

ANNEXURE-A

Project : Substation Package-‘A’ for extensions of 220/132V Purnea S/S associated with Provisions of Transformers and Reactors in Eastern & Northern Region.

Customer : Power Grid Corporation of India Limited

Mandatory Spares

Sl. No.	Item Description	Unit	Quantity
1	2	4	5
	Extension of 220/132 kV Purnea S/S		
1	220/132 kV Power Transformer		
i)	Bushing of each rating with metal parts and gaskets and lifting tools	Set	1
ii)	Oil cooler pump with motor	Set	1
iii)	Cooler fan with motor	No.	1
iv)	Buchholz relay (main tank) complete with float and contacts	Set	1
v)	Local and remote WTI with sensing device and contact(each)	Set	1
vi)	Magnetic oil level gauge	No.	1
vii)	Starters,contactors,switches and relays for electrical control panels(one set of each type)	Set	1
viii)	Remote tap position indicator	No.	1
ix)	Oil flow indicator with flow switch	Set	1
x)	Spare insulating oil to be handed over to POWERGRID after commissioning for O & M requirement	KL	10
2	220 kV Circuit Breaker		
i)	Complete Pole of circuit breaker including grading capacitor, pole column, interrupter, with driving mechanism and Marshaling Box but without support structure for		
	1600 A, 40 KA (No. of Pole)	no	1
ii)	Grading Capacitor	no	1
iii)	Rubber gaskets, 'O' rings and seals	set	1
iv)	Trip coils with resistor	nos	2
v	Closing coils with resistor	nos	1
vi	Terminal Pads & connectors	nos	2
vii)	Molecular filter	nos	2
viii	Corona rings	no	1
ix	Relays, Power contactors, switch fuse units, limit switches, push buttons, timers & MCB etc.	set	1
x	Pressure switches of each type	set	1
xi	Auxiliary switch assembly	set	1
3	145 kV Circuit Breaker		
i)	Complete Pole of circuit breaker including grading capacitor, pole column, interrupter, with driving mechanism and Marshaling Box but without support structure for		
	1250 A, 31.5 KA (No. of Pole)	no	1
ii)	Grading Capacitor	no	1
iii)	Rubber gaskets, 'O' rings and seals	set	1
iv)	Trip coils with resistor	nos	2
v	Closing coils with resistor	nos	1
vi	Terminal Pads & connectors	nos	2
vii)	Molecular filter	nos	2
viii	Corona rings	no	1
ix	Relays, Power contactors, switch fuse units, limit switches, push buttons, timers & MCB etc.	set	1

Sl. No.	Item Description	Unit	Quantity
1	2	4	5
x	Pressure switches of each type	set	1
xi	Auxiliary switch assembly	set	1
4	220 kV Isolator		
i)	One complete pole including support Insulator, motor operating mechanism (MOM) with box but excluding structure		
	1600A, 40 KA, 2 E/S (no. of pole)	no	1
ii)	Copper contact fingers for male & female contacts	set	2
iii)	Open/Close contactor assembly, timers, key interlock push button switch & auxilliary switches	set	1
iv)	Limit Switch	set	2
v	Terminal Pads & Connectors	nos	3
vi	Corona shield rings	nos	3
5	145 kV Isolator		
i)	One complete pole including support Insulator, motor operating mechanism (MOM) with box but excluding structure		
	1250A, 31.5 KA, 2 E/S (no. of pole)	no	1
ii)	Copper contact fingers for male & female contacts	set	2
iii)	Open/Close contactor assembly, timers, key interlock push button switch & auxilliary switches	set	1
iv)	Limit Switch	set	2
v	Terminal Pads & Connectors	nos	3
vi	Corona shield rings	nos	3
6	220kV Current Transformer		
i)	1600A, 40kA,120 % extended current rating	no	1
7	132kV Current Transformer		
i)	800A, 31.5kA,120 % extended current rating	no	1
8	132 kV Capacitive Voltage Transformer		
i)	4400pF	no	1
9	216 kV Surge Arrester		
i)	Complete LA	No.	1
ii)	Surge counter/monitor	Nos.	5
10	120 kV Surge Arrester		
i)	Complete LA	No.	1
ii)	Surge counter/monitor	Nos.	5
11	Control & Protection		
i)	Transformer protection panel		
a)	Transformer differential protection	No.	1
b)	REF protection relay with non-linear resistor	No.	1