

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

Dated: 08.03.2016

AMENDMENT No. – I

Project Name: Tender for “HVAC work for proposed New OPD Block & Other Associated Services and their Maintenance during Defect Liability Period in AIIMS Campus, Ansari Nagar, New Delhi for AIIMS, New Delhi”

Tender No. HSCC/AIIMS/HVAC/OPD/2016; dated: 11.02.2016

(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 18.03.2016
through e-Tendering.**

Date of Opening of bids : on 18.03.2016 at 15:00 hrs.

Reply to Pre Bid Queries raised by bidders during pre -bid meeting held on 24.02.2016 at HSCC, Head Office, Noida

S.No.	Item	Clause/Ref./Vol.	Queries	Reply/ Amendment
1.	NIT, Time for Completion, 9 Months		Considering the quantum of work involved, please extend the time of completion by 6 months at least	No Change, Tender conditions shall prevail.
2.	Taxes/Levy payable by contractor.	Vol-II, GCC, 37	As per the mentioned clause, the service tax shall be reimbursed to us after satisfying EIC that it has been actually & genuinely paid by us. Whereas according to Vol-I clause 2.3.7(i.) Service has to be included in our quoted price. Please let us know do we need to consider the service tax in our quoted price.	Rates/ Price to be quoted without service tax. Service tax as applicable, shall be reimbursed separately on submission of proof of deposition.

3.	Power and Water Supply	Vol-II, SCC, Pg 42	You are requested to provide us power & water free of cost for installation, testing & commissioning of this work.	Shall be as per tender conditions.
4.	Retention Money	Vol-II, SCC, 31(e)	As per prevailing CPWD norms, the total retention money/ security deposit should not exceed 2.5% of total contract value. Please accept.	Shall be as per tender conditions.
5.	Rates/Prices	Vol-II, SCC, 44	Since this is an Air conditioning work, our quoted rates will not include any kind of batching plant for RCC work. Please accept.	No Batching plant is required.
6.	Cash flow targets	Vol-II, SCC, 46	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.	No Change, Tender conditions shall prevail.
7.	Terms of Payment	Vol-III, SCC, 22	Keeping in view the cash flow against subject work please accept payment trms as per CPWD General Specification for HVAC work 2004 i.e.	Shall be as per tender conditions.
			For Equipment & Machinery	
			80% of BOQ rate on delivery of material at site on prorate basis.	Shall be as per tender conditions.
			10% of BOQ rate on installation at site on prorate 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 prorate basis	
			20% of BOQ rate on installation at site on prorate basis	
			5% BOQ rate on commissioning & testing	
5% of BOQ rate on completion of major seasonal test				
7	Water Chilling Unit	BOQ Item 1(SH:A)	Please accept COP, IPLV as per ECBC	
8.	Plant Room Manager	BOQ Item 1.2(SH:A)	Please provide I/O Summary for chiller plant manager	All the plant room equipments including cooling towers.
9.	Water Circulation Pump	BOQ Item – 2(SH:A)	All the pumps shall be centrifugal end suction back pull out type. Please accept	Shall be as per tender conditions.
10.			Also the make of motor shall be as per manufacturer std. for pump set & cooling	Shall be as per tender conditions.

			tower. Please accept.	
11.	Electrical Panels	BOQ Item 24(SH:D)	Please consider the make of main electrical panel same as the make for AHU/Ventilation electrical panel.	Shall be as per tender conditions.
12.	Piping	BOQ Item 12, 14 & 16 (SH:B)	Make of MS pipe shall be Jindal. Please accept	Shall be as per tender conditions.
13.			Please consider following makes in addition to the makes given	
			Airwasher : Same as AHU	Shall be as per tender conditions.
			UVGI : Pure Air/Aeropure	Shall be as per tender conditions.
			Butterfly : Advance/ C&R	Shall be as per tender conditions.
			NRV/Balancing : C&R	Shall be as per tender conditions.
			Expanded polystyrene : Styrene Packing/SHI	Styrene Packing accepted.
			Bus Duct : C&S/ GE/ L&T	Shall be as per tender conditions.
			Factory fabricated ducting : Eco Duct/Zeco	Shall be as per tender conditions.
			Axial Fan : Air Flow/Wolter	Shall be as per tender conditions.
			Cable Tray : Venus/Pilco/Maheshwari Electrical or equivalent	Shall be as per tender conditions.
14.	Chiller		Country of Origin – US/Europe/China : Since all these chillers are AHRI certified and hence have same performance from US and China factory. Apart from performance, to ensure the quality of chillers is same as US, the construction shall be ASME U Stamped from China factory. Hence, request you to please accept China make in case of chillers with ASME U Stamping.	Shall be as per tender conditions.
15.	Full Load IKw/TR		Request you to please accept 0.65 KW/TR full load efficiency at tender conditions.	IKW/TR=0.65 accepted.
16.	Pressure Drop on Evaporator Side-5m		Request you to please accept 5.2m pressure drop on evaporator side. There will be no effect on pump head due to this minor increase in pressure drop.	Accepted.
17.	Flow Rate in Evaporator side – 1320 USGPM		To match a Dela T of 5.6 Deg C on Evaporator side, (12.22 Deg F-6.5 Deg F), the flow rate on evaporator side needs to be revised to 1301 USGPM.	Shall be as per tender conditions. As per BOQ Delta T is 10deg F. It is 12.22 deg C to 6.6 deg C.
18.	Plant Room Manager	1.2	Kindly provide the I/O for Plant room manager	All the plant room equipments including cooling towers.

19.	Pumps		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 conditions.
20.	CT		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 instead of 2328480 Kcal/hr.	Shall be as per tender conditions.
21.	HWG		For 500 KW rating hot water generator and Delta T (15F), the flow rate should be 228USGPM instead of 500 USGPM	Capacity is fixed i.e. 500 KW.
22.	Monsoon Reheat Arrangement		Kindly provide the makes.	Shall be as per tender conditions.
23.	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/ round ducting complete etc.	17.1	Request you to make it rectangular instead of rectangular/round	Factory fabricated ducting shall be rectangular type.
24.	Duct Silencer	23.1	Request to kindly provide the sizes. It will be measured in surface area rather than face area.	Since it is to be measured in surface area sizes not required.
25.	Insulated chilled water piping	14		
	450mm dia.	14.1.1	Whether insulated is to be provided or not	Yes. 75 mm.
	20mm dia.	14.1.16		Yes. 50 mm.
26.	Request you to kindly approve the following additional makes :			
	Tender	Proposed		
(i).	Primary CHW/Cond Pumps (End suction back pullout)		Xylem/Grundfoss/ Arsmstrong/ Wilo- Mather & Platt	Kirlosker & Beacon
(ii).	Air Washer		Ambassador/ Humidin/ Roots Cooling/ Ambiator	Waves
(iii).	Centrifugal/ Axial Flow Fans/ Tube Axial (AMCA Certified)		Flakt/ Nicotra/ Comefri/ Kruger	Wolter
(iv).	Heat recovery unit complete with heat recovery wheel		Flaktwoods/ Novelaire/ DRI/ Greenheck/ Bryair	Zeco/ Edggetch

27.	Main AC Panel		L&T/ Siemens/ ABB/ Schneider	Same as AHU/ ventilation electrical panels	Shall be as per tender conditions.
28.	Expanded Polystyrene		Beardsell Ltd/ BASF/IIoyd	Styrene	Shall be as per tender conditions.
29.	Chiller	BOQ- 1.1	Chiller may be sourced from China. IKW/TR shall be 0.65 and pressure drop on evaporator side 5.2M. Request you to accept free standing VFD also.		IKW/TR=0.65 accepted. Pressure drop 5.2 m accepted.
29 (i).		BOQ- 1.1	Pls. let us know what custom duty we have to consider. Is custom duty benefit is also applicable for other item also?		The rates shall be excluding custom duty. Custom duty shall be paid by the contractor and the same will be reimbursed on submission of documents.
30.	Condenser Water Pump	BOQ- 2.3	Since primary and secondary chiller water pumps asked in BOQ are vertical end suction, hence we request you accept consider water pump vertical split casing end suction type instead of horizontal spit casing.		Shall be as per tender conditions.
31.	Pump	Tech. Specs. - 3.2	Suction of pump shall be single.		Shall be as per tender conditions.
32.	Air handling unit	BOQ- 5.1 j	Foundation shall be other agency scope.		Shall be as per tender conditions.
33.	AHU-Meghanalic Gauge	Tech. Specs - 2.8	Please provide specification of Magnehlic gauge.		Shall be as per CPWD Specifications.
34.	Heat reclaim ventilation unit	BOQ- 5.3	Cable for this item shall be measured under item 25.1 cabling.		Shall be as per tender conditions.
35.	Inline fan	BOQ.- 8.1	Cable for this item shall be measured under item 25.1 cabling.		Shall be as per tender conditions.
36.	Axial fan	Tech. Specs. - 3 e	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.		Shall be as per tender conditions.
37.		List of Make page 117, specs	Comfee do not market fan in India, Nicotra/ Flackt 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 conditions.
38.	Duct – air distribution of BOQ	17.1	Factory fabricated duct shall have joining agreement with TDF flanges as per SMACNA. Duct shall be rectangular type only. Duct shall not include damper same shall be measured under separate BOQ		Yes.

			item mentioned in air distribution.	
39.	Duct – 18 G - air distribution of BOQ	17.14	Since 275 GSM sheet has long delivery period and tight completion schedule of project, Request you too accept 120 GSM for 18 G duct.	Shall be as per tender conditions.
40.	Flexible Duct - air distribution of BOQ	17.3	Flexible duct measured in RMT. Request you to amend measurement unit in RMT instead of sqmt.	Yes in RMT as per diameter.
41.	List of make		We propose and request you to accept following list of make :-	Shall be as per tender conditions.
		Chiller	Daikin	
		Pump	Kirloskar	
		Pipe	Jindal	
		Butterfly valve	Advance	
		UVGI	Aeropure/Magneto/American UV	
		Axial fan	Wolter/ Airflow/Sarla	
Commercial				
42.	Bank Guarantee	Vol.-I, Cl.-1.1 Page.-13 & form B page 19	Pls. provide name of Beneficiary's, Bank A/c No., IFSC Code, Bank name,; since same is mandatory requirement for producing Bank Guarantee	Name of Bank: Indian Overseas Bank Address: Kribhco Branch, A-10, Sector-1, Noida, U.P. Beneficiary Name : HSCC (India) Ltd. Beneficiary A/C No. : 17250-20000-00151 IFS Code/RTGS No.: IOBA0001725 MICR Code : 110020039
43.	Compensation for delay	GCC, 2 Page-17	Compensation for delay shall be 0.5% per week to maximum 5% of contract value	No Change, Tender conditions shall prevail.
44.	Variation in taxes and duty	GCC, 10C & 38, Page-34, Page-70	New levy imposed including GST and Variation in taxes and duties shall payable to us from its day of implementation.	Shall be dealt as per tender conditions.
45.	Arbitration	GCC, 25, Page-59	All disputes to be resolved by one arbitrator from each side and third selected by both of them.	No Change, Tender conditions shall prevail.
46.	The Description of work at page no.14	Vol.-I (NIT/PQ)	The description of work : The work involve "HVAC work for construction of Research and Laboratory Building, AIIMS, New Delhi	Shall be read as: HVAC work for proposed New OPD Block & Other Associated Services and their Maintenance during Defect Liability Period in AIIMS Campus, Ansari Nagar, New Delhi for AIIMS, New Delhi

47.	Operation of Plant	SCC, 45	Please let us know nos of shift for operation of HVAC plant.	Shall be as per tender conditions.
48.	BOQ Item No. 1 A) Equipments 1.0, 1.1 c.	1 No. factory fitted, unit mounted and liquid cooled VFD	VFD as per design of chiller manufacturer should also be acceptable. We offer Freestanding Air cooled VFD's. This solution is part of our global offering. We have been supplying and installing our chillers with this solution (Freestanding VFD's)for last almost 8-10 years in India (including various Govt. projects) and these have been running successfully and is a time proven technology. Further, liquid cooled VFD's using condenser water for cooling, are highly prone to damage due to insufficient cooling resulting from the choking of the heat exchanger.	Shall be as per tender conditions.
49.	BOQ Item No. 1 A) Equipments 1.0, 1.1 r.	IKW/TR should not be less than 0.64	Request you to kindly accept full load IKW/TR upto0.66~0.67at duty conditions for VFD driven chillers. This shall ensure fair participation from all chiller manufacturer's	IKW/TR=0.65 accepted.
50.	BOQ Item No. 1 A) Equipments 1.0, 1.1 q.	IPLV greater than 10 at ARI conditions	We wish to clarify that as per ECBC Code2007, min. IPLV requirement is 6.61 at ARI conditions. We can offer chillers with IPLV upto9.0 in this capacity range. Since this is an aspirational requirement, we request to you kindly accept 'IPLV greater than 9.0' enabling fair participation from all chiller vendors and to avoid limiting competition on this basis	IPLV ≥ 9 accepted.
51.	Technical Specifications1.0 Scope	AHRI certified selection sheets should mention VFD with active harmonic filters and sound level	We wish to clarify that every chiller manufacturer have their available global design solutions approved with AHRI. All these solutions should be acceptable subject to compliance to tender requirements. Further, sound level data is not certified by AHRI and can only be tested as per relevant standards. Since water cooled chillers are always installed in plant room, this evaluation parameter shall become insignificant	AHRI certified selection should be with VFD that is being supplied. Sound level at part loads should not exceed above full load operation sound.
52.	Technical Specifications 1.1.7Capacity	Unit shall be designed to unload upto25% of its rated	We would like to clarify that chiller unloading criteria is defined in accordance with AHRI Standard 550/590. Since AHRI	Unloading of chiller up to 30% of its rated capacity at constant condenser entering water temp is acceptable.

	Control a)	capacity at constant condenser entering water temperature	certified chillers are being asked for, it shall be prudent to follow the AHRI standard for defining this criteria. Chillers are designed for unloading up to 20% for stable operation as per AHRI Standard 550/590. Further, specifying this condition of constant condenser unloading up to 25% (i.e. up to 135 TR) for individual chiller in a plant room having working load of 2200 TR, shall be only 6% of the plant room load. Therefore, it should be technically correct to define AHRI Standard for this selection criteria to ensure fair competition	
53.	BOQ Item No. 1 A) Equipments 1.0, 1.1 b. & Technical Specifications 1.1.10 Drive Motor, v)	The motor shall be fan cooled for open type chiller unit	As per CPWD specifications point no. 5.3.10 'Drive Motor', open type compressors shall be equipped with min. IP-42 protected totally enclosed fan cooled (TEFC) motors. Request you to kindly confirm this requirement as these motors are suitable for chiller applications	Standard design of manufacturer is acceptable.
52.	WATER COOLED CENTRIFUGAL TYPE CHILLERS	BOQ POINT No.1	Kindly confirm us the factory testing of chiller. If case, if factory testing of chiller is mandatory then it will increase the cost of chiller. Please confirm.	Witness testing not required.
53.	WATER COOLED CENTRIFUGAL TYPE CHILLERS	BOQ POINT No.1	Also confirm us the scope chiller foundation. Please confirm.	Shall be as per tender conditions.
54.	Cooling Tower	BOQ POINT No.3/Vol 04 TS page no 49 point no 2.	Kindly confirm the IP protection of VFD for Cooling Tower. Also confirm us the cooling tower shall be either cross flow or counter flow (mentioned in Vol 04 TS page no 49 point no 2). Please confirm.	IP55. Both type accepted.

55.	Cooling Tower	BOQ POINT No.3	Kindly confirm us the Cooling tower foundation scope either in Civil contractor scope or HVAC Contractor scope .	Civil contractor. The design and details shall be provided by AC contractor.
56.	(Precision cooling) Split air conditioner	BOQ POINT No.5.5(c.)	(C) Interconnecting Refrigerant and drain piping with insulation wherever required, refrigerant and oil. The unit shall include refrigerant piping, Power cabling and drain piping as required. Please specify the length of refrigerant pipe, Wiring and drain pipe.	10 m.
57.	Fan coil Unit	BOQ POINT No.5.4	Please confirm us Ball valve with strainer Dia in the point no:-5.4.1 , 5.4.2, 5.4.3 and 5.4.4. Also confirm, the Body metal of the Ball valve with strainer .	Suitable for the item as per TR capacity. Gun metal.
58.	Air Washer Unit	BOQ POINT No.6	Please specify the length of Cable, control cable earthing and also confirm Core of the cable and control cable. And also confirm metal of Cable, control cable and earthing . .i.e Cable and control :- Aluminum or copper Earthing :- GI or Copper . Please clarify.	Shall be as per tender conditions. GI.
59.	Propeller Fan	BOQ POINT No. 8.2	MOC of fixed louver for propeller fan is not specify .Please specify the MOC of Louvers for Propeller fan.	Powder coated Aluminium.
60.	Condenser Water Piping	BOQ POINT No. 12	Please specify weather excavation & back filling is in scope of HVAC contractor or it is in scope of Civil Contractor. Please clarify weather paint has to be done on support also. Please confirm.	Shall be as per tender conditions.

61.	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 cost of round type and rectangular type.	Rectangular type.
62.	Centrifugal /Axial Flow Fans/Tube Axial (AMCA Certified)	Approved make (S. No:- 19)	Please add SWENT/ Greenheck/Air-flow/Wolter for axial flow fan .	Shall be as per tender conditions.
63.	Air Handling Units (High Static) with cooling coils make Caryaire/ Blue-star/ ZECO/ Voltas/ Flaktwood/ Waves/ Edgtech	Approved make (S. No:- 10)	Please add "Unique" make AHU in the approved list of make.	Shall be as per tender conditions.
64.	Ultra Violet Germicidal Irradiation/PHI make- Ruks/Trimed/RGF / Sterilair	Approved make (S. No:- 13)	Please add "Pure Air" makeUltra Violet Germicidal Irradiation/PHI in the approved list of make.	Shall be as per tender conditions.
65.	Air washer - make Ambassador/Humidin/ Roots Cooling/ Ambiator	Approved make (S. No:- 15)	Please add "Unique" make Air Washer in the approved list of make.	Shall be as per tender conditions.
66.	Fan Coil Unitsmake -Same as AHU	Approved make (S. No:- 14)	Please add "Unique" make FCU in the approved list of make.	Shall be as per tender conditions.

67.	Heat recovery unit complete with Heat recovery wheel	Approved make (S. No: - 26)	Please add "Eventus" make HRWin the approved list of make.	Shall be as per tender conditions.
68.	Butterfly Valves make Audco/ L&T/ Honeywell	Approved make (S. No: - 60)	Please also add Advance and Zoloto make Valve.	Shall be as per tender conditions.
69.	Expanded Polystyrene make- Beardsell Ltd./ BASF / Lloyd	Approved make (S. No: - 75)	Please also add Stryrene make insulation in the approved list of make.	Styrene Packaging accepted.
70.	Grilles/Diffusers/V olume Controller Ravistar/ Caryaire/ Mapro	Approved make (S. No: - 53)	Please also add Airflow make in the approved list of make.	Shall be as per tender conditions.
71.	Fire Dampers UL listed Caryaire/ Ravistar/ Ruskin	Approved make (S. No: - 54)	Please also add Green heck make in the approved list of make.	Shall be as per tender conditions.
72.	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.	Ist Basement. Height as per tender drawings.
73.	Chilled water/condenser water piping	BOQ	Please provide us the detail of pressure testing required for the piping.	Shall be as per tender conditions.

74.	SCC	SERVICE TAX, LABOUR CESS	PLEASE CLARIFY WE HAVE TO INCLUDE THE SERVICE TAX AND LABOUR CESS IN COSTING OR IT WILL BE EXCLUDED.	Rates/ Price to be quoted without service tax. Service tax as applicable, shall be reimbursed separately on submission of proof of deposition.
75.	Compressor should modulate from 100% to 20% for stable operation without surging	Specifications 1.1.7	<p>This parameter is important for centrifugal chillers. Since Centrifugal chillers are non-positive displacement chillers, hence there is a typical problem of surging associated with Centrifugal chillers. Even CPWD/PWD mentions this point in their specification To check whether the chillers offered are surge free, AHRI certified and stamped sheet should be asked for following:</p> <p>Request you to please make AHRI Certified and stamped sheets part of tender specifications:</p> <ol style="list-style-type: none"> 1. Tender Conditions: data from 100%-15% at constant condenser entering water temperature of 90 Deg F. 2. Tender Conditions: It should be possible to go down upto 15% of full load even at constant condenser entering water temperature of 95 Deg F. 3. AHRI Certified sheet of Sound levels at tender conditions- The sound levels at part loads shall not exceed the full load sound levels. <p>If a chiller is not able to unload upto 20% , then it means that chiller is starting to surge at 50% load. In case if chiller is not able to unload below 30%, then it means chiller starts stalling at 70% load</p>	<p>100% to 30% at constant condenser entering water temperature.</p> <p>Sound level at part loads should not exceed above full load operation sound.</p>
76.	Motor	BOQ 1.1(b) and Specifications 1.1.10(IV)	The complete chillers are as per NEMA 1 standard for all chiller manufacturers. Open Drive Motors shall be Air cooled SPDP Type standard and refrigerant cooled motor shall be refrigerant cooled. Please note we make Open drive motors which are SPDP (Screen	Standard design of manufacturer is acceptable.

			<p>Protected Dip Proof), complying to NEMA 1 standards equivalent to IP 23. Since all water cooled installations are meant for indoor applications, It is also to be noted that all the previous AIIMS accept and prefer Open drive with IP 23 SPDP Air Cooled motors over refrigerant cooled for semi hermetic motors. We have number of installations working with Open type motors for over 10 years without any problem in AIIMS Delhi.</p> <p>We would also like to highlight few of Govt. Jobs references for chillers from York, where SPDP Type Air Cooled motors are already running and working without any problem.</p> <ul style="list-style-type: none"> • Supreme Court -CPWD (400 TR x 3#) • Judiciary Academy, Dwarka –PWD (400 TR # 4) • Delhi Airport (600 TR # 4) • AIIMS Trauma Center (250 TR x 1# + 800 TR x 1#) • AIIMS CN (500 TR x 3#) • RP Center (500 TR) • AIIMS IRCH (250 TR x 2#) • AIIMS Main Plant (500 TR x 6#) • ESIC, Punjabi Bagh (750 TR x 1#) • IGNOU (300 TR x 3#) • Vigyan Bhawan (500 TR x 3#) • National Museum (300 TR) • MTNL, New Delhi (500 TR # 2) • NBCC Plaza, New Delhi (400 TR # 4) • LNJP (300 TR # 3) • DDU (400 TR # 3) • NBCC – Mewat (850 TR # 3) • AIIMS, Jodhpur (750 TR # 5) • IG Stadium (900 TR # 6) • Mumbai International Airport • Vizag Steel Plant • Delhi Metro (370 TR # 20) 	
77.	Condenser Scope	2.1	The evaporator and condenser shells shall be ASME U Stamped. ASME is a global standard followed by all leading chiller	As per BOQ, Evaporator and condenser shall be ASME stamped.

			manufacturers for fabrication of their shells. All chiller manufacturers have ASME U Stamped shells available from their China/ USA Factory.	
78.	COP	6.3	As per ECBC, minimum COP should be 6.3 at AHRI Conditions. If none of the manufacturers can give 6.3 COP, then refer to ASHRAE. In case of 500-550 TR Capacity, recently there have been tenders like Supreme Court , Safdarjung Hospital, Kalpana Chawla Hospital, AIIMS Mother and Child Block, Baroda House, PNB Dwarka, where all chiller vendors have complied to 6.3 COP.	COP as per tender, IPLV \geq 9.
79.	Specs : Point 1 : Last Line		Since the chillers are AHRI certified, the AHRI Certified sheet should mention Active Harmonic Filters/ Active Rectifier/ Low Harmonics. AHRI Certified performance sheet without harmonic filters should not be accepted. No separate calculation of active harmonic filter losses should be acceptable. There should be provision of continuous monitoring of harmonic levels at chiller control panel. No separate meters should be acceptable	Shall be as per tender conditions.
80.	VFD	1.1(c) BOQ	TO ensure that all chillers are properly caliberated with VFD from factory, free standing VFD should not be acceptable. All chiller manufacturer have the capability of providing Unit Mounted VFD and have sites where Unit Mounted VFD in same capacity range are installed.	Shall be as per tender conditions.
81.	Country or Origin: US/Europe		Country of Origin- US/Europe/ China: Since all these chillers are AHRI Certified and hence have same performance from US and China factory. Apart from performance, to ensure the quality of chillers is same as US, the construction shall be ASME U Stamped from China factory. Hence, request you to please accept China make in case of chillers with ASME U Stamping.	Shall be as per tender conditions.
82.	Full Load IKW/TR		Request you to please accept 0.65 KW/TR full load efficiency at tender conditions.	IKW/TR=0.65 accepted.

83.	Pressure Drop on Evaporator Side-5m		Request you to please accept 5.2m pressure drop on evaporator side. There will be no effect on pump head due to this minor increase in pressure drop.	Accepted.
84.	Flow Rate in Evaporator side-1320 USGPM		To match a Dela T of 5.6 Deg C on Evaporator side, (12.22 Deg F- 6.5 Deg F), the flow rate on evaporator side needs to be revised to 1301 USGPM.	Shall be as per tender conditions. As per BOQ Delta T is 10deg F. It is 12.22 deg C to 6.6 deg C.
85.	Chiller	Approved Makes	Request you to add Dunham – Bush a additional make in NIT	Shall be as per tender conditions.
86.	Chiller	Item 1.1 BOQ	Request you accept country of origin = Malaysia. The benefit shall be CD shall be 17.6% as compared to 26.5% from USA supply. Chiller cooler and condenser manufactured as per ASME Code.	Shall be as per tender conditions.
87.	Chiller	Item 1.1 & Cl. 1.1.12	There is difference in the BOQ and technical Specification w.r.t. Ikw/TR value. Request you to please accept the Ikw/Tr = 0.65 at duty/ tender conditions.	IKW/TR=0.65 accepted.
88.	Chiller	Item 1.1 BOQ	We are quoting chillers with COP = 6.34 @ AHRI conditions and IPLVC= 9.2. Request you accept IPLV s 9.2.	COP as per tender, IPLV ≥ 9.
89.	Chiller	Item 1.1 BOQ	a) Please accept free standing UL listed VFD's b) Request additional of following important point "VFD shall be aircooled, TEFC, IP55 to avoid settlement of dust on VSD cards and preventing the VFD panels from running with open doors (which happens in water cooled VFD's). c) Please accept 5% THDI at PCC as the THDi shall generate by other capacitive equipments also.	Shall be as per tender conditions.
90.	Chiller	Cl. 1.1.7 Spec	We request you accept chiller unloading upto 30% at constant condenser ensuring surge free & stable compressor design.	Accepted.
91.	AHU	Item 5.0 BOQ	Please confirm the static pressure of all AHU as per BOQ is external static pressure or total static pressure.	Total.
92.	HRV unit	Item 5.3 BOQ	Please provide the static pressure of the unit.	External static 10mm.

93.	Precision Cooling Unit	Item 5.5 BOQ	Please confirm the length of refrigerant piping power cable and drain piping.	15 m.
94.	Scrubber	Item 7 BOQ/Spec	Also please to mention that in BOQ it is specs of WET SCRUBBER where as in specs sheet it is DRY Scrubber. In specs sheet it is also understood that V shape carbon filter module is also required.	As per BOQ.
95.	Request you to make the following additional makes in NIT :-			
(i)	Chiller	Sno-1 Approved Makes	Request you to add Dunham – Bush a additional make in NIT.	Shall be as per tender conditions.
(ii)	Centrifugal/axial fans	Sno-19 Approve Makes	Sarla (swent)/Greenheck	
(iii)	Butterfly valve	Sno-60 Approved Makes	Advance/castle	
(iv)	AHU/Ventilation panels	Sno.-31 Approved Make	System power control/ Advance panel	

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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Chief General Manager (PG-II), HSCC (India) Ltd.,
For & on behalf of Director, AIIMS, New Delhi