

TD-201 Rev No. 00	Form No.	 	PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION, HYDERABAD	ANNEXURE-07 to PY55223
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PROJECT

40MW CDQ WASTE HEAT RECOVERY
CO-GENERATION POWER PLANT

CUSTOMER

M/S TATA STEEL LIMITED,
JAMSHEDPUR

CONSULTANT

TATA CONSULTING ENGINEERS,
KOLKATA

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company.		NOTES: 1. Feeder Types: ACB - Air Circuit Breaker, ACB MTR - ACB Motor, DOL - Direct On Line, MCCB - Moulded Case Circuit Breaker, MCCB + C - MCCB with Contactor. 2. Cable lugs & glands to be provided as per given cable sizes. 3. Deleted. 4. This document is intended to provide the details of Incoming and Outgoing feeders only. As Sub-Distribution Transformers also feed several field loads, hence these are also included in this document. For the aforementioned items, the contents of this document shall hold valid over any other corresponding detail mentioned elsewhere. However, items such as Bus PTs, Fitments of each feeder and Switchboard components including Meters, Relays, Control Transformers etc. are not mentioned in this document. All these items shall be provided in line with SLD of respective Switchboards.	

SID	Description	Feeder_Type	Feeder_Rating_Value	Feeder_Rating_Unit	BusA	BusB	BusC	Cable	Remarks
PMCC									
1	Incomer	ACB	4000	A	1	0	0	Bus Duct	
2	Incomer	ACB	4000	A	0	0	1	Bus Duct	
3	Incomer	ACB	1000	A	0	1	0	1C x 630 sq.mm x Al x 6	
4	Bus coupler	ACB	4000	A	1	0	0		
5	Bus coupler	ACB	4000	A	0	0	1		
6	4T5V TG MCC	ACB	1000	A	1	1	0	1C x 630 sq.mm x Al x 6	
7	415V CTMCC (CUSTOMER)	ACB	1000	A	1	0	1	1C x 630 sq.mm x Al x 6	
8	CONDENSATE EXTRACT PUMP	ACB MTR	132	KW	1	0	1	3C x 240 sq.mm x Al x 2	
9	COMPRESSOR MOTOR (CUSTOMER)	ACB MTR	110	KW	1	0	1	3C x 240 sq.mm x Al x 1	
10	415V PDB	MCCB	250	A	0	1	1	3C x 240 sq.mm x Al x 1	
11	220V DC CHARGER	MCCB	250	A	1	1	0	1C x 70 sq.mm x Cu x 6 FS	
12	240V UPS SYSTEM	MCCB	250	A	1	1	1	3C x 240 sq.mm x Al x 1	
13	415V HVAC MCC(CUSTOMER)	MCCB	400	A	1	0	1	3C x 240 sq.mm x Al x 2	
14	LIGHTING FEEDERS(CUSTOMER)	MCCB	63	A	2	0	3	3C x 25 sq.mm x Al x 1	
15	EMERGENCY LIGHTING FEEDERS(CUSTOMER)	MCCB	63	A	0	2	0	3C x 25 sq.mm x Al x 1	
16	WATER SYSTEM DB	MCCB	63	A	1	1		3C x 120 sq.mm x Al x 1	
17	MOV DB	MCCB	63	A	0	1	1	3C x 120 sq.mm x Al x 1	
18	EMERGENCY DG AUX FEEDER(CUSTOMER)	MCCB	63	A	0	1	0	3C x 4 sq.mm x Cu x 1	
19	SPARE	ACB	1000	A	0	1	0	1C x 630 sq.mm x Al x 6	
20	SPARE	ACB MTR	132	KW	0	1	0	3C x 240 sq.mm x Al x 2	
21	SPARE	ACB MTR	110	KW	0	1	0	3C x 240 sq.mm x Al x 1	
22	SPARE	MCCB	400	A	1	0	0	3C x 240 sq.mm x Al x 2	
23	SPARE	MCCB	250	A	0	0	1	3C x 240 sq.mm x Al x 1	
24	SPARE	MCCB	63	A	1	0	1	3C x 25 sq.mm x Al x 1	
TG MCC									
1	Incomer	ACB	1000	A	1	0	0	1C x 630 sq.mm x Al x 6	
2	Incomer	ACB	1000	A	0	1	0	1C x 630 sq.mm x Al x 6	
3	Bus coupler	ACB	1000	A	1	0	0		
4	Lube Oil Pump Drive Motor	DOL-4	75	KW	1	1	0	3C x 70 sq.mm x Al x 2	
5	Jacking Oil Pump Drive Motor	DOL-3	22	KW	0	1	0	1C x 35 sq.mm x Cu x 3 FS	
6	Oil Vapor Extraction Fan Motor	DOL-1	0.37	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
7	Transfer Oil Pump Drive motor	DOL-1	1.5	KW	0	1	0	3C x 2.5 sq.mm x Cu x 1	
8	Oil Purification Unit (STG Integral) -Bulk Load	MCCB (250A)	250	A	1	0	0	3C x 240 sq.mm x Al x 1	
9	Oil Purification Unit (Central Oil System) - Bulk Load	MCCB (250A)	250	A	0	1	0	3C x 240 sq.mm x Al x 1	
10	Exhaust Fans & Illumination for Turbine Enclosure (Bulk Load)	MCCB (32A)	32	A	0	1	0	3C x 4 sq.mm x Cu x 1	
11	Motor Operated Valves [Drain Valves] (Non Inching Type)	MCCB (32A)	32	A	4	4	0	3C x 2.5 sq.mm x Cu x 1	

SID	Description	Feeder_Type	Feeder_Rating_Value	Feeder_Rating_Unit	BusA	BusB	BusC	Cable	Remarks
12	Motor Operated Valves [Vaccum Breaker] (Non Inching Type)	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
13	Motor Operated Valves [Hydraulic Barring] (Inching Type)	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
14	AVR Control (for Testing)	MCCB (32A)	32	A	0	1	0	3C x 4 sq.mm x Cu x 1	
15	Generator space heater	MCCB (32A)	32	A	1	0	0	3C x 6 sq.mm x Cu x 1	
16	DMCW Pump	DOL-4	75	KW	1	1	0	3C x 120 sq.mm x Al x 1	
17	ETP Disposal & Collection pumps	DOL-1	5.5	KW	1	1	0	3C x 4 sq.mm x Cu x 1	
18	Dirty Oil Transfer Pump	DOL-1	3.7	KW	1	0	0	3C x 2.5 sq.mm x Cu x 1	
19	Clean Oil Transfer Pump	DOL-1	5.5	KW	0	1	0	3C x 4 sq.mm x Cu x 1	
20	Portable water Pump	DOL-1	3.7	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
21	Air Blower for SSF	DOL-2	18.5	KW	1	1	0	3C x 25 sq.mm x Al x 1	
22	Vacuum Pumps	DOL-4	80	KW	1	1	0	3C x 70 sq.mm x Al x 2	
23	Recirculation Pumps	DOL-1	0.67	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
24	GSC Fan & Motor	DOL-1	3.7	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
25	Misc. Pumps (Customer Load)	DOL-4	30	KW	1	1	0	3C x 35 sq.mm x Al x 1	
26	OLTC DM & Cooling Fans - Gen Transformer	MCCB (63A)	63	A	1	1	0	3C x 25 sq.mm x Al x 1	
27	OLTC DM & Cooling Fans - UAT	MCCB (63A)	63	A	1	1	0	3C x 25 sq.mm x Al x 1	
28	SWAS System Chiller	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
29	Contractual Spare	DOL-1	0.37	KW	0	1	0	3C x 2.5 sq.mm x Cu x 1	
30	Contractual Spare	DOL-1	0.67	KW	1	0	0	3C x 2.5 sq.mm x Cu x 1	
31	Contractual Spare	DOL-1	1.5	KW	1	0	0	3C x 2.5 sq.mm x Cu x 1	
32	Contractual Spare	DOL-1	3.7	KW	0	1	0	3C x 2.5 sq.mm x Cu x 1	
33	Contractual Spare	DOL-1	5.5	KW	1	0	0	3C x 4 sq.mm x Cu x 1	
34	Contractual Spare	DOL-2	18.5	KW	1	0	0	3C x 25 sq.mm x Al x 1	
35	Contractual Spare	DOL-3	22	KW	0	1	0	1C x 35 sq.mm x Cu x 3 FS	
36	Contractual Spare	DOL-4	30	KW	1	0	0	3C x 35 sq.mm x Al x 1	
37	Contractual Spare	DOL-4	75	KW	1	0	0	3C x 120 sq.mm x Al x 1	
38	Contractual Spare	DOL-4	80	KW	0	1	0	3C x 70 sq.mm x Al x 2	
39	Contractual Spare	MCCB (250A)	250	A	0	1	0	3C x 240 sq.mm x Al x 1	
40	Contractual Spare	MCCB (63A)	63	A	1	0	0	3C x 25 sq.mm x Al x 1	
41	Contractual Spare	MCCB (32A)	32	A	1	1	0	3C x 6 sq.mm x Cu x 1	
42	BHEL SPARE	MCCB (63A)	63	A	2	2	0	3C x 25 sq.mm x Al x 1	
43	BHEL SPARE	MCCB + C (63A)	63	A	1	1	0	4C x 25 sq.mm x Al x 1	
44	BHEL SPARE	DOL-1	0.37	kW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
45	BHEL SPARE	DOL-1	3.7	kW	1	0	0	3C x 2.5 sq.mm x Cu x 1	
46	BHEL SPARE	DOL-1	5.5	kW	0	1	0	3C x 4 sq.mm x Cu x 1	
47	BHEL SPARE	DOL-3	22	kW	1	1	0	1C x 35 sq.mm x Cu x 3 FS	
48	Sub-Distrib Transformer (10 kVA)	MCCB	10	KVA	1	0	0		30 nos. of 20A DP MCB O/Gs

SID	Description	Feeder_Type	Feeder_Rating_Value	Feeder_Rating_Unit	BusA	BusB	BusC	Cable	Remarks
Water System DB									
1	Incomer	MCCB	63	A	1	1	0	3C x 120 sq.mm x Al x 1	
2	Bus coupler	MCCB	63	A	1	0	0		
3	Biocide Dosing pumps	DOL-1	0.37	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
4	Acid dosing pumps	DOL-1	0.37	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
5	Acid unloading pump	DOL-1	3.7	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
6	Corrosion Inhibitor Dosing pumps	DOL-1	0.37	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
7	NaOCl Dosing pumps	DOL-1	0.37	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
8	Scale Inhibitor Dosing pumps	DOL-1	0.37	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
9	Motor For Ball Recirculating Pump	DOL-1	7.5	KW	0	1	0	3C x 6 sq.mm x Cu x 1	
10	Motor For Dosing Pump	DOL-1	0.37	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
11	Motor For Agitator	DOL-1	0.75	KW	1	0	0	3C x 2.5 sq.mm x Cu x 1	
12	Actuator For Ball separator Screens	MCCB (32A)	32	A	1	1	0	3C x 2.5 sq.mm x Cu x 1	
13	Actuator for Ball Vessel for 3-way Valve	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
14	Actuator for Ball Vessel Inlet Valve	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
15	Contractual Spare	DOL-1	0.75	KW	0	1	0	3C x 2.5 sq.mm x Cu x 1	
16	Contractual Spare	DOL-1	7.5	KW	0	1	0	3C x 6 sq.mm x Cu x 1	
17	Contractual Spare	DOL-1	0.37	KW	1	1	0	3C x 2.5 sq.mm x Cu x 1	
18	Contractual Spare	DOL-1	3.7	KW	0	1	0	3C x 2.5 sq.mm x Cu x 1	
19	Contractual Spare	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
20	BHEL SPARE	DOL-1	0.75	kW	1	1	0	3C x 6 sq.mm x Cu x 1	
21	BHEL SPARE	MCCB (32A)	32	A	1	1	0	3C x 2.5 sq.mm x Cu x 1	
MOV DB									
1	Incomer	MCCB	63	A	1	1	0	3C x 120 sq.mm x Al x 1	
2	Bus coupler	MCCB	63	A	1	0	0	3C x 120 sq.mm x Al x 1	
3	MAIN STEAM ISOLATION VALVE-14"-900# GV-MOV-3101-350	MCCB (32A)	32	A	1	0	0		
4	BYPASS VALVE FOR MAIN STEAM ISOLATION VALVE 1"-1500# RGL-MOV-3101A-25	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
5	MOV IN MAIN STEAM LINE DRAIN-1.5"-1500# RGL-3103B-40	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
6	MOV IN VENT SILENCER INPUT LINE-2"-900# GV-MOV-3104-50	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
7	MOV IN VENT SILENCER INPUT LINE-2"-900# RGL-MOV-3106-50	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
8	MOV IN AUXILIARY STEAM TO TURBINE GLAND SEALING LINE-1"-1500# RGL-MOV-3111-25	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
9	MOV IN MAIN STEAM TO PRDS LINE-8"-900# GV-MOV-3120-200	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
10	MOTOR OPERATED BYPASS VALVE IN MAIN STEAM TO PRDS LINE-1"-1500# RGL-MOV-3120A-25	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
11	SPRAY WATER CEP DISCHARGE TO DSH-1"-800# RGL-MOV-3117-25	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
12	MOV IN SPRAY WATER TO CONDENSER WATER INLET-1.5"-800# RGL-MOV-3130-40	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	

SID	Description	Feeder_Type	Feeder_Rating_Value	Feeder_Rating_Unit	BusA	BusB	BusC	Cable	Remarks
13	MOV IN SPRAY WATER TO PRDS-1.5"-800# RGL-MOV-3125-40	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
14	MOV IN CEP DISCHARGE HEADER-8"-150# GV-MOV-3194-200	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
15	MOV IN INLET 1 TO GSC-8"-150# GV-MOV-3195-200	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
16	MOV IN INLET 2 TO GSC-8"-150# GV-MOV-3196-200	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
17	MOV IN CEP A DISCHARGE LINE-8"-150# GV-MOV-3178A-200	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
18	MOTOR OPERATED BY PASS VALVE IN CEP A DISCHARGE LINE -1"-800# GL-MOV-3179A-25	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
19	MOV IN CEP B DISCHARGE LINE-8"-150# GV-MOV-3178B-200	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
20	MOTOR OPERATED BY PASS VALVE IN CEP B DISCHARGE LINE-1"-800# GL-MOV-3179B-25	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
21	MOV IN LINE TO NEARBY LOCAL DRAIN-4"-150# RGL-3203-100	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
22	MOVE IN COND MINIMUM CIRCULATION LINE TO CONDENSER -3"-150# RGL-3208-80	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
23	MOTOR OPERATED BYPASS VALVE FOR CV IN MAKE UP TO HOTWELL-3"-150# RGL-3234-80	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
24	MOV IN SERVICE WATER LINE TO SW OVERHEAD TANK -1"-800# RGLV-3272-25	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
25	MOV IN POTABLE WATER LINE TO PW OVERHEAD TANK -1"-800# RGLV-3278-25	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
26	MOTOR OPERATED BUTTERFLY VALVE IN CW PUMP-A DISCHARGE-34"-150# BV-3256-850	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
27	MOTOR OPERATED BUTTERFLY VALVE IN CW PUMP-B DISCHARGE-34"-150# BV-3257-850	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
28	MOTOR OPERATED BUTTERFLY VALVE IN CW PUMP-C DISCHARGE-34"-150# BV-3258-850	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
29	MOTOR OPERATED BUTTERFLY VALVE IN CONDENSER INLET-1-34"-150# BV-3259-850	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
30	MOTOR OPERATED BUTTERFLY VALVE IN CONDENSER INLET-2-34"-150# BV-3260-850	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
31	MOTOR OPERATED BUTTERFLY VALVE IN CONDENSER OUTLET-1-34"-150# BV-3265-850	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
32	MOTOR OPERATED BUTTERFLY VALVE IN CONDENSER OUTLET-2-34"-150# BV-3266-850	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
33	MOTOR OPERATED BUTTERFLY VALVE IN COOLING WATER MAKE UP LINE TO CW PUMP SUMP - 8"-150# BV-3274-200	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
34	MOTOR OPERATED BUTTERFLY VALVE IN DRAIN LINE TO UPPER COOLING POND -3"-150# BV-3268-80	MCCB (32A)	32	A	1	0	0	3C x 2.5 sq.mm x Cu x 1	
35	Contractual Spare	MCCB (32A)	32	A	2	2	0	3C x 2.5 sq.mm x Cu x 1	
36	BHEL SPARE	MCCB (32A)	32	A	2	2	0	3C x 2.5 sq.mm x Cu x 1	

SID	Description	Feeder_Type	Feeder_Rating_Value	Feeder_Rating_Unit	BusA	BusB	BusC	Cable	Remarks
PDB									
1	Incomer	MCCB	250	A	1	1	0	3C x 240 sq.mm x Al x 1	
2	Bus coupler	MCCB	250	A	1	0	0		
3	Misc. Power feeders (Customer Load)	MCCB (150A)	150	A	2	2	0	3C x 35 sq.mm x Al x 1	
4	EOT Crane (Customer Load)	MCCB (150A)	150	A	1	0	0	3C x 120 sq.mm x Al x 1	
5	Elevator (Customer Load)	MCCB (63A)	63	A	0	1	0	3C x 25 sq.mm x Al x 1	
6	Contractual Spare	MCCB (150A)	150	A	1	0	0	3C x 120 sq.mm x Al x 1	
7	Contractual Spare	MCCB (63A)	63	A	0	1	0	3C x 25 sq.mm x Al x 1	
8	BHEL SPARE	MCCB (63A)	63	A	2	2	0	3C x 25 sq.mm x Al x 1	
9	Sub-Distrib Transformer (10 kVA)	MCCB	10	KVA	1	1	0		30 nos. of 20A DP MCB O/Gs
DCDB									
1	Incomer	MCCB	250	A	1	0	0	1C x70 sq.mm x Cu x 4 FS	FS - Fire Survival
2	Incomer	MCCB	250	A	0	1	0	1C x70 sq.mm x Cu x 4 FS	FS - Fire Survival
3	Bus coupler	MCCB	250	A	1	0	0		
4	Jacking Oil Pump Drive Motor	DC STARTER	22	KW	1	0	0	1C x70 sq.mm x Cu x 2 FS	FS - Fire Survival
5	Emergency Oil Pump Drive Motor	DC STARTER	11	KW	0	1	0	1C x35 sq.mm x Cu x 2 FS	FS - Fire Survival
6	Turbine Enclosure - Illumination	MCCB (32A)	32	A	0	1	0	3C x 2.5 sq.mm x Cu x 1	
7	Lighting (DC) (Customer Load)	MCCB (32A)	32	A	1	1	0	3C x 6 sq.mm x Cu x 1	
8	DC load for 33kV GIS & its CRP	MCCB (32A)	32	A	1	2	0	3C x 4 sq.mm x Cu x 1	
9	AVR (Control)	MCCB (32A)	32	A	1	0	0	3C x 6 sq.mm x Cu x 1	
10	Control & Relay Panel	MCCB (32A)	32	A	1	1	0	3C x 4 sq.mm x Cu x 1	
11	6.6kV Switchboard DC Aux. Supply	MCCB (32A)	32	A	1	1	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
12	PMCC DC Aux. Supply	MCCB (32A)	32	A	1	1	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
13	Generator Transformer Aux. Supply	MCCB (32A)	32	A	0	1	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
14	UAT Aux. Supply	MCCB (32A)	32	A	1	0	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
15	RTCC Panel for Gen Transformer	MCCB (32A)	32	A	1	0	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
16	RTCC Panel for UAT	MCCB (32A)	32	A	0	1	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
17	TG MCC DC Aux. Supply	MCCB (32A)	32	A	1	1	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
18	Station Transformers Aux. Supply	MCCB (32A)	32	A	1	1	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
19	DG SET	MCCB (32A)	32	A	1	1	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
20	DCS	MCCB (63A)	63	A	1	1	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
21	ECP	MCCB (63A)	63	A	1	1	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
22	Contractual Spare	DC STARTER	22	KW	1	0	0	1C x70 sq.mm x Cu x 2 FS	FS - Fire Survival
23	Contractual Spare	DC STARTER	11	KW	0	1	0	1C x35 sq.mm x Cu x 2 FS	FS - Fire Survival
24	Contractual Spare	MCCB (32A)	32	A	3	2	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
25	Contractual Spare	MCCB (63A)	63	A	1	0	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole
26	BHEL SPARE	MCCB (32A)	32	A	2	2	0	4C x 2.5 sq.mm x Cu x 1	2 cores/pole