DEVELOPMENT OF 129 MW AC SOLAR PHOTOVOLTAIC PLANT -AT SCCL,Telangana

PROJECT NAME:	**Yellandu 39MW SOLAR PV PROJECT**
TITLE OF THE DRAWING:	**AC SINGLE LINE DIAGRAM**
DOCUMENT NO:	**BHEL-SECI-SD-SCCL39-DWG-ELE-002**

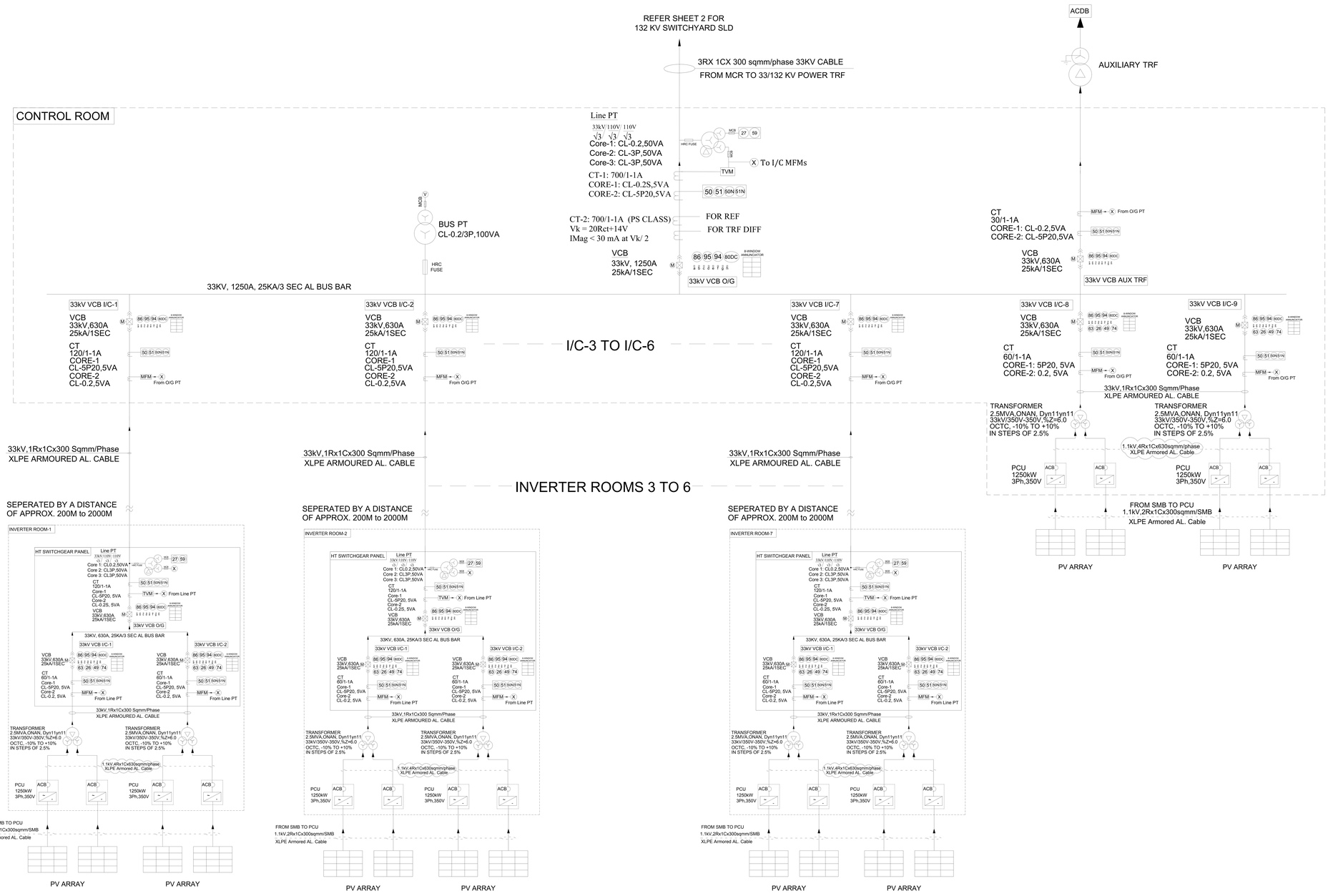
SL.NO	CONTENTS
1	AC SINGLE LINE DIAGRAM

1	08-03-19	FOR APPROVAL	LNK	PRV	PRV
0	15-02-19	FOR APPROVAL	LNK	PRV	PRV
REV NO.	DATE	STATUS	INITIALS	INITIALS	INITIALS
PROJECT:			PREPARED BY	CHECKED BY	APPROVED BY
DEVELOPMENT OF 129 MW-AC			DOC No:	BHEL-SECI-SD-SCCL39-DWG-ELE-002	
SOLAR PHOTOVOLTAIC PLANT -AT SCCL,Telangana			DOC Name:	AC SINGLE LINE DIAGRAM	

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN mm

DRAWING NO.



LEGEND DETAILS

SL. NO.	SYMBOL	DESCRIPTION
1		INVERTER TRANSFORMER / POWER TRANSFORMER
2	M	33KV VACUUM CIRCUIT BREAKER
3		132 kV SF6 BREAKER
4	86	MASTER TRIP RELAY
5	95 195 295	TRIP CIRCUIT SUPERVISION RELAY
6	94	ANTI PUMPING RELAY
7	63	BUCHHOLZ RELAY
8	26	MAGNETIC OIL LEVEL GAUGE
9	49	WINDING TEMP INDICATOR AND OIL TEMP INDICATOR
10	74	PRESSURE RELIEF DEVICE
11	50	INST OVER CURRENT RELAY
12	51	IDMT OVER CURRENT RELAY
13	50N	NEUTRAL INSTANTANEOUS OVER CURRENT RELAY
14	51N	IDMT EARTH FAULT RELAY
15	MFM	MULTI FUNCTION METER
16		CURRENT TRANSFORMER
17	27	UNDER VOLTAGE RELAY
18	59	OVER VOLTAGE RELAY
19		POTENTIAL TRANSFORMER
20		FUSE
21	ABT	ABT TARIFF ENERGY METER
22	80DC	DC FAILURE INDICATION
23	~ -	INVERTER, 1250kVA
24		ACB
25		LIGHTNING ARRESTER
26	64R	RESTRICTED EARTH FAULT RELAY
27	87T	TRANSFORMER DIFFERENTIAL RELAY
28	30	ANNUNCIATOR RELAY
29	50LBB	LOCAL BREAKER BACKUP PROTECTION
30	87L	LINE DIFFERENTIAL PROTECTION RELAY
31		ISOLATOR WITH DOUBLE EARTH SWITCH
32		ISOLATOR WITH SINGLE EARTH SWITCH

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REV.	DATE	ALTERED	CHECKED	APPROVED
01	08.03.19	Revised as per customer comments.		
00	15.02.19	FIRST ISSUE		

	NAME	SIGN	DATE
DRAWN			11.01.2019
CHECKED			
APPROVED			

DISTRIBUTION OF PRINTS

DEPT. CODE

PROJECT : YELLANDU 39MW SOLAR POWER PLANT
CUSTOMER : SCCL

BHARAT HEAVY ELECTRICALS LIMITED.
ELECTRONICS DIVISION, BANGALORE

TITLE: AC SINGLE LINE DIAGRAM

BHEL DRG. No. BHEL-SECI-SD-SCCL39-DWG-ELE-002

No. OF SHEETS	02
SHEET No.	01
REV.	01

SIGN & DATE

REF DRG.NO.

INVENTORY NO.

A0 SIZE

EXISTING 132KV BUS

Isolator without E/S
132KV, 1250A

1250A, 31.5kA/1 SEC
132kV SF6 BREAKER

C&R PANEL
86
P2
TVM
94 195 295
67N 67P 51 50 50N 51N
50LBB 80DC 59 27
87L 21
A V
P1

CT-3: 300/1-1-1A
Core-1: 0.2S, 5VA
Core-2: 5P20, 5VA
Core-3: PS Class

Main ABT — Check ABT

CT-2: 300/1 A
Core-1: CL-0.2S, 5VA

PT-2
132kV/√3 / 110V/√3 CL-0.2, 10VA

Standby ABT

CT-1: 300/1 A
Core-1: CL-0.2S, 5VA

PT-1
132kV/√3 / 110V/√3 CL-0.2, 10VA

132KV, 1250A
Isolator with Double E/s

CVT 132KV

120kV, 10kA
LIGHTNING ARRESTOR

OFC CABLE

132KV SINGLE CKT LINE /
UG CABLE TO SUBSTATION

TSTRANSCO BAY

LIGHTNING ARRESTOR
120kV, 10kA

CVT 132KV

Isolator with Double E/s
132KV, 1250A

A V
P2
21 87L
50LBB 80DC 27 59
67P 67N 50 51 50N 51N
94 195 295
TVM
C&R PANEL
86
P1

CT-4, 300/1-1-1A
Core-1: PS Class
Core-2: 5P20, 5VA
Core-3: 0.2S, 5VA

132kV SF6 BREAKER
1250A, 31.5kA/1 SEC

Isolator without E/S
132KV, 1250A

PT-2
132kV/√3 / 110V/√3 / 110V/√3 / 110V/√3
Core-1: CL-3P, 75VA
Core-2: CL-0.2, 10VA
Core-3: Spare, CL-0.2, 10VA

PT-1
132kV/√3 / 110V/√3 CL-0.2, 10VA

ABT Standby
CT-3, 300/1-1A
Core-1: CL-0.2S, 10VA

ABT Main — ABT Check
CT-2, 300/1-1A
Core-1: CL-0.2S, 10VA

132kV SF6 BREAKER
1250A, 31.5kA/1 SEC

Isolator without E/S
132KV, 1250A

94 27 59 86 80DC 30 50LBB 49 63 26 74 195 295
67P 67N 50 51 50N 51N
MFM
87T
C&R PANEL
A V
P2
P1

CT-1, 300/1-1-1-1A
Core-1: 5P20, 10VA
Core-2: 0.2S, 10VA
Core-3: PS Class
Core-4: Spare, 5P20, 10VA

LIGHTNING ARRESTOR
120kV, 10kA

64R 51G
HV side NCT
300/1-1A

POWER TRANSFORMER
132/33 kV, 24/39MVA,
ONAF, YNyn0, %Z = 10%
OLTC +5% to -15% in steps of 1.25%

LV side NCT
700/1-1A
64R 51G

3RX 1CX 300 sqmm/phase 33KV CABLE
FROM MCR TO 33/132 KV POWER TRF

CONTINUED FROM SHEET 1

PROJECT : YELLANDU 39MW SOLAR POWER PLANT
CUSTOMER : SCCL

BHARAT HEAVY ELECTRICALS LIMITED.
ELECTRONICS DIVISION, BANGALORE

TITLE: AC SINGLE LINE DIAGRAM

No. OF SHEETS 02
SHEET No. 02
REV 01

BHEL DRG. No. BHEL-SECI-SD-SCCL39-DWG-ELE-002

	NAME	SIGN	DATE
DRAWN			11.01.2019
CHECKED			
APPROVED			

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DISTRIBUTION OF PRINTS

REV.	DATE	ALTERED / CHECKED / APPROVED
00		FIRST ISSUE
01	08.03.19	Revised as per customer comments.

ALL DIMENSIONS ARE IN mm
AO SIZE
FIRST ANGLE PROJECTION
DRAWING NO.

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INVENTORY NO. SIGN & DATE REF. DRG.NO.