



NAYA RAIPUR DEVELOPMENT AUTHORITY

**Tender Document for Supply, Installation, Testing ,
Commissioning & Three year's Comprehensive
maintenance of HVAC system and other allied accessories
for Commercial Office Complex building
on plot no. CO3 at sector-21 of Naya Raipur**

(Following Three-Envelope Tender Procedure)

**Schedule – A
Price Tender
To be submitted in ENVELOPE-3**

NIT No. 147/HVAC/CO3/ELECT/CE(E)/NRDA/2016-17, Naya Raipur

Dated: 20.12.2016

Issued by: Chief Executive Officer,
Naya Raipur Development Authority (NRDA)
Paryavas bhawan, North block, Sector- 19,
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Tender Document Contains

- (a) Only schedule "A" and Section-I of schedule "D" are to be filled & signed by the tenderer
- (b) All the certificates as per pre qualification criteria shall be appended with relevant forms of schedule "D"

1. PART ONE (NRDA F-1)-(Attached herewith, to be submit along the tender)

Part (A)

- a) Press Notice
- b) Detailed NIT

Part (B)

a) Schedule-A

- (i) Cost Abstract
- (ii) Bill of Quantities

- b) Schedule-B –NIL
- c) Schedule-C –NIL
- d) Schedule-D

Section-I..... Technical tender forms

- (i) Letter of Technical Tender
- (ii) Tenderer's Information Sheet
- (iii) Annual Turnover
- (iv) Specific Construction Experience
- (v) Declaration
- (vi) Check list for Technical tender evaluation

Section –IIScope of work

Section –III..... Technical specifications of work

Section –IV..... Special Conditions of Contract

Section –V..... List of approved makes

Section –VI..... Drawings

- e) Schedule-E
- f) Schedule-F

2. PART TWO (NRDA F-2/3)-Standard form (Not Attached herewith, and not to be submitted along the tender)

Important note: - Link site <http://nayaraipur.com/documents/gcc.pdf>

1. General Guidelines
2. Tender
3. General rules and directions
4. Conditions of contract
5. Clauses of contract
6. Model rules relating to labour, water supply and sanitation in labour camps safety code
7. Contract forms
 - (a) Draft Format for Performance Security
 - (b) Earnest Money Deposit Form (Bank Guarantee)
 - (c) Format of Contract Agreement
 - (d) Draft Format for Performance Guarantee for Water Proofing and Anti-termite Works
 - (e) Indemnity Bond
 - (f) Indenture Bond
 - (g) Notice for Appointment of Arbitrator
8. Proforma of schedules (Schedule 'A' to Schedule 'F')

Naya Raipur Development Authority (NRDA) Raipur, Chhattisgarh

Document details

Name of work : “Supply, Installation, Testing , Commissioning & Three year’s Comprehensive maintenance of HVAC system and other allied accessories for Commercial Office Complex building on plot no. CO3 at sector-21 of Naya Raipur”.

Name of Tenderer:

Details

- a) Cost of Tender Document : Rs
- b) EMD : Rs

Signature of Tenderer

Date:_____

Cost Abstract

Supply, Installation, Testing , Commissioning & Three year's Comprehensive maintenance of HVAC system and other allied accessories for Commercial Office Complex building on plot no. CO3 at sector-21 of Naya Raipur

Sr. No.	Description of Items	Amount in INR(In Figure)	Amount in INR(In words)
1	CHILLERS		
2	PUMPS		
3	AIR HANDLING UNITS		
4	SPLIT UNITS		
5	CONTROLS AND INSTRUMENTS		
6	AIR WASHERS		
7	Three year's Comprehensive Operation & maintenance of HVAC system		
	GRAND TOTAL		

Note :- Order Equipment and Materials only after approval of shop Drawing.

BILL OF QUANTITY

Supply, Installation, Testing, Commissioning & Three year's Comprehensive maintenance of HVAC system and other allied accessories for Commercial Office Complex building on plot no. CO3 at sector-21 of Naya Raipur

Sr. No.	Description of Items	Unit	Total Quantity	Rate in INR(In Figure)	Rate in words (in INR)	Amount in INR
	All Equipment to be BMS Compatible					
A.1	Air cooled water chilling machine :-					
	Supply, Installation, Testing and Commissioning of Air cooled water chilling machines of 200 TR actual capacity comprising of Screw multiple compressors, refrigerant cooled motor, star delta starter, insulated shell and tube chiller, air cooled condenser, Vibration Isolators for vibration isolation, complete with microprocessor unit, safety devices, refrigerant piping, R-134a refrigerant and compressor oil charge. All components shall be skid mounted. The motor shall be suitable for 415 ± 10% Volts, 50 Hz, 3 Phase, AC power supply. Quoted price shall be inclusive of port clearance, transportation, insurance, unloading, lifting, shifting of machine.					
	Chilled water Leaving Temp. 44 deg.F					
	Chilled water Entering Temp. 54 deg. F					
	Chiller fouling factor = 0.0005 (FPS units)					
	Condenser air entering temp. 110 deg.F					
	IKW / TR < 1.4 at full load inclusive of condenser fans power.					
	Refrigerant R134a					
	Computerized selection sheet required for full load and part load data at constant entering air temp. of 110 deg.F to condenser					
	Air cooled condenser must be corrosion free. If dissimilar metals are used ,Anticorrosive coating must be provided on condenser coil and fins.					
	Aircooled screw water chilling machine as described above including one standby on CIF Raipur at site.	Nos.	3			
	Common Items for item A.1					
	BMS Compatibility to building IBMS system	Lot	1			
	Vibration Isolators for Seismic IV zone	Lot	1			
	Victaulic Couplings (Inlet / outlet)	Lot	1			
A.2	Chiller Plant Manager :-					
	Supply, installation, testing & commissioning of chiller plant manager as per above chillers requirement. The plant manager shall be suitable to control all the chillers being proposed by the tenderer and all suitable modules (I / O) shall have to be provided so individual Micro Processor controlled panels of machines can be synchronised for chillers, pumps and cooling tower operation and to enable sequential operation to achieve equal operating time and take care of load patterns and shall be as per specification.					
	Note :- All bill of items are to be read in conjunction with specifications and drawings and ensure the following points are being considered.					
	Operator work station with minimum intel core2 duo, minimum 3 Ghz, 2 GB RAM with 21" TFT monitor and laser printer suitable for ' A-4' size.					
	Providing, installing, testing and commissioning of network supervisory control unit (imported UL listed) for connecting all controllers to it and software integration to chilling machine and transferring data to P.C. the processor shall be 32 bit, 50 MHZ shall be able to store reports and events logs & shall be able to store reports and events logs & shall have a display unit.					
	Dedicated chiller plant manager software having inbuilt application.					
	Providing, installation, testing & commissioning of programmable controller (imported UL listed) having processors of 32 Bit 50 MHZ,(LON CHIP) BACNET compatible, controller for Pumps, Cooling tower. The Controller shall support easy graphical Programming and shall be able to store the programme in the controller rather than store in the PC. it should include Lockable Mounting cabinets duly powder coated, connector strip, internal wiring etc.					
	Supply, installation, testing and commissioning of Field devices including rigid GI conduit, control and signal cables, Lan cables etc:					
	SITC of Immersion temp. sensor with well (6 Nos.)					
	SITC of combined temp and RH sensor (3 Nos.)					
	SITC of level switches (water), current relay (3 Nos.)					
	Current Relay (3 Nos.)					
	Chiller Plant manager as described above on CIF Raipur at site.	No.	1			
1	TOTAL FOR CHILLERS (RS)					
A.3	Chilled Water Pumps :-					
A.3.1	Primary Chilled Water Pumps :					
	Supply, installation, testing & commissioning of vertical split casing end suction centrifugal pump sets factory assembled & tested for rated efficiency complete with IP 55 T.E.F.C motor with class F insulation & common base frame, coupling guard, cladded insulation, cathodic electro deposit (CED) type anti corrosive coating inside and outside casing etc. for re-circulation of primary chilled water for the central air-conditioning system. The pumps shall be suitable for operation on 415 ± 10% Volts, 50 Hz, 3 Phase AC power supply, The pump characteristic shall be as follows: Quoted rate shall be including of vibration isolators as per specification and pump insulation.					
	Water flow rate = 480 USGPM					
	Head = 15.0 Mtrs.					
	Motor = 10.0 HP					

	Primary Chilled water pumps as described above including one standby.	Nos.	3			
A.3.2	Secondary Chilled Water Pumps :					
	Supply, installation, testing & commissioning of vertical split casing end suction centrifugal pump sets factory assembled & tested for rated efficiency complete with IP 55 T.E.F.C motor with class F insulation motor & common base frame, coupling guard, cladded insulation, cathodic electro deposit (CED) type anti corrosive coating inside and outside casing etc. for re-circulation of secondary chilled water for the central air-conditioning system. The pumps shall be suitable for operation on 415 ± 10% Volts, 50 Hz, 3 Phase AC power supply. Each secondary pump shall have adjustable frequency drive one for each pump, one no. micro processor based pump controller housed within the enclosure one of the VFD with pumping software duly downloaded and two nos. DP sensors. The system shall be complete in all respects and suitable for following motor ratings. Quoted rate shall be including of vibration isolators as per specification and pump insulation. Pump shall be compatible for working with BMS.					
A.3.2.i	For Tower-A :-					
	Water flow rate = 500 US GPM					
	Head = 30.0 Mtrs.					
	Motor = 20.0 HP					
	Secondary Chilled water pumps as described above including one standby and excluding of controls.	Nos.	2			
A.3.2.ii	For Tower-C :-					
	Water flow rate = 900 US GPM					
	Head = 35.0 Mtrs.					
	Motor = 40.0 HP					
	Secondary Chilled water pumps as described above including one standby and excluding of controls.	Nos.	2			
A.3.2.iii	2 nos. 20 HP VFD with 1no. Pumps Logic Controller and 1 no. DP sensor along with control softwares in a enclosure and necessary control wiring as required to commission the system.	No.	1			
A.3.2.iv	2 nos. 40 HP VFD with 1no. Pumps Logic Controller and 1no. DP sensor along with control softwares in a enclosure and necessary control wiring as required to commission the system.	No.	1			
2	TOTAL FOR PUMPS (RS)					
A.4	Floor / Ceiling Mounted Air Handling Units :-					
	Supply, installation, testing and commissioning of factory built floor mounted chilled water Double Skin type horizontal/vertical air handling units made of 25 mm thick panels consisting of pre plasticized G.I casing of thickness 0.8 mm outside layer and 0.8mm inside layer with polyurethane foam (PUF) insulation factory injected between them by injection moulding machine , complete with blower section with blower suitable for static pressure as detailed below, minimum 2 bend GSS/PVC eliminators, cooling coil section with aluminium finned copper tubes (copper tube thickness not less than 0.5mm) cooling coil, filter sections with 50mm thick metal viscous/washable synthetic type air pre-filter, belt drive package with T.E.F.C drive motor suitable for 415 ± 10 % volts, 50 hz . 3 phas, A.C supply, drain connections, stainless steel (18G) drain pan with puf insulation thermometers and pressure guages at the inlet and outlet of coil , auto purge valve where ever required, necessary vibration isolation arrangement etc complete as per specification and of following capacity.					
1	AHU-1	No.	1			
2	AHU-2	No.	1			
3	AHU-3	No.	1			
4	AHU-4	No.	1			
5	AHU-5	No.	1			
6	AHU-6	No.	1			
7	AHU-7	No.	1			
8	AHU-8	No.	1			
9	AHU-9	No.	1			
10	AHU-10	No.	1			
11	AHU-11	No.	1			
12	AHU-12	No.	1			
13	AHU-13	No.	1			
14	AHU-14	No.	1			
15	AHU-15	No.	1			
	Refer schedule of air handling unit (total)		15			
3	TOTAL FOR AHUs (RS)					
A.5	Non ductable Split Unit :-					
	Supply, installation, testing and commissioning of DX type split air conditioning non ductable type indoor units. Each split unit shall be comprising of an outdoor and one non ductable indoor unit. Condensing unit shall be complete with scroll / rotary type compressors and air cooled condenser with fan. Evaporator units shall consist of multi rows deep cooling coil with aluminium fins, expansion valves, insulated drain pan, filters, safty controls, cooling thermostat etc.. complete within the unit. The encloser shall be factory painted to a smooth finish. Quoted price shall be including of cordless remote control, wiring, Control wiring, earthing, MS frame for out door units, Refrigerant copper pipe with gas etc. as required. Quoted rate shall be including of vibration isolators for indoor & outdoor units. (Contractor should incorporate 10 meters refrigerant pipes, equivelent gas and electrical wiring and they should mentioned rate for both the item seperately, any increase or decrease will be paid/ deducteent etc complete					

	2.0 TR high wall type split units	Nos.	6			
4	TOTAL FOR SPLIT UNITS (RS)					
A.6	Automatic Controls & Instruments :-					
A.6.1	Flow Switches :-					
	Supply, installation, testing & commissioning of flow switch for Chiller Quoted price shall be including of necessary control wiring.	Nos.	3			
A.6.2	Thermostat :-					
	Supply, installation, testing & commissioning of following controls for various air handling / fan coil units. The quoted price shall be included of all necessary electrical and control wiring as required to commission the system.					
A.6.2.i	Snap acting Cooling thermostat for AHU's	Nos.	15			
A.6.2.ii	Snap acting Cooling thermostat for FCU's	Nos.	Rate only			
5	TOTAL FOR CONTROLS (RS)					
A.7	Package type Air washer:					
	Supply, installation, testing & commissioning of Package type Air washer / Air scrubber units complete with Cellulose fills / Spray chamber, synthetic filters, VCD, DWDI blowers, pumps, GI piping, electrical panel & weather proof isolation panel, cabling, earthing etc, with accessories housed in insulated GSS cabinet (outdoor type). Blower shall be mounted on metallistik vibration isolators. Blower shall be Nicotra / Comiferi make. Quoted rate shall be including of electrical panel, vibration isolators and water connection with valve as required.					
	22500 cfm FRP air washer including all necessary fittings for DG Room ventilation at basement. (fan static required 50 mm)	Nos.	2			
6	TOTAL FOR AIR WASHER (RS)					

SCHEDULE OF AIRHANDLING UNIT AND FANCOIL UNIT

S.no	AHU Ref No	Ahu /Fcu Type	Floor	Air Qty Cfm	Load TR	Static mm	Fresh air Cfm	Coil area Sqft	Coil Row	Motor HP	Pipe Dia Dia mm	Area Feeding
1	AHU-1	Floor Mounted Ahu	Ground	10000	30.2	50	2884	20.0	6.0	7.5	65	TFA & Coridoor, Tower-A
2	AHU-2	ceiling suspended Ahu	Ground	1350	3.0	32	Nil	2.7	4.0	1.5	25	GC-001, Lift lobby Tower-C
3	AHU-3	Floor Mounted Ahu	Ground	13000	36.5	65	2573	26.0	6.0	10.0	80	TFA & Coridoor, Tower-C
4	AHU-4	Floor Mounted Ahu	First	10000	41.6	50	4864	20.0	6.0	7.5	80	TFA & Coridoor, Tower-A
5	AHU-5	Floor Mounted Ahu	First	9500	26.8	50	1970	19.0	6.0	7.5	65	1C-001, Tower-C
6	AHU-6	ceiling suspended Ahu	First	3000	7.0	30	Nil	6.0	4.0	2.0	40	1C-001, Tower-C
7	AHU-7	Floor Mounted Ahu	First	13000	40.2	50	2925	26.0	6.0	10.0	80	1C-002, Tower-C
8	AHU-8	Floor Mounted Ahu	First	16500	47.3	65.0	3718	33.0	6.0	15.0	80	TFA & Coridoor, Tower-C
9	AHU-9	ceiling suspended Ahu	Second	4000	7.2	40	213	8.0	4.0	4.0	40	Triple Height area, Tower-A
10	AHU-10	ceiling suspended Ahu	Second	4000	7.2	40	213	8.0	4.0	4.0	40	Triple Height area, Tower-A
11	AHU-11	ceiling suspended Ahu	Second	4000	7.2	50.0	213	8.0	4.0	4.0	40	Triple Height area, Tower-C
12	AHU-12	ceiling suspended Ahu	Second	4000	7.2	50.0	213	8.0	4.0	3.0	40	Triple Height area, Tower-C
13	AHU-13	Floor Mounted Ahu	Second	9500	26.8	50.0	1200	19.0	6.0	7.5	65	2C-001, Tower-C
14	AHU-14	ceiling suspended Ahu	Second	3000	7.0	30.0	Nil	6.0	4.0	2.0	40	2C-001, Tower-C
15	AHU-15	Floor Mounted Ahu	Second	13000	40.2	50.0	2925	26.0	6.0	10.0	80	2C-002, Tower-C