

**MISHRA DHATU NIGAM LIMITED**

A Govt of India Enterprise

P. O Kanchanbagh, Hyderabad – 500058, TS, India.

Corporate Identity Number: U14292AP1973GOI001660

Phone: 040 –24340165/24184202, Fax: 040 – 24340764

E Mail ID: rakesh@midhani-india.in , website: www.midhani-india.in

Tender Notice No. : MDN/PUR/0690052/ADVT/132/19-20, Date: 24/08/2019

Start of Issue of Tender Documents: 24/08/2019 at 10.30 Hrs.

Receipt of Tender on or before: 23/09/2019 at 10.30 Hrs

Opening of Tender Date: 24/09/2019 at 10.30 Hrs.

Sl. No	MATERIAL	Estimated Requirement		Delivery + E & C Required
	DESCRIPTION & SPECIFICATION.	Unit	Qty	
1.	Design, Manufacturing, Supply, Erection and Commissioning of 20T LPG Heated Fixed Hearth Furnace as per enclosed specification	One	Number	15 Months
2	Design, Manufacturing, Supply, Erection and Commissioning of 12 T LPG Heated Fixed Hearth Furnace as per enclosed specification	One	Number	

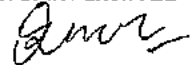
- i) **Integrity Pact:** All bidders shall submit the signed Integrity Pact enclosed herewith along with Techno-Commercial Bid. If the signed Integrity Pact is not found enclosed, such offers would be liable for rejection.
- ii) **EMD :** All bidders shall submit an EMD amount of **Rs.10,00,000/- (Rupees Ten Lakhs only)** or equivalent **Foreign Currency** through online mode as the link given below (or) Bank Guarantee confirmed through a Nationalized Bank/ Scheduled Commercial Bank encashable at Hyderabad shall be enclosed with Techno-Commercial Bid. **If EMD is not found enclosed, such offers are liable for rejection.** Bank Guarantee shall be valid for a period of 180 days. EMD is exempted for MSEs as per Government Guidelines.
- iii) **EMD / Security Deposit submitted in the form of DD / Cheque is not acceptable to us.** All the bidders are requested to submit the **"EMD and Security Deposit"** online through the below link or in the form of Bank Guarantee:
<http://ebs.in/midhani/public/> or visit www.midhani.com > Purchase > Tenders > **TENDER FEE, EMD (EARNEST MONEY DEPOSIT) & SECURITY DEPOSIT – ONLINE PAYMENT**
- iv) Multiple Offers from bidders under same group of companies are liable for rejection.

- v) Preference under Make in India Programme as per below mentioned notifications shall be provided to all Local Vendors:
- Public Procurement (Preference to Make in India) Order – 2017 dated 15/06/2017.
 - DDP Notification No. 59011/8/2015-D(HAL-II) dated 29/06/2018 for list of items with minimum specific local content for consideration as Local Vendor.
- vi) Vendors to intimate the value of Goods & Services which are sub contracted by them from MSE's if any, pertaining to the tendered item(s).
- vii) **All Bank Guarantees (EMD/SD/Advances/PBG) submitted:**
- Shall be from a Nationalized Bank/ Scheduled Commercial Bank encashable in India and in our prescribed formats only.
 - Bank Guarantees (SD/Advances/PBG) shall have an additional claim period of three months from the date of expiry.

List of Tender Documents:-

	Pages
• PART I: TECHNICAL SPECIFICATIONS & DRAWINGS	39
• PART II: SPECIAL CONDITIONS OF CONTRACT	15
• PART III: INTEGRITY PACT	07
• PART IV: BANK GUARANTEE AND LC FORMATS	16
• PART V: GENERAL INSTRUCTIONS TO TENDERERS	23
• PART VI: GENERAL CONDITIONS OF CONTRACT	76

For MISHRA DHATU NIGAM LIMITED



DGM (Purchase)

Date: 24/08/2019

Furnace Locations and General description

- 1.0 This technical specification covers the details of two numbers LPG fired fixed hearth re-heating furnace with maximum operating temperature of 1,250°C, to be designed, manufactured, supplied, installed and commissioned complete with all mechanical, pneumatic equipment, electrics and associated control systems along with any optional equipment and accessories. This furnace will be installed in the existing shop of forge press and will be located between column B14-B16a in place of furnace # 08. (Refer layout drawing M06-217-M1). New Furnace 8-A of capacity 20 Ton will be near to Column B14 and new Furnace 8-B of capacity 12 Tons will be near to column B16a. The furnace doors will open in forge shop B-C bay.

- 2.0 Considering the space constraint at the location of installation of this furnace and the requirement of connecting the flue duct to an existing chimney (chimney is not in the scope of supplier), the bidders are expected to depute their representatives to MIDHANI to assess the site conditions before submitting their offers. MIDHANI shall provide all the details during this time.

- 3.0 Two furnaces will be completely for independent operation but located close with some walkable gap inbetween the walls of adjacent furnace as per design of the supplier. The space available for outer to outer dimension for the two furnaces including common platform in between is 7,500 mm length x 9,500 mm wide. The 9,500 mm dimension (which is along the door opening of furnace chambers) may be increased by another 2 meter approx if required as per detail design, however the dimension 7,500 mm (which along the depth of the furnace chambers) cannot be increased.

- 4.0 Every tenderer has to meet/satisfy the Pre-qualification Criteria as specified at Annexure- 5. The tenderers are hence required to submit all the relevant documents as mentioned there to qualify.

Fixed Hearth Furnace 8A - 20 Ton Capacity :

This LPG fired fixed hearth furnace shall be designed for maximum design temperature of 1,300°C and maximum operating temperature of 1,250°C. This will be used for re-heating of steel/ super alloys / Ti alloys/stainless steel of various grades and sizes for forging. The charge is in the form of round or square ingots /Rings each may be weighing maximum of 6 T. The following shall be the basic parameters

1. Capacity and Dimensions:

SL	Parameter	Description
1	Effective usable length X width X Height	6,000 mm x 3,000 mm x 1,300 mm excluding 400 mm charge support height + 500 mm free space
2	Effective usable height	1,300 mm excluding 400 mm charge support height + 500 mm free space.
3	Hearth height from floor	750 mm approx.
4	Capacity	20 T excluding charge support. The weight of charge support shall be taken as 6 T.

2. Technical details for the furnace – FIXED Parameters

SL	Parameter	Description
1	Type	LPG fired Fixed Hearth Reheating Furnace
2	Application	Reheating of steel/ super alloys /Ti alloys/stainless steel of various grades and sizes for forging. The charge will be in the form of round or square ingots / Ring each may be weighing maximum of 6 Tons.
3	Mode of Heating	LPG Fired

4	Maximum design temperature	1,300°C
5	Normal operating temperature	200 °C to 1,250 °C (in auto mode)
6	Rate of Heating	150°C/Hr at full load
7	Type of Firing	As per supplier's design
8	Mode of Temp. Control	Through Programmable type dedicated single loop PID controllers
9	Mode of Ratio control	Through Programmable type PID controllers/ PLC control
9	Temp. Control regulation	+/- 2 °C
10	Furnace Temp. Uniformity	+/- 10 °C from 900°C to 1,250°C
11	Minimum number of zones	3 zones
12	Door lifting	One rise and fall type door .
13	Maximum permissible skin temperature	At maximum operating temperature, the skin temperature shall not exceed 50° C above ambient temperature at any point on the shell, except in the region of 1 meter from any opening.
14	Burners	Burners with single electrode for electrical ignition and flame monitoring system (flame rod based). The make shall be Kromschroder/ Noxmat/ Bloom only. The burners shall be with low NOX emission and low oxygen, And shall be without requirement of any water cooling.
16	Minimum number of burners in each zone	Minimum 6 for each zone.
17	Flue gas heat recovery scheme	Furnace shall have one centralised recuperator and one Kromschroder WPS (Hot Air Pilot System) for air temperature compensation.

3. Standards

- 3.1 The components of all equipments shall be designed, assembled and tested in accordance with the latest standard of the standards institution, institution of Electrical Engineers and the Manufacturers Association.
- 3.2 The components shall conform to the relevant standards published by the Indian Standard Institution, wherever applicable, so that specific aspects under Indian conditions are taken care of.
- 3.3 The equipment shall also conform to the latest Indian Electricity rules as regards to safety, earthing and other essential provisions specified there-in for installation and operation of electrical equipment.
- 3.4 The equipment shall comply with the statutory requirements of the Government of India and Government of Telangana.
- 3.5 Design & Safety features of the furnace shall be generally as per industrial thermo processing equipment standard.

4.0 Furnace Shell and Door steel:

Furnace shell and door shall be fabricated with MS plates of minimum 6 mm thickness.

5.0 Furnace Door:

All heat resistant parts around door and door opening shall be made from heat resistant material DIN 1.4832/ ASTM 310. No water cooling shall be considered for door frame area/lintel. The mating face of Door & Door opening area of Furnace shall be provided with proper heat sealing arrangement and no heat leakage should be there by use of 4 pneumatic locking cylinder. Door locking system should be proven design and it should be long lasting.

- 5.1 Type of door: One rise and fall type door, operated through electric motor of 415 V, 50 Hz, and electromagnetic brake, with heavy duty limit switches, reduction gearbox, wire rope etc.. Door mast and pulley supports shall be fabricated from heavy steel section to withstand door counter weights. Door drive shall be connected to counter weights by suitable chains. Counter weights are connected by suitable wire rope to drum, gear box, motor etc. Door motor rating shall be suitable for trouble free operation and details to be enclosed by the supplier. The door shall also be operated by remote control apart from LCS and HMI.
- 5.2 Speed of door : Speed of the door shall be 8-10 meter/min.
- 5.3 Door drive motor : VFD Duty TEFC, squirrel cage induction motor with class "F" insulation, IP 55 Enclosure along with electromagnetic brake.
Make of motor: Siemens/ALSTOM/ABB/MARATHON.

5.4 VFD: The door drive is to be provided with variable speed drive of adequate capacity with soft start and stop facilities and single phasing preventer and overload protection.

Make : ABB/ Siemens.

5.5 The door drive system should be designed to run the motor for door operation in DOL (Direct- on- Line) mode also, which shall be used in case of malfunction of VFD. Mode Selection of VFD or DOL shall be provided on the control desk. Separate overload protection to be provided for DOL operation.

5.6 Heavy duty Limit switches to restrict the door movement within the required span are to be provided. L.S to be mounted at a safe place from heating zone.

6.0 Furnace Insulation :

Side and back wall, the roof and door should be lined with Light insulation blocks (ceramic modules density -192 kg/m³ or above, Grade-1425° C HTZ). Ceramic fibers shall be installed on steel wall with integrated Al foil. Modules on hot surface are covered with special coating for high temperature (Sil plate coating or equivalent).

Recommended supplier: UNIFRAX/MMTC

Furnace Hearth shall be lined with low cement Castable/Refractory bricks of make ACE/RHI. Alumina % shall be minimum 60%.

7.0 Central Recuperator:

Furnace shall be provided with one central recuperator located below working floor level(underground) for heat recovery from exhaust flue gases. This is expected to reduce the combustion air requirement, reduce the exhaust gas temperature and increase the fuel efficiency of the furnace. The supplier is expected to design the size and type of this recuperator to ensure the temperature of the pre-heated air for combustion at the output of recuperator to be at least 350 °C, when the furnace is run at maximum operating temperature. The recuperator shall also be provided with an upstream located suitably sized fan for cooling of flue gas in case of over temperature with pressure switch, motorised butterfly valves for fan flow regulation, flue gas dilution, temperature transducer etc.

8.0 Combustion air blowers:

Furnace shall be provided with two properly sized VFD controlled combustion air blowers. One in operation and other stand by. The blowers shall be provided with acoustic insulation to contain the noise levels to 85 dB(A) max. at 1 mtr or better. Combustion air pressure transmitter to be supplied for closed loop control.

9.0 Temperature compensation for combustion air:

The temperature compensation for the combustion air shall be through Kromschroeder WPS (Hot Air Pilot System). There shall be a dedicated air blower for the WPS with air filters, pilot recuperator, breathing screws etc. One pressure transmitter to be provided for measuring WPS output pressure.

One portable digital micro manometer to be supplied. (Make: Fluke/TSI/Kromshroder)

10.0 Heating System :

The furnace shall be divided into zones equally length-wise. Each zone temperature should be independently controlled by single loop temperature controllers. Temperature controller of each zone shall measure temperature from control thermocouple and proportionally give output to the controller. The burner control units, in turn, shall open and close the air and gas solenoid valves. Orifice plates and Differential Pressure Transmitters shall be provided in main gas and combustion air pipe lines for measurement of total air and gas flows. The air fuel ratio control shall be through Kromshroder WPS. The ratio shall be settable from 1:27 to 1:34 for processing different super alloys in case of Normal Operation. A reference P & ID for the heating system is enclosed with the tender.

11.0 Furnace Operation:

All the furnace operations including starting, operation of all mechanical systems, Instrumentation and controls, shutdown of the furnace should be possible through computer interface. The control system shall have a dedicated stand alone PC of latest configuration, pre loaded with required run time and development licensed softwares of PLC and SCADA and suitable operating system etc.

One programming device SIMATIC Field PG M5 Advanced 6ES7717-1CC05-0AC1 or higher version shall be supplied. Cable charger or converter suitable in India shall be provided.

Two separate PLCs shall be provided for Electrical and Instrumentation controls. All the signals pertaining to monitoring and control of combustion system including control of temperature, ratio and pressure etc. shall be incorporated in Instrumentation PLC. All the signals pertaining to motor starters/drives and auxiliaries shall be incorporated in Electrical PLC. PLC shall be Siemens make only. All the inputs, outputs modules with 20% spare capacity (fully wired) shall be supplied. Thermocouples shall be connected directly to the controllers without using mV/mA converters / PLC modules in view of stringent furnace uniformity requirement.

12.0 Flue duct, ID Fan and Damper:

Suitably sized flue duct dampers and ID fans for the furnace are in the scope of the supplier. Any refractory work in the flue duct is to be done by the supplier. The ID fan shall be with VFD and the makes and type of motor and drive shall be as per clause NO: 8.3 and 8.4. It shall be provided with acoustic insulation to contain the noise levels to 85 dB(A) max. at 1 mtr or better. There shall also be a temperature transducer provided to measure the temperature of the flue gas entering the chimney. **The chimney is not in the scope of supplier** since one existing chimney is expected to be used for the furnace. Since this chimney is already connected with one operating twin chamber furnace the tenderers are expected to visit the site before finalising their design and offer. The attached drawing 06P008-01-00-A0 may be referred.

13.0 Painting of mechanical and structural items:

All steel parts shall be painted with two coats of Zinc chromate primer and two coat of finish paint before dispatch in knocked down condition. Touch up paint shall be provided before /after completion of erection at site as per applicability for the areas got damaged during transportation and handling. All bought out components shall be maintained with standard supplier's finish.

14.0 Power provided by the buyer:

Midhani will provide 415 V, 3 ph. 4 Wire, 50 cycles A.C. supply system for power circuit with transformer neutral solidly grounded. Variation in supply voltage and frequency will be limited to $\pm 5\%$ & $\pm 3\%$ respectively. The power will be provided at the input terminals of only one of the supplier's power panel. Any other voltages required and the distribution to other supplier's panels, if required, shall be arranged by the supplier of furnace.

15.0 Compressed air:

Midhani will provide compressed air at a pressure of 4 kg/cm². Clean instrument grade compressed air is not available in the shop. If instrument grade air is required, the supplier shall include necessary equipment to obtain the same. This shall also include necessary in-line filters, regulators, and lubricators etc. for pneumatic cylinder operation, if required. Instrument quality air is not available in Midhani, same if required is in the scope of the supplier.

16.0 LPG:

LPG shall be supplied by MIDHANI. LPG is available at 0.7 to 1.5 Kg/ sq cm pressure.

17.0 LPG gas train:

One Gas train with all safety interlocks are in the scope of supplier. Gas train shall have LPG low and High pressure switches, vent solenoid valve, isolation valves, pressure gauges. All the pressure gauges shall be provided with push-to-test valves of reputed make. Suitable Pressure regulating valves shall be provided for the furnace operation. The PRV shall have all protections like snap shut off, over pressure cutoff, and manual reset. **Make: Kromschroeder only.** Auto shut off valves of adequate capacity shall be provided with manual reset facility. The auto shut off valve shall cutoff the LPG supply to the furnace in case of power failure and shall be interlocked with all safety parameters. Make: Honeywell/ Kromshroeder.

18.0 Electrical Requirements:

- 18.1 All AC motors shall be of insulation class F of make Siemens/ ALSTOM/ABB / Marathon only. All motors shall be provided with electronic motor protection relays of Siemens make. They shall be protected against overload earth fault and short circuits.
- 18.2 Operators control desk and MCC: All control desk and control panel shall be of Industrial type dust proof and flame proof (wherever required) and vermin proof with proper cutouts suitable for operation view as per relevant standards. All panel switchgear shall be of Siemens / Schneider / L&T makes only. Miniature circuit breakers of reputed make shall be provided wherever necessary. Separate transformer of required capacity shall be provided for all instrumentation and controls.
- 18.3 Cables: All power and control cables shall be 1.1 KV grade heavy duty type PVC insulated or PVC sheathed conforming to IS. All control cables shall be multi-strand copper cables.
- 18.4 The equipment shall be effectively double earthed in accordance with relevant clauses of Indian Electricity rules. Cables shall be laid on perforated trays with proper clamping.
- 18.5 Electric power panel: The panel shall be self-standing with double leaf doors. Panel should be dust and vermin proof and shall be made from steel enclosure made from 2 mm CRCA steel on angle Iron frame ISME (75×40) duly powder coated with cable entry for incoming and outgoing cables from bottom. The entire structure shall be sand blasted phosphastised and powder coated. Panel interior shall be white. The panel shall be properly earthed. The panel should be dust proof with rubber beading. The power panel shall be wired adequately with necessary interlocks, as per the wiring diagram, all wires identified suitably with ferrule nos. etc. terminal strips shall be of adequate capacity and of standard make and shall be at comfortable height for work. The panel shall have indication for Power ON, control ON, door

open / closed, etc. Cable entry shall be from bottom, with spare entries punched. All doors shall be earthed with 2.5 mm Sq flexible copper cable. Gaskets shall be of Neoprene and hardware shall be cadmium plated. A plug socket of 5/15A with switch control shall be provided. Internals of the panel shall be illuminated with CFL/LED lamps (preferably Philips make) with protective covering and switch control. 415V/220V transformer shall be provided with MCCB on primary and secondary side.

18.6 The power panel shall be wired adequately and shall consist of the following: -

At the I/P of the MCC shall be provided a ACB/MCCB of suitable capacity.

The switchgear in the panel shall be with following features and makes. All the starters/drives for various motors shall be housed in separate cubicles and shall comprise of the following components wherever applicable.

1. Switch Fuse units: Of Suitable Capacity, 415 VAC, 3 pole. Make: Siemens / L&T/Schneider.
2. MCCBs: Of Suitable Capacity, 415 VAC, 3 poles. Make: Siemens / L&T/Schneider. Features: With microprocessor based trip unit for OL/ SC/ EF, overload, short-circuit, Earth faults.
3. Mains contactors: Of Suitable Capacity, 415 VAC, 3 pole. Make: Siemens / L&T/Schneider
4. Auxiliary contactors / relays: electronic over load delays of suitable capacity and range. Make: Siemens / L&T/Schneider
5. Ammeters, Voltmeters and energy meters: The panel shall have digital Ammeters and voltmeters for each motor and one number Voltmeter for incoming supply with selector switch for 3 phase monitoring at convenient height. Size: 96×96 mm.

18.7 Control Desk: An industrial type control desk of dust and vermin proof with push buttons for operation of door drives shall be provided.

18.8 Power cables of suitable capacity from MCC to various motors and devices and other cables for interconnection of Lapp make shall be supplied.

19.0 Instrumentation:

19.01 Sensors: R type thermocouples made of 1 mm wire shall be provided conforming to special tolerance of relevant ASTM as per IPTS 90 standards. Duplex TCs for each zone shall be used for controlling, recording and simplex thermocouple for over temperature (Safety). The thermocouples shall have a projection of not less than 400mm over the furnace shell so as not to be effected by the ambient temperature. The

inner 4-hole bead and outer sheath shall be made of recrystallized high Alumina (KER710 grade) only from reputed manufacturer.

- 19.02 Compensating cables: Shall be suitable for R type thermocouples. Cables shall be multi-stranded, flexible type, Teflon lined, sleeved of sufficient length with omega connectors on both ends. Control panel will be around 40 meters from the furnace. Cables shall be laid on perforated trays with proper clamping. K type thermocouples shall be provided for monitoring job temperature during running of the furnace. Multi core 6 pair K type cable shall be laid from furnace to control room and to be connected in the recorder.
- 19.03 Temperature controller: Microprocessor based programmable controller (96×96) with minimum 9 number of programs with multiple segments.. **Make of the controller will be Eurotherm/ Yokogawa only.** Detailed specification is given at **Annexure 1.**
- 19.04 Safety temperature controller: Microprocessor based ON/OFF controller for safety shall be provided for each zone. Make of the controller shall be Eurotherm/ Yokogawa only. Detailed specification is given at **Annexure 2.**
- 19.05 Temperature Recorder: One no. 24 point 180mm chart width microprocessor based programmable paper less recorder shall be provided for the furnace. Make: Eurotherm/ Yokogawa only. Detailed specification is given at **Annexure 3.** Data acquisition cable shall be supplied for connecting paperless recorder to nearest Ethernet node for intranet connectivity.
- 19.06 Differential pressure transmitters (SMART) along with orifice plates shall be provided for measuring the air and gas flow into the furnace. Transmitters shall have configuration facility through HART communication. Transmitter Make: Yokogawa/E+H only. One HART communicator to be supplied for calibrating the transmitters.
- 19.07 Each burner shall be provided with air and gas solenoid valves, ignition transformer and flame monitoring system (Ionisation rod based). Make of flame monitoring system: Honeywell/ Kromschroeder only. Make of Solenoid valves: Kromschroeder only. Provision shall be made to switch on the burners from PLC as well as from the field/locally (near to burner). Flame failure indication should be displayed in SCADA.
- 19.08 Mass flow meter has to be provided for measuring total gas consumption of the furnace. Make: Endress+Hausser only. Flow meter reading has to be displayed in SCADA screen and also to be shown in paperless recorder. The communication facility for the mass flow meter is through HART.

- 19.09 Pressure/flow switches: Pressure switches and flow switches in different process lines (gas and combustion air) for safe operation and annunciation shall be provided with suitable ranges. The pressure switches shall have proper enclosure as per the safety rules. Make: Honeywell / Kromschroeder only.
- 19.10 Furnace pressure controller (with damper position indication), furnace pressure transmitters (- 5 to +5 mm WC) and servomotors shall be provided for damper control. Provision shall be made for remote manual control of damper from Instrument panel with auto-manual control switch. VFD to be provided for each ID Fan.
- 19.11 Audio visual annunciation shall be provided with test/accept/reset facility, first fault identification facility, electronic hooter. Annunciation is required for the following conditions:
1. Over temperature
 2. Low combustion air pressure
 3. Low gas pressure
 4. Low air pressure
 5. Any other critical parameters for safe operation of furnace.
- 19.13 Interlocking: Safety interlocks shall be provided to shut off the fuel line under the following conditions:
1. Low gas pressure
 2. Low Combustion air pressure
 3. I.D. Fan running through suction pressure switch
 4. Any other interlocks for safe operation of the furnace to be included
- 19.14 Flue gas analyzer: On line Oxygen measuring instrument to check the oxygen level in the flue gases in the furnace with all accessories to suit the highest operating temperature. (O₂ Analyser Make:Yokogawa/Westinghouse/FER only). Various lamda ratios shall be settable from the HMI during the burner operation by means of lamda adjusters in the Kromscroder WPS.
- 19.15 Thermocouples on the roof shall be positioned for easy accessibility during maintenance and measurement. In addition to control and safety thermocouples, suitable provision shall made for inserting 3.0 meters long minnum 12 nos. R type thermocouple with suitable sealing arrangement on the roof to carry out uniformity testing. Additional requirement, if any, shall be provided during installation and commissioning. Thermocouples outer tubes will be 30 mm dia consisting of two R type TCs of one at 250 mm height and other at 1.0 mts height, which will be arranged during furnace uniformity.

- 19.16 Flue gas temperature measurement: Suitable thermocouples shall be provided and connected to recorder for measuring the temperature of flue gas before and after recuperator.
- 19.17 Emergency stop button shall be provided in the control room, local to the furnace to make the furnace trip in case there is problem. Additional instruments, controls required if any to be offered for safe and satisfactory running of the furnace.
- 19.18 Instrumentation Panel: One floor mounted type instrumental panel should be provided which shall be fabricated from 2 mm thick sheet steel. The panel shall house all the controlling instruments, auto-manual control switches as mentioned above and shall be duly wired up to the terminals. Zone wise instruments and controls shall be provided with isolators and MCBs. The instruments shall be located on the top portion which will have front fixed and rear hinged door. Terminal strips shall be arranged in convenient groups such as power supply, solenoid valve output, field interlocks, compensating cables etc. with space in between each terminal strip. Cable entry shall be through gland plate at bottom of panel. This includes installation and commissioning of inter connecting cable with route length 40 meters around the furnace. The signal cables shall be shielded type. A separate MCCB shall be provided for receiving incoming supply from the power panel of the furnace. Panel shall be dust proof with required rubber beadings. Necessary mountings/hardware for installation of the panel also has to be included in the scope of supply.
- 19.19 1.5 Sq mm flexible multi strand cable (Finolex make only) shall be used for control wiring of the panel. Suitable flexible multi strand cable (Finolex) shall be used for power wiring. Different colors to be used for phase (Red), Blue (Return cable from the field, green for ground Yellow for annunciation cables, Black for neutral). PVC cable trays (minimum 50mm) to be used in the panel for laying cables.
- 19.20 All the wires shall be properly tagged with transparent sheet protection for easy identification. Legends for various instruments, lamps, start and stop buttons etc., to be provided with quality screen printing distinctly for better visibility.
- 19.21 PVC insulated cables lugs to be provided for connections. Cables on the instruments end also to be lugged and marked for easy connection. Arrangement for proper earthing of panel to be provided.
- 19.22 Proper earthing facility to be ensured for trouble free running of ionisation flame rod sensing devices. Separate earth pits for instrumentation panel to be provided by the supplier as Midhani has equipment like Arc furnaces which create unbalanced loads and high voltage fluctuations. The panel shall be light grey outside and brilliant

white inside. The panel shall be effectively double earthed in accordance with the relevant clauses of Indian Electricity Rule.

19.23 All panels shall be supplied with suitable rated panel AC. Make: Rittal/ Advance cooling only. The exhaust of the AC shall be let outside the control room through suitable ducting arrangement.

20.0 Drawing and Documents

20.1 Information to be provided in the offer: Reference General arrangement drawing, layout of furnace, elevation drawing and accessories showing the overall space required and the termination point of utilities to be provided by tenderer along with acceptance of this Technical specification .Process flow diagram and P & ID to be submitted along with the technical offer for evaluation.

20.2 Documents to be provided within 2 weeks after receiving P.O.: Final General Arrangement Drawing, layout of furnace, elevation drawing and accessories showing the overall space required and the termination point of utilities to be provided by supplier. Foundation layout drawing showing the bolt position and load distribution details and adequate section drawing for development of construction drawings are to be given by the supplier. The layout should consist of all requirements pertaining to complete machine including space requirement for all the accessories/ attachments/offered items.

20.3 All Drawings (Electrical, Instrumentation, Refractory & Mechanical) for the complete furnace along with bill of material and quantities shall be submitted for approval prior to manufacture. Along with this detailed erection and commissioning schedule shall be submitted by the supplier.

20.4 Final Drawings and Documents: Three sets of following documents (hard and soft copies, PDF as well as CAD version 2010) in English language should be supplied along with the furnace

1. Detailed operation & Maintenance manual of the furnace with all drawings of assemblies/ sub-assemblies. All assembly/ sub-assembly Drawings shall be supplied with the part list also.
2. Catalogues with ordering code of all bought out items.
3. Complete lists of parts/items (bill of materials) used in the furnace in English language
4. Calibration certificate of all controllers is required
5. Overall dimensional drawings (GA).
6. Furnace sectional drawings (GA).
7. All refractory Drawings.
8. List of Bearings and oil seals and fasteners with order code.

9. Detailed assembly & Manufacturing drawings for wear out parts & component.
10. Schematic drawings for electrical controls, PID.
11. Drawings for Electrical and instrumentation parts, layout drawings showing location of all electrical equipment, single line diagram, interlocking and sequence diagrams etc.
12. Licensed runtime and development software of PLC & SCADA and application programs backup

21.0 Delivery:

The delivery of all items in the scope of supply of the supplier shall be completed in 10 months for FOB supply and in 12 months for FOR supply from the date of contract. Erection, commissioning and PAC shall be completed in 4 months (with one month overlap between delivery and erection) from the date of site hand over. Refer annexure -4 for the project Time schedule.

22.0 Inspection:

Pre-dispatch inspection shall be carried out by purchaser at supplier's works for all the items figuring in the bill of material furnished. Specification details, dimensions motor rating etc. shall be checked. The test certificates for the material used, motors shall be submitted by the supplier. Original manufacturers test certificates for the important items like motor drives controls, instruments etc. wherever applicable shall also be submitted by the supplier along with inspection call.

23.0 Training of MIDHANI Personnel:

Supplier shall conduct training of MIDHANI furnace personnel for operation and maintenance of complete furnace and accessories etc by supplier's experts/engineers. Training of MIDHANI's Instrumentation personnel in programming and maintenance of controllers in detail to be provided at company's specialized training centre or at MIDHANI works by supplier's experts/engineers.

24.0 Erection and Commissioning:

The supplier shall be responsible for complete erection, starting and putting into commissioning including supervision of erection & commissioning, performance test of all equipments supplied by him, as well as those items procured/fabricated by others based on furnace supplier's drawings and specification. All required manpower, tools & tackles, material handling facility for erection are in the scope of supplier.

All civil works necessary for machinery shall be done by purchaser as per the civil assignment drawings provided by the furnace supplier. Supplier will check the foundation before start of equipment erection and inform Purchaser for rectification of defects/deviation, if any, in the

foundation work before takeover. However, minor chipping, cleaning of pockets, etc. will be carried out by supplier during erection. Supplier will be responsible for unloading & proper storage of material using their material handling equipment, tools, tackles, slings, rope, manpower, etc. Shifting of equipment from from storage place to the erection site and all subsequent activities are in the scope of supplier.

25.0 Spares for one-year trouble free operation:

Spares for one-year trouble free operation shall be supplied along with equipment with price breakup. Un-Priced Price Bid shall be submitted in technical bid along with detailed list of spares.

26.0 Performance Guarantee Tests and Provisional Acceptance certificate (PAC):

The Guarantee for performance shall cover individual items and systems including electrics for their ratings / output as well as for the integrated operation of the equipment, its auxiliaries. The supplier shall be responsible for carrying out the performance guarantee tests as per the technical specification in the presence of Purchaser's representative on all plant, machinery and equipment supplied by him. This test is for demonstration of Equipment Function. The following shall be demonstrated by the supplier during performance guarantee test:

1. Overall useful dimensions of inside furnace chamber and other parameters.
2. Uniformity test shall be conducted to assess the working volume having the required uniformity of $\pm 10^{\circ}\text{C}$. The uniformity test shall be conducted in the range of 900 to 1,250 $^{\circ}\text{C}$ temp and also at intermediate temperatures at intervals of 100 $^{\circ}\text{C}$ while the material is processed inside the furnace. **The test shall be conducted as per AMS-2750E/BS relevant standards keeping the search thermocouples on the charge.** Total 12 Nos. (minimum) K/R/S thermocouples shall be distributed evenly within the required effective volume. Sensors used for furnace uniformity test shall have accuracies within $\pm 1.1^{\circ}\text{C}$ or 0.1% whichever is greater. The maximum temperature variation shall not exceed $\pm 10^{\circ}\text{C}$ from the set point as measured by the thermocouples. Search thermocouples and data acquisition system shall be provided by the supplier for initial trials. Provisional acceptance test will be conducted by supplier using R/S thermocouples & Recorder. Search thermocouples and recorder for Performane Acceptance Test will be arranged by Midhani.
3. Skin temperature of the furnace shall not be more than 50 $^{\circ}\text{C}$ above ambient at maximum operating temperature of furnace.

4. Average Rate of Heating from room temperature to max. Operating temperature shall be greater than 150 °C/ hour (average) at full load which will be measured on control thermocouples
5. The temperature of the pre-heated combustion air at the output of recuperator shall be atleast 350 °C, when the furnace is run at maximum operating temperature.
6. Door speed shall be as per specification.
7. All the functional test as per specification.

Midhani shall issue Provisional Acceptance Certificate (PAC) after successful completion of these tests.

27.0 Performance and Guarantee, Defect liability:

Performance of the furnace as per above shall be guaranteed continuously for a period of twelve months (12) from the date of acceptance of the equipment. All equipments shall be guaranteed for performance. Guarantee shall cover individual items and systems including electrics for their ratings / outputs (as required in the specification) as well as for the integrated operation of the equipment, its auxiliaries and ancillary equipment specified. The supplier shall at his own expense, upon written demand by the purchaser promptly repair or replace free to the purchaser at site any item which is defective or not complying with the specifications, within the guaranty period from the date the equipment is put into commercial operation at site.

28.0 Civil Work:

Lay out drawings, G.A drawing & anchor bolts drawing shall be submitted by the Contractor within two weeks after receipt of PO. Assignment drawing with static / dynamic load details etc. and final layout drawings shall be submitted by the Contractors within two weeks after getting MIDHANI's approval of layout drawings. The layout should consist of all requirements pertaining to complete machine including space requirement for all the accessories/ attachments. The contractor shall also indicate detailed specification /requirement of earthing material, grouting compound and grouting procedure etc. for foundation bolts of the machine. All anchor bolts /foundation bolts, fasteners, insert plates, curve angles, trench cover/ pit cover chequered plate, etc will be supplied by furnace Supplier.

29.0 General:

1. The offer shall be on turnkey basis i.e. the entire contractual activity including design, manufacture, supply, erection and commissioning of the furnace including supervision of erection and commissioning.
2. Besides relevant drawings, the offer shall indicate broad bill of material with respective material specification.
3. The successful tenderer shall comply with statutory provisions as applicable for such in plant works. This includes indemnifying Midhani from any liabilities arising out of accidents, if any, to the workmen of the contractor.
4. Any item / work not explicitly mentioned in this specification but essentially required for satisfactory performance of the furnace shall be to the account of the supplier.
5. MIDHANI shall provide following facilities: Power, and utilities. LPG will be provided for one dry-out cycle, 2 initial trials and one final trail free of cost. Trial if any required more than mentioned; LPG consumed will be chargeable as decided by Midhani.

Annexure - B

1.0 Fixed Hearth Furnace 8B- 12 Ton capacity:

This LPG fired fixed hearth furnace shall be designed for maximum design temperature of 1,300°C and maximum operating temperature of 1,250°C. This will be used for re-heating of steel/ super alloys / Ti alloys/stainless steel of various grades and sizes for forging. The charge is in the form of round or square ingots /Rings each may be weighing maximum of 6 T. The following shall be the basic parameters

SL	Parameter	Description
1	Effective usable length X width X Height	4,500 mm x 3,000 mm x 1,300 mm excluding 400 mm charge support height + 500 mm free space
2	Effective usable height	1,300 mm excluding 400 mm charge support height + 500 mm free space.
3	Hearth height from floor	750 mm approx.
4	Capacity	12 T excluding charge support. The weight of charge support shall be taken as 4 T.

2.0 Technical details for the furnace – FIXED Parameters

SL	Parameter	Description
1	Type	LPG fired Fixed Hearth Reheating Furnace
2	Application	Reheating of steel/ super alloys /Ti alloys/stainless steel of various grades and sizes for forging. The charge will be in the form of round or square ingots / Ring each may be weighing maximum of 6 Tons.
3	Mode of Heating	LPG Fired
4	Maximum design temperature	1,300°C
5	Normal operating	200 °C to 1,250 °C (in auto mode)

	temperature	
6	Rate of Heating	150°C/Hr at full load
7	Type of Firing	As per supplier's design
8	Mode of Temp. Control	Through Programmable type dedicated single loop PID controllers
9	Mode of Ratio control	Through Programmable type PID controllers/ PLC control
9	Temp. Control regulation	+/- 2 °C
10	Furnace Temp. Uniformity	+/- 10 °C from 900°C to 1,250°C
11	Minimum number of zones	2 zones
12	Door lifting	One rise and fall type door.
13	Maximum permissible skin temperature	At maximum operating temperature, the skin temperature shall not exceed 50° C above ambient temperature at any point on the shell, except in the region of 1 meter from any opening.
14	Burners	Burners with single electrode for electrical ignition and flame monitoring system (flame rod based). The make shall be Kromschroder/ Noxmat/ Bloom only. The burners shall be with low NOX emission and low oxygen, And shall be without requirement of any water cooling.
16	Minimum number of burners in each zone	Minimum 6 for each zone.
17	Flue gas heat recovery scheme	Furnace shall have one centralised recuperator and one Kromschroder WPS (Hot Air Pilot System) for air temperature compensation.

3. Standards

3.1 The components of all equipments shall be designed, assembled and tested in accordance with the latest standard of the standards institution, institution of Electrical Engineers and the Manufacturers Association.

- 3.2 The components shall conform to the relevant standards published by the Indian Standard Institution, wherever applicable, so that specific aspects under Indian conditions are taken care of.
- 3.3 The equipment shall also conform to the latest Indian Electricity rules as regards to safety, earthing and other essential provisions specified there-in for installation and operation of electrical equipment.
- 3.4 The equipment shall comply with the statutory requirements of the Government of India and Government of Telangana.
- 3.5 Design & Safety features of the furnace shall be generally as per industrial thermo processing equipment standard.

4.0 Furnace Shell and Door steel:

Furnace shell and door shall be fabricated with MS plates of minimum 6 mm thickness.

5.0 Furnace Door:

All heat resistant parts around door and door opening shall be made from heat resistant material DIN 1.4832/ ASTM 310. No water cooling shall be considered for door frame area/lintel. The mating face of Door & Door opening area of Furnace shall be provided with proper heat sealing arrangement and no heat leakage should be there by use of 4 pneumatic locking cylinder. Door locking system should be proven design and it should be long lasting.

- 5.1 Type of door: One rise and fall type door, operated through electric motor of 415 V, 50 Hz, and electromagnetic brake, with heavy duty limit switches, reduction gearbox, wire rope etc.. Door mast and pulley supports shall be fabricated from heavy steel section to withstand door counter weights. Door drive shall be connected to counter weights by suitable chains. Counter weights are connected by suitable wire rope to drum, gear box, motor etc. Door motor rating shall be suitable for trouble free operation and details to be enclosed by the supplier. The door shall also be operated by remote control apart from LCS and HMI.
- 5.2 Speed of door : Speed of the door shall be 8-10 meter/min.
- 5.3 Door drive motor : VFD Duty TEFC, squirrel cage induction motor with class "F" insulation, IP 55 Enclosure along with electromagnetic brake.
Make of motor: Siemens/ALSTOM/ABB/MARATHON.
- 5.4 VFD: The door drive is to be provided with variable speed drive of adequate capacity with soft start and stop facilities and single phasing preventer and overload protection.
Make : ABB/ Siemens.

- 5.5 The door drive system should be designed to run the motor for door operation in DOL (Direct- on- Line) mode also, which shall be used in case of malfunction of VFD. Mode Selection of VFD or DOL shall be provided on the control desk. Separate overload protection to be provided for DOL operation.
- 5.6 Heavy duty Limit switches to restrict the door movement within the required span are to be provided. L.S to be mounted at a safe place from heating zone.

6.0 Furnace Insulation :

Side and back wall, the roof and door should be lined with Light insulation blocks (ceramic modules density -192 kg/m³ or above, Grade-1425° C HTZ). Ceramic fibers shall be installed on steel wall with integrated Al foil. Modules on hot surface are covered with special coating for high temperature (Sil plate coating or equivalent).

Recommended supplier: UNIFRAX/MMTC

Furnace Hearth shall be lined with low cement Castable/Refractory bricks of make ACE/RHI. Alumina % shall be minimum 60%.

7.0 Central Recuperator:

Furnace shall be provided with one central recuperator located below working floor level(underground) for heat recovery from exhaust flue gases. This is expected to reduce the combustion air requirement, reduce the exhaust gas temperature and increase the fuel efficiency of the furnace. The supplier is expected to design the size and type of this recuperator to ensure the temperature of the pre-heated air for combustion at the output of recuperator to be at least 350 °C, when the furnace is run at maximum operating temperature. The recuperator shall also be provided with an upstream located suitably sized fan for cooling of flue gas in case of over temperature with pressure switch, motorised butterfly valves for fan flow regulation, flue gas dilution, temperature transducer etc.

8.0 Combustion air blowers:

Furnace shall be provided with two properly sized VFD controlled combustion air blowers. One in operation and other stand by. The blowers shall be provided with acoustic insulation to contain the noise levels to 85 dB(A) max. at 1 mtr or better. Combustion air pressure transmitter to be supplied for closed loop control.

9.0 Temperature compensation for combustion air:

The temperature compensation for the combustion air shall be through Kromschroeder WPS (Hot Air Pilot System). There shall be a dedicated air blower for the WPS with air filters, pilot recuperator,

breathing screws etc. One pressure transmitter to be provided for measuring WPS output pressure.

One portable digital micro manometer to be supplied. (Make: Fluke/TSI/Kromshroder)

10.0 Heating System :

The furnace shall be divided into zones equally length-wise. Each zone temperature should be independently controlled by single loop temperature controllers. Temperature controller of each zone shall measure temperature from control thermocouple and proportionally give output to the controller. The burner control units, in turn, shall open and close the air and gas solenoid valves. Orifice plates and Differential Pressure Transmitters shall be provided in main gas and combustion air pipe lines for measurement of total air and gas flows. The air fuel ratio control shall be through Kromshroder WPS. The ratio shall be settable from 1:27 to 1:34 for processing different super alloys in case of Normal Operation. A reference P & ID for the heating system is enclosed with the tender.

11.0 Furnace Operation:

All the furnace operations including starting, operation of all mechanical systems, Instrumentation and controls, shutdown of the furnace should be possible through computer interface. The control system shall have a dedicated stand alone PC of latest configuration, pre loaded with required run time and development licensed softwares of PLC and SCADA and suitable operating system etc.

One programming device SIMATIC Field PG M5 Advanced 6ES7717-1CC05-0AC1 or higher version shall be supplied. Cable charger or converter suitable in India shall be provided.

Two separate PLCs shall be provided for Electrical and Instrumentation controls. All the signals pertaining to monitoring and control of combustion system including control of temperature, ratio and pressure etc. shall be incorporated in Instrumentation PLC. All the signals pertaining to motor starters/drives and auxiliaries shall be incorporated in Electrical PLC. PLC shall be Siemens make only. All the inputs, outputs modules with 20% spare capacity (fully wired) shall be supplied. Thermocouples shall be connected directly to the controllers without using mV/mA converters / PLC modules in view of stringent furnace uniformity requirement.

12.0 Flue duct, ID Fan and Damper:

Suitably sized flue duct dampers and ID fans for the furnace are in the scope of the supplier. Any refractory work in the flue duct is to be done by the supplier. The ID fan shall be with VFD and the makes and type of motor and drive shall be as per clause NO: 8.3 and 8.4. It shall be provided with acoustic insulation to contain the noise levels to 85 dB(A) max. at 1 mtr or better. There shall also be a temperature transducer provided to measure the temperature of the flue gas entering the chimney. **The chimney is not in the scope of supplier** since one existing chimney is expected to be used for the furnace. Since this chimney is already connected with one operating twin chamber furnace the tenderers are expected to visit the site before finalising their design and offer. The attached drawing 06P008-01-00-A0 may be referred.

13.0 Painting of mechanical and structural items:

All steel parts shall be painted with two coats of Zinc chromate primer and two coat of finish paint before dispatch in knocked down condition. Touch up paint shall be provided before /after completion of erection at site as per applicability for the areas got damaged during transportation and handling. All bought out components shall be maintained with standard supplier's finish.

14.0 Power provided by the buyer:

Midhani will provide 415 V, 3 ph. 4 Wire, 50 cycles A.C. supply system for power circuit with transformer neutral solidly grounded. Variation in supply voltage and frequency will be limited to $\pm 5\%$ & $\pm 3\%$ respectively. The power will be provided at the input terminals of only one of the supplier's power panel. Any other voltages required and the distribution to other supplier's panels, if required, shall be arranged by the supplier of furnace.

15.0 Compressed air:

Midhani will provide compressed air at a pressure of 4 kg/cm². Clean instrument grade compressed air is not available in the shop. If instrument grade air is required, the supplier shall include necessary equipment to obtain the same. This shall also include necessary in-line filters, regulators, and lubricators etc. for pneumatic cylinder operation, if required. Instrument quality air is not available in Midhani, same if required is in the scope of the supplier.

16.0 LPG:

LPG shall be supplied by MIDHANI. LPG is available at 0.7 to 1.5 Kg/ sq cm pressure.

17.0 LPG gas train:

One Gas train with all safety interlocks are in the scope of supplier. Gas train shall have LPG low and High pressure switches, vent solenoid valve, isolation valves, pressure gauges. All the pressure gauges shall be

provided with push-to-test valves of reputed make. Suitable Pressure regulating valves shall be provided for the furnace operation. The PRV shall have all protections like snap shut off, over pressure cutoff, and manual reset. **Make: Kromschroeder only.** Auto shut off valves of adequate capacity shall be provided with manual reset facility. The auto shut off valve shall cutoff the LPG supply to the furnace in case of power failure and shall be interlocked with all safety parameters. Make: Honeywell/ Kromshroeder.

18.0 Electrical Requirements:

- 18.1 All AC motors shall be of insulation class F of make Siemens/ ALSTOM/ABB / Marathon only. All motors shall be provided with electronic motor protection relays of Siemens make. They shall be protected against overload earth fault and short circuits.
- 18.2 Operators control desk and MCC: All control desk and control panel shall be of Industrial type dust proof and flame proof (wherever required) and vermin proof with proper cutouts suitable for operation view as per relevant standards. All panel switchgear shall be of Siemens / Schneider / L&T makes only. Miniature circuit breakers of reputed make shall be provided wherever necessary. Separate transformer of required capacity shall be provided for all instrumentation and controls.
- 18.3 Cables: All power and control cables shall be 1.1 KV grade heavy duty type PVC insulated or PVC sheathed conforming to IS. All control cables shall be multi-strand copper cables.
- 18.4 The equipment shall be effectively double earthed in accordance with relevant clauses of Indian Electricity rules. Cables shall be laid on perforated trays with proper clamping.
- 18.5 Electric power panel: The panel shall be self-standing with double leaf doors. Panel should be dust and vermin proof and shall be made from steel enclosure made from 2 mm CRCA steel on angle Iron frame ISME (75×40) duly powder coated with cable entry for incoming and outgoing cables from bottom. The entire structure shall be sand blasted phosphastised and powder coated. Panel interior shall be white. The panel shall be properly earthed. The panel should be dust proof with rubber beading. The power panel shall be wired adequately with necessary interlocks, as per the wiring diagram, all wires identified suitably with ferrule nos. etc. terminal strips shall be of adequate capacity and of standard make and shall be at comfortable height for work. The panel shall have indication for Power ON, control ON, door open / closed, etc. Cable entry shall be from bottom, with spare entries punched. All doors shall be earthed with 2.5 mm Sq flexible copper cable. Gaskets shall be of Neoprene and hardware shall be cadmium

plated. A plug socket of 5/15A with switch control shall be provided. Internals of the panel shall be illuminated with CFL/LED lamps (preferably Philips make) with protective covering and switch control. 415V/220V transformer shall be provided with MCCB on primary and secondary side.

18.6 The power panel shall be wired adequately and shall consist of the following: -

At the I/P of the MCC shall be provided a ACB/MCCB of suitable capacity.

The switchgear in the panel shall be with following features and makes. All the starters/drives for various motors shall be housed in separate cubicles and shall comprise of the following components wherever applicable.

6. Switch Fuse units: Of Suitable Capacity, 415 VAC, 3 pole. Make: Siemens / L&T/Schneider.
7. MCCBs: Of Suitable Capacity, 415 VAC, 3 poles. Make: Siemens / L&T/Schneider. Features: With microprocessor based trip unit for OL/ SC/ EF, overload, short-circuit, Earth faults.
8. Mains contactors: Of Suitable Capacity, 415 VAC, 3 pole. Make: Siemens / L&T/Schneider
9. Auxiliary contactors / relays: electronic over load delays of suitable capacity and range. Make: Siemens / L&T/Schneider
10. Ammeters, Voltmeters and energy meters: The panel shall have digital Ammeters and voltmeters for each motor and one number Voltmeter for incoming supply with selector switch for 3 phase monitoring at convenient height. Size: 96×96 mm.

18.7 Control Desk: An industrial type control desk of dust and vermin proof with push buttons for operation of door drives shall be provided.

18.8 Power cables of suitable capacity from MCC to various motors and devices and other cables for interconnection of Lapp make shall be supplied.

19.0 Instrumentation:

19.01 Sensors: R type thermocouples made of 1 mm wire shall be provided conforming to special tolerance of relevant ASTM as per IPTS 90 standards. Duplex TCs for each zone shall be used for controlling, recording and simplex thermocouple for over temperature (Safety). The thermocouples shall have a projection of not less than 400mm over the furnace shell so as not to be effected by the ambient temperature. The inner 4-hole bead and outer sheath shall be made of recrystallized high Alumina (KER710 grade) only from reputed manufacturer.

- 19.02 Compensating cables: Shall be suitable for R type thermocouples. Cables shall be multi-stranded, flexible type, Teflon lined, sleeved of sufficient length with omega connectors on both ends. Control panel will be around 40 meters from the furnace. Cables shall be laid on perforated trays with proper clamping. K type thermocouples shall be provided for monitoring job temperature during running of the furnace. Multi core 6 pair K type cable shall be laid from furnace to control room and to be connected in the recorder.
- 19.03 Temperature controller: Microprocessor based programmable controller (96×96) with minimum 9 number of programs with multiple segments.. **Make of the controller will be Eurotherm/ Yokogawa only.** Detailed specification is given at **Annexure 1.**
- 19.04 Safety temperature controller: Microprocessor based ON/OFF controller for safety shall be provided for each zone. Make of the controller shall be Eurotherm/ Yokogawa only. Detailed specification is given at **Annexure 2.**
- 19.05 Temperature Recorder: One no. 24 point 180mm chart width microprocessor based programmable paper less recorder shall be provided for the furnace. Make: Eurotherm/ Yokogawa only. Detailed specification is given at **Annexure 3.** Data acquisition cable shall be supplied for connecting paperless recorder to nearest Ethernet node for intranet connectivity.
- 19.06 Differential pressure transmitters (SMART) along with orifice plates shall be provided for measuring the air and gas flow into the furnace. Transmitters shall have configuration facility through HART communication. Transmitter Make: Yokogawa/E+H only. One HART communicator to be supplied for calibrating the transmitters.
- 19.07 Each burner shall be provided with air and gas solenoid valves, ignition transformer and flame monitoring system (Ionisation rod based). Make of flame monitoring system: Honeywell/ Kromschroeder only. Make of Solenoid valves: Kromschroeder only. Provision shall be made to switch on the burners from PLC as well as from the field/locally (near to burner). Flame failure indication should be displayed in SCADA.
- 19.08 Mass flow meter has to be provided for measuring total gas consumption of the furnace. Make: Endress+Hausser only. Flow meter reading has to be displayed in SCADA screen and also to be shown in paperless recorder. The communication facility for the mass flow meter is through HART.
- 19.09 Pressure/flow switches: Pressure switches and flow switches in different process lines (gas and combustion air) for safe operation and

annunciation shall be provided with suitable ranges. The pressure switches shall have proper enclosure as per the safety rules. Make: Honeywell / Kromschroeder only.

19.10 Furnace pressure controller (with damper position indication), furnace pressure transmitters (- 5 to +5 mm WC) and servomotors shall be provided for damper control. Provision shall be made for remote manual control of damper from Instrument panel with auto-manual control switch. VFD to be provided for each ID Fan.

19.11 Audio visual annunciation shall be provided with test/accept/reset facility, first fault identification facility, electronic hooter. Annunciation is required for the following conditions:

6. Over temperature
7. Low combustion air pressure
8. Low gas pressure
9. Low air pressure
10. Any other critical parameters for safe operation of furnace.

19.13 Interlocking: Safety interlocks shall be provided to shut off the fuel line under the following conditions:

5. Low gas pressure
6. Low Combustion air pressure
7. I.D. Fan running through suction pressure switch
8. Any other interlocks for safe operation of the furnace to be included

19.14 Flue gas analyzer: On line Oxygen measuring instrument to check the oxygen level in the flue gases in the furnace with all accessories to suit the highest operating temperature. (O₂ Analyser Make:Yokogawa/Westinghouse/FER only). Various lamda ratios shall be settable from the HMI during the burner operation by means of lamda adjusters in the Kromscroder WPS.

19.15 Thermocouples on the roof shall be positioned for easy accessibility during maintenance and measurement. In addition to control and safety thermocouples, suitable provision shall made for inserting 3.0 meters long minnum 12 nos. R type thermocouple with suitable sealing arrangement on the roof to carry out uniformity testing. Additional requirement, if any, shall be provided during installation and commissioning. Thermocouples outer tubes will be 30 mm dia consisting of two R type TCs of one at 250 mm height and other at 1.0 mts height, which will be arranged during furnace uniformity.

19.16 Flue gas temperature measurement: Suitable thermocouples shall be provided and connected to recorder for measuring the temperature of flue gas before and after recuperator.

- 19.17 Emergency stop button shall be provided in the control room, local to the furnace to make the furnace trip in case there is problem. Additional instruments, controls required if any to be offered for safe and satisfactory running of the furnace.
- 19.18 Instrumentation Panel: One floor mounted type instrumental panel should be provided which shall be fabricated from 2 mm thick sheet steel. The panel shall house all the controlling instruments, auto-manual control switches as mentioned above and shall be duly wired up to the terminals. Zone wise instruments and controls shall be provided with isolators and MCBs. The instruments shall be located on the top portion which will have front fixed and rear hinged door. Terminal strips shall be arranged in convenient groups such as power supply, solenoid valve output, field interlocks, compensating cables etc. with space in between each terminal strip. Cable entry shall be through gland plate at bottom of panel. This includes installation and commissioning of inter connecting cable with route length 40 meters around the furnace. The signal cables shall be shielded type. A separate MCCB shall be provided for receiving incoming supply from the power panel of the furnace. Panel shall be dust proof with required rubber beadings. Necessary mountings/hardware for installation of the panel also has to be included in the scope of supply.
- 19.19 1.5 Sq mm flexible multi strand cable (Finolex make only) shall be used for control wiring of the panel. Suitable flexible multi strand cable (Finolex) shall be used for power wiring. Different colors to be used for phase (Red), Blue (Return cable from the field, green for ground Yellow for annunciation cables, Black for neutral). PVC cable trays (minimum 50mm) to be used in the panel for laying cables.
- 19.20 All the wires shall be properly tagged with transparent sheet protection for easy identification. Legends for various instruments, lamps, start and stop buttons etc., to be provided with quality screen printing distinctly for better visibility.
- 19.21 PVC insulated cables lugs to be provided for connections. Cables on the instruments end also to be lugged and marked for easy connection. Arrangement for proper earthing of panel to be provided.
- 19.22 Proper earthing facility to be ensured for trouble free running of ionisation flame rod sensing devices. Separate earth pits for instrumentation panel to be provided by the supplier as Midhani has equipment like Arc furnaces which create unbalanced loads and high voltage fluctuations. The panel shall be light grey outside and brilliant white inside. The panel shall be effectively double earthed in accordance with the relevant clauses of Indian Electricity Rule.

19.23 All panels shall be supplied with suitable rated panel AC. Make: Rittal/ Advance cooling only. The exhaust of the AC shall be let outside the control room through suitable ducting arrangement.

20.0 Drawing and Documents

20.1 Information to be provided in the offer: Reference General arrangement drawing, layout of furnace, elevation drawing and accessories showing the overall space required and the termination point of utilities to be provided by tenderer along with acceptance of this Technical specification .Process flow diagram and P & ID to be submitted along with the technical offer for evaluation.

20.2 Documents to be provided within 2 weeks after receiving P.O.: Final General Arrangement Drawing, layout of furnace, elevation drawing and accessories showing the overall space required and the termination point of utilities to be provided by supplier. Foundation layout drawing showing the bolt position and load distribution details and adequate section drawing for development of construction drawings are to be given by the supplier. The layout should consist of all requirements pertaining to complete machine including space requirement for all the accessories/ attachments/offered items.

20.3 All Drawings (Electrical, Instrumentation, Refractory & Mechanical) for the complete furnace along with bill of material and quantities shall be submitted for approval prior to manufacture. Along with this detailed erection and commissioning schedule shall be submitted by the supplier.

20.4 Final Drawings and Documents: Three sets of following documents (hard and soft copies, PDF as well as CAD version 2010) in English language should be supplied along with the furnace

13. Detailed operation & Maintenance manual of the furnace with all drawings of assemblies/ sub-assemblies. All assembly/ sub-assembly Drawings shall be supplied with the part list also.
14. Catalogues with ordering code of all bought out items.
15. Complete lists of parts/items (bill of materials) used in the furnace in English language
16. Calibration certificate of all controllers is required
17. Overall dimensional drawings (GA).
18. Furnace sectional drawings (GA).
19. All refractory Drawings.
20. List of Bearings and oil seals and fasteners with order code.
21. Detailed assembly & Manufacturing drawings for wear out parts & component.
22. Schematic drawings for electrical controls, PID.

23. Drawings for Electrical and instrumentation parts, layout drawings showing location of all electrical equipment, single line diagram, interlocking and sequence diagrams etc.
24. Licensed runtime and development software of PLC & SCADA and application programs backup

21.0 Delivery:

The delivery of all items in the scope of supply of the supplier shall be completed in 10 months for FOB supply and in 12 months for FOR supply from the date of contract. Erection, commissioning and PAC shall be completed in 4 months (with one month overlap between delivery and erection) from the date of site hand over. Refer annexure -4 for the project Time schedule.

22.0 Inspection:

Pre-dispatch inspection shall be carried out by purchaser at supplier's works for all the items figuring in the bill of material furnished. Specification details, dimensions motor rating etc. shall be checked. The test certificates for the material used, motors shall be submitted by the supplier. Original manufacturers test certificates for the important items like motor drives controls, instruments etc. wherever applicable shall also be submitted by the supplier along with inspection call.

23.0 Training of MIDHANI Personnel:

Supplier shall conduct training of MIDHANI furnace personnel for operation and maintenance of complete furnace and accessories etc by supplier's experts/engineers. Training of MIDHANI's Instrumentation personnel in programming and maintenance of controllers in detail to be provided at company's specialized training centre or at MIDHANI works by supplier's experts/engineers.

24.0 Erection and Commissioning:

The supplier shall be responsible for complete erection, starting and putting into commissioning including supervision of erection & commissioning, performance test of all equipments supplied by him, as well as those items procured/fabricated by others based on furnace supplier's drawings and specification. All required manpower, tools & tackles, material handling facility for erection are in the scope of supplier.

All civil works necessary for machinery shall be done by purchaser as per the civil assignment drawings provided by the furnace supplier. Supplier will check the foundation before start of equipment erection and inform Purchaser for rectification of defects/deviation, if any, in the foundation work before takeover. However, minor chipping, cleaning of pockets, etc. will be carried out by supplier during erection.

Supplier will be responsible for unloading & proper storage of material using their material handling equipment, tools, tackles, slings, rope,

manpower, etc. Shifting of equipment from from storage place to the erection site and all subsequent activities are in the scope of supplier.

25.0 Spares for one-year trouble free operation:

Spares for one-year trouble free operation shall be supplied along with equipment with price breakup. Un-Priced Price Bid shall be submitted in technical bid along with detailed list of spares.

26.0 Performance Guarantee Tests and Provisional Acceptance certificate (PAC):

The Guarantee for performance shall cover individual items and systems including electrics for their ratings / output as well as for the integrated operation of the equipment, its auxiliaries. The supplier shall be responsible for carrying out the performance guarantee tests as per the technical specification in the presence of Purchaser's representative on all plant, machinery and equipment supplied by him. This test is for demonstration of Equipment Function. The following shall be demonstrated by the supplier during performance guarantee test:

8. Overall useful dimensions of inside furnace chamber and other parameters.
9. Uniformity test shall be conducted to assess the working volume having the required uniformity of $\pm 10^{\circ}\text{C}$. The uniformity test shall be conducted in the range of 900 to 1,250 $^{\circ}\text{C}$ temp and also at intermediate temperatures at intervals of 100 $^{\circ}\text{C}$ while the material is processed inside the furnace. **The test shall be conducted as per AMS-2750E/BS relevant standards keeping the search thermocouples on the charge.** Total 12 Nos. (minimum) K/R/S thermocouples shall be distributed evenly within the required effective volume. Sensors used for furnace uniformity test shall have accuracies within $\pm 1.1^{\circ}\text{C}$ or 0.1% whichever is greater. The maximum temperature variation shall not exceed $\pm 10^{\circ}\text{C}$ from the set point as measured by the thermocouples. Search thermocouples and data acquisition system shall be provided by the supplier for initial trials. Provisional acceptance test will be conducted by supplier using R/S thermocouples & Recorder. Search thermocouples and recorder for Performane Acceptance Test will be arranged by Midhani.
10. Skin temperature of the furnace shall not be more than 50 $^{\circ}\text{C}$ above ambient at maximum operating temperature of furnace.
11. Average Rate of Heating from room temperature to max. Operating temperature shall be greater than 150 $^{\circ}\text{C}/\text{hour}$ (average) at full load which will be measured on control thermocouples

12. The temperature of the pre-heated combustion air at the output of recuperator shall be atleast 350 °C, when the furnace is run at maximum operating temperature.
13. Door speed shall be as per specification.
14. All the functional test as per specification.

Midhani shall issue Provisional Acceptance Certificate (PAC) after successful completion of these tests.

27.0 Performance and Guarantee, Defect liability:

Performance of the furnace as per above shall be guaranteed continuously for a period of twelve months (12) from the date of acceptance of the equipment. All equipments shall be guaranteed for performance. Guarantee shall cover individual items and systems including electrics for their ratings / outputs (as required in the specification) as well as for the integrated operation of the equipment, its auxiliaries and ancillary equipment specified. The supplier shall at his own expense, upon written demand by the purchaser promptly repair or replace free to the purchaser at site any item which is defective or not complying with the specifications, within the guaranty period from the date the equipment is put into commercial operation at site.

28.0 Civil Work:

Lay out drawings, G.A drawing & anchor bolts drawing shall be submitted by the Contractor within two weeks after receipt of PO. Assignment drawing with static / dynamic load details etc. and final layout drawings shall be submitted by the Contractors within two weeks after getting MIDHANI's approval of layout drawings. The layout should consist of all requirements pertaining to complete machine including space requirement for all the accessories/ attachments. The contractor shall also indicate detailed specification /requirement of earthing material, grouting compound and grouting procedure etc. for foundation bolts of the machine. All anchor bolts /foundation bolts, fasteners, insert plates, curve angles, trench cover/ pit cover chequered plate, etc will be supplied by furnace Supplier.

29.0 General:

6. The offer shall be on turnkey basis i.e. the entire contractual activity including design, manufacture, supply, erection and commissioning of the furnace including supervision of erection and commissioning.

7. Besides relevant drawings, the offer shall indicate broad bill of material with respective material specification.
8. The successful tenderer shall comply with statutory provisions as applicable for such in plant works. This includes indemnifying Midhani from any liabilities arising out of accidents, if any, to the workmen of the contractor.
9. Any item / work not explicitly mentioned in this specification but essentially required for satisfactory performance of the furnace shall be to the account of the supplier.
10. MIDHANI shall provide following facilities: Power, and utilities. LPG will be provided for one dry-out cycle, 2 initial trials and one final trail free of cost. Trial if any required more than mentioned; LPG consumed will be chargeable as decided by Midhani.

1.

Annexure 1

Specification of Temperature controllers

SL	Parameter	Value
1	Type	Microprocessor based
2	Input	Universal Inputs required. Programmable for T/c's, RTD,0 & 4-20 mA, 0-2VDC/0-10VDC
3	Control output	DC output (Voltage/ current output) (load impedance 400 ohms minimum)
4	Output high / low limit	0-100%
5	Re-transmission output	Required (Programmable for SV, PV, Output) load impedance 400 Ohms (minimum)
6	Ramp up/ ramp down	Required for set point
7	Auto / Manual Selection	To be Provided
8	Alarm Contacts	2 Nos, Rating 230 VAC, Minimum 1Amp
9	Make	Yokogawa/Eurotherm
10	Communication	Profibus/ethernet

Specification of safety controllers

SL	Parameter	Value
1	Type	Microprocessor based
2	Input	Universal input programmable for T/Cs, RTD, 0 & 4-20mA, 0-2VDC / 0-1VDC
3	Temperature range	Field programmable
4	Cold junction compensation	Automatic
5	Control output	Relay output contact rating 230VAC 2Amps
6	Re-transmission Output	0 and 4-20mA programmable for PV, SV, Output with 650 Ohms load
7	Alarms	2 Nos, shall be programmable for deviation and process (230VAC 2Amps)
8	Power supply	90 to 270VAC 50HZ
9	Dimensions	96X96 mm
10	Mounting	Flush panel mounting
11	Make	Eurotherm/ Yokogawa/
12	Hard copy of Operational & Maintenance Manual	Required

Specification of Paperless Recorder

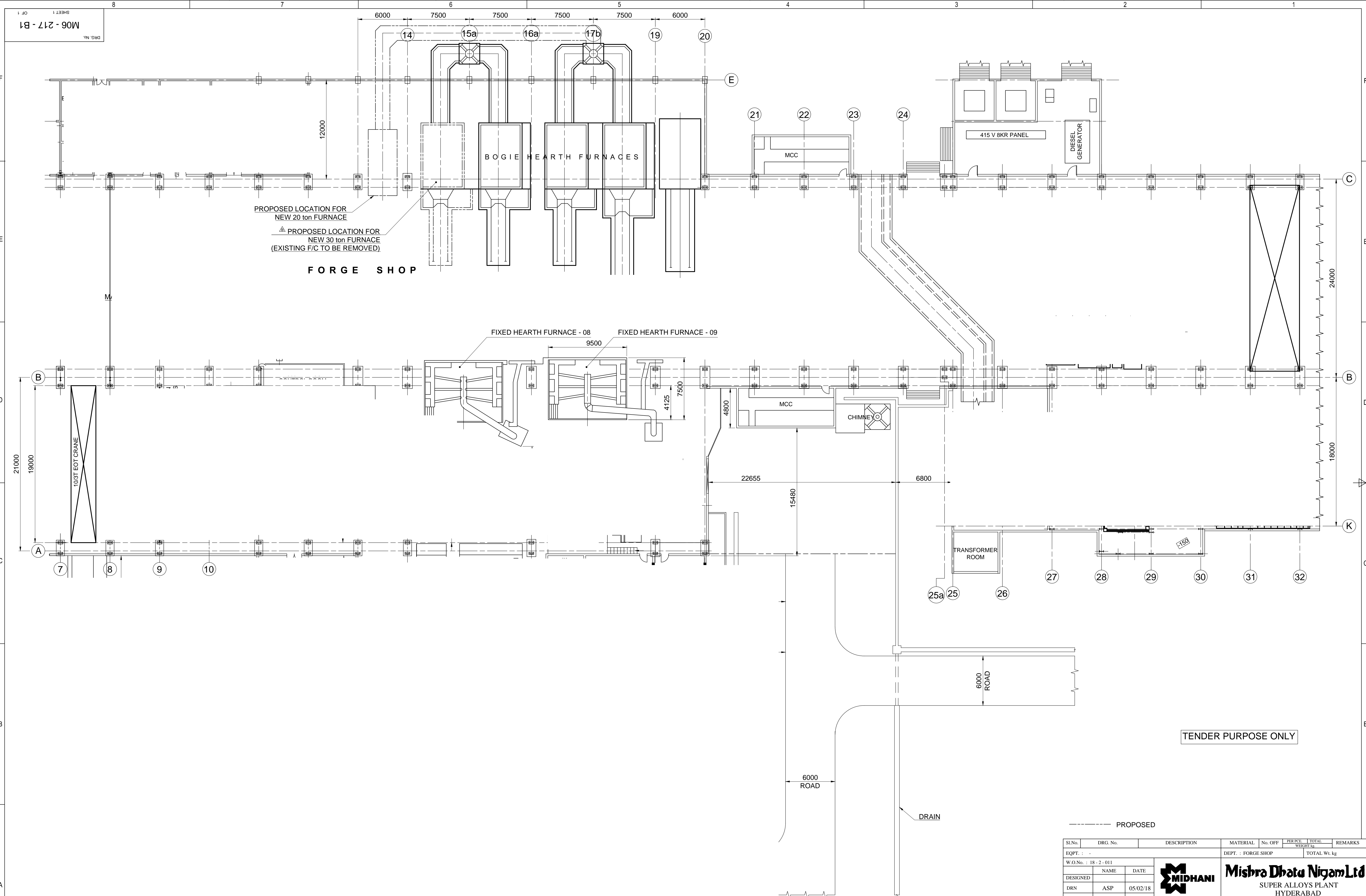
SL	Parameter	Value
1	No of inputs	24 Nos.
2	Screen size	10"Minimum
3	Display	TFT Colour LCD
4	Inputs	DC Volts, (+/-20V minimum), All types of TCs, RTDs, DC Current (Field Programmable)
5	Measuring interval	125 ms or better for all channels (Shall be programmable)
6	Internal memory	96 MB (minimum)
7	External memory	CF Card 4GB (with Media)
8	Programming	Through front keypad/Tourch panel and PC software
9	Communication	Ethernet and USB Port
10	Protocols	FTP, Web Server, Modbus Server, HTTP, Sntp etc,
11	Linear scaling	Required for all inputs including decimal point, Engineering unit and Scaling, limits etc
12	T/c burnout	Shall be programmable for all inputs
13	Moving average	Required
14	Other displays	Group display, Display color, Bar graph display, Digital Indication, Alarm summary display, Message summary Display, Memory information, Report information, Log Display, Tag display, Trend display etc., are required
15	Event function	Required for all inputs
16	Security function	Shall have login/key lock function for each key with Password and user name
17	Real time clock	Required
18	Reference junction compensation	INT/EXT Selectable for all Channels
19	Recorder shall have	integrator/counter facility and mathematical functions (including exponential) Available for 36 mathematical functions
20	Accuracy	+/- 1.0 % or better
21	CMRR	120 dB or better

22	Recorder operation	through touch screen / keypad
23	NMRR	40 dB or better
24	Power supply	100 to 240 VAC, 50 Hz
25	Mounting	Flush Panel mounting
26	Standard software	Software for connecting to PCs, Report software, Review software along with the instrument and database software for (reviewing data) to be supplied along with instrument
27	Protection	These recorders will be used in dusty and explosive areas. Recorder shall be with IP65 protection (entire recorder) without additional enclosures. Certificate to be enclosed.
28	Make	Yokogawa/ Eurotherm (No other makes are acceptable)
29	Manual	Hard copy of Operational & Maintenance Required.

Annexure - IV

Project Schedule

	Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sl. No	Activity															
1	Equipment Basic Engineering															
2	Equipment Detailed Engineering															
3	Basic data for civil foundation design															
4	Design for equipment foundation															
5	Manufacture of Equipment.															
6	Delivery of equipment.															
7	Civil foundation work.															
8	Erection of equipment.															
9	Commissioning of equipment.															



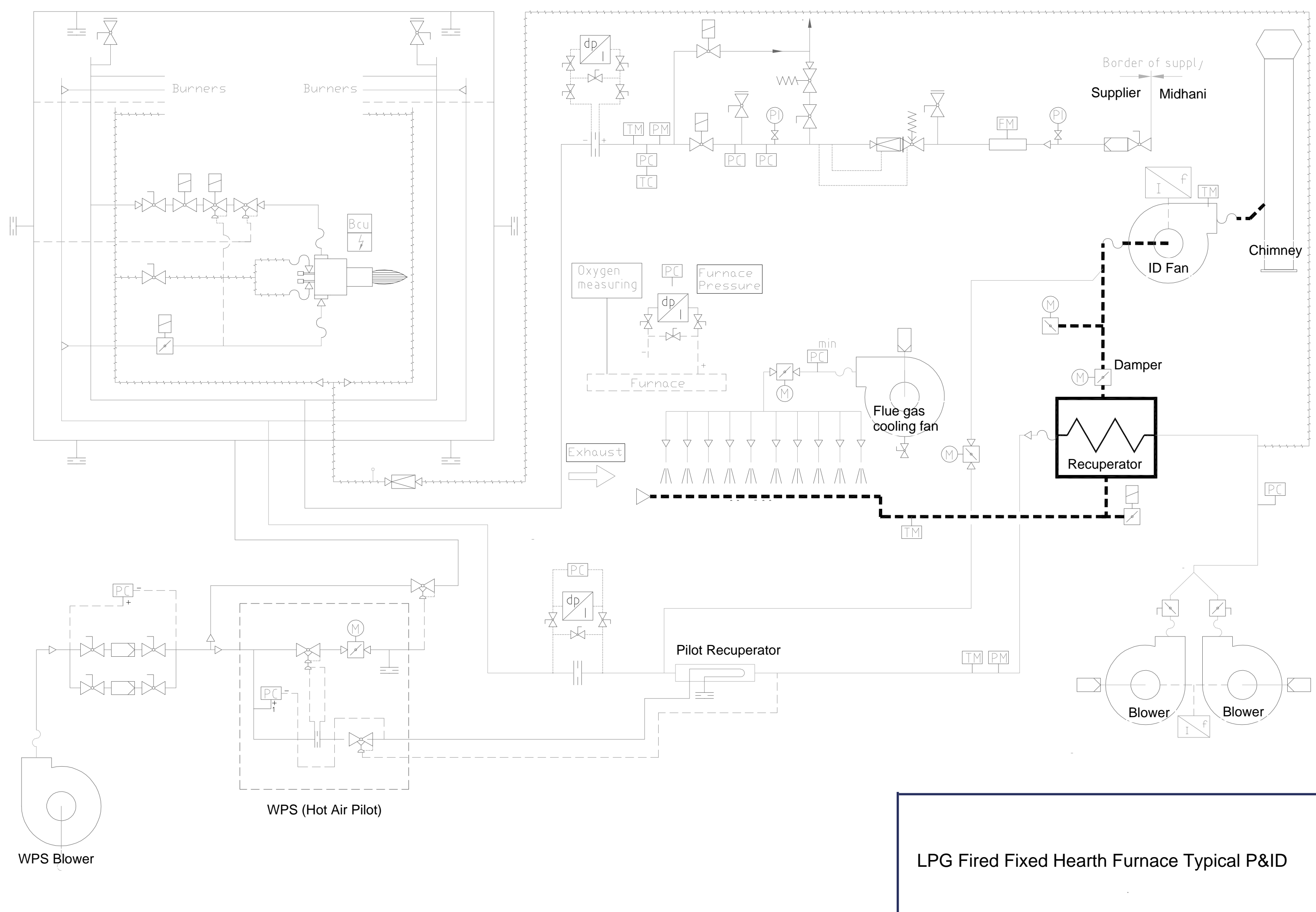
REVISION	ZONE	DATE	W.O.No.	REMARKS	BY	APPD	DRG. No:	DESCRIPTION
B	-	19-12-18	18-2-109	PROPOSED NEW 30 ton FURNACE LOCATION ADDED	ASP	IMRAN		
REFERENCE DRAWINGS								

THIS IS THE PROPERTY OF M/s MISHRA DHATU NIGAM LTD. AND SHOULD NOT BE GIVEN OR HANDED OVER OR DIVULGED TO ANY OTHER PERSON WITH OUT THE EXPRESS PERMISSION OF THE COMPANY IN WRITING. THE MATTER GIVEN ON THIS DRAWING IS TO BE TREATED AS STRICTLY CONFIDENTIAL.

- NOTE:
1. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.
 2. REMOVE BURRS & SHARP CORNERS.
 3. FREE MEASURE TOLERANCE SHOULD BE AS PER MEDIUM IS:2102-1969 UNLESS OTHERWISE SPECIFIED.
 4. FOLLOW RELEVANT INDIAN STANDARDS FOR MANUFACTURE
 5. DO NOT SCALE DRAWING.
 6. ASK IF IN DOUBT.

TENDER PURPOSE ONLY

Sl.No.	DRG. No.	DESCRIPTION	MATERIAL	No. OFF	PER. PER WEIGHT	TOTAL WEIGHT	REMARKS																															
EQPT. : -		DEPT. : FORGE SHOP		TOTAL Wt. kg																																		
W.O.No. : 18 - 2 - 011																																						
DESIGNED	NAME	DATE	Mishra Dhatu Nigam Ltd SUPER ALLOYS PLANT HYDERABAD																																			
DRN	ASP	05/02/18																																				
CHD/COMP																																						
APPROVED					<table border="1"> <tr> <td>▽▽▽</td> <td>▽▽</td> <td>▽</td> <td>~</td> <td colspan="3">SUPERSEDES</td> </tr> <tr> <td>N1</td> <td>N2</td> <td>N3</td> <td>N4</td> <td>N5</td> <td>N6</td> <td>N7</td> <td>N8</td> <td>N9</td> <td>N10</td> <td>N11</td> <td>N12</td> </tr> <tr> <td>0.025</td> <td>0.05</td> <td>0.1</td> <td>0.2</td> <td>0.4</td> <td>0.8</td> <td>1.6</td> <td>3.2</td> <td>6.3</td> <td>12.5</td> <td>25</td> <td>50</td> </tr> </table>			▽▽▽	▽▽	▽	~	SUPERSEDES			N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50
▽▽▽	▽▽	▽	~	SUPERSEDES																																		
N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12																											
0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50																											
FINISH : IF NOT SHOWN		SURFACE FINISH IN mm AS PER IS:696 - 1972					SUPERSEDED BY																															
SCALE : 1 : 200							DRG. No. M06 - 217 - B1																															
		(FORGE SHOP)					SHEET 1 OF 1																															



LPG Fired Fixed Hearth Furnace Typical P&ID

Contents

1.0 PRICE BID FORMAT2

2.0 FIRMNESS OF PRICE5

3.0 EFFECTIVE DATE OF CONTRACT5

4.0 DELIVERY PERIOD5

5.0 TERMS OF PAYMENT5

6.0 MODE OF PAYMENT7

7.0 EARNEST MONEY DEPOSIT7

8.0 SECURITY DEPOSIT8

9.0 SHIPPING DOCUMENTS8

10.0 INSURANCE9

11.0 TAXES AND DUTIES9

12.0 PERFORMANCE AND GUARANTEE, DEFECT LIABILITY 10

13.0 COMPLETENESS OF EQUIPMENT 12

14.0 PROGRESS INSPECTION, PRE DISPATCH INSPECTION AND TRAINING 12

15.0 QUALITY ASSURANCE PLAN 12

16.0 LIQUIDATED DAMAGES FOR DELAY IN SUPPLIES AND EXECUTION 13

17.0 ORDER OF PRECEDENCE 13

18.0 JURISDICTION 13

19.0 LIABILITIES 13

20.0 PATENT INFRINGEMENT & COPYRIGHT 14

21.0 INTEGRITY PACT 14

22.0 DISCLAIMER 14

23.0 OTHERS 14

24.0 ELIGIBILITY CRITERIA 14

SPECIAL CONDITIONS OF CONTRACT

1.0 PRICE BID FORMAT

Design, Supply, Supervision, Erection and Commissioning of 20 T & 12 T Fixed Hearth Furnace for Forge Shop .

A. For Indigenous offers(IN INR):

SL	Description	Basic Price	G S T	GST (%)	Freight	Total F O R MIDHANI	HSN Code
(I)	(II)	(III)	(IV)	(V)	(VI)	(VII = III+IV+VI)	
1	Furnace (20 T-8(A))						
1.1	Furnace						
1.2	Blowers , Burners & Piping						
1.3	Refractory & Insulation						
1.4	Ducting						
1.5	Electricals and Electrical panels						
1.6	Instrumentation (inc panels)						
1.7	Supervision, Erection & Commissioning						
1.8	One year Maintenance spares						
	Total Price for 8A (Sl.No. 1.1 to 1.8) (FOR MIDHANI)						
SL	Description	Basic Price	G S T	GST (%)	Freight	Total F O R MIDHANI	HSN Code
(I)	(II)	(III)	(IV)	(V)	(VI)	(VII = III+IV+VI)	
2.	Furnace (12 T-8B)						
2.1	Furnace						
2.2	Blowers , Burners & Piping						
2.3	Refractory & Insulation						
2.4	Ducting						
2.5	Electricals and Electrical panels						
2.6	Instrumentation (inc panels)						
2.7	Supervision, Erection & Commissioning						
2.8	One year Maintenance spares						
	Total Price for 8B (Sl.No. 2.1 to 2.8) (FOR MIDHANI)						

B. For Import offers:

Design, Supply, Supervision, Erection and Commissioning of **20T & 12 T Fixed Hearth** Furnace for Forge Shop (**In USD/ EURO/GBP**)

	SI I	Description II	F O B Port of Loading III	Any other terms as per INCOTERMS 2010	Custom Tariff Code under Harmonised System
CURRENCY QUOTED & INCO TERMS QUOTED					
1.		Furnace 20T (8A)			
	1.1	Furnace			
	1.2	Blowers , Burners & Piping			
	1.3	Refractory & Insulation			
	1.4	Ducting			
	1.5	Electricals and Electrical panels			
	1.6	Instrumentation (inc panels)			
	1.7	Supervision, Erection & Commissioning			
	1.8	One year Maintenance spares			
		Total Price for 8B (Sl.No. 1.1 to 1.8)			
2.		Furnace 12 T (8B)			
	2.1	Furnace			
	2.2	Blowers , Burners & Piping			
	2.3	Refractory & Insulation			
	2.4	Ducting			
	2.5	Electricals and Electrical panels			
	2.6	Instrumentation (inc panels)			
	2.7	Supervision, Erection & Commissioning			
	2.8	One year Maintenance spares			
		Total Price for 8B (Sl.No. 2.1 to 2.8			

NOTES:

- 1) Prices to be quoted in EURO/USD/GBP for Import Offers.
- 2) L1 shall be based on sum of total prices for furnace 8 A and furnace 8B for landed cost at MIDHANI with net of all taxes and duties.
- 3) Customs Tariff Code for various components shall be indicated in the offer.
- 4) Offers in Foreign Currencies shall be normally on FOB basis. However, in case any other Terms as per INCOTERMS are quoted, FOB price must be indicated. MIDHANI shall reserve the right to place order on either FOB or other Terms as per INCOTERMS.
- 5) Indicate whether the shipment shall be FCL(Full Container Load) or LCL (Low Container Load) and number of containers in the techno-commercial bid. In case the same is not feasible, indicate the volume and weight of the consignments.
- 6) Exchange rate for the foreign currencies shall be considered as on final scheduled techno-commercial bid opening date. Exchange rate shall be taken from the website of RBI.
- 7) Landed Costs shall be calculated on FOB Costs considering the following:

- a. Freight, Insurance and Clearance Charges (as per the port of Loading) till receipt of material in MIDHANI.
 - b. Duties applicable after considering Tax Credits.
 - c. Interest Charges for normalizing payment terms (if any), based on State Bank of India (SBI) cash credit rate as on techno-commercial bid opening date.
 - d. LC charges prevailing as on techno-commercial bid opening date as per SBI taking into account the Delivery Period.
 - e. Pre Dispatch Inspection/Training Charges, if any, for Inspection by MIDHANI.
- 8) Freight charges whichever is lower either (i) from offer, In case of other than FOB price or (ii) our internal prices in case of FOB Price shall be considered.
- 9) Price for One year maintenance Spares must be quoted by the bidder. The L1 price shall be inclusive of the spare price.
- 10) Itemwise Tax rate/ GST to be quoted with applicable HSN code.
- 11) Lump sum Price for spares (itemized list with/without Price break up and along with quantity of each item) with applicable Taxes & duties for "Spares for 1 year operations" must be quoted by the supplier. Validity of these Prices shall be of 180 days from the date of opening of Price Bid. This lump sum price shall be considered for evaluation of L1 bidder.
- Where only lump sum price has been quoted for spares, Itemized List with price breakup (limiting to Lump sum value as quoted) shall be given by supplier within 4 months from the Effective Date of Contract.
- 12) Un-priced Bid in this format must be submitted along with the Techno Commercial Bid.

2.0 FIRMNESS OF PRICE

The quoted price shall remain firm during the currency of the Contract (to be signed at a later date) and is not subject to any variation whatsoever except for variation on Taxes and duties as per Clause 11.1 and price offer will be valid for 180 days.

3.0 EFFECTIVE DATE OF CONTRACT

The Contract (to be signed at a later date) shall be valid and binding from the date of its signature by both Parties herein.

The effectiveness or Coming into Force of the Contract shall be the date on which the Contract is signed.

4.0 DELIVERY PERIOD

FOR Purchaser's site delivery of Plant, machinery & equipment (as detailed in Price Bid Format at Clause 1.0) shall be completed by end of 12th month from the Effective Date of the Contract. In case of FOB, delivery of Plant, machinery & equipment shall be completed by end of 10th month from the effective date of the contract.

Erection, Start Up and putting into commissioning (Provisional Acceptance) shall start from 12th month and shall be completed by end of 15th month from the Effective Date of Contract. Refer Annexure-4 for Project timeline schedule.

5.0 TERMS OF PAYMENT

5.1 SUPPLY OF PLANT, MACHINERY & EQUIPMENT

- (i) Ten (10) percent of the Contract price for supplies (excluding taxes and duties) on
 - a. Signing of Contract,
 - b. Furnishing of Security Deposit as per Clause 8.0
 - c. Submission of invoice in triplicate and Submission of Bank guarantee of similar amount from a Nationalized Bank/ Scheduled Commercial Bank encashable at Hyderabad, INDIA in the prescribed proforma given at part VII hereof for advance payment along with 14% interest per annum valid till FOR & FOB supply of last consignment.

- (ii) Ten (10) percent of the Contract price for supplies (excluding taxes and duties) on
 - a. Submission of invoice in triplicate
 - b. Submission of Bank guarantee of similar amount from a Nationalized Bank/ Scheduled Commercial Bank encashable at Hyderabad, INDIA in the prescribed proforma given at part VII hereof for advance payment along with 14% interest per annum valid till FOR & FOB Supply of last consignment by the supplier.
 - c. Furnishing of the following specified documents and drawings

- Approved layout drawings including location of main equipment
 - Certified foundation load data drawing including complete assignment drawing and bolt plan.
 - Complete Electrical single line diagrams
 - Detailed Quality Assurance Plan (QAP)
 - Detailed Billing Schedule
- (iii) Sixty (60) percent of the Contract price for supplies with 100% Taxes & Duties of each and every part dispatch of equipment in lots by supplier payable against presentation of necessary documents as mentioned in Clause 9.0 against FOR Purchaser's Site dispatch / FOB supply.

In case of Multiple lots, number of lots to be jointly decided. Payment of each instalment against each lot shall be made against submission of Bank Guarantee (Format proforma given at part IV hereof) of equal amount, valid till last FOR Purchaser's Site Supply.

- (iv) Ten (10) percent of the Contract price for supplies (excluding taxes and duties) after completion of erection and commissioning & issue of Provisional Acceptance Certificate (PAC) by Purchaser on submission of invoice in triplicate and certificate issued by Purchaser on "Site cleaning".
- (v) The last Ten per cent (10 %) of the Contract price for supplies (excluding taxes and duties) after
- Certificate from purchaser that all drawings and documents as given in Clause No. 17.0 of General Conditions of Contract have been received and accepted.
 - Submission of invoice in triplicate
 - Submission of Final Acceptance Certificate (FAC) issued by the Purchaser
- Or
- Submission of Bank Guarantee from a Nationalized Bank/ Scheduled Commercial Bank encashable in Hyderabad, INDIA for ten (10)percent of Total Contract price (excluding Charges for "Design and Engineering" of Plant, Machinery & Equipment and excluding taxes and duties)in the prescribed proforma given at part VII here of valid for twelve(12) months from the date of Provisional acceptance certificate (PAC).

5.2 SUPERVISION, COMPLETE ERECTION, START UP AND PUTTING INTO COMMISSIONING

The terms of payment shall be hereunder:

- i) Ten (10) per cent of the Contract price for erection & commissioning shall be paid on the opening of crates and packing cases to the extent required to start erection, inspection of equipment, repair and replacement if necessary and transportation of equipment to the erection site.
- ii) Forty (40) per cent of the Contract price for erection & commissioning shall be paid on the checking of foundation, including final adjustment of

foundation, pre-assembly of equipment if necessary and placing of equipment on foundation.

- iii) Forty (40) per cent of the Contract price for erection & commissioning shall be paid on final alignment, lining, leveling, grouting and connecting-up electric power supply, water and utilities.
- iv) Ten (10) per cent of the Contract price for erection & commissioning shall be paid on issue of Provisional Acceptance certificate (PAC).

NOTE : GST for "Supervision, Erection, Start up and putting into commissioning" shall be paid as and when Invoice is raised.

5.3 SPARES FOR ONE YEAR OPERATIONS

- (i) Ninety percent (90%) of the value of Spares plus 100% of Taxes & Duties against the presentation of necessary documents proving that the goods are delivered FOR Site /FOB supply a single lot.
- (ii) Ten (10%) of the value of Spares and Special tools ordered after issue of Provisional Acceptance Certificate (PAC).

6.0 MODE OF PAYMENT

For Import Suppliers: Purchaser shall make payment through Irrevocable Letter of Credit established by Purchaser or Telegraphic Transfer for 5.1 (i), (ii) and (iii). All other payments shall be made through RTGS/Telegraphic Transfer within 30 days from the submission of specified documents as per clause 5.0. Mode of Payment is to be indicated in the technocommercial offer. If not mentioned, all payments shall be through Telegraphic Transfer only.

For Indigenous Suppliers: All Payments shall be made through RTGS within 30 days from the date of submission of documents as per clause 5.0

BANK CHARGES:

All Bank Charges from supplier's side are to supplier's account and Purchaser's side to Purchaser's account.

7.0 EARNEST MONEY DEPOSIT

Bidder shall submit an amount of INR 10 Lakhs (INR Ten Lakhs only) as Earnest money deposit along with Techno commercial bid online through link <http://ebs.in/midhani/public> or visit midhani website www.midhani.com> purchase > Tenders > EMD fee (Earnest Money Deposit)—ONLINE PAYMENT or Bank guarantee (in the prescribed proforma given at part VII) **In Indian Currency** – from a Nationalized Bank or Scheduled Bank encashable in India. **In Foreign Currency** – from SBI, Frankfurt/ SBI, New York / any Nationalized Bank or Scheduled Bank encashable in India. In case of BG, the validity shall be of a period of 180 days.

8.0 SECURITY DEPOSIT

Security Deposit valuing 10 (TEN) percent of the Total Contract price (excluding taxes and duties), valid till the completion of installation and commissioning of the plant, machinery and equipment and issue of PAC upon successful completion of the PG test, shall be deposited by the supplier by way of online through link <http://ebs.in/midhani/public> or visit midhani website www.midhani.com> purchase > Tenders > security Deposit –ONLINE PAYMENT or Bank Guarantee (in the prescribed proforma given at part VII) from a Nationalized Bank or Scheduled commercial Bank encashable in Hyderabad, INDIA. This Guarantee should be furnished immediately, but in any case, not later than thirty (30) days from the date of signing the Contract.

This amount is liable to be forfeited, in full or in part, for breach of any of the terms and conditions of the Contract (to be signed at a later date) by the supplier.

9.0 SHIPPING DOCUMENTS

For Indigenous Suppliers:

The Shipping documents required to be furnished for supplies are as follows:

- i) Four (4) copies of the Invoice duly signed for the material dispatched, indicating the payments already received.
- ii) Excise invoice (original and duplicate)
- iii) Consignee Copy of Lorry Receipt (LR), freight prepaid
- iv) Packing list in four (4) copies.
- v) Dispatch Advice issued by the Purchaser, in four (4) copies.
- vi) Copy of Insurance policy coverage (single page cover note)

For Import Suppliers:

The following documents will be furnished for each lot/consignment for purpose of payment. Clear instruction shall be given by you to the bank to forward the following documents without any delay to our bank. Andhra Bank, BDL Campus Branch, PO Kanchanbagh, Hyd-500058 OR State Bank of India, Chandrayangutta, Hyd – 500058.

- a. Clean on Board Bill of Lading / Air way bill as defined in Incoterms 2010. - 2 negotiable and 2 non negotiable copies.
- b. Signed invoice for the goods dispatched – 4 copies.
- c. Certificate of Origin – 2 copies.
- d. Packing List – 5 copies.
- e. Test / Manufacturer's Certificate – 4 copies.
- f. Fax intimation particulars regarding shipment sent to our insurer (Insurer details shall be indicated in the contract) – 2 copies.
- g. Dispatch Advice issued by the Purchase – 4 copies.

The goods shall be consigned to the following address-

To,
Additional General Manager- I/c, Stores,
Mishra Dhatu Nigam Limited,
(A Govt. of India Enterprise)
PO: Kanchanbagh
Hyderabad- 500058, Telangana, INDIA

10.0 INSURANCE

For Indigenous Suppliers: The supplier shall bear the transit insurance charges from their works to the Purchaser's site at Hyderabad.

For Import Suppliers: In case of FOB port of shipment delivery for imported equipment, the contractor shall arrange insurance for all equipment and materials to be supplied by him up to FOB port of shipment. Marine Insurance Coverage will be arranged by the Purchaser

All subsequent insurance shall also be arranged by the supplier till completion of erection and commissioning, with the beneficiary being indicated as Midhani.

If any Contract work, including supplies and services, perishes or becomes unserviceable from any cause whatsoever, the supplier shall, on demand by the Purchaser, make replacement and in such a way as to avoid disturbances in the general progress of the installation of the work. This shall apply irrespective of the question whether or not the risk has been passed to the Purchaser, or who shall be responsible for unserviceableness as aforesaid.

11.0 TAXES AND DUTIES

The supplier shall bear and pay all taxes, duties, levies and charges. The payment of duties, taxes, levies, etc. will be reimbursed (at actual) against documentary evidence to be produced by the supplier, subject to a ceiling indicated in price schedule of the Contract. In no case the reimbursement towards duties and taxes, etc. shall exceed the amount indicated in price bid format except on account of statutory variation in Taxes & Duties and / or imposition of new taxes and duties.

The supplier shall bear and pay all the liabilities in respect of non-observance of all legal formalities as per various statutory provisions.

The supplier shall make "Sale in Transit" as per Section 6(2) of Central Sales Tax Act 1956 and all formalities required shall have to be observed by the supplier, wherever applicable.

GST shall be applicable on "Design charges", "Erection and commissioning charges", "Supervision of Erection and Commissioning"

Income tax (Withholding Tax) in India, if leviable and other taxes in relation thereto on any other account shall be borne and paid by the successful supplier. The successful supplier shall be liable to file tax returns with respective income tax authorities as required under the Indian Income Tax Act.

Octroi (if any), shall be reimbursed at actual.

11.1 **VARIATION IN TAXES & DUTIES**

The price specified in Price Bid format (as per Clause 1.0) is based on the taxes, duties, levies etc. and charges prevailing on Base date (i.e. Seven (7) days before the last date of submission of Price Bid). If any rate of tax is increased or decreased, a new tax is introduced, an existing tax is abolished, or any change in interpretation or application of any tax occurs in the course of the performance of Contract, which was or will be assessed on the supplier in connection with performance of the Contract, an adjustment of the Contract Price shall be made by addition to the Contract Price or deduction there from, as the case may be, within the Delivery period.

The adjustment in the Contract Price towards variation in the taxes shall be made by the Purchaser on production of the documentary evidences by the supplier. The Contract Price shall be adjusted towards variations in taxes in respect of only finished equipment supplied by the supplier to the Purchaser. No adjustment in the Contract price shall be made for variations in the taxes on raw-materials, parts, component / intermediate components, assemblies / sub-assemblies, etc.

12.0 **PERFORMANCE AND GUARANTEE, DEFECT LIABILITY**

12.1 The Guarantee for performance shall cover individual items and systems including electrics for their ratings / outputs as well as for the integrated operation of the equipment, its auxiliaries and the ancillaries as specified.

The equipment shall be guaranteed for workmanship & material as specified for a minimum period of 12 months from the date of provisional acceptance based on successful commissioning and performance trial. The supplier at his own expense, upon written demand by the purchaser promptly repair or replace free to the purchaser at site any part comprising the equipment which is defective or not complying with the specification, within a period of Twelve (12) months from the date the equipment is put into commercial operation at site. Part, which is so repaired or replaced, shall be guaranteed for an additional year, as shall any portion of the work that might have been affected by such defect. The maximum guarantee period for repaired or replaced parts shall be 24 months from the date of completion of successful commissioning i.e. PAC.

12.2 **Performance Guarantee Test & Provisional Acceptance Certificate (PAC) :**

The supplier shall be responsible for carrying out the performance guarantee tests as per the Contract / technical specifications in the presence of Purchaser's representative on all plant, machinery and equipment supplied by him for both of furnace 8(A) & 8(B).

Minimum Acceptance Level of Performance Guarantee parameters as described in Sl. No. 29.0 of Technical Specification is tabulated below.

Sl.No	Description	Performance Parameter for furnace	Remarks
1	Skin temperature of the furnace above ambient at 1250 °C furnace temperature measured by suitable pyrometer.	≤50°C	PAC shall be issued
2	Job temperature uniformity in Furnace at 900°C to 1250°C as measured by installed sensors	±10°C	PAC shall be issued
3	Average heating rate of Tempering Furnace	≥150°C/hour	PAC shall be issued
4	Temperature of pre-heated combustion air at the output of recuperator while the furnace is running at max. Operating temperature of 1250 °C .	at least 350 °C	PAC shall be issued
5	Control accuracy of temperature	±2°C	PAC shall be issued
6	Noise as measured by noise meter at any point 1 m distance from the fans and burners, when running	<85 dB	PAC shall be issued
7	Point numbers 1-6	Not Achieved	PAC shall not be issued

If, for reasons attributable to the supplier, the performance guarantee parameters specified in Technical Specification are not met either in whole or in part, the supplier shall at its cost and expense make such changes, modifications and/ or additions to the Plant & machinery or any part thereof as may be necessary to meet performance guarantees parameters.

The supplier shall notify the Purchaser upon completion of the necessary changes, modifications and/ or additions and the supplier shall be allowed by the Purchaser to repeat the performance guarantee tests ONCE after first campaign of guarantee test and the supplier must establish the performance guarantee parameters during the Repeat test and all costs of this second campaign has to be borne by supplier. If the above mentioned performance guarantee parameters are not achieved after repeat test, PAC shall not be issued.

The date of completion of performance guarantee test shall be considered to be the date of PAC, and the plant, machinery and equipment is ready for commencement of commercial production.

12.3

Defect Liability Period and Final Acceptance Certificate (FAC):

The supplier shall warrant that the facilities or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the plant,

machinery and equipment and structures supplied and of the work executed for 12 months from the date of issue of PAC.

After satisfactory completion of guarantee period (i.e. 12 months), Purchaser shall issue the Final Acceptance Certificate (FAC) to the supplier.

13.0 COMPLETENESS OF EQUIPMENT

The equipment shall be complete in all respects with all auxiliaries, mountings, fittings, fixtures and accessories etc. The supplier shall not be eligible for any extra payment in respect of such auxiliaries, mountings, fittings, fixtures and accessories etc. that may be required for the safe operation of the equipment. The supplier shall be responsible for the completeness of the equipment to ensure its specified performance as per technical specification.

14.0 PROGRESS INSPECTION, PRE DISPATCH INSPECTION AND TRAINING

PROGRESS INSPECTION

The purchaser has the right to send its Engineers for progress inspection at any time during the delivery period. The Purchaser will bear the cost of travel, lodging and boarding.

PRE DISPATCH INSPECTION

Purchaser, if required, shall carry out Pre dispatch Inspection of goods as per Clause No. 20 of General Conditions of Contract. Supplier shall intimate the readiness of items and give sufficient time for Purchaser's personnel for the Pre dispatch Inspection. The procedure of Pre dispatch Inspection shall be mutually agreed.

TRAINING

Besides on job training on the equipment supplied at Purchaser's site, the supplier shall also provide training of 30 Man days to the Purchaser's personnel at suitable locations in the supplier/ sub Contractor's works / purchaser's works. The detail training program shall be mutually agreed. The training shall be free of cost; however the expenses for travel, boarding and lodging will be borne by the Purchaser.

15.0 QUALITY ASSURANCE PLAN

Supplier shall develop and implement a quality assurance plan before ordering any equipment in connection with the Work and will maintain the QAP for the duration of the Contract. Prior to placing equipment orders, supplier shall advise Purchaser of any proposed deviations from the QAP. A quality assurance manual for all critical or major equipment shall be submitted by supplier to Purchaser for a review. Submission of detailed QAP is mandatory for release of Advance payment as per Clause 5.1 (ii).

16.0 LIQUIDATED DAMAGES FOR DELAY IN SUPPLIES AND EXECUTION

Liquidated damages shall be levied against supplier in case of unsatisfactory or delay in supplies and execution of the Contract beyond the date of PAC. LD shall be leviable @ 1% per week or part thereof subject to a maximum of 10% of Contract price with Taxes, Duties, levies, cess etc.

The Purchaser may, without prejudice to any other method of recovery, deduct the amount of such damages from any amounts in his hands due to the supplier. The payment or deduction of such damages shall not relieve the supplier from his obligations to complete the work or from any other of his obligations and liabilities under the Contract.

NOTE:

1. If there is delay in supply of equipment but issue of PAC is within due date as per Contract, no LD shall be levied for delayed supply. Only, the date of issue of "Provisional Acceptance Certificate (PAC)" shall be considered for application of LD.

17.0 ORDER OF PRECEDENCE

In case of any inconsistency or repugnancy between any provision of "Technical Specification", "Special Conditions of Contract", "General Instructions to tenderer" and "General Conditions of Contract" on the same subject matter, the provisions of the "Technical Specification and Special Conditions of Contract" shall prevail over the "General Instructions to tenderer" and "General Instructions to tenderer" shall prevail over "General Conditions of Contract".

18.0 JURISDICTION

All questions, disputed or differences arising under or in connection with this Contract, other than those covered by Arbitration clause, shall be subject to the exclusive jurisdiction of the courts within the local limits of Hyderabad, Telangana, India.

19.0 LIABILITIES

The supplier shall be liable for damages caused by him according to its Insurance Coverage for General Liability, Product Liability and Environmental Liability. Evidence of these policies shall be given by the supplier.

Neither PARTY shall be liable to the other for any loss of profit, loss of use, loss of production, loss of Contracts or for any other indirect or consequential damages that may be suffered by the other.

20.0 PATENT INFRINGEMENT & COPYRIGHT

The supplier shall warrant that the Equipment at the time of its delivery is free from any third party's intellectual property right. If, despite this confirmation, a third party's claim comes up, the supplier will at his own choice and at his own cost procure for the Purchaser the right to use the equipment for the contractually agreed purpose or will replace the infringing part or component by a non infringing one.

21.0 INTEGRITY PACT

All bidders shall sign the Integrity pact along with submission of his acceptance of technical specifications and commercial terms & conditions. Non signing of Integrity pact shall disqualify the bidder.

22.0 DISCLAIMER

Eligible bidder to study carefully all documents, technical specifications and commercial conditions referred to herein before accepting the same. He shall fully satisfy himself of the appropriateness of the equipment and layout as indicated in the "Technical Specification" considering the conditions of working at and around the construction site. Further he shall take full responsibility for design, manufacturing, supply and safe & efficient operation and guarantee quality of the plant, machinery & equipment supplied and specified output. Claims and objections due to ignorance on the subject shall not be considered after submission of the Price bid.

23.0 OTHERS

23.1 The documents attached (General Instructions to tenderer, General conditions of contract) are general in nature and covers both indigenous as well as import supplies. However, the relevant portions shall be considered during execution of contract. All the bidders are requested to take a note of it.

23.2 Bidders shall submit the acceptance of "Technical specification" and "Special conditions of Contract".

23.3 No changes are allowed in the submitted Price Bid at a later date.

24.0 ELIGIBILITY CRITERIA

Offers from Consortiums as well as from Authorised dealers/representatives on behalf of Original Equipment manufacturers (OEM) are allowed subject to the following:

(i) Sole Bidder

(ii) In case of Consortiums:

- Consortium agreement (Memorandum of Agreement) signed by legally authorised signatories of respective consortium members/partners, shall be valid till completion of the contract & Defect Liability Period and shall form part of the Contract.

- Consortium agreement clearly defining the roles and responsibilities of each party and signed by all the consortium members/partners shall be submitted along with the techno-commercial offers.
- BGs to be submitted by each member/partner for value of their respective scope of work and Order/Contract shall be signed by all members/partners of the Consortiums.
- Payments to be made to respective members/partners directly for their respective scope of work (ex: In case of INR payments to Indian Partners in the Consortium etc), which shall be indicated in the techno-commercial offer/authorised by the Lead Partner.
- Lead Partner of the Consortium shall be overall responsible for the execution of the Contract. The Leader and other Members of the Consortium shall be jointly and severally liable for the execution of the Contract, but will be liable for damages in proportion of the respective Contract Price.

(iii) In case of participation from Authorised Dealer/Associate/Authorised Representative of Original Equipment Manufacturer(OEM):

- Agreement clearly describing the roles and responsibilities of OEM and Associate jointly signed by OEM and the Associate along with the techno-commercial offer. Agreement shall be valid till completion of the contract / order and Defect Liability Period, in case contract/order is awarded to them.
- OEM to submit Authorisation/Undertaking along with the above said agreement which shall read thus
*“We are appointing the Project Associate/Authorised Representative _____ who are authorised to submit/participate in the tender on our behalf, use our credentials, conduct discussions/negotiations for the tender and also sign the Contract/Purchase Order on our behalf.
We stand responsible against the actions of our Associate/Representative pertaining to this tender. We shall take the responsibility of technical suitability as per tender/purchase order/contract (if placed), establishment of performance guarantee during commissioning and Warranty/Guarantee during defect liability/Guarantee/Warranty period.”*
- Contract shall be signed between the Associate and MIDHANI, however agreement between OEM and the associate(s) shall be an integral part of the Contract.

Sl. No	Criteria	Documents for confirmation
1	<p>(i) Sole bidder/(ii) lead partner/(iii) OEM</p> <p>a) Should have been established and operating since last 5 years from the date of issue of the Tender.</p> <p>b) Should not be a trading company.</p>	<p>For (a):</p> <ul style="list-style-type: none"> - Certificate of Incorporation issued by the Registrars of Companies “OR” - Certificate of Registration by Registrar of Firms “OR” <p>GST Registration in case of proprietary firms “OR”</p> <ul style="list-style-type: none"> - Relevant Registration/Incorporation Certificate issued by Concerned State authorities in case of Foreign Firms with proof of address. <p>For (b): Self Certified Document that the Company is not a Trading Company</p> <p>Note: Other partners/ associate/</p>

		representative of OEMs shall also submit relevant certificates of Incorporation/Registration certificate.
2	<p><u>Annual Turnover</u> (i) Sole bidder/(ii) lead partner/(iii) OEM Should have an average annual turnover of more than INR 790 lakhs in last three financial years.</p>	Audited Balance sheet and Profit & Loss account statement for last three financial Years of Bidders(Sole)/lead partner
3	<p><u>Solvency Certificate:</u> (i) Sole bidder/(ii) lead partner/(iii) OEM a) Should have positive net worth in each of the last three financial years. Or b) Submission of solvency certificate for INR 330 lakhs issued not earlier than 6 months from the date of Tender</p>	<p>(a) Audited Balance sheet for last three financial Years</p> <p>Or</p> <p>b) In case of Indian parties it should be issued by nationalized or scheduled bank from INDIA. In case of foreign parties it should issued by Nationalized or schedule bank from India or bank of repute from their own country.</p>
4	<p>(i) Sole bidder/(ii) All Partners / (iii) All Partners Should have PAN / TAN /TIN /Excise /GST registration No. or Relevant Tax Registration of Foreign parties</p>	<p>a) Copy of registration certificate for Indian parties.</p> <p>b) In case of foreign parties, relevant tax & duties registration certificate from the countries where the company is registered.</p>
5	<p>(i) Sole bidder/(ii) lead partner/(iii) OEM Should have supplied and commissioned at least one Gas fired fixed hearth/bogie hearth furnace of 20 Tons or higher capacity for reheating of forging application for temperature 1250 degree C or above in the last 10 years</p>	Contract Copy/PO Copy & successful commissioning certificate to be submitted
6	Unconditional acceptance of all commercial terms and condition	Self certificated document to be submitted

NOTE:

1. All documents are to be submitted in English language only
2. The translated copy of audited balance sheet and P & L accounts are to be certified by Notary.

Part III
PRE CONTRACT INTEGRITY PACT

General

1. Whereas M/s. MISHRA DHATU NIGAM LIMITED a Government of India Enterprise incorporated and registered as a company under the company Act, 1956 having its registered office at P.O. Kanchanbagh, Hyderabad – 500058 state of A.P., India hereinafter referred to as the Buyer and the first part, propose to procure _____ hereinafter referred to as Defence Stores, and M/s. _____, (which term shall mean and include its successors assigns and legal representation), herein after referred to as the Bidder and the second party, has offered the stores.
2. Whereas the Bidder is a private company / public company / partnership / registered export agency, constituted in accordance with the relevant law in the matter and the Buyer is a Ministry of the Government of India performing its functions on behalf of the President of India.

Objectives

3. Now, therefore, the Buyer and the Bidder agree to enter into this Pre-contract agreement, hereinafter referred to as Integrity Pact, to avoid all forms of corruption by following a system that is fair, transparent and free from any influence / unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-
 - 3.1 Enabling the Buyer to obtain the desired equipment at a competitive price in conformity with the defined specifications of the Service by avoiding in high cost and the distortionary impact of corruption on public procurement, and
 - 3.2 Enabling bidder to abstain from bribing or any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also refrain from bribing and other corrupt practices and the Buyer will commit to prevent corruption, if any form, by their officials by following transparent procedures.

Commitments of the Buyer:

4. The Buyer Commits itself to the following: -
 - 4.1 The Buyer undertakes that no official of the Buyer connected directly or indirectly with the contract, will demand, take a promise for or accept directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the Bidder, either for themselves or for any person, organization of third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
 - 4.2 The buyer will, during the pre-contract stage, treat all Bidders alike, and will provide to all Bidders the same information and will not provide any such information to any particular Bidder which could afford an advantage to that particular Bidder in comparison to other Bidders.

- 4.3 All the officials of the Buyer will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
5. In case of any such preceding misconduct on the part of such officials (s) is reported by the bidder to the Buyer with full and verifiable facts and the same is prima facie found to be correct by the Buyer, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the Buyer and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the Buyer the proceedings under the contract would not be stalled.

Commitments of Bidders:

6. The Bidder commits himself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of his bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commits himself to the following:-
 - 6.1 The Bidder will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Buyer, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the Contract.
 - 6.2 The Bidder further undertakes that he has not give, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Buyer or otherwise in procuring the contract or forbearing to do or having done any act in relation to the obtaining or execution of the Contract or any other contract with the Government for showing or forbearing to show favour or disfavor to any person in relation to the Contract or any other contract with the Government.
 - 6.3 The Bidder will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
 - 6.4 The Bidder will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
 - 6.5 The Bidder further confirms and declares to the Buyer that the Bidder is the original manufacture / integrator / authorized government sponsored export entity of the defence stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the Buyer or any of its functionaries, whether officially or unofficially to the award of the contract to the Bidder, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
 - 6.6 The Bidder, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the Buyer of their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

- 6.7 The Bidder shall to use improperly, for purposes of competitor or personal gain, or pass on to others, any information provided by the Buyer as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The Bidder also undertakes to exercise due and adequate care last any such information is divulged.
- 6.8 The Bidder commits to refrain from giving any complaint direct or through any other manner without supporting it with full and verifiable facts.
- 6.9 The Bidder shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 6.10 A person signing IP shall not approach the courts while representing the matters to IEMs and he/she will await their decision in that matter.
- 6.11 A Bidder undertakes that in case of subcontracting, he becomes a Principal Contractor and he/she shall take the responsibility of adoption of IP by the sub contractor.

7. Previous Transgression

- 7.1 The Bidder declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify bidder's exclusion from the tender process.
- 7.2 If the Bidder makes incorrect statement on this subject, Bidder can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

8. Earnest Money / Security Deposit

- 8.1 Every bidder, while submitting commercial bid, shall deposit an amount as specified in the RFP as Earnest Money / Security Deposit, with the buyer through any of the following instruments:
- i. Bank Draft or a Demand draft in favour of M/s. Mishra Dhatu Nigam Limited, Hyderabad.
 - ii. A confirmed guarantee by an Indian Nationalized Bank, promising payment of the guarantee sum to M/s. Mishra Dhatu Nigam Limited, Hyderabad on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the Buyer shall be treated as conclusive proof for payment.
- 8.2 The Earnest Money / Security Deposit shall be valid upto a period of Six Months or the complete conclusion of the contractual obligations to complete satisfaction of both the bidder and the buyer, whichever is later. In case there are more than one bidder, the Earnest Money / security deposit shall be refunded by the buyer to those bidder (s) whose bid (s) does/do not qualify for negotiation by the Commercial Negotiation Committee (CNC) as constituted by the Buyer, Immediately after recommendation is made by the CNC on the bid(s) after an evaluation.
- 8.3 In the case of successful bidder a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of sanctions for violation shall be applicable for forfeiture of performance bond in case of a decision by the Buyer to forfeit the same without assigning any reason for imposing sanction for violation of this pact.
- 8.4 The provisions regarding Sanctions for violation in Integrity Pact include forfeiture of performance Bond in case of a decision by the Buyer to forfeit the same without assigning any reason for imposing sanction for violation of Integrity Pact.
- 8.5 No interest shall be payable by the Buyer to the Bidder(s) on earnest money / Security Deposit for the period of its currency.

9. Company Code of Conduct

9.1 Bidders are also advised to have a company code of conduct (clearly rejecting the use of bribes and other unethical behavior) and a compliance program for the implementation of the code of conduct throughout the company.

10. Sanctions for Violation:

10.1 Any breach of the aforesaid provisions by the Bidder or any one employed by him or acting on his behalf (whether with or without the knowledge of the Bidder) or the commission of any offence by the Bidder or any one employed by him or acting on his behalf, as defined in chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act 1988 or any other act enacted for the prevention of corruption shall entitle the Buyer to take all or any one of the following actions, wherever required: -

- i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the Bidder. However, the proceedings with the other Bidder(s) would continue.
- ii) The earnest Money / Security Deposit / Performance Bond shall stand forfeited either fully or partially, as decided by the Buyer and the Buyer shall to be required to assign any reason therefore.
- iii) To immediately cancel the contract, if already signed, without giving any compensation to the Bidder.
- iv) To recover all sums already paid by the Buyer, and in case of an Indian Bidder with interest thereon at 2% higher than the prevailing Prime Lending Rate, while in case of a Bidder from a country other than India with interest thereon at 2% higher than LIBOR. If any outstanding payment is due to the Buyer from the Bidder in connection with any other contract for any other Defence stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
- v) To en-cash the advance bank guarantee and performance bond / warranty bond, if furnished by the Bidder, in order to recover the payments, already made by the Buyer, along with interest.
- vi) To cancel all or any other Contracts with the Bidder.
- vii) To debar the Bidder from entering into any bid from the Government of India for a minimum period of five years, which may be further extended at the discretion of the buyer.
- viii) To recover all sums paid in violation of this Pact by Bidder(s) to any middleman or agent or broker with a view to securing the contract.
- ix) If the Bidder or any employee of the Bidder or any person acting on behalf of the Bidder, either directly or indirectly, is closely related to any of the officers of the Buyer, or alternatively, if any close relative of an office of the Buyer has financial interest / stake in the Bidder's firm, the same shall be disclosed by the Bidder at the time of filing of tender. Any failure to disclose the interest involved shall entitle the Buyer to rescind the contract without payment of any compensation to the Bidder. The term 'close relative' for this purpose would mean spouse whether residing with the Government servant or not, but to include a spouse separated from the Government servant by a decree or order of a competent court, son or daughter or step son or step daughter and wholly dependent upon Government servant, but does not include a child or step child who is no longer in any way dependent upon the Government servant or of whose custody the Government servant has been deprived of by or under any law, any other person related, whether by

blood or marriage, to the Government servant or to the Government servant's wife or husband and wholly dependent upon Government servant.

- x) The Bidder shall not lend to or borrow any money from or enter into any monetary dealings or transactions directly or indirectly, with any employee of the Buyer, and if he does so, the Buyer shall be entitled forthwith to rescind the contract and all other contracts with the Bidder. The Bidder shall be liable to pay compensation for any loss or damage to the Buyer resulting from such rescission and the Buyer shall be entitled to deduct the amount so payable from the money(s) due to the Bidder.
 - xi) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the Buyer with Bidder, the same shall not be opened.
- 10.2 The decision of the Buyer to the effect that a breach of the provisions of this Integrity Pact has been committed by the bidder shall be final and binding on the Bidder, however, the Bidder can approach the monitor(s) appointed for the purposes of this pact.

11. Fall Clause

- 11.1 The Bidder undertakes that he has not supplied/is not supplying the similar systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry / Department of the Government of India and if it is found at any stage that the similar system or sub-system was supplied by the Bidder to any other Ministry / Department of the Government of India at a lower price, then that very price will be applicable to the present case and the difference / in the cost would be refunded by the Bidder to the Buyer, if the contract has already been concluded.
- 11.2 The Bidder shall strive to accord the most favored customer treatment to the Buyer in respect of all matters pertaining to the present case.

12. Independent Monitors

- 12.1 Shri R MUKUNDAN, IRPS(Retd) , No.150-E, "Mandakini" Railway Officer's Enclave, Sterling Road, Nungambakam, CHEENAI-600 034 is the Independent External Monitor for Midhani.
- 12.2 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Chairman & Managing Director of M/s. Mishra Dhatu Nigam Limited, Hyderabad.

13. Examination of Books of Accounts: In case of any allegation of violation of any provisions of this Integrity Pact or payment of commission, the Buyer or its agencies shall be entitled to examine the Books of accounts of the Bidder and the Bidder shall provide necessary information of the relevant financial documents in English and shall extend all possible help for the purpose of such examination.

14. Law and Place of Jurisdiction: This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the Buyer i.e. Hyderabad.

15. Other Legal Actions: The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

16. Validity

16.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the Buyer and the Bidder, whichever is later.

16.2 Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

17. The parties hereby sign this Integrity Pact at Hyderabad on _____.

BIDDER

BUYER

M/s. Mishra Dhatu Nigam Limited,
(A Govt. of India Enterprise)
P.O. Kancharbagh,
Hyderabad 500 058,
INDIA.

In the presence of

In the presence of

Witness:

Witness:

1.

1.

2.

2.

PART – IV

SPECIMEN FORMS OF

BANK GUARANTEES

1. BANK GUARANTEE FOR EARNEST MONEY DEPOSIT
2. FORM OF BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT
3. BANK GUARANTEE TO SECURE THE INITIAL ADVANCE PAYMENT
4. BANK GUARANTEE FORMAT FOR GA DRAWINGS
5. BANK GUARANTEE FOR LOTWISE SUPPLIES
6. PERFORMANCE BANK GUARANTEE

1. BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

2. WHEREAS MISHRA DHATU NIGAM LIMITED (A GOVERNMENT OF INDIA ENTERPRISE) PO KANCHANBAGH, HYDERABAD (hereinafter referred as “ The Owner / Company” which expression shall unless repugnant to the subject or context includes its legal representatives, successors and assigns) has issued tender paper vide its Tender No: _____ for supply of _____ (herein after called “the said tender”) to M/s. _____ (herein after called “the said Tenderer(s)” which expression shall unless repugnant to the subject or context includes their legal representatives, successors and assigns) and as per terms and conditions of the said tender, the tenderer shall submit a Bank Guarantee for Rs./USD_____ towards earnest money in lieu of cash.
3. WE (Bank Name and Address) (herein after called the bank) do hereby undertake to pay the amount due and payable under this Guarantee without any demur merely on a demand from the company stating that in the opinion of the company, which is final and binding, the amount claimed is due because of any withdrawal of the tender or any material alteration to the tender after the opening of the tender by way of any loss or damage caused or would be caused or suffered by the company by reason of any breach by the said tenderer(s) of any of the terms and conditions contained in the said tender or failure to accept the Letter of Intent / Agreement or that the amount covered under this Guarantee is forfeited. Any such demand made on the bank by the owner shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs./USD_____.
4. We undertake to pay to the Company any money so demanded notwithstanding any dispute or disputes raised by the tenderer(s) in any suit or proceeding pending before any office, court or tribunal relating thereto, our liability under this present guarantee being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder. Our liability to pay is not dependant or conditional on the owner proceeding against the tenderer.

5. The guarantee herein contained shall not be determined or affected or suspended by the liquidation or winding up, dissolution or change of constitution or insolvency of the said tenderer(s) but shall in all respect and for all purposes be binding and operative until payment of all money due or liabilities under the said tender are fulfilled.

6. WE (Bank Name and Address) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the finalization of the said tender and that it shall continue to be enforceable till the said tender is finally decided and order placed on the successful tenderer(s) and /or till all the dues of the company under/or by virtue of the said tender have been fully paid and its claims satisfied or discharged or till a duly authorized officer of the company certifies that the terms and conditions of the said tender have been fully and properly carried out by the said tender(s) or till date: _____ whichever is earlier and accordingly discharges the guarantee.

7. That the Owner/Company will have full liberty without reference to us and without affecting this guarantee to postpone for any time or from time to time, the exercise of any of the power of the owner under the tender.

8. We (Bank Name and Address), lastly undertake not to revoke this guarantee during its currency except with the previous consent of the company in writing. We further undertake to keep this Guarantee renewed from time to time on the request of the Tenderer(s).

9. Notwithstanding anything contained herein before, our liability shall not exceed Rs./USD _____ towards earnest money in lieu of cash and shall remain in force till (date). Unless a demand or claim under this Guarantee is made on us within three months from the date of expiry i.e., _____ we shall be discharged from all the liabilities under this guarantee

Date: _____

(Bank Name and Address)

Signature of duly
Authorized person
On behalf of the Bank
With seal & signature code

2. FORM OF BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT

1. This deed of guarantee executed onday of by
.....

(Name and Address of the Bank)

the Bank hereinafter called Bank (which term shall mean and include its successors and assigns wherever the context so admits) in favour of M/s. MISHRA DHATU NIGAM LIMITED., a government of India Enterprise incorporated and registered as a company under the Companies Act, 1956, having its registered office at P.O. Kanchanbagh, Hyderabad – 500 058, state of A.P. India, herein after referred to as the “purchaser” (which terms shall mean and include its successors in office and assigns).

2. In consideration of M/s. Mishra Dhatu Nigam Limited (Purchaser) having agreed to exempt hereinafter called the said Contractor(s) (which term shall mean and include its successors assigns and legal representatives) from the demand under the terms and conditions of Purchase / Work Order No. dated for(hereinafter called the said agreement) of Earnest Money / Security Deposit/ Defect Liability deposit for the due fulfillment by the said Contractor(s) of the terms and conditions contained in the said agreement on production of a bank guarantee for Rs.....(Rupees..... only), we (name of the bank, address) (hereinafter referred to as “The Bank”) at the request of Contractor(s) do hereby undertake to pay Purchaser an amount not exceeding Rs against any losses or damage caused to or suffered or would be caused to or suffered Purchaser by reason of any breach by the said Contractor(s) of any of the terms and conditions contained in the said agreement.
3. We (Bank) do hereby unconditionally and irrevocably agree and undertake to pay to Purchaser the amounts due and payable under this Guarantee without any demur, merely on a demand from Purchaser stating that the amount claimed is due by way of loss or damage caused to or would be caused to on suffered by Purchaser by reason of breach by the said agreement or by reason of the contractor(s) failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs
4. We undertake to pay Purchaser and money so demanded notwithstanding any dispute or disputes by the contractor(s) / supplier(s) in any suit or proceedings pending before any court of tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this Guarantee shall be valid discharge of our liability for payment thereunder and the contractor(s) shall have not claim against us for making such payment.

5. We (Bank) further agree that the guarantee herein contained shall remain in full force and affect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of Purchase under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharges or till Purchaser certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee. Provided that if Purchaser together with the Contractor seeks an extension of terms of the Guarantee, such extension shall be granted by the Bank and the guarantee shall be in full force till the expiry of such extended period.

6. We (Bank) further agree with Purchaser that Purchaser shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by purchaser against the said Contractor(s) and to forebear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation of extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of Purchaser or any indulgence by Purchaser to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would but for this provisions, have effect of so relieving us.

7. It shall not be necessary for Purchaser to proceed against the contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding any security which Purchaser may have obtained or obtains from the contractor.

8. This guarantee shall not be discharged due to the change in the constitution of the Bank or the contractor(s).

9. We (Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of Purchase in writing.

10. Our liability is limited to a sum not exceeding Rs unless a claim is made on us in writing on or before (3 months beyond the date of delivery / completion as specified in the contract) we shall be discharged from liability under this guarantee.

In witness whereof these presents are executed at on the date, month and year first herein above written.

FOR AND ON BEHALF OF THE BANK WITHIN NAMED

3. BANK GUARANTEE TO SECURE THE INITIAL ADVANCE PAYMENT

1. This deed of guarantee executed onday of
by.....
(Name and Address of the Bank)
the Bank hereinafter called Bank (which term shall mean and include its successors and assigns wherever the context so admits) in favour of M/s. MISHRA DHATU NIGAM LIMITED., a government of India Enterprise incorporated and registered as a company under the Companies Act, 1956, having its registered office at P.O. Kanchanbagh, Hyderabad – 500 058, state of A.P. India, herein after referred to as the “purchaser” (which terms shall mean and include its successors in office and assigns).
2. In consideration of M/s. Mishra Dhatu Nigam Limited (Purchaser) agreeing to make an advance payment of Rs representing % of the total contract value along with the 14% interest per annum as per the terms and conditions of the Purchase / Works Order No. dated (hereinafter called the Agreement) to hereinafter called the said Contractor(s) (which term shall mean and include its successors assigns and legal representatives) on production of a bank guarantee for Rs(Rupees..... only), we (name of the bank, address) (Hereinafter referred to as “The Bank”) at the request of Contractor(s) do hereby undertake to pay Purchaser an amount not exceeding Rs against any losses or damage caused to or suffered or would be caused to or suffered Purchaser by reason of any breach by the said Contractor(s) of any of the terms and conditions contained in the said agreement.
3. We (Bank) do hereby unconditionally and irrevocably agree and undertake to pay to Purchaser the amounts due and payable under this Guarantee without any demur, merely on a demand from Purchaser stating that the amount claimed is due by way of loss or damage caused to or would be caused to on suffered by Purchaser by reason of breach by the said agreement or by reason of the contractor(s) failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs
4. We undertake to pay Purchaser and money so demanded notwithstanding any dispute or disputes by the contractor(s) / supplier(s) in any suit or proceedings pending before any court of tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this Guarantee shall be valid discharge of our liability for payment thereunder and the contractor(s) shall have not claim against us for making such payment.

5. We (Bank) further agree that the guarantee herein contained shall remain in full force and affect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of Purchase under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharges or till Purchaser certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee. Provided that if Purchaser together with the Contractor seeks an extension of terms of the Guarantee, such extension shall be granted by the Bank and the guarantee shall be in full force till the expiry of such extended period.

6. We (Bank) further agree with Purchaser that Purchaser shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by purchaser against the said Contractor(s) and to forebear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation of extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of Purchaser or any indulgence by Purchaser to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would but for this provisions, have effect of so relieving us.

7. It shall not be necessary for Purchaser to proceed against the contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding any security which Purchaser may have obtained or obtains from the contractor.

8. This guarantee shall not be discharged due to the change in the constitution of the Bank or the contractor(s).

9. We (Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of Purchase in writing.

10. Our liability is limited to a sum not exceeding Rs unless a claim is made on us in writing on or before (3 months beyond the date of delivery / completion as specified in the contract) we shall be discharged from liability under this guarantee.

In witness whereof these presents are executed at,..... on the date, month and year first herein above written.

FOR AND ON BEHALF OF THE BANK WITHIN NAMED

4. BANK GUARANTEE TO SECURE THE PAYMENT FOR GENERAL ARRANGEMENT DRAWING

This Deed of Guarantee executed on..... Day of..... by..... Bank. hereinafter called the "Guarantor" (which term shall mean and include its successors, assigns and legal representatives, where the context so admits) in favour of M/s. MISHRA DHATU NIGAM LIMITED, a Government of India Enterprise incorporated and registered as a Company under the Companies Act, 1956, having its registered office at P.O. Kanchanbagh, Hyderabad - 500 058, State of A.P. INDIA, hereinafter referred to as the "Purchaser", (which term shall mean and include its successors and assigns).

WHEREAS the Contract vide Purchase Order No:, date has been entered into between the Purchaser and M/s. a company incorporated and registered under the Companies Act 1956 by which the company is permitted to manufacture and sell products and having its registered office situated at Hereinafter referred to as the CONTRACTOR, (which term shall mean and include its successors, assigns and legal representatives) for the purchase of as fully described in the aforesaid contract.

AND WHERE AS it has been agreed under the terms and conditions of the aforesaid contract that the Purchaser shall make an advance payment to the Contractor of ₹(in words) representing% of the total contract value along with the 14% interest per annum for utilizing it for the purpose of contract on furnishing a Guarantee from a Bank.

AND WHERE AS the Gurantor has, as per the terms and conditions of the aforesaid contract, agreed to stand guarantee for the amount of advance payment including interest there on in favour of the Contractor.

NOW THIS DEED witnesses that in pursuance of the terms and conditions of the aforesaid contract and in consideration of the advance payment of ₹ representing% of the total value of the Contract agreed to be made to the Contractor by the Purchaser, the Guarantor do hereby agree and undertake to indemnify the department, and keep the department indemnified to the extent of a sum not exceeding the said sum of ₹ (in words Rupees) against any damage or loss that may be suffered by the purchaser by reason of nonfulfilment of any of the terms and conditions of the contract by the contractor and the Guarantor hereby undertake to pay on demand and without any demur to the Department any sum unconditionally and irrevocably not exceeding the sum of ₹ (Rupees) as may be ascertained by the GM (Commercial) of the Purchaser as the damages or loss that the department may have suffered by reason of nonfulfillment of any particular terms and conditions of the Contract by the Contractor, provided that the Guarantee comes into force when the advance payment has been made to the account of the Contractor and Guarantor hereby covenants with the Department as follows:

- (1) That the decision of the General Manager (Commercial) of the Purchaser as to whether the contractor has committed breach of any such terms and conditions of the Contract or not and as to the amount of damages or loss assessed by the said official of the Purchaser on account of such breach shall be conclusive final and binding on the Guarantor.
- (2) That the Guarantee herein contained shall remain in full force and effect till the Contract delivery date viz. by which date all the supplies required under the aforesaid contract are expected to be completed to the full satisfaction of the department / purchaser or till the purchaser certifies in writing that the terms and conditions of the said Contract and accordingly discharges the Guarantee. The Guarantor undertakes to pay on demand and without any demur the amount demanded by the department or GM (Commercial) of purchaser unconditionally and irrevocably. Unless a demand or claim under this Guarantee is made on the Guarantor in writing on or before, the Guarantor shall be discharged from all liabilities under this Guarantee thereafter.
- (3) That the purchaser shall have the fullest liberty, without Guarantor's consent and affecting in any way the liability of the Guarantor 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 or from time to time any of the powers exercisable by it against the said contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Contract and the said Guarantor shall not be released from its liability under these presents by any exercise by the Department of GM (Commercial). Purchaser of the liberty with reference to matters aforesaid act or omission on the part of the purchaser or any indulgence by the purchaser to the said contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the Guarantor from its liability.
- (4) It shall not be necessary for the department or GM (Commercial) of the Purchaser to proceed against the Contractor before proceeding against the Guarantor and the Guarantee herein contained shall be enforceable against the Guarantor notwithstanding any security which the Purchaser may have obtained or obtain from the Contractor at the time when proceedings are taken against the Guarantor hereunder be outstanding or unrealised.
- (5) The Guarantor undertakes to pay to the department / purchaser any money so demanded notwithstanding any dispute or disputes raised by the Contractor with the Guarantor or purchaser / department in any suit or proceedings pending before any court or tribunal relating thereto the guarantor's liability under these presents being absolute and unequivocal.

(6) The Guarantor lastly undertakes not to revoke this Guarantee during its currency except with the previous consent of the Purchaser in writing and agrees that any change in the constitution of the said Contractor or the said Guarantor shall not discharge the Guarantor's liability hereunder.

(7) Our liability is limited to a sum not exceeding ₹ unless a claim is made on us in writing on or before (3 months beyond the date of delivery / completion as specified in the Contract) we shall be discharged from liability under this guarantee.

In witness where of these presents are executed at on the date, month and year first herein above written.

FOR & ON BEHALF OF THE GUARANTOR WITHIN NAMED

5. BANK GUARANTEE TO SECURE THE PAYMENT MADE AGAINST LOT WISE SUPPLY

1. This deed of guarantee executed onday of
by.....

(Name and Address of the Bank)

the Bank hereinafter called Bank (which term shall mean and include its successors and assigns wherever the context so admits) in favour of M/s. MISHRA DHATU NIGAM LIMITED., a government of India Enterprise incorporated and registered as a company under the Companies Act, 1956, having its registered office at P.O. Kanchanbagh, Hyderabad – 500 058, state of A.P. India, herein after referred to as the “purchaser” (which terms shall mean and include its successors in office and assigns).

2. In consideration of M/s. Mishra Dhatu Nigam Limited (Purchaser) agreeing to make payment of Rs representing % of the value of indigenously dispatched goods (lot wise) as per the terms and conditions of the Purchase / Works Order No. dated (Hereinafter called the Agreement) to hereinafter called the said Contractor(s) (which term shall mean and include its successors assigns and legal representatives) on production of a bank guarantee covering the lot value plus interest at 14% p.a. for Rs (Rupees only), we (name of the bank, address) (Hereinafter referred to as “The Bank”) at the request of Contractor(s) do hereby undertake to pay Purchaser an amount not exceeding Rs against any losses or damage caused to or suffered or would be caused to or suffered Purchaser by reason of any breach by the said Contractor(s) of any of the terms and conditions contained in the said agreement.
3. We (Bank) do hereby unconditionally and irrevocably agree and undertake to pay to Purchaser the amounts due and payable under this Guarantee without any demur, merely on a demand from Purchaser stating that the amount claimed is due by way of loss or damage caused to or would be caused to on suffered by Purchaser by reason of breach by the said agreement or by reason of the contractor(s) failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs
4. We undertake to pay Purchaser and money so demanded notwithstanding any dispute or disputes by the contractor(s) / supplier(s) in any suit or proceedings pending before any court of tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this Guarantee shall be valid discharge of our liability for payment thereunder and the contractor(s) shall have not claim against us for making such payment.

5. We (Bank) further agree that the guarantee herein contained shall remain in full force and affect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of Purchase under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharges or till Purchaser certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee. Provided that if Purchaser together with the Contractor seeks an extension of terms of the Guarantee, such extension shall be granted by the Bank and the guarantee shall be in full force till the expiry of such extended period.
6. We (Bank) further agree with Purchaser that Purchaser shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by purchaser against the said Contractor(s) and to forebear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation of extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of Purchaser or any indulgence by Purchaser to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would but for this provisions, have effect of so relieving us.
7. It shall not be necessary for Purchaser to proceed against the contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding any security which Purchaser may have obtained or obtains from the contractor.
8. This guarantee shall not be discharged due to the change in the constitution of the Bank or the contractor(s).
9. We (Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of Purchase in writing.
10. Our liability is limited to a sum not exceeding Rs unless a claim is made on us in writing on or before (3 months beyond the date of delivery / completion as specified in the contract) we shall be discharged from liability under this guarantee.

In witness whereof these presents are executed at, on the date, month and year first herein above written.

FOR AND ON BEHALF OF THE BANK WITHIN NAMED

6. BANK GUARANTEE TOWARDS PERFORMANCE BANK GUARANTEE

This Deed of Guarantee executed on..... Day of..... by..... Bank. hereinafter called the "Guarantor" (which term shall mean and include its successors, assigns and legal representatives, where the context so admits) in favour of M/s. MISHRA DHATU NIGAM LIMITED, a Government of India Enterprise incorporated and registered as a Company under the Companies Act, 1956, having its registered office at P.O. Kanchanbagh, Hyderabad - 500 058, State of A.P. INDIA, hereinafter referred to as the "Purchaser", (which term shall mean and include its successors and assigns).

WHEREAS the Purchase Order No: MDN/PUR/..... (*Indicate both the order Numbers*) Dated..... has been entered into between the Purchaser and M/s..... a company incorporated and registered under the Laws of by which the company is permitted to manufacture and sell certain products, and having its registered office situated at hereinafter referred to as the SUPPLIER (which term shall mean and include its successors, assigns and legal representatives) for the supply of (*Indicate the list of Items which are replaced/repaired*) as fully described in the aforesaid Purchase Order.

AND WHEREAS it has been agreed under the terms and conditions of the aforesaid Purchase Order that the Purchaser shall make balance payment to the Supplier of(amount) in words (.....) representing **10%** of the total value of the repaired and replaced parts in the Purchase Orders on final acceptance of the and on furnishing a Guarantee from a Bank acceptable to the Purchaser by the Supplier towards satisfactory performance of the supplied.

AND WHEREAS the Guarantor has, as per the terms and conditions of the aforesaid Purchase Order, agreed to stand guarantee for the amount of ten per cent of the balance payment in favour of the Supplier and the Guarantor is acceptable to the Purchaser.

NOW THIS DEED witnesses that, in pursuance of the terms and conditions of the aforesaid Purchase Order and in consideration of the payment of representing **10%** of the total value of the repaired and replaced parts in the Purchase Orders agreed to be made to the Supplier by the Purchaser, the Guarantor do hereby agree and undertake to indemnify the Purchaser and keep the purchaser indemnified to the extent of a sum not exceeding the said sum of (Amount) (In Words) against any damage or loss that may be suffered by the Purchaser by reason of non-fulfillment of or breach any of the terms and conditions of the Purchase Order by the supplier, and the guarantor hereby undertaken to pay on demand and without any demur to the purchaser any sum unconditionally and irrevocably not exceeding the sum of (Amount) (In Words as may be demanded by the Purchaser's General Manager (Commercial) or Representative of the purchaser as the damages or loss that the purchaser may have suffered by reasons of non-fulfillment of any of the terms and conditions of the Purchase Order by the Supplier, and Guarantor hereby covenants with the Purchaser as follows:

1. That the decision of the General Manager (Commercial) or Representative of the Purchaser as to whether the said installation under the Purchase Order gives satisfactory performance or not and as to the amount of damages suffered by the Purchaser on account of the unsatisfactory performance of the said installation under the Purchase Order shall be conclusive, final and binding on the Bank.
2. That the Guarantee herein contained shall remain in full force and effect till the Purchaser certifies in writing that the terms and conditions of the said Purchase Order have been fully and properly carried out by the said Supplier and accordingly discharges the Guarantee. Unless a demand for claim under this Guarantee is made on the Bank in writing on or before, the Bank shall be discharged from all liabilities under this Guarantee thereafter, provided that if the Purchaser, together with the Supplier, seeks an extension of the term of the Guarantee, such extension shall be granted by the Bank and the Guarantee shall be in full force and effect till the expiry of such extended period.
3. That the Purchaser 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 Purchase Order or to extend its performance by the said Supplier as provided or to postpone, for any time and from time to time, any of the powers exercisable by it against the said Supplier and either to enforce or forbear from enforcing any of the terms and conditions governing the said Purchase Order, and the said Bank shall not be released from its liability under these presents by any exercise by the Purchaser of the liberty with reference to matters aforesaid or by reason of time being given to the said Supplier or any other forbearance, act or omission on the part of the Purchaser or any indulgence by the Purchaser to the said Supplier or of any other matter 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 liability.
4. It shall not be necessary for the Purchaser to proceed against the Supplier before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding any security which the Purchaser may have obtained or obtain from the Supplier.
5. The Bank lastly undertakes not to revoke this Guarantee during its currency, except with the previous consent of the Purchaser in writing, and agrees that any change in the constitution of the said Supplier or the said Bank shall not discharge the Bank's liability hereunder.

In witness whereof these presents are executed at the date, month and year, first herein above written.

FOR & ON BEHALF OF THE BANK WITHIN NAMED

Draft LC Format as per MT 700 of UCP Latest Version

All tenderers are requested to fill in/tick appropriate fields inline with the tender terms and conditions. The same shall be finalised with the successful tenderer upon placement of Order/Contract and submission of Security Deposit (No separate confirmation shall be obtained after placement of PO/Contract. If LC is opened only for partial amount, appropriate conditions in 46A shall only be applicable.

	Receiver Bank Details:			
27	Sequence of Total	1/1		
40A	Type of L/C	[] Irrevocable	[] Irrevocable & Transferable	
20	Letter of Credit Number			
31C	Date of Issue			
31D	Date and Place of Expiry	Date: _____ (21 Days after the Date of Dispatch)	Place	_____
50	Name and Address of the Applicant	MISHRA DHATU NIGAM LIMITED (A Govt. Of India Enterprise) KANCHANBAGH POST 500 058, HYDERABAD TELANGANA, INDIA		
59	Name and Address of the Beneficiary			
32B	Currency & Amount of L/C (In Words & Figures)	(Shall be filled in as per the PO/Contract)		
39A	Variations in L/C Amount or addl. Amounts permitted			
C				
41A	Credit available with			Name and Address of the Bank
	Credit available by	[] Payment	[v] Negotiation	[] Acceptance [] By Deferred payment
42C	Usance of Drafts	[v] at Sight	[] (specify)	
42B	Drafts to be drawn on	State Bank of India (04031), TFCPC, Ashok My Home Chambers, S.P Road, Secunderabad - 500 003	Or	Andhra Bank, BDL Campus, Kanchanbagh, Hyderabad - 500058
42P	Deferred Payment, if any			
43P	Partial Shipments	[] permitted [] prohibited	43T	Transshipment: [] permitted [] prohibited
44A	Shipments from		44B	
44E	Port of Loading/ Airport of Departure			
44F	Port of Discharge/Airport of Destination	[] Nhavasheva	[] Chennai	[] Hyderabad Airport, India
	Final Place of Destination for Sea Shipments	ICD, Hyderabad, India		
44C	Latest Shipment Date	(Shall be filled in as per the PO/Contract inline with Tender delivery condition)		
45A	Description of Goods (Also indicate whether FOB/CIF/C&F etc.)			
46A	Documents required			
	Stage - I: 10% Advance Payment	Ten (10) percent of the Contract price for supplies i.e., _____ (Shall be filled as per PO/Contract) against presentation of the following documents		
	[]	Signed Contract Copy		
	[]	Submission of Security Deposit for 10% Order Value i.e., _____ from a Nationalized Bank/ Scheduled Commercial Bank encashable at Hyderabad, INDIA valid till successful completion of the Order/Contract and issue of PAC with additional claim period of three months from the date of expiry		
	[]	Submission of invoice in triplicate and Submission of Bank guarantee of similar amount from a Nationalized Bank/ Scheduled Commercial Bank encashable at Hyderabad, INDIA for advance payment along with 14% interest per annum valid till supply of Last lot, with additional claim period of three months from the date of expiry		
	Stage - II: 10% Payment against Drawings/Documents	Ten (10) percent of the Contract price for supplies i.e., _____ (Shall be filled as per PO/Contract) against presentation of the following documents		
	[]	Submission of invoice in triplicate		

	[]	Submission of Bank guarantee of similar amount from a Nationalized Bank/ Scheduled Commercial Bank encashable at Hyderabad, INDIA for advance payment along with 14% interest per annum valid till PAC.
	[]	Furnishing of the documents and drawings as per 'Technical Specifications'
	Stage - III (60% of Payment shall be as per Tender conditions):	Sixty (60) percent of the Contract price for supplies i.e., _____ (Shall be filled as per PO/Contract) is payable against shipment of the material and against presentation of the following documents.
	[]	Clean on Board Bill of Lading/Airway Bill as defined in Incoterms 2010 made to Order and blank endorsed
	[]	Signed Invoice for the goods dispatched. - 4 copies
	[]	Certificate of Origin. – 2 copies
	[]	Packing List. – 5 copies
	[]	Guarantee Certificate – 4 copies
	[]	Test / Manufacturer's Certificate – 4 copies
	[]	Fax intimation particulars regarding shipment sent to our insurer/Insurance Policy Document (In case of CIF)
	[]	Dispatch Advise issued by the Purchaser – 4 Copies
	[]	Certificate from Beneficiary that one set of non-negotiable documents have been sent to Purchaser/Buyer as per
	[]	Draft at Sight/ _____ Days acceptance for _____ % of Invoice Value
	Stage - IV (10% of Payment shall be as per Tender Conditions)	Ten (10) percent of the Shipment Value I.E., _____ (Shall be filled as per PO/Contract) is payable against presentation of the following documents.
	[]	Provisional Acceptance Certificate issued by MIDHANI
	[]	Submission of invoice in triplicate
	[]	Certificate issued by Purchaser on "Site cleaning"
	Stage - V (10% of Payment shall be as per Tender Conditions)	Ten (10) percent of the Shipment Value I.E., _____ (Shall be filled as per PO/Contract) is payable against presentation of the following documents.
	[]	Certificate from purchaser that all drawings and documents as given in Clause No. 17.0 of General Conditions of Contract have been received and accepted.
	[]	Submission of invoice in triplicate
	[]	Final Acceptance Certificate issued by MIDHANI
		OR
	[]	Performance Bank Guarantee for TEN PERCENT Order Value till completion of Guarantee Period as per Tender.
47A	Additional Conditions	
	[]	All documents must mention the LC Number, Date, Purchase Order number and Date and that the Goods are being Imported as per Foreign Trade Policy 2015-2020.
	[]	Immediately after negotiating, the Negotiating Bank must advise the particulars of the Negotiation to the Issuing bank.
	[]	All documents which are incomplete and or with irregularities should not be negotiated without prior authorisation of the purchaser.
	[]	All Documents dated prior to the Date of Letter of Credit will be accepted except the Transport Document i.e., Bill of Lading/Air Way Bill.
	[]	Total Value of the Contract Price is _____. LC opened for ____ Percent of Contract Price i.e., _____.
71B	Charges	All Charges inside India to Applicant's Account (MIDHANI's) and all charges outside India to Beneficiary's Account
48	Period of Presentation	Documents to be presented within 21 days from the date of shipment/airfreight as the case may be
49	Confirmation Instructions	Without
78	Instructions to the Paying bank	Standard wording from our Bank shall be added here

PART V

GENERAL INSTRUCTIONS TO TENDERER

TABLE OF CONTENTS

1.0	LIST OF TENDER DOCUMENTS	5
2.0	TENDERER TO INFORM HIMSELF FULLY	5
3.0	SCOPE OF WORK	5
4.0	SPECIAL CONDITIONS.....	9
5.0	INFORMATION TO BE SUBMITTED WITH TENDER	9
6.0	TRAINING OF PERSONNEL.....	10
7.0	TIME SCHEDULE FOR DELIVERY	10
8.0	TRANSPORTATION	11
9.0	INSURANCE	12
10.0	LICENSES AND TAXES	12
11.0	GUARANTEE AND PERFORMANCE.....	14
12.0	PRICES.....	14
13.0	PRICE VARIATION.....	15
14.0	FOREIGN CURRENCY TO BE STIPULATED.....	15
15.0	TERMS OF PAYMENT.....	15
16.0	LETTER OF CREDIT.....	18
17.0	CAPACITY OF THE TENDERER.....	19
18.0	SUBMISSION OF TENDER	20
19.0	PERIOD OF VALIDITY OF TENDER.....	21
20.0	LANGUAGE	21
21.0	ARRANGEMENT OF TENDER.....	21
22.0	EARNEST MONEY	21
23.0	NO CLAIM FOR COMPENSATION FOR SUBMISSION OF TENDER	22
24.0	INSURANCE POLICY FOR WORKMEN	22
25.0	LOWEST TENDER MAY NOT NECESSARILY BE ACCEPTED.....	22
26.0	CONTRACT AGREEMENT	22
27.0	NOTICES ON BEHALF OF PURCHASER.....	22
28.0	ADDENDA TO TENDER DOCUMENTS.....	22
29.0	QUERIES/CLARIFICATIONS	23
30.0	INTEGRITY PACT.....	23
31.0	ADDITIONAL INSTRUCTIONS TO THE TENDERERS.....	23
32.0	OVERRIDING EFFECT	25
33.0	CONSORTIUM.....	25

1.0 LIST OF TENDER DOCUMENTS

1.1 We have pleasure in enclosing the following documents for the above work and would invite you to submit your best offer. The following documents shall constitute the tender.

1.1.1 Instruction to Tenderers

1.1.2 Technical Specifications

1.1.3 General Conditions of Contract for supply of Plant, Machinery and Equipment, supervisory service for Erection & commissioning and complete Erection and commissioning, and performance guarantee.

1.1.4 General information on Site, Integrity Pact, Formats of bank guarantee for Security deposit, Advance, Performance guarantee, Draft Letter of Credit Format and Draft Contract agreement, Price bid format.

1.1.5 Special Conditions of Contract, if any.

2.0 TENDERER TO INFORM HIMSELF FULLY

2.1 The tenderer shall study carefully the enclosed tender documents and the documents referred to therein before submitting his offer. The tenderer shall fully satisfy himself of the suitability of the plant, machinery and equipment and layout as indicated in the tender documents, conditions of working at and around the construction Site and take full responsibility for the safe and efficient operation and guarantee of the quality and specified output of the plant, machinery and equipment offered. The offer should be for plant, machinery and equipment and for the services according to the Technical Specifications and in accordance with the terms and conditions of the General Conditions of Contract.

2.2 The tenderer shall inspect the Site and shall satisfy himself of the Site conditions and shall collect any other information which he may require before submitting the tender. Claims and objections due to ignorance of Site condition shall not be considered after submission of the tender.

3.0 SCOPE OF WORK

3.1 The Work is outlined in the tender documents listed in Clause 1.0 above which are enclosed with this tender and all of which shall be used together to define the Work. The Work shall be in conformity with this tender and all other documents, such as specifications, drawings, standards, commercial and legal terms and conditions, which make up the tender documents and those referred to therein.

3.2 The tenderer shall include in his tender, for the provision of materials, equipment and services required for the effective implementation of the Project specified in the tender documents, including complete mechanical, electrical with ventilation system, refractories, measuring and control instruments, fabricated steel work, platforms, all necessary piping, valves and fittings, all cables and all foundation bolts, anchoring parts, etc. In addition the tenderer shall offer separately

for the supply of any additional equipment and material which are not specially mentioned in the tender, but are required to complete the plant, machinery and equipment offered in every respect and for safe and efficient operation and guaranteed performance. It shall be the responsibility of the successful tenderer to furnish the materials, plant, machinery and equipment and provide the services specified accordingly, unless specifically stated as being furnished by others.

- 3.3 The materials, plant, machinery and equipment and services to be provided by the successful tenderer shall include, but not be limited to, the following:
- 3.3.1 Submission of all drawings, documents and data to be furnished as per the Contract, along with complete list of drawings and a time schedule for submitting these in accordance with Clause 17 of the General Conditions of Contract.
 - 3.3.2 Submission of general arrangement drawings showing to scale the size and location of major equipment and components, including electrics, control cabinets etc. giving overall dimensions, clearances, controlling dimensions as well as necessary elevation, sections, and plans.
 - 3.3.3 Submission of foundation outline drawings, anchor Bolt location plans, loading diagrams and foundation Bolt details for all foundations and concrete structures, duly certified by the Contractor.
 - 3.3.4 Submission of mechanical, electrical, piping, instrumentation, refractory, assembly, installation drawings, instruction and all other drawings and documents as specified.
 - 3.3.5 Procurement of materials, manufacture/fabrication and supply of plant, machinery and equipment for all items as specified.
 - 3.3.6 Supply of large size foundation Bolts, Bolts of special design and those made of alloy / special steels and special embedment that may be required for the plant, machinery and equipment.
 - 3.3.7 Submission of itemized list of spare parts for two (2) years normal working of the plant, machinery and equipment operating instructions and maintenance manuals. Spare parts not manufactured directly by the tenderer shall be identified and description/catalogues given in sufficient detail to enable the Purchaser to procure these directly from the manufacturers, if required.
 - 3.3.8 Carrying out inspection and tests during and after manufacture (including making arrangements for inspection by the Purchaser or its authorized representative) and on completion, packing, marking and dispatching the equipment FOB and supply and delivery of indigenous items FOR Site of the Purchaser including unloading thereof.
 - 3.3.9 Supply of sufficient quantity of commissioning spares necessary for the commissioning of the plant, machinery and equipment offered up to the date of its provisional acceptance by the Purchaser. The commissioning spares shall be included with the plant, machinery

and equipment and must be at Site with the plant, machinery and equipment. Supply of spare parts for two years normal working of the plant after PAC.

- 3.3.10 Supply of one set of special tools for repair and maintenance of plant, machinery and equipment. A list of these tools proposed to be supplied shall be given in the offer.
- 3.4 For the plant, machinery and equipment offered, electric power and utility piping connections shall be suitably terminated at switches or valves, as the case may be, switch boxes and termination valves (with companion flanges, where relevant), shall be located at easily accessible positions. The tenderer shall minimize the number of connections to be provided by the Purchaser for electric power and utilities. The particulars of power and utilities that will be made available by the Purchaser are indicated in the specification and the tenderer shall include any equipment required to transform these to suit the requirements of the equipment offered. The offer shall include all piping with valves and fittings and wiring, for interconnecting parts / components of the different units/systems of the tendered plant, machinery and equipment.
- 3.5 Where refractory and special lining work is involved, e.g. furnace etc. in addition to one set of refractory lining materials, the offer shall include ten percent (10%) extra quantity for all refractory/materials from Indian sources and twenty percent (20%) extra quantity for all imported refractories/materials. For such refractory/lining work the tenderer shall furnish itemized lists of such refractory/lining materials for two (2) years normal working of the plant, machinery and equipment. The tenderer shall also properly identify these with the specifications, sizes and shapes in sufficient detail to enable the Purchaser to procure these directly from the manufacturers, if required.
- 3.6 Supervision of Erection of Plant and equipment and Putting into commission
- 3.6.1 The Purchaser, at his option, may ask the successful tenderer to provide services for supervision of erection, start-up and putting into commission, including performance tests of all plant, machinery and equipment supplied by the successful tenderer, as well as those that may be procured from/fabricated by others based on the successful tenderer's drawings, specifications and bills of quantities. The scope of work may, inter alia, include final painting/finishing, however, where such services are required, the same is indicated in the enclosed specifications.
- 3.6.2 In such cases, the successful tenderer shall provide resident supervisory personnel for the above services in accordance with the relevant part of the General Conditions of Contract. The tenderer shall indicate in his offer the number and category of supervisory personnel and other erection / operation specialists he proposes to depute for the Work as well as the estimated duration of their stay at Site.
- 3.6.3 The tenderer shall submit with the tender a detailed category wise list of personnel to be arranged by the Purchaser for the Erection and Installation work, start-up, Commissioning and performance tests, based on Site work six days a week and eight hours a day. The tenderer shall in his tender also furnish the complete list of specialized installation tools, tackles, instruments and appliances that, in his opinion, will be required

in connection with the installation of the Plant, Machinery and Equipment. All customs related formalities including costs, regarding declaration of instruments, tools, tackles and other appliances for re-export upon successful completion of the Work shall be the responsibility of the successful tenderer.

- 3.6.4 The successful tenderer shall satisfy himself before giving clearance for the foundation for erection purpose that the civil engineering work has been carried-out in accordance with the drawings and specifications furnished by the Purchaser or Purchaser's consulting Engineer, based on data furnished by the successful tenderer.
- 3.7 Complete erection of Plant, Machinery and Equipment and putting into Commission, including but not limited to the following:
- 3.7.1 The successful tenderer shall provide services for complete Installation, start-up and putting into Commission, including performance tests of all Plant, Machinery and Equipment supplied by the successful tenderer, as well as those that may be procured from/fabricated by others based on the successful tenderer's drawings, specifications and bills of quantities. The successful tenderer shall provide the above services in accordance with the terms and conditions of the Contract.
- 3.7.2 In such cases, the tenderer shall provide the above services in accordance with the relevant part of the General Conditions of Contract, and shall indicate in his offer the number and category of supervisory personnel and other erection operations specialists he proposes to depute for the work as well as the estimated duration of their stay at site.
- 3.7.3 The successful tenderer shall inspect and satisfy himself before commencement of installation that the civil engineering work has been carried out in accordance with the drawings and specifications approved by the Purchaser or Purchaser's consulting Engineer, based on data furnished by the successful tenderer.
- 3.7.4 The successful tenderer shall facilitate the Purchaser's personnel to get fully conversant with the working of the plant, machinery and equipment during installation, commissioning and testing.
- 3.7.5 The successful tenderer shall be responsible for providing the necessary installation tools, tackles, instruments and appliances required for the installation work. He shall also be required to provide, without any extra cost, additional tools, tackles, equipment etc., if considered necessary by the Purchaser after mutual agreement with the tenderer for efficient working and the completion of installation in time. All charges in connection with these, such as transportation from the successful tenderer's work to Site and back on the completion of the installation, operation etc., shall be to the account of the successful tenderer.
- 3.7.6 The successful tenderer shall be responsible for taking over consignments containing equipment and materials for installation at the Purchaser's stores and/or stocking place and all subsequent handling and transport.

3.7.7 On taking over materials for installation, the successful tenderer shall be responsible for their safe storage and custody till they are handed over to the Purchaser. Any damage, breakage and loss during this period will be to the account of the successful tenderer and he should make the necessary arrangements for proper replacement/repair in time. Save and except otherwise elsewhere provided, on receipt of materials at Site, the Purchaser shall be responsible for safe storage and custody of the materials till they are handed over to the successful tenderer for Installation.

4.0 SPECIAL CONDITIONS

- 4.1 Maximum use shall be made of Indian materials and services to the extent possible for which payments will be made in Indian rupees.
- 4.2 The tenderer shall, however, take complete responsibility for co-ordination of the supplies and adhering to the delivery and other schedules and give performance guarantee for the complete Plant, Machinery and Equipment, including the imported and indigenous portions thereof.
- 4.3 For procurement from indigenous sources, no foreign exchange or import licenses for importing equipment, components, spares, raw materials or other services will be arranged for or provided by Purchaser.
- 4.4 It is the intention of the Purchaser to obtain, to the maximum extent possible equipment and material from indigenous sources. These include various electrical equipment and controls, including mill drives and controls, as well as other equipment, components and materials such as cables, valves, pipes, refractories, insulation materials, fabricated components etc. available from indigenous sources, especially from the Public Sectors Units.
- 4.5 The tenderer shall clearly indicate for the major items offered from indigenous sources together with the name of the agency against the respective items.
- 4.6 The tenderer should preferably have a resident representative in India. The address of such representative in India should be indicated in the tender.

5.0 INFORMATION TO BE SUBMITTED WITH TENDER

In addition to the information called for in the different sections of the tender documents, tenderer shall furnish the following information with the tender without which the tender is liable to be rejected:

- 5.1 Complete description and working of the plant, machinery and equipment, supported by such drawings and catalogues as are required to enable the Purchaser to study the suitability of the Plant, Machinery and Equipment offered.
- 5.2 A list of major components, systems and sub-systems of plant, machinery and equipment tendered, indicating the names of potential suppliers and/or sub-contractors. The tenderer shall clearly indicate the items offered from abroad and from indigenous sources, together with the name of the agency against the respective items.

- 5.3 General arrangement drawings, showing, major equipment, giving overall dimensions, clearances, controlling load dimensions, weights, etc. as well as necessary elevations, sections and plans for studying the suitability of the offered items. Along with these arrangement drawings, preliminary foundation outline drawings, with load data and bold locations are to be furnished, wherever applicable.
- 5.4 Requirements of power, water and other utilities for normal operation of the offered plant, machinery and equipment for the purpose of designing the auxiliary and service systems. These shall be binding on the successful tenderer.
- 5.5 Grade and quantities of flushing oil, lubricating oils and other consumables required during the start-up, commissioning, initial filling and yearly requirements for normal operations. The equivalent brands and specifications for all consumables shall be furnished.
- 5.6 Details of consumption, output and performance guarantee of the plant, machinery and equipment.
- 5.7 Estimated cost of operation of the plant and equipment.
- 5.8 Itemized weights for major items of the complete plant, machinery and equipment.
- 5.9 List of tests and the procedures for conducting the tests proposed at the tenderer's factory before dispatch and at Site during commissioning.
- 5.10 Recommended operation and maintenance personnel, semiskilled and skilled, for the efficient operation and maintenance of the plant, machinery and equipment offered.
- 5.11 Questionnaire, if any, included in the tender documents duly filled in. Tenders with incompletely filled in questionnaire are liable to be rejected.
- 5.12 Each exception to the specifications or other parts of the documents shall be listed separately by the tenderer. If exceptions are not clearly listed as such, they will not be considered by the Purchaser.

6.0 TRAINING OF PERSONNEL

- 6.1 The successful tenderer shall arrange for the training of a reasonable number of the Purchaser's technical personnel in shops manufacturing the equipment and in plants where equipment similar to those covered in the tender documents are in operation. The number of such personnel and the period of training will be mutually agreed upon. The travelling and living expenses of the trainees will be borne by the Purchaser.

7.0 TIME SCHEDULE FOR DELIVERY

- 7.1 The delivery schedule expected by the Purchaser for plant, machinery and equipment and the performance of its services is indicated in the tender. If the delivery schedule cannot be adhered to, the tenderer shall quote for his best and earliest delivery.

- 7.2 In the case of imported plant, machinery and equipment, the delivery shall mean FOB Port of Shipment. In the case of locally procured/indigenous items, the delivery shall mean FOR site including unloading at Site.
- 7.3 The tenderers shall submit with his offer a time schedule, showing the individual time periods required for submission of drawings, procurement, manufacture, fabrication, delivery, etc. The schedule shall also show the estimated Installation time, based on normal Site work, six (6) days a week and eight (8) hours a day, as well as the time for start-up, putting into commission, performance guarantee tests and provisional acceptance. In addition, the successful tenderer shall submit the schedules accompanied by a network diagram, incorporating all important activities and their estimated duration from the award of the Contract to its completion indicating clearly the critical path.
- 7.4 The successful tenderer shall be responsible for coordinated delivery of all plant, machinery and equipment, both from abroad and India, and shall ensure deliveries in the sequence in which they will be required at Site for installation. He shall affect delivery of plant, machinery equipment, materials etc. generally as under:
- 7.4.1 Plant, Machinery and Equipment, refractory and lining materials shall be delivered according to the billing cum shipping schedule and in general the sequence in which they will be required at Site for installation and erection.
- 7.4.2 Large size foundation Bolts, Bolts of special design, special embedment, etc. as per Clause 3.3.6 hereof shall be delivered well in advance of the equipment so as to be available at Site during the construction of the related foundations.
- 7.4.3 Commissioning spares as per Clause 3.3.9 hereof shall be delivered along with the plant, machinery and equipment.
- 7.4.4 Save and except elsewhere provided in the Contract, Spare parts for two (2) years normal work of the plant, machinery and equipment hereof shall be delivered prior to the provisional acceptance of the plant, machinery and equipment.
- 7.4.5 Special tools for repair and maintenance as per Clause 3.3.10 hereof shall be delivered prior to the provisional acceptance of the plant, machinery and equipment.
- 7.4.6 Specialized installation tools, tackles, instrument and appliances as per Clause 3.7.5 hereof shall be delivered before installation of the plant, machinery and equipment and the same shall remain the property of the successful tenderer.
- 7.4.7 Save and except elsewhere provided in the Contract, consumables as per Clause 5.5 hereof shall be delivered prior to commencement of installation of the plant and equipment.
- 7.4.8 Drawings and documents shall be delivered in the sequence outlined in Clause 17.14.3 for the due and effective performance of Contract.

8.0 TRANSPORTATION

8.1 The successful tenderer shall deliver all imported plant, machinery and equipment on FOB Port of shipment.

For indigenous items, the successful tenderer shall deliver the plant, machinery and equipment FOR site including unloading at Site.

For imported items the Purchaser will make arrangements to ship the cargo, pay the marine insurance, clear the consignment at Indian port, pay the custom's duty and arrange for obtaining the customs clearances and dispatch to and unloading at plant site.

Within the framework of the installation services referred to in Clause 3.6 and 3.7 above, the successful tenderer shall be responsible, if required by the Purchaser to give his expert advice and guidance in regard to the safe handling of cargo during unloading at India port and for dispatching to site.

9.0 INSURANCE

9.1 The successful tenderer shall provide all insurance up to the FOB port of shipment stage for imported items and up to the FOR site stage for indigenous items and unloading thereof, as per Clause 25 of the General Conditions of Contract.

10.1 LICENSES AND TAXES

10.2 Licenses

10.2.1 All export or other licenses or permits which may be required by law and/or regulations of the country in which any of the plant, machinery and equipment covered by this tender is produced or sold will be obtained by the successful tenderer at his expense. If any such license is required, a copy of the license is to be submitted to the Purchaser within three months from the date of signing of Contract and before the release of first payment for such plant, machinery and equipment or a self-declaration by the successful tenderer that such license is not required.

10.2.2 The Purchaser will, at his expense, obtain necessary licenses and permits if or as may be required under law or regulations to import the plant, machinery and equipment into India. The successful tenderer and the Purchaser will furnish each of such information and assistance as may be necessary to procure the issuance of such licenses or permits.

10.3 Taxes

10.3.1 All statutory taxes, duties, fees, cess & levies payable outside India on the goods sold/services provided to the Purchaser shall be borne and paid by the successful tenderer.

All statutory customs/import duties, taxes, fees, cess & levies, etc. in India on the imported goods on amount payable in foreign currencies shall be borne and paid by the Purchaser.

Any tax applicable in India on foreign training provided by the tenderer outside India will be borne and paid by the Purchaser and shall not be included in the Contract Price to be quoted by the tenderer.

The Contract Price to be quoted by the tenderer for providing Installation services in India will be exclusive of service tax or any other duties, cess applicable for such services.

The successful tenderer shall be liable to pay the applicable income taxes under Indian Income Tax Act 1961 or under Double Taxation Avoidance Agreement as the case may be for income earned or in respect of income deemed to accrue or arise in India. The applicable withholding tax/other taxes for providing Installation services in India by the tenderer will be deducted by the Purchaser. A certificate for tax deduction at source shall be issued by the Purchaser to the successful tenderer to get the necessary tax credit for filing the tax return in their home country.

The successful tenderer shall be liable to pay and shall pay the relevant income tax if and as applicable to the personnel/experts deputed by them for providing Installation services in India under this Contract. The tenderer shall be responsible and comply with all the relevant laws including labour, employment, etc. of such personnel/experts.

- 10.3.2 Income tax in India, if leviable and other taxes in relation thereto on any other account shall be borne and paid by the successful tenderer. The successful tenderer shall be responsible to furnish the Permanent Account Number, Tax Residency Certificate, tax declarations along with the Tender and shall be liable to file tax returns with respective income tax authorities as required under the Indian Income Tax Act.

All payments under the Contract to the successful tenderer shall be subjected to deduction of taxes at source at the applicable rates in force as per the provisions of the Indian Income Tax Act or Double Taxation Avoidance Treaty whichever is more beneficial to the tenderer. Where the benefits of double taxation are to be availed, it shall be the responsibility of the tenderer to furnish the Tax Residency Certificate to the Purchaser required under the Indian Income Tax Act. Tax deduction at source towards payment for on-site services will be made by the Purchaser as per applicable rate and the certificate thereof shall be provided to the tenderer by the Purchaser.

- 10.3.3 In the case of indigenous equipment, sales tax, VAT, CST, octroi, entry tax and other taxes and duties shall be borne by and to the account of the successful tenderer and shall be included in the prices quoted by them. The Contract Price shall be inclusive of all taxes, duties, octroi, entry tax, levies, cess and other statutory impositions existing as on the date seven (7) days before due date of submission of the final price bid. The tenderers shall separately indicate and quantify (against each head) the basic price, incidence of tax, duty, cess and other statutory imposition etc. that they have included in the price quoted by them.

- 10.3.4 The Purchaser shall use his best efforts to get tax exemptions/concessions applicable in India, if any, to enable the tenderer to benefit from such tax savings to the maximum allowable extent. The successful tenderer shall pass on such benefits to the Purchaser in this regard. Tax deduction at source under VAT Act shall be made by the Purchaser on the Contract Price and as per exclusions provided under the Act.
- 10.3.5 Base date of the Contract shall be the date seven (7) days before last date of submission of price bid.
- 10.3.6 The successful tenderer shall make “Sale in Transit (E-1)” as per Section 6(2) of Central Sales Tax Act 1956 and all formalities required shall have to be observed by the successful tenderer. The Purchaser shall issue necessary Concessional Sales Tax Declaration Form ‘C’ and other Concessional Sales Tax Declaration Form as applicable for State Sales Tax.
- 10.3.7 Any Statutory variation occurring after the Base Date of Contract in the taxes, duties, levies, cess etc. and / or imposition of new taxes, duties, levies, cess, etc. in relation to goods and services in India in the course of the performance of the Contract will be to Purchaser’s account and payable at actual against documentary evidence. If the rate of taxes, duties, levies, cess etc. applicable in India is increased or decreased on the price indicated in foreign currency, or new tax is introduced in the course of the performance of Contract, the same shall be to Purchaser’s account at actual.
- 10.3.8 Service tax and education cess for the indigenous services shall be paid to the successful tenderer against each invoice. The invoice for the service portion shall separately indicate the service tax and education cess claimed by the successful tenderer along with their relevant service tax registration number obtained by the successful tenderer.

11.0 GUARANTEE AND PERFORMANCE

- 11.1 The tenderer shall guarantee the workmanship and materials, and satisfactory operation of all items of the plant, machinery and equipment offered by him, with respect to all individual items and collective items comprising a group of equipment, and for the whole plant, machinery and equipment, in accordance with the performance requirements indicated in the Technical Specifications. In this respect, the offer shall include in clear detail the various outputs, consumption and performance guarantee for the Plant, Machinery and Equipment offered.

12.0 PRICES

- 12.1 The tenderer shall include in his offer prices for all materials and services as specified in the tender documents and in manner stated in the relevant articles/clauses/para of the Instructions to Tenderer.
- 12.2 Prices for plant, machinery and equipment, spares, special maintenance tools etc. shall be indicated as per the price bid format enclosed. The prices shall be itemized in accordance with and as stated in, the tender specification and are to be quoted in the following two parts:

- 12.2.1 For all imported items of plant, machinery and equipment, spares, special maintenance tools, etc. prices shall be quoted for delivery, duly packed, FOB Port of shipment, with indication of estimated CIF charge separately.
- 12.2.2 For all indigenous items of plant, machinery and equipment, spares, special maintenance tools, etc. Prices shall be quoted for delivery, duly packed, FOR site including unloading at Site.
- 12.3 Itemized weights shall be given to each of the major items specified in the scope of supply. Weight of the supplies shall be indicative and there shall be no bearing on the quoted price for any variance with actual weights.
- 12.4 Separate prices for supervision, complete Installation, start-up and putting into commission and other services, as indicated in Clause 3.6 and 3.7 above shall be quoted. These shall be inclusive of demonstration of performance parameters / tests.
- 12.5 For complete erection services, the detailed break-up of prices, such as cost of labour, supervisory personnel, consumable materials for erection, cost of site office, storage, provision of tools and tackles and accommodation and incidental expenses justifying the prices to be quoted under para 12.4 above, must be furnished in the tender.
- 12.6 In the case of the provision of erection of plant and equipment and putting them into commission, the tenderer shall indicate the prices and hire charges separately for each of the specialized erection tools, tackles, instruments and appliances, which in his opinion will be required for the erection of the plant and equipment. The Purchaser will inform the tenderer at the time of the finalisation of the Contract regarding the tools, tackles, instruments and appliances etc. he would like to purchase/hire out.
- 12.7 If some of the Installation and Commissioning personnel are required by the Purchaser beyond the provisional acceptance date, which are not covered in the Contract Price, the successful tenderer shall provide the same. The terms and conditions for these should be stated in the offer.

13.0 PRICE VARIATION

- 13.1 Tenderers shall offer firm prices. No escalation of any kind whatsoever shall be allowed by the Purchaser under the Contract.

14.0 FOREIGN CURRENCY TO BE STIPULATED

- 14.1 The foreign currency in which payments have to be effected shall be clearly mentioned in the offer against each item of work and finally the total of quotes in foreign currency.

15.1 TERMS OF PAYMENT

Subject to any deduction, which the Purchaser may be authorized to make statutorily or otherwise under the Contract, the terms of payment shall be as follows.

15.2 For Plant, Machinery & Equipment including Design, Engineering and Training

- (i) Ten (10) percent of the Contract price on the issue of letter of acceptance, furnishing of Security Deposit as per Clause 11.0 of GCC, a certificate from Contractor that Export licence has been received or a statement confirming that Export Licence is not necessary and bank guarantee for such advance payment along with 14% interest valid till FOB stage of last shipment.
- (ii) Ten (10) percent of the Contract price on furnishing of the following specified documents and drawings along with bank guarantee for similar amount with 14% interest valid till FOB stage of last shipment.
 - Name plate and numbering system
 - Preliminary list of drawings with submission schedule
 - Preliminary layout drawings including location of main equipment
 - Certified foundation drawing, data, etc.
 - Complete Electrical single line diagrams
 - Data on cranes including capacity hook approach, number of cranes, rail height and weight of bay
- (iii) Sixty (60) percent of the value of each and every part shipment payable against the presentation of necessary negotiable documents proving that the goods are delivered FOB port of shipment in the case of imported equipment and dispatched FOR site in the case of indigenous equipment.
- (iv) Ten (10) percent of the Contract price after completion of erection and issue of Provisional Acceptance Certificate.
- (v) The last Ten per cent (10 %) of the Contract price after furnishing of a Certificate from Purchaser that all documents as per Clause 17.0 of GCC is received and issuance of Final Acceptance Certificate i.e. after the completion of the guarantee period which is twelve months of regular and reliable working of the plant, consistent with normal starting up operation after issuance of PAC or a Bank Guarantee for ten (10) percent of Contract price valid for twelve months from the date of Provisional Acceptance Certificate.

15.3 Supervision for erection, start-up and putting into commission:

The terms of payment shall be hereunder:

- (i). Eighty percent (80%) of the fixed portion of the price in suitable equal monthly instalments at the end of each completed month, the first instalment being payable on the commencement of Erection, subject to adjustment if the progress of the work is not according to schedule.

- (ii). Twenty percent (20%) of the fixed portion of the price on the issuance of Provisional Acceptance Certificate.

15.4 Complete Erection, Start and Putting into Commission:

The terms of payment shall be as follows:

- (i). Ten percent (10%) of the Contract Price for equipment erection on the opening of crates and packing cases to the extent required to start erection, inspection of equipment, repair and replacement if necessary and transportation of equipment to the erection Site.
- (ii). Forty percent (40%) of the Contract Price for equipment erection on the checking of foundation, including final adjustment of foundation, pre-assembly of equipment, if necessary, and placing of equipment on foundation.
- (iii). Forty percent (40%) of the Contract Price for equipment erection on final alignment, lining, levelling, grouting and connecting-up electric power supply, water and utilities.
- (iv). Ten percent (10%) of the Contract Price for equipment erection on the issuance of Provisional Acceptance Certificate.

15.5 Spares:

Terms of payment shall be as follows:

- (i). Ninety percent(90%) of the value of spares for each and every part shipment against the presentation of necessary negotiable documents proving that the goods are delivered FOB port of shipment /dispatched FOR Site.
- (ii). Ten (10%) of the value of spares ordered after issue of Provisional Acceptance Certificate.

15.5 The Contractor shall establish a letter of guarantee as per formats at annexure and from a bank acceptable to the Purchaser for advance and progressive payments claimed by him.

15.6 Subject to other provisions of the Contract, the payment shall also be made based on the following:

- (i) All payments shall be made directly by the Purchaser to the Contractor unless otherwise provided in the Contract or agreed between the Parties.
- (ii) If as per provisions of Contract any payment is made directly by the Purchaser to the Sub-Contractor, such payments shall constitute a proper discharge of Purchaser's obligations for such payments to the Contractor.
- (iii) The payments will be made in the currencies quoted by the Contractor and included in the Contract unless otherwise agreed between the Parties.

- (iv) The Contractor shall furnish the detailed Billing Schedule, for each item under the scope of work of the Contract, for the approval of Purchaser, which after the approval only, will be the basis for submission of invoices for progress payments.
- (v) The Purchaser shall release the payment to the Contractor in 30 days from the date of receipt of the complete and correct invoices and relevant documents.
- (vi) All interim / progress shall be regarded as payments by way of advance against the final payment only and not as payment for work completed and shall not preclude defective / imperfect / incomplete facilities to be removed. It will not be considered as an admission by the Purchaser of the due performance of the Contract, or an part thereof by the Contractor nor shall it preclude, determines or affect in any way the powers of the Purchaser under these conditions or in any way the powers of the Purchaser under these conditions or in any way vary or affect the Contract.

16.0 LETTER OF CREDIT

- 16.1 The letter of credit for the imported and indigenous plant, machinery and equipment shall be opened by the Purchaser within 15 (fifteen) days after receipt of the Bank Guarantee for security deposit and shall allow payment against the presentation of the following documents to the Bank:
- (i). Bill of lading/Airway Bill/LR (three (3) negotiable and three (3) non-negotiable copies) or photo copies of LR in case of indigenous equipment.
 - (ii). Commercial invoice (six (6) original copies).
 - (iii). Acceptance certificate for dispatch issued by the Purchaser.
Or
Inspection waiver certificate, if any, issued by the Engineer / Purchaser's authorized representative or Contractor's / his sub-contractor's internal inspection certificate / report.
 - (iv). Packing List (ten (10) copies).
 - (v). Certificate of Origin.
 - (vi). Copy of faxintimation to the Purchaser's insurer furnishing the shipment details.
- 16.2 All bank charges outside India including confirmation charges shall be to the successful tenderer's account. Charges for counter guarantee by Purchaser's bank in respect of Standby LC or BG shall be borne by the Purchaser. The Bank charges for opening and maintaining LC will be to Purchaser's account.
- 16.3 If opening of operating letter of credit is delayed beyond the time period specified above due to reason attributable to the Purchaser, the Contract time schedule shall be extended accordingly.

- 16.4 The letter of credit shall be initially valid for a period of 30 (thirty) days more than the Delivery period for the realization of all the payments covered under the letter of credit with a provision of extension on request of successful tenderer without affecting the Work Schedule read with Clause 41.18.7 of the General Conditions of Contract. The letter of credit shall be established as per the enclosed format (to be finalized before signing of the Contract and shall be part of Contract).
- 16.5 Purchaser shall establish irrevocable letter of credit for at sight payment and unrestricted negotiation against letter of credit complying documents. The letter of credit shall be established by Purchaser within the period as specified above by a first class bank of international repute and shall be advised through successful tenderer's designated bank. The transshipment and partial shipment shall be allowed.
- 16.6 Purchaser shall extend the validity of letters of credit if so required within 10 (ten) working days of written request by successful tenderer. In case the validity of the letters of credit needs to be extended due to reasons attributable to the successful tenderer (Contractor), then the Purchaser shall extend the validity of letters of credit at successful tenderer's expense. In case the validity of letters of credit needs to be extended due to reasons attributable to Purchaser, then the Purchaser shall extend the letters of credit at its own expense.
- 16.7 The banks for establishing the letters of credit by the Purchaser and the banks issuing the bank guarantees to be submitted by the successful tenderer shall be mutually agreed upon between the parties. However, for the Purchaser, the bank is State Bank of India, Chandrayangutta.
- 16.8 Subject to the terms and conditions agreed between the parties, the letters of credit shall be subject to Uniform Customs and practice for documentary credits (2007 Revision) of International chamber of Commerce (ICC Publication No. 600).

17.0 CAPACITY OF THE TENDERER

Save as otherwise stated elsewhere, the following shall be the pre-qualifying criteria.

- 17.1 The tenderer should submit a detailed statement of similar plant, machinery and equipment supplied/built by him during the last ten (10) years or as stipulated in the tender.
- 17.2 The tenderer shall satisfy the Purchaser that he possesses the necessary and requisite technical experience, expertise and qualifications and that he has at his disposal suitable modern facilities and staff of specialized personnel to ensure that his contract work is of the best quality and workmanship, according to the latest engineering practice. The tenderer shall furnish necessary particulars in this behalf with the tender.
- 17.3 No proposal by the tenderer will be considered unless the plant, machinery and equipment named therein is manufactured by a company which has had at least five (5) years previous experience in the design and manufacture of plant, machinery and equipment of comparable type and size and/or as stipulated in the tender.

17.4 Each tenderer shall submit in his proposal a list of qualifying units. The list shall include for each unit the date of initial operation, the location, capacity and operating conditions.

17.5 Legal Character and Capacity

The tenderer shall clearly state about its legal character and capacity and satisfy the Purchaser that he is competent and authorized to submit the offer and to enter into a legally binding contract with the Purchaser. To this effect, any person giving an offer shall render documentary evidence that his signature on the offer, submitted by him, is legally binding upon himself, his firm or company, as the case may be.

17.6 Authority of Person Signing Documents

A person signing the tender or any document forming part of the Contract, on behalf of another, shall be deemed to warrant that he has authority to bind such other and if, on enquiry, it appears that the person so signing had no authority to do so, the Purchaser may, without prejudice to any other civil and criminal remedies, cancel the tender / contract and hold the signatory liable for costs and damages.

17.7 Financial Capacity

The tenderer shall produce satisfactory proof such as annual reports, solvency certificate, etc. that he is financially in a position to fulfill the contractual obligation offered to be undertaken by him. In the case of Indian tenderers, the tenderer shall also submit the Income tax clearance certificate along with the tender and or as stipulated in the tender.

18.0 SUBMISSION OF TENDER

18.1 Tenders shall be sent by registered post or handed over personally so as to reach the Purchaser before due date, time and at the place specified in the invitation to tender. They shall contain a special declaration that the tenderer agrees to hold the tender open for the period indicated in this invitation to tender.

18.2 Tenders must be submitted in four (4) copies in sealed covers, super scribing the reference number and date of opening on the covers.

18.3 Unsealed tenders, unsigned tenders, tenders which are incomplete, or otherwise considered defective, are liable to be rejected.

18.4 No tender will be received after the stipulated time and date due to any reason whatsoever.

18.5 Tenders shall be received at the office of General Manager (C & BD), Mishra Dhatu Nigam Ltd., Hyderabad-500058, India, by the date mentioned on page 1 herein and opened at the same place on the date and time mentioned on page 1 herein above. Tenderers are at liberty to be present or authorize their representatives to be present at the time of the opening of the tenders.

19.0 PERIOD OF VALIDITY OF TENDER

- 19.1 The tender and the price quoted shall be deemed to remain valid for acceptance for a period of six (6) months from the date of submission. In the event of termination of the tender process due to reasons not attributable to the successful tenderer the Purchaser shall release the Earnest Money Deposit (EMD) without interest. However, if the same pertains to the reasons attributable to the successful tenderer, the EMD of the successful tenderer shall be forfeited. In any of the cases whatsoever the Purchaser shall not be liable for any extra cost or expenses or shall not be liable to pay any claim or expenses to the successful tenderer.

20.0 LANGUAGE

- 20.1 The tender shall be submitted in the English language.

21.0 ARRANGEMENT OF TENDER

- 21.1 The tender shall be neatly arranged, plain and intelligible, or printed on white paper, with consecutively numbered pages in solid binding. They should not contain any terms and conditions, prints or otherwise, which are not applicable to the tender.
- 21.2 Insertions, postscripts, additions and alterations shall not be recognized, unless confirmed by the tenderer's signature.

22.0 EARNEST MONEY

- 22.1 The tender must be accompanied by earnest money in the form of Demand Draft or Bank Guarantee or Electronic fund transfer, in favour of the Purchaser. Tenders not accompanied by earnest money will not be considered. The earnest money shall be kept deposited for such period as may be specified for keeping the tender open. The earnest money will not earn any interest. If the tenderer after submitting his tender and during the tender's validity period, withdraws his offer or modifies the terms and conditions thereof, in a manner not acceptable to the Purchaser, or upon award of contract does not submit Security Deposit then the earnest money shall be liable to be forfeited. Earnest Money shall be kept valid for eight (8) months and will be extended till the successful tenderer submits security deposit. The Bank Guarantee and security deposit shall be provided as per the enclosed formats.
- 22.2 On the acceptance of the tender, but not earlier than the expiry date of the period for which the tender is kept open, the earnest money will be returned to the unsuccessful tenderers.
- 22.3 Should an invitation to tender be withdrawn or cancelled by the Purchaser, which it shall have the right to do at any time, the earnest money paid with the tender will be returned.
- 22.4 On the tender being accepted by the Purchaser, an agreement in respect of the Contract, will be signed and executed by and between the Purchaser and the successful tenderer in accordance with the terms of Clause 10 of the General Conditions of the Contract. The successful tenderer shall also be required to deposit, within 30 (thirty) days of the acceptance of his tender/issue of Letter of Intent/Acceptance, Security Deposit at 10% of the total Contract Price with the Purchaser in

the manner indicated in Clause 11 of the General Conditions of Contract. Should the successful tenderer, upon the acceptance of his tender, fails or refuses to duly sign the agreement or fails or refuses to furnish the security deposit within the period fixed by the Purchaser as indicated above, the earnest money shall be forfeited without prejudice to his being liable for any further loss or damage incurred in consequence by the Purchaser.

22.5 The earnest money shall be returned to the successful tenderer after the security deposit has been furnished to the Purchaser in accordance with Clause 11 of the General Conditions of Contract.

23.0 NO CLAIM FOR COMPENSATION FOR SUBMISSION OF TENDER

23.1 The tenderer whose tenders are not accepted shall not be entitled to claim any costs charges and expenses of the tender, incidental to or incurred by them, through or in connection with their submission of tenders, even though the Purchaser may elect to withdraw the invitation to tender.

24.0 INSURANCE POLICY FOR WORKMEN

24.1 The successful tenderer shall also take insurance policy for suitable amount for payment of an ex-gratia per head in case of fatal accident to the contract labour engaged by him in addition to the Workmen's Compensation Insurance Policy. As and when a fatal accident takes place, along with the workmen compensation, the Contractor is required to pay ex-gratia amount within 30 (thirty) days from the date of accident.

25.0 LOWEST TENDER MAY NOT NECESSARILY BE ACCEPTED

25.1 The Purchaser is not bound to accept the lowest or any tender or to assign reasons for its non-acceptance. The Purchaser also reserves the right to accept the tender either in whole or in part.

26.0 CONTRACT

26.1 On a tender being accepted by the Purchaser, a Contract will be signed and executed by and between the Purchaser and the successful tenderer in accordance with the terms of Clause 10 of the General Conditions of the Contract. The Purchaser and the successful tenderer will bear their respective cost incurred by them for signing the Contract.

27.0 NOTICES ON BEHALF OF PURCHASER

27.1 Notices and certificates on behalf of the Purchaser or Contractor in connection with the Contract may be given by a duly authorized officer of the Purchaser or Contractor whose name shall have been previously communicated by the Purchaser in writing.

28.0 ADDENDA TO TENDER DOCUMENTS

28.1 The Purchaser reserves the right to issue addenda to the tender documents to clarify, modify, supplement or delete any of the conditions, clauses or items stated in the tender documents issued with this invitation to tender. Each addendum issued will be distributed to each tenderer or his authorized representative or published in newspapers / web and the addendum so issued shall form a part of the original tender documents to be reviewed as required.

29.0 QUERIES/CLARIFICATIONS

- 29.1 Queries/clarifications either technical, financial or commercial, if any, that may arise should be referred by the tenderer by mail/email/fax direct to the General Manager (C& BD) Mishra Dhatu Nigam Ltd., Hyderabad-500058, India.
- 29.2 All tenderers are requested to take special note of the above procedure and observe the same strictly.

30.0 INTEGRITY PACT

- 30.1 In respect of all Contracts for procurement of capital equipment for a value exceeding Rs. 1 Crores, tenderers shall sign 'Integrity Pact' with the Purchaser in the format enclosed.

31.0 ADDITIONAL INSTRUCTIONS TO THE TENDERERS

31.1 Agency Commission:

Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in this tender but not both. Further, in case where an agent participates in this tender on behalf of one manufacturer, he is not entitled to quote on behalf of another manufacturer along with the first manufacturer for the same item.

The Seller confirms and declares to the Buyer that the Seller is the original manufacturer or authorized vendor of original manufacturer or Government sponsored/ Designated Export Agencies (applicable In the case of countries where domestic laws do not permit direct export by OEMs) of the stores referred to in this offer/ Contract/ Purchase Order and has not engaged any individual or firm, whether Indian or foreign whatsoever, to intercede, facilitate or in any way to recommend to Buyer or any of its functionaries, whether officially or unofficially, to the award of the contract / Purchase order to the Seller; nor has any amount been paid, promised or intended to be paid to any such individual or firm in respect of any such intercession, facilitation or recommendation. The Seller agrees that if it is established at any time to the satisfaction of the Buyer that the present declaration is in any way incorrect or if at a later stage it is discovered by the Buyer that the Seller has engaged any such individual/firm, and paid or intended to pay any amount, gift, reward, fees, commission or consideration to such person, party, firm or institution, whether before or after the signing of this contract / Purchase Order, the Seller will be liable to refund that amount to the Buyer. The Seller will also be debarred from participating in any RFQ / Tender for new projects / program with Buyer for a minimum period of five years. The Buyer will also have a right to consider cancellation of the Contract/ Purchase Order either wholly or in part, without any entitlement or compensation to the Seller who shall in such an event be liable to refund all payments made by the Buyer in terms of the Contract / Purchase Order along with interest at the rate of 2% per annum above LIBOR (London Inter Bank Offer Rate) (for Foreign vendors) and Base Rate of SBI plus 2% (for Indian vendors). The Buyer will also have the right to recover any such amount from any contracts / Purchase Orders concluded earlier with Buyer.

31.2 Price Negotiations

Price negotiations as such shall not be held, except in the case of negotiations with the lowest tenderer and accordingly, the tenderers shall have to submit their best Price Bids.

31.3 **Tender Documents through Website**

The tender documents are also available in the Purchaser's website www.midhani.gov.in.

31.4 **Submission of Tender**

Tender may be submitted either by Speed Post, Courier or by person. The tender shall contain a special declaration that the tenderer agrees to hold the tender open for the period indicated in this Instruction to Tenderers. No tender will be received after the stipulated time and due date, due to any reason whatsoever.

31.5 **Mode of Submission of Tender**

Tenderers are required to submit their tenders in two (2) parts, namely,

Part I: Techno-Commercial Bid with all terms & conditions-

Detailed technical specifications should be furnished along with catalogue/literature of original manufacturer and submitted separately super scribed as "Techno-Commercial Bid" (Un-priced) indicating the tender No. & due date of opening duly sealed.

Part II: Price Bid-

The priced offer/quotation should be submitted separately not along with Part I super scribed as Price Bid indicating the Tender No. & due date of opening duly sealed.

31.6 Unsealed and unsigned tenders and tenders that are incomplete or otherwise considered defective are liable to be rejected.

31.7 **Tender Opening**

A. **Techno-Commercial Bids**

After being satisfied that EMD of the tenderers have the required validity, Techno-Commercial Bids shall be accepted from the tenderers and shall be opened in the presence of authorized representatives of the tenderers who choose to be present at the time of tender opening. The comparative assessment of offers/bids received would be made on equal footing.

B. **Pre Price Bid Meeting**

Save and except otherwise elsewhere provided, a Pre Bid meeting, before submission of Price Bid, will be held with the Bidders on a date to be separately intimated after opening

of Techno Commercial bids. Upon completion of the pre price-bid meeting, price bids as specified herein below shall have to be submitted by the tenderers.

C. Price Bids

The Price Bids of only those tenderers will be opened whose Techno-Commercial Bid has been qualified for price bid opening.

The comparative assessment of offers received would be made on equal footing taking into account the financial implications for the deviations in terms and conditions.

Conditional discounts offered by the tenderers for coverage within a shorter period for early inspection/payment etc., shall not be considered at the time of evaluation of tenders.

31.8 Pre-bid conference

In case of turn-key contract(s) or contract(s) of special nature for procurement of sophisticated and costly equipment, a pre-bid conference will be held for clarifying issues and clearing doubts, if any, about the specifications and other allied technical details of the plant, equipment and machinery & commercial terms projected in the bidding document. The date, time and place of pre-bid conference shall be indicated in the bidding document.

32.0 OVERRIDING EFFECT

32.1 In case of any inconsistency or repugnancy between any provision of Instructions to tenderer and General Conditions of Contract on the same subject matter, the provisions of the Instructions to tenderers shall prevail over General Conditions of Contract and will have overriding effect over those conditions.

33.0 CONSORTIUM

33.1 If a tenderer submits his bid in consortium then they will supply copy of the consortium agreement among the members of the consortium clearly identifying their respective scope of Work, strength of the consortium members and other relevant details. In that case the members of the consortium will be jointly and severally liable to perform the entire Contract. With a view to ensure this, the bank guarantee towards Security Deposit for the entire Contract will be liable to be forfeited even for any breach or non-performance on the part of any of the consortium member.

PART VI
GENERAL CONDITIONS OF CONTRACT

TABLE OF CONTENTS

GENERAL CONDITIONS OF CONTRACT FOR PURCHASE OF PLANT, MACHINERY AND EQUIPMENT; SUPERVISORY SERVICE AND COMPLETE ERECTION SERVICES INCLUDING COMMISSIONING AND PERFORMANCE GUARANTEE

1.0	PURPOSE	06
2.0	DEFINITIONS	06
3.0	ENGINEER	09
4.0	ASSIGNING AND SUBCONTRACTING	11
5.0	SITE EXAMINATION	11
6.0	EXTENT AND SCOPE OF CONTRACT	12
7.0	CONFLICT AND INTERPRETATION OF DOCUMENTS	15
8.0	LANGUAGE	15
9.0	CORRESPONDENCE	15
10.0	SIGNING OF THE CONTRACT AGREEMENT	16
11.0	SECURITY DEPOSIT	16
12.0	GENERAL DIRECTION OF THE WORK	17
13.0	REPRESENTATION, WARRANTIES AND REPLACEMENTS	17
14.0	RESPONSIBILITY FOR PERFORMANCE OF CONTRACT	19
15.0	TYPE QUALITY OF MATERIALS AND WORKMANSHIP	20
16.1	COMMISSIONING AND OPERATIONAL SPARES, SPECIAL MAINTENANCE TOOLS AND CONSUMABLES	22
16.2	Commissioning Spares:	22
16.3	Maintenance Spares:	22
16.4	Special Maintenance Tools	22
16.5	Consumables	23
17.1	CONTRACT DRAWINGS, DOCUMENTS AND MANUALS	23
17.2	Scope	23
17.3	Drawing Format	24
17.4	Numbering System	25
17.5	Working documents and drawings list with schedule	25
17.6	Foundation outline drawings and load data:	26
17.7	Equipment details and other drawings and documents	27

17.8	Bills of Materials:	28
17.9	Assembly and Erection Instructions and Drawings	28
17.10	Final Drawings	28
17.11	Spares List, Maintenance and Operational Manuals	30
17.12	Approval of drawings	31
17.13	Drawings/ Documents at delivery of Equipment	32
17.14	Drawings and Documents at Completion of Work:	32
18.0	CONTRACT PRICE	33
19.0	ASSIGNING OF CLAIMS AND INTEREST IN THE CONTRACT	34
20.0	INSPECTION AND TESTS DURING MANUFACTURE	34
21.0	TESTS ON COMPLETION	36
22.0	REJECTION OF DEFECTIVE PLANT, MATERIALS AND WORKMANSHIP	37
23.1	PACKING, PROTECTIVE PAINTING, MARKING AND SHIPPING	37
23.2	PACKING AND PROTECTIVE PAINTING:	37
23.3	MARKING:	39
23.4	SHIPPING	40
23.4.	NOTICE TO PURCHASER AND ACCEPTANCE FOR SHIPMENT	41
24.0	STORAGE	41
25.1	PASSAGE OF RISK AND INSURANCE	42
25.2	Passage of Risks	42
25.3	Insurance	42
26.0	TIME FOR COMPLETION	44
27.0	DELIVERY TIME, DELAYS AND EXTENSION OF TIME	45
28.0	PROGRESS REPORTS	46
29.0	DEPUTATION OF EXPERTS BY THE CONTRACTOR	46
30.1	SUPERVISION OF ERECTION, START-UP & COMMISSIONING AND COMPLETE INSTALLATION, ERECTION, START-UP AND PUTTING INTO COMMISSION	47
30.2	Supervision of Erection, Start-up & Commissioning:	47
31.0	PERFORMANCE GUARANTEE TESTS AND PROVISIONAL ACCEPTENCE	50
32.0	DEFECT LIABILITY PERIOD AND FINAL ACCEPTENCE	51
33.0	CHANGES IN THE WORK	53
34.0	OWNERSHIP OF DRAWINGS AND SPECIFICATIONS	54
35.0	FORCE MAJEURE	54

36.1	TEMPORARY SUSPENSION	55
36.2	Temporary Suspension during manufacture and Installation	55
37.1	PATENT INFRINGEMENT AND INDEMNITY	56
37.2	Patent Infringement	56
37.3	Indemnity	57
38.0	ENVIRONMENT	57
39.0	REMEDIES OF PURCHASER	58
40.0	ARBITRATION	58
41.0	ADDITIONAL CONDITIONS FOR COMPLETE ERECTION OF EQUIPMENT	59
41.3	Installation	59
41.4	Facility to Purchaser’s Engineers	60
41.5	Programme and Particulars of work and Progress Reports	60
41.6	Contractor’s Agent and Personnel	60
41.7	Working Hours	60
41.8	Supply of Installation Equipment, Materials and Labour	61
41.9	Delay in Obtaining Materials from Purchaser	61
41.10	Purchaser’s Installation and Transportation Equipment	61
41.11	Return of Surplus Materials	61
41.12	Accident or Injury to Workmen	62
41.13	Compliance with Statutory and other Regulations	62
41.14	Payment of Taxes for Foreign Personnel	62
41.15	Work Permits, Passports etc.	62
41.16	Travelling Expenses	63
41.17	Labour Rules	63
41.18	Time of Completion for Installation Work and Delays	66
41.19	Safety, Watching and Lighting	68
41.20	Security Regulations	69
41.21	Care of Work	69
41.22	Damage to Persons or Property	69
41.23	Extraordinary Traffic	69
41.24	Co-operation with other Contractors	69
41.25	Inspection of other Contractor’s Works	70
41.26	Vesting of Constructional / Erection Plant etc.	70

41.27	Irremovability of Constructional/Installation, Materials etc.	70
41.28	Removal of Constructional/Installation Materials	70
41.29	Purchaser not liable for Loss or Injury to Construction/Erection Plant	70
41.30	Work in or around an Operating Plant	71
41.31	Site to be cleared on Completion of Work	71
41.32	Possession Prior to Completion	71
41.33	Withholding Payment	71
41.34	Termination of Contract for Equipment Erection	71
41.35	Waiver	74
41.36	Valuation on Determination	74
41.37	Payment after Termination	74
41.38	Jurisdiction	74
42.0	CONSTRUCTION OF CONTRACT	74
43.0	PENALTY FOR USE OF UNDUE INFLUENCE	75
44.0	GENERAL	75
45.0	LIMITATION OF LIABILITY	75
46.0	LIABILITY OF GOVERNMENT OF INDIA	76

1.0 PURPOSE

- 1.1 This document shall accompany and be a part of the Contract entered into by Mishra Dhatu Nigam Limited, Telangana for the provision of materials, plant, machinery, equipment and services required for the effective implementation of the Project.
- 1.2 The purpose of this document is to establish general conditions for the purchase of plant, machinery and equipment, erection, supervision, and complete installation and erection services which shall be binding upon all Contractors. The Contractor shall, not limited to the following, undertake design and engineering, and supply of plant, machinery and equipment, intermediate storage and handling of electrics and automation, erection, installation and automations, supervision of erection of facilities, testing, pre-commissioning, start up and commissioning and demonstration and establishment of performance guarantee parameters of the facilities. These general conditions are complementary to the Contract, Tender documents, Contract Drawings and Technical Specifications, etc. and anything appearing in one shall be construed as appearing in the other, unless specifically exempted.

2.1 DEFINITIONS

The following terms or expressions, as used in these “General Conditions of Contract” and in the appertaining invitation to tender and Tender Specification, shall have the meanings defined hereunder:

“**Approval of the Purchaser**” shall mean the written / stamped approval by the Purchaser or Engineer of a document, a drawing or other particulars or matters in relation to the Contract.

“**Base date of the Contract**” shall mean the date seven (7) days before last date of submission of price bid.

“**Bolt(s)**” shall include nuts and washers.

“**Cold Test**” means the no load test as per Technical Specification.

“**Contract**” shall mean and include the contract signed by and between the Purchaser and the Contractor, the invitation of tender, Contract/Technical Specifications, the instruments to tender, the tender, letter of intent, acceptance of tender, contract drawings, contract price and particulars hereinafter defined in respect of the supply and delivery of materials and for the performance of services within the scope of the Work of the entire Project or envisaged for the extension or expansion thereof and these general conditions and such special conditions that may be added and agreed to, and shall also include any agreement signed by and between the Purchaser and the Contractor in terms of Clause 10 hereof.

“**Contract Drawings**” shall mean the designs, plans drawings, sketches and details which have been supplied by the Contractor for the execution of the Contract and approved by the Purchaser.

“**Commissioning**” means the successful operation of the plant, machinery and equipment under no load and load conditions and production of first specified quantity as per the Technical Specifications, including execution of the Performance Tests, as per the Technical Specification.

“Contractor” shall mean the Tenderer whose tender has been accepted by the Purchaser and shall include his/its/heirs, executors, administrators, legal representatives, successors and assign approved by the Purchaser.

“Contract Price” shall have the meaning as provided in Clause 18 of General Conditions of Contract.

“Contract Specifications”/ “Technical Specification” shall mean the specifications, detailed design statements of technical data, performance characteristics and all such particulars mentioned as such in the Contract.

“Defect Liability Period” means the period of validity of the guarantees given by the Contractor commencing from the date of issuance of the PAC during which the Contractor is responsible for the defects with respect to the Work as provided in Clause 32 hereof.

“Delivery” shall mean delivery by the dates/period specified in the Contract for supply of plant, machinery & equipment and completion of services, wherever applicable which are found acceptable by the Purchaser and not the submission of materials which are not to the required standard or which are not delivered by due dates, and in case of erection work, delivery shall mean the approval by the Purchaser of the said erection work, within the period prescribed for such completion.

“Dimensions” shall mean the extent of a line, area or volume. They are to be based on the metric system. i.e.

For length measurement, in km-

- 1 km = 1000 m
- 1 m = 100 cm
- 1 dcm = 10 cm
- 1 cm = 10 mm
- For surface measurement, in sq.m
- For volume measurement, in cu.m.

“Effective Date” shall mean the date of signing of the Contract.

“Engineer” as used herein shall mean M/s. Mishra Dhatu Nigam Limited having its registered office at P.O: Kanchanbagh, Telangana-500058, India, or such other engineer or engineers as are designated by the Purchaser.

“Final Acceptance of the Works” shall mean the Final Acceptance Certificate (FAC) to be issued at the end of successful completion of the Defect Liability Period.

“FOR Site” shall mean delivered, duly packed, free of expense to Purchaser, on board a road transport vehicle, unloading at the Purchaser’s stores at the plant Site or the erection/Installation Site.

“FOB port of Shipment” shall mean delivered, duly packed, free of expense to Purchaser, placed on board a transport vessel at the port of Shipment.

“Guaranteed Performance” or **“Specified Performance”** or **“Performance Guarantee”** means attaining the range of values specified in the Technical Specification, subject to other terms and conditions of the Contract.

“Hot Test” means the production of the first specified quantity as provided in the Technical Specification.

“Inspector” shall mean any person or agency nominated by or on behalf of the Purchaser to inspect supplies, materials, plant, machinery and equipment or work under the Contract.

“Installation” or **“Erection”** shall mean the putting up under the particular contract of structures and/or installation and erection on turnkey basis of plant, machinery and equipment with all accessories supplied and will include supervision services for installation, erection, start up and commissioning and any service which the Contractor is required to perform for the due fulfilment of his contract at the Site with his own and/or other staff or labour made available to him and with the aid of his own and/or other staff, labour and equipment and auxiliary materials placed at his disposal.

“Instructions to Tender” shall mean and/or include the enquiry for the supply, delivery, installation including foundations and civil engineering work where necessary, and starting up of the plant or plants, or performance of service or services in connection with the Project or for the planned extension or expansion thereof.

“Purchaser” as used herein shall mean Mishra Dhatu Nigam Limited, incorporated under the Companies Act, 1956, and having its registered office at P.O.: Kanchanbagh, Telangana-500058, India, and shall include its successors and assigns in office.

“Project” shall mean the project or scheme in respect of the Purchaser’s new venture and/or facilities including erection/installation, training and all related and incidental services in relation thereto.

“Provisional Acceptance of the Works” or **“PAC”** shall mean the Provisional Acceptance Certificate (PAC) to be issued after the successful completion of the PG test.

“Performance Test” or **“PG Test”** means such tests to be carried out as per Technical Specification and Clause 31 hereof, to demonstrate the achievement of the Guaranteed Performance before the Provisional Acceptance Certificate is issued.

“Schedule/ Work Schedule” shall mean the accepted time schedules between the Contractor and the Purchaser forming a part of the Contract and shall indicate the Delivery and the major activities in the completion of the Work.

“Site” means the land and other places on, under, in or through which the plant, machinery and equipment supplied by the Contractor are to be erected, installed and commissioned and/or services under the Contract are to be executed or carried out, and any other lands or places which are, or have been provided by the Purchaser.

“Sub-Contractor(s)” shall mean a person, firm or corporation who directly or indirectly supplies services or materials to a Contractor or to Purchaser on behalf of the Contractor and to whom the

execution of any part of the Project including preparation of any design or supply of any plant, machinery and equipment is sub contracted directly or indirectly by the Contractor and includes its successors or permitted assignees.

“**Tenderer**” shall mean the person, firm or corporation submitting a tender against the invitation to tender and shall include his/its heirs, executors, administrators, legal representatives, successors and permitted assign.

“**Tender Specification**” shall mean the design, data drawings, schedules, broad equipment, characteristics and other technical details furnished with the Invitation to Tender for the purpose of submitting the offer by the Tenderer.

“**Time**” shall be reckoned by months, days and hours, the period of a month being equivalent to the calendar month according to the Gregorian calendar.

“**Test(s)**” shall include all test or tests made, without releasing the Contractor of his liability, as may be considered necessary by the Purchaser or its duly authorized representative, in order to ascertain the quality and efficiency of the contract Work or parts thereof and performance of the plant, machinery and equipment and material tests in particular.

“**Plant, Machinery, Equipment, Facility, Materials, or Stores** ” or “**Work**” shall mean all or any part of the materials, equipment, drawings, supervision of erection, commissioning, Installation and start up and other services required for the design, supply and execution of the work which is either specially required by the Contractor or is required in connection with such services and such materials or which is within the scope of the Contract and not specifically excluded by the contract from the materials and services which the Contractor is obligated to furnish under the Contract or implied from Tender Specifications, drawings and schedules thereto annexed or incidental thereto.

“**Weight**” shall mean the calculation of a load. It shall be stated in metric system using Grams and Kilograms, Specifically the weight unit “**Ton**” shall mean ‘metric ton’ equal to 1,000 kilograms.

Words importing persons shall include firms, companies, corporations, associations or body of individuals whether incorporated, registered. Words importing masculine gender or singular number shall also include the feminine gender and plural number and vice versa where the context so requires or permits.

Tender Drawings-The term “**Tender Drawings**” shall mean such drawings, plans, sketches and details as are issued together with the Purchaser’s tender specification for the purpose of preparing tenders.

3.0 ENGINEER

3.1 Powers of Engineer:

To ensure the proper execution of the Contract, the Engineer reserves the right of:

- (a) supervision and direction of the Contract,

- (b) directing or amending the sequence of deliveries of plant, machinery and equipment and other services,
- (c) directing the application of Contractor's labour and machinery forces to any portion of the work as required,
- (d) ordering the increase or decrease of the size of the labour and machinery and to resolve issues which arise in the execution of the Contract,
- (e) rejecting any or all work and materials, plant, machinery and equipment which do not conform to the Contract,
- (f) stopping the work of execution whenever such stoppage may be necessary.

3.2 Duties of Engineer

- (a) to inspect the plant, machinery, equipment and materials,
- (b) to follow up and monitor proper delivery of the plant, machinery, equipment and materials to Site as per the specifications and drawings and as per the sequence required,
- (c) to watch and supervise the Works,
- (d) to inspect and test any materials to be used or workmanship employed in connection with the Works.

Any instructions or approvals given by Engineer to the Contractor in connection with the Contract shall bind the Contractor.

3.2.1 The Engineer shall have no authority to relieve the Contractor of any of his duties or obligations under the Contract except as expressly provided hereunder or elsewhere in the Contract, to order any work involving delay, any extra payment by the Purchaser and any variation in the Works.

3.2.2 Failure of the Engineer to reject any plant, equipment, materials, workmanship etc., or to disapprove any work or materials shall not prejudice the Purchaser to reject such plant, machinery and equipment, materials, workmanship etc., or to disapprove such work or materials and to order re-supply of such plant, machinery and equipment and materials or to pull down, remove or break up such disapproved work at the cost of the Contractor, provided the Contractor fails to comply with the direction and requirement of the Purchaser therefor. The decision, opinion, certificates or valuation of the Engineer/Purchaser in respect of any matter under this Clause shall be final, binding and conclusive.

3.2.3 If the Contractor is dissatisfied by reason of any decision, opinion, direction, certificate or valuation of the Engineer, he shall be entitled to refer the matters to the Purchaser who shall thereupon confirm, reverse or vary such matters based on its sole discretion.

4.0 ASSIGNING AND SUBCONTRACTING

4.1 Assigning: The Contractor shall not transfer or assign the Contract or any part thereof or any benefit or interest therein or there under without the written consent of the Purchaser. In the event of the Contractor contravening this condition, the Purchaser shall be entitled to place the Contract elsewhere on the Contractor's account and at the Contractor's risk and cost and that the Contractor shall be liable for any loss or damage which the Purchaser may sustain in consequence or arising out of such replacing of contract. This shall not relieve the Contractor of any responsibility under this Contract.

4.2 Sub-contracting: The Contractor shall not sub-contract the whole or any part of the Works without the prior Approval of the Purchaser except as stipulated otherwise in the Contract and/or for purchases from approved vendor's list. The list of approved vendors forming a part of the Contract Specification specifies major items of supply or services and indicates name of approved vendors against each such items. Such approval if given shall not establish any contractual relationship between the Sub-Contractor and the Purchaser and shall not relieve the Contractor of any responsibility, liability or obligation under the Contract and the Contractor shall be solely responsible for the acts, defaults and neglects of any sub-contractor or his agents, servants or workmen. In the event of the Contractor contravening this condition, the Purchaser shall be entitled to place the Contract elsewhere on the Contractor's account and at his risk and cost and then the Contractor shall be liable for any loss or damage which the Purchaser may sustain in consequence or arising out of such replacing of the Contract. This shall not relieve the Contractor of any responsibility under this Contract. The Contractor may from time to time propose any addition to approved vendors list to the Purchaser for its approval. The Contractor shall submit any such addition of vendors to the Purchaser along with sufficient details of their capability, past records, contact details etc. The Purchaser may approve/ comment on the list of such vendors.

4.3 Notwithstanding the approval given by the Purchaser for sub-contract, it shall continue to be obligatory on the part of the Contractor to provide to the Purchaser all drawings, specifications, technical data, detailed design, performance characteristics etc. from his Sub-Contractors.

4.4 In the event of the Purchaser agreeing for the sub-suppliers/Sub-Contractors proposed by the Contractor, it shall be obligatory on the part of the Contractor to deploy their technical experts in the works of the sub-suppliers/Sub-Contractors to direct and exercise control over quality of plant, equipment, materials and workmanship during the manufacture. However, the same shall not relieve the Contractor of any of his obligations, duties or responsibilities under the Contract.

4.5 The Purchaser shall have the right to specify the brand name/s of the standard bought out items in the Contract and the Contractor shall procure such items from those branded name/s. This shall, however, not relieve the Contractor of his other obligations under the Contract.

5.0 SITE EXAMINATION

- 5.1 The Contractor shall have visited, inspected and examined the Site of the Work and its surroundings and ascertained there from all conditions and information pertaining to the Work and shall satisfy itself prior to the preparation and submitting of the tender all such information and conditions including but not limited to the various facilities available at the Site for the receipt, storage and custody of the materials, as to the nature of the ground and sub soils, the form and the nature of the Site, the quantities and the nature of the Work and facilities necessary for transportation, erection, installation, testing and commissioning of the works and the means of access to the Site and in general shall obtain all necessary information as to the working conditions, risk, contingencies and other circumstances which may influence or affect the tender and performance of the Work. No claim by the Contractor shall be permitted or admissible arising from non-fulfilment of the above.
- 5.2 The Contractor shall also be deemed to have ascertained all special local and national standards, regulations, customs etc, which may affect his design, schedule, choice of supervisory personnel, etc. prior to the preparation of his tender. Typical of such information may include but not limited to the average Indian heights-of-eye (for design of control desks and pulpits) special restrictions or considerations, details of facilities to be expended, modified, or duplicated details of materials available in India etc. No claims for extra payment shall be permitted or admissible on these accounts.

6.0 EXTENT AND SCOPE OF CONTRACT

- 6.1 Extent of Contract: The Work comprises of design and engineering, manufacture and supply of plant, machinery and equipment, storage, erection work (including associated civil & structural works as specified), testing, start-up and commissioning, demonstrating and establishing performance guarantee parameters of the work, including the facilities, materials and stores and guarantees thereof and the provision of all construction facilities including but not limited to water, power, utilities, yard lighting, sheds, roads, transport, handling and shifting, labour, materials, constructional plant, tools and tackles and all the temporary works required for successful completion of the Work. The Contractor shall be responsible for proper housekeeping and area cleaning of the Work to ensure safe working practices as well as deployment of watch and ward at his Work-Site.
- 6.2 The Contractor shall carry out and complete the Contract in every respect as per the directions of and to the satisfaction of the Purchaser/Engineer in accordance with the Contract. Further, during the course of the execution, the Purchaser/Engineer from time to time shall discuss and issue necessary instructions to the Contractor. The same shall include the following:
- 6.2.1 Revisions and modifications in the order of the delivery of the plant, machinery and equipment, materials, changes in the place of inspection or additions and modifications of the tests to be conducted.
- 6.2.2 Changes in the number of copies of the drawings to be submitted.

- 6.2.3 Any discrepancy in the drawings or between the schedule or quantities and/or drawings and/or specification.
 - 6.2.4 The removal from the Site of any materials brought thereon by the Contractor and the substitution of any other materials therefor.
 - 6.2.5 Pull down, removal or break-up and/or re-execution of any Works executed by the Contractor which are not in accordance to the Contract.
 - 6.2.6 The dismissal from the Works of any person employed thereupon.
 - 6.2.7 The opening up for inspection any Work covered up.
 - 6.2.8 The rectifying and making good of any defects.
 - 6.2.9 The inspection and carrying out of tests of materials, plant, machinery and equipment and finished Work on Site.
 - 6.2.10 Deducting and recovering any amounts, in respect of defective plant, materials, labour and finished work for which payments had been made, from any amounts due to the Contractor.
- 6.3 The Contractor shall forthwith comply with and duly execute any work comprising such Engineers' instructions, provided always that verbal directions and explanations given to the Contractor or his agents/representatives upon the work by the Engineer shall, if involving variation, be confirmed in writing by the Contractor within ten (10) working days and if not dissented by the Engineer in writing within a period of ten (10) working days from the date of receipt of such confirmation in writing, such instructions shall be deemed to be the Engineer's instructions within the scope of the Contract.
- 6.4 If work is transferred from the jurisdiction of the Purchaser to any successor, while the Contract is in subsistence, the Contract shall be binding on the Contractor and the successor in the same manner and take effect in all respects as if the Contractor and the successor were parties thereto from the inception and then corresponding office of the competent authority of the successor will exercise the same powers and enjoy the same authority as conferred to the Purchaser under the original Contract entered into and the engineer so appointed shall have the same powers as envisaged in the Contract.
- 6.5 **Contractors Responsibilities:**
- (i) The Contractor shall carryout scope of facilities as specified in the scope of Work hereof including design and engineering; civil engineering work, if agreed between the parties; dismantling, if any, of existing building, structures and equipment; modification / diversion, if any, of utility / services; fabrication and supply of steel structures; manufacture (including associated purchases and / or sub-contracting as per the terms and

conditions of the Contract) and supply of plant, machinery and equipment and refractories; inland transportation; intermediate storage; insurance as agreed herein and handling; erection work; testing; pre-commissioning; start up and commissioning and demonstration and establishment of performance guarantee parameters of the plant, machinery and equipment with due care and diligence in accordance with the Contract.

- (ii) The Contractor shall be deemed to have entered into this Contract on the basis of a proper examination of the data relating to the facilities (including any data as to boring tests) provided by the Purchaser, and on the basis of information that the Contractor could have obtained from a visual inspection of the Site and of other data readily available in relation thereto prior to bid submission. The Contractor acknowledges that any failure to acquaint itself with all such data and informed shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the facilities.

The Contractor shall satisfy himself regarding the accessibility to Site and existing roads, feasibility of taking materials / equipment to Site and availability of Labour and local conditions.

- (iii) The Contractor shall acquire permits, approvals and / or licenses that are necessary for the performance of the Contract. The necessary statutory fees for such permits, approvals and / or licenses are included in the Contract Price.
- (iv) The Contractor shall comply with Indian laws that may be applicable and that may come into force during currency of the Contract that binds upon the Contractor. The Contractor shall indemnify and hold harmless the Purchaser from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the contractor or its personnel, including the Sub-Contractors and their personnel.

6.6 The Contract shall be governed by the law for the time being in force in the Republic of India.

6.7 In case of demise or dissolution or bankruptcy or insolvency of the Contractor or if the Contractor causes or suffers any receiver to be appointed to his business or any assets thereof or compound with his creditors, or being a corporation commence to be wound up, not being a member's voluntary winding up for the purpose of amalgamation or reconstruction, or carry on its business under a receiver for the benefits of its creditors or any of them, the Purchaser shall be at liberty:

- (i) to terminate the Contract forthwith upon coming to know of the happening of any such event as aforesaid by notice in writing to the Contractor or to the receiver or liquidator or to any person in whom the Contract may become vested.

Or

- (ii) to give such receiver, liquidator or other person the option of carrying out the Contract subject to his providing a guarantee up to an amount to be agreed for the due and faithful performance of the Contract.

7.0 CONFLICT AND INTERPRETATION OF DOCUMENTS

- 7.1 In case conflicting statements or directive should occur among the contract documents, it shall be the responsibility of the Contractor to notify the Purchaser, with a copy sent concurrently to the Engineer, Immediately in writing and obtain instructions from the Purchaser to eliminate the conflict.
- 7.2 The Contractor shall notify the Purchaser, with a copy sent concurrently to the Engineer promptly of any discrepancies, omissions or doubts it may have, regarding drawings, specification or other documents. Noted or calculated dimensions shall always be followed. Drawings shall not be scaled without the authorization of the Purchaser or Engineer. Such discrepancies, omissions or doubts shall be eliminated upon instructions from the Purchaser based on discussions between the parties.

8.0 LANGUAGE

The Contract, all correspondence among the Purchaser, the Engineer and the Contractor and title and written notations on drawings shall be in the English language.

9.0 CORRESPONDENCE

- 9.1 All correspondence by the Contractor pertaining to financial, commercial and technical matters and as may be specifically requested by the Purchaser and/or the Engineer shall be addressed to the Purchaser. Copies of all correspondence pertaining to technical matters shall be sent concurrently to the Engineer. Similarly all correspondence by the Purchaser to the Contractor shall made to the following address

- 9.2 The Contractor designates the following foreign address:[●]

- 9.3 The Contractor designates the following address in India: [●]

- 9.4 The Purchaser designates the following address:

Mishra Dhatu Nigam Limited,
(A Government of India Enterprise)
P.O. Kanchanbagh
Telangana-500058, India

- 9.5 The Engineer designates the following address:

Mishra Dhatu Nigam Limited,
(A Government of India Enterprise)
P.O. Kanchanbagh
Telangana-500058, India

9.6 The Inspector designates the following address:

Mishra Dhatu Nigam Limited,
(A Government of India Enterprise)
P.O. Kanchanbagh
Telangana-500058, India

10.0 SIGNING OF THE CONTRACT

On the tender being accepted by the Purchaser, a Contract will be signed and executed by the Purchaser and the successful tenderer. All costs, charges and expenses of and incidental to the execution of the said agreement shall, in so far as they are incurred in India, be borne by the Purchaser, and those that are incurred in the Contractor's country shall be borne by the Contractor, provided however, if both parties incur expenses in India, they shall be borne equally between the parties.

11.0 SECURITY DEPOSIT

11.1 The Contractor shall be required to deposit, within 30 (thirty) days of signing of Contract, Security Deposit of 10% of the Contract Price in favour of the Purchaser in one of the following forms:

- a) Bank guarantee issued from State Bank of India or any Indian Scheduled bank payable at India.
- b) Bank guarantee issued by any foreign bank and payable at any Indian Scheduled Bank in India.
- c) Demand draft of any scheduled Bank.

The Bank guarantee from an Indian Scheduled Bank shall be countersigned by the State Bank of India whereby the State bank of India will undertake full responsibility to indemnify the Purchaser in case of default. This security deposit shall be in relation to the scope of work till the completion of installation and commissioning of the plant, machinery and equipment and issuance of PAC upon successful completion of the PG Test. The bank guarantee for the security deposit shall be returned to the Contractor as soon as the PG Test is successfully completed to the satisfaction of the Purchaser.

The Contractor shall be required to deposit on the date of the issuance of PAC, security deposit of 10% of the Contract Price for the guarantee period till the issuance of the FAC i.e. successful completion of the Defect Liability Period, in favour of the Purchaser in one of the following forms:

- a) Bank guarantee issued from State Bank of India or any Indian Scheduled bank payable at India.
- b) Bank guarantee issued by any foreign bank and payable at any Indian Scheduled Bank in India.
- c) Demand draft of any scheduled Bank.

The Bank guarantee from an Indian Scheduled Bank shall be countersigned by the State Bank of India whereby the State bank of India will undertake full responsibility to indemnify the Purchaser in case of default. The Bank Guarantee shall be returned to the Contractor as soon as the FAC is issued or, on the expiry of 12 (twelve) months from the date of issuance of PAC whichever is later.

- 11.2 The security deposit shall be for the due and faithful performance of the Contract and shall have to remain valid and binding notwithstanding such variations, alterations or extensions of time as may be made, given, conceded or agreed to between the Contractor and the Purchaser under these general conditions or otherwise.
- 11.3 The security deposit furnished by the Contractor will be subject to the terms and conditions of the Contract finally concluded between the parties and the Purchaser will not be liable for payment of any interest on the security deposit.
- 11.4 Should the extent or object of the Contract be altered during the execution of the Contract in such a way as to affect an increase or reduction of the Contract Price by more than 10% (ten per cent), then the security deposit shall be increased or reduced accordingly. The provisions of Clause 11.1 to Clause 11.3 above shall apply in such cases.
- 11.5 If the Contractor is a Consortium then the Bank Guarantee will be furnished by the lead member of the Consortium for the Contract Price and for the entire scope of Work and services to be performed. In the event of failure of any one consortium member, the Bank Guarantee given by the lead consortium member will be liable to be encashed. This provision is to enforce the joint and several liability agreed by the members of the Consortium.

12.0 GENERAL DIRECTION OF THE WORK

- 12.1 The Contractor shall obtain instructions for carrying out the Work pertaining to his Contract from the Purchaser or its authorized representative without causing any disruption in the performance of the Work.
- 12.2 The Contractor shall be under obligation to comply with written instructions given by the Purchaser or its authorized representative. In the event that the Contractor should consider that such an instruction is harmful to the Contractor's interests, he may object to the same in writing and the same shall be decided by the Purchaser or its authorized representative at its sole discretion; if within ten (10) working days from the receipt of the instruction the Contractor has not objected to it, he shall forfeit his right to do so at a later date.
- 12.3 The Contractor shall take care of the progress of the work through a qualified representative. Any instructions given to such representative shall be considered as having been issued directly to the Contractor.

13.0 REPRESENTATION, WARRANTIES AND REPLACEMENTS

- 13.1 The Contractor represents and warrants to the Purchaser that:
- 13.1.1 The design of all plant, machinery and equipment will be proven and of the latest and best type as developed by recent experience and that the plant, machinery and equipment shall be capable, under normal use, operation and maintenance, of accomplishing the purposes for which it is supplied as per Contract Specifications.
 - 13.1.2 The plant, machinery and equipment will comply with the Contract Specifications, drawings and other description furnished thereof by the Purchaser or the Contractor as the case may be as per the Contract.
 - 13.1.3 The materials, workmanship, fabrication of the plant, machinery and equipment will be of high quality in all details as per Contract Specifications and conforming to the latest relevant standards and as prevailing on the Base Date of the Contract where the same has not been specified.
 - 13.1.4 The plant, machinery and equipment supplied by the Contractor when erected, installed and commissioned at Site will constitute a complete and efficient functioning unit, capable of operation at the rate and capacity set forth, if any, in the Contract Specification.
 - 13.1.5 The plant, including any extras, will in all respects comply with the specification therefor, and the specifications for any such extras, and the representations and warranties set forth herein.
 - 13.1.6 The Contractor at the time of delivery to the Purchaser of the plant, machinery and equipment will own the same free and clear of all liens and encumbrances.
- 13.2 The Contractor shall, at his own expense, upon written demand by the Purchaser promptly repair or replace free to the Purchaser at Site any part comprising the plant machinery and equipment supplied by the Contractor, within a period of twelve (12) months from the date of the Provisional Acceptance Certificate issued upon successful completion of the PG Test:
- 13.2.1 Which may not comply with the specification thereof and the representations and warranties set forth herein; or
 - 13.2.2 Which may be of defective or incorrect design; or
 - 13.2.3 Which under normal and proper use and maintenance as per operation & maintenance manual proves deficient in performance or defective in workmanship or materials.
- 13.3 If the Contractor fails to so repair or replace the plant, machinery and equipment within reasonable time as may be determined by the Purchaser, the Purchaser may repair or replace the same at the Contractor's risk and expense without prejudice to any other rights which the Purchaser may have against the Contractor. Prior to taking remedial action, the Purchaser will give fifteen (15) days' notice to the Contractor to review the situation and advise steps to be

taken. Failure to reply in fifteen (15) days after the receipt of notice by Contractor shall constitute authority for the Purchaser to proceed with the repairs or replacements.

- 13.4 All repairs and replacements carried out by the Contractor to rectify defects shall be made in compliance with the Contract Specification and shall be made to the satisfaction of the Purchaser. The part of the plant, machinery and equipment which is so repaired or replaced shall be guaranteed for an additional year as shall any portion of the Work which might have been affected by such defect. The maximum guarantee for repaired or replaced part shall be twenty four (24) months from the date of commissioning.

The guarantee shall not cover:

- fast wearing parts & consumables, where the normal life expectancy is less than the guarantee period.
- Modifications / alterations performed by the Purchaser during guarantee period without the consent of the Contractor. However, the Purchaser is allowed to take action in case of exigency with intimation to the Contractor.

14.0 RESPONSIBILITY FOR PERFORMANCE OF CONTRACT

- 14.1 **General:** The Contractor is to be entirely responsible for the due performance of the Contract in all respects according to the intent and meaning of the drawings, specifications and all other documents referred herein. Any approval which the Purchaser/Inspector/Purchaser's authorised representative may have given in respect of the stores, materials or other particulars and the work or the workmanship involved in the Contract (whether with or without test carried out by the Contractor or the Purchaser) shall not bind the Purchaser, and notwithstanding any approval or acceptance given by the Purchaser/Inspector/Purchaser's authorized representative, it shall be lawful for the Purchaser to reject the materials on or after arrival at Site, if it is found that the materials supplied, erection, supervision/erection work carried out by the Contractor are not in conformity with the terms and conditions of the Contract in all respects.
- 14.2 **Contract:** The Contractor shall commence the Work as stipulated in the Contract and in default thereof, the Earnest Money Deposit and/or the Security Deposit amount furnished by the Contractor shall be forfeited and the acceptance of the Tender shall be considered as withdrawn at the cost of the Contractor. Moreover, the Contract will be terminated and the Contractor will be liable for debarring from participation in the Purchaser's tenders for a period of 2 (two) years.
- 14.3 **Responsibility for Completeness:** Any materials plant, machinery and equipment and services which may not be specifically mentioned in the Contract Specifications or drawings but which are necessary and essential for carrying out the Contract works under the Contract as detailed in the Contract Specification for achieving performance guarantees in accordance with the Contract Specification are to be provided for and rendered by the Contractor without extra charge, and the plant, machinery and equipment must be complete in all details, to ensure the specified and guaranteed performance.

14.4 **Co-operation with other Contractor:** The Contractor shall co-operate with the Purchaser's other contractors at all stage of the Work and exchange all relevant and necessary technical information with the Purchaser in relation to the effective and successful implementation of the Contract to avoid unnecessary duplication of Work and to achieve coordinated work during erection, Installation and commissioning. No remuneration shall be claimed from the Purchaser for such technical co-operation. If any of the Contractor's work depends for proper execution or results upon the works of any other Purchaser's contractor, the Contractor shall inspect and inform the Purchaser of any defects found in such works that render it unsuitable for such proper execution or results, for the Purchaser to take remedial action.

14.5 Neither party shall be liable to the other for any loss arising out of any other indirect or consequential damages that may be suffered by the other.

15.0 TYPE QUALITY OF MATERIALS AND WORKMANSHIP

15.1 The Contractor shall be deemed to have carefully examined and to have knowledge of the general and other conditions, specifications, schedules, drawings, etc. forming part of the Contract, and also to have satisfied himself as to the nature and character of the work to be executed and, where necessary, of the Site conditions and other relevant matters and details. Any information thus had or otherwise obtained from the Purchaser shall not in any way relieve the Contractor from his responsibility for civil works, if agreed to be undertaken herein, supplying the plant, machinery and equipment and executing the work in terms of the Contract, including all details and incidental works and supply of all accessories or apparatus not specifically mentioned in the Contract but necessary for ensuring complete Installation and efficient working of the plant and equipment as per the Contract Specification. If he shall have any doubt as to the meaning of any portion of the Contract, he shall, before signing it set forth the particulars thereof and submit them to the Purchaser in writing in order that such doubt may be removed.

15.2 The contract work shall be as specified in the Contract Specification and of the best quality and workmanship according to the latest engineering practice at the time of the award of the Contract and shall be manufactured from materials of the best quality or highest class for their purpose. They shall be designed, manufactured, supplied and, if required, erected and maintained until their acceptance in India, in accordance with their requirements in India.

15.3 The Contractor shall be deemed to be aware of the fact that the supplies and services under the Contract are required for the Project and he shall, therefore, make provisions for his supplies and/or services to be so adjusted that they fit in to the Purchaser's general scheme in respect of the Project or expansion thereof and will not interfere with the interaction of the combined operation. The Contractor shall make necessary references and inquiries at appropriate stages.

15.4 The Contractor shall procure and/or fabricate all materials and equipment, and shall undertake the erection and Installation as provided in the Contract, in accordance with all requirements of Central and State enactments, rules and regulations governing such work as prevailing on the Base Date of the Contract and as may be amended from time to time and codes and standards listed in the contract documents and normal considerations of quality and good workmanship. This shall not be construed as relieving the Contractor from complying with any requirements of

the drawings and contract specifications which may be more rigid than, but not contrary to, the above mentioned rules nor from providing such constructions as may be required by the above mentioned rules and regulations, even though it may not be shown on the drawings or in the specifications. In case of variance of the drawings and/or contract specifications from the laws, ordinances, rules and regulations governing the work, the Contractor shall immediately notify the Purchaser. It is the sole responsibility of the Contractor, however to determine that such variance exists. Additional costs, if any, due to such revision and / or variation in the rules, regulations and enactment of Governmental Authorities governing such supplies, codes and standard from that existing arising after the Base Date of the Contract shall be mutually discussed and agreed upon. Wherever required by regulations, the Contractor shall also obtain relevant statutory authorities approval (e.g. the Boiler Inspector's, Factory Inspector, etc.) for the plant, machinery and equipment supplied by the Contractor. The Purchaser to the extent possible shall provide the reasonable support to the Contractor for obtaining such approval.

- 15.5 Codes and standards referred to in the Contract documents shall be followed. Necessary codes and standards of suitable Indian or International standard can be followed, with the prior Approval of the Purchaser, provided materials and equipment according to these standards are equal to, or better than the corresponding standards specified in the Contract. In the absence of codes & standards of any item in the contract, codes and standards of suitable Indian or International standard can be followed.
- 15.6 In general, the materials and workmanship shall meet the requirements of standards and specifications in the contract documents. In any case materials shall be of best grade and quality and most suitable for the purpose intended, in accordance with modern practice and as per the Contract Specification. All materials shall be new. Substitutions for specified materials or variations from designed processes or methods of fabrication will be permitted only if approved by the Purchaser. Such approval may be granted only if a compelling reason exists for making a substitution. Before any defect in materials or workmanship is repaired, the Contractor shall outline the procedure proposed for rectification of the defect and obtain Approval of the Purchaser.
- 15.7 All meters, gauges, recorders and other types of indicating, integrating or recording devices shall be calibrated in the metric system and degrees Celsius. Where Vernier attachments are related to the English system, gearing must be changed to produce results on a true decimal (Metric) basis. Functional and instruction plates shall be in the English language.
- 15.8 Brand name mentioned in the Contract documents is for the purpose of establishing the type and quality of products to be used. Competitive products of equal or better quality and function may be substituted, if approved by the Purchaser. All such products and equipments shall be used or installed in strict accordance with the manufacturer's instructions / recommendations.

As far as practicable, manufactured materials and equipment shall be delivered to the Site of the Work or the place of destination as the case may be as may be applicable, in the original shipping containers or packing boxes bearing the manufacturer's names and brands. The Contractor shall provide the Purchaser with copies of all manufacturer's instructions for all products used in the work.

16.0 COMMISSIONING AND OPERATIONAL SPARES, SPECIAL MAINTENANCE TOOLS AND CONSUMABLES

16.1 Commissioning Spares:

The Contractor shall supply with the plant, machinery and equipment, sufficient quantity of commissioning spares required for Installation, start-up and commissioning of the plant, machinery and equipment and for its efficient operation and Provisional Acceptance upon PG Test. These items shall be based on the Contractor's experience in commissioning similar plant and shall be available at Site along with the plant, machinery and equipment. The Contractor shall be responsible for having the required items at Site in sufficient quantities before the commencement of the start-up operation and commissioning. The prices of the same shall be included in the supply price of the plant, machinery and equipment. The list of commissioning spares included, with quantities, shall be indicated in the offer. If the quantities supplied are found to be inadequate, further quantity as may be required shall be supplied without any extra cost and without affecting the Work and in relation thereto if any taxes or duties are leviable the same shall be borne by the Contractor. Commissioning spares shall be the property of the Purchaser even if the same is not used in the commissioning. Left out spares, if any, after the Provisional Acceptance upon successful completion of the PG Test, out of those indicated in the list, shall be handed over to the Purchaser.

16.2 Maintenance Spares:

16.2.1 The Contractor shall submit with the tender an itemized list showing the unit cost and recommended number of spare parts for the first two (2) years of operation. The Contractor shall also submit drawings as required under Clause 17.6.1.7 of the General Conditions of Contract within six(6) months from the date of the award of the Contract or one half of the delivery period, whichever is earlier, to enable the Purchaser to scrutinize the spare parts list.

16.2.2 The Contractor shall also undertake that supplies of necessary spare parts will be made available at any time later at least during the life of the plant, machinery and equipment at reasonable price.

16.2.3 Spare parts not manufactured directly by the Contractor shall be properly identified and description/catalogues, etc. given in sufficient detail to enable the Purchaser to procure these directly from the manufacturers, if he so desires.

16.3 Special Maintenance Tools

The Contractor shall submit with the tender an itemized list of special maintenance tools and supply special maintenance tools required for the operation and maintenance of the plant, machinery and equipment supplied by him. The Contractor shall also undertake that supplies of necessary maintenance tools will be made available at any time later during the life of the plant, machinery and equipment at reasonable prices.

16.4 Consumables

The Contractor shall inform the Purchaser of the specifications including equivalent brand names and quantities of all consumable materials, such as lubricants, flushing oil, hydraulic fluids, chemicals, lumber, paper, etc. required during the start-up, commissioning, initial filling and yearly requirement for normal operation. Binding information on these shall be furnished to the Purchaser sufficiently in advance of the start-up and commissioning date of any equipment to plan procurement of these materials in time to meet all needs, but not later than six (6) months after the award of the Contract. Should the Contractor feel necessary to modify any of the data furnished by him, this should in any case be furnished at least six (6) months before the start-up and commissioning of the plant, machinery and equipment. The Purchaser shall ask the Contractor to supply such materials as set out in the Technical Specification required for start-up, commissioning, initial filling and performance test and the Contractor shall supply the same.

17.0 CONTRACT DRAWINGS, DOCUMENTS AND MANUALS

17.1 Scope

- 17.1.1 In as much as the Contractor is required to supply drawings, documents and manuals, he shall furnish the same free of charge to the Purchaser as part of the Contract. These shall include but not restricted to, design drawings, details and construction drawings, specifications bills of materials, manuals etc. unless otherwise defined in the Contract.
- 17.1.2 The Contractor shall be responsible and liable for any discrepancies, errors, or omissions in the drawings and other particulars supplied by him, whether such drawings and particulars have been approved by the Purchaser or not, provided that such discrepancies, errors or omissions are not due to incorrect information or particulars furnished in writing to the Contractor by the Purchaser or the Engineer unless the Contractor as designer and manufacturer of such equipment could have known or discovered the said discrepancies, errors and omissions. The Contractor shall pay for any extra cost incurred by the Purchaser due to any alterations necessitated by reasons of any discrepancy, error or omission in the drawings and particulars supplied by the Contractor.
- 17.1.3 The Contract Specifications and drawing shall be coordinated by the Contractor in such a manner that any work shown in the drawings, and not specified in the Contract, or specified in the Contract and not shown on the drawings is to be done without extra charge; unless such work is specifically exempted, it is to be executed in accordance with the Contract and in the same manner as if fully specified and shown in detail.
- 17.1.4 Drawings furnished by the Contractor shall be certified as correct for use and shall bear the signature of an authorized person of the Contractor.
- 17.1.5 Drawings, documents, manuals, spare parts list, audio visual training tutor in e-form for the benefit of operational and maintenance personal etc. shall be supplied in neat bound volumes and one soft format. All reproducible CAD format or linen/polythene films

transparencies shall be sent in mailing tubes and CDs or any other electronic form as mutually agreed upon. The quality of reproducible linen/polythene films/CDs to be used for supply of reproducible prints will have to be approved by the Purchaser. The drawings, documents etc. shall be mailed to the address of the Purchaser and the Contractor will be informed of these in time by the Purchaser.

17.2 Drawing Format

- 17.2.1 All drawings shall be dimensioned in the Metric System. Where drawings are usually made in the English (or other) systems, they shall also have Metric System dimensions in parenthesis or below the dimensions line. Titles and written notations shall be in English. While preparing the drawings, the drafting standards adopted such that good, clean and legible e-form of the drawings can be obtained. Drawings prepared by the Contractor shall be suitable for transmitting electronically and digitization for preservation.
- 17.2.2 All drawings prepared by the Contractor shall be of a reasonable scale and size of drawings and as per the Indian/ International standard and Contract Specifications. While preparing the drawings, the drafting standards adopted shall be such that good clean and legible e-form of the drawings can be obtained. Drawings prepared by the Contractor shall be suitable for transmitting electronically and digitization for preservation. In general, it is desired to keep all drawings the same size for ease of filing and reference. All design drawings shall be oriented to match the plant, machinery and equipment arrangement drawings and shall have a key plan identifying the plant area to which they apply. All drawings shall be made with the north arrow pointing to the top of the sheet or to the left. There shall be sufficient reference notes on the drawings to permit identification of all the drawings which are required for a proper understanding. Drawings and bills of materials shall show take-off quantities of all materials required for the work.
- 17.2.3 Bills of materials and drawings shall be cross referenced for easy identification. Altering on drawings shall be sufficiently large to be clearly legible.
- 17.2.4 The Contractor's standard drawings used on his contract shall have information pertaining to the specific item under consideration properly identified to distinguish it from information pertaining to other items which may be contained on the same drawing.
- 17.2.5 When a drawing is revised by the Contractor, every change made shall be identified on the drawing by circling the changes made and placing the revision number in a small triangle so as to be easily recognizable. When a subsequent revision is made, the circles made for the previous revision shall be erased and the current changes circled. However all revision numbers in the small triangle shall be retained. In addition a record of revisions, along with the co-ordinates showing the location of revisions shall be indicated at the left hand bottom corner of the drawings as per standard practice. In case of revisions of a drawing, for which a different number is allotted, the new drawings shall clearly indicate the number of the drawing which it supersedes.

17.2.6 All drawings/prints shall bear a stamp/indication at a prominent place indicating whether the drawings are preliminary, for approval or certified as final.

17.2.7 The Contractor shall prepare and furnish drawings exclusively against the Contract. Even standard drawings of the Contractor shall bear a reference in the drawings to the present Contract only. References pertaining to other contracts entered into with other parties shall not appear in the drawings submitted to the Purchaser.

17.3 Numbering System

Identification number or symbols that the Contractor elects to use for his own purpose are permissible. Bills of materials must be such that the Purchaser will be able to identify and purchase any needed replacement and spares. The method of numbering drawings specifications and bills of materials used by the Contractor shall be submitted to the Purchaser to enable the Purchaser to plan its archives. The above information shall be submitted along with the drawings submission schedule within three (3) months of the award of the Contract.

17.4 Working documents and drawings list with schedule

17.4.1 Drawings list and schedule

Within one (1) month of the award of the contract, the Contractor shall supply to the Purchaser five (5) copies of a complete list of all drawings by the title which the Contractor expects to supply against the contract, together with a detailed schedule for the submission of the drawing. The detailed schedule shall take into account the schedule for submission of the different types of drawings as outlined in Clause 17.14 and shall be in conformity with the overall time schedule established by the contractor in his tender, with subsequent modification if any, which has been made part of the contract.

17.4.2 General arrangement and layout drawings

17.4.2.1 Within one (1) month of the award of the Contract, the Contractor shall submit general arrangement and layout drawings including cross-sections for approval prior to the commencement of detailing and manufacture. In the layout drawings, the scope of supply of the Contractor shall be indicated in darker outlines to distinguish them from these items not in the Contractor's scope. The general arrangement and layout drawings referred to herein shall include the following:-

- (i) For plant, machinery and equipment this category shall include equipment outline and overall dimensions locations of equipment centerlines and working point elevations, functional and clearance requirements and important clearance dimensions. The particulars of refractory and other lining work. If any, and of all auxiliaries shall also be included.

- (ii) For piping, this category shall include the flow diagram of all utilities and process fluids showing flow quantities, temperatures and pressures, all pumps, valves and instrumentation. The general arrangement and layout drawings for piping and duct work shall include physical location of equipment and general pipeline/duct routings to avoid equipment and electrical interferences and to make units requiring servicing and maintenance accessible. Both the flow sheets and pipe/duct routings drawings shall show inter-connecting pipelines ducts, and terminal points of the contractor's piping/ducting. This category shall also include diagrams of hydraulic, pneumatic, lubricating, ventilation and air conditioning systems. Where necessary, the Contractor shall also give diagrams and drawings showing waste disposal system.
- (iii) For electrical, this category shall include layout drawings showing locations of all electrical equipment including motors, controls, limit, switches, solenoid valves, etc. motor list, list of electromagnetic valves, single line, inter-locking and sequence diagrams with instruction diagrams for control signaling and communication systems, location of devices on switch-gear, control panels, desks etc. including sectional views. The details furnished shall include complete cabling drawings giving, details of power and control cables, and terminal detail layout of trenches and cable racks/tunnels, conduits etc.
- (iv) For instrumentation, this category shall include the control scheme and instrumentation flow diagrams and general arrangement drawings of instrument and control panels.
- (v) Drawings for approval of the statutory authorities such as Indian Boiler Inspectorate, Inspectorate of Explosives, Electrical Inspectorate, Factory Inspectorate, environmental clearances and from other statutory and regulatory bodies, etc., as may be required under the applicable laws with reasonable assistance from Purchaser as may be deemed necessary.

17.4.2.2 The details furnished shall include necessary calculations and data required for demonstrating that all part of the plant, machinery and equipment to be furnished shall conform to the provisions of the Contract.

17.5 Foundation outline drawings and load data:

Certified foundation outline drawings including dimensional anchor/foundations Bolt location plan and loading drawings for all foundations and structures together with details drawings giving the size and specification of all foundation/anchor Bolts, sleeves, inserts, supports and other materials which have to be embedded in concrete. These drawings/data shall be furnished within three (3) months of the award of the contract or one-fourth of the delivery period, whichever is earlier.

17.6 Equipment details and other drawings and documents

- 17.6.1 The Contractor shall submit within the time limits indicated in Clause 17.14.3 detailed drawings, covering such drawings, bills of materials or other documents required for the manufacture, fabrication or supply of parts, site installation of piping and ductwork, Site installation of cabling, wiring, buswork, both overhead and underground, conduct, cable trays and supports, and for all refractory work as well as any other lining work. The detailed drawings shall include, but not be limited to, the following:
- 17.6.1.1 Dimension drawings showing dimensions required for the location of each individual equipment including, where necessary, its auxiliaries and control panels being supplied under the Contract, the method and size of the connections to the Purchaser's other equipment within three (3) months of the award of the contract or one-fourth of the delivery period whichever is earlier.
- 17.6.1.2 Assembly, sub-assembly and sectional drawings, as well as detailed drawings showing details of components, required for assembly before three (3) months prior to the first shipment or three-fourth of the delivery period, whichever is earlier. These shall be suitably cross referred to other drawings as required. The drawings shall be sufficiently detailed such that, if the purchaser so desires, it can procure spares and replacements from any competent manufacturer in India or abroad. Details of mechanical equipment shall include grades of finish, heat treatment, clearances (tolerances,) etc. and for electrical equipment these shall include, for example coil dimensions, size and section of conductors, type and size of insulation, process of impregnation etc.
- 17.6.1.3 Performance data, including graphs, efficiency and characteristic curves and other pertinent information of the individual/composite items of plant, machinery and equipment, within three (3) months of the award of the Contract or one- fourth of the delivery period which is earlier.
- 17.6.1.4 Drawing for the approval of statutory authorities, such as the Indian Boiler Inspectorate, Inspectorate of Explosives, etc. at least six (6) months prior to the first shipment.
- 17.6.1.5 Schematic drawings and inter-connecting wiring diagrams, showing, points where connections have to be made by the Purchaser, within three (3) months of the award of the contract or one-fourth of the delivery period, whichever is earlier.
- 17.6.1.6 Drawings showing refractory work and lining, with details of types and grades of refractories, size and shapes of bricks, complete bills of materials for all refractories, specifications including chemical and physical properties of all types of refractory materials, before six (6) months prior to the first shipment or three- fourth of the delivery period, whichever is earlier.
- 17.6.1.7 The manufacturing drawings required for the items in spare parts quotations to assess the requirements of spare parts before the placement of orders for spare parts and drawings of wearing parts showing materials of all components which require replacements due to wear in normal operation. A list of wearing parts, such as bearings, retainers, gaskets, Bolts chains etc., shall be furnished showing quantities furnished and installed, dimensions, materials used and expected useful life. The information furnished shall include complete specifications for

all wearing parts including grades of finish, heat treatment, tolerances etc. Further, drawings of components of proprietary items of the Contractor and his Sub-Contractor which can be manufactured by general engineering practice shall be furnished. If required, the Purchaser will give an undertaking that such items of proprietary nature will not be used for commercial purposes but will be exclusively used only for the maintenance purposes of the plant, machinery and equipment. All these drawings/information shall be supplied within six (6) months of the award of the Contract or one half of the delivery period, whichever is earlier.

17.6.1.8 Other drawings, specifications and data including those not described above but required by other agencies to perform their work/engineering. These shall be furnished during the execution of the Contract.

17.7 Bills of Materials:

Bills of materials shall be submitted along with the drawings to which they pertain and shall include listing of materials being supplied showing piece mark, description and reference drawing numbers. Packing lists described in the marking and shipping instructions covered in these general conditions must have the same identifications as shown on the applicable bills of materials.

17.8 Assembly and Erection Instructions and Drawings

17.8.1 The Contractor shall furnish Four (4) copies of the following:

17.8.1.1 Descriptive literature and drawings to illustrate the working principles, method of assembles and dismantling.

17.8.1.2 Instruction books for proper erection, assembly of all equipment and necessary instruction for checking and recording proper assembly of the plant.

17.8.1.3 Instruction sheets for proper balancing, alignment, checking and calibration as may be necessary.

17.8.1.4 Erection drawings showing all details and particulars, in sequence, required for the erection and installation of the plant. In addition, the contractor's recommended time schedule and a chart showing the sequence of erection for the erection of equipment may also be furnished.

17.9 The documents, drawings, etc. referred to in Clause 17.8 shall be submitted in the time so as to be available at Site prior to the shipment of plant, machinery and equipment, but in any case at least three (3) months before the first shipment of plant, machinery and equipment or three-fourth of the delivery period, whichever is earlier.

17.10 Final Drawings

17.10.1 Along with the supply of the plant, machinery and equipment, sufficient set of prints shall be furnished for the original drawings, specifications, bills of materials, calculation sheets etc. made by the Contractor. These shall include but not restricted to the following:

- (i) General arrangement, assembly, sub assembly and section drawings as well as detailed drawing showing details of components required for assembly with bills of materials and schedule of parts of each complete plant, machinery and equipment giving part numbers with reference to the assembly drawings and the total number of each part. These drawings shall be suitably cross referred to other drawing as may be required. The drawings shall be sufficiently detailed such that, if the Purchaser so desires, he can procure the spares and replacement from any competent supplier/manufacturer in India or abroad.
- (ii) Performance data including graphs, efficiency and characteristic curves and other pertinent information of the individual/composite items of the plant, machinery and equipment as may be applicable.
- (iii) Operation manual of the plant, machinery and equipment.
- (iv) Maintenance manual covering all phases of both preventive and repair maintenance giving clear instructions regarding expected faults, method of detection and elimination, lubrication charts etc.
- (v) Flow diagrams and layouts of instrumentation, hydraulic, pneumatic, lubrication systems and utilities with all necessary dimensions and specifications.
- (vi) Complete electrical, schematic and erection and inter connecting wiring diagrams for power distribution, control and instrumentation and logic circuits for the plant, machinery and equipment.
- (vii) The Contractor shall supply the complete list of commissioning spares. In addition, the Contractor shall supply spares list giving complete list of replaceable parts for two (2) years normal operation indicating clearly operational, consumable, maintenance, replacement spares etc. In the maintenance spares the fast wearing spares shall be clearly identified. The spare parts list shall include necessary catalogues and manufacturing drawings and shall be supplied in the form of a table giving item designations and application, name of the manufacturer, manufacturer's specifications, type and form, reference drawing number, standards used, quantity installed and recommended for two (2) years normal operation, expected useful life, unit cost and in addition for electrical equipment the item designation shall show the entire module to be replaced in case of defect in any component. Detailed instructions both for original installation and future replacements shall be furnished.
- (viii) Manufacturing drawings for fast wearing parts which require replacements due to wear and tear in the normal operation. The information furnished shall include

complete specifications giving materials of construction, heat treatment, grade of finish, tolerance etc. for mechanical items and coil/cable dimensions, size and section of conductors, type and size of insulation etc. for electrical items.

17.10.2 The Contractor shall submit all stability certificate duly signed as required under the Factories Act, 1948 and amendments thereof etc. for the new building and structures under their scope.

17.10.3 Further drawing and specifications, datae not mentioned herein above specifically but required by the Purchaser in connection with the Contract and possible alterations shall also be supplied by the Contractor as and when required.

17.10.4 All drawings, specifications, materials and designs, if any, furnished by the Purchaser or his authorized representatives shall be treated as confidential and shall be the property of the Purchaser and shall be returned to the Purchaser upon completion of the work or upon termination of the Contract. No copies or duplications thereof shall be retained by the Contractor without the prior consent of the Purchaser. All drawing, specifications or manuals furnished by or through the Contractor shall be fully owned by the Purchaser who is entitled to use them for all purposes of execution of the Contract and operation and maintenance of the Plant being subject to the Contract. However, the registered intellectual property right for the drawings and documents as stated above furnished by or through the Contractor shall remain with the Contractor.

17.11 Spares List, Maintenance and Operational Manuals

17.11.1 The Contractor shall supply Four (4) sets of spare parts list giving the complete list of all parts required as commissioning spares, which shall be supplied along with the equipment in addition, the Contractor shall supply spares list giving complete list of replaceable parts for two years, normal operation, indicating clearly operational, consumable, maintenance replacements spares, etc. In the maintenance spares, fast wearing and insurance spares shall be clearly identified. The spare parts list shall include necessary catalogues and manufacturing drawings and shall be supplied in the form of a table giving items designation and application, name of manufacturer, manufacturer's specification., type and form, reference drawing number, standard used, quantity installed, quantity recommended for two years normal operation, unit price and in addition for electrical equipment the item designation shall show the entire module to be replaced in case of defect in any component. Detailed instructions both for original installation and future replacements shall be furnished.

17.11.2 Four (4) copies of maintenance manuals covering all phases of both preventive and repair maintenance shall be supplied, including lubricating charts, showing every point requiring lubrication, grade of lubricant, schedule for lubrication, and, where required, the correct amount and grade of oil or grease necessary for refill after drainage.

17.11.3 Four (4) copies of operating instructions shall be provided, including all details necessary to ensure proper procedure and sequence of operation.

17.11.4 The documents, drawings, etc. referred to in this Clause shall be submitted at least three (3) months prior to the first shipment of equipment by the Contractor or three-fourth of the delivery period, whichever is earlier.

17.11.5 All manuals, documents, spare parts, lists etc. shall be supplied in neat bound volumes in indicated copies along with one soft copy.

17.12 Approval of drawings

17.12.1 The Contractor shall submit such drawings, specification and bills of materials as the Purchaser or Engineer may require in accordance with the time schedule which is part of the Contract or any other reasonable schedule which the Purchaser or Engineer may require. The Contractor shall submit such drawings and documents singly or in small batches as fast as they are available for shipment so as to prevent large accumulations of work from delaying approval procedures.

17.12.2 Approval of the Contractor's drawings, specifications and bills of materials will be mailed within four (4) weeks of the receipt of drawings etc. In case, a delay is anticipated, the Contractor will be notified.

17.12.3 Approval of the Contractor's drawings, specifications and bill of materials means that these will be checked for conformity with applicable specification and general conformity with the engineering requirements for the area covered in the Contract. It is understood that approval by the Purchaser does not include checking for drafting and other errors, but only review of basic concepts and general principles involved.

17.12.4 The Contractor shall make any changes in the design, with the prior Approval of the Purchaser, which are necessary to make the equipment conform to the provisions and intents of the Contract without additional cost to the Purchaser. The Purchaser's approval of the Contractor's drawings, specifications and bills of materials shall not relieve the Contractor of responsibility to comply with the intent of the Contract. Fabrication or Procurement without approved drawings or prior to approval of drawings shall be at the Contractor's risk.

17.12.5 When the Contractor has a drawing ready for approval, he shall send two (2) prints to the Purchaser and two (2) paper re-producibles to the Engineer. The paper reproducible shall be of a quality approved by the Purchaser. If the drawing is "Not approved" or "Approved as noted" one marked up print with appropriate comments will be returned to the Contractor for correction and re-submission. The Contractor shall resubmit the final drawings incorporating all the changes within two (2) weeks after the receipt of the drawings with the Purchaser's comments. The final drawings shall be re-submitted in three (3) paper re-producibles and two (2) prints to the Engineer and Purchaser as above. One (1) print of final approved drawing will be furnished to the Contractor.

17.12.6 Upon approval by the Purchaser, the drawings shall become Contract drawings and thereafter the Contractor shall not depart from them in any way whatsoever except with the written permission of the Purchaser.

17.12.7 All drawings and documents shall be sent by first class air mail. In case, these are sent by air freight, all expenses incurred by the Purchaser and Engineer for customs, handling and forwarding shall be payable by the Contractor. All reproducibles / linen transparencies shall be sent in mailing tubes.

17.13 Drawings/ Documents at delivery of Equipment

17.13.1 With the delivery of equipment, the Contractor shall submit three (3) sets of all test certificates.

17.13.2 In addition one (1) set of drawings and documents, covered under Clause 17.11 shall be supplied along with the first shipment of plant, machinery and equipment.

17.14 Drawings and Documents at Completion of Work:

17.14.1 At the completion of PG Test and issuance of the PAC, the Contractor shall supply for all items being supplied by him and his sub- contractors one (1) reproducible on CAD format on CD along with five (5) prints of each original drawings, specification, bills of materials, calculation sheets, etc. made by the Contractor and his Sub-Contractors, incorporating all changes made during the execution of the work, including those made at site during erection, assembly and start-up, indicating the authorities who made the changes.

In addition three (3) sets of schedule of parts of each complete equipment, giving part numbers with reference to assembly drawings and the total number of each part, as shall be furnished.

17.14.2 Until such time as the supply of drawings, documents and information required as per Clause 17 is completed, the Purchaser will not finally accept the plant as supplied by the Contractor.

17.14.3 The Contractor shall submit the various drawings and documents covered in this Clause as per the following tentative schedule:

Clause No.	Brief description of type of drawings/documents	Time of submission
17.3	Details of numbering system	Within three (3) weeks of award of Contract.
17.4.1	Drawing list and schedule.	Within one (1) month of award of Contract.
17.4.2	General arrangement and layout drawings	Within one (1) month of award of Contract.

Clause No.	Brief description of type of drawings/documents	Time of submission
17.5	Certified foundation outline drawings, data, etc.	Within three (3) months of the award of Contract or one fourth of the delivery period, whichever is earlier.
17.6.1.3	Performance data, etc.	Within three (3) months of the award of Contract or one fourth of the delivery period, whichever is earlier.
17.6.1.1	Dimension drawings.	Within three (3) months of the award of Contract or one fourth of the delivery period, whichever is earlier.
17.6.1.5	Schematic drawings, etc.	Within three (3) months of the award of Contract or one fourth of the delivery period, whichever is earlier.
17.6.1.7	Wearing parts drawings, spare parts drawings, drawing of components of proprietary items	Within six (6) months of the award of Contract or one half of the delivery period, whichever is earlier.
17.6.1.4	Drawings for approval of statutory authorities.	Six (6) months prior to first shipment of equipment.
17.6.1.6	Drawings and documents for refractory and lining work.	Six (6) months prior to first shipment of equipment or three-fourth of delivery period, whichever is earlier.
17.6.1.2	Detailed drawings for assembly, sub-assembly, components etc.	Three (3) months prior to first shipment of equipment or three-fourth of delivery period whichever is earlier.
17.8 and 17.9	Assembly and erection instructions and drawings.	Three (3) months prior to first shipment of equipment or three-fourth of delivery period whichever is earlier.
17.11	Spare parts, maintenance and operational manuals.	Three (3) months prior to first shipment of equipment or three-fourth of delivery period whichever is earlier.
17.13	Test Certificates.	With first shipment of equipment delivery.
17.14.1	Completion drawings and documents.	At the time of issue of provisional acceptance Certificate.

18.0 CONTRACT PRICE

The contract price will include the aggregate of the price for imported plant, machinery and equipment, foreign services (including design and drawings, training) and all indigenous supplies and services (including indigenous design and drawings, if any), including Installation and Erection, Commissioning, PG test and the price towards all the obligations agreed to be performed which are covered in the scope of Work and elsewhere in the Contract. The contract price will exclude the Indian taxes, duties, levies, etc. for imported equipment and services but will include all Indian taxes, duties, levies, etc. on indigenous supplies and services. Delivery of all imported drawings and documents is on DDP (delivery duty paid) basis as per INCOTERMS at ex-site and the delivery of indigenous Drawings and Documents shall be at Purchaser's office.

The Contractor's prices for materials to be supplied under the Contract shall include charges for packing of a kind and quality suitable for shipment overseas and tropical conditions for imported equipment and as customary for indigenous equipment for delivery in good condition.

19.0 ASSIGNING OF CLAIMS AND INTEREST IN THE CONTRACT

The Contractor shall not assign his claim or interest in the Contract without the written permission of the Purchaser which shall not be unreasonably withheld. However, if it is mandatorily and statutorily required as per the applicable laws of the Contractor/s home country, the Contractor's request to assign/or subrogation, as the case may be, its rights and obligations under the Contract to a Credit Insurance company or to its parent company may be considered by the Purchaser after it is satisfied about the real need thereof, on such terms and conditions as the Purchaser thinks due and proper, provided however that the assignee / subrogee agrees to perform the Contract signed by the Contractor mutatis-mutandis

20.0 INSPECTION AND TESTS DURING MANUFACTURE

- 20.1 The Purchaser or his authorized representative shall have the right of inspecting and testing the Contract work or any part thereof at any time during the manufacture as per approved Quality Assurance Plan (QAP) and the Contractor on demand from the Purchaser shall carry out such tests in an appropriate manner in the presence of and free of charge to the Purchaser. Should the Contractor, himself not be in a position to carry out the tests, he shall, on the Purchaser's demand, prepare specimens or samples and send them at his own cost, to such testing stations as the Purchaser may specify and the cost for the tests so effected shall be to the Contractor's account. Should a part of the plant, machinery and equipment be manufactured not on the Contractor's own premises but on other premises, the Contractor shall likewise obtain permission for the Purchaser to inspect and test the work as if the said plant were being manufactured on the Contractor's premises. The inspection, examination or testing carried out at the presence of the Purchaser shall not release the Contractor from any of the obligations and responsibilities under the Contract.
- 20.2 The inspection and tests shall be so conducted as not unreasonably to impede the progress of manufacture.
- 20.3 The Purchaser shall have the right to be present at all tests carried out by the Contractor. The Contractor, on being requested so to act, shall present sufficient documentary evidence as per the approved QAP that the materials used will meet the requirements of good engineering practice. With respect of materials used for the construction of the plant and equipment, such as, structural steel, mild steel, cast iron, cast steel, etc., the Contractor shall produce the requisite test certificates along with specimen and test pieces on which tests were carried out by the manufacturer, at the time of examination as per the QAP. With respect to large castings or forgings, the Contractor shall arrange for the necessary X-Ray and ultrasonic tests to be carried out at his own cost if called for, the samples and specimens shall become the Purchaser's property. The Contractor shall notify the Purchaser in an appropriate manner as to the Contract work particularly before any assembly in order that the Inspections or tests can be carried out as

may be required to ascertain, without prejudice to the Contractor's liability, whether the materials and/or services are in conformity with the requirements of the Contract.

20.4 The Purchaser shall, on giving reasonable notice in writing to the Contractor setting out any grounds of objections which he may have in respect of the work, be at liberty to reject all or any plant or workmanship on the basis of any grounds of objection, which are not in accordance with the Contract or do not fulfill the requirements of the Contract.

20.5 Within four (4) weeks of the award of the Contract, the Contractor shall communicate to the Purchaser details of the tests to be conducted and obtain his approval for the same. Approval for the above will be generally given by the Purchaser within four (4) weeks of the receipt of the information.

The Contractor shall also furnish a list of various components, sub-assemblies and assemblies which the Contractor proposes to put up against the plant, machinery and equipment for inspection. The Purchaser has a right to make modifications in this list to ensure that the minimum amount of assembly work is done at Site.

The Contractor shall give the Purchaser a minimum of three (3) weeks' notice of any material being ready for testing, specifying the period likely to be required for such testing, and the Purchaser or his said representative shall, (unless the inspection or test is voluntarily waived), on giving 24 (twenty four) hours previous notice in writing to the Contractor, attend at the Contractor's or Sub-Contractor's premises (as the case may be) and complete the testing as soon as possible in a period, normally of not more than eight (8) days, from the date on which the material is notified as being ready for testing or inspection, failing which visit the Contractor may proceed with the tests which shall be deemed to have been made in the Purchaser's presence and shall forthwith forward to the Purchaser duly certified copies of the test reports. In cases where the Purchaser is requested to carry out inspection when in fact the equipment is not ready for testing, the cost of such visits, including incidental expenses, shall be to the Contractor's account.

20.6 The Contractor shall be responsible to perform or to have performed by others any and all tests and inspections requested by the Purchaser or his authorized representative as part of his duties under the Contract. The Contractor shall inspect the work for which he is responsible to ensure proper performance. To this end, he shall prepare and submit all pre-inspection forms, releases, post-inspection reports, test reports and such other documentation in such details and at such interval as the Purchaser or his authorised representative may request.

20.7 If the Purchaser has reasons to suspect the existence of hidden defects due to faulty materials and workmanship, he will have the right to order the removal and rebuilding of the doubtful parts of the work or of carrying out additional tests as required. The costs involved in such operation shall be to the account of the Contractor if the existence of such defect is proved; otherwise the costs involved shall be to the account of the Purchaser.

20.8 Failure on the part of the Inspector to inspect or to reject after inspection, Work which later proves to be defective, shall not relieve the Contractor from warranties, commitments and

obligations which he undertakes under this Contract. The Contractor is solely responsible for the accuracy, quality and completeness of his work and supply.

- 20.9 On the completion of shop fabrication, the Contractor shall assemble in his shop all fabricated and procured parts in to sub-assemblies and complete assemblies as stated in Clause 20.5 to ensure proper field erection or as directed by the Purchaser. All parts shall be match-marked by the Contractor to facilitate reassembly at site.
- 20.10 In all cases whether at the premises or work of the Contractor or of any sub-contractor, the Contractor, except where otherwise specified, shall provide, free of charge to the Purchaser, such labour, materials, electricity, fuel, water stores, apparatus, instruments, shop drawings and performance data, including graphs, efficiency and characteristic curves and other pertinent information as may reasonably be demanded, to carry out efficiently such tests of the plant, machinery and equipment in accordance with the Contract and shall give facilities to the Purchaser or his representative to accomplish such testing.
- 20.11 When the tests have been satisfactorily completed at the Contractor's or Sub-Contractors work, the Purchaser or his representative shall forthwith issue a certificate to that effect. If a final certificate cannot be issued, preliminary or provisional certificate shall be issued. If the tests were not witnessed by the Purchaser or his representative, the certificate may be issued on receipt of the test report from the Contractor but not later than 15 (fifteen) days after the receipt of the test reports by the Purchaser. No plant shall be shipped or dispatched before the certificate of acceptance for shipment as per Clause 23.4 has been issued. The Purchaser has a right to withhold such certificates if the sub-assemblies and assemblies covered in the list are not as per the approved list in Clause 20.5. The satisfactory Completion of these tests or the issue of the certificate shall not bind the Purchaser to accept the plant, should it, on further tests, after erection be found not to comply with the Contract.
- 20.12 Where the Contract is concluded for the supply of main plant, machinery and equipment as well as for spare parts, the Contractor shall tender for inspection the spare parts only after the main equipment has been tendered for inspection and accepted.

21.0 TESTS ON COMPLETION

Where possible all tests / inspection shall be carried out before shipment or dispatch. Should however, it become necessary for some tests / inspection to be carried out after Installation, they shall be carried out in the presence of the Contractor's representative. Should however, it becomes necessary for final test as to performance and guarantees to be held over until the plant is erected at Site, they shall be carried out in the presence of the Purchaser's representative within such time as may be considered reasonable by the Purchaser. Should the results of the tests not come within the margin specified, the test shall be repeated within 10 (ten) days from the date the plant, machinery and equipment is ready for re-test. If the results are still not satisfactory, further test, to the extent permissible by the terms of the Contract and at the sole discretion of the Purchaser, shall be conducted by the Contractor in the presence of the Purchaser's representatives after executing the necessary adjustments, repairs, rectifications and modifications etc., the cost of which shall be borne by the Contractor.

22.0 REJECTION OF DEFECTIVE PLANT, MATERIALS AND WORKMANSHIP

- 22.1 If the completed plant, machinery and equipment or any portion thereof at any time before it is finally accepted by issue of Final Acceptance Certificate be defective or fails to fulfill the requirements of the Contract, the Purchaser shall be at liberty to reject any such work done or plant, machinery and equipment supplied or materials used by the Contractor or Sub-Contractor.

The Purchaser shall give the Contractor notice as soon as reasonably practicable, setting forth particulars of such defects or failure, and, in so far as may be necessary, place the plant at the Contractor's disposal. The Contractor shall, with all speed and at his own expense, make it comply with the requirements of the Contract. Should he fail to do so within a reasonable time as may be determined by the Purchaser, the Purchaser reserves the right to reject and replace at the cost of the Contractor, the whole or any portion of the plant, machinery and equipment, as the case may be, which is defective or fails to fulfill the requirements of the Contract.

Such replacement, shall be carried out by the Purchaser within a reasonable time and at a reasonable price, and where reasonably possible to the same Contract Specification and under competitive conditions. The Contractor's liability under this Clause shall be satisfied by the payment to the Purchaser immediately on demand of all moneys paid by the Purchaser to the Contractor in respect of such plant, machinery and equipment plus the ascertained difference, if any, between the replacement documented price of the plant, machinery and equipment, including charges for installation and the original contract price, including the charges for installation in respect of such defective plant including all incidental charges incurred in relation thereto. Should the Purchaser not get the rejected plant, machinery and equipment so replaced within a reasonable time as may be determined by the Purchase, the Contractor's liability under this Clause will be satisfied by the repayment of all moneys paid by the Purchaser to him in respect of such rejected plant, machinery and equipment. In addition to the above, the Purchaser reserves the right to exercise all its right under this Contract and those available under the applicable law in relation to claim damages and losses that the Purchaser may incur in relation thereto.

- 22.2 In the event of rejection, the Purchaser shall be entitled to the use of the plant, machinery and equipment in a reasonable and proper manner for a time reasonably sufficient to enable him to obtain other replacement plant, machinery and equipment.
- 22.3 Subject to Clause 22.2 hereinabove, the Contractor may be entitled to remove and retain all plant, machinery and equipment which the Purchaser may have replaced at the Contractor's cost. If the Contractor fails to remove such rejected / replaced plant within mutually agreed time period, the Purchaser shall be entitled to cause the removal thereof and all expenses incurred by the Purchaser in connection, therewith shall be to the Contractor's account.

23.0 PACKING, PROTECTIVE PAINTING, MARKING AND SHIPPING

23.1 PACKING AND PROTECTIVE PAINTING:

- 23.1.1 The Contractor shall include and provide for securely protecting and packing the plant, machinery and equipment in accordance with the best established practices so as to protect the contents from damage during transit from point of manufacture until after arrival at the installation Site under conditions which may involve multiple handling, transport by ship, rail and road, re-shipment, storage, exposure to heat, moisture, rain etc. and possibility of pilferage. The packing standards shall be as per Technical Specification, if specified and as may be accepted by the Purchaser or its representative and wherever considered necessary, the Purchaser or his representative may check the packing before dispatch and may ask for modifications to the extent considered necessary to be carried out in the packing and the Contractor shall carry out the same. Special precautions as outlined in Clause 23.1.3 to Clause 23.1.8 below shall be taken into consideration. All packing shall allow for easy removal and checking to the extent practicable at Site. All packing cases, packing and other similar materials shall be new and supplied free by the Contractor and the same will not be returned, unless otherwise stated in the Contract.
- 23.1.2 The Contractor shall properly clean and/or shot blast the plant, machinery and equipment and apply one coat of rust inhibitor and a shop coat of paint. Shop finished plant, machinery and equipment shall be supplied finish painted. All primer, paints and colours shall be mutually agreed.
- 23.1.3 Heavy machinery shall be mounted and bolted to skids which shall be of sufficient strength to support and prevent distortion to the machine. All openings of pipes, large valves and machinery must be protected by wooden covers or plugs and machined threads must be covered by caps to protect against damage in transit.
- 23.1.4 All equipment and parts susceptible to corrosion by exposure to moisture and all electrical equipment shall be thoroughly protected against damage during transit and storage. Machine-finished surfaces shall be coated with approved anti-rust compound and all unfinished surfaces of machinery are to be given one coat of rust protective paint. In addition to normal packing, all electrical equipment shall be wrapped in polyethylene or polypropylene plastic sheet and openings in electrical equipment shall be sealed with water proof tapes. A protective grease proof paper shall be inserted between the brushes and armature motors and generators.
- 23.1.5 The Contractor shall deliver the following stores in individual separate packages, having markings, corresponding to the equipment.
- 23.1.5.1 Foundation Bolts, embedments, etc.
 - 23.1.5.2 Commissioning spares.
 - 23.1.5.3 Special tools for repair and maintenance.
 - 23.1.5.4 Refractory and lining materials
 - 23.1.5.5 Specialized installation tools, tackle, instruments and appliances.
 - 23.1.5.6 Consumables.
 - 23.1.5.7 Spare parts and accessories.

- 23.1.6 Fragile items shall be wrapped in crepe cellulose wadding or some equally efficient cushioning material and stuffed / floated in excelsior and packed in substantial wooden cover with special precaution against risk breakage.
- 23.1.7 The shipment dimensions of each package shall not exceed the maximum dimension of packing which can be accepted for transport over the roads or broad gauge system of the Indian Railways or vessel. If, however, over size consignments are unavoidable, the Contractor shall give proper notice to the Purchaser to arrange for the movement of over-size consignment.
- 23.1.8 Each equipment or parts of equipment shall, when shipped or dispatched, be tagged with reference to the assembly drawings and corresponding part number.
- 23.1.9 Notwithstanding anything stated in this Clause, the Contractor shall be entirely responsible for loss, damage or deterioration to the, materials occasioned by faulty, defective or insecure packing, or due to improper or insufficient protective measures.

23.2 MARKING:

- 23.2.1 The following shipping mark, giving the purchase order number shall be clearly stenciled with good quality non-fading paint on one side of the shipping package in characters at least 150 mm high where size of package will permit:

MISHRA DHATU MIGAM LIMITED, TELANGANA, INDIA.

PACKAGE No.

Contract No.

Package number as given above is to be followed sequentially in ascending order. There is to be no duplication of package numbers on any individual order.

- 23.2.2 On the top and one end the following shall be marked:

MISHRA DHATU NIGAM LIMITED

Package No.

- 23.2.3 On one end the following information shall be marked:

MISHRA DHATU NIGAM LIMITED

GROSS WEIGHT (KILOGRAMS)

NET WEIGHT (KILOGRAMS)

LENGTH (METERS)

WIDTH (METERS)

HEIGHT (METERS)

Made in (Country of Origin)

- 23.2.4 On the side opposite the main packing shown in Clause 23.2.1 above, the name of the Contractor, contract number, Contractor's bill of material item number-or other identifying data shall be clearly marked.
- 23.2.5 For the identification of unloading areas at the plant, machinery and equipment collared bands shall be painted encircling all packages, crates or boxes. Colour code for Contracts will be mutually agreed.
- 23.2.6 In the case of bundles or metal base, the proper markings, as here in designated, are to be placed on metal tags which are to be securely attached to the bundle or bar as conspicuously as possible.
- 23.2.7 If necessary, packages must be marked on all four sides with arrows pointing to the top.
- 23.2.8 Easily damaged material or radioactive or perishable goods must be marked on all sides with appropriate cautionary symbols.
- 23.2.9 When required due to length of unbalanced weight, the container or pieces shall have locations of cables or hooks and the center of balance indicated by proper markings.
- 23.2.10 Fabricated sections of structures and equipment must have their respective piece marks permanently stamped into the piece to a depth of not less than one mm, and the stamped area painted with rust preventive paint to a radial distance of fifty mm on the surrounding area.

23.3 SHIPPING

- 23.3.1 The Contractor shall prepare and furnish the Purchaser within three (3) months before the date of first shipment a shipping schedule showing the breakdown of the complete plant, machinery and equipment into various shipment units, with approximate weight and dimensions and the respective dates upon which such units will be ready for dispatches from the point of manufacture. This schedule shall be taken into consideration, for Installation. The Contractor shall promptly give written notice to the Purchaser of any anticipated delay in maintaining the said schedule, stating the reasons therefore. The Purchaser will book space on available vessels scheduled to sail on dates as soon as practicable, after the respective dates on which the shipment units are to be ready for shipment at the indicated port and inform the Contractor accordingly.
- 23.3.2 Shipping details shall be submitted in 10 (ten) sets and shall specifically quote the shipping marking, designation of contents and dimension in metric units, itemized net weight and total gross weight of each package. One (1) complete set of negotiable shipping documents shall be forwarded to the Purchaser immediately after shipment. Complete shipping documents shall be made available to the Purchaser at least 3 weeks in advance of the arrival of the ship at the port of unloading. Further details of shipping schedules, shipping notes and documents will be finalized at the time of the contract or thereafter.

23.3.3 In case the vessel arrives at the port of destination and the corresponding shipping documents are not in the possession of the Purchaser due to the Contractor's inability to provide the same before the vessel's arrival, the Contractor will be responsible for any expenses due to storage, etc which may be imposed against the Purchaser.

23.3.4 The Parties shall be responsible for obtaining, their respective necessary approvals from the authorities for transportation of the plant, machinery and equipment. The Parties shall use its best endeavors in a timely and expeditious manner to assist the other contracting party in obtaining such approvals, if requested. The Contractor shall indemnify and hold harmless the Purchaser from and against any claim for damages to roads, bridges or any other traffic facilities that may be caused by the transport of the plant, machinery and equipment to the Site in case of FOR Site Contracts.

23.4. NOTICE TO PURCHASER AND ACCEPTANCE FOR SHIPMENT

When all tests to be performed in the Contractor's or Sub-Contractor's premises under the terms of this Contract have been successfully carried out, the plant, machinery and equipment will be accepted for dispatch, and the Purchaser or his duly authorized representative will issue an acceptance certificate upon the receipt of which the plant, machinery and equipment shall be packed up forthwith and made ready for dispatch. No plant, machinery and equipment shall be dispatched unless an acceptance certificate has been issued for the same and dispatch instruction given by the Purchaser to the Contractor which will be issued within seven (7) days of completion of inspection/testing. The Purchaser may also at its sole discretion release in lieu of such certificate a waiver certificate. While applying for such certificates, the Contractor shall list all parts, sub-assemblies and assemblies covered and shall indicate all inspections and tests performed on them during manufacture, with copies of inspection certificates. The satisfactory Completion of these tests or the issue of the certificate shall not bind the Purchaser to accept the plant, machinery and equipment, should it, on further tests, after Installation be found not to comply with the Contract and shall not release the Contractor from its liabilities, responsibilities and obligations for the due performance of the Contract. While giving intimation for dispatch of materials the Contractor shall quote:

Contract no. brief description of materials shipped, port of shipment, date of shipment, bill of lading and value of the consignment.

Corresponding data shall be shown for other means of transport.

24.0 STORAGE

In case the shipment of material to be furnished under the contract is delayed due to the Purchaser's inability to arrange ocean shipment, unfavorable unloading conditions at an Indian Port, or if shipment cannot be made for any other reason beyond the Purchaser's control, the Contractor may be requested to either hold the shipment at his factory or place the same in proper storage approved by the Purchaser. In the event the material is placed in storage, storage charges are to be mutually agreed upon which charges in no event shall exceed the warehouse storage

charges as fixed by tariffs prevailing at the time. If storage is away from the contractor's factory, the Purchaser will have the right, if he so elects and, acts promptly, to designate the storage in which the Contractor will place the plant, but such storage will be subject to the Contractor's approval as to suitability. In the event the plant is to be held at the contractor's factory or placed in the storage as above provided the contractor will promptly notify the purchaser whether or not the Contractor's general Plant Insurance covers the plant so that the purchaser will have an opportunity to obtain insurance if necessary. Should any shipment or part of it be cancelled or held back due to the non-compliance by the contractor of the purchaser's instructions, incorrect markings of packages, or mistakes of the kind, the storage charges and extra insurance premium deriving there from, and any other charges eventually incurred, will be to the account of the Contractor.

Any charges, including insurance, which may be for the Purchaser's account as above provides will be paid by the contractor and billed to the Purchaser after purchaser's approval. The holding of the plant at the contractor's factory or placing in storage as above provided will be deemed equivalent to "Shipment" for all purposes of payment and the contractor will allow the purchaser credit for freight on such plant unless the same is caused due to non-compliance by the Contractor or for reasons attributable to the Contractor. The plant so held at the contractor's factory or placed in storage will be held for Purchaser's account, and the contractor will upon request, deliver to the Purchaser such instruments as may be reasonably requested evidencing title in the Purchaser.

25.0 PASSAGE OF RISK AND INSURANCE

25.1 Passage of Risks

25.1.1 In case of imported materials and plant, machinery and equipment, for FOB Contracts, the risk shall pass from the Contractor to the Purchaser when the materials and equipment are placed on board the vessel for shipment as defined by "FOB Port of Shipment" INCOTERMS. In case of indigenous materials and equipment the Contractor shall deliver the same on FOR Site basis including unloading at plant Site and the risk shall pass from the Contractor to the Purchaser when the materials and equipment are delivered to the Site on board road transport vehicle arranged by the Contractor.

25.1.2 If any contract work, including supplies and services, perishes or becomes unserviceable from any cause whatsoever, the Contractor shall, on demand by the Purchaser, make replacement and in such a way as to avoid disturbances in the general progress of the Installation of the Work. This shall apply irrespective of the question whether or not the risk has passed to the Purchaser, or who shall be responsible for the unserviceableness as aforesaid.

25.2 Insurance

In case of FOB port of shipment delivery for imported equipment, the Contractor shall arrange insurance for all equipment and materials to be supplied by him up to FOB port of shipment. In case of delivery of indigenous goods the Contractor shall arrange insurance for all equipment and materials up to the Site and unloading thereof. In order to enable the Purchaser to arrange proper

marine insurance for imported equipment, the Contractor shall co-operate with the Purchaser and provide necessary documentation in sufficient time for each package. Costs resulting from non-compliance by the Contractor of this provision shall be charged to the Contractor.

- 25.2.1 Indigenous Cargo Insurance: For indigenous supplies, the policy to be maintained by the Contractor shall insure the goods originating in India from the Contractor's/Supplier's warehouse to Plant's warehouse/Site and up to completion of Installation, erection and commissioning. This will be inclusive of supplies to and from warehouse/factory of intermediate processors/suppliers. This policy will also cover the replacement items, if any.
- 25.2.2 Third Party Liability Insurance: The Insurance policy to be maintained by the Contractor shall cover third party liability. The third party liability shall cover the loss/disablement of human life (persons not belonging to the Contractor) and also cover the risk of damages to others' materials/equipment/properties during construction, erection and commissioning at Site. The value of third party liability for compensation for loss of human life or partial/full disablement shall be of required statutory value and shall nevertheless cover such compensation as may be awarded by a Court of Law in India or abroad and cover for damage to others' equipment/property.
- 25.2.3 Automobile Liability Insurance: Covering use of vehicles/mobile equipment used by the Contractor or its Sub-Contractors (whether or not owned by them) in connection with the execution of the Contract.
- 25.2.4 Contractor shall ensure that where applicable, its Sub-Contractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Sub-Contractors are covered by the policies taken out by the Contractor.
- 25.2.5 The Purchaser shall be the principal holder of the policy along with the Contractor. The Sub-Contractors of the Contractor shall not be holders or beneficiaries in the policy nor shall they be named in the policy. Purchaser reserves the exclusive right to assign the policy.
- 25.2.6 While the payment of premium may be phased in agreement with the insurance company, at no time shall goods and services required to be provided by the Contractor shall remain uninsured by the Contractor.
- 25.2.7 A copy of the Insurance policy shall be made available by the Contractor to the Purchaser within 15 (fifteen) days in advance, before start of the first dispatch and the contractor shall ensure that the policy shall be kept alive and valid at all times up to date of commissioning.
- 25.2.8 The Purchaser reserves the right to take out whatever policy that is deemed necessary by him if the Contractor fails to keep the said policy alive and valid at all times and/or causes lapses in payment of premium thereby jeopardizing the said policy. The cost of such policy(s) shall be recovered / deducted from the amount payable to the Contractor.

- 25.2.9 The surrounding value shall be Indian Rupees [●] (Rs. [●]).
- 25.3 Upon arrival of plant, machinery and equipment at Site the Contractor shall assume custody thereof and remain responsible thereafter for safe custody until the whole plant, machinery and equipment is successfully commissioned.
- 25.4 In order to adequately cover the works under such composite and comprehensive insurance, the Contractor shall fulfill the necessary requirements/obligations as per the terms of the Contract.
- 25.5 The Contractor shall arrange Accident Insurance Policy for all his personnel including foreign experts/specialists/personnel deputed to Site and Contractor's/his Sub-Contractors' manufacturing works as well as for his Indian engineers & supervisory staff. The Contractor shall also take out for his Indian workmen a separate policy as per Employee's Compensation Act and the applicable laws.
- 25.6 As soon as shipping documents for each shipment are ready, the Contractor shall cable to the Purchaser the details of the consignment along with its value giving the name of the vessel by which the shipment is made, port of shipment, date of shipment, net and gross weight of the materials in kilograms, volume of the package, FOB value of material, freight value and other shipping particulars etc. Costs resulting from non-compliance by the Contractor of these provisions shall be charged to the Contractor.
- 25.7 All the insurance claims for insurance policies maintained by the Contractor shall be processed by the Contractor and the items which are missing / damaged in transit or during handling, storage, erection and commissioning, shall be replaced / repaired by them without any extra cost to the Purchaser. Costs resulting from non-compliance by the Contractor of provisions of these sub clauses shall be charged to the Contractor.
- 25.8 All money received under any such policy shall be applied towards the replacement and repair of the plant, machinery and equipment damaged or destroyed or for the purpose for which it has been claimed but this provision shall not affect the Contractor's liabilities under the Contract. The provisions contained in this Clause are not intended to and do not impair or in any manner limit the liabilities or obligations assumed by the Contractor as may be set forth more specifically elsewhere in the Contract.

26.0 TIME FOR COMPLETION

- 26.1 The time stipulated for dispatch, delivery or completion as the case may be dates to be computed from the Effective Date of the Contract. The overall time schedule for the entire work showing various activities like design & engineering, supply of equipment, civil and structural steelwork, Installation, Testing and Commissioning etc. shall be as per the Bar/ Pert Chart enclosed with Contract Specification and the same shall be binding to both the Contractor and the Purchaser.
- 26.2 The Contractor shall attain "Time for completion" of the Project in [●] months from the Effective Date of the Contract.

26.3 “Time for Completion” indicated above is based on the assumption that the Site will be handed over to the Contractor free of obstacles and all other preconditions for installation of the material delivered are fully met. .

27.0 DELIVERY TIME, DELAYS AND EXTENSION OF TIME

27.1 A detailed schedule showing the start and finish of all phases and items of the work, as well as dates for delivery of materials and equipment and submission of drawings, shall be part of this Contract. This schedule shall show the time required for engineering, procurement and fabrication, as well as installation where applicable and subject to acts of God or Force Majeure or change in scope of Work shall be scrupulously adhered to by the Contractor.

27.2 In the event of any delay arising in any phase of the Contractor’s work, the Contractor shall promptly inform the Purchaser and Engineer of the expected delay giving reasons thereof and requesting an extension of time. It shall be the Contractor’s constant endeavor thereafter to act swiftly and make up for the delay to ensure that deliveries are made in time as far as possible.

27.3 An extension of time will normally be granted by the Purchaser, if he is satisfied that the delay arose out of reasons beyond the Contractor’s control and for the following reasons:

- a) any change in the Work as may be required and solely attributable to the Purchaser;
- b) any occurrence of Force Majeure as provided in Clause 35 (Force Majeure) hereof;
- c) any suspension order given by the Purchaser for reasons solely attributable to the Purchaser;
- d) The default by the Purchaser under the Contract hereof, if proved to be cause for delay in completion of the Work by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.

Should it appear, however, that the delay has been caused by factors within the control of the Contractor, the Purchaser may grant extension reserving its right to recover the amount of Liquidated Damages, but not by way of penalty, from the Contractor for such delayed **delivery** at 1% of Contract price including taxes, duties, levies, cess, etc. per completed week of delay or part thereof up to a maximum of 10% of the Contract Price including taxes, duties, levies, cess, etc. The payment or recovery of such damages shall not relieve the Contractor from his obligations to complete the Work or from any of his other obligations and liabilities under the Contract and the Purchaser shall also reserve to exercise any other right available under the Contract and under the applicable laws.

In case the Contractor is a Consortium, the Purchaser shall recover the amount of Liquidated Damages, but not by way of Penalty, by making deduction from the account of the lead member of the Consortium, at 1% of Contract price including taxes, duties, levies, cess, etc. per completed week of delay or part thereof up to a maximum of 10% of the Contract Price including taxes, duties, levies, cess, etc.

28.0 PROGRESS REPORTS

- 28.1 The Contractor shall submit to the Purchaser monthly progress reports on or about the 20th day of every month, giving the status of the Work along with adequate number of photographs, indicating the stages of implementation of the Work.
- 28.2 For this purpose, the Contractor's work shall be sub-divided and numbered consequently into major categories and arranged in such a manner as to describe the normal sequence of the Work. Progress shall be reported by these major categories in all reports, preferably with Critical Path Network diagram and a contract completion bar chart showing the starting and completion date of all major categories for engineering, purchasing, procurement of raw materials, manufacture, inspection and dispatch along with the percentage completion of each of the above.
- 28.3 The progress report shall include a drawings status report, containing a listing of all drawings required for the due performance of the Contract and documents as detailed in Clause 17.14 together with the related reference number and titles and giving the scheduled completion dates, dates when the drawings and documents have been / will be submitted and date of receipt of approval, etc.
- 28.4 The progress reports shall also include a manufacturing status report detailing the progress of procurement of raw materials, manufacture, when the particular item or sub-assembly is expected to be ready for inspection, status of inspection, delivery, etc. both for the Contractors work and those of his Sub-Contractors.
- 28.5 The proforma for the above progress reports will be indicated by the Purchaser. The Contractor shall submit two (2) copies of such reports, including photographs to the Purchaser. The Purchaser will have the right to depute its representatives to ascertain the progress of work at the premises or works of the Contractor or of any Sub-Contractor.
- 28.6 The submission, receipt and acceptance of such progress reports shall not prejudice the rights of the Purchaser under the Contract, nor shall operate as an estoppel against the Purchaser merely by the reason of the fact that he has not taken notice of or subjected to test any Information contained in such reports.

29.0 DEPUTATION OF EXPERTS BY THE CONTRACTOR

- 29.1 The Contractor shall depute at Site it's foreign as well as India Experts from various disciplines for Installation, trial run, and commissioning and performance guarantee tests of the plant, machinery and equipment.
- 29.2 The experts shall undertake Installation, commissioning and conducting of performance guarantee tests of the plant, machinery and equipment with its auxiliaries as contracted herein so as to establish to the Purchaser that the guarantees as agreed by the Contractor in accordance with the Technical Specification are fully met and complied with.

29.3 The Contractor shall bear and pay all the cost / expenses for deputation of experts required including all costs / expenses towards remuneration, air travels from their country to India / at Site and back to their country, surface travel, local transport, accommodation, food & incidentals, communication system, medical, insurance, personal Indian Income Tax, etc. These experts should neither be treated as employees nor the agents of the Purchaser and the Contractor shall be liable for all the acts and omissions of the experts and the Contractor agrees to indemnify and hold harmless the Purchaser at all times for acts, deeds and omissions of the experts under the Contract.

30.0 SUPERVISION OF ERECTION, START-UP & COMMISSIONING AND COMPLETE INSTALLATION, ERECTION, START-UP AND PUTTING INTO COMMISSION

30.1 Supervision of Erection, Start-up & Commissioning:

30.1.1 When the Contractor requires the Contractor to provide services for the supervision of erection, start-up and putting into commission, the conditions outlined in this article will apply.

30.1.2 The Contractor shall however be solely responsible for the supervision of the work from the commencement of erection up to the demonstration of the performance guarantee of the plant and equipment supplied under the Contract. The responsibilities of Contractor shall include but not be limited to the following:

- (i). Ensuring the correctness of materials and equipment shipped in the order in which they will be required for erection.
- (ii). Advising on the safe handling of cargo at the unloading port and site storage for all materials and equipment.
- (iii). Ensuring correctness of erection of all plant and equipment supplied by the Contractor.
- (iv). Ensuring that adequate quantities of the correct commissioning spare and supplied are at site for the purposes of start-up.
- (v). Starting up and operating the plant to meet the specified performance guarantees.
- (vi). Handing over the plant to the Purchaser on the issue of the Provisional Acceptance Certificate.
- (vii). Advising on any matter pertaining to the erection and start-up on request by the Purchaser or Engineer.

30.1.3 In order to carry out his responsibilities under this section, the Contractor shall send the number experienced personnel to take up residence as site as established in the Contract. The erection and start-up schedule and the details of the strength and calibre of the resident staff the Contractor will be required to maintain at site shall be indicated in the tender by the Contractor and finalized between the Purchaser and the Contractor before the award of the contract. No resident staff shall be sent to Site until permission to do so is received from the Purchaser.

- 30.1.4 At any time during the erection period the Purchaser shall have the right to ask the Contractor to temporarily withdraw his Site staff or reduce the strength of the staff in order to keep pace with the erection programme or for any reason whatsoever at its sole discretion. In such case, the Purchaser will bear the air economy class/ first class train travelling and out-of-pocket expenses for the return trip of the personnel involved between the Site and the city of origin by the shortest route. The Purchaser will give the Contractor two (2) weeks' notice prior to requesting the temporary withdrawal of the Contractor's personnel.
- 30.1.5 The Contractor shall ensure that each individual of the Contractor's personnel resident at the Site shall cooperate with the personnel of the Purchaser. And any and all other contractors engaged in work in or around the job site, in order to avoid difficulties in carrying out work. Failure to accomplish this cooperation shall be just cause for the removal of such individual and his replacement by suitable other personnel by the Contractor at his expenses forthwith upon request by the Purchaser. In case of disagreement as to the cause for such removal and replacement, the decision of the Purchaser shall be final and binding.
- 30.1.6 On completion of the erection work and connecting up of the electrical power supply and utilities, the Contractor shall promptly notify the Purchaser of the proposed date of the commencement of Start-up operations. The duration of the Start-up period shall be established in a schedule which shall be part of the Contract. The Purchaser will provide labour, powers, fuel, utilities and supplies for operating the plant during the start-up period when the plant will be operated under the supervision of the Contractor.
- 30.1.7 Should the start-up period extend beyond the scheduled period due to either difficulties encountered with the Contractor's plant and equipment or inadequacy of the Contractor's staff, the Purchaser shall have the right to charge such amount as may be deemed reasonable by him for the material and services provided by the Purchaser as mentioned in Clause 30.1.6 above for the extended period.

30.2 Complete Installation, Erection, Start-up and Putting into Commission:

- 30.2.1 When the Contract requires the Contractor to undertake complete Installation of the plant, machinery and equipment, start-up and putting into commission, the conditions stated in this Clause will apply in conjunction with the other clause in so far as they are applicable.
- 30.2.2 Except otherwise expressly provided herein the responsibilities of the Contractor shall include but not be limited to, the following:
- i. Ensuring the correctness of material and equipment are shipped in the order in which they will be required for Installation.
 - ii. Taking delivery of equipment from the Purchaser's store at site and moving into the Contractor's storage and / or installation Site.

- iii. Opening of crates and packing cases, inspection and checking of equipment / materials.
- iv. Repairing and replacement of equipment / materials damaged or lost in transit or at Site and in filling and processing of insurance claims for damaged / loss of equipment / materials.
- v. Ensuring that adequate quantities of correct commissioning spares and supplies are available at Site for the purpose of the start-up of the plant, machinery and equipment.
- vi. Making arrangements to draw electricity and water to the installation Site from selected locations at site (to be within 300 m from the installation Site) where electricity and power shall be provided by the Purchaser, at such terms and conditions as stipulated in the Contract free of cost to the Contractor.
- vii. Checking foundations as constructed, including final adjustment of foundation levels by chipping and dressing, checking location, elevations etc., for anchor Bolts and carrying out minor civil works as may be required in connection with the installation work.
- viii. Complete installation of all materials and equipment supplied by the Contractor or his Sub-Contractor. This shall include the complete installation of equipment. Piping, hangers, structures etc. supplied under the Contract, including aligning, lining and levelling and connecting up electric power supply water and utilities, applying, including touching up, of approved final painting to all equipment, piping, hangers, structures etc. as supplied under the Contract.
- ix. Starting up and commissioning the plant, machinery and equipment to meet specified performance guarantees and handing over the plant to the Purchaser on issue of the provisional acceptance certificate.
- x. Providing all consumable, materials and stores required for the commissioning and installation work and for performance guarantee test, unless otherwise provided in the Contract, for due performance of the Contract.
- xi. Providing all ladders, platforms, temporary supports and other necessary facilities required for the handling and installation of the equipment supplied under the Contract.
- xii. Unless otherwise provided in the Contract, providing all construction / installation equipment welding equipment, installation and lifting tools and tackles, instruments and appliances required for the installation work, as well as

equipment tools and tackles for the transportation to Site of installation of all equipment, supplied under the Contract.

- xiii. Providing necessary supervisory and advisory personnel, staff, skilled and unskilled labour, including electrical personnel with approved license as per Indian Electricity Rule 1956as amended from time to time, to ensure that the whole of the installation work is completed in all respects within the period specified in the Contract. The Contractor shall ensure when local laws require, the concerned employees obtain and hold certificates of competency for their work from the competent authority.

30.2.3 The Contractor shall be responsible for protection and / or diversion of underground and all existing over ground services indicated in the drawing made available to the Contractor and form part of Contract Specification.

30.2.4 On the completion of the installation work and connecting up of electric power supply, water and utilities, the Contractor shall promptly notify the Purchaser and Engineer of the proposed date of the commencement of the start-up operations. The duration of the start-up and commissioning period shall be established in a schedule which shall be part of the Contract. The Purchaser will provide facilities, such as skilled & unskilled manpower, input/ raw materials, fuel, power, water and utilities to the Contractor as required for operating the equipment during such period, and during this period the equipment shall be operated under the supervision of the Contractor.

30.2.5 Should the erection and installation or the start up and commissioning of the Plant and equipment extend beyond the scheduled period due to difficulties encountered with the equipment supplied under the Contract or due to inadequacy of the Contractor's staff or due to incorrectness in erection work or due to any other reason for which the Contractor is responsible, the Purchaser will have the right to realize such amount from the Contractor as may be deemed reasonable by the Purchaser for the extended period.

31.0 PERFORMANCE GUARANTEE TESTS AND PROVISIONAL ACCEPTENCE

31.1 The Contractor shall be responsible for carrying out performance guarantee tests as per the Contract Specification in the presence of the Purchaser on all plant, machinery and equipment supplied by him. This responsibility shall rest with the Contractor regardless of whether the erection has been carried out by him or any other agency.

31.2 On the completion of a satisfactory start-up and commissioning operation, the Contractor shall notify the Purchaser in writing of the proposed date of the commencement of the performance tests. A detailed procedural protocol shall be prepared by the Contractor to this effect, which shall be discussed and agreed upon and provided to the Purchaser. Every item of plant, machinery and equipment, as well as the plant machinery and equipment as a whole, supplied by the Contractor shall undergo a performance test unless otherwise decided by the Purchaser. The duration of the performance tests shall be as provided in the Contract Specification. The man power utilization

for carrying out the performance guarantee test by the Contractor shall not be more than the strength of normal operation recommended by the Contractor and accepted by the Purchaser.

- 31.3 During the performance test the plant, machinery and equipment will be operated by the Purchaser under the supervision of the Contractor. The Contractor shall provide adequate engineers/specialists and commissioning spares for smooth conducting of the performance guarantee test. Unless otherwise agreed to in the Contract, the Purchaser will provide necessary input material, skilled and unskilled labour, fuel, power, utilities and other relevant supplies.
- 31.4 Should the operation of the plant, machinery and equipment during the performance test be interrupted then the performance test shall be re-started and run again for the period as specified in the Contract. The Purchaser may at his discretion permit the period of test run prior to the interruption to be reckoned as part of the above mentioned period, in which case the test will be run for the duration of the balance period on re-commencement.
- 31.5 The Purchaser will have the right to charge such amounts as may be deemed reasonable for materials and services provided by the Purchaser, in case performance tests continue for an unreasonably long period due to interruption as defined in Clause 31.4 above. The Purchaser shall charge the Contractor on actuals.
- 31.6 The plant, machinery and equipment shall be considered to have concluded the performance test satisfactorily if, during the entire duration of the test, save as expected in Clause 31.4 above, the plant, machinery and equipment shall have delivered the guaranteed specified output or operated at the guaranteed specified capacity utilizing the quantity and quality of raw materials, utilities, fuel and supplies as specified in the Contract Specification.
- 31.7 On the satisfactory completion of the performance guarantee test, the Purchaser will issue a Provisional Acceptance Certificate provided the Contractor undertake to rectify all defects which do not influence normal operation but which are nevertheless present in the plant and which are indicated in writing by the Purchaser.
- 31.8 Normally, the entire plant, machinery and equipment will have to satisfactorily complete the performance test before the issue of the Provisional Acceptance Certificate. In special circumstances and at the Purchaser's sole discretion, the Provisional Acceptance Certificate may be issued for a part of the plant, machinery and equipment.
- 31.9 The date of completion of performance guarantee test shall be considered to be the date of the PAC, and the plant, machinery & equipment is ready for commencement of commercial production.

32.0 DEFECT LIABILITY PERIOD AND FINAL ACCEPTENCE

- 32.1 The defect liability or guarantee period shall be as stated in Clause 32.2 and after satisfactory completion of guarantee period the Purchaser will issue the Contractor a Final Acceptance Certificate (FAC). During the guarantee period the plant, machinery and equipment will be operated by and under the supervision of the Purchaser according to instruction issued by the

Contractor but the plant, machinery and equipment will not be deemed to have been formally taken over by the Purchaser. On the satisfactory completion of the guarantee period and issuance of the FAC, the Contractor shall be relieved of its contractual obligations under the Contract and the Contractor shall be entitled to receive the agreed payment towards FAC.

- 32.2 The Contractor shall warrant that the facilities or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the plant, machinery and equipment and structures and refractories supplied and of the work executed for twelve (12) months from the date of issue of Provisional Acceptance Certificate.
- 32.3 The Purchaser shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Contractor to inspect the defect.
- 32.4 The Purchaser shall afford the Contractor all necessary access to the Work and the Site to enable the Contractor to perform his obligations. The Contractor may, with the consent of the Purchaser and after submission of Bank Guarantee for the equivalent cost of plant, machinery and equipment, remove from the Site any plant, machinery and equipment or any part of the Works that are defective if the nature of the defect, and / or any damage to the plant, machinery and equipment caused by the defect, is such that repairs cannot be expeditiously carried out at the Site. In case defective parts are not repairable at Site but it is essential in the mean time for the commercial use of plant, the Contractor shall replace at Site free of cost to the Purchaser, the defective parts, before the defective parts are removed from the Site.
- 32.5 If the repair, replacement or making good is of such a character that it may affect the efficiency of the plant, machinery and equipment or any part thereof, the Purchaser may give to the Contractor a notice requiring that tests of the defective part of the plant, machinery and equipment shall be made by the Contractor immediately upon completion of such remedial work, whereupon the Contractor shall carry out such tests.
- 32.6 If such part fails the tests, the Contractor shall carry out further repair, replacement or making good (as the case may be) until that part of the plant, machinery and equipment passes such tests. The Purchaser and the Contractor shall agree upon the tests. If the Contractor does not commence the rectification either by repair or replacement of such defects within 30 (thirty) days from the date of notice by the Purchaser or does not complete the rectification with reasonable diligence and within a reasonable time, the Purchaser may, at its option, rectify the defects at the Contractor's expense. The Purchaser shall, in such case, deduct from payment due to the Contractor the expenses incurred by the Purchaser for remedy of such defects without prejudice to the other rights of the Purchaser under the Contract and under the applicable laws.
- 32.7 If the Contractor fails to commence the work necessary to remedy such defect of any damage to the plant, machinery and equipment caused by such defect within a reasonable time, which shall in no event considered to be less than 15 (fifteen) days, the Purchaser may, following notice to the Contractor, proceed to do such work, and the costs incurred by the Purchaser in connection therewith shall be paid to the Purchaser by the Contractor or may be deducted by the Purchaser from any money due to the Contractor or claimed under the performance Bank Guarantee.

- 32.8 If the plant, machinery and equipment or any part thereof cannot be used by reason of such defect and for making good of such defect, the Defect Liability Period of the plant, machinery and equipment or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Purchaser because of any of the aforesaid reasons.
- 32.9 Except as provided in the Contract, in the event of loss of or damage to property / accident or injury to workers / indemnification, hereof, the Contractor shall be under no liability whatsoever and howsoever arising, in respect of defects in the plant, machinery and equipment, design or engineering or work executed that appear after completion of the project or any part thereof, except where such defects are the result of the negligence, fraud, criminal or willful action of the Contractor.
- 32.10 In addition, the Contractor shall also provide an extended warranty for any repaired or replaced component of the plant, machinery and equipment for a period of minimum twelve (12) months from the date of repair / replacement.

33.0 CHANGES IN THE WORK

- 33.1 The Purchaser shall have the right to propose and / or consider Contractor's proposal, and subsequently order the Contractor from time to time during the performance of the Contract to make any changes, modification, addition or deletion to, in or from the Plant, Machinery & Equipment (hereinafter called "Change"), provided that such Change falls within the general scope of the plant, machinery and equipment and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Plant, Machinery & Equipment and the technical compatibility of Change envisaged with the nature of Plant, Machinery & Equipment as specified in the Contract.
- 33.2 If the Purchaser proposes and / or considers Contractor's proposal for a Change pursuant to Clause 33.1 hereof, it shall send to the Contractor a "Change Request" requiring the Contractor to prepare and furnish to the Purchaser as soon as reasonably practicable a "Change Proposal" which shall include the following-
- a) Brief description of the Change
 - b) Effect on the Time for Completion
 - c) Estimated cost of the Change
 - d) Effect on functional Guarantees (if any)
 - e) Effect on any other provisions of the Contract
- 33.3 The pricing of the Change Proposal shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If such rates and prices are inequitable, the parties thereto shall agree on specific rate for the valuation of the Change.

- 33.4 On receipt of the Change Proposal, Purchaser and the Contractor shall mutually agree upon all matters therein contained. Within Thirty Days after such agreement, the Purchaser shall, if it intends to proceed with the Change, issue the Contractor a Change Order.
- 33.5 If the Purchaser decides not to proceed with the Change for whatever reason, it shall, within the period of Thirty Days, notify the Contractor accordingly.

34.0 OWNERSHIP OF DRAWINGS AND SPECIFICATIONS

- 34.1 All drawings, specifications, materials and design furnished by the Purchaser, Engineer, or their representatives shall be treated as the strictly confidential property of the Purchaser. All such drawings, specifications, manuals and other materials shall be returned to the Purchaser upon the completion of the work under this Contract. No copies, duplications or Photostats shall be retained by the Contractor without the consent of the Purchaser.
- 34.2 All drawings, specifications, and manuals and all specific designs furnished by or through the Contractor shall be treated as strictly confidential by the Purchaser, his employees and agents and shall be the property of the Purchaser who is entitled to use them for execution of the Contract and operation & maintenance of the plant, machinery and equipment being subject to the Contract.

35.0 FORCE MAJEURE

If at any time during the continuance of this Contract, the performance in whole or in part, neither party shall be liable of performance under this Contract, any obligations under the Contract of any party is prevented or delayed due to reasons beyond such party's control, including but not limited to acts of God, fire, flood, earthquake other natural catastrophes, any law, order, regulation, direction, action of any civil or military authority, national emergencies, insurrections, riots, war (whether declared or not), hostility, acts of the public or enemy, civil commotion, sabotage, explosion epidemic, quarantine restrictions, strikes and lock-outs, work stoppage or other labour difficulties, absence of the usual means of communication or transportation (hereinafter referred to as `eventuality`) provided however the party to which the force majeure has happened shall use commercially reasonable efforts to eliminate such an event.

Force majeure shall also be deemed in the event of any regulatory decision or government order requiring the either party to suspend its service(s) or operation(s) for any reasons whatsoever.

Notice of the happening of any such eventuality or force majeure as mentioned herein shall be given by either party to the other within fifteen (15) days from the date of the occurrence thereof along with supporting proof of the occurrence of the Force Majeure event , neither party shall, by reason of such eventuality, be entitled to terminate this Contract, nor shall either party have any claim for damages against the other in respect of such non-performance, or delay in performance, and the work under this Contract shall be resumed as soon as practicable after such eventuality has come to an end or ceased to exist, and the decision of the Purchaser as to whether the work has been so resumed shall be final and conclusive.

Certificate of a Chamber of Commerce (Commerce and Industry) or other competent authority or organization of respective country shall be a sufficient proof of commencement and cessation of the above circumstances.

The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The time for completion shall be extended by number of days the party giving notice was prevented from performing his obligation due to Force Majeure, in accordance with Clause 27 hereof.

Should one or both parties be prevented from fulfilling their contractual obligations by a state of force majeure lasting continuously for a period of at least six (6) months, both the parties shall consult each other regarding the further implementation of the Contract, provided always that, if no mutually agreed arrangement is arrived at within a period within three (3) months from the expiry of the six (6) months referred to above, the Contract shall be deemed to have expired at the end of the said six (6) months referred to above. The above mentioned expiry of the Contract will imply that both the parties have the obligation to reach an agreement regarding the winding up and financial settlement of the Contract.

36.0 TEMPORARY SUSPENSION

36.1 Temporary Suspension during manufacture and Installation

36.1.1 The Purchaser may at any time temporarily stop the work being performed under the Contract or any part thereof by notice in writing to the Contractor specifying the reasons and approximate period of such suspension. All work so stopped shall be resumed by the Contractor based on a schedule to be mutually agreed upon between the Purchaser and the Contractor. Total cumulative period of such temporary suspension shall not exceed a period of six (6) months. However, if the period of temporary suspension exceeds six (6) months, the Parties shall mutually agree on the further course of action.

36.1.2 The Purchaser will not pay the Contractor for any work which is performed during such an interval of suspension, and the Purchaser shall not be liable to the Contractor for any damages or loss caused by such a suspension of work. However, the reasonable cost of necessary preservation of specific items, storage, watch & ward, withdrawal and re-deputation, etc, which is required during such suspension period, not for reasons attributable to the Contractor, to ensure proper resumption of work shall be mutually agreed between the Purchaser and the Contractor and shall be borne and paid by the Purchaser.

If the aggregate duration of the suspensions of the Contract for reasons not due to Contractor's default exceeds six (6) months on account of one or more periods of suspension, then the Parties shall mutually agree on the further course of action. In the event of termination of the Contract for reasons of suspension solely attributable to the Purchaser the documented costs incurred by the Contractor and if agreed by the

Purchaser, in performing the portion of the scope of supply prior to termination incurred for the execution and/or by the Contractor prior to the date of termination shall be paid by the Purchaser.

The extra/additional cost (if any) incurred by the Contractor in giving effect to the Purchaser's order under this Clause shall be borne by the Purchaser unless such suspension is (i) otherwise provided for in the Contract; (ii) necessary for proper execution of the work or by reason of weather or other force majeure conditions or by some default on the part of the Contractor; (iii) necessary for safety works or part thereof, provided the Contractor shall not be entitled to recover any such extra cost unless he gives notice in writing of his intention to claim to the Purchaser with 30 days of the purchaser's order. The Purchaser shall settle and determine the extra payment to be made to the Contractor in respect of such claims as the Purchaser/Engineer shall consider fair and reasonable.

37.0 PATENT INFRINGEMENT AND INDEMNITY

37.1 Patent Infringement

- 37.1.1 The Contractor shall at all times protect, indemnify and save/ keep harmless the Purchaser, its successors, assigns, , any claim made by a third party against all liability, including costs, expenses, claims, suits or proceedings at law, in equity or otherwise, arising out of, or in connection with, any actual or alleged patent infringement (including process patents, if any), or violation of any license with respect thereto, by reason of the manufacture and/or sale by, or on behalf of, the Contractor of the plant or any part thereof, or the purchase thereof by the Purchaser or the use thereof in India for the purchase for which it is furnished, or the sale by the Purchaser, its successors or assigns or products made, manufactured, fabricated, processed or produced with the said plant or any part thereof, and will defend or settle at the Contractor's own expense, any such claims, suits, or proceedings.
- 37.1.2 The Purchaser will promptly notify the Contractor in writing of any such claim, suit, action or proceeding coming to its attention, giving authority and all available information and assistance for the Contractor's defense of the same. If at any time the installation of the plant, or any part thereof or the use thereof in India for the purpose for which it is furnished, or the sale of products produced therewith, is prevented or enjoined because of patent infringement or claimed infringement, the Contractor shall promptly at his own expense, either procure for the Purchaser the right to use and continue to use such plant or replace the same at his own expense with equally efficient non-infringing plant satisfactory under all requirements of the Contract, so that the operation of the Purchaser's plant will not be unduly delayed or interrupted. If shipment of the plant, or any part thereof is prevented by attachment, injunction or otherwise at, or in the course of transit from, the Contractor's factory or other point of origin to the site of the Purchaser's plant, as a result of any claim of Patent infringement, the Contractor shall, at his own cost and expense, promptly furnish and post the necessary bond or take such other steps as may be necessary to enable shipment to be made without delay. The Purchaser will have

the right at its own expense to retain counsel of its own choice to collaborate in the defense of any such claim, suit action on proceeding.

37.2 Indemnity

The Contractor assumes responsibility for, and shall at all times indemnify and save harmless the Purchaser, the Engineer, or their officers or employees from all losses, liability, claims, costs, expenses, taxes and assessments, including penalties, punitive damages, attorney's fees and court costs which are, or may be, required with respect to any breach of the Contractor's obligations under this Contract, or for which the Contractor has assumed responsibility under this Contract, including those imposed under any contract, local or national law or laws, or in respect to all salaries, wages, or the compensation of all persons employed by the Contractor or his Sub-Contractors or suppliers in connection with the performance of any work covered by the Contract. The Contractor shall execute and deliver and shall cause his subcontractors and suppliers to execute and deliver such other further instruments and to comply with such requirements of such laws, and regulations as may be necessary there under to confirm and effectuate this Contract and to protect the Purchaser, Engineer, or their officers or employees. The Purchaser shall not be in any way responsible for any accident or damages incurred or claims arising there from during the period of Erection, Installation and putting into operation and commissioning of the plant, machinery and equipment under the responsibility and supervision of the Contractor.

38.0 ENVIRONMENT

38.1 The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to avoid injury, damage and nuisance to people and property resulting from pollution, noise and other results of his operations. The Contractor shall ensure that air emission, surface discharges and effluent from the Site during the Contract period shall not exceed the values indicated in the Purchaser's requirements, and shall not exceed the values prescribed by law. The Contractor shall conform to the Purchaser's requirements and shall indemnify the Purchaser against any liability or damages or claims arising out of his operations.

38.2 The Contractor shall abide by the following environment, safety and health policy of the Purchaser.

- a) The Contractor must adhere to all the applicable statutory laws pertaining to safety, health and environment.
- b) The Contractor must ensure that there is no wastage of water at the Work Site. The Contractor must also ensure that all the water tapping points are leak proof.
- c) All the motor vehicles of the Contractor used for transporting materials/machinery etc. should have pollution control certificates and the same should be submitted at the time of obtaining gate passes. A copy of the same must be exhibited/pasted on the vehicle also.
- d) The Contractor must ensure dust suppression measures in the work areas by sprinkling of water etc. and also ensure that all his workers use dust masks while working in dusty areas.
- e) The Contractor must ensure proper housekeeping at site by keeping the work areas free from unwanted material and greases, oil to avoid slips & falls.

- f) The Contractor must ensure that all the debris generated during the work is transported safely to dump yard such that there is no spillage of debris on the road during transportation (by covering with a plastic sheet/tarpaulin)
- g) All the garbage collected from, dust bins etc. should be transported in covered vehicles.
- h) All the material which may be recycled / reused should be transported to the designated place for reuse/recycling.
- i) All the cut jungle growth and trees should be disposed at the dumping yard without open air burning.
- j) The Contractor must ensure that there is no spillage of oil or paints on the floors/grounds etc.
- k) All representatives/supervisors/workers of contractors must take safety and environmental induction training and comply with the instructions given therein.

39.0 REMEDIES OF PURCHASER

- 39.1 All costs or expenses for which the Contractor may become liable to the Purchaser under the Contract will be recovered from any invoice of the Contractor after informing the Contractor .If no amount is due to the Contractor such amount will be billed with evidence by the Purchaser to the Contractor. The Contractor shall pay the bills within sixty (60) days after receipt or advice the Purchaser of any objections within fifteen (15) days.
- 39.2 Failure of either party to insist upon strict performance of any of the terms and conditions of the Contract will not be deemed as a waiver of any rights or remedies that the said party may have and will not be deemed as a waiver of any subsequent default under the terms and conditions of the Contract. No right or remedy of the either party will be exclusive of any other right or remedy and the said party will have all rights and remedies given under the Contract and now or hereafter existing in law or by statute. The shipping or delivery by the Contractor or receiving of the payment by from the Purchaser for the plant, machinery and equipment under this Contract will not be deemed a waiver of any rights for any prior failure by the Contractor to comply with any of the provisions of the Contract.
- 39.3 All costs, charges damages or expenses which the Purchaser may have paid, for which under the Contract, the Contractor is liable, may be deducted, by the Purchaser from any money due or becoming due by him to the Contractor under the contract, or may be recovered by action of law or otherwise from the Contractor.

40.0 ARBITRATION

- 40.1 Any dispute(s) or difference(s) whatsoever arises under or out of or in connection with this Contract, or in respect of any defined legal relationship associated therewith or derived therefrom, the parties agree resolve/settle the same by submitting that dispute to arbitration in accordance with the International Centre for Alternative Dispute Resolution (ICADR) Arbitration Rules 1996.

The authority to appoint the arbitrator(s) shall be the International Centre for Alternative Dispute Resolution (ICADR).

The international center for alternative dispute resolution will provide administrative services in accordance with ICADR Arbitration Rules 1996

The language of the arbitration proceeding shall be English

The place of arbitration proceedings shall be Telangana, India.

Note: In respect of PSUs/Government organizations, the DPE guidelines shall be applicable.

Work under the contract shall be continued by the contractor during the arbitration proceedings, unless otherwise directed in writing by the Purchaser or unless the matter is such that the work cannot possibly be continued until the decision of the arbitrators is obtained, and save as those which are otherwise expressly provided in the Contract, no payment due or payable by the purchaser shall be withheld on account of such arbitration proceedings, unless it is the subject matter or one of the subject matter thereof.

- 40.2 Work under the Contract shall be continued by the Contractor during the arbitration proceeding, unless otherwise directed in writing by the Purchaser or unless the matter is such that the work cannot possibly be continued until the decision of the arbitrators is obtained, and save as those which are otherwise expressly provided in the Contract, no payment due or payable by the Purchaser shall be withheld on account of such arbitration proceedings, unless it is the subject matter or one of the subject matters thereof.

41.0 ADDITIONAL CONDITIONS FOR COMPLETE ERECTION OF EQUIPMENT

- 41.1 When the Contract requires the Contractor to undertake complete erection of plant, machinery and equipment start-up and putting into commission, the following conditions will apply, in conjunction with other clauses of the conditions of contract as stated hereinbefore in so far as they are applicable.

- (i) The Contractor shall be solely responsible for the satisfactory Installation, start-up and commissioning of the plant, machinery and equipment supplied under the Contract, including demonstration of performance guarantees notwithstanding that the Contractor may have been assisted by the Purchaser or his authorized representative in doing so.
- (ii) If the Contractor performs any work in a manner contrary to the Contract without the written approval of the Engineer/Purchaser, the Contractor shall bear all the costs arising there from and shall be responsible for all the losses to the Purchaser arising there from.

41.3 Installation

Installation and erection work shall be carried out by the Contractor in the presence and under the general supervision and to the satisfaction of the Engineer/Purchaser. The Contractor shall receive instructions and directions from the Engineer/Purchaser in connection with the Work and shall strictly abide by the same, within the preview of the Contract. If the Contractor performs

any work in a manner contrary to the Contract without the written approval of the Engineer/Purchaser, the Contractor shall bear all the costs arising therefrom and shall be responsible for all the damages and direct losses to the Purchaser arising therefrom.

41.4 Facility to Purchaser's Engineers

The Contractor shall provide every reasonable facility and opportunity to the Purchaser's engineers and personnel as required by the Purchaser to become familiar with the Installation, erection, operation and maintenance of the equipment supplied under the Contract.

41.5 Programme and Particulars of work and Progress Reports

41.5.1 The Contractor shall submit to the Purchaser for his approval before the commencement of erection work and subsequently, at such times as may be required by the Purchaser, the programme and order in which the Contractor proposes to carry out the work, with the date and completion times for various parts and phases of the work, including particulars regarding the Contractor's arrangements for carrying out the work and of the erection and transportation equipment and tools and category wise staff and labour which the Contractor shall engage on the work, such programmes shall be within the overall time schedule of completion of erection of equipment as specified in the contract. The submission to and approval by, the Purchaser of such programme or the furnishing of such particulars shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

41.5.2 During the progress of the Work, the Contractor shall submit to the Engineer monthly progress reports and such other reports on the Installation work and the Contractor's field organization as may be required by the Engineer.

41.6 Contractor's Agent and Personnel

41.6.1 In order to carry out responsibilities under this section, the Contractor shall employ one competent agent, whose name shall be previously communicated in writing by the Contractor to the Purchaser, to superintend the Installation work. The said agent shall be constantly present at Site during working hours and during the extended period so granted to carry out the Installation work and any instructions given to the said agent by the Purchaser and / or Engineer shall be deemed to have been given to the Contractor.

41.6.2 The Contractor shall ensure that his agent and every other personnel employed by him at Site shall co-operate with any and all others agencies engaged in the Site. Failure to extend such co-operation or misconduct or incompetence or negligence by any individual including the agent, shall be sufficient cause for removal from the Site of such individual by the Contractor and the Contractor shall remove such individual forthwith from the Site, if required by the Purchaser. In such cases, the Contractor shall provide immediately competent personnel to replace such individual.

41.7 Working Hours

A normal working day shall mean eight hours of work. There shall be six (6) working days in a week. No work during Sundays and other locally recognized holidays and during night shall be carried out by the Contractor without the written permission of the Engineer. With the exception that, when the carrying out the work is unavoidable or necessary for the saving of life or property or for the safety of the erection work, the Contractor shall carry out such work and shall immediately inform the Purchaser / Engineer to that effect.

41.8 Supply of Installation Equipment, Materials and Labour

Unless otherwise provided in the Contract, the Contractor at his own expenses shall supply all Installation, erection and transportation equipment, tools, materials and labour and all other things of every kind necessary for the due fulfilment of the Contract.

41.9 Delay in Obtaining Materials from Purchaser

If the Purchaser has undertaken to supply any material specified in the Contract at rates and conditions stated therein, the Contractor shall keep himself in touch with the day to day position regarding the supply of materials by the Purchaser and shall so adjust the progress of the Work that his labour may not remain idle nor may there be any other claim due to or arising from delay in obtaining the materials. No claim whatsoever shall be admissible by the Purchaser on account of delay in supplying materials, if any.

41.10 Purchaser's Installation and Transportation Equipment

The Purchaser may at his discretion give on hire to the Contractor installation and/or transportation equipment, if available, for the use of the Contractor (but without prejudice to the Contractor's obligations under Clause 41.8 hereof) during the execution of the work on such terms as may be specified in the Contract or in a separate agreement for Hire of plant. The Contractor shall take all reasonable care of all such equipment belonging to the Purchaser but committed to his charge and shall be responsible for all damage or loss caused to such equipment while they are in his charge. On completion of the Contract or at its termination for any reason whatsoever or at any earlier occasion as required by the Purchaser, the Contractor shall return all such equipment to the Purchaser in good order and repair, wear and tear expected, and shall be entirely responsible for any failure to account for the same or any damage done thereto.

41.11 Return of Surplus Materials

Notwithstanding anything contained to the contrary anywhere in this Contract, wherever any materials for the execution of the work are procured with the assistance of the Purchaser, either by issue from the Purchaser's stocks or purchase made under orders or permits or license issued by the Purchaser, the Contractor shall use the said materials economically and solely for the purpose of the work and shall not dispose of them without the written permission of the Purchaser and shall return to the Purchaser all such surplus serviceable materials that may be left with the Contractor after the completion of the Contract or at its termination for any reason whatsoever, on being paid for or credited such price as the Purchaser shall determine, having due regard to the initial cost and the condition of the materials at the time of such return thereof. The price to be

allowed to the Contractors however shall not exceed the amount charged to him, excluding the storage charge if any. The decision of the Purchaser in this regard shall be final and conclusive. In the event of a breach of the aforesaid condition, the Contractor shall (in addition to making himself liable for action for contravention of the terms of the license or permit and/or for criminal breach of trust) be liable to the Purchaser for payment of double the cost the material not returned as determined by the Purchaser plus all money, advantages of profits resulting or which in the usual course would have resulted to him by reason of such breach.

41.12 Accident or Injury to Workmen

41.12.1 The Contractor shall be solely liable for any accident or injury that may happen to any of his personnel engaged in connection with the installation work according to the Contract within the battery limit. The Purchaser shall not be liable for or in respect of any damage or compensation payable at law in respect of or in consequence of any accident or injury to any personnel in the employment of the Contractor and the Contractor shall indemnify and keep indemnified the Purchaser against all such claims, damages, compensations and proceedings.

41.12.2 The Contractor shall forthwith report to the Engineer all cases of accidents to any of his personnel and shall make every arrangement to render all possible assistance and aid to the victims of the accident.

41.13 Compliance with Statutory and other Regulations

41.13.1 The Contractor shall, in all matters arising in the performance of the Contract, confirm at his own expense with the provisions of all Central or State statutes, ordinances or laws and the rules, regulations, or bye-laws of any local or other duly constituted authority and shall keep the Purchaser indemnified against all penalties and liabilities of every kind for breach of any such statute, ordinance, law, rule, regulation or bye-law.

41.13.2 The Contractor shall give all notices and pay all fees and taxes required to be given or paid under any Central or State statutes, ordinances or other laws or any regulation or bye-laws of any local or other duly constituted authority in relation to the Installation work except where the Purchaser is statutorily required to obtain such approvals / clearance.

41.14 Payment of Taxes for Foreign Personnel

The Contractor shall pay all taxes due in India in respect of all personnel employed by him for Installation work, including any foreign personnel who are non-residents of India as detailed under the Contract.

41.15 Work Permits, Passports etc.

The Contractor shall be responsible for arranging and obtaining at his own cost the necessary work permits, passports, visas, police permits and expenses for custom's duty related to personal

and other effects of any personnel employed by him for Installation work, who are non-residents of India. Purchaser shall make all necessary efforts in order to help the Contractor in doing so.

41.16 Travelling Expenses

All travelling expenses for the Contractor's personnel shall be borne by the Contractor.

41.17 Labour Rules

41.17.1 Provisions of Contract Labour Act

In respect of all labour, directly or indirectly, employed by the Contractor for the Installation work, the Contractor shall comply with the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, or any amendment thereof, and all legislations and rules of the State and/or Central Government or other local authority, framed from time to time governing the protection of health, sanitary arrangements, wages, welfare and safety for labour employed on the Installation work. The rules and other statutory obligations with regard to fair wages, welfare and safety measures, maintenance of registers etc., will be deemed to be part of the Contract.

41.17.2 Provisions of Minimum Wages and Payment of Wages Act

- (i). The Contractor shall comply with the provisions of the Minimum Wages Act, 1948, the Payment of Wages Act, 1936, Provident Fund and Miscellaneous Provisions Act 1972, Employees State Insurance Act 1948, and any amendment thereof in respect of all employees employed by him for the purpose of carrying out the Installation work. The Contractor shall supply to the Purchaser any labour required to work wholly or partly under the direct order and control of the purchaser, whether in connection with any work being executed by the contractor or otherwise for the purpose of purchaser, and such labour shall for the purpose of this clause still be deemed to be persons employed by the Contractor.
- (ii). If any amount shall, as a result of any claim or application made under the said applicable laws, be directed to be paid by the Purchaser, such, amounts shall be deemed to be amounts payable to the Purchaser by the Contractor. On failure by the Contractor to repay the Purchaser, any amounts paid by the Purchaser as aforesaid, within seven (7) days of demand being made from the Contractor, the Purchaser shall be entitled to recover the same from any amounts due or accruing to the Contractor under this or any other contract with the Purchaser.
- (iii). In the event of the retrenchment of workers by the Contractor or Sub-Contractors employed by the Contractor during or after the completion of the Work, the retrenchment compensation and other benefits will be paid by the Contractor to the workers as per the Industrial Disputes Act.

41.17.3 Provisions of Employee Compensation Act

The Contractor shall at all times indemnify and keep indemnified the Purchaser against all claim for compensation under the provision of the Employee Compensation Act, 1923 or any other law for the time being in force and as amended from time to time, in respect of, any workman employed by the Contractor in carrying out of the Contract and against all costs and expenses or penalties incurred by the Purchaser in connection therewith. In every case in which, by virtue of the provisions of Section 12, sub-section (1) of the Employee Compensation Act, 1923, the Purchaser is obliged to pay compensation to a workman employed by the Contractor in executing the contract the Purchaser shall recover from the Contractor the amount of the compensation so paid and, without prejudice to the rights of the Purchaser under Section 12, sub-section (2) of the said Act, the Purchaser shall be at liberty to recover such amount or any part thereof deducting it from the security deposit or from any sum due by the Purchaser to the Contractor whether under this Contract or otherwise. The Purchaser shall not be bound to contest any claim made against him under Section 12, sub-section (1) of the said Act, except on the written request of the Contractor and upon his giving to the Purchaser full security for all costs for which the Purchaser might become liable in consequence of contesting such claim.

41.17.4 Accommodation for Contractor's Staff

No quarters shall normally be provided by the Purchaser for the accommodation of the Contractor or any of his staff employed in connection with the Installation work. In exceptional cases where accommodation is provided to the Contractor at the Purchaser's discretion, recoveries shall be made at such rates as may be fixed by the Purchaser towards the rent of the building and furniture and fittings, if any, therein, as well as charges for electric current, water supply and conservancy.

41.17.5 Accommodation for workmen

The Contractor shall, at his own expense, make adequate arrangement for housing, supply of drinking water and provision of toilets for his staff and labour and disposal of sewerage. Suitable sites on the Purchaser's land, if available, may be allotted to the Contractor for the installation of camp site on such terms and conditions as may be prescribed by the Purchaser. All camp-sites shall be maintained in clean and sanitary condition by the Contractor at his own cost.

The Contractor shall comply with all sanitary rules in force and carry out all sanitary measures and permit inspection of all sanitary arrangement at all reasonable times by the Purchaser. Should the Contractor fail to make adequate sanitary arrangements, these will be provided by the Purchaser and the cost thereof shall be recovered from the Contractor.

41.17.6 Preservation of Peace

The Contractor shall take requisite precautions and use his best endeavour to prevent any riotous or unlawful behaviour by or amongst, his workmen and/or others employed by him and for the preservation of peace and protection of the inhabitants and security of property in the neighbourhood of the Site. In the event of the Purchaser requiring the

maintenance of a special police force at or in the vicinity of the Site during the tenure of the Contract, in consequence of the riotous or unlawful behaviour by or amongst the Contractor's workmen and/or others employed by him, all expenses thereof and costs of all damages due to such riotous or unlawful behaviour shall be borne by the Contractor, and, if paid by the Purchaser, shall be recoverable from the Contractor from any moneys due or that may become due to the Contractor by the Purchaser. The Contractor also undertakes to indemnify and hold harmless the Purchaser against any claims on such account.

41.17.8 Infectious Diseases

The Contractor shall remove from his camp site such labour and their families who refuse protective inoculations and vaccinations when called upon to do so by any competent authority. In the event of any breakout of infectious disease in the camp site, the Contractor undertakes to forthwith provide for all medical facilities and assistance and take all possible steps to prevent spread of such disease and also discard and destroy all belongings of and used materials by the infected parties and promptly arrange new accommodation in healthy sites as may be required by the labour and employees of the Contractor.

41.17.9 Medical Facilities at Site & health & safety

The Contractor shall provide medical facilities at the Site as per rule in force in relation to the strength of the Contractor's staff and workmen. The Contractor shall at all times take all reasonable precaution to maintain the health and safety of its personnel, employees and workmen. The Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance facilities/services are available at all times at the Site and suitable arrangements are made for all necessary welfare and hygiene requirements and for prevention of epidemics. The Contractor shall also appoint an accident prevention officer at the Site responsible for maintaining safety and protection against accidents.

41.17.10 Use of Intoxicants

The sale, use & consumption of alcohol or other intoxicating beverages in the Site or in any of the buildings, encampments or tenements owned, occupied by, or within the control of the Contractor or any of his employees or Sub-Contractors is forbidden, and the Contractor shall secure strict compliance with this condition.

41.17.11 Age Limits of Labour

The Contractor shall not employ children below the age of 18 as labourers for the Installation work.

41.17.12 Observance by Sub-Contractor

The Contractor shall be responsible for the observance of the provisions of Clauses 41.17.1 to 41.17.11 hereof by any Sub-Contractor(s) employed by him in the execution of the Contract.

41.17.13 Contractor's personnel

The Contractor's personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer/Purchaser may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's representative if applicable, who: (i) persists in any misconduct or lack of care, (ii) carries out duties incompletely or negligently, (iii) fails to conform with any provisions of the Contract, or (iv) persists in any conduct which is prejudicial to safety, health, or the protection of the environment. If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

41.18 Time of Completion for Installation Work and Delays

41.18.1 Date of Commencement of Installation Work

The date of commencement for the Installation work shall be reckoned from the dates on which the Contractor is given possession of the Site to commence Installation, which will be intimated to him in writing by the Purchaser and shall be as per the Bar/Pert Chart attached to the Contract Specifications.

41.18.2 Possession of Site

In terms of the Contract, the extent of portions of the Site of which the Contractor is to be given possession from time to time and the order in which such portion shall be made available to him, and subject to any requirement in the Contract to the order in which the Installation work shall be executed, the Purchaser will give to the Contractor possession of as much of the Site as may be required to enable the Contractor to commence and proceed with the Installation work. This will be in accordance with the programme referred to in Clause 41.5.1 hereof and otherwise in accordance with such reasonable proposals of the Contractor as he shall give by notice in writing to the Purchaser / Engineer. The Purchaser, will from time to time, as the work proceeds, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the Installation work, in accordance with the said programme or proposals (as the case may be). If the Contractor suffers delay from failure on the part of the Purchaser to give possession in accordance with the terms of this clause, the Purchaser shall grant an extension of time for the completion of the work. No compensation will be payable by the Purchaser for any such failure and delay.

41.18.3 Time of Completion for Installation Work

Time is the essence of the Contract. The whole of the work, including conducting performance tests to demonstrate performance guarantees according to the Contract shall

be completed within the time stipulated in the Contract, which shall be reckoned from the date of the commencement of the Installation work in accordance with Clause 41.18.1 hereof. Execution times indicated in the Contract are based on the assumption that the Site will be handed over to the Contractor free of obstacles and all other preconditions for installation of the material delivered are fully met.

41.18.4 Extension of Time of Completion for Installation Work

Save and except elsewhere provided in the Contract, should the amount of additional work of any kind or other circumstances of any kind whatsoever, which may occur, be such as fairly to entitle the Contractor to an extension of time for the completion of the Installation work, the Purchaser shall discuss and determine the period of such extension mutually with the Contractor.

41.18.5 Rate of Progress

The whole of the materials, plant, machinery, equipment and labour to be provided by the Contractor and the mode, manner and speed of execution of the Installation work are to be of a kind, and conducted in a manner, as per time schedule. Should the rate of progress of the Installation work be at any time, in the opinion of the Engineer / Purchaser, too slow to ensure the completion of the Work by the prescribed time or extended time for completion, the Purchaser / Engineer shall so notify the Contractor in writing, and the Contractor shall thereupon take such steps, as he may think necessary and the Purchaser / Engineer may approve, to expedite the progress so as to complete the entire Installation work by the prescribed time or extended time for completion. If the Contractor shall request permission to work by night as well as by day, then if the Engineer shall grant permission to work also by night, then the Contractor shall not be entitled to any additional payment whatsoever for so doing but, if such permission is refused and there is no equivalent practicable method of expediting the progress of the work, the time for completion of the Installation work may be extended by the Purchaser by such period if any, as is solely attributable to such refusal and deemed proper by the Purchaser / Engineer.

41.18.6 Night work without disturbance

If work at night is permitted as aforesaid it shall be carried out without unreasonable noise and disturbance. The Contractor shall indemnify the Purchaser from, and against, any liability for damage on account of noise or other disturbance created while, or in carrying out the Installation work, and from, and against, all claims, demands, proceedings, damages costs, charges and expenses whatsoever in regard to or in relation to, such liability.

41.18.7 Liquidated damages due to Delay in Completion

- (i) If the Contractor fails to deliver as per the time schedules or complete the commissioning of the Project within the Time for Completion specified in the

Contract or any extension thereof (allowed without Liquidated Damage) due to reasons attributable to the Contractor including its Sub-Contractors, the Purchaser shall be entitled to recover the amount of Liquidated Damages, but not by way of penalty, by making deductions from the Contractor's account lying with the Purchaser and if the amount to be deducted is not sufficient or available then by encashment of Contractor's Bank Guarantees, at the rate of 1% of the Contract Price, specified in the Contract , including taxes, duties, levies, cess, etc. per complete week of delay or part thereof up to a maximum of 10% of such Contract Price including taxes, duties, levies, cess, etc.

In case, the Contractor is a Consortium, the Purchaser shall recover the amount of Liquidated Damages, but not by way of penalty, by making deductions from the account of the lead member of Consortium and if the amount is not available then as a last resort by encashment of their Bank Guarantees, at the rate of 1% of the Contract Price, specified in the Contract , including taxes, duties, levies, cess, etc. per complete week of delay or part thereof up to a maximum of 10% of such Contract Price including taxes, duties, levies, cess, etc.

- (ii) Any recovery of Liquidated Damages shall be effected from the amount payable to the Contractor against Commissioning, Performance Guarantee Test, Final Acceptance Certificate and Performance Bank Guarantee.
- (iii) The Purchaser may, without prejudice to any other method of recovery, deduct the amount of such damages from any amounts in his hands due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligations to complete the work or from any other of his obligations and liabilities under the Contract.

41.19 Safety, Watching and Lighting

41.19.1 The Contractor shall be responsible for the provision of safety arrangement and protective clothing for all his workmen on Site whether or not engaged in actual Installation work thereof. He shall ensure that all his workmen on Site use safety belts, gloves, helmets, masks etc. as are necessary for their safety. The Contractor shall also be responsible for safety arrangement of all equipment used by him in connection with the installation and transportation work and shall employ only trained & competent operators to man the installation and transportation equipment. The Contractor shall use only tested equipment, tools, wire ropes etc. and shall periodically renew tests to the satisfaction of the Engineer. All test certificates shall be made available to the Engineer at site as and when required by him.

41.19.2 The Contractor shall, in connection with the Installation work, provide and maintain at his own cost all lights, guards, fencing and watching, when and where necessary or required by the Engineer or by any duly constituted authority, for the protection of the work and/or for the safety and convenience of the public or others. The Contractor shall

provide at his own cost the necessary watch and ward to ensure security and safety of all equipment and materials placed under the Contractor's custody.

41.20 Security Regulations

The Contractor shall abide by all the security regulations at Site promulgated by the Purchaser from time to time. The Contractor shall provide identity badges for all his personnel which must be properly displayed by them at Site. In order to facilitate the issue of exit gate permits by the Purchaser for materials and equipment after the completion of the work, the Contractor shall submit to the Purchaser lists of installation equipment etc. and/or other materials that shall be taken by him inside the Site from time to time.

41.21 Care of Work

From the commencement to the completion of the installation work the Contractor shall take full responsibility for the care of plant, machinery and equipment and for all temporary works and in case any damage or loss shall happen to the plant, machinery and equipment or to temporary works from any cause whatsoever shall at his own cost replace or repair and make good the same.

41.22 Damage to Persons or Property

The Contractor shall indemnify and keep indemnified the Purchaser against all losses and claims for injuries or damage to any person or any property whatsoever which may arise out of, or in consequence of, the work at site carried out by the Contractor and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

41.23 Extraordinary Traffic

The Contractor shall use every reasonable means to prevent any of the highways or bridges communicating with on the routes to the Site from being subjected to extraordinary traffic within the meaning of the Road Traffic Act, by any traffic of the Contractor or any of his Sub-Contractors and in particulars the Contractor shall select routes and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from moving of plant and materials from and to the Site shall be limited so far as reasonably possible and so that no unnecessary damage or injury may be occasioned to such highways and bridges. For any damage caused to highways or bridges by extraordinary traffic as aforesaid the Contractor shall be solely responsible.

41.24 Co-operation with other Contractors

The Contractor shall plan and execute his work in a phased manner as directed by the Purchaser from time to time and shall fully co-operate with other agencies working at site simultaneously and afford all responsible facilities to these agencies so as not to obstruct or retard the works simultaneously being executed by such agencies in any way.

41.25 Inspection of other Contractor's Works

If any part of the Contractor's work depends for proper execution on the Work of another contractor, the Contractor shall inspect and promptly report to Engineer/Purchaser, the defects, if any in such work that render it unsuitable for such proper execution and result. The Contractor's failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other contractor's work after the execution thereof.

41.26 Vesting of Constructional / Erection Plant etc.

All constructional/erection plant, temporary works and materials owned by the Contractor, or by any company in which the Contractor has a controlling interest, shall, when brought on to the Site, immediately be deemed to become the property of the Purchaser.

41.27 Irremovability of Constructional/Installation, Materials etc.

No Constructional/erection plant, temporary works or materials or any part thereof shall be removed from the site by the Contractor without the written consent of the Purchaser, which consent shall not be unreasonably withheld where the same is no longer immediately required for the purpose of the completion of the work and the Purchaser will permit the Contractor the exclusive use of all such constructional/erection plant, temporary works and materials in and for the completion of the work until the occurrence of any events which gives the Purchaser the right to exclude the Contractor from the Site and proceed with the completion of the Work.

41.28 Removal of Constructional/Installation Materials

Upon the removal of any such constructional/erection plant, temporary works and materials as have deemed to have become the property of the Purchaser under Clause 41.26 hereof, with consent as aforesaid, the property therein shall be deemed to revert in the Contractor and upon the completion of the Work, the property in the remainder of such constructional/erection plant, temporary works, and materials as aforesaid shall be deemed to re-vest in the Contractor. If the Contractor fails to remove any constructional/erection plant, temporary works or materials as aforesaid, within such reasonable time after completion of the Work as may be allowed by the Purchaser, then the Purchaser may sell any such constructional/erection plant, temporary works and materials as aforesaid and after deduction from any proceeds of sales, the costs, charges and expenses of and in connection with such sale, shall pay the balance (if any) to the Contractor, but to the extent that the proceeds of any sale are insufficient to meet all such costs, charges and expenses, the excess shall be a debt due from the Contractor to the Purchaser and shall be deductible or recoverable by the Purchaser accordingly as aforesaid.

41.29 Purchaser not liable for Loss or Injury to Construction/Erection Plant

The Purchaser shall not at any time be liable for the loss of or injury to, any of the constructional / erection plant, temporary works or materials.

41.30 Work in or around an Operating Plant

When the work is being carried out in or around an operating plant, where the plant must run uninterrupted, the Contractor shall only work at specified places and times as mutually arranged between the Contractor and the Purchaser. The Contractor shall take sufficient care in moving his construction erection plant and equipment from one place to another in an operating plant so that they may not cause any damage to the property of the purchaser, like roads, overhead and underground cables, pipes and/or any other services or equipment or building and in the event of the contractor's failure to do so, the cost of such damages, including eventual loss of working hours as estimated by the Purchaser, is to be borne by the Contractor.

41.31 Site to be cleared on Completion of Work

During erection the Contractor shall at all times keep the working and storage areas used by him free from accumulation of waste materials and/or rubbish, immediately after the completion of erection, the Contractor shall remove or dispose of all temporary structures, waste, debris, rubbish etc. and leave the Site in a clean condition to the satisfaction of the Purchaser.

41.32 Possession Prior to Completion

The Purchaser shall have right to take possession of or use any completed or partially completed part of the Work. Such possession or use shall not be deemed to be in acceptance of any Work done not in accordance with the Contract.

41.33 Withholding Payment

The Purchaser will have full liberty to withhold and set off all sums due or to become due to the Contractor (including security deposit), whether under this or any other contract, against any sum due or to become due to the Purchaser from the Contractor under this or any other contract. The Purchaser also reserves the right to withhold the whole or part of the payment claimed by the Contractor which in the opinion of the Purchaser, is necessary to protect himself from loss on account of defective work not remedied, guarantees not met, claims filed against the Contractor, failure by the Contractor to make due payments for materials, labour employed by him, damages to other contractor etc. When grounds for withholding payments are removed to the satisfaction of the Purchaser, payment of the amount due to the Contractor shall be made by the Purchaser without interest.

41.34 Termination of Contract

The Purchaser, without prejudice to any other rights or remedies it may possess, may terminate the Contract in case of the Contractor's noncompliance of his undertakings and obligations under this Contract and more particularly but not limited to the following circumstances by giving notice of termination and its reasons thereof to the Contractor:

- (i). if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or if, the Contractor is a corporation, a resolution is passed

or order is made for its winding up (other than voluntary liquidation for the purpose of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt;

- (ii). if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the terms of the Contract;
- (iii). if the Contractor
 - a) abandoned or repudiated the Contract; or
 - b) have an execution levied on his goods or property; or
 - c) has without any valid reasons to the satisfaction of the Purchaser failed to commence Work as provided in the Contract promptly or has suspended the progress of the Contract performance for more than 14 (fourteen) days after receiving a written instruction from the Purchaser to proceed; or
 - d) persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract; or
 - e) Refuses or is unable to provide sufficient materials, service or labour and adequate resources to execute and complete the Work in the manner and progress rate as specified in the Contract.
- (iv). Unjustified and un-warranted interruption of services performed by the Contractor and such interruption occurred for more than 15 (fifteen) days without assigning any reason.
- (v). Errors, negligence, insufficiencies in the specifications and contractual work under execution, or failure to supply sufficient material or man-power as per Technical Specification or other similar circumstances affecting the quality of work for reasons attributable to the Contractor.
- (vi). If during the work, it appears that the design, specifications, recommendations supplied / provided by or through the Contractor do not conform to the terms and conditions of the Contract and good and sound current engineering or fabrication practices.
- (vii). If the Contractor disregards the instructions of the Purchaser in relation to the execution of the Installation work or refuses to implement instructions received from the Purchaser or Engineer within the stipulations of this Contract.
- (viii). If the Contractor promises, offers or gives any bribe, commission, gift or advantage, either by himself or through his agent, to any officer or employee of the Purchaser or Engineer or to any person on their behalf in relation to the execution of this Contract.

Then, in any of the aforesaid cases, the Purchaser may serve the Contractor with a notice in writing to that effect, and if the Contractor does not, within seven (7) days after the delivery to him of such notice, proceed to make good his default, , and carry on the work in compliance with such directions as stated in the aforesaid notice to the entire satisfaction of the Purchaser, the

Purchaser shall be entitled, after giving forty eight (48) hours` notice in writing to expel the Contractor from the Site without thereby avoiding the Contract or releasing the Contractor from any of his obligations or liabilities under the Contract or effecting the rights and powers conferred on the Purchaser by the Contract. The expiry of forty-eight (48) hours from the time of serving such notice in writing to the Contractor by the Purchaser shall be conclusive evidence of the expulsion of the Contractor from the Site, notwithstanding any physical presence of the Contractor or his workmen at Site after such expiry.

Upon receipt of termination hereof, the Contractor shall either immediately or upon such date as may be provided in the notice of termination:

- (i). cease all such work, except for such work as the Purchaser may specify in the said notice for the sole purpose of protecting that part of the Project already executed or any work required to leave the Site in a clean and safe condition;
- (ii). terminate all sub contracts except those to be assigned to the Purchaser pursuant to sub clause (iv) below;
- (iii). deliver to the Purchaser the parts of the work /Project executed by the Contractor up to the date of termination;
- (iv). to the extent legally permissible, assign to the Purchaser all rights, title and benefit of the Contractor in relation to the plant, machinery and equipment as at the date of termination and as may be required by the Purchaser, in any subcontracts concluded between the Contractor and its subcontractors;
- (v). deliver to the Purchaser all drawing and specifications and other documents prepared by the Contractor or its subcontractor as at the date of termination in connection with the work.

Upon such expulsion or termination, the Purchaser may himself complete the Installation work or may employ any other contractor to complete the Work at the risk and cost of the Contractor. In such case, the Contractor shall be liable for any costs for obtaining and /or executing the balance of the work from another agency/contractor in excess of the Contract price. In case of termination of part of the Contract, the Contractor will continue performance on the Contract to the extent not terminated by the Purchaser. The Purchaser or such other contractor may use for such completion so much of the constructional / installation plant, temporary works and materials which has become the property of the Purchaser or which is available on the Site pursuant to Clause 41.28 hereof as he or they may think proper. The Purchaser pursuant to Clause 41.28 is entitled at any time to sell any of the said constructional / installation plant, temporary works and unused materials and apply the proceeds of sale in, or towards, the satisfaction of any sums due or which may become due to him from the Contract or under the Contract. The Purchaser may to the exclusion of the right of the Contractor take over and use any Contractors equipment owned by the Contractor and on the Site in connection with the Work for such reasonable period as the Purchaser considers expedient for the supply and Installation of the Project. Provided always that the Purchaser shall at any time after expelling the Contractor from the Site, have the right to rescind this Contract and claim damages from the Contractor. Provided further that, the exercise of any of the rights aforesaid, shall not prejudice the Purchaser's right and remedies under the law and under the Contract.

41.35 Waiver

Provided always that, in any case in which any of the powers conferred upon the Purchaser by Clause 41.34 hereof shall have become exercisable but have not been exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions thereof, and such powers shall notwithstanding be exercisable by the Purchaser in the event of any future case of default by the Contractor for which his liability for past and future defaults shall remain unaffected. Further, if any condition of the Contract has been waived by the Purchaser at the request of the Contractor in a specific case this will not constitute a waiver in all similar cases in future and will not be cited as precedence.

41.36 Valuation on Determination

The Purchaser shall as soon as may be practicable, after such expulsion of the Contractor from the Site, fix and determine ex-parte or by, or after, reference to the parties or after such investigation or enquiries as he may consider fit to make or institute and certify the amount (if any) which had at the time of such expulsion been earned by or would accrue to the Contractor in respect of the erection work till then executed by him under the Contract, as the Purchaser shall consider reasonable and proper. The Contractor shall have however no claim to compensation for any loss sustained by him, by reason of his having purchased or procured any equipment materials or entered into any commitments or made any advances on account of, or with a view to, the execution of the erection work or the performance of the Contract.

41.37 Payment after Termination

If the Contractor is expelled as aforesaid, the Purchaser shall not be liable to pay to the Contractor any moneys, including the security deposit on account of the Contract, until the costs of the completion of the erection work, considering the cost of carrying out the erection work, either by the Purchaser itself or by any other contractor employed by it, in excess of the sum which would have been payable to the Contractor if the erection work had been completed by the Contractor under the terms of Contract, damages for the delay in completion (if any) and all other expenses incurred by the Purchaser have been ascertained. The Contractor shall then be entitled to receive only such sum (if any) as the Purchaser may certify after deduction of the said amount from the sum payable to the Contractor. But if such amount shall exceed the sum which would have been payable to the Contractor, then the Contractor shall, upon demand, pay to the Purchaser the amount of such excess, and it shall be deemed a debt due by the Contractor to the Purchaser and be recoverable accordingly.

41.38 Jurisdiction

The Contract and all questions, disputes or differences arising under or in connection with this Contract, subject to Arbitration clause, shall be subject to the exclusive Jurisdiction of the courts within the local limits of Telangana, India.

42.0 CONSTRUCTION OF CONTRACT

This Contract and the clauses thereof shall be interpreted and applied solely according their wording, to the objects in view. The Contract shall in all respects be construed and operated as a contract as defined in the Indian Contract Act, 1872, and, save as otherwise expressly provided herein, shall be governed by the provision of the said Act.

43.0 PENALTY FOR USE OF UNDUE INFLUENCE

The Contractor undertakes that he has not given, offered or promised to give, directly or indirectly any gift, consideration, reward, commission, fees, brokerage or inducement to any person in services of the Purchaser or otherwise in procuring the Contract or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the Contract or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government. Any breach of the aforesaid undertaking by the Contractor or any one employed by him or acting on his behalf (whether with or without the knowledge of the contractor) or the commission of any offence by the contractor or anyone employed by him or acting on his behalf, as defined in Chapter IX of Indian Penal Code, 1860 or the Prevention of Corruption Act, 1947 or any other Act enacted for the prevention of corruption shall entitle the Purchaser to cancel the contract and all or any other contracts with the contractor and recover from the contractor the amount of any loss arising from such cancellation. A decision of the Purchaser or his nominee to the effect that a breach of the undertaking has been committed shall be final and binding on the contractor.

Giving or offering of any gift, bribe or inducement or any attempt to any such act on behalf of the Contractor towards any officer/employee of the Purchaser or to any other person in a position to influence the decision of the Purchaser, directly or indirectly or any attempt to influence any officer/employee of the Purchaser, directly or indirectly or any attempt to influence any officer/employee of the Purchaser for showing any favour in relation to this or any other contract, shall render the Contractor to such liability/penalty as the purchaser may deem proper, including but not limited to termination of the Contract, imposition of penal damages, forfeiture of the Bank Guarantee and refund of the amount paid by the purchaser.

44.0 GENERAL

Should any conditions in the General Conditions of Contract be contrary to the Special Conditions of the Contract, if any, such special contract conditions shall prevail.

45.0 LIMITATION OF LIABILITY

Except in cases of criminal negligence or willful misconduct the aggregate liability of the Contactor to the Purchaser, whether under the Contract, in tort or otherwise, including the cost of repairing or replacing defective equipment shall not exceed the 100% (Hundred Percent) of the Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective plant and equipment or any obligation of the Contractor to indemnify the Purchaser with respect to copyright (applicable to software) patent infringement and Employee/workman compensation and other liabilities and compensation as per the clauses specified in the Contract.

46.0 LIABILITY OF GOVERNMENT OF INDIA

It is expressly understood and agreed between the Contractor and the Purchaser that the Purchaser is entering into this Contract solely on its own behalf and not on behalf of any other person or entity. In particular, it is expressly understood and agreed that the Government of India is not a party to this Contract and has no liabilities, obligations or rights hereunder. It is expressly understood and agreed that the Purchaser is an independent legal entity with power and authority to enter into e-contracts solely on its own behalf under the applicable laws of India and general principles of Contract Law. The Contractor expressly agrees, acknowledges and understands that the Purchaser is not an agent, representative or delegate of the Government of India. It is further understood and agreed that the Government of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of the Contract. Accordingly, the Contractor hereby, expressly waives, releases and foregoes any and all actions and claims, including cross claims, impleader claims or counter claims against the Government of India arising out of this Contract and covenants not to sue the Government of India in any manner, claim, and cause of action or thing whatsoever arising of or under this Contract.