

BREAK-UP OF MANDATORY SPARES

S. No.	Description (as specified in BPS)	Unit	Nalagarh Substation	SASARAM Substation
1.	420kV Circuit Breaker			
a)	One Complete Pole of 420kV, 3150A, 63KA CB without PIR Pole column interrupter, with driving mechanism and Marshaling Box but without support structure.	Pole (No.)	-	1
b)	Grading capacitor (if applicable)	No	-	1
c)	Rubber gasket, 'O' rings and seal (For Complete replacement for one phase)	Set	-	1
d)	Trip coils with resistor	Nos.	-	2
e)	Closing coils with resistor	Nos.	-	1
f)	Terminal Pad with connector	Nos.	-	2
g)	Molecular filter (For Complete replacement for one phase)	Nos.	-	2
h)	Corona Rings	Nos.	-	1
i)	Relay Power contactors, switch fuse units, limit switches, push button, timers & MCB etc (One No. of each Type)	Set	-	1
j)	Pressure switch of each type/Density monitor (One No. of each Type)	Set	-	1
k)	Auxiliary switch assembly (For one Phase of CB)	Set	-	1
2.	420kV Isolator (3150A, 63kA, Isolator with one E/S)			
a)	One complete pole of Isolator including support insulator with 1 E/S with operating mechanism for main isolator and earth switch (excluding structure)	Pole (No.)	-	1
b)	Copper contact fingers for female & male contacts (for 1-ph of isolator)	Set	-	2
c)	Open/Close Contactor Assembly, Timer, Key Interlock push button switch & auxiliary switches (1 No of each type)	Set	-	1
d)	Limit switch (for 1-ph of isolator)	Set	-	2
e)	Terminal pads & Connectors (for 1-ph of isolator)	Nos.	-	3
f)	Corona shielding ring (for 1-ph of isolator)	Set	-	3
3.	400kV CT			
a)	3000A, 63kA, 400kV Current Transformer (1-Ph) complete in all respect including terminal connectors	No.	-	1
4.	800KV Bus Post insulator			

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a)	Bus Post Insulator Assembly (Complete) (except for Wave Trap)	Set	-	2
5.	245kV Isolator			
a)	One Complete Pole including support insulator, earthswitch, Motor operating mechanism (MOM) but excluding support structure. (245kV, 3150A, 50kA without E/S)	Pole (No.)	1	-
b)	Copper contact fingers for male & female contact (for 1-ph of isolator)	Set	2	-
c)	Open/Close contactor assembly, timers, key interlock, push button switches & Auxiliary switches (1 No of each type)	Set	1	-
d)	Limit Switch (for 1-ph of isolator)	Set	2	-
e)	Terminal Pads (for 1-ph of isolator) (One No of each type)	Nos.	3	-
f)	Corona Shield rings (for 1-ph of isolator) (if applicable)	Set	3	-
g)	Terminal connectors for isolator (1 no. of each type)	Set	3	-
6.	216kV Surge Arrester			
a)	Complete LA with insulating base, surge counter/monitor & terminal connector (of each type)	No	1	-
b)	Surge Counter/Monitor	No	2	-
7.	245kV CVT			
a	245kV, 4400pF CVT	No.	2	-
8.	220KV Bus Post insulator			
	Bus Post Insulator Assembly (Complete) (except for Wave Trap)	Set	2	-
9.	Relay & Protection Panels			
	Control Switching Device			
a)	Controlled Switching Devices along with transducers, Sensors, Cables, Contactors, Switches etc (make specific)	Set	-	1
	Line Protection Panel			
b)	Line Protection Relay (Main-1)	Set	1	-
c)	Line Protection Relay (Main-2)	Set	1	-

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	Reactor Protection Panel			
d)	Reactor Differential Protection	Set	-	1
e)	REF with non-linear resistor	Set	-	1
f)	Reactor Back up impedance	Set	-	1
	Common Spares			
g)	Bay unit module	Set	-	1
h)	LBB Relay (If standalone)	No.	1	1
i)	Auxiliary & Trip relays (of each type)	No.	1	1
10.	Substation Automation/SCADA System			
a)	Bay Control Unit (IED) of Main System	No	1	1
b)	Ethernet switch suitable for 19" Rack Mounting: Ports: 24 Fiber Optic Ports	No	1	1
11.	FIRE PROTECTION SYSTEM			
a)	Smoke/Heat Detectors	No.	-	1
12.	Clamps & Connectors			
a)	Each type (excluding equipments)	No.	-	1