed.
- 10.2 All traveling expenses including provisions of all necessary transport to and from site lodging allowances and other payments to Bidder's employees shall be the sole responsibility of the Bidder.
- 10.3 The hour of work on the site shall be decided by the owner and the Bidder shall adhere to it. Working hours will normally be eight (8) hours per day - Monday to Saturday.
- 10.4 Bidder's employees shall wear identification badges while on work on site.
- 10.5 In case the owner becomes liable to pay any wages or dues to the labour or to any Government agency under any of the provisions of the Minimum Wages Act, Workmen compensation Act, Contract Labour Regulation Abolition Act, CMPF Act/EPF Act or any other law due to act of omission of the Bidder, the owner may make such payments and shall recover the same from the Bidder's bills.

11.0 FACILITIES TO BE PROVIDED BY THE OWNER

11.1 SPACE

A suitable storage space will be provided by the owner on request from the Bidder as per the rules of the company.

12.0 FACILITIES TO BE PROVIDED BY THE BIDDER

12.1 Tools, tackles and scaffoldings

The Bidder shall provide all the construction equipment, tools, tackles and scaffoldings required for pre-assembly, installation, testing and commissioning of the equipment covered under the contract. He shall submit a list of all such materials to the engineer before the commencement of pre-assembly at the site. These tools and tackles shall not be removed from the site without the written permission of the engineer.

12.2 First-aid

- 12.2.1 The Bidder shall provide necessary first-aid facilities for all his employees, representatives and working at the site. Enough number of Bidder's personnel shall be trained in administering first-aid.
- 12.2.2 The owner will provide the Bidder, in case of an emergency, the services of an ambulance for transportation to the nearest hospital.

12.3 Cleanliness

The Bidder shall be responsible for keeping the entire area allotted to him clean and free from rubbish, debris etc. during the period of contract. The Bidder shall employ enough number of special personnel to thoroughly clean his work area at least once in a day. All such rubbish and scrap material shall be stacked or disposed in a place to be identified by the engineer. Materials and stores shall be so arranged to permit easy cleaning of the area in areas where equipment might drip oil and cause damage to the floor surface, a suitable protective cover of a flame resistant oil proof sheet shall be provided to protect the floor from such damage.

13.0 FIRE PROTECTION

13.1 The work procedures that are to be used during the installation shall be those which minimize fire hazards to the extent practicable. Combustible materials, combustible waste and rubbish shall be collected and removed from the site at least once each day. Fuels, oils and volatile or flammable materials shall be stored away from the construction and equipment and materials storage areas in safe containers. Untreated canvas paper, plastic or other flammable flexible materials shall not at all be used at site for any other purpose unless otherwise specified. If any such materials are received with the equipment at the site, the same shall be removed and replaced with acceptable material before moving into the construction area or storage.

13.2 Similarly corrugated paper fabricated cartons etc. will not be permitted in the construction area either for storage or for handling of materials. All such materials used shall be water proof and flame resistant type. All the other materials such as working drawings, plants, etc. which are combustible but are essential for the works to be executed shall be protected against combustion resulting from welding sparks, cutting flames and other similar fire sources.

13.3 All the Bidder's supervisory personnel and sufficient number of workers shall be trained for fire-fighting and shall be assigned specific fire protection duties. Enough of such trained personnel must be available at the site during the entire period of the contract.

13.4 The Bidder shall provide enough fire protection equipment of the types and number for the ware-houses, office, temporary structures, labour colony area etc. Access to such fire protection equipment shall be easy and kept open at all times.

14.0 SECURITY

The Bidder shall have total responsibility for all equipment and materials in his custody stored loose, semi-assembled and/or installed by him at site. The Bidder shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire pilferage and any other damages and loss. All materials of the Bidder shall enter and leave the project site only with the written permission of the engineer in the prescribed manner.

15.0 BIDDER'S AREA LIMITS

The engineer will mark-out the boundary limits of access roads, parking spaces, storage and construction areas for the Bidder and the Bidder shall not trespass the areas not so

marked out for him. The Bidder shall be responsible to ensure that none of his personnel move out of the areas marked out for his operations. In case of such a need for the Bidder's personnel to work out of the areas marked out for him, the same shall be done only with the written permission of the engineer.

16.0 BIDDER'S CO-OPERATION WITH THE OWNER

In cases where the performance of the installation work by the Bidder affects the operation of the system facilities of the owner, such installation work of the Bidder shall be scheduled to be performed only in the manner stipulated by the engineer and the same shall be acceptable at all times to the Bidder.

The engineer may impose such restrictions on the facilities provided to the Bidder such as electricity, water, etc. as he may think fit in the interest of the owner and the Bidder shall strictly adhere etc. such restrictions and co-operate with the engineer. It will be the responsibility of the Bidder to provide all necessary temporary instrumentation and other measuring devices required during start-up and operation of the equipment systems which are installed by him. The Bidder shall also be responsible for flushing and initial filling of all the oil and lubricants required for the equipment furnished and installed by him, so as to make such equipment ready for operation. The Bidder shall be responsible for supplying such flushing oil and other lubricants unless otherwise specified elsewhere in these documents and specifications.

17.0 PRE-COMMISSIONING TRIALS AND INITIAL OPERATIONS

The pre-commissioning trials and initial operations of the equipment furnished and installed by the Bidder shall be the responsibility of the Bidder as detailed in relevant clauses in section GTC. The Bidder shall provide, in addition, test instruments, calibrating devices, etc. and the labour required for the successful performance of these trials. It is anticipated that the above test may prolong for a long time, the Bidder's workmen required for the above test shall always be present at site during such trials.

18.0 MATERIALS HANDLING AND STORAGE

- 18.1 All the equipment furnished under the contract and arriving at site shall be promptly received, unloaded and transported and stored in the storage spaces by the Bidder.
- 18.2 Bidder shall be responsible for examining all the shipment and notify the engineer immediately or any damage, shortage, discrepancy, etc. for the purpose of engineer's information only. The Bidder shall submit to the engineer every week a report detailing all the receipts during the week. However, the Bidder shall be solely responsible for any shortages or damage in transit, handling and/or in storage and installation of the equipment at the site. Any demurrage, wharfage and other such charges claimed by the transporters, railways etc. shall be to the account of the Bidder.
- 18.3 The Bidder shall maintain an accurate and exhaustive record detailing out the list of all equipment received by him for the purpose of installation and keep such record open for the inspection of the engineer at any time.
- 18.4 All equipment shall be handled very carefully to prevent any damage or loss. No bare wire ropes slings etc. shall be used for unloading and/or handling of the equipment

without the specific written permission of the engineer. The equipment stored shall be properly protected to prevent damage either to the equipment or to the floor where they are stored. The equipment from the store shall be moved to the actual location at the appropriate time so as to avoid damage of such equipment at site.

- 18.5 All electrical panels, control gear, motors and such other devices shall be properly dried by heating before they are installed and energized. Motor bearings, slip rings, commutators and other exposed parts shall be protected against moisture ingress and corrosion during storage and periodically inspected. Heavy rotating parts in assembled conditions shall be periodically rotated to prevent corrosion due to prolonged storage.
- 18.6 All the electrical equipment such as motors, generators, etc. shall be tested for insulation resistance at least once in three months from the date of receipt till the date of commissioning and a record of such measured insulation values maintained by the bidder. Such records shall be open for inspection by the engineer.
- 18.7 The Bidder shall ensure that all the packing materials and protection devices used for the various equipment during transit and storage are removed before the equipment are installed.
- 18.8 The consumable and other supplies likely to deteriorate due to storage must be thoroughly protected and stored in a suitable manner to prevent damage or deterioration in quality by storage.
- 18.9 All the materials stored in the open or duly location must be covered with suitable weather-proof and flameproof covering materials wherever applicable.
- 18.10 If the materials belonging to the Bidder are stored in areas other than those earmarked for him, the engineer will have the right to get it moved to the area earmarked for the Bidder at the Bidder's cost.
- 18.11 The Bidder shall be responsible for making suitable indoor storage facilities to store all equipment which require indoor storage. Normally, all the electrical equipment such as motors, control gear, generators, exciters and consumable like electrodes, lubricants etc. shall be stored in the closed storage space. The engineer, in addition, may direct the Bidder to move certain other materials which in his opinion will require indoor storage, to indoor storage areas which the Bidder shall strictly comply with.
- 18.12 A suitable storage space will be provided by the owner on request from the Bidder as per the rules of the company.

19.0 FIELD OFFICE RECORDS

The Bidder shall maintain at his site office up-to-date copies of all drawings, specifications and other contract documents and any other supplementary data complete with all the latest revisions thereto. The Bidder shall also maintain in addition the continuous record of all changes to the above contract documents, drawings, specifications, supplementary data etc. effected at the field and on completion of his total assignment under the contract shall incorporate all such changes on the drawings and other engineering data to indicate as installed condition of the equipment furnished and erected under the contract. Such drawings and engineering data shall be submitted to the engineer in required number of copies. Daily work programme with progress of the

previous day and deployment of labour related to work programme and attendance of workmen deployed during the previous day shall be maintained in a register. This register shall be signed by authorized representative of the Bidder which will then be checked and signed by the owner's representative. Every three months this register shall be deposited to the owner which shall then be owners property.

20.0 BIDDER'S MATERIALS BROUGHT ON TO SITE

20.1 The Bidder shall bring to site all equipment, parts, materials, including construction equipment, tools and tackles for the purpose of the works with intimation to the engineer. All such goods shall, from the time of their being brought, vest in the owner, but may be used for the purpose of the works only and shall not on any account be removed or taken away by the Bidder without the written permission of the engineer. The Bidder shall nevertheless be solely liable and responsible for any loss or destruction thereof and damage thereto.

20.2 The owner shall have a lien on such goods for any sum or sums which may at any time be due or owing to him by the Bidder, under, in respect of or by reasons of the contract. After giving a fifteen (15) days' notice in writing of his intention to do so, the owner shall be at liberty to sell and dispose of any such goods, in such manner as he shall think fit including public auction or private treaty and to apply the proceeds in or towards the satisfaction of such sum or sums due as aforesaid.

20.3 After the completion of the works, the Bidder shall remove from the site under the direction of the engineer the materials such as construction equipment, installation tools and tackles, scaffolding etc. with the written permission of the engineer. If the Bidder fails to remove such materials, within fifteen (15) days of issue of a notice by the engineer to do so then the engineer shall have the liberty to dispose of such materials as detailed under clause 20.2 above and credit the proceeds thereto the account of the Bidder.

21.0 PROTECTION OF PROPERTY AND BIDDER'S LIABILITY

21.1 The Bidder shall be responsible for any damage resulting from his operations. He shall also be responsible for protection of all persons including members of public and employees of the owner and the employees of other Bidders and sub-Bidders and all public and private property including structures, buildings, other AC plants and equipment and utilities either above or below the ground.

21.2 The Bidder will ensure provision of necessary safety equipment such as barriers, sign-boards, warning lights and alarms etc. to provide adequate protection to persons and property. The Bidder shall be responsible to give reasonable notice to the engineer and the owners of public or private property and utilities when such property and utilities are likely to get damaged or injured during the performance of his works and shall make all necessary arrangements with such owners, related to removal and/or replacement or protection of such property and utilities.

22.0 **INSURANCE**

22.1 In addition to the conditions covered under the clause entitled insurance in general terms and conditions of contract of this, the following provisions will also apply to the portion of the works to be done beyond the Bidder's own or his sub-Bidder's works.

22.2 **Workmen's compensation insurance**

This insurance shall protect the Bidder against all claims applicable under the Workmen's Compensation Act 1948 (Government of India). This policy shall also cover the Bidder against claims for injury, disability disease or death of his or his sub-Bidder's employees, which for any reason are not covered under the Workmen's Compensation Act 1948. The liabilities shall not be less than

Workmen's compensation	As per statutory provisions
Employer's liability	As per statutory provisions

The hazards to be covered will pertain to all the works which and areas where the Bidder, his sub-Bidders, his agents and his employees have to perform work pursuant to the contract.

23.0 **WORK AND SAFETY REGULATIONS**

23.1 The Bidder shall ensure proper safety of all the workmen, materials and equipment belonging to him or Company or to others, working at or near the site. The Bidder shall also be responsible for provision of all safety notices and safety equipment required both by the relevant legislation and the engineer-in-charge as he may deem necessary.

23.2 All equipment used in construction and installation by Bidder shall meet Indian, Inter-national Standards and where such standards do not exist, the Bidder shall ensure these to be absolutely safe. All equipment shall be strictly operated and maintained by the Bidder in accordance with manufacturer's operation manual and safety instructions and as per Guidelines/Rules of the Company in this regard.

23.3 Periodical Examinations and all tests for all lifting/hoisting equipment and tackles shall be carried out in accordance with the relevant provisions for Factories Act 1948, Indian Electricity Act 1910 and associated Laws/Rules enforced from time to time. A register of such examinations and tests shall be properly maintained by the Bidder and will be promptly produced as and when desired by engineer-in-charge or by the person authorized by him.

23.4 The Bidder shall provide suitable safety equipment of prescribed standard to all employee and workmen according to the need, as may be directed by engineer-in-charge who will also have right to examine these safety equipment to determine their suitability, reliability, acceptability and adaptability.

23.5 The Bidder shall provide safe working conditions to all workmen and employees at the site including safe means of access, railings, stairs, ladders, scaffoldings etc. The

scaffoldings, stairs, ladders etc. shall be erected under the control and supervision of an experienced and competent person. For installation, good and standard quality of material only shall be used by the Bidder.

23.6 The Bidder shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to the owner or other Bidders under any circumstances, whatsoever, unless expressly permitted in writing by the Company to handle such fuses, wiring or electrical equipment.

23.7 Before the Bidder connects any electrical appliances to any plug or socket belonging to the other Bidder or owner, he shall :

- a) Satisfy the engineer that the appliances is in good working condition
- b) Inform the engineer of the maximum current rating, voltage and phases of the appliances.
- c) Obtain permission of the engineer detailing the sockets to which the appliances may be connected.

23.8 The engineer will not grant permission to connect until he is satisfied that:

- a) The appliance is in good condition and is fitted with a suitable plug.
- b) The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.

23.9 No electric cable in use by the Bidder/owner will be disturbed without prior permission. No weight of any description will be imposed on any cable and no ladder or similar equipment will rest against or attached to it.

23.10 No repair work shall be carried out on any live equipment. The equipment must be declared safe by engineer-in-charge and a permit to work shall be issued by engineer-in-charge before any repair work is carried out by the Bidder. While working on electric lines/equipments whether alive or dead, suitable type and sufficient quantity of tools will have to be provided by Bidder to electricians/workmen/officers.

23.11 The Bidder shall employ necessary number of qualified, full time electricians / electrical supervisors to maintain in his temporary electrical installations.

23.12 In case any accident occurs during the construction/installation or other associated activities undertaken by the Bidder thereby using any minor or major or fatal injury to his employees due to any reason, whatsoever, it shall be the responsibility of the Bidder to promptly inform the same to the company's engineer-in-charge in prescribed form and also to all the authorities envisaged under the applicable laws.

23.13 The engineer-in-charge shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipment. In such cases, the Bidder shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove short comings promptly. The Bidder after stopping the specific work, can, if felt necessary, appeal against the order of stoppage of work to the Head of the project within 3 days of such stoppage of work and decision of the project Head in this respect shall be conclusive and binding on the Bidder.

23.14 The Bidder shall not be entitled for any damages/compensation for stoppage of work due to safety reasons as provided in para 23.13 above and the period of such stoppage of work will not be taken as an extension of time for completion of work and will not be the ground for waiver of levy of liquidated damages.

23.15 The Bidder shall follow and comply with all the Company safety rules relevant provisions of applicable laws pertaining to the safety of workmen, employees, plant and equipment as may be prescribed from time to time without demur, protest or content or reservation. In case of any inconformity between statutory requirement and the Company safety rules referred above, the later shall be binding on the Bidder unless the statutory provisions are more stringent.

23.16 If the Bidder fails in providing safe working environment as per the Company, safety rules or continues the work even after being instructed to stop work by engineer-in-charge as provided in para 23.13 above, the Bidder shall promptly pay to the Company, on demand i.e. by the owner compensation at the rate of Rs.5,000/= per day or part there of till the instructions are complied with as so certified by engineer-in-charge.

However, in case of accident taking place causing injury to any individual, the provisions contained in para 23.17 shall also apply in addition to compensation mentioned in this para.

23.17 If the Bidder does not take all safety precautions and/or fails to comply with the safety rules as prescribed by the Company or under the applicable laws for the safety of the equipment and plant and for the safety of personnel and the Bidder does not prevent hazardous conditions which cause injury to his own employees or employees of other Bidders or the Company employees or any other person who are at site or adjacent thereto, the Bidder shall be responsible for payment of compensation under the relevant provisions of the workmen's compensation act and rules framed there under or any other applicable laws as applicable from time to time.

Permanent disablement shall have same meaning as indicated in workmen's compensation act. The compensation mentioned above shall be in addition to the compensation payable to the workmen/employees under the relevant provisions of the workmen's compensation act and rules framed there under or any other applicable laws as applicable from time to time.

In case the owner is made to pay such compensation then the Bidder is liable to reimburse the owner such amount.

24.0 COMMISSIONING SPARES

The Bidder shall make arrangement for an adequate inventory at site of necessary commissioning spares prior to commissioning of the equipment furnished and installed so that any damage or loss during this commissioning activities necessitating the requirements of spares will not come in the way of timely completion of the works under the contract.

25.0 CABLING

25.1 All cables shall be supported by conduits or cable tray run in air or in cable channels. These shall be installed in exposed runs parallel or perpendicular to dominant surfaces with right angle turn made of symmetrical bends or fittings. When

cables are run on cable trays, they shall be clamped at a minimum interval of 2000 mm or otherwise as directed by the engineer.

Each cable, whether power or control, shall be provided with metallic or plastic of an approved type, bearing a cable reference number indicated in the cable and conduit list (prepared by the Bidder), at every 5 metre run or part there of and at both ends or the cable adjacent to the terminations. Cable routing is to be done in such a way that cables are accessible for any maintenance and for easy identification.

Sharp bending and kinking of cables shall be avoided. The minimum radii for PVC insulated cables 1100 V grade shall be 15D, where D is the over all diameter of the cable. Installation of other cables like high voltage, co-axial, screened, compensating, mineral insulated shall be in accordance with the cable manufacturer's recommendations. Wherever cables cross roads and water, oil, sewage or gas lines, special care should be taken for the protection of the cables in designing the cable channels.

In each cable run some extra length shall be kept at a suitable point to enable one to two straight through joints to be made should the cable develop fault at a later date.

Control cable terminations shall be made in accordance with wiring diagrams, using identifying codes subject to engineer's approval. Multicore control cable jackets shall be removed as required to train and terminate the conductors. The cable jacket shall be left on the cable, as far as possible, to the point of the first conductor branch. The insulated conductors from which the jacket is removed shall be neatly twined in bundles and terminated. The bundles shall be firmly but not tightly tied utilizing plastic or nylon ties or specially treated fungus protected cord made for this purpose. Control cable conductor insulation shall be securely and evenly cut. The connectors for control cables shall be covered with a transparent insulating sleeve so as to prevent accidental contact with ground or adjacent terminals and shall preferably terminate Elmex terminals and washers. The insulating sleeve shall be fire resistant and shall be long enough to over-pass the conductor insulation. All control cables shall be fanned out and connection made to terminal blocks and test equipment for proper operation before cables are corded together.

26.0 GUARANTEE

31.1 The contractor shall warrant that the equipment will be new and in accordance with the contract documents and be free from defects in material and workmanship for a period of twelve (12) calendar months commencing immediately upon the satisfactory completion of the trial operations and handing over of the equipment to the owner. The contractor's liability shall be limited to the replacement of defective parts in the equipment of his own manufacture or those of his sub-contractors, under normal use and arising solely from faulty design, materials, and / or workmanship provided always that such defective parts are repairable at the site and are not in the meantime essential in the commercial use of the AC Plant. Such replaced defective parts shall be returned to the contractor unless otherwise arranged. No repairs or replacements shall normally be carried out by any person when the AC Plant is under the supervision of the contractor's supervisory engineers.

26.0 REPLACEMENT OF DEFECTIVE PARTS AND MATERIALS

26.1 If during the progress of the works, the site engineer shall decide and inform in writing to the contractor that the contractor has manufactured any AC Plant or part of the AC Plant unsound or imperfect or has furnished any AC Plant inferior than the quality specified, the contractor on receiving details of such defects or deficiencies shall at his own expense within seven (7) days of his receiving the notice, or otherwise, within such time as may be reasonably necessary for making it good, proceed to alter, re-construct or remove such work and furnish fresh equipment upto the standards of the specifications. In case the contractor fails to do so, the site engineer may on giving the contractor seven (7) days notice in writing of his intentions to do so, proceed to remove the portion of the works so complained of and, at the cost and risk of the contractor, perform all such work or furnish all such equipment provided that nothing in this clause shall be deemed to deprive the owner of or affect any rights under the contract which the owner may otherwise have in respect of such defects and deficiencies.

26.2 The contractor's full and extreme liability under this clause shall be satisfied by the payments to the owner of the extra cost, of such replacement procured, including installation, as provided for in the contract, such extra cost being the ascertained difference between the price paid by the owner for such replacements and the contract price portion for such defective AC Plant and repayments of any sum paid by the owner to the contractor in respect of such defective AC Plant. Should the owner not so replace the defective AC Plant, the contractor's extreme liability under this clause shall be limited to repayment of all sums paid by the owner under the contract for such defective AC Plant.

COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT

1.0 The central Air-Conditioning system will be under Comprehensive Annual Maintenance Contract for a period of 9 (Nine) Years after successful completion of initial warranty/guarantee period of 1 (One) Year.

1.0 Scope of work and Terms & Conditions of the comprehensive maintenance contract

- A.**
 - i) The contractor shall engage trained and qualified technicians for complete service and maintenance of the AC plant.
 - ii) The contractor shall also engage experienced & authorized engineer / manager for periodic supervision of the overall maintenance job(including the periodic preventive maintenance) to ensure safe and smooth operation of the AC plant under the maintenance contract.
 - iii) The contractor shall provide total service and maintenance locally from Singrauli.
 - iv) Only authorized persons should be engaged for supervision /Maintenance.
- B.** Periodic and systemic checking, cleaning, lubrication and proper adjustments of all components, safety devices / switches / contacts / sub-systems etc. of the AC plant and their associated accessories, as per the standard check list issued by the manufacturer, shall be carried out by the contractor for safe and trouble free operation of the AC plant.
- C.**
 - i) Brief description and quantity of the items, to be replaced by the contractor during the service and maintenance of the ac plant, shall be recorded by the contractor in the Logbooks / Service reports / Breakdown reports, indicating the date and time of replacement of the same.
 - ii) The contractor shall not modify any portion of the AC plant without the prior written approval of CMPDI.
 - iii) The contractor shall ensure the availability of all the critical items, components and cards (including the control cards) of the AC ex-stock at Singrauli & they have to provide periodic stock confirmation, so that the urgent maintenance job can be carried out as and when required.
 - iv) Individual Logbook / Service report or Breakdown report shall be maintained / prepared by the contractor for each individual AC and these Logbooks / Service reports or Breakdown reports shall be kept in the machine rooms of the AC plant under lock & key or at the safe custody of the Engineer-in-charge of CMPDI.

- v) All other activities / works done, including adjustments / lubrications / overhauling etc. of the lifts and their accessories, shall also be recorded by the contractor in the Logbooks / Service reports or Breakdown reports, indicating the date & time of the same.
 - vi) All records shall be authenticated jointly by the contractor and the representative / Engineer - in - charge of CMPDI.
- D.** The overall servicing and preventive maintenance of all the AC units shall be done by the contractor **at least once in a month**, as per the standard maintenance schedule of the OEM.
- E. i)** The contractor shall immediately attend the emergency call back services on receipt of any report of non-operation / malfunction / total breakdown of any unit of AC
- ii) The contractor shall provide Services on **holidays also**, whenever required.
- F. PAYMENT TERMS :-**
- i) Approved comprehensive maintenance charge will be paid by CMPDI.
 - ii) Any Tax as applicable, including Service Tax has to be paid by the contractor. However, confirmatory receipt of service-tax has to be submitted to the CMPDI.
 - iii) Payment will be made on **quarterly basis**, after the successful completion of 03 month of service and maintenance of the AC and their associated accessories.
 - iv) Statutory deductions will be made from the billing amounts for which proper certificates will be issued by CMPDI / appropriate authority.
 - v) The agreed Basic contract rate shall be firm during the entire period of execution of the contract and the Basic contract rate means the contract rate without Service Tax.

G: PENALTY

- i) The bidder has to ensure 90% availability of the Air Conditioning system failing which the penalty will be payable by the contractor as per the formula given below:

$$\text{Penalty} = \frac{(90\% \text{ of total hours} - \text{Actual availability of AC Plant in hours}) \times (\text{AMC Charge}/4)}{90\% \text{ of total hours}}$$

H. RESPONSE TIME :-

- i) Any fault, reported to the engineer / technician at site or to the technical personnel posted at the nearest service center / regional office / call center of the contractor, shall be attended by the contractor immediately.
- ii) In case of delay in restoration of any non operation / malfunction / total break down of any unit of AC plant, proportionate deductions on per day & per unit basis will be made from the contract amount, against the down time periods.
- iii) There will be no deduction from the contract amount, if the breakdown / non-operation / malfunction of any system is restored within 06 hours of reporting of the fault.
- iv) The down time means the period calculated between the date & time of reporting of any fault / break down of the system to the contractor and the date & time of restoration of normal operation of the AC plant by the contractor.

I. SAFETY :

If any accidental events / injury of the AC plant or any damage of the materials being carried through the AC plant occur, during the contract period, on account of any of the aforesaid failures, sole responsibility shall be borne by the contractor and appropriate compensation, as deemed fit, shall be provided by the contractor to the affected victim / owner of the damaged material within a reasonable time frame.

- J.** CMPDI reserves the right to terminate the contract by giving one month' notice to the contractor.
- K.** The worn out / burnt spares, replaced by the contractor, during the day to day service and maintenance, shall be the property of the contractor.

PRICE SCHEDULE OF QUANTITIES

Name of work: Installation and Commissioning of Centralised Air-conditioning system for New RI-VI building at Singrauli, MP.

Tender Notice No. & Date : -.....

Estimate & B.O.Q of C.M.P.D.I.RI-VI Office Building (AC Plant)

The Work to be executed will cover the fabrication, supply of materials, erection and commissioning of the plant to the extent necessary for the contract work. The execution of the work will involve providing of the following equipment and R-410 a Refrigerant

Sl. No.	Description	Unit	Quantity	Unit rate	Amount
1	Supply of Materials of Variable Refrigerant Volume/Flow System :				
1.1	Supply of fully factory assembled Variable Refrigerant Volume / Flow type multi unit air conditioning and heating system of 200 TR complete with indoor and outdoor units with individual controller for cooling & heating type operations. The compressor shall be high efficiency scroll or rotary type which shall be capable of inverter control i.e.changes its speed in accordance to the variation in cooling /heating loads. The quoted price to include all taxes, lifting, shifting, positioning at site of all the equipment and fittings,damper and vibration pad,topping up of refrigerant R-410A , MS Frame work for outdoor units installation, vibration isolators, wheather proof electrical panel with all such items required to fullfill the the intent. Any suitable combination may be accepted.				
1.1.1	Outdoor condensing Unit				
i)	48 HP (Nominal capacity) (compressor with DC inverter scroll type)	Nos	1		
ii)	32 HP (Nominal capacity) (compressor with DC inverter scroll type)	Nos.	4		
iii)	26 HP (Nominal capacity) (compressor with DC inverter scroll type)	Nos.	1		
1.1.2	Indoor Cassette units with Cordless remote of following approx. TR				
i)	4 way Cassette Type Units 4.5 TR	Nos.	16		
ii)	4 way Cassette Type Units 3.2 TR	Nos.	4		
iii)	4 way Cassette Type Units 2.86 TR	Nos.	1		
iv)	4 way Cassette Type Units 2.57 TR	Nos.	1		
v)	4 way Cassette Type Units 2.27 TR	Nos.	15		
vi)	4 way Cassette Type Units 2.02 TR	Nos.	2		
vii)	4 way Cassette Type Units 1.57 TR	Nos.	14		
viii)	4 way Cassette Type Units 1.27 TR	Nos.	13		
ix)	4 way Cassette Type Units 1.01 TR	Nos.	1		
x)	4 way Cassette Type Units 0.8 TR	Nos.	1		

Sl. No.	Description	Unit	Quantity	Unit rate	Amount
1.2	Supply of Y joints IDU	Nos.	61		
1.3	Supply of T joints ODU	Nos.	5		
2	Installation and Commissioning of Variable Refrigerant Volume/Flow System :				
2.1	Installation,testing and commissioning (of item 1. of A) of fully factory assembled Variable Refrigerant Volume / Flow type multi unit air conditioning and heating system complete with indoor and outdoor units with individual controller for cooling & heating type operations. The compressor shall be high efficiency scroll or rotary type which shall be capable of inverter control i.e.changes its speed in accordance to the variation in cooling /heating loads. The quoted price to include all taxes, lifting, shifting, positioning at site of all the equipment and fittings, remote controls,topping up of refrigerant R-410A or R-407C, MS Frame work for outdoor units installation, vibration isolators, wheather proof electrical panel with all such items required to fullfill the the intent				
2.1.1	Outdoor condensing Unit				
i)	48 HP (Nominal capacity)	Nos.	1		
ii)	32HP (Nominal capacity)	Nos.	4		
iii)	26 HP (Nominal capacity)	Nos.	1		
2.1.2	Indoor Cassette units (Approx.TR)				
i)	4 way Cassette Type Units 4.5 TR	Nos.	16		
ii)	4 way Cassette Type Units 3.2 TR	Nos.	4		
iii)	4 way Cassette Type Units 2.86 TR	Nos.	1		
iv)	4 way Cassette Type Units 2.02 TR	Nos.	1		
v)	4 way Cassette Type Units 2.27 TR	Nos.	15		
vi)	4 way Cassette Type Units 2.02 TR	Nos.	2		
vii)	4 way Cassette Type Units 1.57 TR	Nos.	14		
viii)	4 way Cassette Type Units 1.27 TR	Nos.	13		
ix)	4 way Cassette Type Units 1.01 TR	Nos.	1		
x)	4 way Cassette Type Units 0.8 TR	Nos.	1		
2.2	ITC of Y joints-IDU	Nos.	61		
2.3	ITC of Y joints-IDU	Nos.	5		
2.4	Supply,installation,testing and commissioning of copper refrigerant piping for the above indoor and outdoor units copper piping shall be properly supported and it shall include the cost of all the fitting,insulation,UV coating and all required fittings,joints etc. as per drawings of the following sizes (the insulation shall be 13/19mm thick closed				
i)	41.3mm OD(insulation 19 mm thickness)	Rmt	165		
ii)	38.1mm OD(insulation 19 mm thickness)	Rmt	15		
iii)	34.9mm OD(insulation 19 mm thickness)	Rmt	20		
iv)	28.6mm OD(insulation 19 mm thickness)	Rmt	70		
v)	22.2mm OD(insulation 13 mm thickness)	Rmt	70		
vi)	19.1mm OD(insulation 13 mm thickness)	Rmt	70		

Sl. No.	Description	Unit	Quantity	Unit rate	Amount
vii)	15.9mm OD(insulation 13 mm thickness)	Rmt	160		
viii)	12.7mm OD(insulation 13 mm thickness)	Rmt	100		
ix)	9.5mm OD(insulation 13 mm thickness)	Rmt	190		
x)	6.4mm OD(insulation 13 mm thickness)	Rmt	55		
2.5	Supply,installation,testing and commissioning of 2core X 1.5 mm ² copper conductor control wiring in PVC conduit	Rmt	1000		
2.6	Supply,installation,testing, connecting to main drain and commissioning of PVC drain pipes with 6 mm nitrile rubber insulations complete with supports as per drawings and specifications of below sizes				
a)	50 mm dia	Rmt	50		
b)	32 mm dia.	Rmt	70		
c)	25 mm dia.	Rmt	250		
2.7	Supply and installation,commissioning and testing of PC monitoring system from one location for performing ON/OFF from remote location, Unit operating parameters, fault diagnostic analysis for last failure, operating history cardfor at least last 4 breakdowns for each unit, facilities to set the interval of datalogging and inside temperature setting. The PC should be of minimum 500 GB, 1GB RAM, 2 GHZ speed with 19" LED/LCD monitor.	Set	1		
3.	Power supply system consisting of supply and laying of cable, 400 Amp Al. Bus Bar, MCCB/MCBs for incomer and outgoing etc. as required				
3.1	submain wiring with FR PVC insulated Cu. Conductor cable in surface/recessed in medium class PVC conduit.	RM	500		
3.2	Supply and laying of 1.1 kV PVC/XLPE armoured AL. Cable of 1100 v grade of size 3.5 core, 185 sqmm.	RM	125		
3.3	supply and fixing of adjustable thermal & fixed magnetic setting 4 pole 36 kA, 320 A MCCB	Nos.	1		
3.4	Supply and fixing of of 400 A. busbar chamber	Nos.	1		
3.5	supply and fixing of C series, 10 kA, TPN MCBs of following ratings				
a.	40 A MCB	Nos.	1		
b.	50/63 A MCB	Nos.	5		
	Total For HVAC Works				

NOTE : Quantity of the Low side items will be determined on detailed Engineering which will be carried out after obtaining clearance from your side. Any changes in the same will be adjusted at the unit rates against each item, on the basis of actual measurements at site.

Date

Signature and Seal of Bidder