

ANNEXURE-III

BREAK-UP OF MANDATORY SPARES

S.No	Description	Unit	S/S wise Quantity (as specified in BPS)	
			400 kV Kashipur S/s	400kV Srinagar S/s.
1	400kV Class Reactor			
a)	Bushing of each rating with metal parts & gaskets	Set	1	-
b)	Buchholz relay (each type & rating) complete (maintank) with floats & contacts	Set	1	-
c)	Local Winding temperature indicator with sensing device & contact (each type & rating)	Set	1	-
d)	Magnetic oil level gauge	No.	1	-
e)	Set of starters, contactors, relays and switches for electrical control panel (one set of each type)	Set	1	-
f)	Spare Insulating Oil	kL	5	-
g)	OTI with contacts and sensing device (each type & rating)	No.	1	-
2	420kV Circuit Breaker			
a)	Complete Pole (Phase) of circuit Breaker including closing resistor (if applicable), grading capacitor (if applicable), Pole column, interrupter, operating mechanism, marshaling box, corona ring (if applicable) but without support structure (420kV, 3150A, 63/40kA as applicable)	Pole (No.)	1	1
b)	Grading Capacitor (if applicable)	Nos.	2	2
c)	Rubber Gasket "O Ring" and seals	Set	1	1
d)	Trip coils with resistor (as applicable)	Set	2	2
e)	Closing coils with resistor (as applicable)	Set	2	2
f)	Terminal Pads (One No of each type)	Set	2	2
g)	Molecular filter	Nos.	2	2
h)	Corona Rings (if applicable)	Nos.	1	1
i)	Relay, Power contactors, switch fuse units, limit switches fuse units, limit switches, push buttons, timers & MCB etc	Set	1	1
j)	Pressure Switch of each type	Set	1	1
k)	Auxiliary Switch assembly	Set	1	1
l)	Operation Counter	No.	1	1
m)	Complete Drive Mechanism	Set	1	1
n)	SF6 Gas	-	Equivalent to 2 Poles	Equivalent to 2 Poles
3	420kV Isolator			
a)	One Complete Pole including support insulator, earthswitch, Motor operating mechanism (MOM) but excluding support structure (420kV, 3150A, 63kA with one E/S)	Pole (No.)	1	-
b)	Copper contact fingers for male & female contact	Set	2	-
c)	Open/Close contactor assembly, timers, key interlock push button switch & Auxiliary switches	Set	1	-
d)	Limit Switch	Set	2	-

Technical Specification, Specification No. :KRTL/TBCB/400kV/ Khandhukhal & Rampura/G1

Dated:-----

Project Construction of "400kV Khandukhal (Srinagar)- Rampura (Kashipur) D/c line" - 194 Km with Twin HTLS conductor along with associated 400kV AIS S/S Extension Package SS01 for (i) Extn. of 400kV Rampura (Kashipur) S/S including 400kV class Line Reactor and (ii) Extn. of 400kV Khandukhal (Srinagar) S/S" under Turnkey basis - Bids invited by M/s. Khandukhal -Rampura Transmission Limited (hereafter referred as KRTL)"

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e)	Terminal Pads	Nos.	3	-
f)	Corona Shield rings (if applicable)	Nos.	3	-
4	420kV Current Transformer			
a)	420kV, 3000A, 63/40kA (as applicable) Current Transformer with 120% extended current rating	Nos.	1	1
5	420kV Capacitive Voltage Transformer			
a)	420kV, 4400pF CVT	Nos.	1	1
6	336kV Surge Arrester			
a)	Complete LA with insulating base, surge counter/monitor	Nos.	2	2
b)	Surge Counter/Monitor	Nos.	2	2
7	Control, Relay & Protection Panels			
a)	Control Switching Device (each type)	Set	1	-
b)	Numerical Distance Protection relay (of each type)	Set	1	-
c)	Line Current Differential Relay (of each type)	Set	-	-
d)	Transformer Differential Protection Relay	Set	-	-
e)	REF relay with non-linear resistor for Transformer Protection	Set	-	-
f)	Reactor Differential Protection relay	Set	1	-
g)	REF relay with non-linear resistor for Reactor Protection	Set	1	-
h)	Reactor back-up Impedance protection relay	Set	1	-
i)	Power Supply module for Bus Bar protection	No.	-	-
j)	Bus bar bay unit module	Set	1	-
k)	LBB Relay (If standalone)	No.	1	-
l)	Auxiliary & Trip relays (installed CRP Panel)	No.	2 (each type)	-
8	PLCC Equipment			
a)	Set of Prints for carrier terminal (Speech & Protection)	Set	1	1
b)	Set of Prints for analogue protection coupler	Set	1	1
c)	Digital Tele-protection coupler	Set	1	1
9	420kV Bus Post Insulator			
a)	Bus Post Insulator	Sets	2	-
10	Clamps & Connectors			
a)	Clamps & Connectors of each type	Nos.	3	3
11	Power & Control Cable			
a)	10Cx2.5 sq. mm Control Cable	Mtr	1000	-
b)	4Cx6 sq. mm Power Cable	Mtr	500	-
c)	4Cx16 sq. mm Power Cable	Mtr	500	-
d)	3.5Cx35 sq. mm Power Cable	Mtr	500	-

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