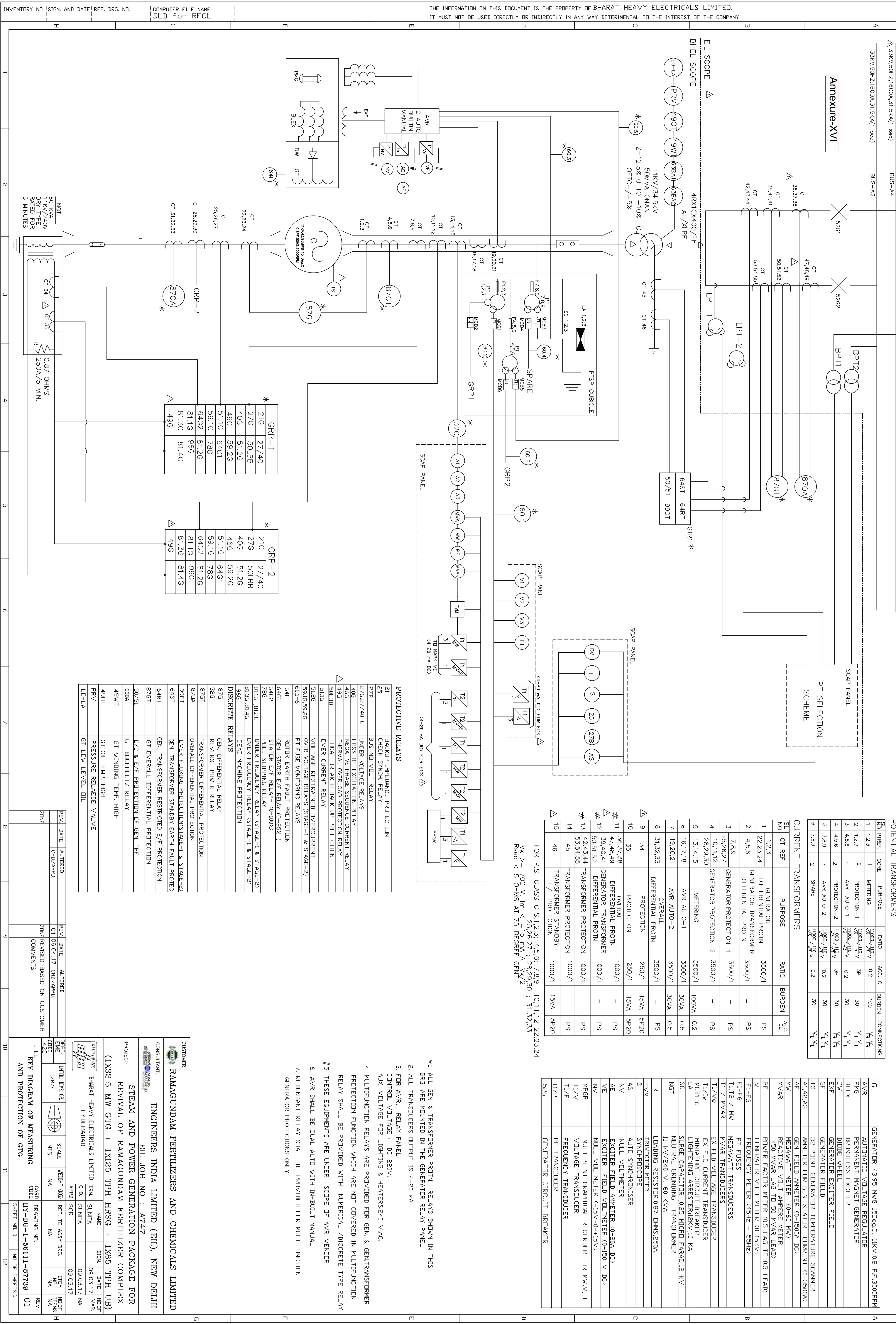




NO	PREF.	CORE	PURPOSE	RATIO	ACC.	CL.	BURDEN	CONNECTIONS
1	1,2,3	1	METERING	$\frac{I_{100V}}{I_{100V}}$	0.2	100		$\frac{1}{2} \frac{1}{2}$
2	1,2,3	2	PROTECTION-1	$\frac{I_{100V}}{I_{100V}}$	0.2	100		$\frac{1}{2} \frac{1}{2}$
3	4,5,6	1	AVR. AUTO-1	$\frac{I_{100V}}{I_{100V}}$	0.2	30		$\frac{1}{2} \frac{1}{2}$
4	4,5,6	2	PROTECTION-2	$\frac{I_{100V}}{I_{100V}}$	0.2	30		$\frac{1}{2} \frac{1}{2}$
5	7,8,9	1	AVR. AUTO-2	$\frac{I_{100V}}{I_{100V}}$	0.2	30		$\frac{1}{2} \frac{1}{2}$
6	7,8,9	2	SPARE	$\frac{I_{100V}}{I_{100V}}$	0.2	30		$\frac{1}{2} \frac{1}{2}$

CURRENT TRANSFORMERS

SL NO	CT REF	PURPOSE	RATIO	BURDEN	ACC. CL.
1	1,2,3 22,33,24	GENERATOR DIFFERENTIAL PROT N	3500/1	–	PS
2	4,5,6	GENERATOR TRANSFORMER DIFFERENTIAL PROT N	3500/1	–	PS
3	7,8,9 25,26,27	GENERATOR PROTECTION-1	3500/1	–	PS
4	10,11,12 28,29,30	GENERATOR PROTECTION-2	3500/1	–	PS
5	13,14,15	METERING	3500/1	100VA	0.2
6	16,17,18	AVR AUTO-1	3500/1	30VA	0.5
7	19,20,21	AVR AUTO-2	3500/1	30VA	0.5
8	31,32,33	OVERALL DIFFERENTIAL PROT N	3500/1	–	PS
9	34	PROTECTION	250/1	15VA	5P20
10	35	PROTECTION	250/1	15VA	5P20
11	36,37,38 47,48,49	OVERALL DIFFERENTIAL PROT N	1000/1	–	PS
12	39,40,41 50,51,52	GENERATOR TRANSFORMER DIFFERENTIAL PROT N	1000/1	–	PS
13	42,43,44 53,54,55	TRANSFORMER PROTECTION	1000/1	–	PS
14	45	TRANSFORMER PROTECTION	1000/1	–	PS
15	46	TRANSFORMER STANDBY E/F PROTECTION	1000/1	15VA	5P20

FOR P.S. CLASS CTS:1,2,3; 4,5,6; 7,8,9 10,11,12 2
25,26,27; 28,29,30; 31,32,33
V_k >= 700 V, I_m <=15 mA AT V_k/2
R_{sec} < 5 OHMS AT 75 DEGREE CENT.

G	GENERATOR 43.95 MW @1SD69C, 11kV/0.8 P.F./3000RPM
AVR	AUTOMATIC VOLTAGE REGULATOR
PMG	PERMANENT MAGNET GENERATOR
BLEX	BRUSHLESS EXCITER
DW	DIODE WHEEL
EXF	GENERATOR EXCITER FIELD
TS	GENERATOR FIELD
AI2/AI3	32 POINT GENERATOR TEMPERATURE SCANNER
AF	AMMETER FOR GEN. STATOR CURRENT (0-3500A)
AI	GEN. FIELD AMMETER (0-1500A DC)
MV	MEGAWATT METER (0-60 MW)
MVAR	REACTIVE VOLT AMPERE METER
PF	50 MVAR LAG TO 50 MVAR LEAD
V	POWER FACTOR METER (0.5 LAG TO 0.5 LEAD)
F1-F3	GENERATOR VOLT METER (0-15KV)
T1,T2 / MW	FREQUENCY METER (45Hz - 55Hz)
T1 / MVAR	PI FUSES
T1/Ve	MEGAWATT TRANSDUCERS
T1/Ve	MVAR TRANSDUCERS
T1/Ve	EX FLD VOLTAGE TRANSDUCER
T1/Ve	EX FLD CURRENT TRANSDUCER
MCB1-6	MINIATURE CIRCUIT BREAKER
LA	LIGHTNING ARRESTER,12KV,10 KA
SC	SURGE CAPACITOR 0.25 MICRO FARAD,12 KV
NGT	NEUTRAL GROUNDING TRANSFORMER
LR	11 KV/240 V, 60 KVA
LR	LOADING RESISTOR,0.87 OHMS,250A
TVM	TRIVECTOR METER
S	SYNCHROSCOPE
AS	AUTO SYNCHRONISER
NV	NULL VOLTMETER
AE	EXCITER FIELD AMMETER (0-20A DC)
VE	EXCITER FIELD VOLTMETER (0-150 V DC)
NV	NULL VOLTMETER (-15V-0+15V)
MGR	MULTIPOINT GRAPHICAL RECORDER FOR MW,V, F
T1/V	VOLTAGE TRANSDUCER
T1/V	FREQUENCY TRANSDUCER
T1/VF	PF TRANSDUCER
36G	GENERATOR CIRCUIT BREAKER

1. ALL GEN. & TRANSFORMER PROTIN. RELAYS SHOWN IN THIS DRG. ARE MOUNTED IN THE GENERATOR RELAY PANEL
2. ALL TRANSducers OUTPUT IS 4-20 mA
3. FOR AVR, RELAY PANEL
CONTROL VOLTAGE : DC 220V
AUX. VOLTAGE FOR LIGHTING & HEATERS240 V.AC.
4. MULTIFUNCTION RELAYS ARE PROVIDED FOR GEN. & GENTRANSFORMER
PROTECTION FUNCTION WHICH ARE NOT COVERED IN MULTIFUNCTION
RELAY SHALL BE PROVIDED WITH NUMERICAL /DISCRETE TYPE RELAY
5. THESE EQUIPMENTS ARE UNDER SCOPE OF AVR VENDOR
6. AVR SHALL BE DUAL AUTO WITH IN-BUILT MANUAL
7. REDUNDANT RELAY SHALL BE PROVIDED FOR MULTIFUNCTION
GENERATOR PROTECTIONS ONLY

CUSTOMER:  RAMAGUNDAM FERTILIZERS AND CHEMICALS LIMITED

CONSULTANT: ENGINEERS INDIA LIMITED (EIL), NEW DELHI
 EIL JOB NO : A747

PROJECT: STEAM AND POWER GENERATION PACKAGE FOR
 REVIVAL OF RAMAGUNDAM FERTILIZER COMPLEX
 (1X32.5 MW GTG + 1X125 TPH HMSG + 1X85 TPH UDG)

	NAME	STDN.	DATE	UNIT
BHARAT HEAVY ELECTRICALS LIMITED	SUNITA		09.03.17	VARS
HIDDERABAD	CHD.	SUNITA	09.03.17	NA
APPLD. SCR			09.03.17	

REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPL.	01	06.04.17	CHD/APPL.
ZONE REVISED BASED ON CUSTOMER COMMENTS					
ZONE					