BREAK-UP OF MANDATORY SPARES

Sl. No	Description	Unit	Quantity for 765 kV Pune (West) GIS S/s
1.0	**765kV Capacitive Voltage Transformer**		
a	765kV, 8800pF CVT	Nos.	2
2.0	**624kV Surge Arrester**		
a	Complete L.A. (each rating) with insulating base, surge counter/monitor	Nos.	2
b	Surge counter/monitor	Nos.	2
3.0	**Control Relay & Protection System**		
(I)	**Line Protection Panel (Each Make & Type)**		
a	Numerical Distance relay (if applicable)	No.	1 (Each type)
b	Line differential relay (if applicable)	No.	1 (Each type)
(II)	**Transformers Protection Panel (Each Make & Type)**		
a	Differential Protection relay	No.	1
b	REF with non-linear resistor	No.	1
(III)	**Reactor Protection Panel (Each Make & Type)**		
a	Differential Protection relay	No.	1
b	Back-up impedance protection relay	No.	1
(IV)	**Common Spares**		
a	Bus Bar Bay unit module (if applicable) each make & type	No.	1
b	LBB Relay (if standalone)	No.	1
c	Auxiliary & Trip relays (of each type)	No.	1
4.0	**Substation Automation System**		
a	Bay Control Unit (IED) of Main System	Set	1
b	Bay Control Unit (IED) of Auxiliary system	Set	1
c	Ethernet switch suitable for 19" Rack Mounting: Ports: 24 Fiber Optic Ports	No.	1
d	Ethernet switch suitable for 19" Rack Mounting: Ports: 12 Copper Ports + 6 Fiber Optic Ports	No.	1
5.0	**PLCC EQUIPMENT**		
a	Set of Prints for Carrier terminal	Set	1
b	Set of Prints for Analog protection coupler	Set	1
c	Digital Tele-Protection Coupler	Set	1
6.0	**FIRE PROTECTION SYSTEM**		
a	Smoke Detector	No.	1
b	Heat Detector	No.	1
c	Pressure Gauge of each type	No.	1
d	Pressure Switch of each type	No.	1
7.0	**220V Batteries Charger**		
a	Set of Control Cards (Each make)	Set	1
b	Set of relays	Set	1
c	Rectifier transformer	No.	1

Sl. No	Description	Unit	Quantity for
			765 kV Pune (West) GIS S/s
d	Thyristor/ Diode	No.	1
e	Fuses of Thyristor with indicators	Nos.	6
8.0	**48V Batteries Charger**		
a	Set of Control Cards (Each make)	Set	1
b	Set of relays	Set	1
c	Rectifier transformer	No.	1
d	Thyristor/ Diode	No.	1
e	Fuses of Thyristor with indicators	Nos.	6
9.0	**220V Batteries**		
a	Spare Battery Cell (each rating)	No.	2
10.0	**48V Batteries**		
a	Spare Battery Cell (each rating)	No.	2
11.0	**800KV Bus Post insulator**		
a	Bus Post Insulator Assembly (Complete) (except for Wave Trap)	No.	1
b	Bus Post Insulator Assembly (Complete) (for Wave Trap)	No.	1
12.0	**Clamps & Connectors**		
a	Each type	No.	1