

220KV LILO SWITCHYARD - AMGURI (ASSAM)

SUBSTATION (NTPS)

Transmission Line-In: 220KV

Transmission Line-In: 220KV

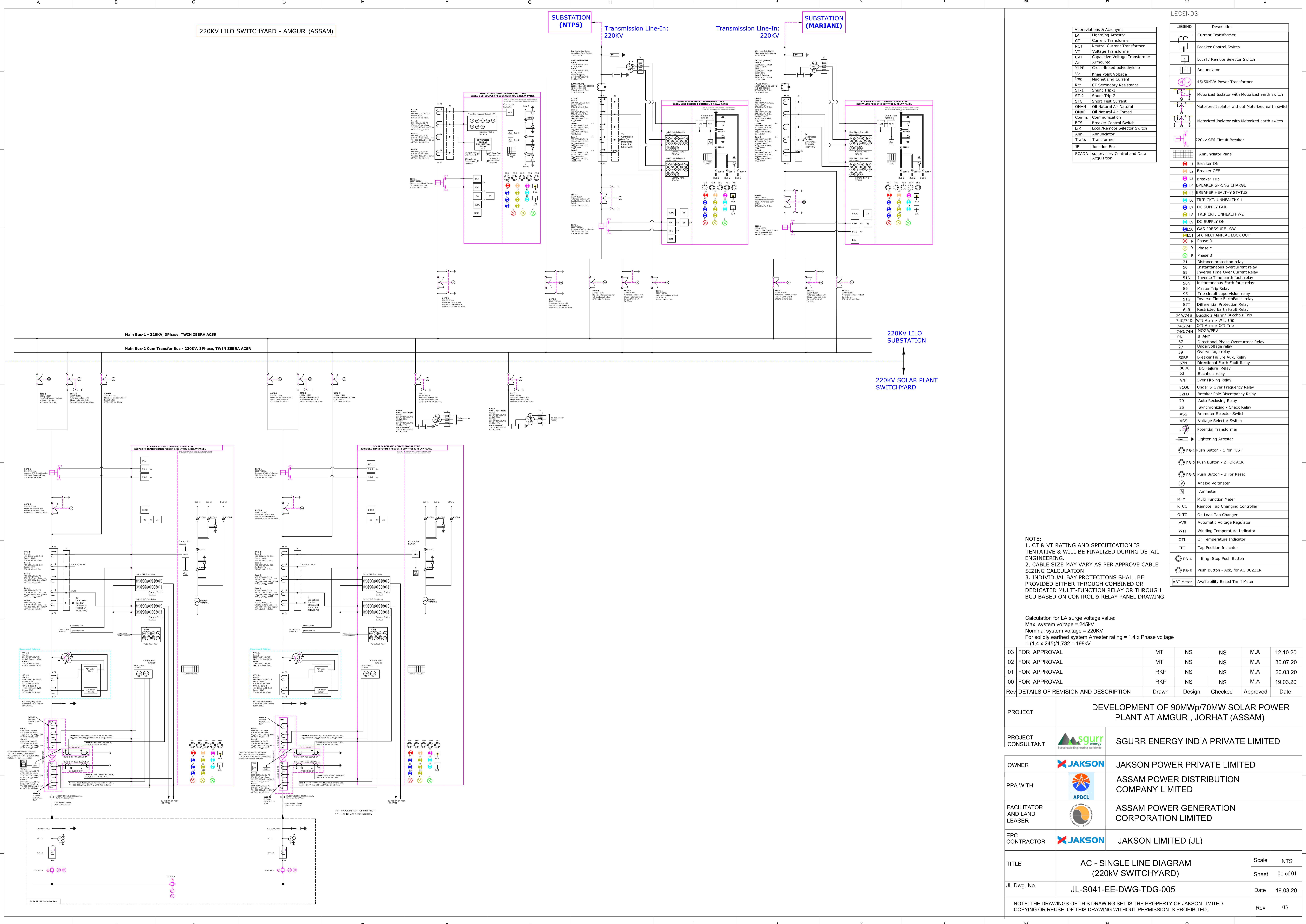
SUBSTATION (MARIANT)

220KV LILO SUBSTATION

220KV SOLAR PLANT SWITCHYARD

Main Bus-1 - 220KV, 3Phase, TWIN ZEBRA ACSR

Main Bus-2 Cum Transfer Bus - 220KV, 3Phase, TWIN ZEBRA ACSR



LEGENDS	
Abbreviations & Acronyms	Description
LA	Lightning Arrestor
CT	Current Transformer
NCT	Neutral Current Transformer
VT	Voltage Transformer
CVT	Capacitive Voltage Transformer
Ar	Armoured
XLPE	Cross-linked polyethylene
Vk	Knee Point Voltage
Img	Magnetizing Current
Rct	CT Secondary Resistance
ST-1	Shunt Trip-1
ST-2	Shunt Trip-2
SIC	Short Test Current
ONAN	Oil Natural Air Natural
ONAF	Oil Natural Air Forced
Comm.	Communication
B.C.S.	Breaker Control Switch
L/R	Local/Remote Selector Switch
Ann.	Annunciator
Trafo.	Transformer
JB	Junction Box
SCADA	Supervisory Control and Data Acquisition
CT	Current Transformer
B.C.S.	Breaker Control Switch
L/S	Local / Remote Selector Switch
Ann.	Annunciator
220kv SF6	220kv SF6 Circuit Breaker
Annunciator Panel	Annunciator Panel
L1	Breaker ON
L2	Breaker OFF
L3	Breaker Trip
L4	BREAKER SPRING CHARGE
L5	BREAKER HEALTHY STATUS
L6	TRIP CKT. UNHEALTHY-1
L7	DC SUPPLY FAIL
L8	TRIP CKT. UNHEALTHY-2
L9	DC SUPPLY ON
L10	GAS PRESSURE LOW
L11	SF6 MECHANICAL LOCK OUT
R	Phase R
Y	Phase Y
B	Phase B
Z1	Distance protection relay
50	Instantaneous overcurrent relay
51	Inverse Time Over Current Relay
51X	Inverse Time earth fault relay
50N	Instantaneous Earth fault relay
86	Master Trip Relay
95	Trap circuit supervision relay
SIC	Inverse Time EarthFault relay
87T	Differential Protection Relay
64R	Restricted Earth Fault Relay
74A/74B	Buchholz Alarm Buchholz Trip
74C/74D	WTI Alarm/ WTI Trip
74E/74F	OTTI Alarm/ OTTI Trip
74G/74H	MOGAP/WY
74I	IF ANY
67	Directional Phase Overcurrent Relay
27	Undervoltage relay
59	Overvoltage relay
50BF	Breaker Failure Aux. Relay
67H	Directional Earth Fault Relay
80DC	DC Failure Relay
63	Buchholz relay
V/F	Over Fluxing Relay
81OU	Under & Over Frequency Relay
52PD	Breaker Pulse Discrepancy Relay
79	Auto Reclosing Relay
25	Synchronizing - Check Relay
ASS	Ammeter Selector Switch
VSS	Voltage Selector Switch
POT	Potential Transformer
LA	Lightening Arnester
PB-1	Push Button - 1 for TEST
PB-2	Push Button - 2 FOR ACK
PB-3	Push Button - 3 For Reset
V	Analog Voltmeter
A	Ammeter
MM	Multi Function Meter
RTCC	Remote Tap Changing Controller
OLTC	On Load Tap Changer
AVR	Automatic Voltage Regulator
WTI	Winding Temperature Indicator
OTTI	Oil Temperature Indicator
TPI	Tap Position Indicator
PB-4	Emp. Stop Push Button
PB-5	Push Button - Ack. for AC BUZZER
ABT Meter	Availability Based Tariff Meter

NOTE:
 1. CT & VT RATING AND SPECIFICATION IS TENTATIVE & WILL BE FINALIZED DURING DETAIL ENGINEERING.
 2. CABLE SIZE MAY VARY AS PER APPROVE CABLE SIZING CALCULATION
 3. INDIVIDUAL BAY PROTECTIONS SHALL BE PROVIDED EITHER THROUGH COMBINED OR DEDICATED MULTI-FUNCTION RELAY OR THROUGH BCU BASED ON CONTROL & RELAY PANEL DRAWING.

Calculation for LA surge voltage value:
 Max. system voltage = 245KV
 Nominal system voltage = 220KV
 For solidly earthed system Arrester rating = 1.4 x Phase voltage
 = (1.4 x 245)/1.732 = 198KV

03 FOR APPROVAL	MT	NS	NS	M.A	12.10.20
02 FOR APPROVAL	MT	NS	NS	M.A	30.07.20
01 FOR APPROVAL	RKP	NS	NS	M.A	20.03.20
00 FOR APPROVAL	RKP	NS	NS	M.A	19.03.20

Rev DETAILS OF REVISION AND DESCRIPTION

Design	Checked	Approved	Date
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PROJECT	DEVELOPMENT OF 90MWp/70MW SOLAR POWER PLANT AT AMGURI, JORHAT (ASSAM)				
PROJECT CONSULTANT		SGURR ENERGY INDIA PRIVATE LIMITED			
OWNER		JAKSON POWER PRIVATE LIMITED			
PPA WITH		ASSAM POWER DISTRIBUTION COMPANY LIMITED			
FACILITATOR AND LAND LEASER		ASSAM POWER GENERATION CORPORATION LIMITED			
EPC CONTRACTOR		JAKSON LIMITED (JL)			
TITLE	AC - SINGLE LINE DIAGRAM (220KV SWITCHYARD)				Scale NTS
JL Dwg. No.	JL-S041-EE-DWG-TDG-005				Sheet 01 of 01
		Date	19.03.20		
		Rev	03		

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