

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES (AIIMS)
ANSARI NAGAR, NEW DELHI**

Dated: 25.10.2016

AMENDMENT No. – I

Project Name: Tender for “HVAC works for OPD Block & other associated services and their Maintenance during defect liability period in AIIMS Campus, Masjid Moth, New Delhi for AIIMS, New Delhi”

Tender No. HSCC/AIIMS/OPD/HVAC/2016/02; dated: 05.10.2016

(i) The Last date of submission & opening of bids has been extended as follows:

Last date to fill/upload the tender : upto 14:30 hrs. on 11.11.2016
through e-Tendering.

Date of Opening of bids : on 11.11.2016 at 15:00 hrs.

Reply to Pre Bid Queries raised by bidders during pre -bid meeting held on 14.10.2016 at HSCC, Head Office, Noida

S.No.	Specification / Vol./ BOQ Reference	Ref. / Clause	As per Tender	Bidders Queries/ Request	Clarification/ Reply
1	LIST OF APPROVED MAKES AND MANUFACTURERS	1 Centrifugal Chilling Units with VFD (ARI Certified), Page: Specs – AC- Page -117 R3	Carrier/ Trane/ York	<p>We would like to request you to include imported make of Dunham - Bush for centrifugal chiller in addition to makes specified in tender. Please note Dunham-Bush chiller is approved make in tender from various government agencies like CPWD, PWD, UPRNN, IISER. Please note enclosed list of Government projects where Dunham-Bush chiller Make is approved with Other equivalent makes. If desired, we can share the NIT copies of these tenders.</p> <p>1) IIT Ropar: 3 x 600TR, 2) Lucknow High Court: 5 x 550TR, 3) Lucknow Secretariat: 5 x 800TR, 4) PGI Chandigarh (Nehru Block): 5x 750TR, 5) Indira Gandhi Hospital, Delhi: 4 x1000TR, 6) Kolkata High Court: 5 x 550TR, 7) Delhi District Unit, Delhi: 4 x 525TR, 8) Reserve Bank of India, Delhi: 1 x 650TR, 9) IITM, Gwalior: 2 x 500TR, 10) IIT Jodhpur: 2 x 600TR.</p> <p>One of the recent tender of Central Armed Police Forces Institute of Medical Sciences (CAPFIMS) at Maidan Garhi, New Delhi, having requirement of 1600 TR x 04 Nos also have Dunham - Bush make in approved list of makes. CPWD is the agency involved for this project.</p> <p>List of recently executed/ under execution projects where we have supplied Dunham-Bush make Centrifugal Chillers are under:</p> <ol style="list-style-type: none"> 1. Tata Steel, Kalinganagar: 1000 TR x 07 Nos. 2. Lucknow Highcourt: 800 TR x 05 Nos. 3. Kokata High Court: 550 TR x 05 Nos. 4. Lucknow, Sachivalaya: 500 TR x 04 Nos. 5. Delhi District Unit, Delhi: 525 TR x 04 Nos. 6. IITM, Gwalior: 500 TR x 02 Nos. 7. Reserve Bank of India: 650 TR x01 No. 8. Tata Steel, KPO: 1200 TR x01 No. 9. TCS , Chennai: 600 TR x 01 No. <p>From above submission it's our genuine request to you to include Dunham - Bush make in approved list of makes for centrifugal chiller also for subject tender.</p>	<p>Shall be as per tender.</p> <p>Shall be as per tender.</p>

S.No.	Specification / Vol./ BOQ Reference	Ref. / Clause	As per Tender	Bidders Queries/ Request	Clarification/ Reply
2	BOQ, A) EQUIPMENTS 1.0 WATER CHILLING UNITS.	S.No. t, 1.1, Page: BOQ-AC1 R3	Country of origin USA or Europe only	Our DB Centrifugal chillers are manufactured at Malaysia facility as per latest international standards and specification and being tested at AHRI certified test bed. We request you to include Malaysia also as Country of origin for Chillers.	Shall be as per tender.
3	BOQ, A) EQUIPMENTS 1.0 WATER CHILLING UNITS.	S.No. o, 1.1, Page: BOQ-AC1 R3	Lot-RCC/Cement concrete foundation i/c.....	We are not specialised agency for carrying such kind of civil works and same is not being included in HVAC contractor scope, so request you to please exclude this form our scope of works.	Foundation work is excluded from the scope.
4	Volume I NIB & ITB	Vol. - I Page - 1 & 2	Last date to fill/upload the tender through e-Tendering.	You would appreciate that the conditions in the tender require considerable amount of working and costing at our end, for which we require certain time and being festive season we will get slower response from the equipment suppliers. In view of this, we request you to kindly extend the tender submission date till 10.11.2016.	Last date of submission of bid through e-tendering has been extended upto on 14:30 hrs. on 11.11.2016
6	Vol-II, SCC, page - 42, Power and water supply, 42.2.4			You are requested to provide us power & water free of cost for Installation, testing & commissioning of this work. It is not feasible to provide DG sets of that much capacity so that complete plant can be run for testing & commissioning. Please remove this from our scope.	Shall be provided on chargeable basis.
7	Vol-II, GCC, page - 15 of 121, clause - 1A, Recovery of Security Deposit			As per the said clause, recovery of security deposit shall be maximum of 2.5% of total tendered value. whereas as per Schedule 'F' & Vol-III, SCC, page - 33, clause - 31 (e), Retention Money, security deposit/ retention money shall be maximum of 5% of total tendered value. Both are contradictory. so please accept security deposit/ Retention money as per prevailing CPWD norms, i.e. 2.5% of total contract value.	Shall be as per tender condition.
8	Vol-II, SCC, page - 43, clause - 44, Rates/ prices			Since this is an Air Conditioning Work, our quoted rates will not include any kind of batching plant for RCC work. Please accept	Foundation work is excluded from the scope. However the drawings and details shall be provided by the contractor.
9	Vol-II, SCC, page - 43, clause - 46, Cash flow targets			Since It is not possible to maintain a separate account for each project, we will be using our existing account for the same. Please accept.	Shall be as per tender condition.
10	Vol-II, SCC, page - 53, clause - 22, Terms of Payment			keeping in view the cash flow against subject work please accept payment terms as per CPWD General Specification for HVAC work 2004 i.e.	Shall be as per tender.
11				For Equipment & Machinery 80 % of BOQ rate on delivery of material at site on prorata basis 10 % of BOQ rate on installation at site on prorata basis 5 % of BOQ rate on commissioning & testing 5 % of BOQ rate on Completion of major seasonal test For Other items 70 % of BOQ rate on delivery of material at site on prorata basis 20 % of BOQ rate on installation at site on prorata basis 5 % of BOQ rate on commissioning & testing 5 % of BOQ rate on Completion of major seasonal test	No Change , Shall be as per tender condition.
12	BOQ item no.- 1 (SH:A), Water Chilling unit			Please confirm the factory witness testing of chillers if it is required or not. Please clarify	Witness Testing of chillers not required.
13	BOQ item no.- 1.2 (SH:A), Plant Room Manager			Please provide I/O Summary for Chiller plant Manager.	As per attached Annexure-1.
14	BOQ item no.- 24.1 (SH:D), Main AC Panel			Approved makes for Main AC Panel i.e. L&T/Siemens/ABB/Schneider only quote through their Authorised Channel Partner. Please accept the make of main Electrical panel same as the make for AHU/ Ventilation electrical panel since they all are Authorised channel partner.	Authorised channel partner not acceptable. Shall be as per tender documents.
15	BOQ item no.- 12,14 & 16 (SH:B), Piping			Jindal (Hissar) plant doesn't manufacturer pipe above 300 mm dia. . Also there are delivery issues with other makes. Therefore in the interest of project, you are requested to accept jindal make pipe for all the sizes. So that the pipe can be arranged from other plants of jindal.	Shall be as per tender.
16	BOQ item no.- 17 (SH:C), Ducting			Considering the quantum of ducting work & timely delivery of the same, please accept few additional makes for Ducting like EcoDuct & Zeco	Shall be as per tender.

S.No.	Specification / Vol./ BOQ Reference	Ref. / Clause	As per Tender	Bidders Queries/ Request	Clarification/ Reply
17	BOQ item no.- 3 (SH:A), Cooling Tower			Flow rate of cooling tower is 1650 GPM with temperature difference of 10 Deg F, heat rejection capacity comes out to be 20,80,356 Kcal/hr instead of 23,28,480 Kcal/hr. please accept	Shall be as per tender.
18	BOQ item no.- 2 (SH:A), Hot water Pumps			For 500 KW hot water generator and temperature difference of 15 Deg F, the flow rate should be 228 USGPM instead of 500 GPM. Please accept	KW rating of HWG shall be 500 KW. GPM and delta T will vary.
19	BOQ item no.- 17.1 (SH:C), GSS Ducting			Since the cost of round duct and rectangular duct is different. Please amend the same as rectangular ducting instead of rectangular/round.	Only rectangular ducting required.
20				Ducting shall be as per SMACNA with TDF flanges as applicable. Ducting shall not include the cost of damper as the same shall be measured under separate BOQ item.	Shall be as per tender.
21	BOQ item no.- 1 (SH:A), Water Chilling unit			Please let us know whether we need to consider Custom Duty or not	Shall be as per BOQ item 1.1. the custom duty is not to be included as the same will be reimburses as applicable.
22				Also do we have Custom Duty benefit applicable for other items also.	NO
23	BOQ item no.- 5 (SH:A), Air Handling units			Please confirm the static pressure of all the AHUs as specified in BOQ is total static pressure or External static pressure.	Total static pressure.
24	BOQ item no.- 5.3 (SH:A), HRV unit			please specify the static pressure of the unit.	25mm
25	BOQ item no.- 5.5 (SH:A), PAC unit			Please confirm the length of interconnected refrigerant pipe, drain pipe, power cable & control cable.	Up to 15 meters is inclusive in item.
26		Please consider following makes in addition to the makes given:		Airwasher: Same as AHU UVGI: PureAir/ Aeropure Butterfly: Advance/ C&R NRV/ Balancing: C&R Expanded polystyrene: Styrene Packing/ SHI Bus Duct: C&S/ GE/ L&T Axial Fan: AirFlow/ Wolter Cable Tray: Venus/ Pilco/ Maheshwari Electrical or equivalent	Shall be as per tender. Shall be as per tender. Shall be as per tender. Shall be as per tender. Styrene packaging is acceptable. Shall be as per tender. Shall be as per tender. Shall be as per tender.
27	BOQ	Chiller	1.1	Pressure drop on evaporator side 5.2 M. Request you to accept free standing VFD also. Kindly confirm us the factory witness testing of chiller is required or not.	5.2 Meter acceptable.VFD as per Tender documents.Witness run test not required.
28	BOQ	Chiller	1.1	Pls. let us know what custom duty we have to consider. Is custom duty benefit is also applicable for other item also?	Shall be as per BOQ item 1.1. the custom duty is not to be included as the same will be reimbursed as applicable by AIIMS.
29	BOQ	Condenser Water Pump	2.3	Since primary and secondary chilled water pumps asked in BOQ are vertical end suction, hence we request you accept condenser water pump vertical split casing end suction type instead of horizontal spit casing.	Shall be as per tender.
30	Specification	Pump	Clause 3.2, Page 50	Suction of pump shall be single.	Yes.
31		Cooling tower foundation		Foundation of cooling tower and MS structure shall be in other agency scope.	Yes.
32	BOQ	Air handling unit / All equipment	5.1, j	Foundation shall be other agency scope.	Foundation work is excluded from the scope.However the drawing and details shall be provided by the contractor.
33	BOQ	Heat reclaim ventilation unit	5.3	Cable for this item shall be measured under item"25.1 cabling".	Shall be as per tender.
34	BOQ	Inline fan	8.1	Cable for this item shall be measured under item"25.1 cabling".	Shall be as per tender.
35	Specification	Axial fan	Clause 3 e, page 65	Axial flow fans is selected on the basis of the CFM and static pressure as required in BOQ. The fan may be selected on 1450 RPM.	Rpm shall be as per clause 3 f.
36	List of make	Axial fan	Page 117 of specification	Comfree do not market fan in India, Nicotra / Flakt shall not able to match all the specification asked in tender hence we request you to accept Sarala / Air flow / Wolter make in addition to list of make given in tender.	Shall be as per tender.

S.No.	Specification / Vol./ BOQ Reference	Ref. / Clause	As per Tender	Bidders Queries/ Request	Clarification/ Reply
37	Sub head C -Air distribution of BOQ	Duct	17.1	Factory fabricated duct shall have joining agreement with TDF / TDC flanges as per SMACNA.Duct shall be rectangular type only. Duct shall not include damper same shall be measured under separate BOQ item mentioned in air distribution	TDF/TDC flanges for all area except OT which will be C&S.
38	Sub head C -Air distribution of BOQ	Duct -18 G	17.1.4	Since 275 GSM sheet has long delivery period and tight completion schedule of project, Request you to accept 120 GSM for 18 G duct too.	Shall be as per tender.
39	Sub head C -Air distribution of BOQ	Flexible duct	17.3	Flexible duct measured in RMT, Request you to amend measurement unit in RMT instead of sqmt.	Unit shall be Rmt.
40		List of makes:-		We propose and request you to accept following additional list of make:-	Shall be as per tender.
		Chiller		Daikin	Shall be as per tender.
		Pump		Kirlosker	Shall be as per tender.
		Pipe		Jindal	Shall be as per tender.
		Butterfly valve		Advance	Shall be as per tender.
		Factory fabriceted duct		Waves	Shall be as per tender.
		UVGI		Aeropure / Magneto / American UV	Shall be as per tender.
		VAV		Honeywell	Shall be as per tender.
		Main AC panel		Channel partner of L&T/ Siemens / ABB/ Schneider	Shall be as per tender.
		Axial fan		Wolter / Airflow / Sarla	Shall be as per tender.
41	Volune -1	Bank Guarantee	Clause -1.1 page 13 & Form B page 19	Pls. provide Name of Beneficiary's Bank, Account no. of Beneficiary, IFSC Code No. of Beneficiary bank; Since same is mandatory requirement for producing bank guarantee.	HSCC (India) Limited, Name of Branch - Indian Overseas Bank, Kribhco Branch, Noida IFSC Code - IOBA0001725 Bank A/C No. - 172502000000151 PAN No. - AAACH0086N
42	GCC	Compensation for delay	Clause 2, Page 17	Compensation for delay shall be 0.5% per week to maximum 5% of contract value.	Shall be as per tender condition.
43	GCC / SCC	Variation in taxes and duty	Clause 10 C, Page 34 / Clause 38 page 70	New levy imposed including GST and variation in taxes and duties shall payable to us form its day of implementation.	Shall be as per tender condition.
44	GCC	Arbitration	Clause 25, Page 59	All disputes to be resolved by one arbitrator from each side and third selected by both of them.	Shall be as per tender condition.
45	SCC	Power and water	Clause 42.2.4, Page 42	Power and water for testing and commissioning shall be provided to us free of cost.	Power shall be provided on chargabe basis.
46	SCC	List of make	Caluse 4 page 46	Choice of make shall be with us within the list of make.	Shall be as per tender.
47	SCC	Terms of payment	Clause 22, Page 53	Request you to accept below payment terms, same terms of payment are also acceptable in CPDW and mentioned under clause no 1.17 of CPWD :	Shall be as per tender.
48	GCC,10 C & 38 Page-34,page 70		Variation in taxes & duties	The statutory variation in prevailing taxes & duties, along with new levy or imposition of GST due change in govt. rules and regulation will be reimbursed against the documentary evidences.	Refer Cl. No. 38 of Vol.-II (GCC).
49	Clause no 2 Page no 17 of GCC		LIQUIDITY DAMAGE CLAUSE	We request you to amend LD as 0.5% per week subject upto maximum of 5% of contract value.	Shall be as per tender condition.
50	Page no 28 of VOL I NIT & PQ		Defect liability Period-The tender says that DLP shall be upto 12 months from date of commissioning over.	Defect liability period shall be 12 months from the date of commissioning or 15 months from the date of delivery, which ever ends earlier.	Shall be as per tender.
51	SCC Page No 54 clause 4.		Equipment shall be strictly as per the list of approved makes/manufacturers given in the Bid documents. However, final choice of make shall lie with the Engineer	We confirm to provide one of the approved makes as per tender. However final choice of make shall remain with us.	Shall be as per tender.
52			Custom duty	The chiller boq says that custom duty exemption certificate shall be provided by AIIMS. Please clarify whether custom duty should be included in our prices or not. And also if applicable, please specify the items where custom duty benefit could be availed.	Shall be as per BOQ item 1.1. The custom duty is not to be included as the same will be reimbursed as applicable by AIIMS.

S.No.	Specification / Vol./ BOQ Reference	Ref. / Clause	As per Tender	Bidders Queries/ Request	Clarification/ Reply
53	SCC Page No 57 clause no12.3		Tender says that power & water for testing & commissioning shall be as arranged by the HVAC contractor	We request you to provide water & power for testing & commissioning free of cost to the contractor. Since, power & water for commissioning is traditionally provided by the client since it is practically impossible to carry out the commissioning of the complete system by DG's. We request you to kindly provide us the power /water at the time of commissioning.	Shall be provided on chargeable basis.
54			CIVIL Work	Since we are not specialised in doing the these types of civil work. Kindly exclude this clause from our scope of work.	Foundation work is excluded from the scope. However the drawings and details shall be provided by the contractor.
55	Technical Specifications	YORK	Country or Origin: US/Europe	Kindly accept China make chillers as chillers supplied from China are also fulfilling the efficiency criteria of tender and are AHRI certified. Further, the manufacturing standard used in China are in compliance with US standards. The chillers from China shall be ASME U Stamped.	Shall be as per tender.
56			Unit Mounted/ Free Standing VFD	Kindly note that all manufacturers provides Unit Mounted and factory fitted VFD. Unit mounted and factory fitted VFD leads to proper alignment of motor and VFD with chiller control panel and leads to actual energy saving.	Standard design of manufacturer is acceptable. However the control wiring and VFD shall be from the manufacturer as per tender documents.
57		Specifications: 1.1.7 Capacity Control		A) The compressor shall be equipped for modulating the capacity from 100% up to the 20% for stable operation without surging. The unit shall be designed to unload upto 25% of its rated capacity at Constant Condenser Entering Water Temperature For surge free running of chillers upto 25% of its rated capacity at Constant Condenser Entering water temperature, artificial means like hot gas bypass shall not be used as it leads to efficiency loss and unstable operation. The chiller impeller shall be designed in such a way that it leads to stable operation without surging. All chillers installed in AIIMS Delhi are without Hot gas bypass and have been running successfully for over 20 years.	Hot gas bypass is not allowed.
58			The capacity of the driving motor shall be at least 25% in excess of the	BHP requirement of the pump.	Shall be as per tender.
59			Chiller asked in tender 550 TR and flow rate of CT is 1650 USGPM, 2080870 Kcal/ Hr heat rejection capacity is required according to flow rate instaed of 2328480 Kcal/hr.		Shall be as per tender. Higher capacity cooling tower is required.
60			For 500 KW rating hot water generator and Delta T (15 F) , the flow rate should be 228USGPM instead of 500 USGPM		KW rating of HWG shall be 500 KW. GPM and delta T will vary.
61		Kindly provide the makes.		Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/ round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required. Request you to make it rectangular instead of rectangular/ round.	Only rectangular ducting required.
62			Duct Silencer	Request to kindly provide the sizes. It will be measured in surface area rather than face area.	It will be measured in surface area of duct silencer as duct measurement.
63	14.1.1	Insulated chilled water piping	450 mm dia	Whether insulated is to be provided or not.	Shall be as per BOQ.
64	14.1.16	Insulated chilled water piping	20 mm dia		Shall be as per BOQ.
65 (A)	We request you to kindly approve the following additional makes:	Primary CHW/Cond Pumps(End suction back pullout)	Xylem/Grundfoss/Armstrong/Wilo-Mather & Platt	Kirloskar & Beacon	Shall be as per tender
		Air Washer	Ambassador/Humidin/Roots Cooling/Ambiator	Waves	Shall be as per tender

S.No.	Specification / Vol./ BOQ Reference	Ref. / Clause	As per Tender	Bidders Queries/ Request	Clarification/ Reply
65 (B)	We request you to kindly approve the following additional makes:	Centrifugal / Axial Flow Fans/Tube Axial (AMCA Certified)	Flakt/Nicotra/Comefri/Kruger	Wolter / systemair /Airflow	Shall be as per tender
		Heat Recovery unit complete with heat recovery wheel	Flaktwoods/Novelaire/DRI/Greenheck/Bryair	Zeco/Edgetech	Shall be as per tender
		Main AC panel	L&T/Siemens/ABB/Schneider	Same as AHU/ventilation electrical Panels	Shall be as per tender. No system integrator allowed.
		Expanded Polystyrene	Beardsell Ltd/BASF/lloyd	Styrene	Shall be as per tender
		Air flow/water flow switch	Johnson control/ Honeywell/ Siemens	Anergy	Shall be as per tender
66		NIT, TIME FOR COMPLETION, 9 MONTHS		CONSIDERING THE QUANTUM OF WORK INVOLVED, PL EXTEND THE TIME OF COMPLETION BY 6 MOTNHS AT LEAST.	Shall be as per tender condition.
67		TAXES/LEVY PAYBLE BY CONTRACTOR	VOL-II,GCC,37 / VOL-I CLAUSE 2.3.7	PL CLARIFY SERVICE TAX SHOULD BE INCLUDE IN OUR PRICES OR NOT	Refer Cl. No.2.3.7 of Vol.-I (NIT/PQ) & Cl. No. 37 of Vol.-II (GCC).
68		RETENTION MONEY	VOL-III,SCC, 31 (e)	WE REQUESTED YOU TO PLS CONSIDER THE RETENTION BG OF 5% UPTO DLP PERIOD ONLY AGAINST RETENTION AND NO FURTHER DEDUCTION AGAINST THE SAME .	Shall be as per tender condition.
69		ADDITIONAL MAKES REQUIRED FOR SOME ITEMS AS MENTION HERE		1.) INLINE/VANE AXIAL / TUBE AXIAL / CENTRIFUGAL FAN - WOLTER , AIRFLOW. 2.) UVGI - STULZ. 3.) AHU'S,AIRWASHER,HRU UNITS - RAVIAIRCON, WAVES. 4.) VAV BOXES - TRITON. 5.) AHU/VENTILATION PANEL - ADVANCE, SPC. 6.) FACTORY FABRICATED DUCT - WAVES. 7.) GRILLES & DIFFUSERS - AIRFLOW. 8.) BFV - ADVANCE.	Shall be as per tender.
70	TECHNICAL SPECIFICATIONS	PRECISION UNITS AIRCOOLED CABINET PANELS	BOQ-5.5 / VOL4 TECH SPECS PAGE NO 39 DX TYPE AIR COOLED PRECISION UNITS - The External Panel shall be constructed of 1.2mm zinc coated sheet steel.front,Rear & end panels shall be fitted with 25mm galss fibre insulation,Fire rated.	The cabinet shall be constructed of corrosion resistance powder coated steel sheet & Shall be provided with double skin side panels with inner panel of minimum thickness of 0.8mm and outer panel of thickness of 1.0mm, Insulation in the side panels should be 19 mm thick glass wool and front & back panels should be insulated with 25 mm thick special acoustic mineral wool.	Shall be as per tender.
71		EVAPORATOR FAN	The fan shall be of forward curved centrifugal type & double width double inlet .The drive arrangement shall be of self tensioning and provide for belt replacement without the use of tools	Unit shall be supplied with Electronically commuted direct drive backward curved centrifugal radical fan & single width single inlet	Amendment: Electronically communicated direct driven fan
72		HUMIDIFIER	Humidifier shall be capable of providing 7.5 Kg/Hr of steam	Unit shall be supplied with humidifier with the capacity of 5 kg/hr of steam which is appropriate for maintaining the designed RH %	Acceptable. Suitable to maintain the designed Rh.
73		REFRIGERANT CIRCUIT	Refrigerant circuit shall be of the twin circuit direct expansion type &	Unit shall be supplied with Single compressor per unit	Acceptable.
74		EVAPORATOR COIL	Evaporator coil shall be A Shape Coil	Unit shall be supplied with Straight/Slant evaporator coil	Straight/Slant as per manufacturer std design is acceptable.
75		DRAIN PAN	Drain Pan shall be made of heavy guage aluminium	Drip tray should be fabricated from heavy gauge steel with powder coating to avoid corrosion. The drip trays must be double angled for condensate flow and easily removable for cleaning	Yes.
76		DEHUMIDIFICATION CYCLE	Dehumidification cycle shall bedone by reducing the operating surface temperature in a section of one of the refrigration coils by means of solenoid valve in liquid line	Dehumidification cycle shall be done by reducing the Evaporator fan speed .	Standard design acceptable.
77		CONDENSER FRAME	Condenser shall be constructed from heavy-duty aluminium	The condenser frame shall be constructed from heavy duty steel with powder coating to avoid corrosion	Standard design acceptable.

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78		CONDENSER COIL	Condenser coil shall be have maximum of 3 rows and adequate fins per mt.	Condenser coil in 8.5 TR Model have 4rows with 12 to 13 fins per inch	Standard design acceptable. Shall be able to maintain the designed conditions.
79		CONTROL SYSTEM	Control system shall include auto sequencing of compressors	Auto sequencing of units is possible depending upon the load variations .	Shall be as per tender.
80		PLANT ROOM MANAGER	BOQ ITEM 1.2	PLS PROVIDE IO SUMMARY FOR CHILLER PLANT ROOM MANAGER	As per Annexure-1 .
81		WATER COOLED CENTRIFUGAL TYPE CHILLERS	BOQ POINT No.1 (1.1)	<p>York pre-bid query:-</p> <p>. Technical Specifications: 1.1.7 Capacity Control (page no.- Specs – AC- Page - 20R3)-</p> <p>A) The compressor shall be equipped for modulating the capacity from 100% up to the 20% for stable operation without surging. The unit shall be designed to unload upto 25% of its rated capacity at Constant Condenser Entering Water Temperature—</p> <p>-- York Query- For surge free running of chillers upto 25% of its rated capacity at Constant Condenser Entering water temperature, artificial means like hot gas bypass shall not be used as it leads to efficiency loss and unstable operation. The chiller impeller shall be designed in such a way that it leads to stable operation without surging. All chillers installed in AIIMS Delhi are without Hot gas bypass and have been running successfully for over 20 years</p> <p>Technical Specs page no.- Specs – AC- Page -20R3 SCHEDULE OF EQUIPMENT 1.3.4 -</p> <p>B) Request you to please accept 5.2m pressure drop on evaporator side (Chiller Technical parameters mentions 5 m). There will be no effect on pump head due to this minor increase in pressure drop.</p> <p>C) . Country Of origin: USA/ Europe (BOQ point no 1.1 t)</p> <p>York Query: Kindly accept China make chillers as chillers supplied from China are also fulfilling the efficiency criteria of tender and are AHRI certified. Further, the manufacturing standard used in China are in compliance with US standards. The chillers from China shall be ASME U Stamped.</p> <p>D) Unit Mounted/ Free Standing VFD York Query:- Kindly note that all manufacturers provides Unit Mounted and factory fitted VFD. Unit mounted and factory fitted VFD leads to proper alignment of motor and VFD with chiller control panel and leads to actual energy saving.</p> <p>E) The AHRI Certified performance sheet shall mention the losses due to active harmonic filter. Same shall be verified with AHRI during technical submittal.</p>	<p>A) Unit shall be designed to unload 25% of its rated capacity without hot gas bypass.</p> <p>B) 5.2 m acceptable.</p> <p>C) Shall be as per tender.</p> <p>D) Shall be as per tender.</p> <p>E) Yes</p>
82		WATER COOLED CENTRIFUGAL TYPE CHILLERS	BOQ POINT No.1 (1.1)	Kindly confirm us the scope chiller foundation.	Chiller foundation work is excluded from scope. However the drawings and details shall be provided by the contractor.
83		Cooling Tower	BOQ POINT No.3	Kindly confirm us the Cooling tower foundation scope either in Civil contractor scope or HVAC Contractor scope.	Excluded from the scope. However drawings shall be provided by the contractor.
84		Closed Expansion Tank	BOQ POINT No.10	Kindly provide us the Location of the Plant Room along with the height of the Building. Also provide us the Technical Specification of the Closed Expansion Tank and also PN rating.	Shall be as per tender.
85		Condenser Water Piping	BOQ POINT No. 12	i) Please specify weather excavation & back filling is in scope of HVAC contractor or it is in scope of Civil Contractor.	Shall be as per tender.
				ii) Please clarify weather paint has to be done on support also. Please confirm.	Yes. Shall be as per tender.
86		Chilled water/condenser water piping	BOQ	Please provide us the detail of pressure testing required for the piping.	Shall be as per tender and CPWD HVAC specifications for testing.
87		GSS Ducting	BOQ POINT No. 17.1	Please clarify the ducting has to be considered round type or rectangular type as there is huge difference in the cost of round type and rectangular type.	Rectangular.

S.No.	Specification / Vol./ BOQ Reference	Ref. / Clause	As per Tender	Bidders Queries/ Request	Clarification/ Reply
88		Air Handling Units (High) SPECS-AC PAGE 117 R3 Approved make (S. No:- 10 & 14)	Static) with cooling coils make Caryaire/ Blue-star/ ZECO/ Voltas/ Flaktwood/ Waves/Edgetech	Please add "Unique/VTS" make AHU and FCU in the approved list of make.	Shall be as per tender.
89		Ultra Violet Germicidal Irradiation/PHI make- Ruks/Trimed/RGF/ Sterilair	SPECS-AC PAGE 117 R3 Approved make (S. No:- 13)	Please add "Pure Air" make Ultra Violet Germicidal Irradiation/PHI in the approved list of make.	Shall be as per tender.
90		Air washer Ambassador/Humidin/ Roots Cooling/ Ambiator	SPECS-AC PAGE 117 R3 Approved make (S. No:- 15)	Please add "Unique" make Air washer in the approved list of make	Shall be as per tender.
91		Centrifugal /Axial Flow Fans/Tube Axial (AMCA Certified)	SPECS-AC PAGE 117 R3 Approved make (S. No:- 19)	Please add "SWENT/ Green heck/Air-flow/Wolter" for axial flow fan.	Shall be as per tender.
92		Heat recovery unit complete with Heat recovery wheel	SPECS-AC PAGE 118 R3 Approved make (S. No:- 26)	Please add "Eventus" make HRW in the approved list of make.	Shall be as per tender.
93		Fire Dampers UL listed Caryaire/ Ravistar/ Ruskin	SPECS-AC PAGE 119 R3 Approved make (S. No:- 54)	Please also add Green heck make in the approved list of make.	Shall be as per tender.
94		Expanded Polystyrene Beardsell Ltd./ BASF / Lloyd	SPECS-AC PAGE 119 R3	Please also add "Styrene" make insulation in the approved list of make	Styrene Packaging
95		SCC	ELCTRICITY & WATER SUPPLY	PLEASE CLARIFY WEATHER NECESSARY ELECTRICITY & WATER SUPPLY REQUIRED DURING PROJECT EXECUTION SHALL BE IN SCOPE OF HVAC CONTRACTOR OR IT SHALL BE AVAILIABLE FREE OF COST.	Power will be supplied on chargeable basis.
96		Makes	Main Electrical Panel (SIEMENS/ SCHNEIDER/ABB)	Request you to please approve electrical authorized channel partners (Panel Manufacture i.e ALDEC for SCHNEIDER & KEPL for SIEMENS)	Shall be as per tender.

All other terms & Conditions of the Tender shall remain unchanged.

Prospective bidders are advised to regularly scan through HSCC e-tender portal <http://www.tenderwizard.com/HSCC> and HSCC Website www.hsccltd.co.in as corrigendum/amendments etc., if any, will be notified on this portal only and separate advertisement will not be made for this.

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Dy. General Manager (Elect.), HSCC (India) Ltd.,
For & on behalf of Director, AIIMS, New Delhi

ANNEXURE-1**OPD Block, AIIMS-New Delhi****Data Point Summary for Plant Manager**

Sr. No	Description	Qty	Total Points					Required signal
			DI	DO	AI	AO	SW	
A	Chiller Plant (Water Cooled Chiller)	5						
1	Chiller On/Off command			0			5	Software Integration signal
2	Chiller Run status		0				5	Software Integration signal
3	Chiller Fault/Alarm status		0				5	Software Integration signal
4	Chiller CHW Temperature Reset Setpoint				0	5		Software Integration signal
5	Chiller Current Limit Setpoint				0	5		Software Integration signal
6	Chiller inlet isolation valve Open/Close command			5				NO/NC Relay Command to Valve
7	Chiller inlet isolation valve Open/Close status		5					NO/NC Potential free contact from Valve
8	CW inlet isolation valve Open/Close command			5				NO/NC Relay Command to Valve
9	CW inlet isolation valve Open/Close status		5					NO/NC Potential free contact from Valve
10	Common CHW supply header temperature				1			
11	Common CHW return header temperature				1			
12	Outside Air Temp/Humidity				2			0-10VDC from RH cum temp sensor
#	Total points for Chiller Plant		10	10	4	0	25	
B	Primary Chilled Water Pumps (PCHP)	5	DI	DO	AI	AO	SW	
1	Pump Auto/Manual status		5				0	NO/NC Potential free contact from MCC Panel/Pump VFD
2	Pump On/Off command			5			0	NO/NC Potential free contact from MCC Panel/Pump VFD
3	Pump run status		5				0	NO/NC Potential free contact from MCC Panel/Pump VFD
4	Pump trip status		5				0	NO/NC Potential free contact from MCC Panel/Pump VFD
#	Total points for Chilled Water Pumps		15	5	0	0	0	
C	Condenser Water Pumps (CWP)	5	DI	DO	AI	AO	SW	
1	Pump Auto/Manual status		5				0	NO/NC Potential free contact from MCC Panel/Pump VFD
2	Pump On/Off command			5			0	NO/NC Potential free contact from MCC Panel/Pump VFD

3	Pump run status		5				0	NO/NC Potential free contact from MCC Panel/Pump VFD
4	Pump trip status		5				0	NO/NC Potential free contact from MCC Panel/Pump VFD
#	Total points for Condenser Water Pumps		15	5	0	0	0	
D	Cooling Tower (CT)	5	DI	DO	AI	AO	SW	
1	Fan Auto/Manual status		5				0	NO/NC Potential free contact from MCC Panel/CT VFD
2	Fan On/Off Command			5			0	NO/NC Potential free contact from MCC Panel/CT VFD
3	Fan Run status		5				0	NO/NC Potential free contact from MCC Panel/CT VFD
4	Fan Trip status		5				0	NO/NC Potential free contact from MCC Panel/CT VFD
5	CT inlet/outlet Isolation valve Open command			5				TE-632AM-1+WZ 1000-5
6	CT inlet/outlet Isolation valve Open/close status		5					TE-632AM-1+WZ 1000-5
7	Common CW supply header temperature				1			NO/NC Relay Command to Valve
8	Common CW return header Temperature				1			NO/NC Potential free contact from Valve
#	Total points for Cooling Tower		20	10	2	0	0	
E	Secondary Chilled Water Pumps (SCHWP)	5	DI	DO	AI	AO	SW	
1	Pump On/Off command			1			0	NO/NC Potential free contact from MCC Panel/Pump VFD
2	Pump run status		3				0	NO/NC Potential free contact from MCC Panel/Pump VFD
#	Total points for Chilled Water Pumps		3	1	0	0	0	
F	Chiller Diagnostic Points (including VFD) from main chiller control panel	5	DI	DO	AI	AO	SW	
1	Leaving chilled liquid - setpoint						5	
2	Motor current limit -setpoint						5	
3	Leaving chilled liquid - temperature						5	
4	Entering chilled liquid - temperature						5	
5	Leaving condensor liquid - temperature						5	
6	Entering condensor liquid - temperature						5	
7	% Amps						5	
8	RLA						5	
9	VFD Frequency						5	
10	Evaporator pressure						5	
11	Condensor pressure						5	
12	Oil – low differential pressure						5	

13	Motor FLA current						5	
14	Discharge pressure						5	
15	Operating hours						5	
16	Unit safety fault code						5	
17	Unit cycling fault code						5	
18	Opreation code						5	
19	Evaporator – low pressure						5	
20	Evaporator – low-pressure – smart freeze						5	
21	Evaporator – transducer or leaving liquid probe						5	
22	Condenser – high pressure						5	
23	Condenser – pressure transducer out of range						5	
24	Discharge – low temperature						5	
25	Oil – high temperature						5	
26	Oil – low differential pressure						5	
27	Oil – clogged filter						5	
28	Motor controller – loss of current						5	
29	Oil – high pressure						5	
30	Oil – separator – low level						5	
31	Leaving chilled liquid - low temperature						5	
32	Motor controller – loss of current						5	
33	Sys Oil Temperature						5	
34	Sys Oil Pressure						5	
35	Sys Oil Filter Pressure						5	
36	Slide Valve Position						5	
37	Sys Discharge Temp						5	
38	SYS.EVAPORATOR SATURATION TEMPERATURE						5	
39	SYS.EVAPORATOR SUB TEMPERATURE						5	
40	SYS.CONDENSER SATURATION TEMPERATURE						5	
41	EVAPORATOR REFRIGERANT TEMPERATURE						5	
42	EVAPORATOR SMALL TEMPERATURE DIFFERENCE						5	
43	CONDENSER SMALL TEMPERATURE DIFFERENCE						5	
44	SYS. START TIMES						5	
	Total diagnostic points						220	