		Doc No:	PE-PF-445-160-A001
SUGGESTED F	PRICE FORMAT	Rev No:	0
		Date of issue	26.07.2021
NAME OF PROJECT: SAGARDIGHI THERMAL POWER PROJECT, 1 X 660 MW UNIT NO		5, STAGE III.	
NAME OF PACKAGE:	MILL REJECT SYSTEM (PNEUMATIC TYPE) & COAL BUNKER DEBLOCKING DEVICES		
TECHNICAL SPECIFICATION:	PE-TS-445-160-A001		

LCITIVIC	AL SPECIFICATION: PE-13-449-100-A001			
S. No.	DESCRIPTION	UNIT	QTY	AMOUNT (Ex-Works)
1.0	Total lump sum firm price inclusive of all prevailing taxes, duties and other levies for SUPPLY PART, SERVICE PART & MANDATORY SPARES comprising of design (i.e. Preparation and submission of drawing /documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles, fill of lubricants and consumables required for pre-commissioning, commissioning alongwith spares for erection, startup and commissioning as required, forwarding, proper packing, shipment and delivery at site, unloading, handling, transportation & storage at site, in-site transportation, assembly, minor civil works, erection & commissioning, final painting at site, trial run at site and carrying out performance guarantee/Functional/Demonstration tests at site (As applicable), training of Customer & final handing over to Customer in flawless condition for project and package specified above complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order.	Lot	1	
2.0	MILL REJECT SYSTEM (PNEUMATIC TYPE) - MAJOR BREAK-UP OF PRICES GIVEN IN 1.0 ABOVE.			
2.1	Prices inclusive of all prevailing taxes, duties and other levies for SUPPLY part for MILL REJECT SYSTEM (PNEUMATIC TYPE) comprising of design (i.e. preparation and submission of drawing /documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles, fill of lubricants and consumables required for pre-commissioning, commissioning, alongwith spares for erection, start-up and commissioning as required, forwarding, proper packing, shipment and delivery at site for project and package specified above complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order. (Break-up as per Annexure-I)	Lot	1	
2.2	Total lumpsum firm prices inclusive of all prevailing taxes, duties and other levies for the SERVICES for MILL REJECT SYSTEM (PNEUMATIC TYPE) comprising of unloading, handling, transportation & storage at site, in site transportation, assembly, minor civil works, erection & commissioning, final painting at site, trial run at site, carrying out Performance guarantee/Functional/Demonstration tests at site (As applicable), training of Customer & final handing over to End customer in flawless condition for project and package specified above complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order.	Lot	1	
2.3	Total lumpsum firm price inclusive of all prevailing taxes, duties and other levies for Mandatory spares for MILL REJECT SYSTEM (PNEUMATIC TYPE) comprising of manufacture, fabrication, assembly, inspection / testing (as applicable) at vendor's & sub-vendor's works, painting, forwarding, proper packing, shipment, delivery at site & guarantee as per tender technical specification above, amendment & agreements till placement of order. (Price break up of mandatory spares is to be furnished as per Annexure- II).	Lot	1	
3.0	COAL BUNKER DEBLOCKING DEVICES- MAJOR BREAK-UP OF PRICES GIVEN IN 1.0 ABOVE.			
3.1	Prices inclusive of all prevailing taxes, duties and other levies for SUPPLY part for COAL BUNKER DEBLOCKING DEVICES comprising of design (i.e. preparation and submission of drawing /documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles, fill of lubricants and consumables required for pre-commissioning, commissioning, alongwith spares for erection, start-up and commissioning as required, forwarding, proper packing, shipment and delivery at site for project and package specified above complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order. (Break-up as per Annexure-I)	Lot	1	
3.2	Total lumpsum firm prices inclusive of all prevailing taxes, duties and other levies for the SERVICES for COAL BUNKER DEBLOCKING DEVICES comprising of unloading, handling, transportation & storage at site, in site transportation, assembly, minor civil works, erection & commissioning, final painting at site, trial run at site, carrying out Performance guarantee/Functional/Demonstration tests at site (As applicable), training of Customer & final handing over to End customer in flawless condition for project and package specified above complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order	Lot	1	

	Total lumpsum firm price inclusive of all prevailing taxes, duties DEVICES comprising of manufacture, fabrication, assembly, ir forwarding, proper packing, shipment, delivery at site & guarat till placement of order. (Price break up of mandatory spares is		1				
Note:							
· ·	consider and suitably incorporate taxes, duties and other comme	ercial aspects.					
2.) Bidder to	o quote the Prices in 'figures' along with corresponding 'words'.						
Particulars	of bidder / authorised representative						
Name	Designation	Signature	Date		Company Seal		

			Doc No:	PE-PF-445-1	60 0001	
SUGGESTED PRICE FORMAT		Rev No:	0	60-A001		
	ANN	EVIIDE I	E-I Date of issue 26.07.2021			
NAME OF	PROJECT:	SAGARDIGHI THERMAL POWER PROJECT, 1 X 660 MW UNIT NO	5, STAGE III.	•		
NAME OF	PACKAGE:	MILL REJECT SYSTEM (PNEUMATIC TYPE) & COAL BUNKER DE	BLOCKING DEV	VICES		
TECHNIC	AL SPECIFICATION:	PE-TS-445-160-A001				
S. No.		DESCRIPTION	<u></u> I		SUPPLY	SUPPLY
			UNIT	QUANTITY	UNIT PRICE (Ex-	TOTAL PRICE
			1		Works) `	(Ex- Works)
	BREAK-UP OF SUPPLY PRICES GIVEN IN 2.1 OF MAIN S	HEET.				
2.1	TYPE) comprising of design (i.e. preparation and submiss engineering, manufacture, fabrication, assembly, inspectior tackles, fill of lubricants and consumables required for procommissioning as required, forwarding, proper packing, shi with all accessories for the total scope defined as per BHEL of order.	nd other levies for SUPPLY part for MILL REJECT SYSTEM (PNEUMATIC sion of drawing /documents including "As Built" drawings and O&M manuals), a / testing at vendor's & sub-vendor's works, painting, maintenance tools & re-commissioning, commissioning alongwith spares for erection, startup and oment and delivery at site for project and package specified above complete NIT & tender technical specification, amendment & agreements till placement	Lot	1		
2.1.1	Transporter vessel with dome/ butterfly/ vertical swing type		Nos.	8		
2.1.2 2.1.3	Pyrite hopper with level probes, temperature switch, rupture		Nos.	8		
2.1.4			Nos. Sets	2		
2.1.5	Air compressors with drive and instrumentation & flow trans	smitters etc.	Nos.	2		
2.1.6	receivers with accessories.		No.	2		
2.1.7	1.7 Pipes for mill reject conveying.		Lot	1		
2.1.8			Lot	1		
2.1.9	2.1.9 Air & water line valves.		Lot	1		
2.1.10	2.1.10 Pneumatically operated knife gate valves for different application.		Nos.	32		
2.1.11			Lot	1		
2.1.12	Field instruments, cable glands & lugs, cable trays/ cond	uits (branch) as per specification requirement.	Lot	1		
2.1.13	Fixed type sump pumps along with all its control.		Nos.	2		
2.1.14	Maintenance tools & tackles (as per requirement of technic	al specification)	Lot	1		
2.1.15	Erection & commissioning spares including fill of lubricants	s & consumables.	Lot	1		
2.1.16	Any other item not indicated above, but required to make the	system complete in all respects.	Lot	1		
	BREAK-UP OF SUPPLY PRICES GIVEN IN 3.1 OF MAIN S	HEET.				
3.1	comprising of design (i.e. preparation and submission of dra engineering, manufacture, fabrication, assembly, inspection / tackles, fill of lubricants and consumables required for pre-co commissioning as required, forwarding, proper packing, shipi	other levies for SUPPLY part for COAL BUNKER DEBLOCKING DEVICES wing /documents including "As Built" drawings and O&M manuals), testing at vendor's & sub-vendor's works, painting, maintenance tools & mmissioning, commissioning alongwith spares for erection, startup and ment and delivery at site for project and package specified above complete NIT & tender technical specification, amendment & agreements till placement	Lot	1		

Lot

Air Cannons for Raw Coal Bunkers with support/mounting brackets and accessories

3.1.1

1	li 10 (lp 1/ 2) 1/15 3/1 1 10/		1		1	1
3.1.2	Local Control Panel/pneumatic panels/JBs with required Stainless steel impulse/pneumatic tubing, solenoid valves, filter-regulator-lubricator unit and accessories			1		
3.1.3	Air compressors with drive motor, integral micro-processor, in	struments and all other accessories.	Nos	2		
3.1.4	Air receivers with drain traps, safety relief valve, instruments a	nd all accessories.	Nos	2		
3.1.5	Piping, fittings, valves & instruments for air, cooling water	for air compressor etc.	Lot	1		
3.1.6	Erection & commissioning spares including fill of lubricants & consumables.		Lot	1		
3.1.7	Maintenance tools & tackles.			1		
3.1.8	Any other item not indicated above, but required to make the system complete in all respects.			1		
Particulars of bidder / authorised representative						
Name	Designation	Signature	Date	Com	pany Seal	
Note:	Note:					
1	1 In case of any variation in quantity during detailed engineering, same shall be adjusted as per above break-up of prices.					
2	Any other item not indicated above, but required to make the system complete in all respects, as per the technical specification, shall be supplied without any cost implication to BHEL.					
3	Any cell left blank in the unpriced schedule shall be treated as "Quoted" and is included in total price.					

		Doc No:	PE-PF-445-160-A001
	STED PRICE FORMAT IRE-II- LIST OF MANDATORY SPARES	Rev No:	0
ANNEXONE-II- EIGT OF MANDATON OF ANEO		Date of issue	26.07.2021
NAME OF PROJECT:		SAGARDIGHI THERMAL POWER PROJECT, 1 X 660 MW UNIT NO 5, STAGE III.	
	F PACKAGE:	MILL REJECT SYSTEM (PNEUMATIC TYF	PE)
TECHNIC	CAL SPECIFICATION:	PE-TS-445-160-A001	
S. No.*	Description	Quantity to be supplied for the package	Ex-works price (in Rs.)
	MECHANICAL SYSTEM		
1.32.00	Mill Reject Handling System		
1.32.01	Pneumatic Conveying System		
(i)	Pneumatic Main Valves	4 Sets of each type	
` '	Pneumatic/Solenoid Two/ Three Position Control Valve	4 Sets of each type	
	Plate/Dome (including seals) Valve with Actuator	4 Nos.	
_ ` ′	Plate/Dome valve seals	6 Sets	
	Compressor	Applicable Spares as Sl. No. 6.05.00	
	Compressed Air System Dry Air Intake Filter	5 Nos.	
	•	2 Sets (one set means complete	
6.05.02	Complete set of Loading- unloading valve assembly	replacement for one compressor)	
6.05.03	Low Pressure Compressor element (Screw) with Drive end & Non-drive end	2 Sets (one set means complete	
	Bearings for Male & Female Elements	replacement for one compressor)	
	High Pressure Compressor element (Screw) with Drive end & Non-drive end Bearings for Male & Female Elements	replacement for one compressor)	
	Plug for Inter cooler Tube Bunch	15 Nos	
	Plug for After Cooler Tube Bunch	15 Nos	
	Automatic Purge Drain Valve for Inter cooler and After cooler	2 Sets (one set means complete	
		replacement for one compressor)	
6.05.08	Air Outlet Check Valve	2 Nos.1Set (one set means complete replacement	
6.05.09	Air Outlet Compensator	for one compressor)	
6.05.10	Lub oil filter	5Nos.	
6.05.11	Lub oil Pressure Regulating valve	1No.	
6.05.12	Different oil seals/O-ring for Lub oil system	4Sets (one set means complete replacement for one compressor)	
6.05.13	Cooling water Inlet and Outlet connection bellows	2Sets (one set means complete replacement for one compressor)	
6.05.14	Gear Box Unit Complete	1Set (one set means complete replacement for one compressor)	
6.05.15	Gear Box Component		
(i)	Different Oil Seals/O-ring	2Sets (one set means complete replacement for one compressor)	
(ii)	Set Of Bearings	1Set (one set means complete replacement for one compressor)	
(iii)	Breathing Unit	2Nos	
6.05.16	Component of L.P Cylinder		
(i)	Gear sets	1Set (one set means complete replacement for one compressor)	
(ii)	Set of bearings	1Set (one set means complete replacement for one compressor)	
(iii)	Mechanical Seal & O-ring	1Set (one set means complete replacement for one compressor)	
6.05.17	Component of HP Cylinder		
(i)	Gear sets	1Set (one set means complete replacement for one compressor)	
(ii)	Set of bearings	1Set (one set means complete replacement for one compressor)	
(iii)	Mechanical Seal & O-ring	1Set (one set means complete replacement for one compressor)	
(iv)	Different Safety Valves	1Set (one set means complete replacement for one compressor)	
(v)	Coupling		
, ,	Complete Set of Coupling (Motor to Compressor)	1Set (one set means complete replacement for one compressor)	
i	Flexible Rubber for Coupling	4Nos.	

6.05.18	Drain Moisture Trap	2Sets (one set means complete replacement for one compressor)
6.05.19	Safety Valve's Springs & Gasket for LP Stage	1Set (one set means complete replacement for one safety valve)
6.05.20	Safety Valve's Springs & Gasket for HP Stage	1Set (one set means complete replacement for one safety valve)
6.05.21	Oil Pump & Motor Complete Assembly	1Set
	Drive Motor	1No.
	Other Spares as applicable as per the Electrical List	Applicable Item & Quantity same as indicated in Electrical list Sl. No.7.08.00, 7.12.00 & 7.21.00
6.05.24	Compressed Air Line Valves	As applicable as per Sl. No.5.05.02
6.05.25	C&I Items	
(i)	PLC with MMI System	Applicable Item & Quantity same as indicated in C&I list SI. No. 8.03.00
(ii)	Field Instruments & Others as applicable as per the C&I List	Applicable Item & Quantity same as indicated in C&I list SI. No. 8.04.00, 8.07.00 & 8.10.00
6.05.26	Air Drying Plant (HOC Type)	
(i)	Pre-filter Elements	2Sets (one set means complete replacement for one drier filter)
(ii)	After-filter Elements	2Sets (one set means complete replacement for one drier filter)
1.32.03	Other Electrical Spares as applicable as per the Electrical List	Applicable Item & Quantity same as indicated in Electrical list Sl. No. 7.08.00, 7.13.00 & 7.21.00.
7.08.00	415V System	
	11/0.415KV Transformer (for Each make, type and rating of Transformer)	
(i)	Door Limit Switch complete set	1 set (1 set means total requirement for one Transformer)
(ii)	Neutral CT	1 no of each type and rating
(iii)	Temperature scanner	1 no.
(iv)	bhy	3 No
(v)	LV Bushing with metal parts, connectors and gaskets	3 No
(vi)	LV neutral Bushing with metal parts, connectors and gaskets	1 No
(vii)	Post Insulator	1 set (1 set means total requirement for one Transformer)
(viii)	Limb of complete LT & HT of temperature sensing devices	Set (1 set means total requirement for one Transformer)
7.08.02	415V Air Circuit Breaker (for Each make, type and rating of ACB)	, i
	Trip Coil	20% of total nos. or minimum 5 nos whichever is higher for each type and rating used in each switchgear (PCC/PMCC/MCC/ACDB)
(ii)	Closing Coil	20% of total nos. or minimum 5 nos whichever is higher for each type and rating used in each switchgear (PCC/PMCC/MCC/ACDB)
(iii)	Spring Charging Motor	2 nos.
(iv)	Spring Charging Motor with complete Mechanism	2 nos.
(v)	Spring Charged Limit Switch	5 nos.
(vi)	Thermal Overload for Spring Charging Motor	2 nos.
(vii)	Main Contact (Fixed and moving) assembly	5 sets (1 set consists of 3 nos.) for each type and rating
(viii)	Arcing Contact (Fixed and moving) assembly	5 sets (1 set consists of 3 nos.) for each type and rating
(ix)	Breaker Jaw Contact (Bus-end & Breaker- end) assembly	5 sets (1 set consists of 3 nos.) for each type and rating
(x)	Sliding Contact (Fixed & Moving)	3 sets.
(xi)	Breaker Auxiliary Contact Block	5 nos.
(xii)	Arcing Chute	2 sets (1 set consists of 3 nos.) for each type and rating
(xiii)	Plug Socket with Prefab cable	3 nos
_ `	Position Limit Switch	5 sets
7.08.03	415V PCC, PMCC, MCC, ACDB, DCDB, Elect. Control Panel (For each PCC, PMCC, MCC, ACDB, DCDB and Elect. Control Panel) (applicable items of PCC, PMCC, MCC, ACDB, DCDB and Elect. Control Panel shall be considered)	
(i)	Indicating Lamps complete assembly	
		

(-)	D. 1	0 ()
(a)	Red	3 nos of each make and type.
(b)	Blue	3 nos of each make and type.
(c)	Green	3 nos of each make and type.
. ,	White	3 nos of each make and type.
, ,	Amber	3 nos of each make and type.
	CT	2 nos. for each make, type and Rating
· '	Transducer	2 no for each make, type and Rating
(iv)	Trip / Neutral / close Control Switch	2 nos. for each make, type and Rating
(v)	Switch gear or MCC / Trial / Normal selector switch	2 nos. for each make, type and Rating
(vi)	Local/Remote selector switch	2 nos. for each make, type and Rating
(vii)	AC Supply On / Off Switch	1 no. for each make, type and Rating
	DC Supply On / Off Switch	1 no. for each make, type and Rating
<u> </u>	Motor Heater On /Off Switch	1 no. for each make, type and Rating
(x)	DC Supply Source Selector Switch (3-position)	1 no. for each make, type and Rating
(xi)	Ammeter Selector Switch	1 no. for each make, type and Rating
(xii)	Voltmeter Selector Switch	1 no. for each make, type and Rating
(xiii)	Voltmeter	2 no. for each make, type and Rating
(xiv)	Ammeter	2 no. for each make, type and Rating
(xv)	Auxiliary Control Contactor	A00% of total and formation in the
(a)	Auxiliary Control Contactor complete assembly	10% of total nos for each make, type and Rating.
(b)	Auxiliary Control Contactor spare kits	10% of total nos. for each make, type and
(a)	Auxiliary Control Contactor spare kits	Rating.
(c)	Auxiliary Control Contactor Coils	10% of total nos for each make, type and
(xvi)	Power Contactor	Rating.
(XVI)		10% of total nos for each make, type and
(a)	Power Contactor Complete Assembly	rating
(b)	Dower Contactor, angre kita	10% of total nos for each make, type and
(b)	Power Contactor spare kits	Rating.
(c)	Power Contactor Coils	10% of total nos for each make, type and Rating.
(xvii)	MCCB	5% of total nos. for each make, type and
(XVII)	INICCB	rating.
(xviii)	MCB	5% of total nos. for each make, type and rating.
	0 * 1 5 11 * (70)	10% of total nos. for each make, type and
(xix)	Switch Fuse Unit (DC)	rating.
(xx)	Power Fuse	5% of total nos. for each make, type and
(/		rating.
(xxi)	Control Fuse	5% of total nos. for each make, type and rating.
		5% of total nos. for each make, type and
(xxii)	Thermal Overload Relay	rating.
(xxii)	Sliding contact (Fixed and moving) Complete assembly	2 sets of each make, type and rating
(xxiii)	Busbar to module Lira Contact assembly	2 sets of each make, type and rating (1 set
` ′	•	means all 3 ph+ neutral)
(xxiv)	Control and Aux. Transformer	1 no of each make, type and rating
(xxv)	Delay Timer	2 no of each make, type and rating
(xxvi)	Power Terminal Block	2 sets for each make, type and rating
(xxvii)	Control Terminal Block	2 sets for each make, type and rating
(xxviii)	End plate for Power and Control terminal block	2 sets for each make, type and rating
· ·	Energy meter	1 no for each make, type and rating
(xxx)	Relays (Other than numerical relay):	One for each make time and and a
(a)	Conventional (Electromagnetic/Static type) Relay	2 no for each make, type and rating
	Aux. relays & Lock out relays & TIMERS	2 nos for each make, type and rating
	MCCB Status (On/off) Monitoring Switch/Contact	2 nos for each make, type and rating
<u>`</u>	Push Button (On/Off) Complete Assembly Appropriation Easin with James complete set (if applicable)	2 nos for each make, type and rating
_ `	Annunciation Facia with lamps complete set (if applicable)	1 set for each make, type and rating
7.13.00	Actuator	
7.40.07	Occasion and of Astronomy	2Nos. for each type, make and rating, 1 no.
7.13.01	Complete set of Actuator	for H2 cooler Temperature controller and 1
		no. for stator water temperature controller
	Power Unit for Modulating Actuator	4Nos. of each type
	DC-DC Power Pack Unit	4Nos. of each type
7.13.04	Electronic cards	4Nos. of each type

7 13 05	Position Feed Back Transmitters	4Nos. of each type
	Control Unit	4Nos. of each type
-	Limit Switch Assembly	2 Nos each type and rating
	Torque Switch Assembly	2 Nos each type and rating
	Power Contactor	5Nos. for each type and rating
	Auxiliary Contactor	5Nos. for each type and rating
	Thermal Over Load Relay	2Nos. for each type and rating
7.13.12	•	1No. each type and rating
	Complete Seal kit	2Sets for each type and rating
	Complete O-Ring Set	2Sets for each type and rating
	Motor	3
7.21.02	415 Volt Motor	
	Motor of each type and rating (Note: motors covered in mechanical spare items need not to be included here again) 10% of the installed quantity or	10% of the installed quantity or minimum 1 number whichever be higher
(::)	minimum 1 number whichever be higher	<u> </u>
(ii)	End Shield Cover Driving & Non-Driving End	1 set for each type and rating of Motor
(iii)	Heaters Pagings (PE and NDE) for each time and rating of mater	2 sets for each type and rating of motor 2 sets
	Bearings (DE and NDE) for each type and rating of motor Cooling Fan for all type and rating of LT motors	
(v)	Dust seals and gaskets for each type of motors	One (1) set 1 Set
(vi) (vii)	Motor Terminal Block	1 no. for each type and rating of Motor
. ,	Complete Set of Coupling	1 set for each type and rating
7.21.04	DC Motor	1 Section Cacin type and rating
	Motor of each type and rating (Note : motors covered in mechanical spare	10% of the installed quantity or minimum 1
(i)	items need not to be included here again)	number whichever be higher
(ii)	Carbon brushes	2 sets for each type and rating of Motor
(iii)	Brush assemblies	2 sets for each type and rating of Motor
(iv)	Terminal blocks	1 set for each type and rating of Motor
(v)	Heaters	1 set for each type and rating of Motor
(vi)	Complete Set of Coupling	1 set for each type and rating of Motor
	Bearings (DE and NDE) for each type and rating of motor	1 set for each type and rating of Motor
	Cooling Fan	1 set for each type and rating of Motor
1.32.05	Other C&I Spares as applicable as per the C&I List	Applicable Item & Quantity same as indicated in C&I list SI No.8.04.00 & 8.07.00
8.04.00	Field Instrument	
8.04.01	Electronic Transmitters	
(i)	Pressure	1(One) no. complete set for each type and model/range used in the system
(ii)	Differential Pressure	1(One) no. complete set for each type and
		model/range used in the system 1(One) no. complete set for each type and
(iii)	Level	model/range used in the system
(iv)	Speed	1(One) no. complete set for each type and
(10)		model/range used in the system
(v)	FlowTransmitter	1(One) no. complete set for each type and model/range used in the system
		1(One) no. complete set for each type and
(vi)	3-D Ultrasonic level Transmitter	model/range used in the system
8.04.02	Different type of Switches	
(i)	Pressure Switch	2(two)no. of each type & model/range used in the system
(ii)	Differential Pressure Switch	2(two)no. of each type & model/range used in the system
(iii)	Level Switch	2(two)no. of each type & model/range used in the system
(iv)	Flow Switch	2(two)no. of each type & model/range used in the system 2(two)no. of each type & model/range used
(v)	Temperature Switch	in the system 1(one)no. of each type & model/range used 1 (one)no. of each type & model used in the
(vi)	Dust Detector Thermocouple	system 10% of each type & model used in the system
8.04.03	Thermocouple	10% of each type and length used in one unit
8.04.04	RTD	10% of each type and length used in one unit
8 04 0F	Thermo-well for both TC and RTD	2(Two) nos. for each type and rating/length
0.04.05	THE THO WELL OF DOULT TO A HUNT D	used in the system

8.04.06	Solenoid Valve		
		2Nos. for each type and rating used in the	
(i)	Complete Solenoid Valve Assembly	system	
411		10% of total nos. used in the system or	
(ii)	Coil (single or double coil type)	minimum 5(five) Nos. whichever is more for	
8.04.07	Different types of Gauge	each type and rating.	
0.04.07	Different types of Gauge	10% of total nos. used in the system or	
(i)	Pressure Gauge	minimum 1(one) no. whichever is more for	
()	C	each type and range.	
		10% of total nos. used in the system or	
(ii)	Differential Pressure Gauge	minimum 1(one) no. whichever is more for	
		each type and range.	
(iii)	Temperature Gauge	10% of total nos. used in the system or minimum 1(one) no. whichever is more for	
(111)	Temperature dauge	each type and range.	
		10% of total nos. used in the system or	
(iv)	Magnetic Level Gauge	minimum 1(one) no. whichever is more for	
		each type and range.	
8.04.08	Air Filter Regulator including moisture separator complete set with pressure	10Nos.	
	gauges		
		10% of total nos. used in the system or minimum 2(Two) nos. whichever is more for	
8.04.09	Rotameter	each type, rating,/model and size used in	
		the system.	
8.04.10	Gauge Glass	1No. for each type and size	
8.04.11	Erection Hardware		
		10% of total nos. used in the system or	
(i)	Transmitter's Manifold	minimum 2(Two) nos. whichever is more for	
(1)	Transmitter & Warmord	each type, rating,/model and size used in	
		the system.	
		10% of total nos. used in the system or minimum 4(four) nos. whichever is more for	
(ii)	Impulse Line Root/Source valve	each type, rating,/model and size used in	
		the system.	
		10% of total nos. used in the system or	
(iii)	Impulse Line Isolation valve	minimum 4(four) nos. whichever is more for	
()		each type, rating,/model and size used in	
		the system. 10% of total nos. used in the system or	
		minimum 4(four) nos. whichever is more for	
(iv)	Impulse Line Drain valve	each type, rating,/model and size used in	
		the system.	
(v)	Impulse Line fittings	Each type/size 25Nos.	
(vi)	Impulse Pipe	Each type/size 100Mtrs.	
(vii)	Copper/SS Tube	Each type/size 100Mtrs.	
(viii)	Fittings for Copper/SS Tube	Each type/size 100Nos.	
8.04.13	Conductivity Type Level Switch		
(i)	Conductivity Ttype level Probes	10% of total nos. used in the system or	
		minimum 4(four) nos. whichever is more.	
(ii)	Complete Electronics unit	1Set	
(iii)	Isolating/Root Valve	2Nos.	
0 04 45	Cold Junction Componentian Power	10% of total nos. used in the system or	
0.04.15	Cold Junction Compensation Boxes	minimum 2(two) nos. for each type/size whichever is more.	
		1(one) no. each type/rating used in the	
8.04.16	Current/Voltage Transducers	system	
8 04 17	MWatt/MVAR Transducer	1(one) no. each type/rating used in the	
		system	
	Chlorine Leak Detector System		
	Sensor Unit (complete)	2No.	
(ii)	Transmitter/Processing Unit (complete)	2No.	
8.07.00	Pneumatic Control Valve & Power Cylinder (Applicable for all Modulating	T	
	Type & On-Off/Isolating Type)		
	Control Valve		
	Pneumatic Diaghragm for Diaghragm actuated valve	2(two) nos. for each type of Actuator	
	Actuator Seal Kit for Pneumatic Cylinder actuated valve	2(two) nos. for each type of Actuator	
	Gland Packing	1(one) set for each type of Control Valve	
	Stem	1(one) No. for each type of Control Valve	
(v)	Plug	1(one) No. for each type of Control Valve	

(vi)	Seat	1(one) No. for each type of Control Valve	
(vii)	Cage	1(one) No. for each type of Control Valve	
(viii)	Retainer Ring	1(one) set for each type of Control Valve	
(ix)	Seal Ring	1(one) set for each type of Control Valve	
(x)	Gasket	2(two) Sets. for each type of Control Valve	
(//)			
(xi)	Smart Positioner of the Valve	10% of total quantity used in the system or minimum 2(two) nos. whichever is more for	
(/11)	omatti contonoi di the vario	each type and model.	
(xii)	Seal Kit for the Positioner	2(two) Sets. for each type of Positioner	
/:·\	Position Feedback Transmitter	10% of total quantity used in the system or	
(xiii)	(applicable if it is not integral with the Smart Positioner)	minimum 2(two) nos. whichever is more for each type and model.	
(xiv)	Complete Set of Solenoid Valve for Pneumatic type On/Off Valve	2Nos. for each type & ratings	
(xv)	Solenoid Coil for Pneumatic type On/Off Valve	5Nos. for each type & ratings	
8.07.02	Power Cylinder		
(i)	Actuator Seal Kit	2(two) nos. for each type of Power Cylinder	
(-/			
(ii)	Gasket	2(two) Sets. for each type of Power Cylinder	
(iii)	Complete Set of Power Cylinder	1(one) no. each type for all application	
(is A	Smart Positionar of the Valve	10% of total quantity used in the system or minimum 2(two) nos. whichever is more for	
(iv)	Smart Positioner of the Valve	each type and model.	
(v)	Seal Kit for the Positioner	2(two) Sets. for each type of Positioner	
	Position Feedback Transmitter	10% of total quantity used in the system or	
(vi)	(applicable if it is not integral with the Smart Positioner)	minimum 2(two) nos. whichever is more for	
		each type and model.	
(vii)	Complete Set of Solenoid Valve for Pneumatic type On/Off Power Cylinder	2Nos. for each type & ratings	
(viii)	Solenoid Coil for Pneumatic type On/Off Power Cylinder	5Nos. for each type & ratings	
(ix)	Position Limit Switch for Pneumatic type On/Off Power Cylinder	10Nos. for each type & ratings	
8 07 03	I/P Converter for Control Valve/Power Cylinder (if applicable)	10% of total quantity used in the system or minimum 5(five) nos. whichever is more for	
0.07.00	and the second second second of the second o		
		each type and model.	
	Air Lock Relay	10Nos. for each type	
	Air Lock Relay Signal Air Booster Unit		
8.07.05	Signal Air Booster Unit	10Nos. for each type	
8.07.05		10Nos. for each type	
8.07.05	Signal Air Booster Unit	10Nos. for each type 2Nos. for each type	
8.07.05	Signal Air Booster Unit Control Panel And Local/Remote Control Desk	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or	
8.07.05	Signal Air Booster Unit	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model.	
8.07.05 8.10.00 8.10.01	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or	
8.07.05 8.10.00 8.10.01	Signal Air Booster Unit Control Panel And Local/Remote Control Desk	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for	
8.07.05 8.10.00 8.10.01	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or	
8.07.05 8.10.00 8.10.01 8.10.02	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for minimum 2(two) nos. whichever is more for	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station	10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model.	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for minimum 2(two) nos. whichever is more for	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System	10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i)	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system)	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos.	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (ii) (iii)	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type)	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (ii) (iii) 7.12.00	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos.	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (ii) (iii) 7.12.00 7.12.01	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter Control Panel/Desk Mounted Items	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos. 1(one) No.	
8.07.05 8.10.00 8.10.02 8.10.03 8.10.04 8.10.05 (i) (ii) (iii) 7.12.00 7.12.01 7.12.02 7.12.03	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter Control Panel/Desk Mounted Items Push Button Complete assembly Push Button Contact Element (1NO + 1NC) Block Selector Switch	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos. 1(one) No.	
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8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (ii) (iii) 7.12.00 7.12.01 7.12.02 7.12.03 7.12.04 (i)	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter Control Panel/Desk Mounted Items Push Button Complete assembly Push Button Contact Element (1NO + 1NC) Block Selector Switch Meter (Analog and Digital) Ammeter	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos. 1(one) No. 2Nos. for each colour 20Nos. for each type and rating	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (iii) 7.12.00 7.12.01 7.12.02 7.12.03 7.12.04 (i) (ii)	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter Control Panel/Desk Mounted Items Push Button Complete assembly Push Button Contact Element (1NO + 1NC) Block Selector Switch Meter (Analog and Digital) Ammeter Voltmeter	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos. 1(one) No. 2Nos. for each colour 2Nos. for each type and range 2Nos. for each type and range	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (iii) 7.12.00 7.12.01 7.12.02 7.12.03 7.12.04 (i) (ii) (iii)	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter Control Panel/Desk Mounted Items Push Button Complete assembly Push Button Contact Element (1NO + 1NC) Block Selector Switch Meter (Analog and Digital) Ammeter Voltmeter Frequency	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos. 1(one) No. 2Nos. for each colour 2Nos. for each type and range 2Nos. for each type and range 2Nos. for each type and range	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (ii) 7.12.00 7.12.01 7.12.02 7.12.03 7.12.04 (i) (iii) (iii) (iii)	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter Control Panel/Desk Mounted Items Push Button Complete assembly Push Button Contact Element (1NO + 1NC) Block Selector Switch Meter (Analog and Digital) Ammeter Voltmeter Frequency MW	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos. 1(one) No. 2Nos. for each colour 20Nos. 10Nos for each type and rating 2Nos. for each type and range 2Nos. for each type and range 2Nos. for each type and range	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (ii) (iii) 7.12.00 7.12.01 7.12.02 7.12.03 7.12.04 (i) (iii) (iii) (iv) (v)	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter Control Panel/Desk Mounted Items Push Button Complete assembly Push Button Contact Element (1NO + 1NC) Block Selector Switch Meter (Analog and Digital) Ammeter Voltmeter Frequency MW MVAR	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos. 1(one) No. 2Nos. for each colour 20Nos. 10Nos for each type and range 2Nos. for each type and range	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (ii) (iii) 7.12.00 7.12.01 7.12.02 7.12.03 7.12.04 (i) (ii) (iii) (iv) (v) (vi)	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter Control Panel/Desk Mounted Items Push Button Complete assembly Push Button Contact Element (1NO + 1NC) Block Selector Switch Meter (Analog and Digital) Ammeter Voltmeter Frequency MW MVAR Power Factor	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos. 1(one) No. 20Nos. 10Nos for each colour 20Nos. 20Nos. for each type and rating 2Nos. for each type and range	
8.07.05 8.10.00 8.10.01 8.10.02 8.10.03 8.10.04 8.10.05 (i) (ii) (iii) 7.12.00 7.12.01 7.12.02 7.12.03 7.12.04 (i) (ii) (iii) (iii) (iv) (v)	Signal Air Booster Unit Control Panel And Local/Remote Control Desk Mosaic/Conventional Type Push button Station Mosaic Type Push button Station with LED Indication Mosaic Type LED Indication Station Simaphore Indicator Annunciation System Each type of PCB (for non-PLC driven system) Lamp Box with Facia & Lamps (LED type) Hooter Control Panel/Desk Mounted Items Push Button Complete assembly Push Button Contact Element (1NO + 1NC) Block Selector Switch Meter (Analog and Digital) Ammeter Voltmeter Frequency MW MVAR	10Nos. for each type 2Nos. for each type 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 10% of total quantity used in the system or minimum 2(two) nos. whichever is more for each type and model. 2(two)Nos. each type 1(one) No. each 10(ten)Nos. 1(one) No. 2Nos. for each colour 20Nos. 10Nos for each type and range 2Nos. for each type and range	

(ix)	Transducer	1No. for each type and range				
7.12.05	Indicating Lamps complete assembly	20Nos. for each Colour and type				
7.12.06	Mimic Lamps	10Nos. for each Colour and type				
7.12.07	MCB	5Nos. for each type and rating				
7.12.08	Door Limit Switch	5Nos.				
7.12.09	Annunciation system					
(i)	Lamp Box with Facia & Lamps (LED type)	25Nos.				
(ii)	Hooter	1No.				
(iii)	Each type of PCB (for non-PLC driven system)	1(one) no.				
Note 1	Mandatory spares listed above are bare minimum requirement. In case any additional mandatory spares requirement is covered elsewhere in the tender specification apart from specified above, same shall be deemed to have been covered in bidder's scope of supply.					
Note 2	* Refer Volume II A, reference clause of Customer's specification.					

ALLO OF OTTER DRIVET FORMAT		Doc No:	PE-PF-445-160-A001
ANNEXURE-III- LIST OF MANDATORY SPARES NAME OF PROJECT: NAME OF PACKAGE:		Rev No:	0
		Date of issue	26.07.2021
		SAGARDIGHI THERMAL POWER PROJECT, 1 X 660 MW UNIT NO 5, STAGE III. COAL BUNKER DEBLOCKING DEVICES	
		S. No.*	Description
	MECHANICAL SYSTEM		
1.32.02	Compressor	Applicable Spares as Sl. No. 6.05.00	
6.05.00	Compressed Air System		
6.05.01	Dry Air Intake Filter	5 Nos.	
6.05.02	Complete set of Loading- unloading valve assembly	2 Sets (one set means complete replacement for one compressor)	
	Low Pressure Compressor element (Screw) with Drive end & Non-drive end Bearings for Male & Female Elements	replacement for one compressor)	
6.05.04	High Pressure Compressor element (Screw) with Drive end & Non-drive end Bearings for Male & Female Elements	replacement for one compressor)	
	Plug for Inter cooler Tube Bunch	15 Nos	
	Plug for After Cooler Tube Bunch	15 Nos 2 Sets (one set means complete	
6.05.07	Automatic Purge Drain Valve for Inter cooler and After cooler	replacement for one compressor)	
6.05.08	Air Outlet Check Valve	2 Nos.	
6.05.09	Air Outlet Compensator	1Set (one set means complete replacement for one compressor)	
	Lub oil filter	5Nos.	
6.05.11	Lub oil Pressure Regulating valve	1No.	
6.05.12	Different oil seals/O-ring for Lub oil system	4Sets (one set means complete replacement for one compressor)	
	Cooling water Inlet and Outlet connection bellows	2Sets (one set means complete replacement for one compressor) 1Set (one set means complete replacement	
6.05.14	Gear Box Unit Complete	for one compressor)	
6.05.15	Gear Box Component		
(i)	Different Oil Seals/O-ring	2Sets (one set means complete replacement for one compressor)	
	Set Of Bearings	1Set (one set means complete replacement for one compressor)	
	Breathing Unit Component of L.P Cylinder	2Nos	
(i)	Gear sets	1Set (one set means complete replacement for one compressor)	
(ii)	Set of bearings	1Set (one set means complete replacement for one compressor)	
(iii)	Mechanical Seal & O-ring	1Set (one set means complete replacement for one compressor)	
6.05.17	Component of HP Cylinder		
(i)	Gear sets	1Set (one set means complete replacement for one compressor)	
(ii)	Set of bearings	1Set (one set means complete replacement for one compressor) 1Set (one set means complete replacement	
. ,	Mechanical Seal & O-ring	for one compressor) 1Set (one set means complete replacement	
(iv)	Different Safety Valves	for one compressor)	
(v)	Coupling		
. ,	Complete Set of Coupling (Motor to Compressor)	1Set (one set means complete replacement for one compressor)	
(b)	Flexible Rubber for Coupling	4Nos.	
6.05.18	Drain Moisture Trap	2Sets (one set means complete replacement for one compressor)	
	Safety Valve's Springs & Gasket for LP Stage	1Set (one set means complete replacement for one safety valve) 1Set (one set means complete replacement	
	Safety Valve's Springs & Gasket for HP Stage Oil Pump & Motor Complete Assembly	for one safety valve) 1Set	
0.00.21	On Fully & Motor Complete Assembly	11061	!

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6.05.22	Drive Motor	1No.	
		Applicable Item & Quantity same as	
6.05.23	Other Spares as applicable as per the Electrical List	indicated in Electrical list Sl. No.7.08.00,	
		7.12.00 & 7.21.00	
	Compressed Air Line Valves	As applicable as per Sl. No.5.05.02	
6.05.25	C&I Items		
(i)	PLC with MMI System	Applicable Item & Quantity same as	
(-)		indicated in C&I list SI. No. 8.03.00	
/ii\	Field Instruments & Others on applicable on parths C&I List	Applicable Item & Quantity same as	
(ii)	Field Instruments & Others as applicable as per the C&I List	indicated in C&I list SI. No. 8.04.00, 8.07.00 & 8.10.00	
6.05.26	Air Drying Plant (HOC Type)	0.10.00	
		2Sets (one set means complete	
(i)	Pre-filter Elements	replacement for one drier filter)	
(")	After Charles	2Sets (one set means complete	
(ii)	After-filter Elements	replacement for one drier filter)	
		Applicable Item & Quantity same as	
1.32.03	Other Electrical Spares as applicable as per the Electrical List	indicated in Electrical list Sl. No. 7.08.00,	
		7.13.00 & 7.21.00.	
7.08.00	415V System		
7.08.01	11/0.415KV Transformer (for Each make, type and rating of Transformer)		
<u> </u>	, , , , , , , , , , , , , , , , , , , ,	1 cot (1 cot moons total requirement for	
(i)	Door Limit Switch complete set	1 set (1 set means total requirement for one Transformer)	
	Neutral CT	1 no of each type and rating	
- ' '		1 no.	
(iii)	Temperature scanner		
(iv)	bhy	3 No	
(v)	LV Bushing with metal parts, connectors and gaskets	3 No	
(vi)	LV neutral Bushing with metal parts, connectors and gaskets	1 No	
(vii)	Post Insulator	1 set (1 set means total requirement for	
		one Transformer) 1 Set (1 set means total requirement for	
(viii)	Limb of complete LT & HT of temperature sensing devices	one Transformer)	
7.08.02	415V Air Circuit Breaker (for Each make, type and rating of ACB)		
7.00.02	415V All Circuit breaker (for Each make, type and fatting of ACB)	20% of total nos. or minimum 5 nos	
		whichever is higher for each type and rating	
(i)	Trip Coil	used in each switchgear	
		(PCC/PMCC/MCC/ACDB)	
		20% of total nos. or minimum 5 nos	
(ii)	Closing Coil	whichever is higher for each type and rating	
(11)	Closing Coll	used in each switchgear	
		(PCC/PMCC/MCC/ACDB)	
	Spring Charging Motor	2 nos.	
(iv)	Spring Charging Motor with complete Mechanism	2 nos.	
(v)	Spring Charged Limit Switch	5 nos.	
(vi)	Thermal Overload for Spring Charging Motor	2 nos.	
(vii)	Main Contact (Fixed and moving) assembly	5 sets (1 set consists of 3 nos.) for each	
(vii)	main contact (i incu and moving) assembly	type and rating	
(viii)	Arcing Contact (Fixed and moving) assembly	5 sets (1 set consists of 3 nos.) for each	
(*)	g	type and rating	
(ix)	Breaker Jaw Contact (Bus-end & Breaker- end) assembly	5 sets (1 set consists of 3 nos.) for each	
	Sliding Contact (Fixed & Moving)	type and rating	
(x)	Sliding Contact (Fixed & Moving)	3 sets.	
(xi)	Breaker Auxiliary Contact Block	5 nos.	
(xii)	Arcing Chute	2 sets (1 set consists of 3 nos.) for each	
(viii)	Dlug Socket with Prefab cable	type and rating	
	Plug Socket with Prefab cable	3 nos	
(xiv)	Position Limit Switch	5 sets	
	415V PCC, PMCC, MCC, ACDB, DCDB, Elect. Control Panel (For each PCC, PMCC, MCC, ACDB, DCDB and Elect. Control Panel) (applicable		
7.08.03	items of PCC, PMCC, MCC, ACDB, DCDB and Elect. Control Panel) (applicable		
	be considered)		
(i)	Indicating Lamps complete assembly		
(a)	Red	3 nos of each make and type.	
	Blue	3 nos of each make and type.	
(b)		· · · · · · · · · · · · · · · · · · ·	
(c)	Green	3 nos of each make and type.	
- ' '	White	3 nos of each make and type.	
(e)	Amber	3 nos of each make and type.	
_ ` '	СТ	2 nos. for each make, type and Rating	
(iii)	Transducer	2 no for each make, type and Rating	
(iv)	Trip / Neutral / close Control Switch	2 nos. for each make, type and Rating	

(v)	Switch gear or MCC / Trial / Normal selector switch	2 nos. for each make, type and Rating
	Local/Remote selector switch	2 nos. for each make, type and Rating 2 nos. for each make, type and Rating
(vi) (vii)	AC Supply On / Off Switch	1 no. for each make, type and Rating
_ `	DC Supply On / Off Switch	1 no. for each make, type and Rating
	Motor Heater On /Off Switch	1 no. for each make, type and Rating
_ ` '	DC Supply Source Selector Switch (3-position)	1 no. for each make, type and Rating
	Ammeter Selector Switch	1 no. for each make, type and Rating
. ,	Voltmeter Selector Switch	1 no. for each make, type and Rating
(xiii)	Voltmeter	2 no. for each make, type and Rating
(xiv)	Ammeter	2 no. for each make, type and Rating
_ ` _	Auxiliary Control Contactor	2 no. for each make, type and realing
		10% of total nos for each make, type and
(a)	Auxiliary Control Contactor complete assembly	Rating.
(b)	Auxiliary Control Contactor spare kits	10% of total nos. for each make, type and
(5)	Turning Control Contactor Sparo title	Rating.
(c)	Auxiliary Control Contactor Coils	10% of total nos for each make, type and Rating.
(xvi)	Power Contactor	Induity.
		10% of total nos for each make, type and
(a)	Power Contactor Complete Assembly	rating
(b)	Power Contactor spare kits	10% of total nos for each make, type and
(~)		Rating. 10% of total nos for each make, type and
(c)	Power Contactor Coils	10% of total nos for each make, type and Rating.
,	MOOD	5% of total nos. for each make, type and
(xvii)	MCCB	rating.
(xviii)	MCB	5% of total nos. for each make, type and
(XVIII)	NIOD .	rating.
(xix)	Switch Fuse Unit (DC)	10% of total nos. for each make, type and rating.
		5% of total nos. for each make, type and
(xx)	Power Fuse	rating.
(xxi)	Control Fuse	5% of total nos. for each make, type and
(XXI)	OOHII 011 430	rating.
(xxii)	Thermal Overload Relay	5% of total nos. for each make, type and rating.
(xxii)	Sliding contact (Fixed and moving) Complete assembly	2 sets of each make, type and rating
		2 sets of each make, type and rating (1 set
(xxiii)	Busbar to module Lira Contact assembly	
	Bassar to modulo Elia Contact assembly	means all 3 ph+ neutral)
(xxiv)	Control and Aux. Transformer	1 no of each make, type and rating
(xxiv)	Control and Aux. Transformer Delay Timer	1 no of each make, type and rating 2 no of each make, type and rating
(xxiv) (xxv) (xxvi)	Control and Aux. Transformer Delay Timer Power Terminal Block	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxix)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay):	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxix) (xxx) (a) (b)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxi)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (xxx) (xxx) (xxx) (xxx) (xxxi) (xxxi)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) (xxxiii)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable)	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) (xxxiii)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) (xxxiii)	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable)	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxi) (xxxii) (xxxiii) 7.13.00	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable)	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 2 Nos. for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxi) (xxxii) (xxxiii) 7.13.00	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 2 Nos. for each type, make and rating, 1 no.
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxii) (xxxiii) 7.13.00	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 2 Nos. for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxii) (xxxiii) 7.13.00	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 2Nos. for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) 7.13.00 7.13.01	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 2Nos. for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller 4Nos. of each type
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 2 Nos. for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller 4Nos. of each type 4Nos. of each type
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04 7.13.05 7.13.06	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit Electronic cards Position Feed Back Transmitters Control Unit	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 2 Nos. for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller 4Nos. of each type 4Nos. of each type 4Nos. of each type 4Nos. of each type
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04 7.13.05 7.13.06	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit Electronic cards Position Feed Back Transmitters	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 2 nos for each make, type and rating 4 nos for each make, type and rating 5 nos for each make, type and rating 6 nos for each make, type and rating 7 nos for each type, make and rating, 1 nos for H2 cooler Temperature controller and 1 nos for stator water temperature controller 8 nos for each type 9 nos for each type
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04 7.13.05 7.13.06 7.13.07	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit Electronic cards Position Feed Back Transmitters Control Unit	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 2 nos for each make, type and rating 4 nos for each make, type and rating 2 nos for each make, type and rating 4 set for each make, type and rating 4 set for each type, make and rating, 1 no. 5 for H2 cooler Temperature controller and 1 no. 6 for stator water temperature controller 4 Nos. of each type
(xxiv) (xxvi) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04 7.13.05 7.13.06 7.13.07 7.13.08 7.13.09	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit Electronic cards Position Feed Back Transmitters Control Unit Limit Switch Assembly Torque Switch Assembly Power Contactor	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 4 no. for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller 4 Nos. of each type
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04 7.13.05 7.13.06 7.13.07 7.13.08 7.13.09 7.13.10	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit Electronic cards Position Feed Back Transmitters Control Unit Limit Switch Assembly Torque Switch Assembly Power Contactor Auxiliary Contactor	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 2 Nos. for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller 4Nos. of each type 2 Nos each type and rating 2 Nos each type and rating 5Nos. for each type and rating 5Nos. for each type and rating 5Nos. for each type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxix) (xxxii) (xxxii) (xxxii) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04 7.13.05 7.13.06 7.13.07 7.13.08 7.13.09 7.13.10 7.13.11	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit Electronic cards Position Feed Back Transmitters Control Unit Limit Switch Assembly Torque Switch Assembly Power Contactor Auxiliary Contactor Thermal Over Load Relay	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 1 set for each make, type and rating 2 Nos. for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller 4Nos. of each type 4Nos. of each type 4Nos. of each type 4Nos. of each type 2 Nos each type 2 Nos each type and rating 5 Nos. for each type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxx) (a) (b) (xxxii) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04 7.13.05 7.13.06 7.13.07 7.13.08 7.13.09 7.13.10 7.13.11 7.13.12	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit Electronic cards Position Feed Back Transmitters Control Unit Limit Switch Assembly Torque Switch Assembly Power Contactor Auxiliary Contactor Thermal Over Load Relay Motor	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 2 nos for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller 4Nos. of each type 2 Nos each type and rating 5Nos. for each type and rating 5Nos. for each type and rating 5Nos. for each type and rating 1No. each type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxix) (xxxiii) (xxxii) (xxxii) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04 7.13.05 7.13.06 7.13.07 7.13.08 7.13.09 7.13.10 7.13.11 7.13.12 7.13.13	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit Electronic cards Position Feed Back Transmitters Control Unit Limit Switch Assembly Torque Switch Assembly Torque Switch Assembly Power Contactor Auxiliary Contactor Thermal Over Load Relay Motor Complete Seal kit	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 2 nos for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller 4Nos. of each type 2 Nos each type and rating 5 Nos. for each type and rating 5 Nos. for each type and rating 5 Nos. for each type and rating 2 Nos. for each type and rating
(xxiv) (xxv) (xxvi) (xxvii) (xxviii) (xxxiii) (xxix) (xxxi) (xxxi) (xxxiii) 7.13.00 7.13.01 7.13.02 7.13.03 7.13.04 7.13.05 7.13.06 7.13.07 7.13.08 7.13.09 7.13.10 7.13.11 7.13.12	Control and Aux. Transformer Delay Timer Power Terminal Block Control Terminal Block End plate for Power and Control terminal block Energy meter Relays (Other than numerical relay): Conventional (Electromagnetic/Static type) Relay Aux. relays & Lock out relays & TIMERS MCCB Status (On/off) Monitoring Switch/Contact Push Button (On/Off) Complete Assembly Annunciation Facia with lamps complete set (if applicable) Actuator Complete set of Actuator Power Unit for Modulating Actuator DC-DC Power Pack Unit Electronic cards Position Feed Back Transmitters Control Unit Limit Switch Assembly Torque Switch Assembly Power Contactor Auxiliary Contactor Thermal Over Load Relay Motor	1 no of each make, type and rating 2 no of each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 2 sets for each make, type and rating 1 no for each make, type and rating 2 no for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 2 nos for each make, type and rating 1 set for each make, type and rating 2 nos for each type, make and rating, 1 no. for H2 cooler Temperature controller and 1 no. for stator water temperature controller 4Nos. of each type 2 Nos each type and rating 5Nos. for each type and rating 5Nos. for each type and rating 5Nos. for each type and rating 1No. each type and rating

70400	Matan	T
7.21.00		
	415 Volt Motor Motor of each type and rating (Note: motors covered in mechanical spare	
(i)	items need not to be included here again) 10% of the installed quantity or	10% of the installed quantity or minimum 1 number whichever be higher
	End Shield Cover Driving & Non-Driving End	1 set for each type and rating of Motor
(iii)	Heaters	2 sets for each type and rating of motor
(iv)	Bearings (DE and NDE) for each type and rating of motor	2 sets
	Cooling Fan for all type and rating of LT motors	One (1) set
. ,	Dust seals and gaskets for each type of motors	1 Set
	Motor Terminal Block	1 no. for each type and rating of Motor
(viii)	Complete Set of Coupling	1 set for each type and rating
7.21.04	DC Motor	7
(:)	Motor of each type and rating (Note: motors covered in mechanical spare	10% of the installed quantity or minimum 1
(i)	items need not to be included here again)	number whichever be higher
(ii)	Carbon brushes	2 sets for each type and rating of Motor
(iii)	Brush assemblies	2 sets for each type and rating of Motor
(iv)	Terminal blocks	1 set for each type and rating of Motor
(v)	Heaters	1 set for each type and rating of Motor
	Complete Set of Coupling	1 set for each type and rating of Motor
	Bearings (DE and NDE) for each type and rating of motor	1 set for each type and rating of Motor
(viii)	Cooling Fan	1 set for each type and rating of Motor
1.32.05	Other C&I Spares as applicable as per the C&I List	Applicable Item & Quantity same as indicated in C&I list SI No.8.04.00 & 8.07.00
8.04.00	Field Instrument	
8.04.01	Electronic Transmitters	
(i)	Pressure	1(One) no. complete set for each type and model/range used in the system
(ii)	Differential Pressure	1(One) no. complete set for each type and model/range used in the system
(iii)	Level	1(One) no. complete set for each type and model/range used in the system
(iv)	Speed	1(One) no. complete set for each type and model/range used in the system
(v)	FlowTransmitter	1(One) no. complete set for each type and model/range used in the system 1(One) no. complete set for each type and
. ,	3-D Ultrasonic level Transmitter	model/range used in the system
8.04.02	Different type of Switches	2(two)no. of each type & model/range used
(i)	Pressure Switch	in the system
(ii)		2(two)no. of each type & model/range used in the system
(iii)		2(two)no. of each type & model/range used in the system
(iv)	Flow Switch	2(two)no. of each type & model/range used in the system
(v)	Temperature Switch	2(two)no. of each type & model/range used in the system
(vi)	Dust Detector	1(one)no. of each type & model used in the system
8.04.03	Thermocouple	10% of each type and length used in one unit
8.04.04	RTD	10% of each type and length used in one unit
8.04.05	Thermo-well for both TC and RTD	2(Two) nos. for each type and rating/length used in the system
8.04.06	Solenoid Valve	
(i)	Complete Solenoid Valve Assembly	2Nos. for each type and rating used in the
	Coil (single or double coil type)	system 10% of total nos. used in the system or minimum 5(five) Nos. whichever is more for
. ,		each type and rating.
8.04.07	Different types of Gauge	400/ of total gas aread in the contract
(i)	Pressure Gauge	10% of total nos. used in the system or minimum 1(one) no. whichever is more for each type and range.
(ii)	Differential Pressure Gauge	10% of total nos. used in the system or minimum 1(one) no. whichever is more for each type and range.

		10% of total nos. used in the system or
(iii)	Temperature Gauge	minimum 1(one) no. whichever is more for
(111)	Temperature Gauge	each type and range.
		10% of total nos. used in the system or
(iv)	Magnetic Level Gauge	minimum 1(one) no. whichever is more for
(,	magnesis zovol daugs	each type and range.
	Air Filter Regulator including moisture separator complete set with pressure	
8.04.08	gauges	10Nos.
		10% of total nos. used in the system or
0.04.00	Determeter	minimum 2(Two) nos. whichever is more for
8.04.09	Rotameter	each type, rating,/model and size used in
		the system.
8.04.10	Gauge Glass	1No. for each type and size
8.04.11	Erection Hardware	
		10% of total nos. used in the system or
(:)	Transportation of Manufald	minimum 2(Two) nos. whichever is more for
(i)	Transmitter's Manifold	each type, rating,/model and size used in
		the system.
		10% of total nos. used in the system or
/ii\	Impulso Lino Boot/Source valve	minimum 4(four) nos. whichever is more for
(ii)	Impulse Line Root/Source valve	each type, rating,/model and size used in
		the system.
		10% of total nos. used in the system or
(iii)	Impulse Line Isolation valve	minimum 4(four) nos. whichever is more for
(111)	Impalee Line Isolation valve	each type, rating,/model and size used in
		the system.
		10% of total nos. used in the system or
(iv)	Impulse Line Drain valve	minimum 4(four) nos. whichever is more for
(.*)		each type, rating,/model and size used in
		the system.
	Impulse Line fittings	Each type/size 25Nos.
(vi)	Impulse Pipe	Each type/size 100Mtrs.
(vii)	Copper/SS Tube	Each type/size 100Mtrs.
(viii)	Fittings for Copper/SS Tube	Each type/size 100Nos.
	Conductivity Type Level Switch	
		10% of total nos. used in the system or
(i)	Conductivity Ttype level Probes	minimum 4(four) nos. whichever is more.
(ii)	Complete Electronics unit	1Set
	Isolating/Root Valve	2Nos.
()	iosialing reservants	10% of total nos. used in the system or
8.04.15	Cold Junction Compensation Boxes	minimum 2(two) nos. for each type/size
0.00	2014 2411011011 20110411011 201100	whichever is more.
		1(one) no. each type/rating used in the
8.04.16	Current/Voltage Transducers	system
0.04.47	MWatt/MVAR Transducer	1(one) no. each type/rating used in the
8.04.17	MWall/MVAR Transducer	system
8.04.18	Chlorine Leak Detector System	
	Sensor Unit (complete)	2No.
	Transmitter/Processing Unit (complete)	2No.
	Pneumatic Control Valve & Power Cylinder (Applicable for all Modulating	
8.07.00	Type & On-Off/Isolating Type)	
8.07.01	Control Valve	
	Pneumatic Diaghragm for Diaghragm actuated valve	2(two) nos. for each type of Actuator
	Actuator Seal Kit for Pneumatic Cylinder actuated valve	, ,
(ii)	•	2(two) nos. for each type of Actuator
(iii)	Gland Packing	1(one) set for each type of Control Valve
(iv)	Stem	1(one) No. for each type of Control Valve
(v)	Plug	1(one) No. for each type of Control Valve
(vi)	Seat	1(one) No. for each type of Control Valve
· , ,	Cage	1(one) No. for each type of Control Valve
_ ` ′	Retainer Ring	1(one) set for each type of Control Valve
<u> </u>	Seal Ring	1(one) set for each type of Control Valve
	-	· · ·
(x)	Gasket	2(two) Sets. for each type of Control Valve
		10% of total quantity used in the system or
(xi)	Smart Positioner of the Valve	minimum 2(two) nos. whichever is more for
(^,')	Ca Solution of the Vario	each type and model.
(xii)	Seal Kit for the Positioner	2(two) Sets. for each type of Positioner
(////)		10% of total quantity used in the system or
(xiii)	Position Feedback Transmitter	minimum 2(two) nos. whichever is more for
(7.111)	(applicable if it is not integral with the Smart Positioner)	each type and model.
(xiv)	Complete Set of Solenoid Valve for Pneumatic type On/Off Valve	2Nos. for each type & ratings
(717)	Somplete Set of Colonida valve for Friedmane type On/On valve	21100. Tot odon typo a ratingo