

**Substation Package for Extension of 400kV Tumkur Pooling station (Pavagada) (including transformer & Reactor), Extension of 400/220kV Mysore Substation and Extension of 400/220kV Tumkur (Vasantnarsapur) (Including Transformer) under Transmission System for Ultra Megar Solar Power Park (2000MW) at Tumkur (Pavagada), Karnataka-Phase-II (Part -A)**

**Mandatory Spares - 400 KV TUMKUR (pavagada) EXTN**

Sl. No.	Activity Description	Item Description	Unit	Qty.
		<b>400 KV TUMKUR (pavagada) EXTN</b>		
80	MANDATORY SPARE	Open / Close contactor assembly, timers, key interlock push buttonswitch & auxiliary switches for 420kV Isolator	SET	1
81	MANDATORY SPARE	Limit switch for 420kV Isolator	SET	2
82	MANDATORY SPARE	Corona shield rings for 420kV Isolator	SET	3
83	MANDATORY SPARE	Terminal pads & connectors for 420kV Isolator	EA	3
84	MANDATORY SPARE	336kV Surge Arrester (1-phase)	EA	1
85	MANDATORY SPARE	One complete pole of 245kV, 1600A,40kA CB including pole column, interrupter,operating mechanism and Marshalling Boxbut without support structure	EA	1
86	MANDATORY SPARE	Trip coil with resistor for 245kV Circuit Breaker	EA	2
87	MANDATORY SPARE	Closing coil with resistor for 245kV Circuit Breaker	EA	1
88	MANDATORY SPARE	Terminal pad for 245kV SF6 Circuit Breaker	EA	2
89	MANDATORY SPARE	Terminal Connector Flexible or ExpansionType, 245kV, 1600A, 40kA for 4"IPSAI.Tube to Circuit Breaker	EA	2
90	MANDATORY SPARE	Molecular filter for 245kV SF6 Circuit Breaker	EA	2
91	MANDATORY SPARE	CORONA RING FOR 245KV SF6 CIRCUIT BREAKER	EA	1
92	MANDATORY SPARE	Relays, Power contactors, SFU, limit switches, push buttons, timers &MCB etc. (1 No of each type) for 245kV SF6 Circuit Breaker	SET	1
93	MANDATORY SPARE	Pressure Switches (1 no each type) for 245 kV SF6 Circuit Breaker	SET	1
94	MANDATORY SPARE	Aux. Switch assembly for 245kV, SF6 Circuit Breaker	SET	1
95	MANDATORY SPARE	Rubber gasket, O rings and seals for SF6 gas (complete replacement forone 245kV SF6 Circuit Breaker)	SET	1
96	MANDATORY SPARE	Complete pole for 245kV, 1600A isolator with 1 earth switch includingsupport Insulator, motor operatingmechanism (MOM) with box but excludingstructure	EA	1
97	MANDATORY SPARE	Copper contact fingers for female & male contacts of 245kV DoubleBreak Isolator	SET	2
98	MANDATORY SPARE	Open / Close contactor assembly, timers, key interlock push buttonswitch & auxiliary switches for 245kV Isolator	SET	1
99	MANDATORY SPARE	Limit switch for 245kV Isolator	SET	2
100	MANDATORY SPARE	Corona shield rings for 245 kV, 250A, 40 KA, 1 E/S isolator	EA	3
101	MANDATORY SPARE	Terminal pads & connectors for 245kV Isolator	EA	3
102	MANDATORY SPARE	TRANSFORMER Protection RELAY Group1	SET	1
103	MANDATORY SPARE	Restricted earthfault relay type with non-linear resistor andassociated software in case of numerical relay	EA	1
104	MANDATORY SPARE	Reactor differential protection relay	SET	1
105	MANDATORY SPARE	Restricted earthfault relay type with non-linear resistor andassociated software in case of numerical relay	EA	1
106	MANDATORY SPARE	Numerical Reactor Backup Impedance relay	EA	1
107	MANDATORY SPARE	Ethernet switch of each type	SET	1
108	MANDATORY SPARE	Deluge valve (1 No. of each size)	SET	1
109	MANDATORY SPARE	Trip coil with resistor for 420kV SF6 Circuit Breaker	SET	2

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**Mandatory Spares - 400 KV TUMKUR (pavagada) EXTN**

Sl. No.	Activity Description	Item Description	Unit	Qty.
110	MANDATORY SPARE	Closing coil with resistor for 420kV SF6 Circuit Breaker	EA	1
111	MANDATORY SPARE	Terminal pad for 420kV SF6 Circuit Breaker	EA	2
112	MANDATORY SPARE	Molecular filter for 420kV SF6 Circuit Breaker	EA	2
113	MANDATORY SPARE	Corona rings (1 No of each type) for 420 kV Circuit Breaker	SET	1
114	MANDATORY SPARE	Relays, Power contactors, SFU, limit switches, push buttons, timers & MCB etc. (1 No of each type) for 420kV Circuit Breaker	SET	1
115	MANDATORY SPARE	Pressure switches (1 No. of each type) for 420kV SF6 Circuit Breaker	SET	1
116	MANDATORY SPARE	Aux. Switch/contact assembly for 420kV SF6 Circuit Breaker	SET	1
117	MANDATORY SPARE	Rubber gasket, O rings and seals for SF6 gas (complete replacement for one 420kV SF6 Circuit Breaker)	SET	1
118	MANDATORY SPARE	Grading capacitors (if applicable) for 420kV SF6 Circuit Breaker	EA	1
119	MANDATORY SPARE	COPPER CONTACT FINGERS FOR FEMALE & MALE CONTACTS OF 420KV DOUBLEBREAK ISOLATOR	SET	2
120	MANDATORY SPARE	245 kV, 1600A, 40KA, 1-Phase Current Transformer with 120% extended current rating	EA	1
121	MANDATORY SPARE	420 kV, 3000A, 50KA, 1-Phase Current Transformer with 120% extended current rating	EA	1
122	MANDATORY SPARE	216kV Surge Arrester (1-phase)	EA	1
123	MANDATORY SPARE	One Complete Pole of Double Break Isolator including support Insulator with 1 E/s (excluding structure) with Motor operating Mechanism for 420kV, 2000A, 50kA main Isolator and E/S	EA	1
124	MANDATORY SPARE	ONE POLE OF 420KV, 3150 A, 50KA SF6 CIRCUIT BREAKER INCLUDING GRADING CAPACITOR (IF APPLICABLE), POLE COLUMN INTERRUPTER, WITH DRIVING MECHANISM AND MARSHALING BOX BUT WITHOUT SUPPORT STRUCTURE.	EA	1
<b>2X500 MVA ICT AT TUMKUR</b>				
133	Mandatory Spares	Oil cooler pump with motor for 400kV Transformer	SET	1
134	Mandatory Spares	Buchholz Relay (Main Tank) complete with float and contacts for Transformer	SET	1
135	Mandatory Spares	Local winding temperature indicator (WTI) with contact	EA	1
136	Mandatory Spares	Remote winding temperature indicator (WTI) with sensing device and matching unit	EA	1
137	Mandatory Spares	Magnetic Oil Level Gauge	EA	1
138	Mandatory Spares	Cooler fan with motor for 400kV Transformer	EA	1
139	Mandatory Spares	Remote tap position indicator for 400kV Transformer	EA	1
140	Mandatory Spares	Oil flow indicator for 400kV T/F with flow switch	SET	1
141	Mandatory Spares	245KV, 2000A RIP BUSHING WITH METAL PARTS AND GASKETS	EA	1
142	Mandatory Spares	52kV, 3150A Bushing with metal parts and gaskets	EA	1
143	Mandatory Spares	SPARES INSULATING OIL TO BE HANDED OVER TO OWNER AFTER COMMISSIONING	KL	10
144	Mandatory Spares	36kV, 2000A Bushing with metal parts and gaskets for Transformer	EA	1
145	Mandatory Spares	Starters, contactors, switches and relays for electrical control panels of 400kV T/F (one set of each type)	SET	1
146	Mandatory Spares	420KV, 1250A RIP BUSHING WITH METAL PARTS AND GASKETS	EA	1
<b>125 MVAR BUS REACTOR AT TUMKUR</b>				

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**Mandatory Spares - 400 KV TUMKUR (pavagada) EXTN**

Sl. No.	Activity Description	Item Description	Unit	Qty.
260	Mandatory Spares-Reactor	Buchholz Relay (Main Tank) complete with float and contacts for Reactor	SET	1
261	Mandatory Spares-Reactor	Local and Remote WTI/OTI with sensing device and contact (each) for Reactor	SET	1
262	Mandatory Spares-Reactor	Local and Remote WTI/OTI with sensing device and contact (each) for Reactor	SET	1
263	Mandatory Spares-Reactor	SPARES INSULATING OIL TO BE HANDED OVER TO OWNER AFTER COMMISSIONING	KL	10
264	Mandatory Spares-Reactor	420KV, 800A RIP BUSHING WITH METAL PARTS AND GASKETS	EA	1
265	Mandatory Spares-Reactor	145KV, 800A RIP BUSHING WITH METAL PARTS AND GASKETS	EA	1