



**AMENDMENT ON TECHNICAL SPECIFICATION FOR COMPRESSED AIR SYTEM
PACKAGE
370 MW (109 FB) CCPP YELAHANKA**

SPECIFICATION NO.: PE-TS-409-555-A001

AMENDMENT NO # 3

REV. NO. 00

DATE: 28/03/2016

The following modifications with respect to Technical Specification compressed air system BHEL's Technical specification no **PE-TS-409-555-A001** shall apply.

Bidder to note that existing clauses/details as appearing in the specification stands deleted and clauses/details as mentioned in "Modified to or Read as" column shall be applicable and complied by the bidder.

MODIFIED CLAUSES/PAGE NUMBERS.

SI no.	Vol. No.	Section/ Description	Clause	Page no	Existing clause/details	Modified to or Read as
1.	IIB	Scope of supply and services	1.1.1	13	Two (2) nos. (1 working + 1 standby) identical air compressors (common for service air and instrument air) each of minimum 10 NM3/Min (14.2 m3/min FAD) capacity at 8.0 Kg/sqcm (min) discharge pressure with electric motor drive, suction filter with silencer, inter cooler and after cooler with moisture separators, automatic drain traps, instruments, control system and other accessories.	Two (2) nos. (1 working + 1 standby) identical air compressors (common for service air and instrument air) each of minimum 15 NM3/Min (21.3 m3/min FAD) capacity at 8.0 Kg/ cm2 (min) discharge pressure with electric motor drive, suction filter with silencer, inter cooler and after cooler with moisture separators, automatic drain traps, instruments, control system and other accessories.
2.	IIB	specific technical requirement	3.2.1.1	22	The capacity of each air compressor shall be 10 NM3/min. Delivery pressure will be 8 Kg/cm2 (g) at outlet of compressors & 7.5 kg/ cm2 (g) at ADP outlet. Each compressor will be designed to deliver the nominal capacity at the required delivery pressure.	The capacity of each air compressor shall be 15 NM3/min. Delivery pressure will be 8 Kg/cm2 (g) at outlet of compressors & 7.5 kg/ cm2 (g) at ADP outlet. Each compressor will be designed to deliver the nominal capacity at the required delivery pressure.
3.	IIB	customer specification	1.1	29	Two (2) Nos. identical air compressors (1 W+ 1 S) common for instrument air compressors and plant air compressors of capacity 10 Nm3/min. at discharge pressure of 8.0 Kg/cm2 (g).	Two (2) Nos. identical air compressors (1 W+ 1 S) common for instrument air compressors and plant air compressors of capacity 15 Nm3/min. at discharge pressure of 8.0 Kg/cm2 (g).
4.	III	Section-V, Electric load data	-	210	Air Compressors, Rating- 90kw	Air Compressors, Rating- 135kw. (Please refer Annexure-A of this amendment.)
5.	III	Section-VI ,Guaranteed Power Consumption	Note-1	212	Estimated Power Consumption Figure for the compressed air system (For Working Drives Only) considered is 65 KW	Estimated Power Consumption Figure for the compressed air system (For Working Drives Only) considered is 94 KW. (Please refer Annexure-B of this amendment.)
6.	III	compressor house layout	Ammendment# 2	2	Air compressor capacity- 10 NM3.	Air compressor capacity- 15 NM3.
7.	III	Indicative billing break up	2.1.0	227	-	This chapter shall be considered null and void.



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8.	IIB	Scope of supply, terminal points and exclusions	Ammendment# 2		Compressor and air dryer shall be designed for cooling water from DMCW system. Quantity of cooling water for cooling of air compressors & air dryers shall be limited to 20 m ³ /hr. (max.) for all working drives. Pressure drop across the cooling water circuit shall be limited to 10 MWC .The max temp of hot water from compressor shall be 10 deg. C higher cooling water inlet temp. Accordingly the coolers for air compressors and driers shall designed taking the above factors into consideration.	Compressor and air dryer shall be designed for cooling water from DMCW system. Quantity of cooling water for cooling of air compressors & air dryers shall be limited to 26 m³/hr. (max.) for all working drives. Pressure drop across the cooling water circuit shall be limited to 10 MWC .The max temp of hot water from compressor shall be 10 deg. C higher cooling water inlet temp. Accordingly the coolers for air compressors and driers shall designed taking the above factors into consideration.
9.	IIB	Specific technical requirement	-	-	-	Emergency Trip Push button shall be provided for Compressors.
10.	III	Section-7,Suggestive price format.	Suggestive Price Schedule - Compressed Air System Package.	215	-	Revised suggestive price schedule has been attached herewith as Annexure C. (Please refer Annexure-C of this amendment.)
11.	IIB	Section-E Annexure-II	Mandatory spare list, notes		-	f) In case the indicated spares are not applicable, bidder shall quote for suitable alternate spares. The same needs to be clearly demarcated in the offer submitted by the bidder. (Please refer Annexure-D of this amendment.)

**VOLUME-III
SECTION 5
ELECTRICAL LOAD DATA
ANNEXURE-A**

LOAD TITLE	RATING (KW / A)		UNIT (U)/STN (S)	Nos.		VOLTAGE CODE*	FEEDER CODE**	EMER. LOAD (Y)	CONT.(C)/ INTT.(I)	STARTING TIME >5 SEC (Y)	LOCATION	BOARD NO.	CABLE		BLOCK CABLE DRG. No.	CONTROL CODE	REMARKS	LOAD No.
	NAME PLATE	MAX. CONT. DEMAND (MCR)		RUNNING	STANDBY								SIZE CODE	NOs				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

AIR COMPRESSORS	135 KW		S	1	1		U	N	C		Compressor House							
PANEL FOR AIR COMPRESSOR	3 KW		S	1	1		S	N	C		Compressor House							
PANEL FOR AIR DRIER	2 KW		S	1	1		S	N	C		Compressor House							
AUTO DRAIN TRAP	0.3 KW		S	2	-		S	N	I		Compressor House							
SPACE HEATER	0.3KW		S	1	1		S	N	C		Compressor House							
SEQUENTIAL PANEL	1 KW		S	1	-		-	-	C		Compressor House							

Note:

- Bidder to confirm that the system provided by them would be catered by the above loads considered by BHEL. In case there is any variation, the same should be clearly stated in the technical offer. No changes would be admissible during detailed engineering stage.
- Bidder to note that for the system being supplied by them, only the above loads will be provided. In case any other load is required the same would be derived / multiplied by bidder on their own from these feeders only.
- Any change in the electrical load list shall be entertained only subject to its feasibility, and BHEL reserves the right to debit the vendor cost of any changes necessitated in the switch gear /MCC on account of changed loads.

NOTES: 1. COLUMN 1 TO 12 & 18 SHALL BE FILLED BY THE REQUISITIONER (ORIGINATING AGENCY); REMAINING COLUMNS ARE TO BE FILLED UP BY PEM (ELECTRICAL)/ CUSTOMER
2. ABBREVIATIONS : * VOLTAGE CODE (7):- (ac) A=11 KV, B=6.6 KV, C=3.3 KV, D=415 V, E=240 V (1 PH), F=110 V (cc): G=220 V, H=110 V, J=48 V, K=+24V, L=-24 V
: ** FEEDER CODE (8):- U=UNIDIRECTIONAL STARTER, B=BI-DIRECTIONAL STARTER, S=SUPPLY FEEDER, D=SUPPLY FEEDER (CONTACTOR CONTROLLED)

LOAD DATA (ELECTRICAL)	JOB NO.	409		ORIGINATING AGENCY		PEM (ELECTRICAL)		
	PROJECT TITLE	370 MW (109 FB) CCPP YELAHANKA		NAME			DATA FILLED UP ON	
	SYSTEM	COMPRESSED AIR SYSTEM		SIGN.			DATA ENTERED ON	
	DEPTT. / SECTION	MAX		SHEET 1 OF 1	REV. 00	DE'S SIGN. & DATE		

VOLUME-III
SECTION 6
GUARANTEED POWER CONSUMPTION
ANNEXURE-B

370 MW (109 FB) CAPP YELAHANKA

Guaranteed Power Consumption For Air Compressor System Shall be as per Following :

S.No. (1)	Description of Equipments (2)	Nos. of Equipments (3)		Total Guaranteed Power Consumption for Each Equipment at Motor Input Terminals & control Panel (4)	Duty Factor (5)	Total (KW) (6) = (3A)*(4)*(5)
		Working	Standby			
1	Air Compressors common for service air and instrument air (Oil free Screw type) 15 NM3/min at 8 Kg/cm2 pressure	1	1		0.66	
2	Air Drying Plant Unit (Conventional Twin Tower type/ Rotary drun type as applicable)	1	1		0.66	
					TOTAL	

Note :

1	Estimated Power Consumption Figure for the compressed air system (For Working Drives Only) considered is 94 KW
2	Bidders Guaranteed power consumption at motor input terminals (Not Shaft Power) including power for control panel as furnished in guranteed schedule shall be demonstrated by the successful bidder during performance testing at works/site.
3	The price quoted by the bidder shall be loaded @ (INR) 136000/- for every additional kW increase in consumption from the base figure indicated at Note no. 1.0 above.
4	In case the successful bidder fails to establish / prove the guaranteed values of power consumption (base figure of auxiliary power consumption) on actual performance testing at the manufacturing works / site, penalty @ (INR) 136000/- per kW increase in power consumption figure shall be levied.

SECTION: 7

SUGGESTIVE PRICE FORMAT

ANNEXURE-C

SUGGESTIVE PRICE SCHEDULE - COMPRESSED AIR SYSTEM PACKAGE

SI.No	DESCRIPTION OF EQUIPMENT / ITEM	Ex-works price	ED	CST / VAT	FREIGHT	E&C Charges	Service tax on E & C	Total
1	2	3	4	5	6	7	8	9 (3 to 8)
1.0.0	Total lumpsum firm prices for the supply of equipment & services as specified, Comprising Design, Engineering, Manufacture, Inspection & Testing at Manufacturer's Works, Painting at Manufacturer's Works, Duly packed for Transportation, Delivery to Site, loading, unloading & storage at site, supply of erection materials, consumables, start-up & commissioning spares, and mandatory spares as required to complete the compressed air system including service part for unloading, storage & handling at site, erection, commissioning, trial run, carrying out performance tests at site, handing over to customer in line with drawings/ documents/ test procedures approved by BHEL/ customer, for the total scope defined in technical specification (spec.No. PE-TS-409-555-A001) and terms & conditions of tender, taking into account all clarifications, confirmations and agreements till date of package order for Compressed Air System for 370 MW (109 FB) CCPP YELAHANKA.							
2.0.0	Break up prices for items covered in clause 1.0.0 above.							
2.1.0	Total lumpsum firm prices for the supply of equipment as specified, Comprising Design, Engineering, Manufacture, Inspection & Testing at Manufacturer's Works, Painting at Manufacturer's Works, Duly packed for Transportation, Delivery to Site including freight, including supply of consumables, start-up & commissioning spares, as required to complete the compressed air system for the total scope defined in technical specification (spec.No. PE-TS-409-555-A001) and terms & conditions of tender, taking into account all clarifications, confirmations and agreements till date for Compressed Air System for 370 MW (109 FB) CCPP YELAHANKA.							
2.2.0	Total lumpsum firm prices for the supply of equipment as specified, Comprising Design, Engineering, Manufacture, Inspection & Testing at Manufacturer's Works, Painting at Manufacturer's Works, Duly packed for Transportation, Delivery to Site, loading, unloading & storage at site for mandatory spares (as per Attached annexure-I) required to complete the compressed air system including handing over to customer in line with drawings/ documents/ test procedures approved by BHEL/ customer, for the total scope defined in technical specification (spec.No. PE-TS-409-555-A001) and terms & conditions of tender, taking into account all clarifications, confirmations and agreements till date of package order for Compressed Air System for 370 MW (109 FB) CCPP YELAHANKA.							

370 MW (109 FB) CCPP YELAHANKA Rev 01 28.03.2016								
SUGGESTIVE PRICE SCHEDULE - COMPRESSED AIR SYSTEM PACKAGE								
SI.No	DESCRIPTION OF EQUIPMENT / ITEM	Ex-works price	ED	CST / VAT	FREIGHT	E&C Charges	Service tax on E & C	Total
1	2	3	4	5	6	7	8	9 (3 to 8)
2.3.0	Total lumpsum firm prices for the services as specified, comprising of service part for unloading, storage & handling at site, erection, commissioning, trial run, carrying out performance tests at site, handing over to customer in line with drawings/ documents/ test procedures approved by BHEL/ customer, for the total scope defined in technical specification (spec.No. PE-TS-409-555-A001) and terms & conditions of tender, taking into account all clarifications, confirmations and agreements till date for Compressed Air System for 370 MW (109 FB) CCPP YELAHANKA.							
NOTES	<i>Bidder to note that total price indicated above at 1.0.0 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.</i>							
a	<i>Any item not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.</i>							
b	<i>Total Lumpsum price in column-9 of Sl. No. 1.0.0 should match with summation of total prices as in Column -9 of Sl. No. 2.1.0 + Column 9 of Sl. No. 2.2.0 + Column 9 of Sl. No. 2.3.0.</i>							
c	<i>Total Lumpsum price in column-9 of Sl. No. 2.2.0 should match with summation of total prices as in Column -9 of A of Annexure-I.</i>							
d	<i>Total erection & commissioning charges including service tax should be minimum 10% of the total quoted package price (excluding mandatory spares but including all taxes and freight), failing which the break-up of prices shall be adjusted accordingly for ordering.</i>							
e	<i>All deviations should be marked in Cost of withdrawal sheet (Annexure-IV) only. Deviations marked elsewhere other than schedule of deviation shall not be taken into cognizance.</i>							
f	<i>Bidder to fill import content in Annexure-II. However, any benefits w.r.t taxes and duties will be governed by the commercial terms and conditions in this tender.</i>							
g	<i>Bidder must submit prices in the Pro Forma duly filled in signed and stamped on every page without any ambiguity. The price shall be written against each item. Term such as "refer covering letter" etc. are not acceptable. Price format shall not be changed by the bidder as the bidder may get disqualified by doing so.</i>							
h	<i>During execution stage there will not be any Billing Break Up (BBU) for making progressive payments for supply purpose. Total supply payment shall be made after receipt of complete materials at site. For this the successful bidder has to give a complete BOQ for engineering approval. However, anything else required to complete the contractual requirements shall be supplied by the successful bidder within the quoted price. For further details delivery conditions as defined elsewhere to be noted.</i>							
	Bidder's / bidder's representative signature					Company seal		

SUGGESTIVE PRICE SCHEDULE									
					Rev 01	28.03.2016			
370 MW (109 FB) CAPP YELAHANKA									
ANNEXURE I									
Sl.no	Description	Qty.	Qty. Offered	Unit Ex-works price	Total ex-works price	ED	CST	FREIGHT	FOR SITE
	2		3	4	5	6	7	8	9
1	0 Ring for each size	1 Set							
2	Packing Ring	12							
3	Oil Wiper Ring	12							
4	Sealing Ring	2							
5	Gasket for each size	1 Set							
6	Clamps for valve assembly	7							
7	Circlips for valve assembly	7							
8	Valve Spring (LP suction)	7							
9	Valve spring (HP Suction)	7							
10	Valve Spring Discharge	7							
11	Valve Plate	12							
12	Damper plate	20							
13	Piston Ring - LP	2							
14	Rider Ring - LP	2							
15	Piston Ring - HP	3							
16	Rider Ring - HP	2							
17	Oil Filter Element	2							
18	Suction Filter element	2							
19	Bearing for driving and non driving ends of compressors	2 set							
20	Compressor spare crank shaft	1							
21	Suction Valve Assembly for LP	1 Set							
22	Suction Valve Assembly for HP	1 Set							
23	Discharge Valve Assembly for LP	1 Set							
24	Discharge Valve Assembly for HP	1 Set							
25	Suction Valve Un loader	1 Set							
26	Piston rod with locknut	1 Set							
27	LP and HP Piston	1 Set							
28	Motor	1 No. of each type, rating & frame size							
29	For all field instruments, air filter regulators, transmitter racks and interposing relays,	a minimum of one(1) no. or 10% of the quantity of each type and range, whichever is higher							
A	Total Lumpsum price of Mandatory Spares								
Notes									
a)	Unless stated otherwise, a 'set' means item or sub-items required for each type/ size, range of assembly/ sub- assembly required for complete replacement in one equipment system; it is further intended that the assembly/ sub-assembly which have different orientation (like left hand or right hand, top or bottom), different direction of rotation or mirror image positioning or any other reasons which result in marinating two different sets of spares to be used for subject assembly/ sub assembly, these shall be considered as different type of assembly/ sub assembly.								
b)	Wherever quantity has been specified as percentage(%), the quantity of mandatory spares to be provided by the vendor shall be the specified percentage (%) of total population required to meet the specification requirements. In case the quantity of mandatory spares so calculated happens to be in fraction, the same shall be rounded off to next higher whole number.								
c)	Wherever the quantities have been indicated for each type, size, thickness, material, radius , range etc, these shall cover all the items supplied and installed and the breakup of these shall be furnished by the vendor during detail engineering.								
d)	In case spares indicated in the list are not applicable to the particular design offered by the bidder, the bidder should offer spares applicable to the offered design with quantities genaarally in line with the approach followed in the above list.								
e)	Wherever bidder has indicated an item as not applicable, the same will have to be supplied free of cost, incase it is found applicable during detail engineering.								
f)	In case the indicated spares are not applicable, bidder shall quote for suitable alternate spares. The same needs to be clearly demarcated in the offer submitted by the bidder.								
Bidder's / bidder's representative signature							Company seal		

SUGGESTIVE PRICE SCHEDULE		Rev 01	28.03.2016
370 MW (109 FB) CCPP YELAHANKA			
ANNEXURE-II			
IMPORT CONTENT - PRICE SCHEDULE FOR COMPRESSED AIR SYSTEM PACKAGE			
SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	ALL INCLUSIVE PRICE (As per tender)	
1.0	Total price (in terms of `Euro/US \$' and correspondingly in INR as on date) for supply of import content, as required, for total scope defined as per technical specification and terms & conditions of tender taking into account all clarifications, confirmations and agreements till date. (Bidder shall furnish item-wise break-up in a separate sheet)		
1.1.1	In Euro.		
1.1.2	In INR (Corresponding to 1.1.1).		
1.2.1	In US \$.		
1.2.2	In INR (Corresponding to 1.2.1).		
1.3	Total in INR (1.1.2 + 1.2.2).		
NOTE			
1.0	Bidder's quoted price in various schedules shall be inclusive of above total price for import component at sl no 1.3 above.		
2.0	Bidder shall furnish item-wise break-up of imported items.		

370 MW (109 FB) CAPP YELAHANKA			ANNEXURE-III			
Guaranteed Power Consumption For Air Compressor System Shall be as per Following :						
S.No. (1)	Description of Equipments (2)	Nos. of Equipments (3)		Total Guaranteed Power Consumption for Each Equipment at	Duty Factor (5)	Total (KW) (6) = (3A)*(4)*(5)
		Working	Standby			
1	Air Compressors common for service air and instrument air (Oil free Screw type) 15 NM3/min at 8 Kg/cm2 pressure	1	1		0.66	
2	Air Drying Plant Unit (Conventional Twin Tower type/ Rotary drum type as applicable)	1	1		0.66	
					TOTAL	

Note :

1	Estimated Power Consumption Figure for the compressed air system (For Working Drives Only) considered is 94 KW
2	Bidders Guaranteed power consumption at motor input terminals (Not Shaft Power) including power for control panel as furnished in guranteed schedule shall be demonstrated by the successful bidder during performance testing at works/site.
3	The price quoted by the bidder shall be loaded @ (INR) 136000/- for every additional kW increase in consumption from the base figure indicated at Note no. 1.0 above.
4	In case the successful bidder fails to establish / prove the guaranteed values of power consumption (base figure of auxiliary power consumption) on actual performance testing at the manufacturing works / site, penalty @ (INR) 136000/- per kW increase in power consumption figure shall be levied.

DEVIATION SHEET (COST OF WITHDRAWL)**ANNEXURE-IV****370 MW (109 FB) CCP YELAHANKA****PACKAGE:- COMPRESSED AIR SYSTEM PACKAGE****TENDER ENQUIRY REFERENCE:-****NAME OF VENDOR:-**

SL NO	VOULME/ SECTION	PAGE NO.	CLAUSE NO.	TECHNICAL SPECIFICATIO N/ TENDER DOCUMENT	COMPLETE DESCRIPTION OF DEVIATION	COST OF WITHDRAWL OF DEVIATION	REFERENCE OF PRICE SCHEDULE ON WHICH COST OF WITHDRAWL OF DEVIATION IS APPLICABLE	NATURE OF COST OF WITHDRAWL OF DEVIATION (POSITIVE/ NEGATIVE)	REASON FOR QUOTING DEVIATION
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TECHNICAL DEVIATIONS

COMMERCIAL DEVIATIONS

PARTICULARS OF BIDDERS/ AUTHORISED REPRESENTATIVE

NAME	DESIGNATIONS	SIGN & DATE
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NOTES:

- For self manufactured items of bidder, cost of withdrawl of deviation will be applicable on the basic price (i.e. excluding taxes, duties & freight) only.
- For directly dispatchable items, cost of withdrawl of deviation will be applicable on the basic price including taxes, duties & freight.
- All the bidders have to list out all their Technical & Commercial Deviations (if any) in detail in the above format.
- Any deviation not mentioned above and shown separately or found hidden in offer, will not be taken cognizance of.
- Bidder shall submit duly filled unpriced copy of above format indicating "quoted" in "cost of withdrawl of deviation" column of the schedule above along with their Techno-commercial offer, wherever applicable.
- Bidder shall furnish price copy of above format along with price bid.
- The final decision of acceptance/ rejection of the deviations quoted by the bidder shall be at discretion of the Purchaser.
- Bidders to note that any deviation (technical/commercial) not listed in above and asked after Part-I opening shall not be considered.
- 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 withdrawl 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 withdrawl of deviation shall be taken as NIL.
- Any deviation mentioned in priced copy of this format, but not mentioned in the un-priced copy, shall not be accepted.
- 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.
- Cost of withdrawl is to be given seperately for each deviation. In no event bidder should club cost of withdrawl of more than one deviation else cost of withdrawl of such deviations which have been clubbed together shall be considered as NIL.
- In case nature of cost of withdrawl (positive/negative) is not specified it shall be assumed as positive.
- In case of descrepancy in the nature of impact (positive/ negative), positive will be considered for evaluation and negative for ordering.

ANNEXURE-II
MANDATORY SPARE LIST
ANNEXURE-D

370 MW (109 FB) CAPP YELAHANKA									
ANNEXURE I									
Sl.no	Description	Qty.	Qty. Offered	Unit Ex-works price	Total ex-works price	ED	CST	FREIGHT	FOR SITE
	2		3	4	5	6	7	8	9
1	O Ring for each size	1 Set							
2	Packing Ring	12							
3	Oil Wiper Ring	12							
4	Sealing Ring	2							
5	Gasket for each size	1 Set							
6	Clamps for valve assembly	7							
7	Circlips for valve assembly	7							
8	Valve Spring (LP suction)	7							
9	Valve spring (HP Suction)	7							
10	Valve Spring Discharge	7							
11	Valve Plate	12							
12	Damper plate	20							
13	Piston Ring - LP	2							
14	Rider Ring - LP	2							
15	Piston Ring - HP	3							
16	Rider Ring - HP	2							
17	Oil Filter Element	2							
18	Suction Filter element	2							
19	Bearing for driving and non driving ends of compressors	2 set							
20	Compressor spare crank shaft	1							
21	Suction Valve Assembly for LP	1 Set							
22	Suction Valve Assembly for HP	1 Set							
23	Discharge Valve Assembly for LP	1 Set							
24	Discharge Valve Assembly for HP	1 Set							
25	Suction Valve Un loader	1 Set							
26	Piston rod with locknut	1 Set							
27	LP and HP Piston	1 Set							
28	Motor	1 No. of each type, rating & frame size							
29	For all field instruments, air filter regulators, transmitter racks and interposing relays,	a minimum of one(1) no. or 10% of the quantity of each type and range, whichever is higher							
A	Total Lumpsum price of Mandatory Spares								
Notes									
a)	Unless stated otherwise, a 'set' means item or sub-items required for each type/ size, range of assembly/ sub- assembly required for complete replacement in one equipment system; it is further intended that the assembly/ sub-assembly which have different orientation (like left hand or right hand, top or bottom), different direction of rotation or mirror image positioning or any other reasons which result in marinating two different sets of spares to be used for subject assembly/ sub assembly, these shall be considered as different type of assembly/ sub assembly.								
b)	Wherever quantity has been specified as percentage(%), the quantity of mandatory spares to be provided by the vendor shall be the specified percentage (%) of total population required to meet the specification requirements. In case the quantity of mandatory spares so calculated happens to be in fraction, the same shall be rounded off to next higher whole number.								
c)	Wherever the quantities have been indicated for each type, size, thickness, material, radius , range etc, these shall cover all the items supplied and installed and the breakup of these shall be furnished by the vendor during detail engineering.								
d)	In case spares indicated in the list are not applicable to the particular design offered by the bidder, the bidder should offer spares applicable to the offered design with quantities genaarally in line with the approach followed in the above list.								
e)	Wherever bidder has indicated an item as not applicable, the same will have to be supplied free of cost, incase it is found applicable during detail engineering.								
f)	In case the indicated spares are not applicable, bidder shall quote for suitable alternate spares. The same needs to be clearly demarcated in the offer submitted by the bidder.								
Bidder's / bidder's representative signature							Company seal		