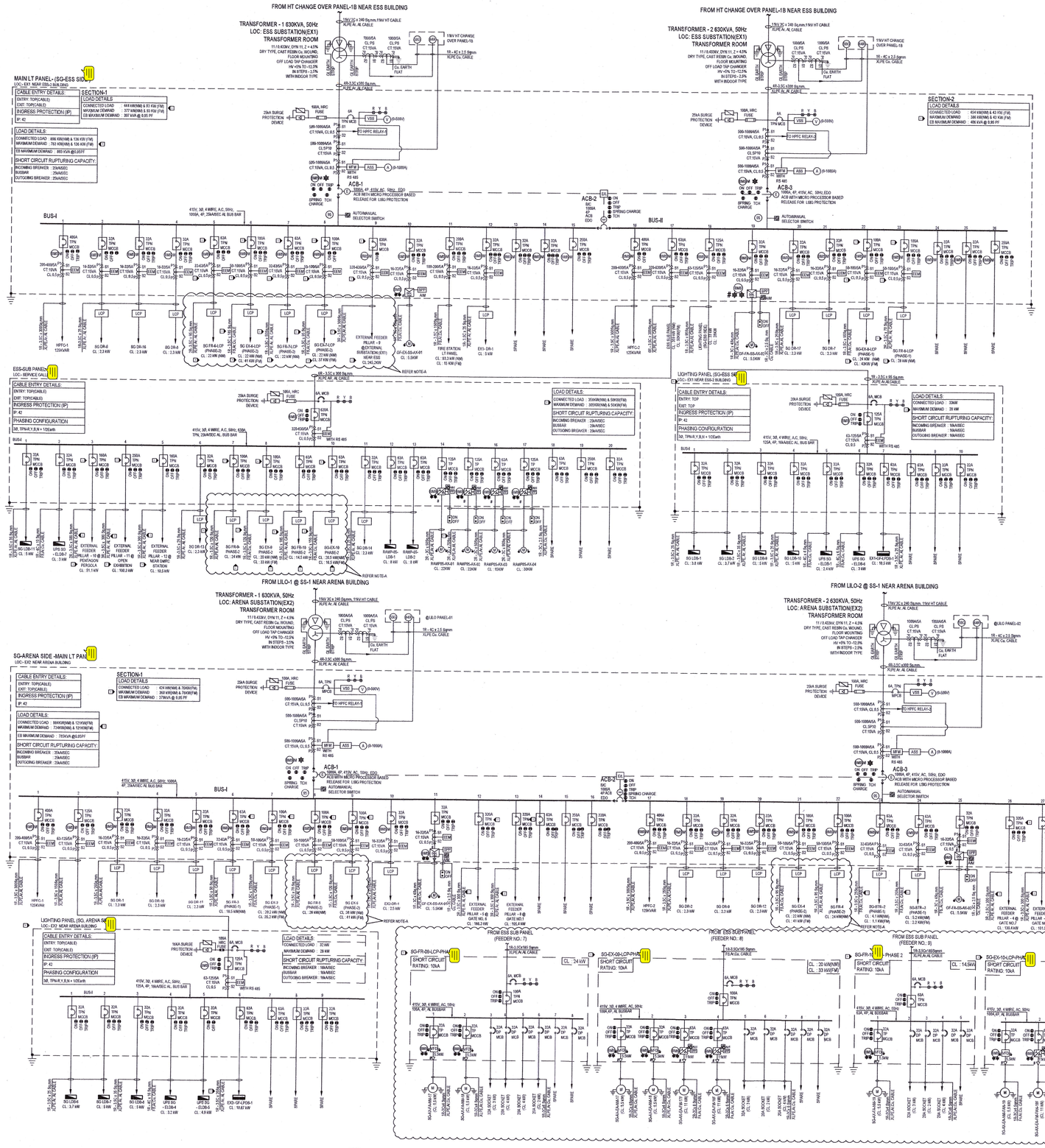
FROM HT CHANGE OVER PANEL-1B NEAR ESS BUILDING
TRANSFORMER - 1 6300KVA, 50Hz
LOC: ESS SUBSTATION(ES1)
TRANSFORMER ROOM
MAIN LT PANEL-1 (SG-ESS SS)
BUS-I
BUS-II
ACB-1
ACB-2
ACB-3
ESS-SUB PANEL-1
LIGHTING PANEL (SG-ESS SS)
FROM LILO-1 @ ES-1 NEAR ARENA BUILDING
TRANSFORMER - 1 6300KVA, 50Hz
LOC: ARENA SUBSTATION(EX2)
TRANSFORMER ROOM
SQ-ARENA SIDE -MAIN LT PANEL
LIGHTING PANEL (SG -ARENA SIDE)
FROM HT CHANGE OVER PANEL-1B NEAR ESS BUILDING
TRANSFORMER - 2 6300KVA, 50Hz
LOC: ESS SUBSTATION(EX1)
TRANSFORMER ROOM
SECTION-1
SECTION-2
SUPPLY FROM EH-3 MAIN LT PANEL
MAIN LT PANEL (SG - EH) SS
FROM SG-ESS-MAIN LT PANEL (FEEDER NO: 5)
FROM SG-ESS-MAIN LT PANEL (FEEDER NO: 6)
SG-FR-01-LCP-PNL
SG-EX-01-LCP-PNL
SG-FR-02-LCP-PNL
SG-EX-02-LCP-PNL
SG-FR-06-LCP-PNL
SG-EX-06-LCP-PNL
SG-FR-07-LCP-PNL
SG-EX-07-LCP-PNL
SG-FR-08-LCP-PNL
SG-EX-08-LCP-PNL
SG-FR-09-LCP-PNL
SG-EX-09-LCP-PNL
SG-FR-10-LCP-PNL
SG-EX-10-LCP-PNL
SG-FR-11-LCP-PNL
SG-EX-11-LCP-PNL
SG-FR-12-LCP-PNL
SG-EX-12-LCP-PNL
SG-FR-13-LCP-PNL
SG-EX-13-LCP-PNL
SG-FR-14-LCP-PNL
SG-EX-14-LCP-PNL
SG-FR-15-LCP-PNL
SG-EX-15-LCP-PNL
SG-FR-16-LCP-PNL
SG-EX-16-LCP-PNL
SG-FR-17-LCP-PNL
SG-EX-17-LCP-PNL
SG-FR-18-LCP-PNL
SG-EX-18-LCP-PNL
SG-FR-19-LCP-PNL
SG-EX-19-LCP-PNL
SG-FR-20-LCP-PNL
SG-EX-20-LCP-PNL
SG-FR-21-LCP-PNL
SG-EX-21-LCP-PNL
SG-FR-22-LCP-PNL
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SG-FR-23-LCP-PNL
SG-EX-23-LCP-PNL
SG-FR-24-LCP-PNL
SG-EX-24-LCP-PNL
SG-EX-05-LCP-PNL
SG-EX-04-LCP-PNL
SG-EX-03-LCP-PNL
SG-EX-06-LCP-PNL
SG-BTR-1-LCP-PNL
SG-BTR-2-LCP-PNL
SG-BTR-3-LCP-PNL
SG-BTR-4-LCP-PNL
SG-BTR-5-LCP-PNL
SG-BTR-6-LCP-PNL
SG-BTR-7-LCP-PNL
SG-BTR-8-LCP-PNL
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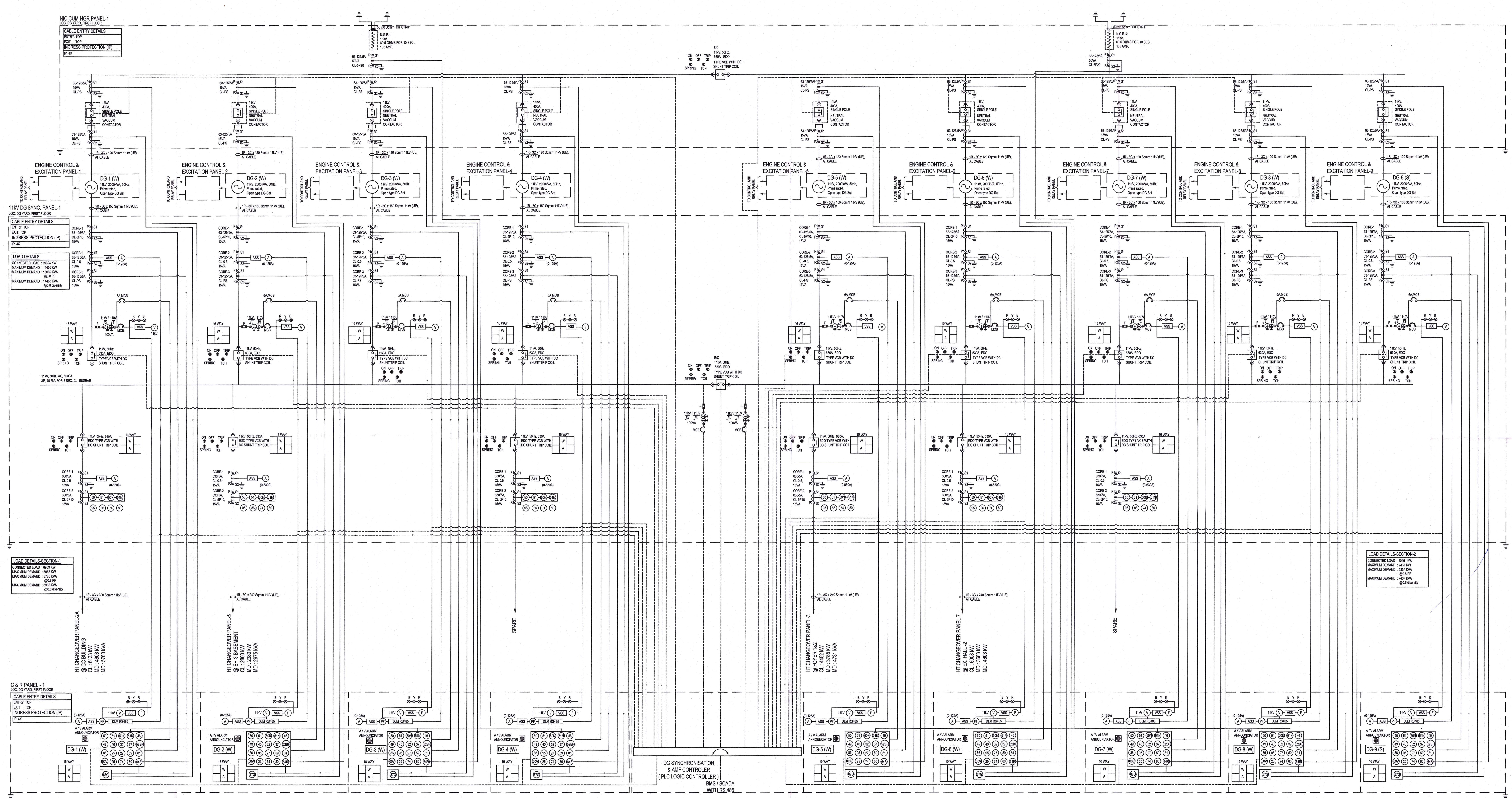
SG-BTR-40-LCP-PNL



SLD SYMBOLS

S.NO	SYMBOL	DESCRIPTION
1	(25)	CHECK SYNCHRONISE RELAY
2	(27)	UNDER VOLTAGE RELAY
3	(32)	DIRECTIONAL POWER RELAY
4	(37)	UNDER POWER RELAY (REVERSE POWER RELAY)
5	(40)	FIELD FAILURE RELAY
6	(46)	NEGATIVE PHASE SEQUENCE RELAY
7	(49)	MACHINE THERMAL RELAY
8	(50)	INSTANTANEOUS OVER CURRENT RELAY
9	(50N)	INSTANTANEOUS EARTH FAULT RELAY
10	(51)	IDMT OVER CURRENT RELAY
11	(51N)	IDMT EARTH FAULT RELAY
12	(52BF)	BREAKER FAILURE PROTECTION
13	(59)	OVER VOLTAGE RELAY
14	(60V)	VOLTAGE BALANCE RELAY
15	(64R)	RESTRICTED EARTH FAULT RELAY
16	(74)	ALARM RELAY
17	(80)	DC HEALTHY RELAY

SLD SYMBOLS

S.NO	SYMBOL	DESCRIPTION
18	(81)	FREQUENCY RELAY
19	(86)	LOCK-OUT RELAY
20	(87G)	GENERATOR DIFFERENTIAL RELAY
21	(95)	TRIP CIRCUIT SUPERVISION RELAY
22		A / V ALARM ANNUNCIATOR
23		STAR POINT
24		MINIATURE CIRCUIT BREAKER
25		CURRENT TRANSFORMER
26		DRAWOUT POTENTIAL TRANSFORMER
27		INDICATION LAMP (OFF/TRIP/SPRING/TCH)
28	VSS	VOLTMETER SELECTOR SWITCH
29	ASS	AMMETER SELECTOR SWITCH
30	(V)	DIGITAL VOLTMETER
31	(A)	DIGITAL AMMETER
32		VACUUM CIRCUIT BREAKER
33		GROUNDING
34	DLM RS485	DIGITAL LOAD MANAGER WITH RS485 PORT
35	16 WAY	16 WAY WINDOW ANNUNCIATOR

GENERAL DG OPERATING NOTES

1. NORMALLY BUS COUPLER IS OPEN AND ALL DG'S ARE IN CLOSED CONDITION, WHEN GRID POWER IS AVAILABLE.
2. IN THE EVENT OF GRID SUPPLY FAILURE, THE DG SETS WILL BE SEQUENTIALLY STARTED TO CATER THE DEMAND LOAD.
3. LOAD BALANCING ON THE TWO BUS SECTION OF 11kV DG SYNC. PANEL WILL BE MANUALLY DECIDED & SUPERVISED DEPENDING ON LOAD CONDITION (WITH BMS ASSISTANCE).
4. CLOSING OF THE NEUTRAL VACUUM CONTACTOR SHALL BE DONE AUTOMATICALLY BASED ON FOLLOWING LOGICAL CONDITION.
   * WHEN DG IS IN ISLAND MODE
   * WHEN DG IS THE FIRST TO BE PUT INTO SERVICE CONSIDERING TWO OR MORE DG SETS INTENDED FOR PARALLEL OPERATION
5. DG SETS SHALL BE CAPABLE OF CONTINUES PARALLEL OPERATION.
6. A COMMON AUDIO / VISUAL ALARM ANNUNCIATOR WITH HOOTER SHALL BE PROVIDED IN THE CONTROL & RELAY PANEL.
6. 110V AUXILIARY DC SUPPLY SHALL BE PROVIDED.
7. THE DETAILED DG SEQUENCE OF OPERATION (OPERATING PHILOSOPHY) SHALL BE DETERMINED & FINALIZED BY DG VENDOR DURING DETAIL ENGINEERING.
8. VENDOR HAS TO DEVELOP PROPER LOGIC FOR NGR OPERATION.
9. THERE WILL BE A COMPLETE NETWORK OF DIGITAL / ANALOGUE SIGNALS BETWEEN DG BREAKER PANEL, NGR PANEL, DG CONTROL AND RELAY PANEL FOR SYNCHRONIZATION.
10. THE DETAILS AND THE INTERFACING OF THE DG MOUNTED CONTROL PANEL SHALL BE SUBMITTED DURING DETAIL ENGINEERING STAGE UPON THE FINALIZED DG VENDOR.
11. CONTROL CABLES FROM ENGINE TO C&R PANEL, HT PANEL WILL BE AS PER OEM RECOMMENDATION.
12. DC AUXILIARY POWER SUPPLY FROM THE BATTERY CHARGER WILL BE PROVIDED IN THE PANEL CONTROL WIRING DIAGRAM

NOTES

1. EARTHING SHALL BE CARRIED OUT AS PER IS: 3043-1987.
2. NEUTRAL EARTHING SHALL BE OF ADEQUATE SIZE OF Cu. FLAT/ STRIP AND BODY EARTHING SHALL BE OF ADEQUATE SIZE OF GI. FLAT/ STRIP.
3. NO OTHER SERVICE PIPE LINE WATER MAINS TELEPHONE LINES, INTERCOM LINES, GAS PIPES OR ANY OTHER SERVICES LINES SHALL BE LAID IN THE ELECTRICAL CONDUITS.
4. FOLLOWING CLEARANCE SHALL BE MAINTAINED DURING THE ERECTION OF PANELS
   A) FRONT CLEARANCE OF THE PANEL SHALL BE MINIMUM 1000mm
   B) IF TWO SWITCH BOARDS ARE ERRECTED FACING EACH OTHER THE CLEARANCE BETWEEN THEM SHOULD NOT BE LESS THAN 2000mm
   C) IF TWO SWITCH BOARDS ARE ERECTED BACK TO BACK, THE CLEARANCE OF NOT LESS THAN 1500mm SHOULD BE MAINTAINED BETWEEN THEM.
   D) IF TWO SWITCH BOARDS ARE ERECTED ADJACENT TO EACH OTHER IN THE SAME LINE. THE CLEARANCE BETWEEN THE TWO SWITCH BOARDS SHOULD BE EITHER LESS THEN 200mm MORE THAN 750mm.
   E) REAR CLEARANCE SHALL BE MINIMUM 750mm IF THERE ARE REAR ENTRY OF CABLES OR REAR DOORS OR THEIR IS NECESSITY TO WORK BEHIND.
   F) REAR CLEARANCE SHALL BE LESS THAN 200mm IF THERE IS NO SUCH ITEM AND NECESSITY DESCRIBED ABOVE.
   G) H.V OR M.V CIRCUIT BREAKER, IF ERECTED INDEPENDENTLY MAY HAVE TO BE ERECTED WITH A CLEARANCE OF NOT LESS THAN 1000mm ON THE FRONT SIDE AND CLEARANCE OF NOT LESS THAN 750mm ON OTHER SIDES.
   H) SPACING BETWEEN HT GEARS / SWITCH BOARDS AND M.V SWITCH BOARDS LOCATED IN THE SAME ENCLOSURE / ROOM SHOULD BE ATLEAST TWO METERS.
   I) IF DOUBLE FRONTED SWITCH BOARDS / MCC PANELS ARE ERECTED A SPACE OF NOT LESS THEN 1000mm SHOULD BE PROVIDED FOR BOTH THE FRONT SIDES.
   J) SIDE CLEARANCE : IF THE REAR CLEARANCE IS 750mm AND ABOVE SIDE SPACINGS OF ATLEAST 750mm SHOULD ALSO BE PROVIDED ON BOTH SIDES OF THE BOARD.
   K) WHERE THE REAR CLEARANCE IS 750mm OR MORE, A PASSAGE WAY CLEAR TO THE HEIGHT OF 1800mm SHOULD ALSO BE PROVIDED.
4. ALL CABLES ARE ARMOURED ALUMINIUM CONDUCTOR CABLES UNLESS OTHERWISE SPECIFIED.
5. ALL THE FEEDERS SHALL BE LABELLED WITH PROPER FEEDER IDENTIFICATION.
7. INDOOR PANELS SHALL BE OF IP - 4X CATEGORY.
8. FOR EARTH FLAT SIZES PLEASE REFER RESPECTIVE EARTHING SCHEMATIC.

ANNUNCIATION

S.NO	TYPE OF ANNUNCIATION
1.	INSTANTANEOUS OVER CURRENT RELAY ACTIVATED
2.	INSTANTANEOUS EARTH FAULT RELAY ACTIVATED
3.	IDMT OVER CURRENT RELAY ACTIVATED
4.	IDMT EARTH FAULT RELAY ACTIVATED
5.	DISTANCE PROTECTION RELAY ACTIVATED
6.	UNDER VOLTAGE RELAY ACTIVATED
7.	OVER VOLTAGE RELAY ACTIVATED
8.	TRIP CIRCUIT SUPERVISION RELAY ACTIVATED
9.	MASTER TRIP RELAY(ELECTRICAL FAULT) ACTIVATED
10.	MASTER TRIP RELAY(MECHANICAL FAULT) ACTIVATED
11.	DC HEALTHY RELAY ACTIVATED
12.	AUTOMATIC RECLOSER ACTIVATED

ALL CURRENT OPERATING RELAY IN THE HT PANEL SHALL BE OF NUMERICAL TYPE RELAY WITH RS485 PORT.
NUMERICAL RELAYS WITH RS 485 COMMUNICATION PORT
1. NON DIRECTIONAL COMBINED INSTANTANEOUS & IDMT O/C AND EARTH FAULT REALY WITH 2 O/C & E/F RELAY WITH HIGH SET AND 2 NOS. HAND RESET CONTACT PER UNIT PER POLE.
2. RESTRICTED EARTH FAULT RELAY
3. MASTER TRIP RELAY (LOCKOUT RELAY)
4. ANTIPUMPING RELAY
5. TRIP CIRCUIT SUPERVISION RELAY
6. DC HEALTHY RELAY
7. AUXILLARY RELAY
8. UNDER VOLTAGE AND OVER VOLTAGE RELAY
9. ALARM RELAY

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Certification

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Issued by: on behalf of PEAC	Date: 07/08/2019
Employer / Employer's Engineer	

REV	DESCRIPTION	DATE	DSGN	DRWN	CHKD	APPD
R0	ISSUED FOR CONSTRUCTION	05.08.19	SBTS	TVS / TSS	MK	RAA

Revisions

ARCHITECTURE			FPS		
STRUCTURAL			PIPING		
ELECTRICAL			PHE		
ELV SYSTEM			GIS		
HVAC			GEOTECH.		
CHECKED BY	SIGN	DATE	CHECKED BY	SIGN	DATE

EPC Contractor
L&T Construction Buildings & Factories
JOB No : O17203
Project Name
DESIGN AND CONSTRUCTION OF INDIA INTERNATIONAL CONVENTION & EXPO CENTRE
SECTOR 25, DWARKA, NEW DELHI, INDIA
Drawing Status
GOOD FOR CONSTRUCTION (GFC)

Drawing No			Rev. No
E	00	0063	R0

Title :
BUILDING NAME
HT DG MSLD 1/2

EDRC DWG No : O17203 - E - SP - 00 - 1L - 0063
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