

**1x800 MW KOTHAGUDEM TPS-Mandatory Spares List (Electrical)** **ANNEXURE-A**

Contract BOQ No.	Description	Qty.
<b>4</b>	<b>400 KV Switchyard</b>	
<b>4.1</b>	<b>Circuit Breaker</b>	
4.1.1	Complete pole with column and interrupter and operating mechanism but without support structure	1No.
4.1.2	Rubber gaskets, 'O' rings and seals (complete replacement for one breaker)	3Sets
4.1.3	Trip coils with resistor	3Nos.
4.1.4	Closing coils with resistor	3Nos.
4.1.5	Set of fixed contacts, moving Contacts and contacts for pre-insertion resistor	3Sets
4.1.6	Pre-insertion resistor	3Nos.
4.1.7	Molecular filter for SF6 circuit of 1 pole	1Set
4.1.8	Gas Density monitor	2Nos.
4.1.9	Operating mechanism with motor	2Nos.
4.1.10	Fixed, moving and arcing contacts of 1 pole	1Set
4.1.11	Auxiliary Switch	1Set
4.1.12	Air pressure switch	1No.
4.1.13	SF6 Gas pressure switch	1No.
4.1.14	Air pressure gauge	1No.
4.1.15	Contacts for circuit	1No.
4.1.16	MCB/MCCB for DC Circuit	1No.
4.1.17	MCB/MCCB for AC circuit	1No.
4.1.18	Spare fuses for each type & Rating	2Sets
4.1.19	Auxiliary Relay	1Set
4.1.20	Complete set of gaskets	2Sets
4.1.21	Set of seals	2Sets
4.1.22	Isolation valves, control valves & safety valves for air or oil system	1Set
<b>4.2</b>	<b>Disconnect switch</b>	
4.2.1	Complete pole of centre break disconnecting switch with operating mechanism and two earth switches	4Nos.
4.2.2	Fixed main & arcing contact assembly for Horizontal break Isolator	6Nos.
4.2.3	Support insulators for one pole	9Nos.
4.2.4	Support Bearing	3Sets
4.2.5	Hinge pin	6Nos.
4.2.6	Terminal pad	6Nos.
4.2.7	Auxiliary switch assembly for Main blade (6 NO + 6 NC)	3Sets
4.2.8	Auxiliary switch assembly for Main blade (4 NO + 4 NC)	2Sets
4.2.9	Limit switches for one operating mechanism complete	3Sets
4.2.10	Operating mechanism Box	3Nos.
4.2.11	Drive motor with gear box	2Sets.
4.2.12	Operating mechanism Box for earth switch	2Nos.
<b>4.3</b>	<b>Current Transformer</b>	
4.3.1	Current Transformer	3Nos.
4.3.2	Oil Seals	6Nos.
4.3.3	Insulators	6Nos.
<b>4.4</b>	<b>Capacitive Voltage Transformer</b>	
4.4.1	Capacitive Voltage Transformer	3Nos.
4.4.2	Oil Seals	6Nos.
4.4.3	Insulators	6Nos.
<b>4.5</b>	<b>Lightning Arrestor</b>	

4.5.1	Lightning Arrestor complete with insulator base and surge counter with leakage current monitor	3Nos.
<b>4.6 Not used</b>		
<b>4.7 Switchyard Material &amp; Hardware</b>		
4.7.1	ACSR Conductor	300 meter
4.7.2	4" Tubular Aluminium Bus	100 meter
4.7.3	Tension insulator string assembly set with hardware of each type	6Nos.
4.7.4	Suspension insulator string assembly set with hardware of each each type	6Nos.
4.7.5	Conductor Spacers, Clamps and Connectors	12Nos. each type
4.7.6	Disc Insulator for each type	24Nos.
4.7.7	Post Insulator Stack for each type	6Nos.
<b>8 415V System</b>		
8.1	Air Circuit Breaker	<b>1 Lot (Included as applicable for switchyard)</b>
8.1.1	Trip Coil	
8.1.2	Closing Coil	
8.1.3	Spring Charging Motor	
8.1.4	Spring Charging Motor with complete Mechanisim	
8.1.5	Spring Charged Limit Switch	
8.1.6	Thermal Overload for Spring Charging Motor	
8.1.7	Breaker Contact	
8.1.7.1	Main Contact (Fixed and moving) assembly	
8.1.7.2	Arcing Contact (Fixed and moving) assembly	
8.1.7.3	Breaker Jaw Contact ( Bus-end & Breaker- end) assembly	
8.1.7.4	Sliding Contact (Fixed & Moving)	
8.1.7.5	Breaker Auxiliary Contact Block	
8.1.8	Arcing Chute	
8.1.9	Plug Socket with Prefab cable	
8.1.10	Position Limit Switch	
8.1.11	Indicating Lamps complete assembly	
8.1.11.1	Red	
8.1.11.2	Amber	
8.1.11.3	Green	
8.1.11.4	White	
8.1.11.5	Blue	
8.1.12	CT	
8.1.13	Transducer	
8.1.14	Breaker Control Switch	
8.1.14.1	Trip / Neutral / close Switch	
8.1.14.2	Sw.gear / Trial / Normal Switch (Local/Remote)	
8.1.14.3	AC Supply On / Off Switch	
8.1.14.4	DC Supply On / Off Switch	
8.1.14.5	Motor Heater On /Off Switch	
8.1.14.6	DC Supply Source Selector Switch (3-position)	
8.1.14.7	Ammeter Selector Switch	
8.1.14.8	Voltmeter Selector Switch	
8.1.15	Voltmeter	
8.1.16	Ammeter	
8.1.17	Auxiliary Control Contactor	
8.1.17.1	Auxiliary Control Contactor DC complete	
8.1.17.2	Auxiliary Control Contactor DC spare kits	
8.1.17.3	Auxiliary Control Contactor DC Coils	
8.2	PMCC/MCC/ACDB	
8.2.1	Contactors	
8.2.1.1	Power Contactor (AC)	
8.2.1.1.1	Power Contactor Complete Assembly	

8.2.1.1.2	Power Contactor spare kits	
8.2.1.1.3	Power Contactor AC Coils	
8.2.1.2	Auxiliary Control Contactor (AC)	
8.2.1.2.1	Auxiliary Control Contactor Complete Assembly	
8.2.1.2.2	Auxiliary Control Contactor spare kits	
8.2.1.2.3	Auxiliary Control Contactor AC Coils	
8.2.2	MCCB (Power Circuit)	
8.2.3	MCB (Control Circuit)	
8.2.4	Switch	
8.2.4.1	Local / Remote Selector Switch	
8.2.4.2	MCCB Status (On/off) Monitoring Switch/Contact	
8.2.4.3	Trial / Normal /MCC Selector Switch	
8.2.4.4	MCC module Service Position Limit Switch	
8.2.5	Thermal Overload Relay	
8.2.6	Sliding Contact (Fixed & Moving)	
8.2.7	Bus bar to MCC module Lira Contact Assembly ( Bus-end & MCC Module-end)	
8.2.8	Indicating Lamps complete assembly	
8.2.8.1	Red	
8.2.8.2	Amber	
8.2.8.3	Green	
8.2.9	Push Button (On/Off) Complete Assembly	
8.2.10	CT	
8.2.11	Ammeter	
8.2.12	Control Transformer	
8.2.13	Off Delay/ On Delay Timer	
8.2.14	Switch Fuse Unit	
8.2.15	Terminal Block	
8.2.15.1	Power Terminal Block	
8.2.15.2	Control Terminal Block	
8.2.15.3	End Plate for Power & Control Terminal Block	
8.3	Energy Meter	
	<b>15 Cable</b>	
15.3	LT Power Cable	500mtr of each type, size & rating of Cables
15.4	Control Cable	500mtr of each type, size & rating of Cables
	<b>19 Plant 220V DC System &amp; Other DC system of Various Voltage Levels</b>	
19.1	Battery	
19.1.1	Battery Cell (Uncharged, Dry)	<b>1 Lot (Included as applicable for switchyard)</b>
19.1.2	Inter connecting cell strips	
19.1.3	Vent plug	
19.1.4	Teak wood cable clamps with hardware	
19.1.5	Hydrometer	
19.1.6	Rubber gloves	
19.1.7	Voltmeter for measuring cell voltage (Center zero type)	
19.1.8	Insulated socket spanner with handle	
19.1.9	Thermometer	
19.2	Float -cum- Boost Charger	
19.2.1	Fuses & fuse links	
19.2.2	SCR	
19.2.3	Diode	
19.2.4	Indicating lamps	
19.2.5	Electronic Module/ PCB/Card	
19.2.6	Pulse transformer	
19.3	For other applicable items SIno.11&7 of this document shall be followed.	