

Tender Document Serial No:

TENDER DOCUMENT

FOR

**Design & Engineering, Supply,
Installation, Testing
and Commissioning of
Process Control Systems**

AT

**Dugda-II Coal Washery
and
Bhojudih Coal Washery**



BHARAT COKING COAL LIMITED

(A subsidiary of Coal India Ltd)

**Koyla Bhawan, P.O. BCCL Township,
Dhanbad – 826005**

WASHERIES CONSTRUCTION DIVISION
Koyla Bhawan (Level-VI), BCCL Township,
Dhanbad – 826005

Tender Document having serial number.....

for

**Design & Engineering, Supply, Installation,
Testing and Commissioning of
Process Control Systems at
Bhojudih Washery and
Dugda-II Washery**

Issued to

M/s.....
..... against money receipt
no..... dated for
Rs.5000.00 (Rupees Five Thousand) only.

**Chief General Manager (Ws),
Washeries Construction Division,
Bharat Coking Coal Limited,
Level-VI, Koyla Bhawan, Dhanbad**

INDEX

<u>SECTIONS</u>	<u>DESCRIPTION</u>	<u>PAGE No.</u>
	PREAMBLE	3 -7
SECTION 1	NOTICE INVITING TENDER	9– 12
SECTION 2	INSTRUCTION TO BIDDERS	14– 31

SECTION 3	FORMS OF BID AND QUALIFICATION INFORMATION	33– 40
SECTION 4	CONDITIONS OF CONTRACT	42 – 123
	• GENERAL TERMS & CONDITIONS OF CONTRACT	43 -76
	• ADDITIONAL TERMS & CONDITIONS OF CONTRACT	77 -81
	• GERNERAL TECHNICAL CONDITIONS	82-95
	• ERECTION CONDITIONS OF CONTRACT	96-123
SECTION 5	SPECIFICATIONS	125-131
SECTION 6	FORM OF BIDDING THE PRICE	133-134
SECTION 7	FORM OF BANK GUARANTEES AND FORM OF ARTICLE OF AGREEMENT	136– 143

PREAMBLE

INTRODUCTION

Washeries are designed to beneficiate Raw Coking coal and segregate it into washed coal, middlings / power coal and rejects. The washed coal is sent to various Steel Plants and used for production of steel. Middlings / power coal are sent to various Thermal Plants for Power Generation.

LOCATION & COMMUNICATION

Bhojudih Washery:

Bhojudih washery is located on the Eastern side of Jharia Coal field in Purulia district of West Bengal state falling in the command area of BCCL. It is situated between Santaldih and Bhojudih Railway station of South Eastern Railways on Gomoh-Adra line near Santaldih Thermal Power Station. The washery is also connected by metalled road from the district town of Purulia in West Bengal.

Dugda – II Washery:

Dugda - II Washery is located on the western side of Jharia Coal field in Bokaro district of Jharkhand state falling in the BCCL command area. It is situated between Dugda and Chandrapura Railway station of South Eastern Railways near Chandrapura Thermal Power Station. The washery is also connected by metalled road from the towns of Dhanbad, Bokaro and Giridih etc.

EXISTING SYSTEM

Pneumatic instruments were used for monitoring the Specific Gravity of heavy media in these Washeries. But, due to non-availability of spares and the instruments being obsolete, the existing pneumatic instrumentation system, for monitoring and control of the specific gravity of heavy media, has become almost non-functional or difficult to maintain. In absence of the instrumentation system, the specific gravity is being monitored manually causing human error due to which precise control of Washery operation is not possible. This results in variation in the quality of the washery products.

PROPOSED SYSTEM

The monitoring and precise control of the specific gravity of heavy media used in H.M. Bath / H.M. Cyclones is very essential for maintaining the quality of the products of the washery namely washed coal and power coal / middling. Hence, for efficient and continuous precise control of specific gravity of the heavy media during the plant operation, automatic control system for specific gravity is proposed to be used.

For monitoring and automatic control of the specific gravity of the heavy media, a Density Monitor shall be installed. This shall use the Back Pressure based

methodology or Flange type DP Txr. The data is to be transferred via 4-20mA signal to controller.

The Set Point i.e. the desired specific gravity of the cut value for the washing circuit will be entered into the system through the Set Point of the HMI and or from Controller. The Density Control function will compare the prevailing value of density of the heavy media in the system with the set point. In case of non-conformity of the two values, the control logic will determine the action and accordingly send the signals for controlling of the regulating device(s) as stated below.

The Density Control Unit should have the following facilities:

- i) Display unit at different important locations as per plants' requirement along with display in Control Room;
- ii) Provision for giving Set Point command;
- iii) Analog to Digital & Digital to Analog conversion mechanism;
- iv) PLC with adequate I / O modules shall have the followings:
 - a) PLC- PC based system with adequate I/O Modules;
 - b) Provision of giving Set Point from PC as well as from Operator Desk;
 - c) Local display of Specific Gravity along with provision of viewing the same from different required locations;
 - d) Provision of displaying level of all relevant Liquid Tank(s) through PLC-PC based system, logging of the same and to use the same Level related data for control wherever required;
 - e) Alarm also to be displayed and logged;
 - f) Logging of data for future analysis;
 - g) MIS report generation as per plants' requirement;
 - h) Keeping provision of taking Ash Analyser data in future;
 - i) Provided system should have the scalability of adding information sending capability through SMS to BCCL head quarter.

In case of the actual density prevailing in the Heavy Media System is below the set point, the over dense media from the Magnetite Thickener / O.D.M. Tank shall be made to flow into the H.M. Tank and in case actual density is above the Set Point, dilute media from the Dilute Media Tank shall be made to flow into the H.M. Tank. In either case, the flow shall be affected till the density of the heavy media in the system

stabilizes at the set point. Once the system achieves the desired value of the specific gravity, the regulating device(s) shall be automatically stopped.

Further, a continuous level control system is also proposed to be provided in these washeries for each of the Heavy Media System in order to maintain the level of heavy media in each H.M. Tank at the desired set level and prevent overflowing of the media as well as reduction in the level of heavy media in the H. M. Tank below 30% level. Generally, at the start of the operation of washery, the level of heavy media in the H.M. Tank is maintained at about 70% of the capacity of the H. M. Tank. The Set Point i.e. the desired operating level of heavy media in the H.M. Tank will be entered into the system. During plant operation, the Level Controller shall compare the prevailing level of the heavy media in the H.M. Tank with the set level. In case of non-conformity of the two levels, the control logic will determine the action and accordingly send the signals for controlling of the regulating device(s). In case the actual level of the heavy media in H. M. Tank is above the Set Point, heavy media from the H. M. Tank shall be bled to the D.M. Tank and in case the actual level is below the Set Point, the dilute media from the D.M. Tank shall be made to flow into the H.M. Tank. In either case, the flow shall be affected till the level of the heavy media in the H.M. Tank stabilizes at the set level. Any abnormal / continuous lowering of the level of H. M. Tank shall be highlighted through an audio - visual signal in the Control Room.

The Density Control System and the Level Control System shall always work in tandem so that Specific Gravity of heavy media in the system and the level of heavy media in the H.M. Tank are maintained at the desired respective Set Points continuously. Once the system achieves the desired specific gravity and level in the H.M. Tank and the system stabilises, the regulating devices(s) shall be automatically stopped.

Depending on the process, circuit and layout of each washery, the required sets of Density Meter, Level Sensor, Motorized Valve with Electric Actuator; Solenoid Valve, Density Controller, Level Controller etc. shall be installed in each washery. One set of PC of suitable configuration with required software along with printer shall also be provided in each washery. All the field inputs will be fed to PLC for controlling and the same will be communicated to PC for monitoring; Logging, Alarm- annunciation and MIS report generation purpose. The configuration of the P.C. shall be such that it shall be capable of integrating signals from various Belt Weighers and Ash Monitors also in

future, if desired by the Company and generate MIS Reports related to the production and quality of raw coal, washed coal, middling / power coal and rejects; receipt / despatch and left over stock of each coal on daily, weekly, fortnightly, monthly, half - yearly and yearly basis. The successful bidder shall have to do an in-depth study of the respective system(s) in each washery, design the complete system for respective washery, install the same and after successful commissioning, stabilization, necessary trial run, removal of the teething trouble, if any, the integrated system in running condition shall be handed over to the respective washery to their entire satisfaction.

The auxiliary equipment of required capacity like Air Conditioner(s), Servo Stabiliser, UPS with Battery and Battery Charger, Air Compressor(s) or any other equipment not specifically mentioned herein but essential as required for smooth and trouble free operation of the integrated system of each Washery are deemed to be included in the scope of work of this tender for respective washery. Care shall be taken to install only the identical components in each washery to keep inventory items of the company to the minimum.

Types of Transmitter should be identical for all the washeries to achieve better learning curve. The supplier should be responsible for making the plan of involving BCCL Engineers to get trained for the new system.

CLIMATE CONDITION

The Climate condition of the area is tropical, with monsoon prevailing during the month of June to September during which the humidity can go up to 100% (approx). This is followed by the winter months of October to January. Spring and summer prevail from February to May. The maximum temperature during summer may go up to 50⁰ C (approx.)

COMPLETION PERIOD

All the related work for each of the washery should be completed within 03(three) months from expiry of 10 (ten) days from the issue of Letter of Acceptance of tender.

SECTION--1

TENDER NOTICE

COMPANY : **BHARAT COKING COAL LIMITED**

AREA : **WASHERIES CONSTRUCTION DIVISION**

TENDER NOTICE No. : **WCD/247**

DATE : **27.08.2010**

1. Sealed Turn-key Tenders are invited from reputed and experienced contractors for the following works :

Name and description of Work	Location	Expected date of commencement	Period of Completion
Installation of Process Control system at Bhojudih Coal Washery and Dugda-II Coal Washery : Complete design and engineering with detail drawings, supply of required equipments / components including associated electrical / structural / civil works etc. as required for complete installation of the system. The turn-key work shall also include erection, testing & commissioning of the system, handing over the work in satisfactory running condition.	Bhojudih Coal Washery And Dugda –II Coal Washery	Immediately	3 (Three) months

Estimated Cost of the works : Rs. 35,17,152/- for Bhojudih Washery and

Rs. 48,50,837/- for Dugda-II Washery.

Total : **Rs. 83,67,989/-**

2. Earnest money / Bid Security

Rs. 83,680/- as Earnest Money / Bid Security is to be deposited in the form of irrevocable Bank Guarantee (from Scheduled Bank/ Branch acceptable to the owner) with validity of 28 days beyond the validity of the Bid in the format given the Bid Document. Certified cheques and Demand Drafts will also be acceptable as Earnest Money / Bid Security drawn in favour of BHARAT COKING COAL LIMITED on any scheduled Bank payable at its branch at DHANBAD. The Earnest Money/ Bid Security of the unsuccessful Bidder shall be refunded as promptly as possible after opening of Price Bid and finalisation of the tender and shall bear no interest.

3. Qualification of the Tenderer

To qualify for award of the contract –

- a. 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 :-

- i) Three similar completed works each costing not less than the amount equal to 40% of the estimated cost,

Or

- ii) Two similar completed works each costing not less than the amount equal to 50% of the estimated cost,

Or

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

“Similar work’ means execution of work involving control of processes through PLC-PC system of instrumentation.

- b. Average annual financial turnover of work during the last 3 (three) years, ending 31st March of the previous financial year should be atleast 30% of the estimated cost.
- c. Evidence of possessing adequate working capital (at least 20% of the value of this work) inclusive of access to lines of credit and availability of other financial resources to meet the requirement.
- d. Evidence of possessing adequate infrastructural support with respect to design, construction, manufacture/supply of major equipment inclusive of legally bound back-up MOU/Agreement with other agencies in the respective field of specialisation as joint venture partners or sub-contractors.
- e. Preference shall be given to a Tenderer who is ISO-9001:2000 certified.

4. Application fee for Tender Documents

The price of tender documents shall be Rs. 5,000/- (Rupees Five Thousand) only payable either in cash or by bank draft drawn in favour of **BHARAT COKING COAL LIMITED** on a scheduled Indian Bank payable at its branch at DHANBAD.

5. Availability of Tender Documents

Tender Documents including terms and conditions of work, shall be available on payment of Rs. 5,000/- (Rupees Five Thousand) only from the Office of Chief General Manager (Ws), Washeries Construction Division, Koyla Bhawan (Level-VI), P.O. BCCL Township, Dhanbad from **08.09.2010 to 21.09.2010.**

Tender Document is also available on our website : <http://bccl.cmpdi.co.in> for the purpose of downloading and tender submitted on such downloaded bid documents shall be considered valid for participating in the tender process.

The Bidders will be required to submit an undertaking that they will accept the Bid Document as available on the website and offer shall be rejected if any tampering is found to be done during the entire Bidding Process. The Bidder has to pay the requisite Application Fee (i.e. cost of the Bid Document) alongwith the above undertaking in a separate envelope superscribed as such.

The date of the payment instrument towards the cost of Bid Document must not be beyond the schedule period of sale / availability of such document in all conditions. The above criteria are valid even in case where such Bid Document is downloaded from the website.

6. General Instructions for Submission of Tender

A Tenderer should strictly comply with the following instructions :

a) A tenderer is required to submit his offer in sealed covers giving reference to this Tender Notice No. and date, containing offers in three parts prominently superscribed as Part-I, Part-II and Part-III respectively.

b) Three Parts should contain the details of the offer as follows :

Part-I – full details of the firm, information on the supplies of similar equipment to different parties in the country, details of project handled, testimonials and documentary evidence in support of satisfactory performance, financial capabilities and any other relevant information and the Earnest Money Deposit.

Part-II – Technical offer alongwith technical specifications of equipment/ know-how offered, drawings, pamphlets etc. strictly in terms of tender enquiry.

Part – III – Prices only in the format as indicated in the tender documents.

Note : Part-II and III of the offer shall be opened only in respect of such tenders as are found valid after scrutiny of Part-I.

7. Validity Period of Offer

The rates offered in Part III should be valid for six calendar months from the date of opening of Part I of the Tender.

8. Receipt of Tenders

Tenders are to be received in sealed covers **on 28.09.2010 upto 13.00 hrs** at the Office of the Chief General Manager (Ws), Washeries Construction Division, Koyla Bhawan (Level – VI), P.O. BCCL Township, Dhanbad.

9. Opening of Tenders

Tenders will be opened **on 28.09.2010 at 15.30 hrs** at the Office of the Chief General Manager (Ws), Washeries Construction Division, Koyla Bhawan (Level – VI), P.O. BCCL Township, Dhanbad.

10. Deputation of representatives for discussions

After opening of the tender, if the company decides to negotiate, the tenderers should be in a position to depute their representatives at short notice, with full authority for negotiating on technical as well as commercial terms and conditions of the contract.

The company is not under any obligation to accept the lowest tender/tenders and reserves the right to reject any or all the tenders without assigning any reason whatsoever and also to distribute the work and allot the work/works to more than one tenderer, at its sole discretion.

**Chief General Manager (Ws)
Washeries Construction Division
Bharat Coking Coal Limited
Koyla Bhawan (Level-VI),
P.O. BCCL Township,
Dhanbad-826005 (Jharkhand)**

SECTION---2

INSTRUCTIONS TO BIDDERS

1. SCOPE OF TENDERER

- 1.1 The Bharat Coking Coal Limited (referred to as Employer in these documents) invites bids for the construction on turnkey basis for the works (as defined in these documents and referred to as “the works”) detailed in the table given in the Notice Inviting Tenders (NIT). The tenderers may submit tenders for all of the works detailed in the NIT.
- 1.2 The successful Bidder will be expected to complete the Works by the Intended Completion Date specified in the Contract.

2. ELIGIBLE TENDERERS:

- 2.1 The Invitation for Bids is open to all Bidders eligible to participate as per qualifying criteria laid down separately hereinafter.
- 2.2 All bidders shall provide in Part 1, Forms of Bid and Qualification Information, a statement that the Bidder (including all members of a joint venture and subcontractors) is not associated, nor has been associated in the past, directly or indirectly, with the consultant or any other entity that has prepared the design, specifications, and other documents for the Project or being proposed as Engineer for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation or supervision of the Works shall not be eligible to Bid.
- 2.3 Joint Venture : Two or three companies/ contractors may jointly undertake contract/ contracts. Each entity will be jointly responsible for completing the task as per the contract.
- 2.4 The Company reserves its right to allow Public Enterprises purchase preference facility as admissible under prevailing policy.

3. QUALIFICATION OF THE TENDERER :

- 3.1 All bidders shall provide in Part 1, Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
- 3.2 In the event that pre-qualification of potential bidders has been undertaken, only Bids from pre-qualified bidders will be considered for award of Contract. These

qualified bidders should submit with their Bids any information updating their original pre-qualification applications or, alternatively, confirm in their Bids that the originally submitted pre-qualification information remains essentially correct as of the date of Bid submission. The update or confirmation should be provided in Part 1.

3.3 If the Employer has not undertaken pre-qualification of potential bidders, all bidders shall include the following information and documents with their Bids (copies of all documentary evidences are to be duly authenticated by the tenderers/ constituted attorney of the tenderer with full signature and seal. All signed declarations are to be made in the tenderer's letter head) :-

- a. copies of original documents defining the constitutions or legal status, place of registration, and principal place of business; written power of attorney of signatory of the Bid to commit the Bidder;
- b. i) total monetary value of contractual work performed for each of the last five years;
ii) experience of having successfully executed similar work during last seven years.
- c. experience in works of similar nature and size for each of the last five years, and details of work under way or contractually committed; and the name and address of clients who may be contacted for further information on those contracts with performance certificate for the works executed in last five years from the respective owners.
- d. major items of equipment proposed to carry out the Contract;
- e. qualifications and experience of key site management and technical personnel proposed for the contract;
- f. reports on financial standing of Bidder, such as profit and loss statement and auditor's reports for the past five years;
- g. evidence of adequacy of working capital for this Contract (access to lines of credit and availability of other financial resources);
- h. authority to seek references from the Bidder's bankers;
- i. 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 damage, bonus etc., if any.

- j. proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price
- k. Permanent Income Tax Account No.(PAN).
- l. Particulars of Registration with appropriate Sales Tax Authorities & Sales Tax Clearance certificate; if applicable and
- m. Particulars of Registration with appropriate Provident Fund Authorities; if applicable
- n. 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 by any Govt. Agencies or Quasi-Govt. Agencies or PSU's that fact must be clearly stated and it may not necessarily be a cause for disqualifying him. If this declaration is not given the bid will be rejected as non-responsive.
- o. Two or three companies/contractors participating in the bid as Joint Venture should submit Firm-wise participation details, Banker's name, execution of work with details of contribution of each and all other relevant details.

[Note : The intending tenderer will have to submit a declaration in support of the authenticity of the credential submitted by them along with the tender in the form of an affidavit as per the format provided in the bid document.]

3.4 To qualify for award of the contract -

- a. 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 followings :
 - i) Three similar completed works each costing not less than the amount equal to 40% of the estimated cost,
 - Or
 - ii) Two similar completed works each costing not less than the amount equal to 50% of the estimated cost,
 - Or
 - iii) One similar completed work costing not less than the amount equal to 80% of the estimated cost.

- b. Average annual financial turnover of similar work during the last 3 (three) years ending 31st March of the previous financial year should be atleast 30% of the estimated cost.
- c. Evidence of possessing adequate working capital (at least 20% of the value of this work) inclusive of access to lines of credit and availability of other financial resources to meet the requirement.
- d. Evidence of possessing adequate infrastructural support with respect to design, construction, manufacture / supply of major equipment inclusive of legally bound back-up MOU / Agreement with other agencies in the respective field of specialisation as joint venture partners or sub-contractors.

Note : i) Preference shall be given to a Tenderer who is ISO-9001:2000 certified.

ii) Financial turn over and cost of completed works of previous works shall be given a weightage of 5% per year (average annual rate of inflation) to bring them at current price level.

3.5 Sub contractor's experience and resources will not be taken into account in determining the Bidders' compliance with qualifying criteria.

3.7 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have :

- a. made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- b. record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.

4. 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 subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

5. 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 or liable for those costs.

6. SITE VISIT

- 6.1 The Bidder, at the Bidder's own responsibility, cost and risk, is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.
- 6.2 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 he actually visits the site/area or not and has taken all the factors into account while quoting his rates and prices.
- 6.3 Site Investigation Reports: The Contractor, in preparing the bid, shall rely on the Site Investigation Report referred to in the contract data, supplemented by any information available to the Bidder.

7. CONTENT OF BIDDING DOCUMENTS

The set of bidding documents comprises the documents listed in the table below and addenda issued in accordance with Clause 9:

Notice Inviting Tender

Section 2	Instructions to Bidders;
Section 3	Forms of Bid and Qualification Information;
Section 4	Conditions of Contract;
Section 5	Specifications;
Section 6	Form of bidding the price
Section 7	Forms of Securities, Forms of Bank guarantees and form of Article of Agreement.

9. AMENDMENT OF BIDDING DOCUMENTS

- 9.1 Before the deadline for submission of Bids, the Employer may modify the bidding documents by issuing addenda.

- 9.2 Any addendum thus issued shall be part of the bidding documents and shall be communicated in writing or by cable to all purchasers of the bidding documents. Prospective Bidders shall acknowledge receipt of each addendum by cable to the Employer.
- 9.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer shall extend, as necessary, the deadline for submission of Bids, in accordance with Sub-clause 19.2 below. And the same is also to be communicated simultaneously to all the purchaser of the bidding document.

10. **LANGUAGE OF BID**

All documents relating to the Bid shall be in the English language.

11. **DOCUMENTS COMPRISING THE BID**

The Bid, comprising of three parts, will be submitted by the bidder in the following manner :

- a. **Part I** of the bid to be submitted in 1st inner sealed envelope comprising of-
- (i) bid security/earnest money deposit,
 - (ii) letter of the bidder submitting the bid in the form as stipulated in 'Contractor's bid' of Section 3 and
 - (iii) qualification information as indicated in bid document and Documents as required in accordance with stipulations of bid document and any other materials required to be completed and submitted by bidder in accordance with these instructions.
- b. **Part II** of the bid to be submitted in the 2nd inner sealed envelope comprising of -
- (i) Technical offer along with technical specifications of equipments/ know-how offered, drawings, pamphlets etc. strictly in terms of tender enquiry.
 - (ii) Alternative offers of the bidder, if any, fulfilling the requirements in terms of tender inquiry with specifications and details.
 - (iii) Commercial Terms and Conditions including payment terms in case deviating from those in the tender inquiry.
- c. **Part III** of the bid, to be submitted in 3rd inner sealed envelope, shall comprise of Price Bid only in the format as indicated in the tender documents.

- d. All the inner sealed envelopes will then be placed in one outer envelope, sealed and marked properly as per Clause 18 and submitted to the Employer at its address before the deadline for submission of the bid as described in Clause 19.

12. BID PRICES

- 12.1 The contract shall be for the whole Works as described in Sub-Clause 1.1, based on the scope of work as detailed in the bidding document.
- 12.2 The Bidder shall submit rates and prices for all items of the Works described in the scope of works. Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.
- 12.3 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause shall be included in the rates, prices and the total Bid Price submitted by the Bidder. All incidentals, overheads, leads, lifts, carriages etc. as may be attendant upon execution and completion of works as stipulated in the bidding document shall also be included in the rates, prices and total Bid price submitted by the bidder.
- 12.4 The rates and prices quoted by the Bidder shall be fixed for the duration of the contract and shall not be subject to variations on any account except to the extent variations allowed as per the conditions of the contract indicated in the bidding document.

13. CURRENCIES OF BID AND PAYMENT

- 13.1 The unit rates and prices shall be quoted by the Bidder entirely in Indian Rupees.

14. BID VALIDITY

- 14.1 Bid shall remain valid for a period not less than one hundred and eighty days after the deadline for bid submission specified in Clause 19. A bid valid for a shorter period shall be rejected by the Employer.
- 14.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidder's responses shall be made in writing or by cable. 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 for a period of the extension and in compliance with Clause 15 in all respects.

15. BID SECURITY / EARNEST MONEY DEPOSIT

15.1 The bidder shall furnish, as part of his bid, a Bid Security/Earnest Money in the amount as shown in NIT for this particular work. Bid Security/EMD will be required to be deposited in the form of irrevocable Bank Guarantee (from Scheduled Bank /Branch acceptable to the owner) with validity 28 days beyond the validity of the Bid in the format given in the Bid Document. Certified cheques and Demand Drafts will also be acceptable as Bid Security/ Earnest Money drawn in favour of BHARAT COKING COAL LIMITED on any Scheduled Bank payable at its branch at Dhanbad.

15.2 Any Bid not accompanied by an acceptable Bid Security / EMD shall be rejected by the Employer as non-responsive.

15.3 The Bid Security / EMD of the unsuccessful Bidder shall be refunded as promptly as possible after opening of Price Bid and finalisation of the tender.

15.4 The Bid Security/EMD of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Performance Security/ Security Deposit.

15.5 The Bid Security/Earnest Money may be forfeited :

- a. if the Bidder withdraws the Bid after Bid opening during the period of Bid validity; or
- b. in the case of a successful Bidder, if the Bidder fails within the specified time limit to : (i) sign the Agreement; or
(ii) furnish the required Performance Security/Security Deposit
- c. if the Bidder does not accept the correction of Bid Price pursuant to clause 26 of ITB.

15.6 The Bid Security/EMD deposited with the Employer will not carry any interest.

16. ALTERNATIVE PROPOSALS BY BIDDERS

16.1 Bidders shall submit offers that comply with the requirements of the Bidding documents, including the basic technical design as indicated in the drawings and specifications. Alternatives will not be considered, unless specifically allowed in the Bidding Data. If so allowed, Sub-Clause 16.2 shall govern.

16.2 If so allowed in the Bidding Data, Bidders wishing to offer technical alternatives to the requirements of the Bidding documents must also submit a Bid that

complies with the requirements of the Bidding documents, including the basic technical design as indicated in the drawings and specification. In addition to submitting the basic Bid, the Bidder shall provide all information necessary for a complete evaluation of the alternative by the Employer, including design calculations, technical specification, breakdown of prices, proposed construction methods and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements stipulated in the bidding document shall be considered by the Employer.

17. FORMAT AND SIGNING OF BID

- 17.1 The Bidder shall prepare the bidding documents comprising the Bid as described in Clause 11 of these instruction to Bidders.
- 17.2 All documents of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder, pursuant to Sub-Clauses 3.3 (a). All pages of the Bid document shall be initialled by the person or persons signing the Bid.
- 17.3 The Bid shall contain no alterations, or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Bidder, in which case such corrections shall be initialled by the person or persons signing the Bid. Erasing or overwriting in the bid document may disqualify the bidder.

18. SEALING, MARKING AND SUBMISSION OF BIDS

- 18.1 The Bidder shall seal the Bid in three inner sealed envelopes and one outer sealed envelope, duly marking the inner envelopes in the following manner:
- a. 1st inner sealed envelope will be marked "Part I – Bid for
..... comprising of Bid Security/EMD with qualification information"
 - b. 2nd inner sealed envelope will be marked as "Part II – Technical and Commercial Part for....."
 - c. 3rd inner sealed envelope will be marked "Part III – Price Bid for....."
 - d. Outer Sealed envelope will be marked as "Bidding Documents for....."

18.2 The inner envelopes placed in outer envelope shall :

- a) be addressed to the Employer at the following address and submitted accordingly before the deadline for submission of bid as indicated in

Clause 19: Chief General Manager (Ws)
Washeries Construction Division,
Level-VI, Koyla Bhawan,
P.O. BCCL Township,
Dhanbad-826005 (Jharkhand)

And

- b) inner and outer envelopes will bear the following additional identification:

- Bid for.....
- Bid Reference No.
- DO NOT OPEN BEFORE **15.30** HRS IST on **28.09.2010**

18.3 In addition to the identification required in Sub-Clause 18.2 the inner and outer envelopes shall indicate the name and address of the Bidder.

18.4 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement of premature opening of the Bid.

19. DEADLINE FOR SUBMISSION OF BIDS

19.1 Bids shall be delivered to the Employer at the address specified above on **28.09.2010** by 13.00 hrs. In the event of the specified date for the submission of bids being declared a holiday for the Employer, the Bids will be received upto the appointed time on the next working day.

19.2 The Employer may extend the deadline for submission of Bids by issuing an amendment in accordance with Clause 9, in which case all rights and obligations of the Employer and the Bidders previously subject to the original deadline will then be subject to the new deadline.

20. LATE BIDS

20.1 Any Bid received by the Employer after the deadline prescribed in Clause 19 due to any reason whatsoever will not be accepted.

21. MODIFICATION AND WITHDRAWAL OF BIDS

- 21.1 Bidders may modify or withdraw their Bids by giving notice in writing before the deadline prescribed in Clause 19 in case the bidder has submitted the bid well before the deadline or extended deadline.
- 21.2 Each Bidder's modification or withdrawal notice shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause 11, 17, 18 and 19 with the outer and inner envelopes additionally marked 'MODIFICATION' or 'WITHDRAWAL', as appropriate.
- 21.3 No Bid may be modified after the deadline for submission of Bids.
- 21.4 Withdrawal of a Bid between the deadline for submission of Bids and the expiration of the period of Bid validity specified in the Bid Document or as extended pursuant to Sub-Clause 14.2 may result in the forfeiture of the Bid Security pursuant to Clause 15

22. BID OPENING

- 22.1 The Employer will open part I of the bids first, including modifications made pursuant to Clause 21, in the presence of the bidders' or their representatives who choose to attend at the time and in the place specified in Clause 19. In the event of the specified date of Bid opening being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.
- 22.2 After examination and evaluation of part I of the bids in accordance with Cl. 25 of these instructions, part II of the bids which are substantially responsive and fulfill the requisite eligibility criteria laid down under these instructions shall be opened.
- 22.3 Part II of the bids which are technically and commercially at par and substantially responsive in accordance with specifications, scope, terms and conditions and fulfilling the requirements of the instructions to the bidders, shall be opened.
- 22.4 Envelopes marked "WITHDRAWAL' shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause 21 shall not be opened.
- 22.5 The Bidders' names, the Bid Prices, the total amount of each Bid and of any alternative Bid (if alternatives have been requested or permitted), any discounts, Bid modifications and withdrawals, the presence or absence of Bid

Security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening.

23. PROCESS TO BE CONFIDENTIAL

Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.

24. CLARIFICATION OF BIDS

To assist in the examination, evaluation and comparison of Bids, the Employer may, at the Employer's discretion, ask any Bidder for clarification of the Bidder's Bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, telex, or facsimile.

25. EXAMINATION OF BIDS AND DETERMINATION OF RESPONSIVENESS

25.1 Prior to the detailed evaluation of Bids, the Employer will determine whether each Bid:

- a. meets the eligibility criteria defined in Clause 3;
- b. has been properly signed;
- c. is accompanied by the required securities; and
- d. is substantially responsive to the requirements of the Bidding documents.

25.2 A substantially responsive Bid is one which conforms to all the terms, conditions & specifications of the Bidding documents without material deviation or reservation. A material deviation or reservation is one :

- a. which affects in any substantial way the scope, quality, or performance of the works;
- b. which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or

- c. whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

25.3 If a Bid is not substantially responsive, it may be rejected by the Employer at its sole discretion.

26. CORRECTION OF ERRORS

26.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetical errors. Errors will be corrected by the Employer as follows :

- a. where there is a discrepancy between the amounts in figures and in words, the amounts in words will govern; and
- b. where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.
- 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 along with 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.

26.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, shall be considered as binding upon the Bidder.

27. EVALUATION AND COMPARISON OF BIDS

27.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause 25.

27.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:

- a. making any correction for errors pursuant to Clause 26.
- b. making an appropriate adjustment for any other quantifiable acceptable variations, deviations or alternative offers submitted in accordance with Clause 16; and
- c. making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Clause 21.

27.3 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer and other factors that are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the employer shall not be taken into account in Bid evaluation.

27.4 If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analyses for any or all items of the work, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed.

28. AWARD CRITERIA

Subject to Clause 29, the Employer will award the Contract to the best qualified Bidder whose Bid has been determined to be substantially responsive to the Bidding documents and who has offered the lowest evaluated Bid Price. Employer shall be the sole judge in this regard. Preference shall be given to a Tenderer who is ISO-9001:2000 certified.

29. EMPLOYER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

Notwithstanding Clause 28, the Employer reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all Bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer's action.

30. NOTIFICATION OF AWARD AND SIGNING OF AGREEMENT

30.1 The Bidder, whose Bid has been accepted, will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex, or facsimile confirmed by registered letter. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called "the Contract Price").

30.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a Performance Security/Security Deposit in accordance with Clause 31.

30.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder within 28 days following the notification of award along with the letter of Acceptance.

30.4 Upon the furnishing by the successful Bidder of the Performance Security/Security Deposit, the Employer will promptly notify the other Bidder that their Bids have been unsuccessful and refund the Bid Security/Earnest Money Deposit.

31. PERFORMANCE SECURITY / SECURITY DEPOSIT / PERFORMANCE GUARANTEE

31.1 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.

31.1.1 Performance Security should be 5% of contract amount and should be submitted within 28 days of receipt of LOA by the successful Bidders in any of the form given below after which bid security / earnest money will be refunded to the contractor :

- a Bank Guarantee 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 BHARAT COKING COAL LIMITED on any Scheduled Bank payable at its Branch at Dhanbad.

31.1.2 If Performance Security is provided by the successful bidders in the form of bank guarantee, it shall be issued either :

- a) at Bidders option by a Nationalised/ Scheduled Indian Bank or
- b) by a foreign bank located in India and acceptable to the Employer.

31.1.3 Retention Money should be deducted at 5% from running bills. Total of performance security and Retention Money should not exceed 10% of contract amount or lesser sum indicated in the bid document.

31.2 The Guarantee amount shall be payable to the Employer without any condition whatsoever.

31.3 The Performance Guarantee shall cover additionally the following guarantees to the Employer:

- a) The successful bidder guarantees the successful and satisfactory operation of the equipment furnished and erected under the contract, as per the specifications and documents,

- b) The successful bidder further guarantees that the equipment provided and installed by him shall be free from all defects in design, material and workmanship and shall upon written notice from the employer fully remedy free of expenses to the Employer such defects as developed under the normal use of the said equipment within the period of guarantee specified in the relevant clause of the Conditions of Contract.

31.4 The Contract Performance Guarantee is intended to secure the performance of the entire Contract. However, it is not construed as limiting the damages under clause entitled 'Equipment Performance Guarantee' in section Technical Conditions of Contract and damages stipulated in the other clauses in the bidding documents.

31.5 Bank Guarantee is to be submitted in the format prescribed by the company in the Bid document. Bank Guarantee shall be irrevocable and it shall be from any Nationalised Bank/Scheduled Bank.

31.6 The Company shall be at liberty to deduct/appropriate from the Contract Performance Guarantee/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 Contract Performance Guarantee/Security Deposit shall have to be restored by Contractor subsequently.

31.7 The Contract Performance Guarantee will be returned to the Contractor without any interest at the end of the Guarantee Period.

31.8 Failure of the successful Bidder to comply with the requirements of sub-Clause 31.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.

31.9 Performance Security/Security Deposit shall be converted into Performance Guarantee on successful completion of work in accordance with contract and upon satisfactory trial operations and shall be valid for 90 days after the end of Guarantee period.

32. EMPLOYMENT OF LOCAL LABOUR

Contractors are to employ, to the extent possible, only local project affected people and pay wages not less than the minimum wages fixed by the local Government.

33. LEGAL JURISDICTION

Matter relating to any dispute or difference arising out of this tender and subsequent contract awarded based on the bid shall be subject to the jurisdiction of Dhanbad court only.

34. DEEMED EXPORTS

If the bidder has quoted any item/items under the deemed exports then it will be the responsibility of the Bidder to get all the benefits under deemed exports from the Government. The Company's responsibility shall only be limited to the issuance of required certificates. The quotation of the Bidder will be unconditional and phrases like "Subject to availability of deemed exports benefit" will not find place in it.

35. CONSULTANTS NOT TO BID & VICE-VERSA

A firm which has been engaged by the company to provide Goods or Works for a project or any of its affiliates will be barred from providing consultancy services for the same project. Conversely, a firm hired to provide consultancy services for the preparation or implementation of a project and any of its affiliates will be barred from subsequently providing Goods or Works or Services related to the initial assignment for the same project.

36. SUB-CONTRACTOR / SUB-VENDOR

36.1 The contract agreement will specify major items of supply of 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 the 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 will not relieve the contractor from any of his obligation, duties and responsibilities under the contract.

36.2 If a contractor submits his bid, qualifies and does not get the contract because of his not being the lowest, he will be prohibited from working as a sub-contractor for the contractor who is executing the work.

37. DOWNLOADING OF TENDER DOCUMENT AND SUBMISSION OF TENDER

- 37.1 The company shall not be responsible for any delay / difficulties / inaccessibility of the downloading facility for any reason whatsoever. The downloading facility shall be available during the period of sale of Bid Document.
- 37.2 The bidders, who will download the tender documents from the website of the company, will be required to pay the cost of Bid Document (Application Fee) by Bank Draft as per NIT at the time of submission of tender.
- 37.3 The bidders will be required to submit an undertaking that they will accept the tender documents as available in the website and their tender shall be rejected if any tampering in the tender document is found to be done at the time of opening of tender.
- 37.4 The Bank Draft towards the cost of tender documents (Application Fee) and the undertaking of the tenderer as at clause 37.3 shall be submitted in a separate envelope marked "Cost of Tender Documents and the Undertaking" and not with Part-I / EMD.
- 37.5 In case of any discrepancy between the tender documents downloaded from the website and the master copy available in the office, the latter shall prevail and will be binding on the tenderers. No claim on this account will be entertained.

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SECTION---3

FORMS OF BID AND QUALIFICATION INFORMATION

Annexure – A

Format for Affidavit

Non-judicial Stamp Paper

AFFIDAVIT

I, Partner / Legal Attorney / accredited Representative
of M/s., solemnly declare that :

1. We are submitting Tender for the Work
..... Against Tender Notice No. dated
2. None of the Partners of our firm is relative of employee of Bharat Coking Coal Limited.
3. All information furnished by us in respect of fulfillment of eligibility criteria and qualification information of this Tender is complete, correct and true.
4. All documents / credentials submitted along with this Tender are genuine, authentic, true and valid.
5. If any information and document submitted is found to be false / incorrect at any time, department may cancel my Tender and action as deemed fit may be taken against us, including termination of the contract, forfeiture of all dues including Earnest Money and banning/ delisting of our firm and all partners of the firm etc.

Signature of the tenderer,

Dated

Seal of Notary

CONTRACTOR'S BID

Sub : BID for the Work_____

To:

The Chief General Manager (Ws)
Washeries Construction Division
Koyla Bhawan (Level – VI), Koyla Nagar
Dhanbad 826 005

Dear Sir,

We offer to execute the Works described above in accordance with the Conditions of Contract accompanying the Bidding Document issued to us. The Bid Security/Earnest Money in accordance with the NIT and Instructions to Bidders amounting to Rs.....(in figures)(in words) in the form as stipulated in Clause 15 of the Instructions to Bidders is enclosed herewith (to be filled in by the Bidder).

This Bid and your written acceptance of it shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any Bid you receive.

We hereby confirm that this Bid complies with the Bid validity and Bid security required by the Bidding documents. We also confirm that E.M.D. and other required documentary evidences related to this part of the Bid are enclosed (as listed below) herewith either in original / copies attested by Gazetted Officer/ copies duly authenticated by us with signature and seal alongwith affidavit as per the format provided in the bid document.

Yours faithfully,

Authorised Signature:_____
Name and Title of the Signatory:_____
Name of the Bidder:_____ (the Contractor)
Address_____
Date_____
(To be filled in by the Bidder)

Encl.:

- i) EMD of Rs.vide dated
- ii)
- iii)
- iv)

QUALIFICATION INFORMATION

(The information to be submitted by all the Bidders)

1. Individual Bidders or Individual Members of Joint Ventures
Constitution or Legal status of Bidder (attach copy)

Place of registration : _____

Principal place of business: _____

Power of Attorney of signatory Bid : (attach)

Details of the turnover during last 3 (three) years :

Annual Turnover Data (Construction only)		
Year	Turnover in Rs.	Remarks

Joint Venture details :

Name of all partners of a joint venture
1. Lead partner
2. Partner
3. Partner

NOTES : Joint ventures must comply the following requirements:

- i) Following are the minimum qualification requirements for joint ventures:
 - a) The lead partner shall meet not less than 40% of all the qualifying criteria stated in the bid document.
 - b) The other partners shall meet not less than 30% of all the qualifying criteria stated in the bid document.
- 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) Any bid shall be signed so as to legally bind all partners jointly and severally and any bid shall be submitted with a copy of the Joint Venture Agreement (JV Agreement) providing the joint and several liabilities with respect to the contract.
- 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 the written approval of the employer.
- v) The bid submission must include documentary evidence to 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 authorisation shall be evidenced by submitting with the bid a Power of Attorney signed by legally authorised signatories of all the partners.
- vii) The JV Agreement must provide that the Lead Partner shall be authorised 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

Details of experience for similar nature and complexity of work in last 7 (seven) years :

Use a separate sheet for each contract (Attach performance certificates from concerned customer).

1. Number of contract :
2. Name of the employer :
3. Employers address :
4. Nature of work and special features if any :
5. Contract role (check one)
1. Sole contractor 2. Sub-contractor 3. Partner in joint venture
6. Value of the total contract :
7. Date of award :
8. Date of completion with original schedule and slippage, if any.
9. Specified requirements:
a) equipment: b) Structural steelworks: c) others

Subcontractors/Consultants and firms proposed to be involved:

(Attach performance credentials including Bio-data of design personnel of Consultants)

Section of work	Approx. value of Subcontract	Sub-contractor (Name & Address)	Experience in Similar works

Information on Bid Capacity. (Works for which bids have been submitted and work which are yet to be completed) as on the date of this bid :

- a. Total value of work executed in last five years (yearwise);
- b. Details of existing commitments and ongoing works.
- c. Details of Works for which bids already submitted.

Financial reports of the last five years: balance sheets, profit and loss statement, auditors report etc. (copies to be submitted and the following format be filled up)

Financial information In Rs.	Actual : Previous five years					Projected : Next two years	
	1	2	3	4	5	6	7
1. Total assets							
2. Current assets							
3. Total liabilities							
4. Current liabilities							
5. Profits Before tax							
6. Profits after tax							

Evidence of access to financial resources to meet the qualification requirements:

Cash in hand, liquid assets, unencumbered real assets, lines of credit and other financial means etc. sufficient to meet the construction cash flow (the copies to be submitted and the following format to be filled up)

Source of financing	Amount in Rs.
1.	
2.	

Details of the bankers:

Banker	Name of the banker	
	Address of the banker	
	Telephone	Contact name and title
	Fax	Telex

Information about litigations, if any, in which bidder is involved:

Year	Award FOR or AGAINST applicant	Name of the client, Clause of Litigation and Matter of dispute	Disputed Amount in Rs.

Details of the major equipment to be used for the work :

	Equipment type and capacity	Make and model	Minimum number
1			
2			

Details of additional equipment to be purchased new for the project, indicating delivery times required in the form given below:

	Equipment to be purchased new – type and capacity	Make and model	Delivery period	Number
1				
2				

Personnel capabilities

The applicant must have suitably qualified personnel to fill the following key positions for the project. The applicant will supply information on a prime candidate and an alternate for each positions both of whom, wherever possible meet the experience requirements as specified in format below:

Position	Name	Total post Qualification Experience (years)	In Similar Works (Years)	As Manager or Section Leader of Similar Works (years)
Project Manager Alternative name				
Site engineers of resp. disc. Alternative names				
Cost controller Alternative name				
Quality Assurance Engineer Alternative name				
Site supervisors of resp. disc. Alternative names				

DETAILS OF EARNEST MONEY/PERFORMANCE SECURITY

Deposit of Earnest Money by:

Draft No.

Bank Guarantee Details:

Drawn on:

Name of Bank:

Amount (Rs.):

Amount of BG:

Bank Guarantee valid upto:

Other details

(a) Details of registration / enlistment with Government Organizations / PSUs / Subsidiaries of Coal India Ltd.

(b) Certificate of registration as per statutory requirement under Sales Tax, Contract Labour Laws etc. as may be applicable

Signature of the Tenderer

NOTE: Separate sheets may be attached to furnish details if necessary.

SECTION---4

GENERAL TERMS AND CONDITIONS OF CONTRACT

1. DEFINITIONS:

- I. The word “Company” or ‘Employer” or ‘Owner” wherever occurs in the conditions, means the Bharat Coking Coal Limited, represented at the headquarters of the Company by the Chairman-cum-Managing Director or his authorised representative or any other officer specially deputed for the purpose.
- II. The word “Principal Employer” or “Engineer” wherever occurs, means the authorised representative or any other officer specially deputed by the Company for the purpose of contract.
- III. The word “Contractor”/ “Contractors” or “Manufacturer” wherever occurs means the successful Bidder/Bidders 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. “The Site” shall mean the site of the contract work including land and any building and erections thereon and any other land allotted by the company for contractor’s use in the performance of the contract.
- V. The term “sub-contractor”, as employed herein, includes those having a direct contract with contractor either on piece rate, items rate, time rate or on 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 supplied materials.
- VI. “Consulting Engineer” / “Consultant” shall mean any firm or person duly appointed as such from time to time by the owner.
- VII. ‘Accepting authority’ shall mean the management of the company and includes an authorised representative of the company or any other person or body of persons empowered in this behalf by the company.
- VIII. A ‘Day’ shall mean a day of 24 hours from midnight to midnight.
- IX. Engineer-in-charge/Designated Officer-in-charge who is of an appropriate seniority will be responsible for supervising and administering the contract, certifying payment due to the contractor, valuing variations to the contract, awarding extension of time and valuing compensation events. 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 the 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.

- X. The 'contract' shall mean the notice inviting tender, the tender as accepted by the company and the formal agreement executed between the company and the contractor together with the documents referred to therein including conditions of contract, special conditions, if any, specifications, designs & drawings including those to be submitted during progress of work, scope of work, billing schedule/schedule of quantities with rates and amounts.
- XI. The 'works' shall mean and include the furnishing of equipment, labour, and the services in accordance with the contract or parts thereof as the case may be and shall also 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.
- XII. "Specification" shall mean the technical specifications forming a part of the contract and such other schedules and drawings as may be mutually agreed upon.
- XIII. 'Contract price' shall mean the total sum for which tender is accepted by the company.
- XIV. 'Written notice' shall mean a notice or communication in writing and shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an office of the Corporation/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.
- XV. "Letter of Acceptance" of the tender shall mean the official notice issued by the company notifying the contractor that his tender has been accepted.
- XVI. "Date of Contract" shall mean the date on which both the parties have signed the contract agreement.
- XVII. "Manufacturer's Works" or 'Contractor's Works' shall mean the place of work used by the Manufacturer, the Contractor, their collaborators or sub-contractors for the performance of the works.
- XVIII. "Inspector" shall mean the Owner or any person nominated by the Owner from time to time, to inspect the equipment stores or Works under the contract and/or the duly authorised representative of the owner.

- XIX. When the words “Approved”, “Subject to Approval”, “Satisfactory”, “Equal to”, “Proper”, “Requested”, “As directed”, “Where directed”, “When directed”, “Determined by”, “Accepted”, “Permitted”, or words and phrases of like import are used, the approval, judgment, direction etc. is understood to be a function of the Owner/Engineer/Engineer-in-charge.
- XX. “Test of Completion “ shall mean such tests as prescribed in the contract to be performed by the contractor before the Works is taken over by the Owner.
- XXI. “Start-up” shall mean the time period required to bring the equipment covered under the Contract from an inactive condition, when construction is essentially complete, to the state ready for trial operation. The start-up period shall include preliminary inspection and check out of equipment and supporting sub-systems; initial operation of the complete equipment covered under the Contract to obtain necessary pre-trial operation data, perform calibration and corrective action; shut down inspection and adjustment prior to the trial operation period.
- XXII. “Initial operation” shall mean the first integral operation of the complete equipment covered under the contract with sub-systems and supporting equipment in service.
- XXIII. “Trial Operation”, “Reliability Test”, “Trial Run”, “Complete Test” shall mean the extended period of time after the “Start-up” period. During this trial operations period the unit shall be operated over the full load range. The length of Trial Operation shall be as determined by the Engineer, unless otherwise specified elsewhere in the Contract.
- XXIV. “Performance and Guarantee Tests” shall mean all operation checks and tests required to determine and demonstrate capacity, efficiency, and operating characteristics as specified in the contract document.
- XXV. “Commercial Operation” shall mean the condition of operation in which the complete equipment covered under the contract is officially declared by the owner to be available for continuous operation at different loads up to and including rated capacity. Such declaration by the owner however, shall not relieve or prejudice any of the contractor’s obligation under this contract.
- XXVI. “Final Acceptance” shall mean the owner’s written acceptance of the works performed under the contract, after successful completion of performance and guarantee tests.

XXVII. "Guarantee Period/Maintenance Period" shall mean the period during which the contractor shall remain liable for repair or replacement of any defective part of the works performed under the contract.

XXVIII. "Drawings"/ "Plans" shall mean all:

- (a) drawings furnished by the owner/consultant as a basis for proposals,
- (b) supplementary drawings furnished by the Owner/Consultant to clarify and to define in greater detail the intent of the contract.
- (c) drawings submitted by the contractor with his proposal provided such drawings are acceptable to the Owner/Consultant,
- (d) drawings furnished by the Owner/Consultant to the Contractor during the progress of the work, and
- (e) engineering data and drawings submitted by the Contractor during the progress of the work provided such drawings are acceptable to the Engineer.

XXIX. "Codes" shall mean the following, including the latest amendments, and/or replacements, if any:

- (a) Standards of Bureau of Indian Standards relevant to the works under the contract and their specifications.
- (b) Other Internationally approved Standards and/or rules and regulations touching the subject matter of the contract.

- (i) A.S.M.E. Test codes.
- (ii) A.I.E.E. Test codes.
- (iii) American Society of Materials Testing Codes.
- (iv) Indian Electricity Act and Rules and Regulations made thereunder.
- (v) Indian Explosive Act and Rules and Regulations made thereunder.
- (vi) Indian Petroleum Act and Rules and Regulations made thereunder.
- (vii) Indian Mines Act and Rules and Regulations made thereunder.

- (c) Any other laws, rules, regulations and Acts applicable in the country with respect to labour, safety, compensation, insurance etc.

XXX. Words importing singular only shall also include the plural and vice-versa where the context so requires.

- XXXI. Words importing "Person" shall include firms, companies, corporations, and associations or bodies of individuals, whether incorporated or not.
- XXXII. Terms and expressions, not defined herein, shall have the same meaning as are assigned to them in the Indian Sale of Goods Act, failing that in the Indian Contract Act, and failing that in the General Clauses Act.
- XXXIII. "Commissioning" the plant/project shall mean completion in all respects of construction rendering the plant/project ready for performance test and commercial operation as per XXV.
- XXXIV. "Government Approvals" shall mean all permits, licenses, authorisations, consents, clearances, decrees, waivers, privileges, approvals from and filing with government instrumentalities necessary for the development, construction and operation of the plant/project.
- XXXV. "Month" shall mean a calendar month according to the Gregorian calendar.
- XXXVI. "Bank Guarantee" shall mean the Bank Guarantee to be provided by the Bidder/Contractor to the Employer.

2. CONTRACT DOCUMENTS:

The following documents shall constitute the contract documents:

- (i) Articles of Agreement,
- (ii) Notice Inviting Tender,
- (iii) Letter of Acceptance of Tender indicating deviations, if any, from the conditions of contract incorporated in the Tender document issued to the bidder and/or the Bid submitted by the bidder.
- (iv) Conditions of contract, including general terms and conditions, additional terms and conditions, technical terms and conditions, erection terms and conditions, special conditions, if any etc. forming part of the Agreement.
- (v) Specifications, where it is part of Tender Documents,
- (vi) Scope of works/Bills of quantities/schedule of works/quantities and
- (vii) Contract Drawings / finalised work programme.

- 2.1 After acceptance of tender the Contractor shall be deemed to have carefully examined all Contract Documents to his satisfaction. If he shall have any doubt as to the meaning of any portion of the Contract Documents, he shall before signing the Contract, set forth the particulars thereof, and submit them to the Owner in writing in order that such doubt may be removed. The Owner will

provide such clarifications as may be necessary in writing to the Contractor. Any information otherwise obtained from the Owner or the Engineer shall not in any way relieve the Contractor of his responsibility to fulfill his obligations under the Contract.

- 2.2 The Contractor shall enter into a Contract Agreement with the Owner within 30(thirty) days from the date of "Acceptance of Tender" or within such extended time as may be granted by the Owner. The performance Bank Guarantee for the proper fulfillment of the contract shall be furnished by the contractor in the prescribed form before signing of the Contract Agreement. The performance Guarantee shall be as per terms prescribed in clause 31 of Instructions to Bidders of this tender.
- 2.3 The owner, after the issue of the letter of Acceptance of Tender, will send one copy of the final agreement to the contractor for his scrutiny and approval.
- 2.4 The agreement, unless otherwise agreed to, shall be signed within 30(thirty) days of the issue of the letter of Acceptance of tender, at the office of the owner on a date and time to be mutually agreed. The contractor shall provide for signing of the contract, performance guarantee in copies as required, appropriate power of attorney and other requisite materials. In case it is agreed mutually that the contract is to be signed beyond the stipulated time, the bid guarantee submitted with the tender will have to be extended accordingly.
- 2.5 The agreement will be signed in six originals and the contractor shall be provided with one signed original and the rest will be retained by the owner. None of these documents shall be used by the contractor for any purpose other than this contract and the contractor shall ensure that all persons employed for this contract strictly adhere to this and maintain secrecy, as required of such documents.
- 2.6 The contractor shall provide free of cost to the owner all the engineering data, drawings and descriptive materials submitted with the bid, in at least six (6) copies to form a part of the contract immediately after issue of letter of acceptance.
- 2.7 Subsequent to signing of the contract, the contractor at his own cost shall provide the owner with at least six (6) true copies of agreement within 15 (fifteen) days after the signing of the contract.
- 2.8 The contract shall be considered as having come into force from the date of the letter of acceptance of tender issued by the owner.

2.9 The laws applicable to this contract shall be the laws in force in India. The courts of Dhanbad shall have exclusive jurisdiction in all matters arising under this contract.

3.0 CONTRACT PERFORMANCE GUARANTEE/SECURITY DEPOSIT :

3.1 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.

3.1.1 Performance Security should be 5% of contract amount and should be submitted within 28 days of receipt of LOA by the successful Bidders in any of the form given below after which bid security / earnest money will be refunded to the contractor :

- a Bank Guarantee 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 BHARAT COKING COAL LIMITED on any Scheduled bank payable at its Branch at Dhanbad.

3.1.2 If Performance Security is provided by the successful bidders in the form of bank guarantee, it shall be issued either :

- a) at Bidders option by a Nationalised/ Scheduled Indian Bank or
- b) by a foreign bank located in India and acceptable to the Employer.

3.1.3 Retention Money should be deducted at 5% from running bills. Total of performance security and Retention Money should not exceed 10% of contract amount or lesser sum indicated in the bid document.

3.2 Bank Guarantee shall be valid upto ninety (90) days after the end of Guarantee Period.

3.3 The Guarantee amount shall be payable to the Employer without any condition whatsoever.

3.4 The Performance Guarantee shall cover additionally the following guarantees to the Employer :

- (a) The successful bidder guarantees the successful and satisfactory operation of the equipment furnished and erected under the contract, as per the specifications and documents.
- (b) The successful bidder further guarantees that the equipment provided and installed by him shall be free from all defects in design, material and workmanship and shall upon written notice from the Employer fully

remedy free of expenses to the Employer such defects as developed under the normal use of the said equipment within the period of guarantee specified in the relevant clause of the Conditions of Contract.

- 3.5 The Contract Performance Guarantee is intended to secure the performance of the entire Contract. However it is not construed as limiting the damages under clause entitled 'Equipment Performance Guarantee' in section Technical Conditions of Contract and damages stipulated in the other clauses in the bidding documents.
- 3.6 Bank Guarantee is to be submitted in the format prescribed by the company in the bid document. Bank Guarantee shall be irrevocable and it shall be from any Nationalised Bank/Scheduled Bank.
- 3.7 The Company shall be at liberty to deduct/appropriate from the Contract Performance Guarantee/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 Contract Performance Guarantee/Security Deposit shall have to be restored by Contractor subsequently.
- 3.8 The Contract Performance Guarantee will be returned to the Contractor without any interest at the end of the Guarantee Period.

4.0 ASSIGNMENT AND SUBLETTING OF CONTRACT

- 4.1 The contractor may, after informing the engineer and getting his written approval, assign or sub-let the contract or any part thereof other than for raw materials, for minor detail or any part of the plant for which makes are identified in the contract. Suppliers of the equipment not identified in the contract or any change in the identified supplier shall be subject to approval by the engineer. The experience list of the equipment vendors under consideration by the contractor for this contract shall be furnished to the engineer for approval prior to procurement of all such items/equipments. Such assignment sub-letting shall not relieve the contractor from any obligation, duty or responsibility under the contract. Any assignment as above without prior written approval of engineer shall be void.
- 4.2 For components/equipments procured by the contractors for the purposes of the contract, after obtaining the written approval of the owner, the contractor's purchase specifications and enquiries shall call for quality plans to be submitted by the suppliers alongwith their proposals. The quality plans called for from the

vendors shall set out, during the various stages of manufacture and installation, the quality practices and procedures followed by the vendor's quality control organisation, the relevant reference documents/standards used, acceptance level, inspection documentation raised etc. Such quality plans of the successful vendor shall be discussed and finalised in consultation with the engineer and shall form a part of the purchase order/contract between the contractor and the vendor. Within 3 weeks of the release of the same purchase order/contracts for such bought out items/ components, a copy of the same without price details but together with detailed purchase specifications, quality plans and delivery conditions shall be furnished to the engineer by the contractor.

5.0 PATENT RIGHTS AND ROYALTIES

Royalties and fees for patent covering materials, articles, apparatus, devices, equipment or process used in the works shall be deemed to have been included in the contract price. The contractor shall satisfy all demands that may be made at any time for such royalties or fees and he alone shall be liable for any damages or claims for patent infringements and shall keep the owner indemnified in that regard. The contractor shall, at his own cost and expense, defend all suits or proceedings that may be instituted for alleged infringement of any patent involved in the works, and, in case of an award of damages, the contractor shall pay for such award. In the event of any suit or other proceedings instituted against the owner, the same shall be defended at the cost and expense of the contractor who shall also satisfy/comply and decree, order or award made against the owner. But it shall be understood that no such machine, plant, work, material or thing has been used by the owner for any purpose or any manner other than that for which they have been furnished and installed by the contractor and specified under these specification. Final payment to the contractor by the owner will not be made while any such suit or claim remains unsettled. In the event any apparatus or equipment, or any matter thereof furnished by the contractor, is in such suit or proceedings held to constitute infringement, and its use is enjoined, the contractor shall, at his option and at his own expense, either procure for the owner, the right to continue use of said apparatus, equipment or part thereof, replace it with non-infringing apparatus or equipment or modify it, so it becomes non-infringing.

6.0 TIME – THE ESSENCE OF CONTRACT

- 6.1 The time and the date of completion of the works as stipulated in the contractor's proposal and accepted by the owner without or with modifications, if any and so incorporated in the award letter shall be deemed to be the essence of the contract. The contractor shall so organize his resources and perform his work as to complete it not later than the date agreed to.
- 6.2 The contractor shall submit a detailed PERT network within the time frame agreed above consisting of adequate number of activities covering various key phases of the works such as design, procurement, manufacturing, shipment and field erection activities within fifteen (15) days after the date of acceptance of tender. This network shall also indicate the interface facilities to be provided by the owner and the dates by which such facilities are needed. Contractor shall discuss the network so submitted with the owner and the agreed network which may be in the form as submitted or in revised form in line with the outcome of discussions and shall form part of the contract to be signed within fifteen (15) days from the date of letter of acceptance of notice of award of contract. During the performance of contract, if in the opinion of the engineer proper progress is not maintained suitable changes shall be made in the contractor's operations to ensure proper progress.
- 6.3 The above PERT network shall be reviewed and periodic review reports shall be submitted by the contractor as directed by the engineer.

7.0 CONTRACT PRICE

The lump sum prices quoted by the contractor in his bid with additions and deletions as may be agreed before signing of the contract, for the entire scope of the work including furnishing and erection of equipment covered under the specifications and documents and shall be treated as the contract price.

8.0 CHANGED QUANTITY

The owner reserves the right to vary the quantities of items or groups of items to be ordered as specified in the accompanying technical specification, as may be necessary, during the execution of contract, but such variations unless otherwise specified in the accompanying technical specifications shall be limited to plus or minus twenty percent (20%) of the original quantity ordered.

9.0 DEDUCTIONS FROM CONTRACT PRICE

All costs, damages or expenses which the owner may have paid, for which under the contract the contractor is liable, will be claimed by the owner. All such claims shall be billed by the owner to the contractor regularly as and when they fall due. Such bills shall be supported by appropriate and certified vouchers or explanations, to enable the contractor to properly identify such claims. Such claims shall be paid by the contractor within fifteen (15) days of the receipt of the corresponding bills and if not paid by the contractor within the said period, the owner may then deduct the amount, from any moneys due or becoming due by him to the contractor under the contract or may be recovered by actions of law or otherwise, if the contractor fails to satisfy the owner of such claims.

10.0 CONTRACT PRICE ADJUSTMENT

- 10.1 All adjustments in the contract price shall be computed in accordance with the conditions and formulae prescribed in the relevant clauses of “Additional Terms and Conditions of Contract”, the accompanying technical specifications and further satisfying the requirements specified herein.
- 10.2 The contract price stated in the contract agreement is the base price. A certain fixed percentage of the base price as indicated in the technical specifications shall not be subject to any price adjustment. The balance percentage viz. the cost portion shall only be subject to price adjustment
- 10.3 Price adjustment shall be applicable to the cost portion, only if changes in the cost of labour and materials (either increases or decreases) occur during the contract period, directly affecting the cost portion.
- 10.4 Variations in the cost of materials shall be determined by comparing published material indices as of thirty (30) days prior to the date set for opening of bids or the revised price bid, whichever is later, with the same indices published during the manufacture at the respective cut off periods for material as specified in clause 2.0 of Additional Terms and Conditions of Contract. Variations in the cost of labour shall be determined by comparing the wages as per the Minimum Wages Act/Rules of the State or Central Government, whichever is more, applicable to the place of work as of thirty (30) days prior to the date set for opening of bids or the revised price bid, whichever is later, with the same wages as per the Minimum Wages Act/ Rules of the State or Central Government, whichever is more, during the work/ manufacture applicable to the place of

work/manufacture at the respective cut off periods for labour as specified in clause 2.0 of Additional Terms and Conditions of Contract of this volume.

- 10.5 The total computed variation in the contract price shall be restricted to a limiting percentage as specified in clause 2.5 of Additional Terms and Conditions of Contract of this volume.
- 10.6 The price adjustment for the erection shall be made on the value of erection work done as indicated in each billing.
- 10.7 Every three months after the award of contract, and a month prior to shipment of equipment (in the case of ex-factory price component of contract price), and every month after establishing his site office (in the case of erection) the contractor shall submit to the engineer a written notice of the changes, if any, that have occurred in the specified material and labour indices during the previous reporting period containing the effective date of such change, the amount of change, the amount of contract price adjustment and documentary evidence to substantiate the price adjustment.
- 10.8 The contract price adjustment provisions detailed above, shall only be applicable if so specified in the Additional terms and conditions of Contract.

11.0 PACKING, FORWARDING AND SHIPMENT

- 11.1 The contractor, wherever applicable, shall after proper painting, pack and crate all equipment in such a manner as to protect them from deterioration and damage during rail and road transportation to the site and, storage at the site till the time of erection. The contractor shall be held responsible for all damages due to improper packing.
- 11.2 The contractor shall notify the owner of the date of each shipment from his works, and the expected date of arrival at the site for the information of the owner.
- 11.3 The contractor shall also give all shipping information concerning the weight, size and content of each packing including any other information the owner may require.
- 11.4 The following documents shall be sent by registered post to the owner within 3 days from the date of shipment, to enable the owner to make progressive payments to the contractor :

Application for payment in the standard format of the owner (3 copies)

Invoice (6 copies)

Packing list (6 copies)

Pre –despatch clearance certificate, if any (3 copies)

Test certificate, wherever applicable (3 copies)

- 11.5 The contractor shall prepare detailed packing list of all packages and containers, bundles and loose material forming each and every consignment despatched to site. The contractor shall further be responsible for making all necessary arrangements for loading, unloading and other handling right from his works up to the site and also till the equipment is erected, tested and commissioned. He shall be solely responsible for proper storage and safe custody of all equipment.

12.0 DEMURRAGE, WHARFAGE, ETC.

All demurrage, wharfage and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the contractor.

13.0 INSURANCE

- 13.1 The contractor shall arrange, secure and maintain insurance as may be necessary and for all such amounts to protect his interest and the interests of the owner, against all risks as detailed herein in the joint names of the Owner and the Contractor with the condition that payments against all claims shall be payable by insurers to the owner as elaborated at clause 13.5. All premiums and other charges of the said insurance policies shall be paid by the contractor. The form and the limit of such insurance, as defined herein together with the under-writer thereof in each case shall be acceptable to the owner. However, irrespective of such acceptance, the responsibility to maintain adequate insurance coverage on comprehensive all risks basis at all time during the period of contract shall be that of the contractor alone. The contractor's failure in this regard shall not relieve him of any of his contractual responsibilities and obligations.
- 13.2 Any loss of damage to the equipment, during handling, transporting, storage and erection, till such time the plant is taken over by the owner, shall be to the account of the contractor. The contractor shall be responsible for preferring of all claims and make good for the damage or loss by way of repairs and/or replacement of the portion of the works damaged or lost. The transfer of title shall not in anyway relieve the contractor of the above responsibilities during the period of the contract. The contractor shall provide the owner with a copy of all insurance policies and documents taken out by him in pursuance of the

contract. Such copies of document shall be submitted to the owner immediately after such insurance coverage. The contractor shall also inform the owner in writing at least sixty (60) days in advance, regarding the expiry, cancellation and/or change in any of such documents and ensure revalidation/renewal, etc. as may be necessary well in time.

- 13.3 The risk that are to be covered under the insurance shall include, but not be limited to, the loss or damage in transit, theft, pilferage, riot, civil commotion, weather conditions, accidents of all kinds, fire, etc. The scope of such insurance shall cover the entire value of the works from time to time.
- 13.4 All costs on account of insurance liabilities covered under the contract will be on contractor's account and will be included in contract price. However, the owner may from time to time, during the pendency of the contract, ask the contractor in writing to limit the insurance coverage risks and in such a case, the parties to the contract will agree for a mutual settlement for reduction in contract price to the extent of reduced premium amounts.
- 13.5 All insurance claims, payable by the insurers, shall be paid to the Owner which shall be released 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.
- 13.6 The clause entitle insurance under the section erection terms and conditions of contract of this volume, covers the additional insurance requirements for the portion of the works to be performed at the site of work.

14.0 LIABILITY FOR ACCIDENTS AND DAMAGES

Under the contract, the contractor shall be responsible for loss or damage to the plant until the plant is taken over in accordance with clause entitled 'Taking Over' in section technical terms and conditions of contract of this volume.

15.0 LIQUIDATED DAMAGES FOR DELAY IN COMPLETION

- 15.1 If the Contactor 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 date of completion of 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.

15.1.1 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.

15.1.2 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.

15.1.3 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.

15.1.4 In the event of such termination of the contract as described in clauses 15.1.2 or 15.1.3 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.

15.2 The company may wave the payment of compensation, depending upon merit of the case, on request received from the contractor if the entire work is completed within the date as specified in the contract or as validly extended without stipulating any penalty.

16.0 CONTRACTOR'S DEFAULT

16.1 If the contractor shall neglect to execute the works with the diligence and expedition or shall refuse or neglect to comply with any reasonable orders given to him, in writing by the engineer in connection with the works or shall

contravene the provisions of the contract, the owner may give notice in writing to the contractor to make good the failure, neglect or contravention complained of. Should the contractor fail to comply with the notice within thirty (30) days from the date of service thereof, then and in such case the owner shall be at liberty to employ other workmen and forthwith execute such part of the works as the contractor may have neglected to do or if the owner shall think fit, it shall be lawful for him, without prejudice to any other right he may have under the contract, to take the works wholly or in part thereof and in that event the owner shall have free use of all contractor's equipment that may have been at the time on the site in connection with the works without being responsible to the contractor for fair wear and tear thereof and to the exclusion of any right of the contractor over the same, and the owner shall be entitled to retain and apply any balance which may otherwise be due on the contract by him to the contractor, or such part thereof as may be necessary, the payment of the cost of executing the said part of the works or of completing the works as the case may be. If the cost of completing the works or executing a part thereof as aforesaid shall exceed the balance due to the contractor, the contractor shall pay such excess. Such payment of excess amount shall be independent of the liquidated damages for delay which the contractor shall have to pay if the completion of works is delayed.

- 16.2 In addition, such action by the owner as aforesaid shall not relieve the contractor of his liability to pay liquidated damages for delay in completion of works as defined in clause 15.0 of this section.
- 16.3 The termination of the contract under this clause shall not entitle the contractor to reduce the value of the performance bank guarantee nor the time thereof. The performance guarantee shall be valid for the full value and for the full period of the contract including guarantee period.
- 16.4 The bidding documents will clearly state that, if the contractor fails to complete the work and the order is cancelled, the amount due to him on account of work executed by him, if payable, shall be paid to him only after due recoveries as per the provisions of the contract and that too after alternative arrangements to complete the work has been made.

17.0 FORCE MAJEURE

- 17.1 Force majeure is herein defined as any cause which is beyond the control of the contractor or the owner as the case may be which they could not foresee or

with a reasonable amount of diligence could not have foreseen and which substantially affect the performance of the contract, such as:

- (a) natural phenomena, including but not limited to floods, draughts, earthquakes and epidemics:
- (b) acts of any government, including but not limited to war, declared or undeclared, priorities, quarantines, embargoes.

Provided either party shall within fifteen (15) days from the occurrence of such a cause notify the other in writing of such causes.

17.2 (a) The successful bidder/contractor will advise, in the event of his having 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 clause of delay, within fifteen days of the occurrence and cessation of such Force Majeure condition. In the event of delay lasting over two months, if arising out of Force Majeure, the contract may be terminated at the discretion of the company.

(b) For delays arising out of Force Majeure, the bidder/contractor will not claim extension in completion date for a period exceeding the period of delay attributable to the causes of Force Majeure and neither company nor the bidder shall be liable to pay extra costs (like increase in rates, remobilisation advance, idle charges for labour and machinery etc.). Provided it is mutually established that the Force Majeure conditions did actually exist.

(c) If any of the Force Majeure conditions exists in the place of operation of the bidder even at the time of submission of bid he will categorically specify them in his bid and state whether they have been taken into consideration in their quotations.

17.3 The contractor or the owner shall not be liable for delays in performing his obligations resulting from any force majeure cause as referred to and/or defined above. The date of completion will, subject to hereinafter provided, be extended by a reasonable time even though such cause may occur after contractor's performance of his obligations has been delayed for other causes.

18.0 DELAYS BY OWNER OR HIS AUTHORISED AGENT

18.1 In case the contractor's performance is delayed due to any act of omission on the part of the owner or his authorised agents, then the contractor shall be given due extension of time for the completion of the works, to the extent such omission on the part of the owner has caused delay in the contractor's

performance of his work. Regarding reasonableness or otherwise of the extension of time, the decision of the engineer shall be final.

18.2 In addition, the contractor shall be entitled to claim demonstrable and reasonable compensation if such delays have resulted in any increase in the cost of work. The owner shall examine the justification for such a request for claim, and if satisfied the extent of compensation shall be mutually agreed depending upon the circumstances at the time of such an occurrence.

18.3 Any delay in finalisation of mutual agreement in regard to any of the contractor's claim/compensation against any act of omission on the part of the owner or his authorised agents should not result in any work stoppage/further delay on the part of the contractor.

19.0 EXTENSION OF DATE OF COMPLETION

19.1 On happening of any events causing delay as stated hereinafter, the contractor shall intimate immediately in writing the Engineer-in-charge:

- a. due to any reasons defined as Force Majeure.
- b. non-availability of stores which are the responsibility of the owner to supply.
- c. non-availability or breakdown of tools and plant to be made available or made available by the owner.
- d. delay on the part of the contractors or tradesmen engaged by the owner not forming part of the contract, holding up further progress of the work.
- e. non-availability of working drawings/work programme in time, which are to be made available by the company during progress of the work.
- f. any other causes which, at the sole discretion of the company is beyond the control of the contractor.

19.2 A 'Hindrances Register' shall be maintained by both the Company and the Contractor at site to record the various hindrances, as mentioned above, encountered during the course of execution.

19.3 The contractor may request the company in writing for extension of time within 14 days of happening of such event causing delay stating also, if practicable, the period for which extension is desired. The company may, considering the eligibility of the request, give a fair and 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. 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.

19.4 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 liquidated damages at the time of granting final extension of time as per contract agreement.

19.5 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 Company or the both. The extension will have to be by party's agreement, expressed or implied.

19.6 In case the Contractor does not apply for grant of extension of time within 15 (fifteen) days of hindrance occurring in execution of the work and the Company wants to continue with the work beyond the stipulated date of completion for reason of the work having been hindered, the Engineer-in-charge at his sole discretion can grant provisional 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 contract.

20.0 TERMINATION, SUSPENSION, CANCELLATION & FORECLOSURE OF CONTRACT

20.1 The owner 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. 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

- 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 the company.

or

- e. Shall try to obtain a contract with the company by way of ring tendering or other non-bonafide method of competitive tendering.

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.

20.2 The owner shall in such an event give fifteen (15) days notice in writing to the contractor of his decision to do so.

20.3 The contractor upon receipt of such notice shall discontinue the work on the date and to the extent specified in the notice, make all reasonable efforts to obtain cancellation of all orders and contracts to the extent they are related to the work terminated and terms satisfactory to the owner, stop all further subcontracting or purchasing activity related to the work terminated, and assist the owner in maintenance, protection, and disposition of the works acquired under the contract by the owner.

20.4 The contract shall stand terminated under the following circumstances unless the owner is satisfied that the legal representatives of the individual contractor or of the proprietor of the proprietary concern and in the case of partnership the surviving partners, are capable of carrying out and completing the contract and

the owner shall in any way not be liable to payment of any compensation to the estate of deceased contractor and/or to the surviving partners of the contractor's firm on account of the termination of the contract :

- 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 company or by an order of court, not being a voluntary liquidation proceedings for the purpose of amalgamation or reorganization, or a receiver or manager is appointed by the court on the application by the debenture holders of the 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 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.

20.5 If the contractor is an individual or a proprietary concern and the individual or the proprietor dies and if the contractor is a partnership concern and one of the partners dies, then unless the owner is satisfied that the legal representatives of the individual contractor or of the proprietor of the proprietary concerns and in the case of partnership the surviving partners, are capable of carrying out and completing the contract the owner shall be entitled to cancel the contract as to its incomplete part without being in any way liable to payment of any compensation to the estate of deceased contractor and/or to the surviving partners of the contractor's firm on account of the cancellation of the contract.

The decision of the owner that the legal representatives of the deceased contractor or surviving partners of the contractor's firm cannot carry out and

complete the contract shall be final and binding on the parties. In the event of such cancellation the owner shall not hold the estate of the deceased contractor and/or the surviving partners of the estate of the deceased contractor and/or the surviving partners of the contractor's firm liable to damages for not completing the contract.

20.6 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, implements, stores, etc. thereon.
- b. to carry out the incomplete work by any means at the risk 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 up to the time of termination/cancellation less on a/c payments made till date and value of contractor's materials, plant, equipment, etc., taken possession of after termination/cancellation.
- d. to recover the amount determined as above, if any, from any moneys 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 20.4(d).

20.7 Suspension of work - The company shall have power to suspend the progress of 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 the part of the contractor, or on ground of safety of the work or part thereof. In the event of suspension for reason 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. Any necessary and demonstrable costs incurred by the contractor as a result of such suspension of the works will be paid by the owner, provided such costs are substantiated to the satisfaction of the engineer.

The owner shall not be responsible for any liabilities if suspension or delay is due to some default on the part of the contractor or his sub-contractor.

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% of the contract value.

20.8 Foreclosure of contract in full or in part - If at any time after acceptance of the tender, the company decides to abandon or reduce the scope of the work 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/reduction in the scope of work, the company shall be liable

- a. to pay the contractor at the contract rates full amount for works executed and measured at site upto the date of such abandonment/reduction in the work.
- b. 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 supply for the work including supply to labour/staff quarters, office etc.
- 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 part if so desired by him and to be transported by the contractor from site to his place.
- 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 issued 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.

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 amount payable in terms of para 20.8(b), (c) & (e) above, the contractor shall not have any claim for compensation whatsoever either for abandonment or for reduction in the scope of work, other than those as specified above.

21.0 NO WAIVER OF RIGHTS

Neither the inspection by the owner or the engineer or any of their officials, employees or agents nor any order by the owner or the engineer for payment of money or any payment for or acceptance of, the whole or any part of the works by the owner or the engineer, nor any extension of time, nor any possession taken by the engineer shall operate as a waiver of any provision of the contract, or of any power herein reserved to the owner, or any right to damages herein provided, nor shall any waiver of any breach in the contract be held to be a waiver of any other or subsequent breach.

22.0 CERTIFICATE NOT TO AFFECT RIGHT OF OWNER AND LIABILITY OF CONTRACTOR

No interim payment certificate of the engineer, nor any sum paid on account, by the owner, nor any extension of time for execution of the works granted by the engineer shall affect or prejudice the rights of the owner against the contractor or relieve the contractor of his obligations for the due performance of the contract, or be interpreted as approval of the works done or of the equipment furnished and no certificate shall create liability for the owner to pay for alterations, amendments, variations or additional works not ordered, in writing, by the engineer or discharge the liability of the contractor for the payment of damages whether due, ascertained, or certified or not, or any sum against the payment of which he is bound to indemnify the owner, nor shall any such certificate nor the acceptance by him of any sum paid on account or otherwise affect or prejudice the rights of the contractor against the owner.

23.0 GRAFTS AND COMMISSIONS ETC.

Any graft, commission, gift or advantage given, promised or offered by or on behalf of the contractor or his partner, agent, officers, director, employee or servant or any one of his or their behalf in relation to the obtaining or to the execution of this or any other contracts with the owner, shall, in addition to any criminal liability which it may incur, subject the contractor to the cancellation of this and all other contracts and also to payment of any loss or damage to the owner resulting from any cancellation. The owner shall then be entitled to deduct the amount so payable from any moneys otherwise due to the contractor under the contract.

24.0 LANGUAGE AND MEASURES

All documents pertaining to the contract including specifications, schedules notices, correspondence., operating and maintenance instructions, drawings or any other writing shall be written in English language. The metric system of measurement shall be used exclusively in the contract.

25.0 RELEASE OF INFORMATION

The contractor shall not communicate or use in advertising, publicity, sales releases or in any other medium photographs or other reproduction of the works under this contract, or descriptions of the site, dimensions, quantity, quality or other information, concerning the works unless prior written permission has been obtained from the owner.

26.0 CONSTRUCTION OF THE CONTRACT

26.1 Notwithstanding anything stated elsewhere in the bid documents, the contract to be entered into will be treated as a divisible supply and erection contract. The supply portion of the contract will relate to the supply of equipment and materials and the erection portion will relate to the handling at the site, storage, erection, construction, testing, commissioning etc. as defined in the bid documents. The contractor will pay the sales tax for the supply of equipment and materials in accordance with law and the same will be reimbursed by the owner as a part of the total contract price on actual. The sales tax should be included in the total bid price in the proposal and should also be indicated separately.

- 26.2 In case of divisible supply and erection contract, or where the owner hands over his equipment to the contractor for executing, then the contractor shall at the time of taking delivery of the equipment/despatch documents be required to execute an indemnity bond in favour of the owner in the form acceptable to the owner for keeping the equipment in safe custody and to utilise the same exclusively for the purposes of the said contract.
- 26.3 The contract shall in all respects be construed and governed accordingly to Indian Laws.
- 26.4 It is clearly understood that the total consideration for the contract (s) has been broken up into various components only for the convenience of payment of advance under the contract (s) and for the measurement of deviations or modifications under the contract (s).

27.0 COMPLETION OF CONTRACT

Unless otherwise terminated under the provisions of any other relevant clause, this contract shall be deemed to have been completed at the expiration of the guarantee period as provided for under the clause entitled 'Guarantee' in this section.

28.0 ENFORCEMENT OF TERMS

The failure of either party to enforce at any time of the provisions of this contract or any rights in respect thereto or to exercise any option herein provided, shall in no way be construed to be a waiver of such provisions, rights or options or in anyway to affect the validity of the contract. The exercise by either party of any of its rights herein shall not preclude or prejudice either party from exercising the same or any other right it may have hereunder.

29.0 ENGINEER'S DECISION

- 29.1 In respect of all matters which are left to the decision of the engineer including the granting or withholding of the certificates, the engineer shall, if required to do so by the contractor give in writing a decision thereon.
- 29.2 If in the opinion of the contractor, a decision made by the engineer is not in accordance with the meaning and intent of the contract, the contractor may file with the engineer within fifteen (15) days after receipt of the decision, a written objection to the decision. Failure to file an objection within the allotted time will

be considered as acceptance of the engineer's decision and the decision shall become final and binding.

- 29.3 The engineer's decision and the filling of the written objection thereto shall be a condition precedent to the right to any legal proceedings. It is the intent of the agreement that there shall be no delay in the execution of the works and the decision of the engineer as rendered shall be promptly observed.

30.0 CO-OPERATION WITH OTHER CONTRACTORS AND CONSULTING ENGINEERS

The contractor shall agree to co-operate with the owner's other contractors and consulting engineers and freely exchange with them such technical information as is necessary to obtain the most efficient and economical design and to avoid unnecessary duplication of efforts. The engineer shall be provided with three copies of all correspondence addressed by the contractor to other sub-contractors and consulting engineers in respect of such exchange of technical information.

31.0 TRAINING OF OWNER'S PERSONNEL

- 31.1 The contractor shall undertake to train free of cost, engineering personnel selected and sent by the owner at the works of the contractor unless otherwise specified in the technical specifications. The period and the nature of training for the individual personnel shall be agreed upon mutually between the contractor and the owner. These engineering personnel shall be given special training in the shops, where the equipment will be manufactured and/or their collaborator's works and where possible, in any other plant where equipment manufactured by the contractor or his collaborator is under installation or test, to enable those personnel to become familiar with the equipment being furnished by the contractor.
- 31.2 All traveling and living expenses for the engineering personnel to be trained during the total period of training will be borne by the owner. These engineering personnel while undergoing training shall be responsible to the contractor for discipline.
- 31.3 In the event of the owner, for any reason, failing to avail of the training facilities, he shall not be entitled for any rebate whatsoever on this account.

32.0 POWER TO VARY OR OMIT WORK

- 32.1 No alterations, amendments, omissions, suspensions or variations of the works (hereinafter referred to as 'Variation') under the contract as detailed in the contract documents, shall be made by the contractor except as directed in writing by the engineer, but the engineer shall have full power subject to the provision hereinafter contained from time to time during the execution of the contract by notice in writing, to instruct the contractor to make such variation without prejudice to the contract. The contractor shall carry out such variation and be bound by the same conditions as far as applicable as though the said variation occurred in the contract documents. If any suggested variation would, in the opinion of the contractor, if carried out, prevent him from fulfilling any of his obligations or guarantees under the contract, he shall notify the engineer thereof in writing and the engineer shall decide forthwith, whether or not the same shall be carried out and if the engineer confirm his instructions, contractor's obligations and guarantees shall be modified to such an extent as may be mutually agreed. Any agreed difference in cost occasioned by any such variation shall be added to or deducted from the contract price as the case may be.
- 32.2 In the event of the engineer requiring any variation, such reasonable and proper notice shall be given to the contractor to enable him to work his arrangements accordingly and in cases where goods or materials are already prepared or any design, drawings or pattern made or work done requires to be altered, a reasonable and agreed sum in respect thereof shall be paid to the contractor.
- 32.3 In any case in which the contractor has received instructions from the engineer as to the requirement of carrying out the altered or additional substituted work which either then or later on, will in the opinion of the contractor, involve a claim for additional payments, the contractor shall immediately and in no case later than thirty (30) days after receipt of the instructions aforesaid and before carrying out the instructions, advise the engineer to that effect. But the engineer shall not become liable for the payment of any charges in respect of any such variations, unless the instructions for the performance of the same shall be confirmed in writing by the engineer.
- 32.4 If any variation in the works, results in reduction of contract price, the parties shall, agree, in writing, so to the extent of any change in the price, before the contractor proceeds with the change.

- 32.5 In all the above cases, in the event of a disagreement as to the reasonableness of the said sum, the decision of the engineer shall prevail.
- 32.6 Notwithstanding anything stated above in this clause, the engineer shall have the full power to instruct the contractor, in writing, during the execution of the contract, to vary to quantities of the items or groups of items. The contractor shall carry out such variations and be bound by the same conditions, as though the said variations occurred in the contract documents. However, the contract price shall be adjusted at the rates and the prices provided for the original quantities in the contract.

33.0 GUARANTEE

- 33.1 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. The contractor's liability shall be limited to the replacement of any 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 plant. Such replaced defective parts shall be returned to the contractor unless otherwise arranged. No repairs or replacements shall normally be carried out by the engineer when the plant is under the supervision of the contractor's supervisory engineers.

34.0 REPLACEMENT OF DEFECTIVE PARTS AND MATERIALS

- 34.1 If during the progress of the works the engineer shall decide and inform in writing to the contractor, that the contractor has manufactured any plant or part of the plant unsound or imperfect or has furnished any 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 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 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.

34.2 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 erection, 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 plant and repayments of any sum paid by the owner to the contractor in respect of such defective plant. Should the owner not so replace the defective 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 plant.

35.0 DEFENCE OF SUITS

If any action in court is brought against the owner or engineer or an officer or agent of the owner, for the failure or neglect on the part of the contractor to perform any acts, matters, covenants or things under the contract, or for damage or injury caused by the alleged omission or negligence on the part of the contractor, his agents, representatives or his sub-contractors, workmen, suppliers or employees, the contractor shall in all such cases indemnify and keep the owner, and the engineer and/or his representative, harmless from all losses, damages, expenses or decrees arising of such action.

36.0 LIMITATIONS OF LIABILITIES

The final payment by the owner in pursuance of the contract shall mean, the release of the contractor from all his liabilities under the contract. Such final payment shall be made only at the end of the guarantee period as detailed in clause 33 above and till such time as the contractual liabilities and responsibilities of the contractor, shall prevail. All other payments made under the contract shall be treated as on account payments.

37.0 MARGINAL NOTES

The marginal notes to any clause of the contract shall not affect or control the construction of such clause.

38.0 TAXES, PERMITS & LICENCES

The contractor shall be liable and pay all-Indian taxes, duties, levies, lawfully assessed against the owner or the contractor in pursuance of the contract. In addition the contractor shall be responsible for payment of all Indian duties, levies and taxes lawfully assessed against the contractor for his personal income and property only. This clause shall be read in conjunction with clause 12.3 of section Instruction to Bidders.

39.0 PROGRESS REPORTS AND PHOTOGRAPHS

During the various stages of the works in the pursuance of the contract, the contractor shall at his own cost submit periodic progress reports as may be reasonably required by the engineer with such materials as charts, net-works, photographs, test certificates, etc. Such progress report shall be in the form and size as may be required by the engineer and shall be submitted in at least three (3) copies.

40.0 LONG TERM AVAILABILITY OF SPARES

- 40.1 The contractor shall guarantee the long term availability of spares to the owner for the full life of the equipments covered under the contract. The contractor shall guarantee that before going out of production of spare parts of the equipment covered under the contract, he shall give the owner at least twelve (12) months advance notice so that the latter may order his bulk requirement of spares, if he so desires. The same provision will also be applicable to sub-contractor. Further, in case of discontinuance of manufacture of any spares by the contractor or his sub-contractors the contractor will provide the owner two years in advance, with full manufacturing drawings, material specifications and technical information required by the owner for the purpose of manufacture of such items.
- 40.2 Further, in case of discontinuance of supply of spares by the contractor or his sub-contractors the contractor will provide the owner with full information for replacement of such spares with other equivalent makes, if so required by the owner.
- 40.3 The contractor shall provide the owner with a "directory" of his sub-contractors giving the addresses and other particulars of his sub-contractors. The owner, if he so desires, shall have the right to procure the spares directly from sub-contractors.

- 40.4 Notwithstanding anything stated elsewhere in the bid documents, the prices of all spares which may be procured to cover long term requirements beyond the 2 years' maintenance and operational requirements will be generally in accordance with the mutually agreed prices.
- 40.5 The contractor will indicate in advance the delivery period of the items of spares, which the owner may procure in accordance with the sub-clause 40.4. In case of emergency requirements of spares, the contractor would make every effort to expedite the manufacture and delivery of such spares on the basis of mutually agreed time schedule.
- 40.6 The procedure specified in clause 40.4 and 40.5 shall apply for future procurement of items included in stand by spare list, mandatory spares list, optional spares list and special tools, plants and equipment list, if any, specified in the bid documents.
- 40.7 The contractor shall indemnify the owner for the availability of long time spares as per the terms and conditions laid down above in clause 40.1 to clause 40.6.

41.0 PAYMENT

- 41.1 The payment to the contractor for the performance of the works under the contract will be made by the owner as per the guidelines and conditions specified herein. All payment made during the contract shall be on account payments only. The final payment will be made on completion of all the works and on fulfillment by the contractor of all his liabilities under the contract.

41.2 CURRENCY OF PAYMENT

All payments under the contract shall be in Indian Rupees only.

41.3 DUE DATES FOR PAYMENT

Owner will make progressive payment as and when the payment is due as per the terms of payment set forth in the accompanying technical specifications. Payment will become due and payable by the owner within thirty (30) days from the date of receipt of contractor's bill/invoice/debit note by the owner, provided the documents submitted are complete in all respects.

41.4 PAYMENT SCHEDULE

The contractor shall prepare and submit to the engineer for approval, a break-up of the contract price. This contract price break-up shall be interlinked with the agreed detailed PERT network of the contractor setting forth his starting and completion dates for the various key phases of works prepared as per condition of this section. Any payment under the contract shall be made only after the

contractor's price break-up is approved by the engineer. The aggregate sum of the contractor's price break-up shall be equal to the lump sum contract price.

41.5 APPLICATION FOR PAYMENTS

41.5.1 The contractor shall submit application for the payment in the prescribed proforma of the owner. Proforma for application for payment is enclosed in section 8.

41.5.2 Each such application shall state the amount claimed and shall set forth in detail, in the order of the payment schedule, particulars of the works including the works executed at site and of the equipment shipped/brought on to the site pursuant to the contract upto the date mentioned in the application and for the period covered since the last preceding certificate, if any.

41.5.3 Every interim payment certificate shall certify the contract value of the works executed upto the date mentioned in the application for the payment certificate, provided that no sum shall be included in any interim payment certificate in respect of the works that, according to the decision of the engineer, does not comply with the contract, or has been performed, at the date of certificate prematurely.

41.6 MODE OF PAYMENT

The payments due on receipt of equipment and materials, and those for the inland transportation and the erection portion of the works shall be made direct to the contractor by the owner.

41.7 TERMS OF PAYMENTS

41.7.1 The terms of payment for the price components of the equipment and its erection are detailed herein for each equipment package.

41.7.2 All payments under the contract shall be made as stipulated in the technical specifications after signing the contract agreement. The payments linked with despatch of materials shall only be made after production of all despatch documents as specified in L/C conditions and/or in the relevant contract conditions which will inter-alia include the material despatch clearance certificate issued by the owner. In case of erection, progress payments shall only be made after the issue certificates by the engineer's field quality surveillance representative for the successful completion of quality check points involved in the quantum of work billed.

41.7.3 INLAND TRANSPORTATION AND INSURANCE

Inland transportation (including port handling) and inland insurance charges shall be paid to the contractor on pro-rata to the value of the equipment

received at site and on production of the invoices by the contractor. However, wherever equipment wise inland transportation charges have been called for in the bid proposal sheets and have been furnished by the contractor, the payment of inland transportation charges shall be made after receipt of equipment at site based on the charges thus identified by the contractor in his proposal and incorporated in the contract. The aggregate of all such pro-rata payments shall however, not exceed the total amount quoted by the bidder in his bid and incorporated in the contract.

42.0 SETTLEMENT OF DISPUTES

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.

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.

43.0 SALES TAX ON WORKS CONTRACTS

All taxes, levies, cess, royalties, whether local, municipal, provincial or central pertaining to the contract are payable during the entire period of contract, shall be to the contractor/ contractors account and shall be deemed to have been included in the contracted rate for the work to be executed by the contractor. The company shall not be liable for any taxes or levies etc. whatsoever in connection with this contract.

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 deduction and shall not be responsible for any reason whatsoever.

44. 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 12 (twelve) months from the date of issue of 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 12 (twelve) months from the date of issue of completion certificate or before the expiry of one full monsoon period i.e. June to October whichever is later in point of time.

44.1 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.

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ADDITIONAL TERMS & CONDITIONS OF CONTRACT

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

1.0 PRICE VARIATION CLAUSE :

- 1.1 **The contract price shall remain firm without any price variation due to escalation** for the portions of design and engineering and supply of equipments, plant and machineries as envisaged in the scope of work and the price agreed thereon as per the contract except the statutory increase/decrease in taxes and duties such as excise duty, sales tax, import duty etc.
- 1.2 If the contract is to be extended beyond the stipulated period for completion of the work due to fault on the part of the contractor escalation on prices should not be allowed further if not provided otherwise in the accepted contract.
- 1.2 For the portions of civil and structural works and erection and commissioning works of the plant & machineries, the price variation due to escalation shall be allowed to the extent as detailed hereinafter.
 - 1.2.1 If the prices of materials (not being materials supplied at fixed issue rates by the company) and wages of labour, required for execution of the work, increase, the contractor shall be compensated for such increase as per provisions detailed below :
 - a) The amount of the contract shall accordingly be varied, subject to the condition that such compensation for variation in prices shall be available only for the work done during the stipulated period of the contract as per the work programme agreed including such period for which the contract is validly extended under the provisions of the contract without any penal action.
 - b) The base date for working out such price variation shall be thirty (30) days prior to the date set for opening of the bids or the revised price bid whichever is later.
 - c) The compensation of price variation shall be worked out at quarterly intervals and shall be with respect to the cost of work done during the previous three months. The first such payment shall be made at the end of three months after the month (Excluding) in which the tender was accepted and thereafter at three months interval.

2.2.1.1 PRICE VARIATION 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 price variation relates as indicated in clause no.2.3 of the 'ADDITIONAL TERMS & CONDITIONS OF CONTRACT'

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

Lo = Minimum wages for unskilled workers payable as per the Minimum Wages Act / Rules of the State or Central Government, 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 workers corresponding to Lo during the period to which the escalation relates.

2.2.1.2 Price Variation on Materials :

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

$$Vm = W \times \frac{B}{100} \times \frac{M - Mo}{Mo}$$

Where :

Vm = Variation in material 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 price variation relates as indicated in clause no.2.3 of the 'ADDITIONAL TERMS & CONDITIONS OF CONTRACT'.
- B = Component of material expressed as percentage of the total value of work adopted from Table – 1.
- M = Average All India Wholesale Price Index for all commodities for the period to which price variation relates as published by the RBI Bulletin, Ministry of Industry & Commerce, Govt. of India.
- Mo = 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.

2.2.1.3 PRICE VARIATION ON POL :

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

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

Where :

- V_f = Variation in the cost of fuel, oil & lubricants 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 price variation relates as indicated in clause no.2.3 of the 'ADDITIONAL TERMS & CONDITIONS OF CONTRACT'.
- C = Component of POL expressed as percentage of total value of work adopted from Table-1.
- F = Average Index Number for Wholesale Price for the group of fuel, power, light and lubricants for the period to which price variation relates as published by Economic Advisor, Ministry of Industry, Govt. of India.
- F_o = Average Index Number for Wholesale Price for the group of fuel, power, light and lubricants as published by Economic Advisor, Ministry of Industry, Govt. of India prevalent on the last date of receipt of price bids or revised price bids whichever is later.

2.3 WHILE CALCULATING THE VALUE OF “W” THE FOLLOWING MAY BE NOTED:

The cost on which the escalation/price variation shall 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/price variation is worked out. Further the cost shall not include any work for which payment is made at prevailing market rates.

- 2.4** 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 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 hereinbefore stated under this clause shall mutatis/mutandis apply.

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. The price variation clause as stated above will be applied for extended time frame of a contract by following the principles 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 the 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 successful 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.
- iv) In some cases the total delay may be partially due to causes not attributable to the contractor and partially due to his fault. It may be difficult to exactly

quantify the total delay proportionately in such cases. The Price Variation Clause under such condition will be made operative for the entire extended time period by freezing the relevant indices on the date of the scheduled date of completion as originally fixed in the contract/agreement. At the same time the Clause related to the compensation for delay will also be applied.

2.5 CEILING ON PRICE VARIATION DUE TO ESCALATION

There shall be a ceiling on price variation due to escalation covered under clauses mentioned hereinbefore on the whole contract, limited to 10% of the 'contract price' only.

2.6 VARIATION IN THE TAXES, DUTIES, LEVIES ETC.

Other statutory variation due to increase in taxes, duties, levies etc. by Govt. (Central or State or Local) as of thirty (30) days prior to the date of opening of the bid or the revised price bid, whichever is later, with the taxes, duties, levies etc. during the manufacture/ works/ supply, as the case may be, shall be borne by the owner. Similarly decrease in taxes, duties, levies etc. shall be returned/deducted to/by the owner.

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GENERAL TECHNICAL CONDITIONS

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 contractor's proposal shall be based on the use of equipment and materials complying fully with the requirements, specified herein. It is recognized that the contractor may have standardized on the use of certain components, materials, processes or procedures different than those specified herein. Alternate proposals offering similar equipment based on the manufacturer's standard practice will also be considered provided such proposals meet the specified designs, standard and performance requirements and are acceptable to the owner.

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 erection, 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 contractor, 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 contractor 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 contractor, 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 contractor 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 DRAWINGS

5.1 All drawings submitted by the contractor 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 contractor 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, notings, markings and writings on the drawing shall be in English. All the dimensions should be in metric units.

5.3 The owner may use a 35mm microfilm system in processing drawings. All drawings shall be suitable for microfilming. Drawings, which are not suitable for microfilming, will not be accepted. A copy of each drawings reviewed will be returned to the contractor as stipulated herein. The owner may also accept and use floppies/disks for computer based drawings.

5.3.1 Copies of drawings returned to the contractor will be in the form of a print with the owner's marking, or a print made from a microfilm of the marked up drawing or in the form of aperture cards if the contractor has facilities to process such cards or print made from floppies for computer based drawings.

5.4 The drawings submitted by the contractor shall be reviewed by the engineer as far as practicable within four (4) weeks and shall be modified by the contractor if any modifications and / or corrections are required by the engineer. The contractor shall incorporate such modifications and/or corrections and submit the final drawings for approval. Any delay arising out of failure by the contractor 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 Contractor 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 contractor shall be responsible for design of Temporary Works.

The Nodal Officer/Engineer-in-charge or nominee's approval shall not alter the contractor'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 contractor by the engineer marked approved/ approved with corrections. The contractor shall thereupon furnish the owner with nine prints and one reproducible original of the drawing after incorporating all corrections.

5.7 Further work by the contractor 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 contractor's risk. The contractor 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 contractor's drawings or work by the engineer shall not relieve the contractor 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 100mm 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 **Operating and Maintenance Manual** : If "as built" drawings and/or Operating and Maintenance Manuals are required the contractor shall supply them by the dates stated in the contract data.

If the Contractor does not supply the drawings and/or Manuals by the dates stated in the contract data, or they do not receive the Nodal Officer or his Nominee's

approval, the Nodal Officer or his Nominee shall withhold the amount stated in the contract data from payments due to the contractor.

6.0 INSTRUCTION MANUALS

6.1 The contractor shall submit to the engineer, preliminary instruction manuals for all the equipment, covered under the contract within the time agreed upon between the owner & the contractor. The final instruction manuals complete in all respects shall be submitted by the contractor thirty (30) days before the first shipment of the equipment. The instruction manuals shall contain full details and drawings of all the equipment furnished, the erection procedures, testing procedures, operation & maintenance procedure of the equipment. These instruction manuals shall be submitted in the form of one (1) reproducible original and twelve (12) copies.

6.2 If after the commissioning and initial operation of the plant, the instruction manuals require any modifications/additions/changes, the same shall be incorporated and the updated final instruction manuals in the form of one (1) reproducible original and twelve (12) copies shall be submitted by the contractor to the owner.

6.3 The contractor shall furnish to the owner, twelve (12) sets of spare parts catalogue.

7.0 MANUFACTURING SCHEDULE

The contractor shall submit to the engineer his manufacture and delivery schedules for all equipment within thirty (30) days from the date of the letter of acceptance of tender. Such schedules shall be in line with the detailed net-work for all phases of the work of the contractor. Such schedule shall be reviewed, up-dated and submitted to the engineer, once every two (2) months thereafter, by the contractor. Schedule shall also include the materials and equipment purchased from outside suppliers.

8.0 REFERENCE STANDARDS

8.1 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.

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

9.0 DESIGN IMPROVEMENT

9.1 The engineer or the contractor may propose changes in the specification of the equipment or quality thereof and if the parties agree upon any such changes the specification shall be modified accordingly.

9.2 If any such agreed upon change is such that it affects the price and schedule of completion, the parties shall agree in writing as to the extent of any change in the price and/or schedule of completion before the contractor proceeds with the change. Following such agreement the provision thereof, shall be deemed to have been amended accordingly.

10.0 QUALITY ASSURANCE

10.1 Quality Assurance Programme

To ensure that the equipment and services under the scope of this contract whether manufactured or performed within the contractor's works or at his sub-contractor's premises or at the owner's site or at any other place of work are in accordance with the specifications, the contractor shall adopt suitable quality assurance programme to control such activities at all points necessary. Such programme shall be outlined by the contractor and shall be finally accepted by the engineer after discussions before the issue of letter of acceptance of tender. A quality assurance programme of the contractor shall generally cover the following :

- a. his organization structure for the management and implementation of the proposed quality assurance programme;
- b. documentation control system;
- c. qualification data for bidder's key personnel;
- d. the procedure for purchase of materials, parts components and selection of sub-contractor's services including vendor analysis, source inspection, incoming raw-material inspection, verification of materials purchased etc;
- e. system for shop manufacturing and site erection control including process control and fabrication and assembly controls;
- f. control of non-conforming items and system for corrective actions;
- g. inspection and test procedure both for manufacture and field activities;
- h. control of calibration and testing of measuring and testing equipment;
- i. system for indication and appraisal of inspection status:

- j. system for quality audits;
- k. system for authorizing release of manufactured product to the owner;
- l. system for maintenance of records;
- m. system for handling storage and delivery: and
- n. a quality plan detailing out the specific quality control procedure adopted for controlling the quality characteristics relevant to each item of equipment furnished and each work at different stages executed at work site.

10.2 Quality Assurance Documents

The contractor shall be required to submit the following Quality Assurance Documents within three weeks after despatch of the equipment :

- i. all non-destructive examination procedures stress relief and weld repair procedure actually used during fabrication.
- ii. welder and welding operator qualification certificates.
- iii. welder identification list, listing welder's and welding operator's qualification procedure and welding identification symbols.
- iv. material mill test reports on components as specified by the specification.
- v. the inspection plan with verification, inspection plan check points, verification sketches, if used, and methods used to verify that the inspection and testing points in the inspection plan were performed satisfactorily.
- vi. sketches and drawings used for indicating the method of traceability of the radiographs to the location on the equipment.
- vii. all non-destructive examination result reports including radiography interpretation reports.
- viii. stress relief time temperature charts.
- ix. factory test results for testing required as per applicable codes and standard referred in the specifications.
- x. the engineer or his duly authorized representative reserves the right to carry out quality audit and quality surveillance of the systems and procedures of the contractor/his vendor's quality management and control activities.

11.0 ENGINEER'S SUPERVISION

11.1 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.

11.2 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 contractor'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. supervise the quality assurance programme implementation at all stages of the works.
- h. to receive and endorse the despatch documents enabling the contractor to clear the consignments.

12.0 INSPECTION, TESTING AND INSPECTION CERTIFICATE

12.1 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 contractor'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 erection and if part of the works is being manufactured or assembled at other premises or works, the contractor shall obtain for the engineer and for his duly authorized representative permission to inspect as if the works were manufactured or assembled on the contractor's own premises or works.

12.2 The contractor shall give the Engineer/Inspector fifteen (15) days written notice of any material being ready for testing. Such tests shall be to the contractor'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 contractor 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 test in triplicate.

12.3 The Engineer or Inspector shall within fifteen (15) days from the date of inspection as defined herein give notice in writing to the contractor, 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 contractor 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.

12.4 When the factory tests have been completed at the contractor's or sub-contractor'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 contractor's test certificate by the Engineer/Inspector. Failure of the Engineer/Inspector to issue such a certificate shall not prevent the contractor 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 erection, be found not to comply with the contract.

12.5 In all cases where the contract provides for tests whether at the premises or works of the contractor or of any sub-contractor, the contractor, 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 given facilities to the Engineer/Inspector or to his authorized representative to accomplish testing.

12.6 The inspection by Engineer and issue of Inspection Certificate thereon shall in no way limit the liabilities and responsibilities of the contractor in respect of the agreed quality assurance programme forming a part of the contract.

13.0 TEST

13.1 Start up

13.1.1 On completion of erection 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 contractor 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 contractor's quality assurance programme.

13.1.2 The contractor'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 plant referred hereinafter as plant.

13.2 Trial Operation

13.2.1 The plant shall then be on trial operation during which period all necessary adjustments shall be made while operating over the full load-range enabling the plant to be made ready for performance and guarantee tests.

13.2.2 The duration of trial operation of the complete equipment shall be fourteen (14) days out of which at least seventy two (72) hours shall be continuous operation on full load or any other duration as may be agreed to, between the engineer and the contractor. 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.

13.2.3 For the period of trial operation, the time of operation with any load shall be counted. Minor interruptions not exceeding four (4) hours at a time, caused during the continuous operation shall not affect the total duration of trial operation. However, if in the opinion of the engineer, the interruption is long, the trial operation shall be prolonged for the period of interruption.

13.2.4 A trial operation report comprising of observations and recordings of various parameters to be measured in respect of the above trial operation shall be prepared by the contractor. This report, besides recording the details of the various observations during trial run, shall also include the dates of start and finish of the trial operations and shall be signed by the representatives of both the parties. The report shall have sheets, recording all the details of interruptions occurred, adjustments made and any minor repairs done during the trial operation. Based on the observations, necessary modifications/repairs to the plant shall be carried out by the contractor to the full satisfaction of the engineer to enable the later to accord permission to carry out performance and guarantee tests on the plant. However, minor defects which do not endanger the safe operation of the equipment, shall not be considered as reasons for withholding the aforesaid permission.

14.0 Performance and guarantee test

14.1 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 one week after successful completion of trial operations. Any extension of time beyond the above one week shall be mutually agreed upon.

14.2 These tests shall be binding on both the parties of the contract to determine compliance of the equipment with the performance guarantees.

14.3 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, unmeasurable 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.

14.4 Any special equipment, tools and tackles required for the successful completion of the performance and guarantee tests shall be provided by the contractor, free of cost.

14.5 The guaranteed performance figures of the equipment shall be proved by the contractor during these performance and guarantee tests. Should the results of these tests show any decrease from the guaranteed values, the contractor shall modify the equipment as required to enable it to meet the guarantees. In such case, performance and guarantee test shall be repeated within one month, from the date the equipment is 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 contractor. Duration of performance guarantee tests will be of one month of which 6 (six) days continuous on load operation is the minimum requirement and in case it fails, the process of performance guarantee tests will be repeated.

14.6 The specific tests to be conducted on equipment has been brought out in the technical specifications.

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

14.8 TEST CODES

The provisions outlined in the ASME performance test 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.

15.0 PACKING

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

16.0 PROTECTION

All coated surfaces shall be protected against abrasions, impact, discoloration and any other damages. All exposed threaded portions shall be suitable 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.

17.0 PRESERVATIVE SHOP COATING

17.1 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 of 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 manufacturers standards, to be selected and specified by the engineering at a later date.

17.2 Shop primer for all steel surface which will be exposed to operating temperature below 95°C shall be selected by the contractor, 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 95°C and such primers shall also be subject to the approval of the engineer.

17.3 All other steel surfaces, which are not to be painted shall be coated with suitable rust preventive compound subject to the approval of the engineer.

18.0 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.

19.0 DESIGN CO-ORDINATION

The contractor shall be responsible for the selection and design of appropriate equipment to provide the best co-ordinated performance of the entire system. The basic design requirements are detailed out in Technical Specification. 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 closed to the operating range of the unit.

20.0 DESIGN CO-ORDINATION MEETING

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

21.0 TOOLS AND TACKLES

The contractor shall supply with the equipment one complete set of all special tools and tackles for the erection, assembly, dis-assembly and maintenance of the equipment. However, these tools and tackles shall be separately packed and brought on to site.

22.0 NOISE LEVEL

The equivalent 'A' weighted sound level measured at a distance of 1.5 metres above floor level in elevation and one metre horizontally from the base of any equipment furnished and installed under these specifications, expressed in decibels to a reference of 0.0002 microbar, shall not exceed 85 dBA.

23.0 TAKING OVER

Upon successful completion of all the tests to be performed at site on equipment furnished and erected by the contractor, the engineer shall issue to the contractor 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 contractor of any of his obligations which otherwise survive, by the terms and conditions of the contract after issuance of such certificate.

24.0 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.

26.0 LUBRICATION

Equipments 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.

27.0 EQUIPMENT BASES

A cast iron or welded steel base plate shall be provided for all rotating equipment which is to be installed on a concrete/structural steel base unless otherwise agreed to by the engineer. Each base plate shall support the unit and its drive assembly, shall be of a neat design with pads for anchoring the units, shall have a raised lip all around, and shall have threaded drain connections.

28.0 RATING PLATES, NAME PLATES AND LABELS

28.1 Each main and auxiliary items of plant is to have permanently attached to it in a conspicuous position a rating plate of non corrosive material upon which is to be engraved the manufacturer's name, equipment, type or serial number, together with details of the loading conditions under which the item of plant in question have been designed to operate, and such diagram plates as may be required by the engineer.

28.2 Each item of plant is to be provided with a nameplate or label designating the service of the particular equipment. The inscriptions are to be approved by the engineer or shall be as detailed in the appropriate sections of the technical specifications.

28.3 Such nameplates or labels are to be of white non-hygroscopic material with engraved black lettering or, alternatively, in the case of indoor circuit breakers, starters etc. of transparent plastic material with suitably coloured lettering engraved on the back.

28.4 Items of plant such as valves, which are subject to handling, are to be provided with an engraved chromium plated nameplate or label with engraving filled with enamel.

28.5 All such nameplates, instruction plates, lubrication charts etc. shall be bilingual with Hindi inscription first, followed by English. Alternatively two separate plates one with Hindi and the other with English inscriptions may be provided.

29.0 COLOUR CODE FOR PIPE SERVICES

All pipe services wherever applicable are to be painted in accordance with the owner's standard colour scheme, by the contractor.

30.0 SERVICE BY THE OWNER

30.1 The following services shall be provided by the owner :

- i. Construction/ drinking water at one point within 100 metres of the work site, charges to be decided by the company.
- ii. Auxiliary power for construction at one point within 100 metres of the work site, charges to be decided by the company.

30.2 In the event of the contractor requiring these services at parameters other than those specified above, for any systems, equipment, instrument etc. he shall make the necessary arrangements himself.

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ERECTION CONDITIONS OF CONTRACT

1. 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 contractor upon signing of the contract shall, in addition to a project co-ordinator, nominate another responsible officer as his representative at site suitably designated for the purpose of overall responsibility and co-ordination of the works to be performed at site. Such person shall function from the site office of the contractor during the pendency of contract.

2.0 REGULATION OF LOCAL ALUTHORITIES AND STATUTES

2.1 The contractor 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 subcontractor. The contractor shall make all necessary payments of the Provident Fund for the workmen 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 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 this contract shall be to the account of the contractor. 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 erection in respect of the plant equipment 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 contractor or his sub-contractor, the additional fees for such inspection and/ or registration shall be borne by the contractor.

3.0 OWNER'S LIEN ON EQUIPMENT

The owner shall have lien on all equipment including those of the contractor brought to the site for the purpose of erection, testing and commissioning of the 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 contractor and/or his sub-contractors 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 erection portion of the works. The engineer shall have the right to re-inspect any equipment though previously inspected and approved by him, at the contractor's works, before and after the same are constructed and/or erected at site. If by the above inspection, the engineer rejects any work or equipment, the contractor 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 contractors and/or agencies, which might have got damaged or affected by replacements or re-work done to the contractor'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 contractor by the owner in reasonable time.

5.2 The owner shall have the necessary foundations to be provided by him ready, as per the agreed schedule for the execution of the individual phases of works.

5.3 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 contractor reasonable facilities for carrying out the works.

5.4 In the execution of the works, no persons other than the contractor or his duly appointed representative, sub-contractor 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 CONTRACTOR'S SITE OFFICE ESTABLISHMENT

The contractor shall establish a site office at the site and keep posted an authorized representative for the purpose of the contract. Any written order or instruction of the engineer or his duly authorized representative, shall be communicated to the said authorized resident representing the contractor and the same shall be deemed to have been communicated to the contractor at his legal address.

7.0 CO-OPERATION WITH OTHER CONTRACTORS

7.1 The contractor shall co-operate with all other contractors 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 contractor shall also so arrange to perform his work as to minimize, to the maximum extent possible, interference with the work of other contractors and his workmen. Any injury or damage that may be sustained in the employees of the other contractor's and the owner, due to the contractor'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 contractor and other contractors or between the contractor and the workmen of the owner in regard to their work. If the works of the contractor is delayed because of any acts or omissions of another contractor, the contractor shall have no claim against the owner on that account other than an extension of time for completing his works.

7.2 The engineer shall be notified promptly by the contractor of any defects in the other contractor's works that could affect the contractor'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 contractor.

8.0 DISCIPLINE OF WORKMEN

The contractor 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 contractor 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 contractor shall remove such a person objected to and provide in his place a competent replacement.

9.0 CONTRACTOR'S FIELD OPERATION

9.1 The contractor shall keep the engineer informed in advance regarding his field activity plans and schedules for carrying out each part of the works. Any review of such plan or schedule or method of work by the engineer shall not relieve the contractor 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 contractor will be entertained because of the failure or inefficiency of any such plan or schedule or method of work reviewed. The contractor shall be solely responsible for the safety, adequacy and efficiency of plant and equipment and his erection methods.

9.2 The contractor shall have complete responsibility for the conditions of the work site including the safety of all persons employed by him or his sub-contractor 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 contractor's safety measures in, on or near the works-site, and their adequacy or otherwise.

10.0 PHOTOGRAPHS AND PROGRESS REPORT

10.1 The contractor shall furnish three (3) prints each to the engineer of progress photographs of the work done at site. Photographs shall be taken as and when indicated by the engineer or his representative. Photographs shall be adequate in size and number to indicate various stages of erection. Each photograph shall contain the date, the name of the contractor and the title of the photograph.

10.2 The above photographs shall accompany the monthly progress report detailing out the progress achieved on all erection activities as compared to the schedules. The report shall also indicate the reasons for the variance between the scheduled and actual progress and the action proposed for corrective measures wherever necessary.

11.0 MAN-POWER REPORT

11.1 The contractor shall submit to the engineer, on the first day of every month, a man hour schedule for the month, detailing the man hours scheduled for the month, skill wise and area-wise.

11.2 The contractor shall also submit to the engineer on the first day of every month, a man power report of the previous months detailing the number of persons scheduled to have been employed and actually employed, skill-wise and areas of employment of such labour.

12.0 PROTECTION WORK

The contractor 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 contractor's works and the contractor 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 contractor's works occur because of other party not under his supervision or control, the contractor shall make his claim directly with the party concerned. If disagreement or conflict or dispute develops between the contractor and the other party or parties concerned regarding the responsibility for damage to the contractor's works the same shall be resolved as per the provisions of the clause 7.0 above entitled co-operation with other contractors. The contractor shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such disputes. The contractor shall proceed to repair the work immediately and the cause thereof will be assigned pending resolution of such dispute.

13.0 EMPLOYMENT OF LABOUR

13.1 The contractor will be expected to employ on the work only his regular skilled employees with experience of this particular work. No female labour shall be employed after darkness, no persons below the age of eighteen years shall be employed.

13.2 All traveling expenses including provisions of all necessary transport to and from site lodging allowances and other payments to contractor's employees shall be the sole responsibility of the contractor.

13.3 The hour of work on the site shall be decided by the owner and the contractor shall adhere to it. Working hours will normally be eight (8) hours per day- Monday to Saturday.

13.4 Contractor's employees shall wear identification badges while on work at site.

13.5 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 contractor, the owner may make such payments and shall recover the same from the contractor's bills.

14.0 FACILITIES TO BE PROVIDED BY THE OWNER

14.1 SPACE :

The contractor shall advise the owner within thirty (30) days from the date of acceptance of the letter of award, about his exact requirement of space for his office, mess-rooms, storage area, pre-assembly and fabrication areas, labour colony area, toilets, etc. The above requirement shall be reviewed by the engineer and space will be allotted to the contractor for construction of his temporary structures like office, storage sheds, labour and staff colony and other utilities etc. for his own as well as his sub-contractor's use.

14.2 ELECTRICITY

The contractor shall submit to the engineer within thirty (30) days from the date of acceptance of the award letter, his electrical power requirements, if any, to allow the planning of the temporary electrical distribution by the engineer. The contractor shall be provided with supply of electricity for the purposes of the contract, only at one point in the project site. The contractor shall make his own further distribution arrangement. All temporary wiring must comply with local regulations and will be subject to engineer's inspection and approval before connection to supply. Power supply for labour colonies shall also be provided at one point. The contractor shall be charged for the power supplied at work site and labour colonies at prevalent rate of power supplied by State Electricity Board.

14.3 WATER

Supply of water will be made available for the construction purposes at an agreed single point within 100 metres of the work site. And further distribution will

be the responsibility of the contractor. The contractor shall be charged for the water supplied at work site @ 1% of the value of civil works and shall be deducted from the contractor's running /final bills.

15.0 FACILITIES TO BE PROVIDED BY THE CONTRACTOR

15.1 Tools, tackles and scaffoldings

The contractor shall provide all the construction equipment, tools, tackles and scaffoldings required for pre-assembly, erection, 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 site. These tools and tackles shall not be removed from the site without the written permission of the engineer.

15.2 Communication

The owner will extend the telephone & telex facilities, if available at site, for purposes of contract. The contractor shall be charged at actual for such facilities.

15.3 First-aid

15.3.1 The contractor shall provide necessary first aid facilities for all his employees, representatives and workmen working at the site. Enough number of contractor's personnel shall be trained in administering first-aid.

15.3.2 The owner will provide the contractor in case of an emergency, the services of an ambulance for transportation to the nearest hospital.

15.4. Cleanliness

15.4.1 The contractor shall be responsible for keeping the entire area allotted to him clean and free from rubbish, debris etc. during the period of contract. The contractor 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.

15.4.2 Similarly the labour colony, the offices and the residential areas of the contractor's employees and workmen shall be kept clean and neat to the entire satisfaction of the engineer. Proper sanitary arrangement shall be provided by the contractor, in the work areas, office and residential areas of the contractor.

16.0 LINES AND GRADES

All the works shall be performed to the lines, grades and elevations indicated on the drawings. The contractor shall be responsible to locate and layout the works. Basic horizontal and vertical control points will be established and marked by the engineer at site at suitable points. These points shall be used as datum for the works under the contract. The contractor shall inform the engineer well-in advance of the times and places at which he wishes to do work in the area allotted to him, so that suitable datum points may be established and checked by the engineer to enable the contractor to proceed with his works. Any work done without being properly located may be removed and/or dismantled by the engineer at contractor's expense.

17.0 FIRE PROTECTION

17.1 The work procedures that are to be used during the erection 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 purposes 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.

17.2 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.

17.3 All the contractor'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.

17.4 The contractor shall provide enough fire protection equipment of the types and number for the warehouses, office, temporary structures, labour colony area

etc. Access to such fire protection equipment, shall be easy and kept open at all times.

18.0 SECURITY

The contractor shall have total responsibility for all equipment and materials in his custody stored, loose, semi-assembled and/or erected by him at site. The contractor 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 contractor shall enter and leave the project site only with the written permission of the engineer in the prescribed manner.

19.0 CONTRACTOR'S AREA LIMITS

The engineer will mark-out the boundary limits of access roads, parking spaces, storages and construction areas for the contractor and the contractor shall not trespass the areas not so marked out for him. The contractor 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 contractor'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.

20.0 CONTRACTOR'S CO-OPERATION WITH THE OWNER

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

21.0 PRE-COMMISSIONING TRIALS AND INITIAL OPERATIONS

The pre-commission trials and initial operations of the equipment furnished and erected by the contractor shall be the responsibility of the contractor as detailed in relevant clauses in section GTC. The contractor 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 contractors workmen required for the above test shall always be present at site during such trials.

22.0 MATERIALS HANDLING AND STORAGE

22.1 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 contractor.

22.2 Contractor shall be responsible for examining all the shipment and notify the engineer immediately of any damage, shortage, discrepancy, etc. for the purpose of engineer's information only. The contractor shall submit to the engineer every week a report detailing, all the receipts during the week. However, the contractor shall be solely responsible for any shortages or damage in transit, handling and/or in storage and erection of the equipment at the site. Any demurrage, wharfage and other such charges claimed by the transporters, railway etc. shall be to the account of the contractor.

22.3 The contractor shall maintain an accurate and exhaustive record detailing out the list of all equipment received by him for the purpose of erection and keep such record open for the inspection of the engineer at any time.

22.4 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.

22.5 All electrical panels, control gear, motors and such other devices shall be properly dried by heating before they are installed and energised. 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.

22.6 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 contractor. Such records shall be open for inspection by the engineer.

22.7 The contractor 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.

22.8 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.

22.9 All the materials stored in the open or duty location must be covered with suitable weather-proof and flameproof covering materials wherever applicable.

22.10 If the materials belonging to the contractor 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 contractor at the contractor's cost.

22.11 The contractor 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 contractor to move certain other materials which in his opinion will require indoor storage, to indoor storage areas which the contractor shall strictly comply with.

23.0 CONSTRUCTION MANAGEMENT

23.1 The field activities of the contractors working at site, will be co-ordinated by the engineer and the engineer's decision shall be final in resolving any disputes or conflicts between the contractor and other contractors and tradesmen of the owner regarding scheduling and co-ordination of work. Such decision by the engineer shall not be a cause for extra compensation or extension of time for the contractor.

23.2 The engineer shall hold weekly meetings of all the contractors working at site, at a time and a place to be designated by the engineer. The contractor shall attend such meetings and take notes of discussions during the meeting and the

decisions of the engineer and shall strictly adhere to those decisions in performing his works. In addition to the above weekly meetings, the engineer may call for other meetings either with individual contractors or with selected number of contractors and in such a case the contractor, if called will also attend such meetings.

23.3 Time is the essence of the contract and the contractor shall be responsible for performance this works in accordance with the specified construction schedule. If at any time, the contractor is falling behind the schedule, he shall take necessary action to make good for such delays by increasing his work force or by working overtime or otherwise accelerate the progress of the work to comply with the schedule and shall communicate such actions in writing to the engineer, satisfying that his action will compensate for the delay. The contractor shall not be allowed any extra compensation for such action.

23.4 The engineer shall however not be responsible for provision of additional labour and/or materials or supply or any other services to the contractor except for the co-ordination work between various contractors as set out earlier.

24.0 FIELD OFFICE RECORDS

The contractor 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 contractor 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 contractor 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 owner's property.

25.0 CONTRACTOR'S MATERIALS BROUGHT ON TO SITE

25.1 The contractor 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 contractor without the written permission of the engineer. The contractor shall nevertheless be solely liable and responsible for any loss or destruction thereof and damage thereto.

25.2 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 contractor, 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.

25.3 After the completion of the works, the contractor shall remove from the site under the direction of the engineer the materials such as construction equipment, erection tools and tackles, scaffolding etc. with the written permission of the engineer. If the contractor 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 25.2 above and credit the proceeds thereto the account of the contractor.

26.0 PROTECTION OF PROPERTY AND CONTRACTOR'S LIABILITY

26.1 The contractor 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 contractors and sub-contractors and all public and private property including structures, buildings, other plants and equipment and utilities either above or below the ground.

26.2 The contractor 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 contractor 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.

27.0 PAINTING

All exposed metal parts of the equipment including pipings, structure railing etc. wherever applicable, after installation unless otherwise surface protected, shall be first painted with at least one coat of suitable primer which matches the shop primer paint used, after thoroughly cleaning all such parts of all dirt, rust, scales, greases, oils and other foreign materials by wire brushing, scraping or sand blasting, and the same being inspected and approved by the engineer for painting. Afterwards, the above parts shall be finished with two coats of alloyed resin machinery enamel paints. The quality of the finish paint shall be as per the standards of ISI or equivalent and to be of the colour as approved by the engineer.

28.0 INSURANCE

28.1 In addition to the conditions covered under the clause entitled insurance in general terms and conditions of contract of this volume-1, the following provisions will also apply to the portion of the works to be done beyond the contractor's own or his sub-contractor's works.

28.2 Workmen's compensation insurance

This insurance shall protect the contractor against all claims applicable under the Workmen's Compensation Act 1948 (Government of India). This policy shall also cover the contractor against claims for injury, disability, disease or death of his or his sub-contractor'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

28.3 Comprehensive Automobile Insurance

This insurance shall be in such a form to protect the contractor against all claims for injuries, disability, disease and death to members of public including the owner's men and damage to the property of others arising from the use of motor vehicles during on or off the site operations, irrespective of the ownership of such vehicles.

28.4 Comprehensive General Liability Insurance

28.4.1 This insurance shall protect the contractor against all claims arising from injuries, disabilities, disease or death of members of public or damage to property of others, due to any act or omission on the part of the contractor, his agents, his employees, his representatives and sub-contractors or from riots, strikes and civil commotion. The insurance shall also cover all the liabilities of the contractor arising out of the clause entitled defence of suits under General Terms and Conditions of contracts of this volume 1.

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

28.5 The above are only illustrative list of insurance covers normally required and it will be the responsibility of the contractor to maintain all necessary insurance coverage to the extent both in time and amount to take care of all his liabilities either direct or indirect, in pursuance of the contract.

29.0 UNFAVOURABLE WORKING CONDITIONS

The contractor shall confine all his field operations to those works which can be performed without subjecting the equipment and materials to adverse effects, during inclement weather conditions, like monsoon, storms, etc. and during other unfavorable construction conditions. No field activities shall be performed by the contractor under conditions which might adversely affect quality and efficiency thereof, unless special precautions or measures are taken by the contractor in a proper and satisfactory manner in performance of such works and with concurrence of the engineer. Such unfavourable construction conditions will in no way relieve the contractor of his responsibility to perform works as per the schedule.

30.0 PROTECTION OF MONUMENTS AND REFERENCE POINTS

The contractor shall ensure that any finds such as relic, antiquity, coins, fossils, etc. which he might come across during the course of performance of his works either during excavation or elsewhere, are properly protected and handed over to the engineer. Similarly the contractor shall ensure that the bench marks, reference points, etc., which are marked out either with the help of engineer or by the engineer shall not be disturbed in any way during the performance of his works. If any work is to be performed which disturb such references, the same

shall be done only after these are transferred to other suitable locations under the direction of the engineer. The contractor shall provide all necessary materials and assistance for such relocation of reference points etc.

31.0 WORK AND SAFETY REGULATIONS

31.1 The contractor shall ensure proper safety of all the workmen, materials plant and equipment belonging to him or the Company or to others, working at or near the site. The contractor 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.

31.2 The contractor will notify well in advance to the engineer-in-charge of his intention to bring to the site any container filled with liquid or gaseous fuel or explosive or petroleum substance or such chemicals which may involve hazards. The engineer-in-charge shall have the right to prescribe the conditions, under which such container is to be stored, handled and used during the performance of the works and the contractor shall strictly adhere to and comply with such instructions. The engineer-in-charge shall have the right at his sole discretion to inspect any such container of such construction plant/equipment for which material in the container is required to be used and if in his opinion, its use is not safe, he may forbid its use. No claim due to such prohibition shall be entertained by the owner. Nor the owner shall entertain any claim of the contractor towards additional safety provisions/ conditions to be provided or constructed as per engineer-in-charge's instructions.

Further any such decision of engineer-in-charge shall not, in any way, absolve the contractor of his responsibilities, and in case, use of such a container or entry thereof into the site area is forbidden by engineer-in-charge, the contractor shall use alternative methods with approval of engineer-in-charge without any cost implication to Company or extension of work schedule.

31.3 Where it is necessary to provide and/or store petroleum products or petroleum mixtures and explosives, the contractor shall be responsible for carrying out such provision and/or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act 1948, and Petroleum and Carbide of Calcium Manual Published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of the engineer-in-charge. In case, any approvals are necessary from the Chief Inspector

(Explosive) or any statutory authorities, the contractor shall be responsible for obtaining the same.

31.4 All equipment used in construction and erection by contractor shall meet Indian, International Standards and where such standards do not exist, the contractor, shall ensure these to be absolutely safe. All equipment shall be strictly operated and maintained by the contractor in accordance with manufacture's operation manual and safety instructions as per Guidelines/Rules of the Company in this regard.

31.5 Periodical Examinations and all tests for all lifting/hoisting equipment and tackles shall be carried out in accordance with the relevant provisions of 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 contractor and will be promptly produced as and when desired by engineer –in-charge or by the person authorized by him.

31.6 The contractor shall be fully responsible for the safe storage of his and his sub-contractors radio-active sources in accordance with BARC/DAE Rules and other applicable provisions. All precautionary measures stipulated by BARC/DAE in connection with use, storage and handling of such material will be taken by contractor.

31.7 The contractor 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.

31.8 Where explosives are to be used, the same shall be used under the direct control and supervision of an expert, experienced, qualified and competent persons strictly in accordance with the code practices/rules framed under Indian Explosives Act pertaining to handling, storage and use of the explosives.

31.9 The contractor 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 erection, good and standard quality of material only shall be used by the contractor.

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

- 31.11 Before the contractor connects any electrical appliances to any plug or socket belonging to the other contractor 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.
- 31.12 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.
- 31.13 No electric cable is in use by the contractor /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.
- 31.14 No repair work shall be carried out on any live equipment. The equipment shall 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 contractor. While working on electric lines/equipments whether alive or dead, suitable type and sufficient quantity of tools will have to be provided by contractor to electricians/workmen/officers..
- 31.15 The contractor shall employ necessary number of qualified, full time electricians/ electrical supervisors to maintain in his temporary electrical installations.
- 31.16 The contractor employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as safety officer to supervise safety aspects of the equipment and workmen who will co-ordinate with the project safety officer. In case of work being carried out through sub-contractor's, the sub-contractor's workmen/employees will also be considered as the contractor's employees/workmen for above purpose. The name and address of a such safety officer of contractor will be promptly informed in writing to engineer-in-charge with a copy to safety officer-in-charge before he starts work or immediately after any change of the incumbent is made during currency of the contract.
- 31.17 In case any accident occurs during the construction/erection or other associated activities undertaken by the contractor thereby causing any minor or

major or fatal injury to his employees due to any reason whatsoever, it shall be the responsibility of the contractor 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.

31.18 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 contractor shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove short comings promptly. The contractor after stopping the specific work, can, if felt necessary, appeal against the order of stoppage of work to the General Manger of the project within 3 days of such stoppage of work and decision of the project G.M. in this respect shall be conclusive and binding on the contractor.

31.19 The contractor shall not be entitled for any damages/compensation for stoppage of work due to safety reasons as provided in para 31.18 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.

31.20 The contractor 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 contractor unless the statutory provisions are more stringent.

31.21 If the contractor 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 31.18 above, the contractor 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 instruction are complied with and so certified by engineer-in-charge. However in case of accident taking place causing injury to any individual, the provisions contained in para 31.22 shall also apply in addition to compensation mentioned in this para.

31.22 If the contractor 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 contractor does not prevent hazardous condition which cause injury to his own employees or employees of other contractors, or the Company employees or any other person who are at site or adjacent thereto, the contractor shall be responsible for payment of compensation under the relevant provisions of the workmen's compensation act and rules framed thereunder 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 contractor is liable to reimburse the owner such amount.

32.0 CODE REQUIREMENTS

The erection requirements and procedures to be followed during the installation of the equipment shall be in accordance with the relevant Indian Boiler Regulations, ASME codes and accepted good engineering practice, the engineer's drawings and other applicable Indian recognized codes and the laws and regulations of the Government of India.

33.0 CHECK OUT OF CONTROL SYSTEMS / POWER SUPPLY

After completion of wiring, cabling furnished under separate specifications and laid and terminated by the owner, the contractor shall check out the operation of all control systems for the equipment furnished and installed under these specifications and documents.

34.0 COMMISSIONING SPARES

The contractor shall make arrangement for an adequate inventory at site of necessary commissioning spares prior to commissioning of the equipment furnished and erected 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.

35.0 Removal of Improper Work and Materials.

i) The Engineer-In-Charge shall during the progress of 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 therefore, 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.

36.0 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.

37.0 Final Inspection of Work

37.1 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.

37.2 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.

37.3 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.

37.4 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 acceptable to the Engineer In Charge.

37.5 Storage of Materials

Materials shall be so stored as to ensure the preservation of the quality and fitness for the work.

37.6 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 materials.

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 30days 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.

40. **Additional Responsibility 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 work 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 assistance 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 :

- 1) For value of work ranging from 5 lakhs to 15 lakhs One Experienced Diploma holder.
- 2) For value of work over Rs. 15 lakhs and upto Rs. 75 lakhs. One Experienced Graduate Engineer in addition to Diploma holder as per sl.no.4 below.

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. Bidder must have experts having experience in commissioning of Washery.

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 exercise 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 shall maintain all records as per the provisions 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.

vi) 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 work under this item shall be covered by the contractor / contractor's tendered rates.

vii) No fruit trees or valuable plants or trees with trunk diameter exceeding 150 mm 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.

viii) 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 representative State Govt. or Central Govt. as may be in force.

ix) 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 of the labourer by its representatives.

x) 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 regulating P.F. or any modification thereof or any other law relating thereto and rules made thereunder 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 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.

xi) 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) day notice to the contractor.

xii) 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.

xiii) 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.

xiv) 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.

xv) 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.

xvi) Approval by the Nodal Officer/Engineer in Charge or his nominee: The contractor 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 contractor shall be responsible for design of Temporary Works.

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

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SECTION--5

SPECIFICATIONS

1.0 TECHNICAL SPECIFICATIONS

1.1 Bhojudih Washery:

Sl. No.	Item Description	Qty.	Remarks
1	Back pressure based Density measurement by DP Trx with necessary mechanical arrangement modifications along with Dip tube arrangement and Supply of Measuring tank, required Air filter and regulator.	1	
2	Ultrasonic Liquid Level Sensor for measuring level of HM Tank of height- 5.5 Mtrs.	1	
3	Arrangement for Density control through Splitter Box (revamping of existing scheme)	1	
4	Power Cylinder / Electric Actuator	2	
5	PLC panel (I/O - 64 DI + 32 DO+ 12 AI + 8 AO) with Mod-bus communication + PLC logic development S/W	1	
6	UPS (3 KVA, 1/2 Hr back-up) with Isolation Transformer	1	
7	PC - 2 Nos. [one for PO Room (Monitoring Purpose) & other for Control Room (Operating Station)] + Laser Jet Printer - 1 No.	1 Set	
8	Signal Isolator	2	
9	Digital Indicator	4	
10	Cabling	Lump sum	
11	Erection & Commissioning	Lump sum	
12	Project Management	Lump sum	
13	LAN arrangement for Control Room to PO Room	Lump sum	
14	HMI- S/W - Run time - 1500 Tag(with future provision of Unlimited Tag)	Lump sum	
15	Appln S/W development along with MIS S/W development with option for SMS	Lump sum	
16	1 year preventive maintenance and operational management along with hand holding	Lump sum	

1.2 Dugda-II Washery:

Sl. No.	Item Description	Qty.	Remarks
1	Back pressure based Density measurement by DP Tsr with necessary mechanical arrangement modifications	3	
2	Ultrasonic Liquid Level Sensor for measuring level of HM Tank of height- 4.25 Mtrs	3	
3	Power Cylinder/ Electric Actuator	9	
4	PLC Panel (I/O- 64 DI + 32DO+ 12 AI + 8 AO) with Modbus communication+ PLC logic development S/W	1	
5	UPS (3 KVA, 1/2 Hr Back-up) with Isolation Transformer	1	
6	PC - 2 Nos. [one for PO Room (Monitoring Purpose) & other for Control Room (Operating Station)] + Laser Jet Printer - 1 No.	1Set	
7	Signal Isolator	2	
8	Digital Indicator	4	
9	Cabling	Lump sum	
10	Erection & Commissioning	Lump sum	
11	Project Management	Lump sum	
12	LAN arrangement for Control Room to PO Room	Lump sum	
13	HMI- S/W - Run time - 1500 Tag (with future provision of Unlimited Tag)	Lump sum	
14	Appln S/W development along with MIS S/W development with option for SMS	Lump sum	
15	1 year preventive maintenance and operational management along with hand holding	Lump sum	

1.3 MAKE OF EQUIPMENT

All the equipment & components for the Instrumentation System shall be of reputed make with the latest and proven technology and performance. The company's preference for the equipment is given hereafter. The components / equipment for all the Washeries shall be identical so as to maintain identical spares at each Washery / Centrally as may be decided. In addition to this, the tenderer may also quote any other make, which may be considered / accepted by the purchaser provided the purchaser is satisfied with the furnished evidence and justification in support of the performance of any such particular make of equipment quoted by the tenderer.

Preferred makes of some of the equipments shall be as follows -

DP Txr - Rosemount / E&H / YBIL / ABB / Honeywell / Milltronics

Ultrasonic Level Transmitter - E&H / Moore / Milltronics

PLC System - GE Fanuc / ABB / Rockwell / Schnider / Siemens

PC - IBM / HP / Lenevo / Dell / HCL / Compaq / LG

UPS – Microtech / Venus / Epoch

Cables – Incab / Gloster / Finolex / Nicco / Hindustan Cables

2.0 General Comment

- Main Air Header should be of GI pipe,
- All Copper tube is to be PVC coated,
- The tenderer will supply all necessary structural support.
- Air Filter Regulator is to be provided for Back Pressure based measurements.

3.0 SPECIAL TERMS & CONDITIONS

1. All the plant and equipment shall be checked / inspected before erection.
2. All the safety rules and regulations prevailing in the respective areas and as prescribed by the applicable relevant Rules and Acts or any other Rules as imposed by the State Govt. shall have to be observed. Employer is not liable for any lapses on the part of the contractor towards the jobs involved.

3. After award of work, the contractor shall submit 6(six) sets of each of required GA and detailed working and layout drawing for the complete system to the company for scrutiny and approval. Drawing shall be stamped "For Approval" and duly signed by the contractor. One set of drawing will be sent back with the stamp of approval / comments of the employer. The contractor shall, thereafter, submit approved drawings, incorporating the corrections and comments. These drawings shall be stamped "For Execution" and duly signed by the contractor and shall be released for execution by the employer upon finding them having updated as per Company's comments. After completing the job the contractor shall submit one set of all the final i.e. "as built" drawing on reproducible.
4. The company shall prefer the testing, commissioning and technical back-up for the various components and the system by the OEM only. However, in case indigenous equipments /components are not found upto the mark the tenderer may quote for the imported components with necessary justification.
5. The contractor shall submit the manual for the erection, operation and maintenance for each of the components and equipment of the Automatic Density and Level Control System.
6. The contractor shall submit the list of essential spares (along with the prices) required to be maintained at each Washery for two years trouble free operation of the Automatic Density and Level Control System of the respective Washery.
7. The contractor shall train, free of cost, the personnel of each Washery for day to day maintenance, preventive maintenance and troubleshooting etc to enable them to keep each system always in running condition.
8. The contractor shall ensure free technical back-up through OEM for each of the component of the Automatic Density and Level Control System for one year for maintaining all the systems always in running condition. The contractor shall promptly send its / OEM's servicing personnel as and when called for.
9. The contractor shall ensure that each component of the Automatic Density and Level Control System being supplied for each Washery shall be with the latest and proven technology only. Identical system with identical components shall be ensured for all the Washeries.

10. The tenderer shall submit necessary certificate from the OEM of various equipment of the Automatic Density and Level Control system for product support for minimum 10 years.
11. While executing the work, special care shall be taken so that existing structures are not disturbed / damaged.
12. All equipments shall be complete with approved safety devices against potential hazards to personnel and adequate provision of safe access to and around the equipment for operation and maintenance shall also be kept.
13. The plant and equipments shall be checked properly before erection.
14. All safety rules and regulations prevailing in the area and as prescribed by the State Factory Rules & Acts or any other rules as imposed by State Govt. shall have to be observed. Employer is not liable for any lapses on the part of contractor.
15. Approved type of danger boards shall have to be provided by the contractor wherever required.

16. Performance Guarantee

The tenderer shall guarantee the performance of the systems in terms of maintaining the specific gravity of heavy media and its level in H.M. Tank(s) at the Set-Point.

17. Penalty Clause

The tenderer shall be required to design the composite system and provide such components / equipment in each individual Washery so that the provided Instrumentation system maintains the specific gravity of heavy media in each system and the level in each H.M. Tank as per the Set Points / level in each of the Washery. The assessment of the performance of the Instrumentation system shall be done in each Washery on an individual basis independently. The specific gravity shall be compared by help of DENVER Scale, as is being done presently. If there is variation beyond $\pm 1\%$, the system shall not be

acceptable if it is beyond the inherent accuracy limit declared by the manufacturer of the Instrument and the Bidder shall have to replace the system

However, in case it is less than 1% and more than the declared accuracy level , a penalty @ 5% of the award value shall be deducted.

Further, for level of H.M. Tank(s), variation beyond $\pm 5\%$ shall not be acceptable if it is beyond the inherent accuracy limit declared by the manufacturer of the Instrument and Bidder shall have to replace the system. However, in case it is less than 5% and more than the declared accuracy level, a penalty @ 2.5% of the award value shall be deducted.

18. **Maintenance facility**

While designing the layout of the various components / equipment, care shall be taken so as to provide easy access and space around to facilitate easy maintenance of these components / equipment. Any special tools & tackles if required for maintenance and calibration of individual component / equipment shall also form part of the supply and erection of the system to each of the Washery

All the equipment and accessories quoted for the plant shall be of reputed make with proven performance. The Company preference for some of the equipment has already been given. The selection of equipment preferably should match the existing equipment for controlling the inventory. In addition to this, the tenderer may also quote any other make, which may be considered / accepted by the purchaser provided the purchaser is satisfied with the furnished evidence and justification in support of the performance of any such particular make of equipment quoted by the tenderer.

Sl. No.	ITEM DESCRIPTION	NAME OF APPROVED MANUFACTURERS

19. COMPLETION PERIOD

The work should be completed within 3 (three) months from expiry of 10 days from the issue of Letter of Acceptance of tender.

20. GENERAL SCOPE OF WORK

The scope of work of this tender shall broadly include design& engineering, supply of equipment,installation,testing, commissioning and final handing over of the Plant in respect of the instrumentation system in conjunction with the electrical and mechanicals as required. Entire electricals shall be conforming to Indian Electricity Rules and the relevant Indian Standards.

21. The following items shall be supplied by the successful tenderer:

- Detailed specification of all equipment & accessories
- Complete set of instruction manuals for installation, maintenance, testing and adjustment of entire electrical installations;
- Detailed wiring diagram;
- Spare parts' catalogue;
- Spares for commissioning;
- Overall dimensions and general arrangement.

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SECTION---6

PROFORMA FOR PRICE BID

Price break-up of different sub-heads for turn-key Execution

A. Bhojudih Coal Washery

Sl. No.	Item Description	Qty.	Unit price	Amount
1	Back pressure based Density measurement by DP Tsr with necessary mechanical arrangement modifications along with Dip tube arrangement and Supply of Measuring tank, required Air filter and regulator.	1		
2	Ultrasonic Liquid Level Sensor for measuring level of HM Tank of height- 5.5 Mtrs.	1		
3	Arrangement for Density control through Splitter Box (revamping of existing scheme)	1		
4	Power Cylinder / Electric Actuator	2		
5	PLC panel (I/O - 64 DI + 32 DO+ 12 AI + 8 AO) with Mod-bus communication + PLC logic development S/W	1		
6	UPS (3 KVA, 1/2 Hr back-up) with Isolation Transformer	1		
7	PC - 2 Nos. [one for PO Room (Monitoring Purpose) & other for Control Room (Operating Station)] + Laser Jet Printer - 1 No.	1 Set		
8	Signal Isolator	2		
9	Digital Indicator	4		
10	Cabling	Lump sum		
11	Erection & Commissioning	Lump sum		
12	Project Management	Lump sum		
13	LAN arrangement for Control Room to PO Room	Lump sum		
14	HMI- S/W - Run time - 1500 Tag(with future provision of Unlimited Tag)	Lump sum		
15	Appln S/W development along with MIS S/W development with option for SMS	Lump sum		
16	1 year preventive maintenance and operational management along with hand holding	Lump sum		
	Total for the system for Bhojudih			

Taxes, Duties, Service Tax etc. as payable according to laws should be indicated on separate sheet.

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B.Dugda-II Washery

Sl. No.	Item Description	Qty.	Unit Price	Amount
1	Back pressure based Density measurement by DP Txr with necessary mechanical arrangement modifications	3		
2	Ultrasonic Liquid Level Sensor for measuring level of HM Tank of height- 4.25 Mtrs	3		
3	Power Cylinder/ Electric Actuator	9		
4	PLC Panel (I/O- 64 DI + 32DO+ 12 AI + 8 AO) with Modbus communication+ PLC logic development S/W	1		
5	UPS (3 KVA, 1/2 Hr Back-up) with Isolation Transformer	1		
6	PC - 2 Nos. [one for PO Room (Monitoring Purpose) & other for Control Room (Operating Station)] + Laser Jet Printer - 1 No.	1Set		
7	Signal Isolator	2		
8	Digital Indicator	4		
9	Cabling	Lump sum		
10	Erection & Commissioning	Lump sum		
11	Project Management	Lump sum		
12	LAN arrangement for Control Room to PO Room	Lump sum		
13	HMI- S/W - Run time - 1500 Tag (with future provision of Unlimited Tag)	Lump sum		
14	Appln S/W development along with MIS S/W development with option for SMS	Lump sum		
15	1 year preventive maintenance and operational management along with hand holding	Lump sum		
	Total for the system for Dugda-II			

Taxes, Duties, Service Tax etc. as payable according to laws should be indicated on separate sheet.

X-X-X-

SECTION---7

Bank Guarantee against Earnest Money Deposit

To

M/s Bharat Coking Coal Limited,
Koyla Bhawan,
Dhanbad, Jharkhand.

Dear Sir ,

In consideration of M/s Bharat Coking Coal Limited, Koyla Bhawan, Dhanbad (hereinafter called 'BCCL') having agreed to accept M/s having its registered office at (hereinafter called 'the said tenderer') from the demand under the terms and conditions of the Tender Notice No. WCD/..... dated issued by BCCL for "....." (hereinafter called 'the said Tender') from deposit of Earnest Money for the due fulfillment by said Tenderer of the terms and conditions contained in the said Tender, on production of a Bank Guarantee for Rs..... (Rupees..... only), we, a Scheduled Bank and having its Registered Office at , and amongst other places a branch office at (hereinafter referred to as the 'Bank' which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors, administrators, executors and assigns), hereby undertake and agree to indemnify and keep indemnified BCCL from time to time to the extent of Rs..... (Rupees.....only) against any loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by BCCL by reason of any breach or breaches by the said Tenderer of any of the terms and conditions contained in the said Tender and to unconditionally pay the amount claimed by BCCL on demand and without demur to the extent aforesaid.

We,.....further agree that BCCL shall be the sole judge of and as to whether the said Tenderer has committed any breach or breaches of any of the terms and conditions of the said Tender and the extent of loss, damage, gross

charges and expenses caused to or suffered by BCCL or that may be caused to or suffered by BCCL or account thereof and the decision of BCCL that the said Tenderer has committed such breaches and as to the amount or amounts of loss, damages, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by BCCL from time to time shall be final and binding on us.

We, the said Bank further agree that the Guarantee here in contained shall come into force from the date hereof and shall remain in full force and effect during the period that would be taken for the performance of the said Tender and till all the dues of BCCL under the said Tender or by virtue of any of the terms and conditions governing the said Tender have been fully paid and its claim satisfied or discharged and till the concerned authorities certify that the terms and conditions of the said Tender have been fully and properly carried out by the said Tenderer and accordingly discharges this Guarantee.

We, the Bank further agree with the BCCL that BCCL shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or Indemnity, from time to time to vary any of the terms and conditions of the said Tender or to extend time of performance by the said Tenderer or to postpone for any time and from time to time any of the powers exercisable by it, against the said Tenderer and either to enforce or forebear from enforcing any of the terms and conditions governing the said Tender or securities available to BCCL and the said Bank shall not be released from its liability under these presents by any exercise by BCCL of the liberty with reference to the matters aforesaid or reason of time being given to the said Tenderer or any other forbearance, act or omission on the part of BCCL or any indulgence by BCCL to the said Tenderer or any other matters or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the Bank from its such liability.

We, the Bank further agree that It shall not be necessary for BCCL to proceed against the Tenderer before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank, notwithstanding any security which BCCL may have to obtain or obtained from the

Tenderer shall be at the time when proceedings are taken against the Bank here under be outstanding or unrealised.

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 said Bank shall not discharge our liability here under.

Notwithstanding anything contained herein, the liability of the Bank under this Guarantee is limited to a maximum of Rs. and this Guarantee shall remain in full force till and unless the Guarantee is renewed or a claim is preferred against the Bank within 6 (Six) months in writing from the said date.

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

Dated :

Place :

FORM OF BANK GUARANTEE AGAINST SECURITY DEPOSIT

To
M/s Bharat Coking Coal Limited,
Koyla Bhawan,
Dhanbad, Jharkhand.

Dear Sir ,

In consideration of M/s. Bharat Coking Coal Limited (hereinafter called "The Company" which expression shall unless repugnant to the subject or context include its successors and assigns) having agreed under the terms and conditions of Tender / Contract No. made between (Contractor) & the company in connection with , hereinafter called the said contract to accept a Deed of Guarantee as herein provided for Rs..... (Rupees.....) only from a Bank in lieu of the deduction to be made from the Contractor's Bill, for the due fulfillment by the said contractor of the terms and conditions contained in the said tender / contract, we, the Bank Ltd (hereinafter referred to as "the Said Bank" a Company under the Companies Act 1956 and having our registered Office at hereby undertake and agree to indemnify and keep indemnified that Company from time to time to the extent of Rs. (Rupees) only against any loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Company by reason of any breach or breaches by the said contractor or any of the terms and conditions contained in the said contract and to unconditionally pay the amount claimed by the Company on demand and without demur to the extent aforesaid irrespective of any dispute raised by the contractor.

We,..... Bank Ltd., further agree that the Company shall be the sole judge of and as to whether the said Contractor has committed any breach or breaches of any of the terms and conditions of the said contract and the extent of loss, damage, gross charges and expenses caused to or suffered by the Company or that may be caused to or suffered by the Company or that may be caused to or suffered by the /company or account thereof and the decision of the company that the said contractor has committed such breaches and as to the amount or amounts of loss damages, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Company from time to time 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 during the period that would be taken for the performance of the said contract and till all the dues of the Company under the said contract or virtue of any or the terms and conditions governing the said contract have been fully paid and its claim satisfied or discharged and till the concerned authorities certify that the terms and conditions of the said contract have been fully and properly carried out by the said contractor and accordingly discharges this guarantee subject, however, that the Company shall have no claim under this guarantee after the date of issue of Final Acceptance Test Certificate as provided in the said contract or from the date of cancellation of the said contract, as the case may be unless a notice of the claim under this Guarantee has been served on the Bank before the expiry of the said period in which case the same shall be enforceable against the bank non-with-standing the fact, that the same is in enforcement after the expiry of the said period.

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 to vary any of the terms and conditions of the said contract or to extend time of performance by the said contractor or to postpone for any time and from time to time any of the powers exercisable by it, against the said Contractor and either to enforce or forebear 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 by any exercise by the

Company of the liberty with reference to the matters aforesaid or reason of time being given to the said contractor or any other forbearance, act or omission on the part of the Company or any indulgence by the Company to the said contractor or any other matters or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the Bank from its such liability.

It shall not be necessary for the Company to proceed against the Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank, not-with-standing any security which the Company may have to obtain or obtained from the contractor shall be at the time when proceedings are taken against the Bank here under be outstanding or unrealised.

We, the said Bank, lastly undertake not to revoke this Guarantee during the 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.

Dated this..... Day of

(For & on behalf of the Bank)

The Guarantee is accepted by the

(Name of the Company, Address)

FORMAT for CONTRACT AGREEMENT

(On Non Judicial Stamp Paper)

This agreement made the day of 2010 between of (hereinafter called "the company") of the one part and of (hereinafter called "the contractor") of the other part, whereas the company is desirous that certain works should be constructed, performance tested and handed over in satisfactory running condition, viz and has accepted a tender by the contractor for the construction, performance test and completion of such works.

NOW THIS AGREEMENT WITNESSETH as follows :

1. In this agreement words and expressions shall have same meaning as are respectively assigned to them in the conditions of the contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this agreement, viz. :
 - a) The tender document supplied against Tender Notice No.....
 - b)
 - c)
 - d)
 - e)
3. In consideration of the payments to be made by the Company to the Contractor, as hereinafter mentioned, the Contractor hereby covenants with the Company to construct, performance guarantee test, completion of such works in all respects, with the provisions of the Contract.
4. The company hereby covenants to pay the Contractor in consideration of the works, of the construction, performance guarantee test, completion of the works, the Contract Price at the times and in the manner prescribed by the Contract.

In witness whereof the Contractor has hereunto set hand and on behalf of the Company hereunto set his hands the day and year first above written.

Signed by the Contractor

Address

In presence of the Witness

Signed by on behalf of the Company

Designation

In presence of the Witness

-X-X-X-