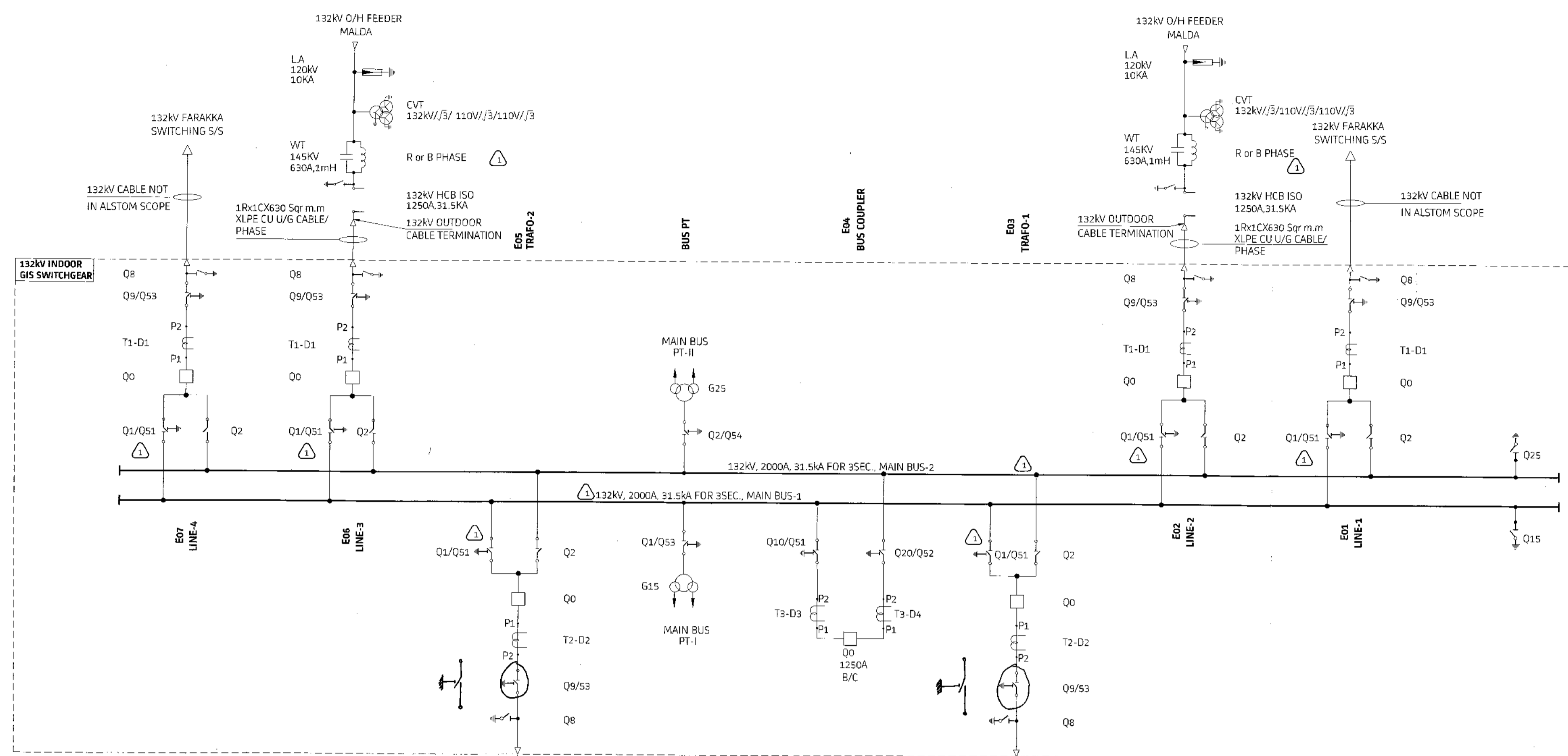


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SYSTEM PARAMETERS- FOR AIS

NOMINAL SYSTEM VOLTAGE	132kV	33kV
HIGHEST SYSTEM VOLTAGE	145kV	36kV
RATED FREQUENCY	50Hz	50Hz
RATED SHORT CIRCUIT LEVEL	31.5kA/3 Sec.	20kA/3 Sec.
BASIC INSULATION LEVEL FOR EQUIPMENTS OTHER THAN TRAFOS.	650kVp	170kVp
BASIC INSULATION LEVEL FOR ALL TRANSFORMER	550kVp	170kVp
ONE MINUTE POWER FREQUENCY DRY & WET WITHSTAND VOLTAGE (KV RMS)		
EQUIPMENTS OTHER THAN TRAFOS & REACTORS	275kVrms	70kVrms
ALL TRAFOS AND REACTORS	230kVrms	70kVrms
SYSTEM NEUTRAL EARTHING	EFFECTIVELY EARTHED	EARTHED THROUGH GROUNDING TRAFOS.
MINIMUM CREEPAGE DISTANCE FOR INSULATORS	3625MM	900MM

SYSTEM PARAMETERS- FOR GIS

NOMINAL CURRENT BUS BAR / BUS COUPLER	= 2000A
NOMINAL CURRENT INCOMER BAY	= 1250A
NOMINAL CURRENT FEEDER BAY	= 1250A
SYSTEM VOLTAGE	= 132kV
RATED VOLTAGE	= 145kV
RATED SHORT CIRCUIT CURRENT FOR 35SEC	= 31.5kA
RATED MAKING CURRENT	= 80kA
RATED POWER FREQUENCY WITHSTAND VOLTAGE	= 275kV
RATED LIGHTNING IMPULSE WITHSTAND VOLTAGE	= 650kV

BILL OF QUANTITY DESCRIPTION AND RATINGS OF EQUIPMENT (AIS)

B.	132kV AIS EQUIPMENT	ERECTION QUANTITY	SUPPLY QUANTITY
01	ISOLATOR WITHOUT E/S 132kV, 1250A, 31.5kA/35SEC. HCB, MOTOR OPERATED 3Ø ASSEMBLY.	02 NOS.	02 NOS.
02	ISOLATOR WITH ONE E/S 132kV, 1250A, 31.5kA, HCB, MOTOR OPERATED 3Ø ASSEMBLY.	02 NOS.	02 NOS.
03	132kV CVT 132kV/3/110V/3/110V/3	06 NOS.	06 NOS.
04	LA (1 Ø) 120kV, 10kA, HEAVY DUTY, STATION CLASS, GAPLESS.	12 NOS.	12 NOS.
05	132kV 630A, 1mH LINE TRAP	06 NOS.	06 NOS.

BILL OF QUANTITY OF GIS BAY WISE:

ITEM NO.	DESCRIPTION	ERECTION QUANTITY
A.	132kV GIS EQUIPMENT	
01	132kV FEEDER BAYS GIS	04 NOS.
02	132kV GIS TRANSFORMER BAYS	02 NOS.
03	132kV GIS BUS COUPLER BAY	01 NO.
04	132kV GIS BUSBAR PT BAY FOR MAIN BUSES.	01 NO.

C. 33kV INDOOR EQUIPMENT

01	33kV INDOOR DRAWOUT TYPE SF6 SWITCHGEAR ASSEMBLY COMPLETE CONSISTING OF 10 NOS. OUTGOING LINE BAYS. 2 NOS. I/C BAYS & 1 NO. BUS COUPLER BAY INCLUDING 2 SET OF BUS PTS. PROVISION SHALL BE THERE FOR CONNECTION OF 2 NOS. 57N. SERVICE & 2 NOS. EARTHING TRAFOS FROM 33kV INDOOR SWITCHGEAR BUS WITH DISCONNECTOR.	ERECTION QUANTITY	SUPPLY QUANTITY
01		01 NO.	01 NO.

RATING OF GIS EQUIPMENTS

Q0	= 145kV, 3Ph, 50Hz, 1250A, 31.5 kA/35SEC. CB
Q8, Q15, Q25	= 145kV, 3Ph, 50Hz, 1250A, 31.5 kV/35SEC. MOTOR OPERATED HIGH SPEED EARTH SWITCH
Q1/Q51, Q9/Q53, Q10/Q51, Q20/Q52, Q2/Q54	= 145kV, 3Ph, 50Hz, 1250A, 31.5 kV/35SEC. MOTOR OPERATED COMBINED DISCONNECTOR / EARTH SWITCH
Q2	= 145kV, 3Ph, 50Hz, 1250A, 31.5 kV/35SEC. MOTOR OPERATED DISCONNECTOR

D. 33kV AIS EQUIPMENT

01	LA (SINGLE Ø) 42kV, 10kA, HEAVY DUTY, STATION CLASS, GAPLESS.	ERECTION QUANTITY	SUPPLY QUANTITY
01		18 NOS.	18 NOS.
02	HDB ISOLATOR 33kV, 1250A, 20kA, 3Ø ASSEMBLY	06 NOS.	06 NOS.
03	STATION SERVICE TRANSFORMERS 315kVA, 33kV, 3Ø, 2 WINDING	02 NOS.	02 NOS.
04	EARTHING TRANSFORMERS 100kVA, 33kV, 3Ø, 1 WINDING	02 NOS.	02 NOS.
05	33kV HORN GAP FUSE 3Ø	02 NOS.	02 NOS.

33kV INDOOR SWITCHGEAR CT & PT RATING.

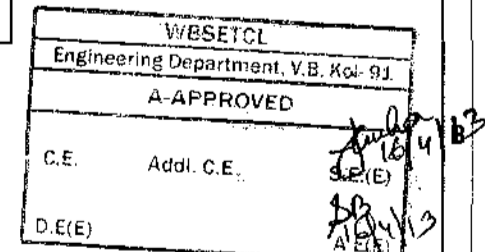
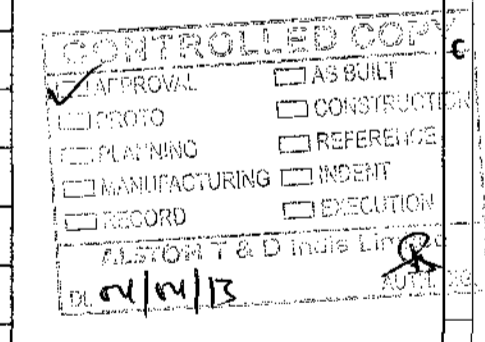
DESCRIPTION	CORE NO.	APPLICATION	CURRENT RATIO	ACCURACY CLASS	BURDEN	V _{pk}	I _{pk} (at highest tap)	R _{ct} (at highest tap)
33kV FEEDER BAYS	1	METERING	400-200/1A	0.2	20VA	-	-	-
	2	PROTECTION	400-200/3A	PS	-	200V/400/1	30mA	10
31.5 132/33kV TRAFOS. BAY	1	METERING	1000-800/1A	0.2	30VA	-	-	-
	2	PROTECTION	1000-800/1A	PS	-	200V/800/1	30mA	10
	3	PROTECTION	1000-800/1A	PS	-	800V/800/1	30mA	10
BUS SECTIONALIZER	1	METERING	1000-800/1A	0.2	30VA	-	-	-
	2	PROTECTION	1000-800/1A	PS	-	200V/800/1	30mA	10
33kV PT	1	METERING	9300/3 : 110/5	0.2	-	-	-	-
	2	PROTECTION	9300/3 : 110/5	3P	-	-	-	-

GIS CT & VT DETAILS

CT TYPE	RATIO	CLASS	BURDEN	V _{pk} (min)	I _{pk} (kV)	R _{ct} @ 75°C (AT HIGHEST TAP)
T1-D1 (5 CORES)	1) 600-300/1	0.2, ISFC-5	30	-	-	-
	2) 600-300/1	PS	-	900V @ 600/1	30mA	5
	3) 600-300/1	PS	-	700V @ 600/1	30mA	5
	4) 800/1	PS	-	1000V	30mA	6
	5) 800/1	PS	-	1000V	30mA	6
T2-D2 (5 CORES)	1) 300-150/1	0.2, ISFC-5	30	-	-	-
	2) 300-150/1	PS	-	300V @ 300/1	30mA	1
	3) 300-150/1	PS	-	100V @ 300/1	30mA	1
	4) 800/1	PS	-	1000V	30mA	6
	5) 800/1	PS	-	1000V	30mA	6
T3-D3 & T3-D4 (2 CORES)	1) 1600/2	0.2, ISFC-5	30	-	-	-
	2) 1600/2	PS	-	1200V	30mA	5

VT

VT	RATIO (KV)	VA	CLASS
G15-G25 (2 CORES)	132 / 0.11 / 3	0.2	50
	132 / 0.11 / 3	3P	50



RefDrg. no: 145KV GIS GAS SINGLE LINE DIAGRAM. (G234A000104 RC)

REV.No.	DESCRIPTION	DATE	DRAWN	ELE.	CIVIL	MECH.	APPROVED	STATUS
1	REVISED AS PER WBSETCL COMMENTS DT/D 16.03.13	04.04.13	04.04.13					FOR APPROVAL
0	FIRST SUBMISSION	14.01.13	14.01.13					FOR APPROVAL

WEST BENGAL STATE ELECTRICITY TRANSMISSION COMPANY LIMITED.

CONSTRUCTION OF NEW 132/33kV GIS AT KHEJURIA

LOA No. _____

TITLE: **SINGLE LINE DIAGRAM 132/33kV GIS SUB-STATION AT KHEJURIA**

ALSTOM T&D INDIA LTD

DRAWING No. _____

5427PK074-KHE-E-SVD-SYS-0014-SL

TOTAL SH. 01 SH.No. 1 REV. 1