

Ref No. : PE/PG/RTC/E-5966/2018/CORRIGENDA/08

Date: 02.08.2018

CORRIGENDA / ADDENDUM-08

SUBJECT: TENDER ENQUIRY FOR RATE CONTRACT OF PLATE HEAT EXCHANGER AS PER TECHNICAL SPECIFICATION NO. PE-RC-999-179-N001 (REV 0)

OUR REF: TENDER ENQUIRY NO: PE/PG/RTC/E-5966/2018, DTD-01.06.2018

Please find enclosed Amendment II to Technical Specification and Revised Price Schedule. Also note that revised price form has been uploaded on e-procurement portal. All bidders are requested to follow the same while quoting. Bidders who have already submitted their offer needs to resubmit their offer as per revised price forms available at eprocurement portal (<https://bhel.abcpocure.com>.)

All other terms & conditions will remain unchanged. All future corrigenda/ amendment and due date extension, if any, for this tender shall be hosted only on above websites.

Thanking You,

With Regards,

For & on behalf of BHEL

SUMEET SAHAY

DY MGR/CMM

Please reply to:

**Sh Sumeet Sahay, Dy Manager
CMM**

Power Project Engineering Institute Building
HRD & ESI Complex Plot No. 25, Sector -16 A,
BHEL-PEM,Noida-201301 (U.P.)
Tel No.0120-4213532, 09999498202

RATE CONTRACT OF PLATE HEAT EXCHANGERS

AMENDMENT NO. 2

TO TECHNICAL SPECIFICATION FOR RATE CONTRACT OF PLATE HEAT EXCHANGER

**Specification No. : PE-RC-999-179-N001 (REV. 0)
SECTION-IB**



**BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
PPEI BUILDING, SECTOR 16 A
NOIDA - 201301**

	TECHNICAL SPECIFICATIONS PLATE TYPE HEAT EXCHANGER		SPECN. NO.: PE-RC-999-179-N001	
	AMENDMENT NO. 2	REV. NO. 0	DATE: 31.07.2018	
1.0	Following Changes are there in Datasheet A for Group-A, Section IB, of Technical Specification:			
a) Type-XVI and Type-XVII are added in Group-A b) Parameters (as yellow highlighted) of Type-I & Type-II PHE of Group-A revised. Revised Portion of Datasheet for above types are enclosed as Annexure-1 (6 sheets) of this amendment.				



	TECHNICAL SPECIFICATION FOR RATE CONTRACT OF PLATE HEAT EXCHANGER			Technical specification no	PE-RC-999-179-N001 (Rev 0)
	DATASHEET - A			Section	IB
	FOR CLARIFIED WATER APPLICATION			Rev	1
				Date	30-07-2018
				GROUP-A	GROUP-A
	PHE DESCRIPTION			TYPE I	TYPE II
1.0	General				
1.1	Number of Plate Heat Exchanger	Nos	Nine (9) nos	Six (6) nos	
1.2	Arrangement		3X50% configuration per unit	2X100% configuration per unit	
1.3	Location		Indoor	Indoor	
1.4	Primary side (Hot) Fluid		Passivated DM water (Refer enclosed water analysis)	Passivated DM water (Refer enclosed water analysis)	
1.5	Secondary side (Cold) fluid		Clarified water (Refer enclosed water analysis)	Clarified water (Refer enclosed water analysis)	
1.6	Connecting Pipe size	(Primary Side)	NB	500	350
		(Secondary Side)	NB	500	350
1.7	Maximum permitted Length of the PHE	mm	6600 mm (excluding reducer)	5000 mm (excluding reducer)	
2.0	Design				
2.1	Design Code		Latest IS/BS/DIN/ASTM Standards	Latest IS/BS/DIN/ASTM Standards	
2.2	Design Pressure	Kg/cm ² (g)	10	12	
2.3	Operating Pressure	(Primary Side)	Kg/cm ² (g)	6.0 to 7.0 Kg/sq. cm(g)	8.0 to 9.0 Kg/sq. cm(g)
		(Secondary Side)	Kg/cm ² (g)	2.0 to 2.5 Kg/sq. cm(g)	2.0 to 2.5 Kg/sq. cm(g)
2.4	Mechanical Design Temp.	°C	60	60	
2.5	Heat Transfer per Sq.Mtr. Of Heat Transfer Plate	Kcal/Hr./m ²	6500 (Max.)	6500 (Max.)	
2.6	Specific Heat of Fluid	(Primary Side)	Cal/gmDeg.C	1	1
		(Secondary Side)	Cal/gmDeg.C	1	1
2.7	Density of Fluid	(Primary Side)	gm/cc	1	1
		(Secondary Side)	gm/cc	1	1
3.0	Guaranteed Performance Requirements for each Heat Exchangers in fouled condition:				
3.1	Flow rate	(DMCW Side)	M ³ /hr	1250	650
		(ACW Side)	M ³ /hr	1250	650
3.2	Inlet temperature	(DMCW Side)	°C	46	44.4
		(ACW Side)	°C	36	36
3.3	Outlet temp	(DMCW Side)	°C	38	38
		(ACW Side)	°C	44	42.4
3.4	* Allowable pressure drop across heat exchanger from inlet to outlet in fouled conditions at design flow	(DMCW Side)	MWC	7	7
		(ACW Side)	MWC	7	7
* High pressure drop than the specified figure will not be accepted, no credit shall be, however, given for lower pressure drop in bid evaluation. Pressure drop mentioned shall be calculated against flow mentioned at S. No 3.1. Each heat exchanger shall be capable of passing a flow of at least 1.1 times the design flow rate on both primary and secondary water sides. Bidder shall indicate maximum pressure drop through the heat exchanger under this condition.					



TECHNICAL SPECIFICATION FOR RATE CONTRACT OF PLATE HEAT EXCHANGER		Technical specification no	PE-RC-999-179-N001 (Rev 0)
DATASHEET - A		Section	IB
FOR CLARIFIED WATER APPLICATION		Rev	1
		Date	30-07-2018
		GROUP-A	GROUP-A
PHE DESCRIPTION		TYPE I	TYPE II
4.0	Additional HT plates on Design Plates	%	NIL
5.0	Heat Transfer Coefficient/Margin		
5.1	Overall fouling resistance (minimun)	Hr m2deg C/Kcal	0.00008
5.2	Minimum corrosion allowance on heat exchanger parts of carbon steel (e.g. pressure parts, nozzles, sliding channel and frame) (refer note 1)	mm	1.6
6.0	Material of Construction :		
6.1	Heat Transfer Plates (Minimum acceptable plate thickness 0.6 mm). Refer Note no. 3	SS-316	SS-316
6.2	Plate Gasket	Nitrile rubber, 65 ± 5 Deg. shore hardness	Nitrile rubber, 65 ± 5 Deg. shore hardness
6.3	Compression/Fixed/Frame/Movable Pressure plates	Carbon Steel, IS-2062, E-410, Gr.B, Epoxy painted	Carbon Steel, IS-2062, E-410, Gr.B, Epoxy painted
6.4	Guide Rails/ bar	Carbon Steel, IS-2062, E-410, Gr.B, with SS Cladding	Carbon Steel, IS-2062, E-410, Gr.B, with SS Cladding
6.5	Support Beam/ column	Carbon Steel, IS-2062, E-410, Gr.B, Epoxy painted	Carbon Steel, IS-2062, E-410, Gr.B, Epoxy painted
6.6	Nozzle (Reducer/Expander)	Carbon steel IS 2062, Gr. B, Epoxy Coated	Carbon steel IS 2062, Gr. B, Epoxy Coated
6.7	Nozzle flanges	Carbon Steel IS 2062 (Confirming to ANSI B 16.5 class, Min.-150 lb) Epoxy Coated	Carbon Steel IS 2062 (Confirming to ANSI B 16.5 class, Min.-150 lb) Epoxy Coated
6.8	Flange/ Counter flanges	Carbon Steel as per IS 2062 Gr. B (Confirming to ANSI B 16.5 class, Min.-150 lb) Epoxy Coated	Carbon Steel as per IS 2062 Gr. B (Confirming to ANSI B 16.5 class, Min.-150 lb) Epoxy Coated
6.9	Tightening Bolts/Rods & Nuts	IS-1367 Gr.8.8 or equivalent	IS-1367 Gr.8.8 or equivalent
6.10	Nozzle flange bolts / nuts	SA 193 B7/ SA 194 2H	SA 193 B7/ SA 194 2H
6.11	Nozzle flange gasket	3mm wire inserted Red Rubber	3mm wire inserted Red Rubber
6.12	Name Plate	AISI 316 18'-8' SS (3 mm thick)	AISI 316 18'-8' SS (3 mm thick)
6.13	Wetted fasteners	SS-316	SS-316
6.14	Painting		
External Surface			
a.) Surface Preparation		All surface other than stainless steels shall be painted. The steel surface to be applied with painting shall be thoroughly cleaned before applying painting by shotblasting (SA 2.5) etc shall be subjected to BHEL/Customer approval.	All surface other than stainless steels shall be painted. The steel surface to be applied with painting shall be thoroughly cleaned before applying painting by shotblasting (SA 2.5) etc shall be subjected to BHEL/Customer approval.
b.) Primer		For all the steel surfaces, a coat of epoxy resin based zinc phosphate primer of min thickness of 50 microns followed up with undercoat of epoxy resin based paint pigmented with Titanium dioxide with min thickness of 50 microns shall be applied. The top coat shall consist of two coats each of min 50 microns thickness of epoxy paint. Thus total thickness shall be minimum 200 microns.	For all the steel surfaces, a coat of epoxy resin based zinc phosphate primer of min thickness of 50 microns followed up with undercoat of epoxy resin based paint pigmented with Titanium dioxide with min thickness of 50 microns shall be applied. The top coat shall consist of two coats each of min 50 microns thickness of epoxy paint. Thus total thickness shall be minimum 200 microns.
c.) Final Paint			



TECHNICAL SPECIFICATION FOR RATE				
CONTRACT OF PLATE HEAT EXCHANGER			Technical specification no	PE-RC-999-179-N001 (Rev 0)
DATASHEET - A			Section	IB
FOR CLARIFIED WATER APPLICATION			Rev	1
			Date	30-07-2018
			GROUP-A	GROUP-A
PHE DESCRIPTION			TYPE I	TYPE II
7.0	Extra Carrying capacity to be provided on frame assembly.	%	25	25
8.0	Spares	Unit of Measurement		
8.1	Heat Transfer Plates	1 Lot = 1% of plates in each PHE	20 LOTS	20 LOTS
8.2	Gaskets (All types)	1 Lot = 1% of gaskets of each type in each PHE	1 LOT	30 LOTS
8.3	Valves	NOS.	1	1
8.4	Tie Rods	1 Lot = 1% of tie-rod of each type in each PHE	1 LOT	10 LOTS
8.5	Fasteners (Nuts & bolts etc.)	1 Lot = 1% of Nuts & bolts of each type & size in each PHE	1 LOT	10 LOTS
9.0	Hydrotesting at Shop			
9.1	Hydrotesting Pressure	Kg/cm2 (g)	1.5 times the design pressure	1.5 times the design pressure
9.2	Duration of Hydrotesting	Minutes	60	60
10.0	Performance curves and figures to be furnished during contact stage			
10.1	Primary side water outlet temperature vs. Secondary side water inlet temperature.			
10.2	Primary side water flow (80% to 115%) vs. Pressure drop and outlet temperature (Secondary side flow – 100%)			
10.3	Secondary side water flow (80% to 115%) vs. Secondary side pressure drop and primary side outlet temp (Primary side flow – 100%)			
10.4	Primary side water outlet temperature vs. Primary side inlet temp.			
10.5	Film heat transfer coefficient curve			
10.6	Correction Curves.			
11.0	Minimum Standard requirement of the PHE to be offered by the bidder.			
11.1	Minimum Corrosion allowance on thickness (as per ASME Sec. VIII Div. I)			
11.2	Metallurgy specified above is bare minimum . Equivalent or Superior materials suitable for fluid handled is also acceptable subject to Customer/BHEL approval.			
11.3	Plate thickness should be adequate to withstand all operating conditions but with Minimum plate thickness of 0.6 mm (No negative tolerance allowed in thickness specified). The plates shall be pressed from one single piece with the corrugation being smooth, uniform and identical for every plate.			
11.4	The plate Heat exchangers shall be single pass type. Heat transfer plates shall be sealed at their outer edges and around the ports by gaskets in order to prevent leakage and inter-mixing of fluids.			
11.5	Double sealing arrangement shall be provided at outer edge and around ports with the inter space between the seals vented to atmosphere in order to avoid inter-mixing of liquids in case of gaskets failure.			
11.6	Each Plate shall be numbered in sequence with the number marked by indelible ink on each plate to permit easy reassembly.			
11.7	Flanges shall be as per ANSI 16.5 or equivalent. Thickness of pressure and frame plates shall be as per ASME Sect. VIII div.1.			



	TECHNICAL SPECIFICATION FOR RATE CONTRACT OF PLATE HEAT EXCHANGER			Technical specification no	PE-RC-999-179-N001 (Rev 0)
				Section	IB
	DATASHEET - A			Rev	1
	FOR CLARIFIED WATER APPLICATION			Date	30-07-2018
				GROUP-A	GROUP-A
	PHE DESCRIPTION			TYPE XVI	TYPE XVII
1.0	General				
1.1	Number of Plate Heat Exchanger	Nos		Three (3) nos	Six (6) nos
1.2	Arrangement			3X50% configuration for station	3 x 50% configuration per unit
1.3	Location			Indoor	Outdoor
1.4	Primary side (Hot) Fluid			Passivated DM water (Refer enclosed water analysis)	Passivated DM water (Refer enclosed water analysis)
1.5	Secondary side (Cold) fluid			Clarified water (Refer enclosed water analysis)	Clarified water (Refer enclosed water analysis)
1.6	Connecting Pipe size	(Primary Side)	NB	500	350
		(Secondary Side)	NB	500	350
1.7	Maximum permitted Length of the PHE		mm	6600 mm (excluding reducer)	5000 mm (excluding reducer)
2.0	Design				
2.1	Design Code			Latest IS/BS/DIN/ASTM Standards	Latest IS/BS/DIN/ASTM Standards
2.2	Design Pressure		Kg/cm ² (g)	10	12
2.3	Operating Pressure	(Primary Side)	Kg/cm ² (g)	6.0 to 7.0 Kg/sq. cm(g)	8.0 to 9.0 Kg/sq. cm(g)
		(Secondary Side)	Kg/cm ² (g)	2.0 to 2.5 Kg/sq. cm(g)	3.0 to 3.5 Kg/sq. cm(g)
2.4	Mechanical Design Temp.		°C	60	60
2.5	Heat Transfer per Sq.Mtr. Of Heat Transfer Plate		Kcal/Hr./m ²	6500 (Max.)	6500 (Max.)
2.6	Specific Heat of Fluid	(Primary Side)	Cal/gmDeg.C	1	1
		(Secondary Side)	Cal/gmDeg.C	1	1
2.7	Density of Fluid	(Primary Side)	gm/cc	1	1
		(Secondary Side)	gm/cc	1	1
3.0	Guaranteed Performance Requirements for each Heat Exchangers in fouled condition:				
3.1	Flow rate	(DMCW Side)	M ³ /hr	1525	750
		(ACW Side)	M ³ /hr	1525	750
3.2	Inlet temperature	(DMCW Side)	°C	47.5	46.8
		(ACW Side)	°C	36	36
3.3	Outlet temp	(DMCW Side)	°C	38	38
		(ACW Side)	°C	45.5	44.8
3.4	* Allowable pressure drop across heat exchanger from inlet to outlet in fouled conditions at design flow	(DMCW Side)	MWC	7	7
		(ACW Side)	MWC	7	7
* High pressure drop than the specified figure will not be accepted, no credit shall be, however, given for lower pressure drop in bid evaluation. Pressure drop mentioned shall be calculated against flow mentioned at S. No 3.1. Each heat exchanger shall be capable of passing a flow of at least 1.1 times the design flow rate on both primary and secondary water sides. Bidder shall indicate maximum pressure drop through the heat exchanger under this condition.					



TECHNICAL SPECIFICATION FOR RATE CONTRACT OF PLATE HEAT EXCHANGER		Technical specification no	PE-RC-999-179-N001 (Rev 0)
DATASHEET - A		Section	IB
FOR CLARIFIED WATER APPLICATION		Rev	1
		Date	30-07-2018
		GROUP-A	GROUP-A
PHE DESCRIPTION		TYPE XVI	TYPE XVII
4.0	Additional HT plates on Design Plates	%	NIL
5.0	Heat Transfer Coefficient/Margin		
5.1	Overall fouling resistance (minimun)	Hr m2deg C/Kcal	0.00008
5.2	Minimum corrosion allowance on heat exchanger parts of carbon steel (e.g. pressure parts,nozzles,sliding channel and frame) (refer note 1)	mm	1.6
6.0	Material of Construction :		
6.1	Heat Transfer Plates (Minimum acceptable plate thickness 0.6 mm). Refer Note no. 3	SS-316	SS-316
6.2	Plate Gasket	Nitrile rubber, 65 ± 5 Deg. shore hardness	Nitrile rubber, 65 ± 5 Deg. shore hardness
6.3	Compression/Fixed/Frame/Movable Pressure plates	Carbon Steel, IS-2062, E-410, Gr.B, Epoxy painted	Carbon Steel, IS-2062, E-410, Gr.B, Epoxy painted
6.4	Guide Rails/ bar	Carbon Steel, IS-2062, E-410, Gr.B, with SS Cladding	Carbon Steel, IS-2062, E-410, Gr.B, with SS Cladding
6.5	Support Beam/ column	Carbon Steel, IS-2062, E-410, Gr.B, Epoxy painted	Carbon Steel, IS-2062, E-410, Gr.B, Epoxy painted
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6.7	Nozzle flanges	Carbon Steel IS 2062 (Confirming to ANSI B 16.5 class, Min.-150 lb) Epoxy Coated	Carbon Steel IS 2062 (Confirming to ANSI B 16.5 class, Min.-150 lb) Epoxy Coated
6.8	Flange/ Counter flanges	Carbon Steel as per IS 2062 Gr. B (Confirming to ANSI B 16.5 class, Min.-150 lb) Epoxy Coated	Carbon Steel as per IS 2062 Gr. B (Confirming to ANSI B 16.5 class, Min.-150 lb) Epoxy Coated
6.9	Tightening Bolts/Rods & Nuts	IS-1367 Gr.8.8 or equivalent	IS-1367 Gr.8.8 or equivalent
6.10	Nozzle flange bolts / nuts	SA 193 B7/ SA 194 2H	SA 193 B7/ SA 194 2H
6.11	Nozzle flange gasket	3mm wire inserted Red Rubber	3mm wire inserted Red Rubber
6.12	Name Plate	AISI 316 18'-8' SS (3 mm thick)	AISI 316 18'-8' SS (3 mm thick)
6.13	Wetted fasteners	SS-316	SS-316
6.14	Painting		
External Surface			
a.) Surface Preparation		All surface other than stainless steels shall be painted. The steel surface to be applied with painting shall be thoroughly cleaned before applying painting by shotblasting (SA 2.5) etc shall be subjected to BHEL/Customer approval.	All surface other than stainless steels shall be painted. The steel surface to be applied with painting shall be thoroughly cleaned before applying painting by shotblasting (SA 2.5) etc shall be subjected to BHEL/Customer approval.
b.) Primer		For all the steel surfaces, a coat of epoxy resin based zinc phosphate primer of min thickness of 50 microns followed up with undercoat of epoxy resin based paint pigmented with Titanium dioxide with min thickness of 50 microns shall be applied. The top coat shall consist of two coats each of min 50 microns thickness of epoxy paint. Thus total thickness shall be minimum 200 microns.	For all the steel surfaces, a coat of epoxy resin based zinc phosphate primer of min thickness of 50 microns followed up with undercoat of epoxy resin based paint pigmented with Titanium dioxide with min thickness of 50 microns shall be applied. The top coat shall consist of two coats each of min 50 microns thickness of epoxy paint. Thus total thickness shall be minimum 200 microns.
c.) Final Paint			



TECHNICAL SPECIFICATION FOR RATE				
CONTRACT OF PLATE HEAT EXCHANGER			Technical specification no	PE-RC-999-179-N001 (Rev 0)
DATASHEET - A			Section	IB
FOR CLARIFIED WATER APPLICATION			Rev	1
			Date	30-07-2018
			GROUP-A	GROUP-A
PHE DESCRIPTION			TYPE XVI	TYPE XVII
7.0	Extra Carrying capacity to be provided on frame assembly.	%	25	25
8.0	Spares	Unit of Measurement		
8.1	Heat Transfer Plates	1 Lot = 1% of plates in each PHE	20 LOTS	120 LOTS
8.2	Gaskets (All types)	1 Lot = 1% of gaskets of each type in each PHE	1 LOT	180 LOTS
8.3	Valves	NOS.	1	1
8.4	Tie Rods	1 Lot = 1% of tie-rod of each type in each PHE	1 LOT	60 LOTS
8.5	Fasteners (Nuts & bolts etc.)	1 Lot = 1% of Nuts & bolts of each type & size in each PHE	1 LOT	60 LOTS
9.0	Hydrotesting at Shop			
9.1	Hydrotesting Pressure	Kg/cm2 (g)	1.5 times the design pressure	1.5 times the design pressure
9.2	Duration of Hydrotesting	Minutes	60	60
10.0	Performance curves and figures to be furnished during contact stage			
10.1	Primary side water outlet temperature vs. Secondary side water inlet temperature.			
10.2	Primary side water flow (80% to 115%) vs. Pressure drop and outlet temperature (Secondary side flow – 100%)			
10.3	Secondary side water flow (80% to 115%) vs. Secondary side pressure drop and primary side outlet temp (Primary side flow – 100%)			
10.4	Primary side water outlet temperature vs. Primary side inlet temp.			
10.5	Film heat transfer coefficient curve			
10.6	Correction Curves.			
11.0	Minimum Standard requirement of the PHE to be offered by the bidder.			
11.1	Minimum Corrosion allowance on thickness (as per ASME Sec. VIII Div. I)			
11.2	Metallurgy specified above is bare minimum . Equivalent or Superior materials suitable for fluid handled is also acceptable subject to Customer/BHEL approval.			
11.3	Plate thickness should be adequate to withstand all operating conditions but with Minimum plate thickness of 0.6 mm (No negative tolerance allowed in thickness specified). The plates shall be pressed from one single piece with the corrugation being smooth, uniform and identical for every plate.			
11.4	The plate Heat exchangers shall be single pass type. Heat transfer plates shall be sealed at their outer edges and around the ports by gaskets in order to prevent leakage and inter-mixing of fluids.			
11.5	Double sealing arrangement shall be provided at outer edge and around ports with the inter space between the seals vented to atmosphere in order to avoid inter-mixing of liquids in case of gaskets failure.			
11.6	Each Plate shall be numbered in sequence with the number marked by indelible ink on each plate to permit easy reassembly.			
11.7	Flanges shall be as per ANSI 16.5 or equivalent. Thickness of pressure and frame plates shall be as per ASME Sect. VIII div.1.			

बी एच ई एल BHEL				ANNEXURE- IA (REV 01)											
RATE CONTRACT - NIT REF NO-PE/PG/RTC/E-5966/2018, DTD-01.06.2018															
PRICE SCHEDULE FOR PLATE HEAT EXCHANGERS (GROUP A)															
NAME OF VENDOR-															
					INDIGENOUS VENDOR							FOREIGN VENDOR			
SL NO	ITEM DESCRIPTION	UOM	ORDERED QUANTITY	HSN CODE	UNIT EX-WORKS PRICE (DULY PACKED) IN PERCENTAGE OF TOTAL EX WORKS PRICE OF PHEs GIVEN AT SL NO-A.12 OF COUMN 8	UNIT EX-WORKS PRICE (DULY PACKED) (INR)	TOTAL EX-WORKS PRICE (DULY PACKED) IN PERCENTAGE OF TOTAL EX WORKS PRICE OF PHEs GIVEN AT SL NO-A.12 OF COUMN 8	TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL F.O.R SITE PRICE (INR)	UNIT C & F PRICE (DULY PACKED) IN PERCENTAGE OF TOTAL PRICE OF PHEs GIVEN AT SL NO-A.12 OF COUMN 15 INDIAN SEA PORT	UNIT C & F PRICE (DULY PACKED) INDIAN SEA PORT (CURRENCY)	TOTAL C & F PRICE (DULY PACKED) IN PERCENTAGE OF TOTAL PRICE OF PHEs GIVEN AT SL NO-A.12 OF COUMN 15 INDIAN SEA PORT	TOTAL C & F PRICE (DULY PACKED) INDIAN SEA PORT (CURRENCY)
1	2	3		4	5	6	7	8	9	10	11	12	13	14	15
A	PLATE HEAT EXCHANGER - MAIN SUPPLY														
A.1	TYPE I	NOS.	9	TO BE QUOTED	1.98384%	Derived	17.85452%	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	1.98384%	Derived	17.85452%	Derived
A.2	TYPE II	NOS.	6		0.99192%	Derived	5.95151%	Derived			Derived	0.99192%	Derived	5.95151%	Derived
A.3	TYPE III	NOS.	15		1.72667%	Derived	25.90007%	Derived			Derived	1.72667%	Derived	25.90007%	Derived
A.4	TYPE IV	NOS.	10		0.69802%	Derived	6.98016%	Derived			Derived	0.69802%	Derived	6.98016%	Derived
A.5	TYPE V	NOS.	3		2.09405%	Derived	6.28215%	Derived			Derived	2.09405%	Derived	6.28215%	Derived
A.6	TYPE VI	NOS.	4		0.66128%	Derived	2.64511%	Derived			Derived	0.66128%	Derived	2.64511%	Derived
A.7	TYPE VII	NOS.	3		1.46951%	Derived	4.40852%	Derived			Derived	1.46951%	Derived	4.40852%	Derived
A.8	TYPE VIII	NOS.	2		0.66128%	Derived	1.32256%	Derived			Derived	0.66128%	Derived	1.32256%	Derived
A.9	TYPE IX	NOS.	3		2.09405%	Derived	6.28215%	Derived			Derived	2.09405%	Derived	6.28215%	Derived
A.10	TYPE X	NOS.	2		0.66128%	Derived	1.32256%	Derived			Derived	0.66128%	Derived	1.32256%	Derived
A.11	TYPE XI	NOS.	3		1.46951%	Derived	4.40852%	Derived			Derived	1.46951%	Derived	4.40852%	Derived
A.11A	TYPE XVI	NOS.	3		2.75533%	Derived	8.26598%	Derived			Derived	2.75533%	Derived	8.26598%	Derived
A.11B	TYPE XVII	NOS.	6		1.39603%	Derived	8.37619%	Derived			Derived	1.39603%	Derived	8.37619%	Derived
A.12	TOTAL (A.1 TO A.11B)						100.00000%	TO BE QUOTED = Rs X	Derived	Derived	Derived			100.00000%	TO BE QUOTED = M
				HSN CODE	UNIT PRICE FOR PG TEST	UNIT PRICE FOR PG TEST (INR)	TOTAL EX-WORKS PRICE OF PG TEST IN PERCENTAGE OF TOTAL PRICE OF PHEs GIVEN AT SL NO-A.12 OF COUMN 8	TOTAL EX-WORKS PRICE FOR PG TEST (INR)		APPLICABLE GST RATE % ON PG TEST PRICE (INR)	TOTAL PRICE FOR PG TEST WITH GST (INR)	UNIT PRICE FOR PG TEST	UNIT PRICE FOR PG TEST (CURRENCY)	TOTAL PRICE OF PG TEST IN PERCENTAGE OF TOTAL PRICE OF PHEs GIVEN AT SL NO-A.12 OF COUMN 15 INDIAN SEA PORT	TOTAL PRICE FOR PG TEST (CURRENCY)
B	SERVICES AT SITE PG TEST AT SITE (NOTE: 1SET = PG TEST FOR ONE PHE.)														

					INDIGENOUS VENDOR							FOREIGN VENDOR			
B.1		SET	69	TO BE QUOTED	0.014695652% OF PRICE AT A.12, COL 8	Derived	1.014% OF PRICE AT A.12, COL 8	Derived		% TO BE QUOTED	Derived	0.014695652% OF PRICE AT A.12, COL 15	Derived	1.014% OF PRICE AT A.12, COL 15	Derived
B.2	TOTAL (B.1)							Derived			Derived				Derived
				HSN CODE	UNIT EX-WORKS PRICE (DULY PACKED)	UNIT EX-WORKS PRICE (DULY PACKED) (INR)	EXPECTED QUANTITY OF SPARES AS PER DATASHEET A OF SECTION IA	TOTAL EX- WORKS PRICE (DULY PACKED) (INR) (Col F * Col. G)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL F.O.R SITE PRICE (INR)	UNIT C & F PRICE (DULY PACKED) INDIAN SEA PORT	UNIT C & F PRICE (DULY PACKED) INDIAN SEA PORT (CURRENCY)		TOTAL C & F PRICE (DULY PACKED) INDIAN SEA PORT (CURRENCY)
C	MANDATORY SPARES EXPECTED SPARES FOR EACH PHE TYPE AS PER SPARE LIST INDICATED IN DATASHEET A AT SECTION IB OF SPECIFICATION.														
C.1	TYPE I	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7% OF PRICE AT A.1, COL 6	Derived	20	Derived			Derived	0.7% OF PRICE AT A.1, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.1, COL 6	Derived	1	Derived			Derived	0.15%OF PRICE AT A.1, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.1, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.1, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.1, COL 6	Derived	1	Derived			Derived	0.075%OF PRICE AT A.1, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.1, COL 6	Derived	1	Derived			Derived	0.05%OF PRICE AT A.1, COL 13	Derived		Derived
C.2	TYPE II	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7% OF PRICE AT A.2, COL 6	Derived	20	Derived			Derived	0.7% OF PRICE AT A.2, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15% OF PRICE AT A.2, COL 6	Derived	30	Derived			Derived	0.15% OF PRICE AT A.2, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025% OF PRICE AT A.2, COL 6	Derived	1	Derived			Derived	0.025% OF PRICE AT A.2, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075% OF PRICE AT A.2, COL 6	Derived	10	Derived			Derived	0.075% OF PRICE AT A.2, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05% OF PRICE AT A.2, COL 6	Derived	10	Derived			Derived	0.05% OF PRICE AT A.2, COL 13	Derived		Derived
C.3	TYPE III	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7% OF PRICE AT A.3, COL 6	Derived	30	Derived			Derived	0.7% OF PRICE AT A.3, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.3, COL 6	Derived	1	Derived			Derived	0.15%OF PRICE AT A.3, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.3, COL 6	Derived	2	Derived			Derived	0.025%OF PRICE AT A.3, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.3, COL 6	Derived	1	Derived			Derived	0.075%OF PRICE AT A.3, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.3, COL 6	Derived	1	Derived			Derived	0.05%OF PRICE AT A.3, COL 13	Derived		Derived
C.4	TYPE IV	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.4, COL 6	Derived	20	Derived			Derived	0.7%OF PRICE AT A.4, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.4, COL 6	Derived	1	Derived			Derived	0.15%OF PRICE AT A.4, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.4, COL 6	Derived	2	Derived			Derived	0.025%OF PRICE AT A.4, COL 13	Derived		Derived

					INDIGENOUS VENDOR					FOREIGN VENDOR					
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.4, COL 6	Derived	1	Derived			Derived	0.075%OF PRICE AT A.4, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.4, COL 6	Derived	1	Derived			Derived	0.05%OF PRICE AT A.4, COL 13	Derived		Derived
C.5	TYPE V	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.5, COL 6	Derived	30	Derived			Derived	0.7%OF PRICE AT A.5, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.5, COL 6	Derived	90	Derived			Derived	0.15%OF PRICE AT A.5, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.5, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.5, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.5, COL 6	Derived	30	Derived			Derived	0.075%OF PRICE AT A.5, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.5, COL 6	Derived	30	Derived			Derived	0.05%OF PRICE AT A.5, COL 13	Derived		Derived
C.6	TYPE VI	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.6, COL 6	Derived	40	Derived			Derived	0.7%OF PRICE AT A.6, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.6, COL 6	Derived	260	Derived			Derived	0.15%OF PRICE AT A.6, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.6, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.6, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.6, COL 6	Derived	20	Derived			Derived	0.075%OF PRICE AT A.6, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.6, COL 6	Derived	120	Derived			Derived	0.05%OF PRICE AT A.6, COL 13	Derived		Derived
C.7	TYPE VII	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.7, COL 6	Derived	30	Derived			Derived	0.7%OF PRICE AT A.7, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.7, COL 6	Derived	200	Derived			Derived	0.15%OF PRICE AT A.7, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.7, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.7, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.7, COL 6	Derived	1	Derived			Derived	0.075%OF PRICE AT A.7, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.7, COL 6	Derived	100	Derived			Derived	0.05%OF PRICE AT A.7, COL 13	Derived		Derived
C.8	TYPE VIII	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.8, COL 6	Derived	20	Derived			Derived	0.7%OF PRICE AT A.8, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.8, COL 6	Derived	200	Derived			Derived	0.15%OF PRICE AT A.8, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.8, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.8, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.8, COL 6	Derived	1	Derived			Derived	0.075%OF PRICE AT A.8, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.8, COL 6	Derived	100	Derived			Derived	0.05%OF PRICE AT A.8, COL 13	Derived		Derived
C.9	TYPE IX	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.9, COL 6	Derived	30	Derived			Derived	0.7%OF PRICE AT A.9, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.9, COL 6	Derived	90	Derived			Derived	0.15%OF PRICE AT A.9, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.9, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.9, COL 13	Derived		Derived

					INDIGENOUS VENDOR						FOREIGN VENDOR				
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.9, COL 6	Derived	30	Derived			Derived	0.075%OF PRICE AT A.9, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.9, COL 6	Derived	30	Derived			Derived	0.05%OF PRICE AT A.9, COL 13	Derived		Derived
C.10	TYPE X	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.10, COL 6	Derived	20	Derived			Derived	0.7%OF PRICE AT A.10, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.10, COL 6	Derived	60	Derived			Derived	0.15%OF PRICE AT A.10, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.10, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.10, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.10, COL 6	Derived	20	Derived			Derived	0.075%OF PRICE AT A.10, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.10, COL 6	Derived	20	Derived			Derived	0.05%OF PRICE AT A.10, COL 13	Derived		Derived
C.11	TYPE XI	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.11, COL 6	Derived	30	Derived			Derived	0.7%OF PRICE AT A.11, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.11, COL 6	Derived	200	Derived			Derived	0.15%OF PRICE AT A.11, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.11, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.11, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.11, COL 6	Derived	1	Derived			Derived	0.075%OF PRICE AT A.11, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.11, COL 6	Derived	100	Derived			Derived	0.05%OF PRICE AT A.11, COL 13	Derived		Derived
C.11A	TYPE XVI	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.11A, COL 6	Derived	20	Derived			Derived	0.7%OF PRICE AT A.11A, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.11A, COL 6	Derived	1	Derived			Derived	0.15%OF PRICE AT A.11A, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.11A, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.11A, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.11A, COL 6	Derived	1	Derived			Derived	0.075%OF PRICE AT A.11A, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.11A, COL 6	Derived	1	Derived			Derived	0.05%OF PRICE AT A.11A, COL 13	Derived		Derived
C.11B	TYPE XVII	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.7%OF PRICE AT A.11B, COL 6	Derived	120	Derived			Derived	0.7%OF PRICE AT A.11B, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.15%OF PRICE AT A.11B, COL 6	Derived	180	Derived			Derived	0.15%OF PRICE AT A.11B, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.025%OF PRICE AT A.11B, COL 6	Derived	1	Derived			Derived	0.025%OF PRICE AT A.11B, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.075%OF PRICE AT A.11B, COL 6	Derived	60	Derived			Derived	0.075%OF PRICE AT A.11B, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.05%OF PRICE AT A.11B, COL 6	Derived	60	Derived			Derived	0.05%OF PRICE AT A.11B, COL 13	Derived		Derived
C.12	TOTAL (C.1 TO C.11B)							Derived	Derived	Derived	Derived				Derived
D	GRAND TOTAL (A.12+B.2+C.12)							Derived	Derived	Derived	Derived = Rs Y				Derived = N

			INDIGENOUS VENDOR	FOREIGN VENDOR
E	Indigenous vendors having CIF are required to indicate CIF @ ____% of their total ex-works supply value and quote their prices considering discount on ex works price in lieu of availing CIF.			
Note:-				
1. Bidder to note that evaluation shall be on Grand Total Ex works price + Freight charges, however, Bidder to quote grand total Ex works/total C&F value of the PHEs mentioned at A.1 to A.11B (Rs X for Indigenous bidders/ M for foreign bidder) only as per the BOQ above. The item wise break up of Ex works prices (unit as well as total) for all the items in the BOQ shall be derived as per the formulae indicated above by BHEL. Indigenous bidder also need to indicate taxes percentage in the respective column and freight percentage of Ex works value considering delivery anywhere in India in the freight column.				
2. Rate contract shall be decided on the basis of grand Total Ex works price + Freight charges of Total BOQ				
3. Value is to be filled only where “to be quoted” is mentioned and for other columns where “derived” is mentioned same shall be derived by BHEL as per % allocation fixed against each item				
4. Bidder to note that total price indicated above at D shall be considered for evaluation and hence should be complete in all respect for the full scope defined and considering all terms and conditions agreed.				
5. The unit price quoted by bidder shall be binding for quantity variation which is at discretion of purchaser.				
6. Prices shall remain firm during contract execution.				
7. For any clarification please refer Technical Specification No-PE-RC-999-179-N001				
8. Price of all accessories, commissioning spares, special Tools & tackle and other accessories not listed above shall be included in the price of PHE & shall be supplied with the PHE.				
9. Indigenous vendors having CIF are required to indicate CIF @ ____% of their total ex-works supply value and quote their prices considering discount on ex works price in lieu of availing CIF.				
10. Bidder shall furnish this price Schedule indicating "Quoted/Not-Quoted" along with technical offer and actual prices in his price offer.				
11. Where ever the quantity is coming in fraction same shall be round off to next higher number.				
12. Any item indicated as "Not Applicable" by bidder but actually found applicable for that PHE type, shall be supplied by bidder at cost based on cost percentage break-up for spares furnished along with NIT.				

				ANNEXURE- IB											
RATE CONTRACT - NIT REF NO-PE/PG/RTC/E-5966/2018, DTD-01.06.2018															
PRICE SCHEDULE FOR PLATE HEAT EXCHANGERS (GROUP B)															
NAME OF VENDOR-															
				INDIGENOUS VENDOR								FOREIGN VENDOR			
SL NO	ITEM DESCRIPTION	UOM	ORDERED QUANTITY	HSN CODE	UNIT EX-WORKS PRICE (DULY PACKED) IN PERCENTAGE OF TOTAL EX WORKS PRICE OF PHEs GIVEN AT SL NO-A.5 OF COUMN 8	UNIT EX-WORKS PRICE (DULY PACKED) (INR)	TOTAL EX-WORKS PRICE (DULY PACKED) IN PERCENTAGE OF TOTAL EX WORKS PRICE OF PHEs GIVEN AT SL NO-A.5 OF COUMN 8	TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL F.O.R SITE PRICE (INR)	UNIT C & F PRICE (DULY PACKED) IN PERCENTAGE OF TOTAL PRICE OF PHEs GIVEN AT SL NO-A.5OF COUMN 15 INDIAN SEA PORT	UNIT C & F PRICE (DULY PACKED) INDIAN SEA PORT (CURRENCY)	TOTAL C & F PRICE (DULY PACKED) IN PERCENTAGE OF TOTAL PRICE OF PHEs GIVEN AT SL NO-A.5OF COUMN 15 INDIAN SEA PORT	TOTAL C & F PRICE (DULY PACKED) INDIAN SEA PORT (CURRENCY)
1	2	3		4	5	6	7	8	9	10	11	12	13	14	15
A	PLATE HEAT EXCHANGER - MAIN SUPPLY														
A.1	TYPE XII	NOS.	6	TO BE QUOTED	6.89076%	Derived	41.34454%	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	6.89076%	Derived	41.34454%	Derived
A.2	TYPE XIII	NOS.	4		2.35294%	Derived	9.41176%	Derived			Derived	2.35294%	Derived	9.41176%	Derived
A.3	TYPE XIV	NOS.	6		6.80672%	Derived	40.84034%	Derived			Derived	6.80672%	Derived	40.84034%	Derived
A.4	TYPE XV	NOS.	4		2.10084%	Derived	8.40336%	Derived			Derived	2.10084%	Derived	8.40336%	Derived
A.5	TOTAL (A.1 TO A.4)						100.00000%	TO BE QUOTED = Rs X	Derived	Derived	Derived			100.00000%	TO BE QUOTED = M
				HSN CODE	UNIT PRICE FOR PG TEST	UNIT PRICE FOR PG TEST (INR)	TOTAL EX-WORKS PRICE OF PG TEST IN PERCENTAGE OF TOTAL PRICE OF PHEs GIVEN AT SL NO-A.5OF COUMN 8	TOTAL EX-WORKS PRICE FOR PG TEST (INR)		APPLICABLE GST RATE % ON PG TEST PRICE (INR)	TOTAL PRICE FOR PG TEST WITH GST (INR)	UNIT PRICE FOR PG TEST	UNIT PRICE FOR PG TEST (CURRENCY)	TOTAL PRICE OF PG TEST IN PERCENTAGE OF TOTAL PRICE OF PHEs GIVEN AT SL NO-A.5 OF COUMN 15 INDIAN SEA PORT	TOTAL PRICE FOR PG TEST (CURRENCY)
B	SERVICES AT SITE PG TEST AT SITE (NOTE: 1SET = PG TEST FOR ONE PHE.)														
B.1		SET	20	TO BE QUOTED	0.016800% OF PRICE AT A.5, COL 8	Derived	0.336% OF PRICE AT A.5, COL 8	Derived		% TO BE QUOTED	Derived	0.016800% OF PRICE AT A.5, COL 15	Derived	0.336% OF PRICE AT A.5, COL 15	Derived
B.2	TOTAL (B.1)							Derived		Derived	Derived				Derived
				HSN CODE	UNIT EX-WORKS PRICE (DULY PACKED)	UNIT EX-WORKS PRICE (DULY PACKED) (INR)	EXPECTED QUANTITY OF SPARES AS PER DATASHEET A OF SECTION IA	TOTAL EX- WORKS PRICE (DULY PACKED) (INR) (Col F * Col. G)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL F.O.R SITE PRICE (INR)	UNIT C & F PRICE (DULY PACKED) INDIAN SEA PORT	UNIT C & F PRICE (DULY PACKED) INDIAN SEA PORT (CURRENCY)		TOTAL C & F PRICE (DULY PACKED) INDIAN SEA PORT (CURRENCY)
C	MANDATORY SPARES EXPECTED SPARES FOR EACH PHE TYPE AS PER SPARE LIST INDICATED IN DATASHEET A AT SECTION IB OF SPECIFICATION.														
C.1	TYPE XII	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.8% OF PRICE AT A.1, COL 6	Derived	1	Derived			Derived	0.8% OF PRICE AT A.1, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.12% OF PRICE AT A.1, COL 6	Derived	1	Derived			Derived	0.12% OF PRICE AT A.1, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.015% OF PRICE AT A.1, COL 6	Derived	1	Derived			Derived	0.015% OF PRICE AT A.1, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.04% OF PRICE AT A.1, COL 6	Derived	1	Derived			Derived	0.04% OF PRICE AT A.1, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.025% OF PRICE AT A.1, COL 6	Derived	1	Derived			Derived	0.025% OF PRICE AT A.1, COL 13	Derived		Derived
		Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.8% OF PRICE AT A.2, COL 6	Derived	1	Derived			Derived	0.8% OF PRICE AT A.2, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.12% OF PRICE AT A.2, COL 6	Derived	1	Derived			Derived	0.12% OF PRICE AT A.2, COL 13	Derived		Derived

				INDIGENOUS VENDOR						FOREIGN VENDOR					
C.2	TYPE XIII	Valves	NOS.	TO BE QUOTED	0.015% OF PRICE AT A.2, COL 6	Derived	1	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	0.015% OF PRICE AT A.2, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.04% OF PRICE AT A.2, COL 6	Derived	1	Derived			Derived	0.04% OF PRICE AT A.2, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.025% OF PRICE AT A.2, COL 6	Derived	1	Derived			Derived	0.025% OF PRICE AT A.2, COL 13	Derived		Derived
C.3	TYPE XIV	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.8% OF PRICE AT A.3, COL 6	Derived	1	Derived			Derived	0.8% OF PRICE AT A.3, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.12% OF PRICE AT A.3, COL 6	Derived	1	Derived			Derived	0.12% OF PRICE AT A.3, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.015% OF PRICE AT A.3, COL 6	Derived	1	Derived			Derived	0.015% OF PRICE AT A.3, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.04% OF PRICE AT A.3, COL 6	Derived	1	Derived			Derived	0.04% OF PRICE AT A.3, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.025% OF PRICE AT A.3, COL 6	Derived	1	Derived			Derived	0.025% OF PRICE AT A.3, COL 13	Derived		Derived
C.4	TYPE XV	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	TO BE QUOTED	0.8% OF PRICE AT A.4, COL 6	Derived	1	Derived			Derived	0.8% OF PRICE AT A.4, COL 13	Derived		Derived
		Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	TO BE QUOTED	0.12% OF PRICE AT A.4, COL 6	Derived	1	Derived			Derived	0.12% OF PRICE AT A.4, COL 13	Derived		Derived
		Valves	NOS.	TO BE QUOTED	0.015% OF PRICE AT A.4, COL 6	Derived	1	Derived			Derived	0.015% OF PRICE AT A.4, COL 13	Derived		Derived
		Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	TO BE QUOTED	0.04% OF PRICE AT A.4, COL 6	Derived	1	Derived			Derived	0.04% OF PRICE AT A.4, COL 13	Derived		Derived
		Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	TO BE QUOTED	0.025% OF PRICE AT A.4, COL 6	Derived	1	Derived			Derived	0.025% OF PRICE AT A.4, COL 13	Derived		Derived
C.5	TOTAL (C.1 TO C.11)							Derived			Derived	Derived	Derived		
D	GRAND TOTAL (A.5+B.2+C.5)							Derived	Derived	Derived	Derived = Rs Y				Derived = N
E	Indigenous vendors having CIF are required to indicate CIF @ ____% of their total ex-works supply value and quote their prices considering discount on ex works price in lieu of availing CIF.														
Note:-															
1. Bidder to note that evaluation shall be on Grand Total Ex works price + Freight charges, however, Bidder to quote grand total Ex works/total C&F value of the PHEs mentioned at A.1 to A.4 (Rs X for Indigenous bidders/ M for foreign bidder) only as per the BOQ above. The item wise break up of Ex works prices (unit as well as total) for all the items in the BOQ shall be derived as per the formulae indicated above by BHEL. Indigenous bidder also need to indicate taxes percentage in the respective column and freight percentage of Ex works value considering delivery anywhere in India in the freight column.															
2. Rate contract shall be decided on the basis of grand Total Ex works price + Freight charges of Total BOQ															
3. Value is to be filled only where "to be quoted" is mentioned and for other columns where "derived" is mentioned same shall be derived by BHEL as per % allocation fixed against each item															
4. Bidder to note that total price indicated above at D shall be considered for evaluation and hence should be complete in all respect for the full scope defined and considering all terms and conditions agreed.															
5. The unit price quoted by bidder shall be binding for quantity variation which is at discretion of purchaser.															
6. Prices shall remain firm during contract execution.															
7. For any clarification please refer Technical Specification No-PE-RC-999-179-N001															
8. Price of all accessories, commissioning spares, special Tools & tackle and other accessories not listed above shall be included in the price of PHE & shall be supplied with the PHE.															
9. Indigenous vendors having CIF are required to indicate CIF @ ____% of their total ex-works supply value and quote their prices considering discount on ex works price in lieu of availing CIF.															
10. Bidder shall furnish this price Schedule indicating "Quoted/Not-Quoted" along with technical offer and actual prices in his price offer.															
11. Where ever the quantity is coming in fraction same shall be round off to next higher number.															
12. Any item indicated as "Not Applicable" by bidder but actually found applicable for that PHE type, shall be supplied by bidder at cost based on cost percentage break-up for spares furnished along with NIT.															

		ANNEXURE-II: DEVIATION SHEET (COST OF WITHDRAWAL)							
		PACKAGE:- PLATE HEAT EXCHANGER- RATE CONTRACT							
TENDER ENQUIRY REF NO-RATE CONTRACT - NIT REF NO-PE/PG/RTC/E-5966/2018, DTD-01.06.2018									
NAME OF VENDOR:-									
SL NO	VOLUME/ SECTION	PAGE NO.	CLAUSE NO.	TECHNICAL SPECIFICATION/ TENDER DOCUMENT	COMPLETE DESCRIPTION OF DEVIATION	COST OF WITHDRAWAL OF DEVIATION	REFERENCE OF PRICE SCHEDULE ON WHICH COST OF WITHDRAWAL OF DEVIATION IS APPLICABLE	NATURE OF COST OF WITHDRAWAL OF DEVIATION (POSITIVE/ NEGATIVE)	REASONS FOR QUOTING DEVIATION
TECHNICAL DEVIATIONS									
COMMERCIAL DEVIATIONS									
PARTICULARS OF BIDDERS/ AUTHORISED REPRESENTATIVE									
NAME				DESIGNATIONS		SIGN & DATE			
NOTES:									
1. For self manufactured items of bidder, cost of withdrawal of deviation will be applicable on the basic price (i.e. excluding taxes, duties & freight) only.									
2. For directly dispatchable items, cost of withdrawal of deviation will be applicable on the basic price including taxes, duties & freight.									
3. All the bidders have to list out all their Technical & Commercial Deviations (if any) in detail in the above format.									
4. Any deviation not mentioned above and shown separately or found hidden in offer, will not be taken cognizance of.									
5. Bidder shall submit duly filled unpriced copy of above format indicating "quoted" in "cost of withdrawal of deviation" column of the schedule above along with their Techno-commercial offer, wherever applicable									
6. Bidder shall furnish price copy of above format along with price bid.									
7. The final decision of acceptance/ rejection of the deviations quoted by the bidder shall be at discretion of the Purchaser.									
8. Bidders to note that any deviation (technical/commercial) not listed in above and asked after Part-I opening shall not be considered									
9. For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII of GCC, Rev-06 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.									
10. Any deviation mentioned in priced copy of this format, but not mentioned in the un-priced copy, shall not be accepted.									
11. All techno-commercial terms and conditions of NIT shall be deemed to have been accepted by the bidder, other than those listed in unpriced copy of this format.									
12. Cost of withdrawal is to be given separately for each deviation. In no event bidder should club cost of withdrawal of more than one deviation else cost of withdrawal of such deviations which have been clubbed together shall be considered as NIL.									
13. In case nature of cost of withdrawal (positive/negative) is not specified it shall be assumed as positive.									
14. In case of discrepancy in the nature of impact (positive/ negative), positive will be considered for evaluation and negative for ordering.									

ANNEXURE A (REV01)

Cost of Spares in Percentage w.r.t Unit Ex-works price of One PHE

[illegible]

ANNEXURE A (GROUP-B)

Cost of Spares in Percentage w.r.t Unit Ex-works price of One PHE

S. No	Spares for each PHE type:	Quantity	Cost in percentage of One PHE Cost of that type (as quoted by bidder) at Column 6/13 of Price schedule			
			TYPE XII	TYPE XIII	TYPE XIV	TYPE XV
1	Heat Transfer Plates	1 Lot = 1% of plates in each PHE	0.800%	0.800%	0.800%	0.800%
2	Gaskets (All types)	1 Lot = 1% of gaskets of each type in each PHE	0.120%	0.120%	0.120%	0.120%
3	Valves	NOS.	0.015%	0.015%	0.015%	0.015%
3	Tie Rods	1 Lot = 1% of tie-rod of each type in each PHE	0.040%	0.040%	0.040%	0.040%
4	Fasteners (Nuts & bolts etc.)	1 Lot = 1% of Nuts & bolts of each type & size in each PHE	0.025%	0.025%	0.025%	0.025%
Note:						
1)	The percentage cost indicated above is for 1 unit of measurement of each spare item. The qty. of spare are mentioned in BOQ of Spares for arriving at final percentage of each type of PHE in Sl. No. C of Price Schedule.					

BOQ of SPARES (GROUP-A) REV01

[illegible]

BOQ of SPARES (GROUP-B)

SL.NO.	Spares for each PHE type:	Unit of Measurement	TYPE XII	TYPE XIII	TYPE XIV	TYPE XV
1	Heat Transfer Plates	LOTS (1 Lot = 1% of plates in each PHE)	1	1	1	1
2	Gaskets (All types)	LOTS (1 Lot = 1% of gaskets of each type in each PHE)	1	1	1	1
3	Valves	NOS.	1	1	1	1
4	Tie Rods	LOTS (1 Lot = 1% of tie-rod of each type in each PHE)	1	1	1	1
5	Fasteners (Nuts & bolts etc.)	LOTS (1 Lot = 1% of Nuts & bolts of each type & size in each PHE)	1	1	1	1
NOTE:						
1	Bidder shall furnish this price Schedule indicating "Quoted/Not-Quoted" against each item along with technical offer and actual prices in his price offer.					
2	Where ever the quantity is coming in fraction same shall be round off to next higher number.					
3	Any item indicated as "Not Applicable" by bidder but actually found applicable for that PHE type, shall be supplied by bidder at cost based on cost percentage break-up for spares furnished along with NIT.					