



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
उद्योग क्षेत्र, नई दिल्ली / Industry Sector, New Delhi
मानव संसाधन प्रबंध / Human Resources Management

Ref. no. ID/Pur/0910/Precision AC /2014-15/01

Dated 05 .01.2015

Enquiry Opening Date: 27.01.2015

M/s

Subject :- Procurement of 02 nos. 6.5 T Precision AC

Dear Sir,

We invite your most competitive offer for supply and installation (Erection & commissioning) of 02 nos. **6.5 T Precision ACs** whose specifications are as given at Annexure-II attached/ enclosed and whose complete description is as per Price format given at Annexure-V attached/ enclosed.

You have to submit your offer as per the Price format given at Annexure-V attached/ enclosed.

Any corrigendum to this tender, if issued by BHEL in future, will be uploaded on the BHEL website (www.bhel.com) & e-procurement portal of government of India (<http://eprocure.gov.in/cppp/>). Therefore, the bidders are advised to keep visiting the mentioned websites regularly. Any clarification, if required, should be sought from the undersigned.

You are requested to send your offer as per our specifications only in two parts i.e. Part I – Techno - Commercial Bid and Part-II - Priced Bid .

Bids should be submitted as per clause 1 of Terms and Condition, Annexure-1 attached.

Bids Complete in all respects should reach our office on or before 27/01/2015 up to 02.00 PM.

Un-Priced Bid will be opened at 15-30 Hrs on the same day in the presence of authorized representative of the bidders who choose to be present. BHEL reserve the right to make any changes in the terms and conditions of purchase and reject any or all bids including those received late and or incomplete.

Delivery: 04 weeks from the date of Purchase Order.

Liquidated Damages for Delay in Delivery as per ANNEX. -1 (TERMS AND CONDITIONS) enclosed/attached.

(1)

Deepak Vohra
25/01/15



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
उद्योग क्षेत्र, नई दिल्ली / Industry Sector, New Delhi
मानव संसाधन प्रबंध / Human Resources Management

Ref. no. ID/Pur/0910/Precision AC /2014-15/01

Dated 05.01.2015

Payment terms - as per **ANNEX. -1 (TERMS AND CONDITIONS)** enclosed/attached.

Performance Bank Guarantee: as per **ANNEX. -1 (TERMS AND CONDITIONS)** enclosed/attached.

Reverse Auction

BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation of un-priced bids. All bidders are required to give their acceptance for participation in RA if they are willing in Reverse Auction.

Non acceptance to participate in RA may result in non consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in reverse auction will have to necessarily submit "on line sealed bid" in the reverse auction. Non submission of "on line sealed bid" by the bidder will be considered as tempering of the tender process and will invite action by the BHEL as per extant guidelines in vogue.

Information and general terms and conditions governing RA are as per Annex. VI enclosed.

Vendor has to specifically indicate in their Un priced bid regarding their Acceptance/Non Acceptance for RA.

Warranty : 02 years

Scope of Work & Pre qualification Requirement (PQR) : As per Annex.-III & IV attached /enclosed. **Bidders are required to sign and stamp each and every page of terms and conditions Annex.1 as token of their acceptance.**

Evaluation shall be on the basis of total of material cost plus cost of erection and commission including all taxes and duties. Order will be placed on technically acceptable and lowest (L-1) vendor.

(2)

Deepak Kumar
05/01/15



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
उद्योग क्षेत्र, नई दिल्ली / Industry Sector, New Delhi
मानव संसाधन प्रबंध / Human Resources Management

Ref. no. ID/Pur/0910/Precision AC /2014-15/01

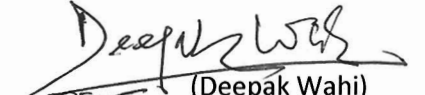
Dated 05.01.2015

Tenders and all correspondence shall be addressed to the undersigned at the following address.
M/s Bharat Heavy electrical Limited,
Industry Sector,
Lodhi Road, New Delhi-110003

All other terms and conditions shall be as per Annex.1 Attached/enclosed. **Bidders are required to sign and stamp each and every page of terms and conditions of Annex.1 as token of their acceptance.**

Thanking you;

Yours faithfully


(Deepak Wahi)
Manager/ Purchase

Encl.

- | | |
|--|--------------|
| (i) Annexure-I Terms & Conditions of Enquiry | (3 Sheet s) |
| (ii) Annexure-II Specifications of Precision AC. | (7 Sheets) |
| (iii) Annexure-III Scope of Work | (1 Sheet) |
| (iv) Annexure-IV Pre qualification Requirement (PQR) | (1 Sheet) |
| (v) Annexure- V Price Format | (1 Sheet) |
| (vi) Annexure- VI Terms and conditions governing RA | (2 Sheets) |


05/01/15



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
उद्योग क्षेत्र, नई दिल्ली / Industry Sector, New Delhi
मानव संसाधन प्रबंध / Human Resources Management

ANNEX. -1 TERMS AND CONDITIONS

Ref. no. ID/Pur/0910/Precision AC /2014-15/01

Dated 05.01.2015

BID SUBMISSION

Bids shall be submitted latest by 02.00 PM. on or before the due date in two parts as follows:

PART- 1: TECHNO-COMMERCIAL BID (IN DUPLICATE)

This part shall contain the following:

- Technical offer/ details
- Commercial terms and conditions
- Unpriced copy of the price bid with all amounts/ figures/ percentages wherever quoted in the price bid being replaced with the word 'Quoted' or 'Q'.

This part shall be submitted in duplicate in two separate Sealed Covers with bidder's distinctive Seal super scribed with correct Enquiry No., Item of supply, due date of opening and 'part – 1: techno-commercial bid'.

Complete tender in all respects duly signed & stamped on each and every page by the authorized signatory of the bidder as a token of acceptance of all the terms and conditions of tender.

PART- 2 PRICE BID

This part shall contain Prices only and should not contain any technical details and/ or Commercial Terms & Conditions. Any technical details and/ or Commercial Terms & Conditions, if found in this part shall be ignored as the same are supposed to be contained in PART- 1 only as indicated above.

This part shall be submitted in a separate Sealed Cover with bidder's distinctive Seal super scribed with correct Enquiry No., Item of supply, due date of opening and 'part -2: price bid'.

1. BID OPENING

PART – I (Techno – Commercial Bids) will be opened at 02 P.M. on the due date in the presence of bidders who may like to be present. Date and time of opening of Part – II (Price Bids) shall be communicated separately.

SIGN & STAMP OF THE BIDDER

-1-

Deepak Singh
05/01/15



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
उद्योग क्षेत्र, नई दिल्ली / Industry Sector, New Delhi
मानव संसाधन प्रबंध / Human Resources Management

Ref. no. ID/Pur/0910/Precision AC /2014-15/01

Dated 05.01.2015

GENERAL

2. Prices shall be net F.O.R. destination inclusive of freight, handling and packing charges, transit insurance etc. and remain valid for 3 months from the due date.
3. Taxes and duties should be indicated separately, otherwise it will be presumed that the goods quoted are inclusive of all taxes, duties & octroi etc., in such cases shall not pay any tax, duty, octroi etc.
4. No revision of prices shall be entertained after bids have been opened.
5. Prices shall remain firm without any variation till completion of contract.
6. Manufacturer's name, trade Mark or Patent No., if any, should be specified.
7. Illustrative leaflets giving technical details of items offered should be enclosed, wherever necessary.
8. BHEL shall be under no obligation to accept the lowest or any other bid and shall have the right to accept or reject any bid in part or in full without assigning any reason whatsoever.
9. Late tenders will be rejected.
10. Bid should be free from corrections and erasures. Corrections, if any, must be counter-signed.
11. **PACKING AND MARKING:** Vendor shall arrange for sound packing and marking the goods to avoid any loss or damage during transit.
12. **PAYMENT:**
 - a. Ninety percent (90%) of basic price of materials supplied, as per PO, along with 100% taxes and duties (as applicable), shall be paid against receipt of material at site.
 - b. Ten percent (10%) of basic price of materials supplied and 50 % of E&C payment will be released after successful installation and running of AC.
 - c. 50 % of E&C payment will be released on after 3 months successful running of AC.

Any deviation in payment terms will be loaded by interest @18% per annum.

13. **SUBMISSION OF INVOICE:** All invoices along with specified documents and Warranty certificate shall be submitted in triplicate, to HR Deptt., BHEL, INDUSTRY SECTOR, LODHI ROAD, NEW DELHI-11003.
14. **PRICE DISCREPENCY:**
 - (a) If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit.

SIGN & STAMP OF THE BIDDER

-2-

Deepak Lodhi
05/01/15



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
उद्योग क्षेत्र, नई दिल्ली / Industry Sector, New Delhi
मानव संसाधन प्रबंध / Human Resources Management

Ref. no. ID/Pur/0910/Precision AC /2014-15/01

Dated 05.01.2015

- (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in the words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.
- (d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.
15. **LIQUIDATED DAMAGES:** In case of any delay in the execution of the order, BHEL reserve the right to deduct a sum equivalent to 0.5% of the value of the delayed material/equipment (including installation, if it is in the scope) for each week of delay and part thereof subject to a maximum of 10% of the total value of the Order from the vendor's bills.
Any deviation while accepting LD clause will be loaded accordingly or maximum up to 10% in case vendor refused to accept the LD clause in the offer.
16. **PERFORMANCE BANK GUARANTEE:** 05 % of PO value without taxes & duties in the form of Bank Guarantee valid for entire Guarantee period shall need to be submitted by vendor after award of contract to BHEL to cover the due performance of Order/ Contract and to fulfil the guarantee conditions stipulated in the Order/ Contract otherwise equivalent amount shall be withheld from supply bills. PBG shall be refunded after successful completion guarantee/warranty period as per Contract/PO.
Any deviation w.r.t. to PBG clause will be loaded accordingly in the offer but maximum up to 5% in case of non acceptance of submitting the PBG.
17. **RISK PURCHASE:** Purchaser will have the option to terminate the contract and purchase from elsewhere at the risk and cost of the Vendor, either the whole or part of the goods which the Vendor has failed to deliver or dispatch within the stipulated delivery period or if the same were not available, the best and the nearest available substitute thereof. The Vendor would be liable to compensate the Purchaser for any loss which the Purchaser may sustain by reason of such risk purchase, in addition to Liquidated Damages at the rate mentioned above.

NOTE: It is presumed that the bidder has accepted all the instructions, Terms and conditions and Technical Specifications covered in the Tender Enquiry, unless the deviations are specifically indicated in the bid on a separate sheet.

Bidders are required to sign and stamp each page of terms and conditions Annex.1 as token of their acceptance.

SIGN & STAMP OF THE BIDDER

Deepak Ladd
5/1/15 -3-



TECHNICAL REQUIREMENT
AIR CONDITIONING SYSTEM
SERVER ROOM – 4TH FLOOR, IS, LODHI
ROAD BUILDING

BHEL Doc No: IS-TS-001

REV 00

DATE 24.11.2014

Annex. II

SERVER ROOM – 4TH FLOOR,
IS, LODHI ROAD BUILDING
N.DELHI

TECHNICAL SPECIFICATION

AIR-CONDITIONING SYSTEM

TITLE	TECHNICAL SPECIFICATION OF PRECISION AC FOR SERVER ROOM – INDUSTRY SECTOR	
PREPARED BY	Amit Kumar Nag	
CHECKED BY	Saurabh Srivastava	 20/12/14
APPROVED BY	Manish Kumar Garg	 20/12/14



**TECHNICAL REQUIREMENT
AIR CONDITIONING SYSTEM
SERVER ROOM – 4TH FLOOR, IS, LODHI
ROAD BUILDING**

BHEL Doc No: IS-TS-001

REV	00
DATE	24.11.2014

1.	FUNCTION	1
2.	AREA DESCRIPTION	1
2.1	SERVER ROOM IN 4 TH FLOOR	1
3.	DESIGN CRITERIA	1
3.1	SYSTEM DESIGN CRITERIA	1
3.2	SYSTEM CAPACITY	1
4.	AIR COOLED DIRECT EXPANSION PRECISION PACKAGED UNITS	1
4.1	GENERAL	1
4.2	UNIT BASE & CASING	2
4.3	FAN	2
4.4	FILTERS	2
4.5	EVAPORATOR COIL	2
4.6	SCROLL COMPRESSOR	2
4.7	REFRIGERATION CIRCUIT	2
4.8	EXPANSION DEVICE: ELECTRONIC EXPANSION VALVE (EEV)	3
4.9	AIR COOLED CONDENSER	3
4.10	ELECTRIC STRIP HEATERS	3
4.11	HUMIDIFIER	3
4.12	DE-HUMIDIFICATION	3
4.13	WATER SENSOR	3
4.14	MICROPROCESSOR CONTROL SYSTEM	4
5.	LAYOUT CONSIDERATIONS:	4
6.	POWER SUPPLY ARRANGEMENT	4

Handwritten signature

Handwritten mark



**TECHNICAL REQUIREMENT
AIR CONDITIONING SYSTEM
SERVER ROOM – 4TH FLOOR, IS, LODHI
ROAD BUILDING**

SPECIFICATION NO. IS-TS-001

VOLUME II B

SECTION C

SUB-SECTION

REV. 00

08.12.2014

SHEET 1 OF 4

1. FUNCTION

The purpose of the system is to provide air conditioning and humidity control for the server room located in the central wing of the fourth floor of the IS, Lodhi Road Building.

2. AREA DESCRIPTION

2.1 SERVER ROOM IN 4TH FLOOR

Server Room situated on 4th floor with dimension of 19x14x7 Ft at IS, Lodhi Road building having the following equipments with heat load dissipation figures as under:

2.1.1 3 nos Server Rack with 24 servers

2.1.2 2 nos Switch Rack with 33 data switches

2.1.3 1 no BSNL router rack

Total heat dissipation of 10 KW.

3. DESIGN CRITERIA

3.1 SYSTEM DESIGN CRITERIA

3.1.1 The outside design conditions considered are as follows:-

	Summer	Monsoon	Winter
DBT (°C)	45	36	6
WBT (°C)	25.6	28	4

3.1.2 The inside design conditions to be maintained

21 ± 2°C & RH 50% ± 5%

3.1.3 For winter heating load calculation, 50% of combined light load and eqpt. / panel load as available in the Server room is to be considered.

3.1.4 A design margin of 10% on grand total heat is considered while designing the AC Plant capacity.

3.1.5 Lighting load shall be minimum 1.5 watt / Sq.ft.

3.1.6 The Occupancy shall be 2

3.2 SYSTEM CAPACITY

3.2.1 2x100% capacity air-cooled precision type AC Units, each of minimum 6.5 TR (net) capacity is required to be provided for the air-conditioning of the Server Room.

4. AIR COOLED DIRECT EXPANSION PRECISION PACKAGED UNITS

4.1 GENERAL

4.1.1 Modular construction Precision air conditioning unit suitable for operation on R-410a/R407c/R134a refrigerant with bottom discharge arrangement consisting of inlet filter, blow through direct drive Electronically communicated Motors and Backward curved Plug fans, fan motor assembly to deliver desired air quantity, Direct Expansion Cooling Coil, Heater banks to maintain humidity inside the space, condensate drain pan of aluminum construction, Microprocessor panel, programmable control complete with LCD display. The unit shall be suitable for operation on 415 V, 50 Hz, AC supply. The panel shall display values, operating conditions, signal faults and collective faults limiting values. Each unit shall comprise of various sections as listed above meeting specifications capable of delivering actual

Signature

Signature



**TECHNICAL REQUIREMENT
AIR CONDITIONING SYSTEM
SERVER ROOM – 4TH FLOOR, IS, LODHI
ROAD BUILDING**

SPECIFICATION NO. IS-TS-001

VOLUME II B

SECTION C

SUB-SECTION

REV. 00

08.12.2014

SHEET 2 OF 4

cooling capacity as specified and must be equipped with Scroll compressor, blower and motor assembly, heater banks, humidifier and Microprocessor based control panel. Cooling wattage : 22 KW

4.2 UNIT BASE & CASING

4.2.1 Base panel shall be constructed out of sandwich panels of galvanized steel and painted with epoxy powder. All four side panels (including front door) shall be double skinned sandwiched panels. The panels shall be insulated on the inside with glass wool, for fire insulation class A0. Unit shall be complete with space for refrigeration equipment, fans, cooling coils, liquid receiver and multistage strip heaters and modulating Humidifiers. Unit shall be provided with welded tubular steel floor stand with adjustable legs and requisite vibration isolation pads.

4.3 FAN

4.3.1 The units should be equipped with direct driven backward curved EC radial fans with electronically commutated brushless motors or belt driven fan with AC motor.

4.4 FILTERS

4.4.1 The filter chamber shall be an integral part of the system and withdraw able from the front of the unit. Filtration level should be of 90% - 10 microns. Filter should be of HDPE media & washable type. Filters with combustible / dry disposable media are strictly not accepted

4.5 EVAPORATOR COIL

4.5.1 Precision packaged unit shall comprise of cooling coil of copper tubes expanded into aluminium fins with corrugated profile and hydrophilic treatment. Face and surface areas shall be such as to assure rated capacity and the air velocity across the coil shall not exceed 2.4 m/s. The cooling coil shall be minimum of 3/4 rows deep and the fin spacing shall not exceed 1.8 mm. Coil selection to be suitable for SHF > 0.90 and provided with hydrophilic coating to minimize / eliminate water carry over into the airflow stream. Drain pan shall be made of stainless steel.

4.6 SCROLL COMPRESSOR

4.6.1 The compressor shall be of the high efficiency scroll design operating with R410A/R407C/R134A and 415V/3PH/50 Hz supply. Compressors, the humidifier shall be isolated from the air flow in the version with downward flow, and in the air flow in versions with upward output. The compressor shall be charged with mineral oil and designed for operation on environment friendly refrigerant as specified. Each compressor shall have internal motor protection, in-built overloads, HP and LP controllers and be mounted on vibration isolators.

4.7 REFRIGERATION CIRCUIT

4.7.1 The refrigeration system shall be of the Single/ Multiple circuit direct expansion type and incorporate hermetic scroll compressors, complete with crankcase heaters. The system shall include a manual reset high pressure control; auto reset low pressure switch, safety valve, electronic expansion valve, high sensitivity refrigerant sight glass, liquid receiver, filter drier, solenoid valve for interception of liquid refrigerant, and charging/access ports in each circuit. Each refrigeration circuit shall include rigidly mounted isolation valves in the discharge and liquid lines to aid servicing and installation.



**TECHNICAL REQUIREMENT
AIR CONDITIONING SYSTEM
SERVER ROOM – 4TH FLOOR, IS, LODHI
ROAD BUILDING**

SPECIFICATION NO. IS-TS-001

VOLUME II B

SECTION C **SUB-SECTION**

REV. 00 **08.12.2014**

SHEET 3 OF 4

4.8 EXPANSION DEVICE: ELECTRONIC EXPANSION VALVE (EEV)

The unit should have Electronic Expansion Valve, which offers the following advantages:

- 4.8.1 Fast, high precision adjustment of refrigerant flow;
- 4.8.2 Fast arrival of the unit at steady-state conditions;
- 4.8.3 Superheating value remains constant in variable thermal load conditions;
- 4.8.4 Efficient operating conditions of the compressor, especially in the presence of low room temperatures;
- 4.8.5 Wide working range with consequent extension of the unit's operating limits. These properties result in enhanced performance of the unit and make it possible to obtain very significant energy savings.

4.9 AIR COOLED CONDENSER

- 4.9.1 Condenser shall be air-cooled type, suitable for outdoor installation and shall be suitable for operating at high ambient of 45 deg C db and at low ambient of upto 5 deg C db temperatures. Condenser shall be in copper tube & aluminum fins construction. Condenser coil shall be of maximum 4 rows deep and the fin spacing shall not exceed 2mm.
- 4.9.2 The condenser fan/s shall be of propeller type with max 1000 RPM variable voltage electric motor complete with IP-54 protection. Motor shall be speed controlled to ensure a stable operation for varying ambient, by a factory fitted direct acting head pressure activated step less variable speed drive. The condenser shall be complete with provisions for refrigerant piping connections, shut off valves and any other standard accessories necessary with the equipment supplied.

4.10 ELECTRIC STRIP HEATERS

- 4.10.1 Each packaged unit shall be provided with multistage electric heaters with heating elements constructed from a non-oxidable material. Electric strip heaters shall be of the low temperature totally enclosed strip type fitted with radiation fins and suitable for operating at black heat. If overheating occurs, a safety thermostat should cut off the voltage supply to the heaters and triggers an alarm.

4.11 HUMIDIFIER

- 4.11.1 Boiling water in a polypropylene steam generator shall provide humidification. The humidifier shall be capable of providing continuous modulation in steam generation from 20-100% as per the steam requirement per hour. The humidifier shall be fully serviceable with replaceable electrodes. Waste water shall be flushed from the humidifier by initiation of water supply valve via U-trap.

4.12 DE-HUMIDIFICATION

- 4.12.1 De-humidification cycle shall operate by reducing the speed of EC fan to reduce ADP of coil.

4.13 WATER SENSOR

- 4.13.1 The system shall be provided with relevant water detection kit which shall have sensors with wire of minimum 2 mtrs and each of the sensor must be capable to detect individually any water below the false floor near the unit, the sensor must be connected to the unit microprocessor thus enabling the controller to give an alarm in case of wet floor.

[Handwritten signature]



**TECHNICAL REQUIREMENT
AIR CONDITIONING SYSTEM
SERVER ROOM – 4TH FLOOR, IS, LODHI
ROAD BUILDING**

SPECIFICATION NO. IS-TS-001

VOLUME II B

SECTION C

SUB-SECTION

REV. 00

08.12.2014

SHEET 4 OF 4

4.14 MICROPROCESSOR CONTROL SYSTEM

4.14.1 Logic Circuitry:

A microprocessor shall continuously monitor operation of Server room air-conditioning unit continuously digitally display room temperature and room relative humidity, alarm on system malfunction and display problem. When more than one malfunction occurs, flash fault in sequence with room temperature, remember alarm even when malfunction cleared, and continue to flash fault until reset.

4.14.2 Malfunctions:

Power Loss, Loss of Airflow, Clogged Air Filter, High Room Temperature, Low Room Temperature, High Humidity, Low Humidity, Supply Fan Overload, and Water Under Floor / Fire alarm.

4.14.3 Automatic lead unit sequencing to extend equipment life and automatic rotation of standby unit should be part of the microprocessor itself. Microprocessor must be suitable to control multiple units if required with hard wiring which can be done at a later date.

4.14.4 Controllers shall be Microprocessor based with capability to generate alarm and networking of all units to rotate (working + standby) units in any configuration, equalized run time capability.

4.15 POWER MONITORING SWITCH

4.15.1 All units must be provided with CE certified main power line supervisor switch to monitor under voltage / over voltage / phase reversal of incoming power supply.

4.16 ELECTRICAL PANEL

4.16.1 Control cabinet to be provided with Type 2 enclosure, with grounding lug, combination magnetic starters with overload relays, circuit breakers and cover interlock, and fusible control circuit transformer.

4.16.2 The electric panel provided for the unit must be equipped with main incoming power isolation switch, additionally the unit must be provided with under voltage / over voltage / phase reversal / single phasing protection, all three phase motors must be operated only via 24V coil voltage contactors and MPCB's, additionally step down transformer must be provided for power supply to the unit controller.

5. LAYOUT CONSIDERATIONS:

5.1.1 The indoor unit of the Precision unit is to be located along the wall of the Server Room. The unit shall be serviceable from the front with a maximum service space required of 1 mtr.

5.1.2 The outdoor unit is to be located at just outside the Server Room (4th floor). Angular support for outer unit is under vendors scope.

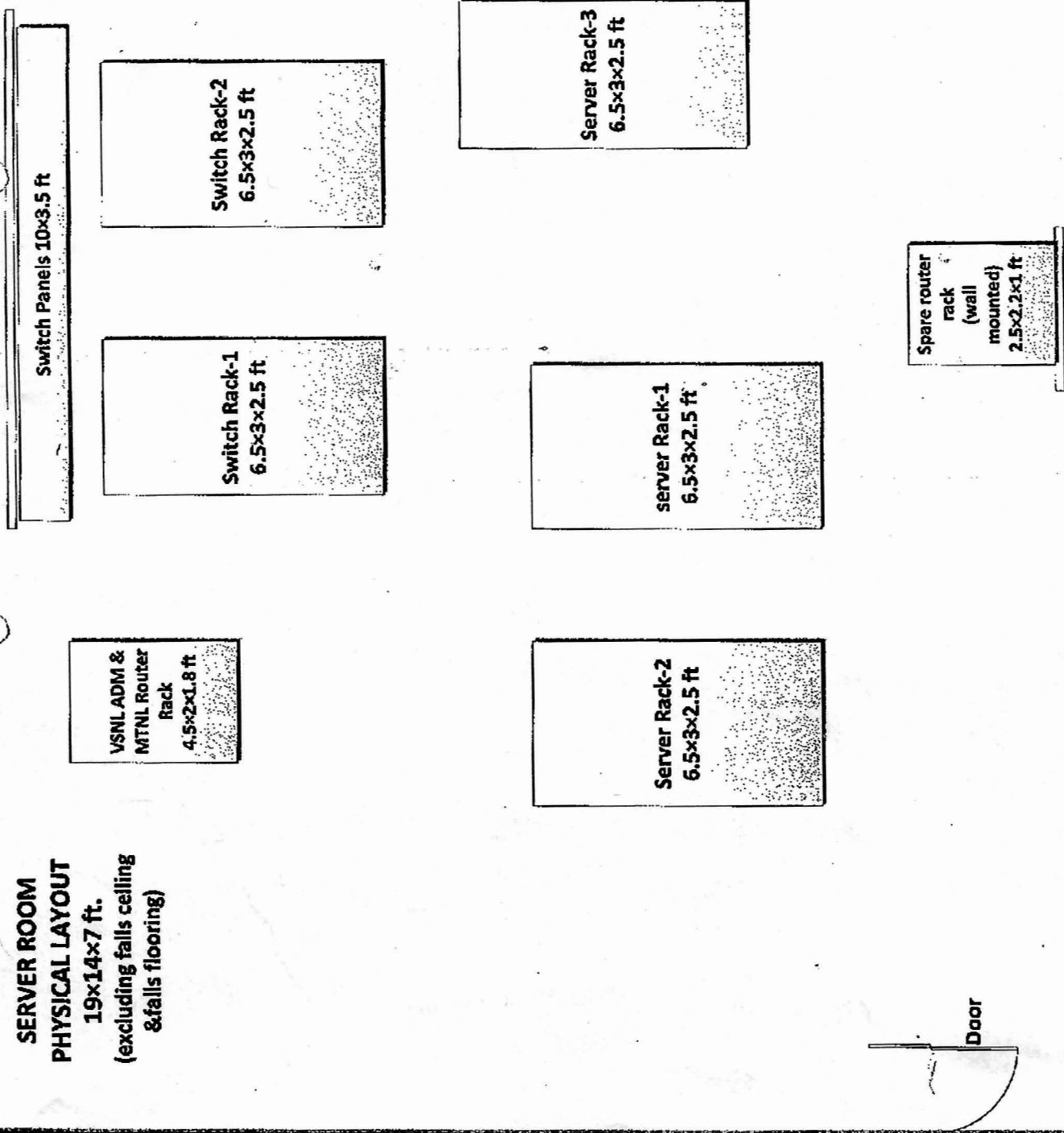
6. POWER SUPPLY ARRANGEMENT

6.1.1 The power supply (rated voltage, frequency, phase) of the equipments will be 415 V, 3ph, 50 Hz. stablizer?

Amey

Annexure - I

**SERVER ROOM
PHYSICAL LAYOUT**
(excluding falls ceiling
& falls flooring)



[Handwritten signature]

[Handwritten signature]



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
उद्योग क्षेत्र, नई दिल्ली / Industry Sector, New Delhi
मानव संसाधन प्रबंध / Human Resources Management

Ref. no. ID/Pur/0910/Precision AC /2014-15/01
Dated 05 .01.2015

Annexure-3


scope of Work

- a) Supply of 6.5 T Precision AC (2 nos)
- b) E&C – Installation of Units including Gas filling after N2 flushing, drain pipe 20m, humidifier pipe 20 m, Power cable 10 m, Copper piping between indoor and outdoor unit 20 m, etc.

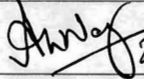
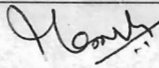
Deepak Verma
05/01/15

SIGN & STAMP OF THE BIDDER

PRE—QUALIFICATION REQUIREMENTS

	Industry Sector, New Delhi TECHNICAL PRE-QUALIFICATION REQUIREMENTS FOR OPEN TENDERS	PACKAGE: AIRCONDITIONING SYSTEM
		DEPARTMENT : P&MS
		REVISION : 00
		DATE : 20-12-2014
		PAGE : 1 of 1

- A) Supplier should have designing/manufacturing capability and having testing facility (in house or outsourced).
- B) Minimum capacity of single installed machine (precision type AC) shall be 5 TR.
- C) Precision type Air conditioning machines should have been successfully in use for at least one year in data centres / server room / electronic lab / other industries. For this the supplier has to submit either of following supporting documents meeting below mentioned conditions.
- i) Copy of minimum one (1) performance certificate in English from end user along with copy of related Purchase Order specifying that the product is running successfully for one (1) year from date of commissioning.
- OR
- ii) Minimum one second/repeat purchase order (placed with a minimum gap of one (1) year after commissioning of first order) from same purchaser meeting the minimum pre-qualifying requirement.
- OR
- iii) Minimum three purchase orders (placed with minimum gap of one(1) year from previous purchase order) from same purchaser meeting the points B and C
- D) Supplier to submit the following major documents:
- i) Vendor shall submit design documents to substantiate technical parameters specified in PQR, if the same is not mentioned in performance certificate/purchase order.
- ii) Minimum two (2) nos. Purchase orders shall be submitted which should not be more than ten (10) years old as on date of application for registration/bid submission, for establishing continuity in business.
- iii) Vendor may also qualify based on the credential of principal meeting package specific pre-qualifying requirements having technical valid collaboration/licensing agreement.
- iv) In case documents submitted for meeting PQR are in language other than English, notarized English translation shall also be submitted.

PREPARED BY			APPROVED BY		
AK Nag		20/12/14	Manish Kumar Garg		20/12/14
NAME	SIGNATURE	DATE	NAME	SIGNATURE	DATE

3

Annex V

**PRECISION AC FOR SERVER ROOM - INDUSTRY SECTOR, LODHI ROAD, NEW DELHI
SUGGESTIVE PRICE FORMAT**

Rev 00 Dated 20-12-2014

Clause No.	DESCRIPTION	Qty.	Unit	SUPPLY				ERECTION & COMMISSIONING			TOTAL		
				Unit Price (Rs)	Total Ex-works price (Rs)	ED including CESS (Rs)	CST / VAT (Rs)	FREIGHT including Service Tax, if applicable (Rs)	TOTAL F.O.R. Site Price Supply (Rs)	UNIT PRICE (Rs)		Total Price (Rs)	Service Tax (Rs)
1	LUMPSUM PRICES Total lump sum firm prices for Equipment & Services as Specified, Comprising design, manufacture, inspection & Testing at manufacturers works, Painting at manufactures works, duly packed for transportation, delivery to site, unloading storage & handling at site, erection & commissioning, carrying out acceptance tests at site & final painting of Air cooled Precision type AC units of Minimum 6.5 TR capacity consisting of condensing unit, evaporating unit including refrigerant pipes & fittings with insulation, humidifier and accessories as per Specification IS-TS-001 including all taxes, duties etc.	2	Set										

Dayal Singh
5/1/15

Sharma

Annex V

Terms & Conditions of Reverse Auction

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit 'online sealed bid' in the Reverse Auction. Non-submission of 'online sealed bid' by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.

Amr

R. Lakshmi
31/1/2015

Deepak
03/11/15

10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the 'Business Rules of Reverse Auction', which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as *per extant BHEL guidelines*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

Anubj

R. K. Kulkarni
3/11/2015

Deepak Kulkarni
03/11/15