

Project : 400 kV GIS (new) & Switchyard Extension for Wanakbori (already charged)

Customer : GSECL

Consultant : DCPL

MANDATORY SPARES BOQ

ANNEXURE-A

1.0	400 kV Air Insulated Switchgear			
	Surge Arrestors		Lot	1
	- Pr. Release port	1 no.	No.	1
	- Compression Spring	2 sets	Sets	2
	- Surge Monitor	1 no.	No.	1
	- Connecting lead	1 no.	No.	1
	- Zno element	1 no.	No.	1
	Circuit Breaker			
	- Closing Coil	2 nos.	Nos.	2
	- Tripping Coil	2 nos.	Nos.	2
	- SF6 Gas Pr. Switc	1 no.	No.	1
	- Seals, Gaskets and Accessories	2 sets	Sets	2
	- Spare SF6 Cylinder (50 kg)	1 no.	No.	1
	- SF6 Gas leakage detector	1 no.	No.	1
	- Kit for Hardware	1 no.	No.	1
	Terminal Connectors	1 Set	Sets	1
2.0	400 kV Gas Insulated Switchgear			
	O-ring and Gasket	2 set for each size	Lot	1
	Absorbent	.Kg(bidder to indicate)	Lot	1
	SF6 Gas	One Cylinder of 20 kg	Lot	1
	Single Phase PT	One no.	Lot	1
	Expansion Vent diaphragms	5 % of total	Lot	1
	Disconnecting Switch motor	One no. of each type	Lot	1
	Earthing Switch motor	One no. of each type	Lot	1
	Limit Switches	One set of each type	Lot	1
	Bus support Insulator	5 % of total	Lot	1
	Gas density switches	5 % of total	Lot	1
	Circuit Breaker Closing and opening Coil	Two no. of each type	Lot	1
	Circuit Breaker contacts	One set of each type	Lot	1
	Circuit Breaker Spring charge motor	One no. of each type	Lot	1
	Lamps, Fuses, MCB, Aux. Relays	10 % of each type	Lot	1
	CVT	Three nos.	nos.	3
	Oil Seal for CVT	One no.	nos.	1
	Insulators for CVT	One no.	nos.	1
	DC system for 400kV Switchyard			
3.0	220V DC system			
	Battery			
	Battery Cell (Uncharged, Dry)		Nos	20
	Inter connecting cell strips		Nos	20
	Vent plug		Nos	20

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	Teak wood cable clamps with hardware		Nos	10
	Hydrometer		Nos	1
	Rubber gloves		pair	1
	Voltmeter for measuring cell voltage (Center zero type)		Nos	1
	Insulated socket spanner with handle		Nos	1
	Thermometer		Nos	1
	Float -cum- Boost Charger			
	Fuses & fuse links		Lot	1
	SCR		Lot	1
	Diode		Lot	1
	Indicating lamps		Nos	5
	Electronic Module/ PCB/Card		Lot	1
	Pulse transformer		sets	2
4.0	48V DC system			
	Battery			
	Battery Cell (Uncharged, Dry)		Nos	20
	Inter connecting cell strips		Nos	20
	Vent plug		Nos	20
	Teak wood cable clamps with hardware		Nos	10
	Hydrometer		Nos	1
	Rubber gloves		pair	1
	Voltmeter for measuring cell voltage (Center zero type)		Nos	1
	Insulated socket spanner with handle		Nos	1
	Thermometer		Nos	1
	Float -cum- Boost Charger			
	Fuses & fuse links (100% of total quantity for each type & rating of fuses used in the system)		Lot	1
	SCR (4Nos. for each type and rating)		Lot	1
	Diode (4Nos. for each type and rating)		Lot	1
	Indicating lamps		Nos	5
	Electronic Module/ PCB/Card (1 (one) No. each type used in the system)		Lot	1
	Pulse transformer		sets	2
5.0	PLCC			
	Wave Trap complete with all accessories		set	1
	Capacitor Voltage Transformer (CVT) complete with all accessories		set	1
	Terminal connection of wave trap and CVT		set	1

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	Coupling filter		set	1
	All types of plug- in modules of power line carrier terminals, private Private Automatic Branch exchange, 48Volt Battery Charger		set	1
	Four wire table telephone set for point to point communication between switchyard control room		set	1
	6.0 Control & protection/SAS		Lot	1
	7.0 ILLUMINATION			
	High Pressure Sodium Vapour Lamp 150W		Nos.	5
	High Pressure Sodium Vapour Lamp 250W		Nos.	5
	High Pressure Sodium Vapour Lamp 400W		Nos.	5
	Ignitors (Separate type) for High Pressure Sodium Vapour Lamp		Nos.	20
	Ballast for 1 x 150 W High Pressure Sodium Vapour Lamp		Nos.	10
	Ballast for 1 x 250 W High Pressure Sodium Vapour Lamp		Nos.	5
	Capacitor for 1 x 150 W High Pressure Sodium Vapour Lamp		Nos.	5
	Capacitor for 1 x 250 W High Pressure Sodium Vapour Lamp		Nos.	5
	Capacitor for 1 x 400 W High Pressure Sodium Vapour Lamp		Nos.	5
	Fluorescent Lamp 2 X 28W (T5)		Nos.	5
	Ballast for Fluorescent Lamp 2 X 28W (T5)		Nos.	5
	Clockswitch type Time Switch		Lot	1
	Miniature Circuit Breakers (M.C. Bs)			
	1-Pole 20 Amps.		Nos.	4
	2-Pole 20 Amps.		Nos.	4
	2-Pole 16 Amps.		Nos.	4
	Receptacles			
	5Amp		Nos.	4
	15Amp		Nos.	4
	63Amp		Nos.	4
	8.0 PMCC/MCC/ACDB			
	Contactor			
	Power Contactor (AC)			
	Power Contactor Complete Assembly	4 Nos.for each type and rating	Lot	1

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Power Contactor spare kits	10Sets for each type and rating	Lot	1
Power Contactor AC Coils	10Nos. Coils for each type and rating	Lot	1
Auxiliary Control Contactor (AC)		Lot	1
Auxiliary Control Contactor Complete Assembly	30 Nos.for each type and rating	Lot	1
Auxiliary Control Contactor spare kits	40 Sets for each type and rating	Lot	1
Auxiliary Control Contactor AC Coils	35 Nos.for each type and rating	Lot	1
MCCB (Power Circuit)	5 Nos. for each type and rating	Lot	1
MCB (Control Circuit)	25 Nos.for each type and rating	Lot	1
Switch			
Local / Remote Selector Switch	10Nos.	Lot	1
MCCB Status (On/off) Monitoring Switch/Contact	5Nos.	Lot	1
Trial / Normal /MCC Selector Switch	15Nos.	Lot	1
MCC module Service Position Limit Switch	5Nos.	Lot	1
Thermal Overload Relay	5Nos. for each type and rating	Lot	1
Sliding Contact (Fixed & Moving)	25Sets	Lot	1
Bus bar to MCC module Lira Contact Assembly (Bus-end & MCC Module-end)	5Sets for each type and rating	Lot	1
Indicating Lamps complete assembly		Lot	1
Red	30Sets	Lot	1
Amber	30Sets	Lot	1
Green	30Sets	Lot	1
Push Button (On/Off) Complete Assembly	20Sets	Lot	1
CT	1No.for each type and rating	Lot	1
Ammeter	1No. for each type and rating	Lot	1
Control Transformer	1No. for each type and rating	Lot	1
Off Delay/ On Delay Timer	5Nos.for each type and rating	Lot	1
Switch Fuse Unit	5Nos.for each type and rating	Lot	1
Terminal Block			
Power Terminal Block	10% of total nos. for each type and rating used in the system or minimum one (1) no. whichever is more	Lot	1

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	Control Terminal Block	10% of total nos. for each type and rating used in the system or minimum one (1) no. whichever is more	Lot	1
	End Plate for Power & Control Terminal Block	Each type 25Nos.	Lot	1
	Energy Meter	1No. For each type &rating	Lot	1
9	DCDB		Lot	1
	DC Power Contactor complete assembly	1No. for each type and Rating	Lot	1
	Power Contact Spare Kit	2Sets for each type and rating	Lot	1
	Coil for Power Contactor	2Nos.	Lot	1
	Control Contactor complete assembly	5Nos.	Lot	1
	Control Contact Spare Kit	5Sets for each type and rating	Lot	1
	Coil for Control Contactor	5Nos.	Lot	1
	On/Off Delay Timer	1No. for each type and Rating	Lot	1
	Indicating Lamps complete assembly		Lot	1
	Red	3Sets	Lot	1
	Amber	3Sets	Lot	1
	Green	3Sets	Lot	1
	Push Button (On/Off) Complete Assembly	2Nos.for each colour	Lot	1
	MCCB	1No. for each type and Rating	Lot	1
	Power Fuse	3Nos. for each type and Rating	Lot	1
	Control Fuse	5Nos each type and rating	Lot	1
	Thermal Over Load Relay	1No. each type and rating	Lot	1
	Ammeter	1No. each type and rating	Lot	1
	Switch Fuse Unit	5Nos.for each type and rating	Lot	1
	Any Electronic Components/PCB used in the system			
	Terminal Block			
	Power Terminal Block	10% of total nos. for each type and rating used in the system	Lot	1
	Control Terminal Block	10% of total nos. for each type and rating used in the system	Lot	1
	End Plate for Power & Control Terminal Block	Each type 25Nos.	Lot	1

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10.0	LT Transformer (Cast Resin Dry Type)			
	Door Limit Switch		nos.	10
	Temperature Indicator/Gauge		nos.	10
	Bushing			
	HV		nos.	10
	LV		nos.	10