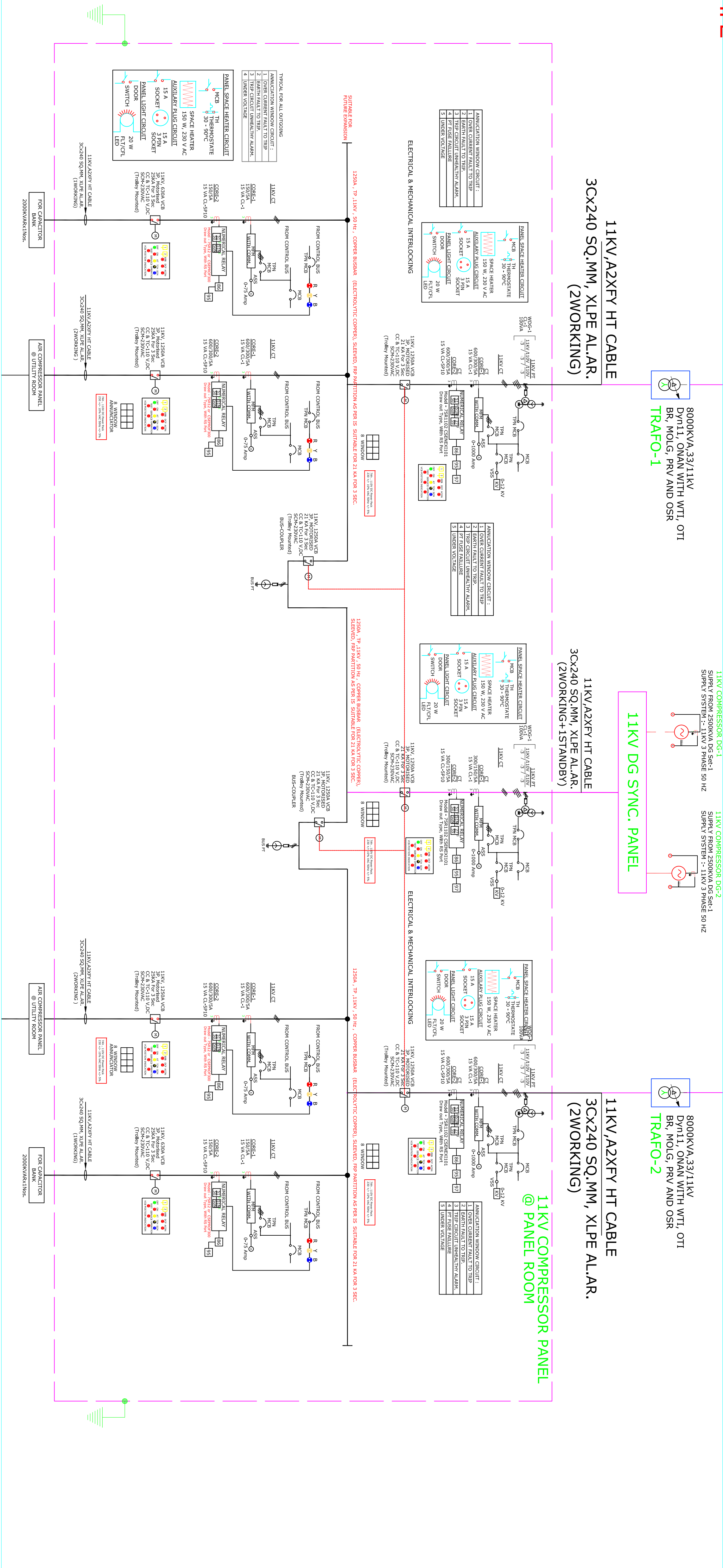


TENDER DRAWING

ANNEXURE- II E



1	REFERENCE SPECIFICATION OF HT PANEL'S DOCUMENT NO. :-																												
2	INCOMING ELECTRICAL POWER SUPPLY DETAIL ARE AS FOLLOWS.																												
3	UTILIZATION VOLTAGE 11k V, 3 PHASE , 3 WIRE , 50 Hz																												
4	VOLTAGE VARIATION ± 10%																												
5	FREQUENCY VARIATION ± 3%																												
6	HT PANEL SHALL BE SINGLE FRONT, FLOOR MOUNTED WITH PROVISION FOR BOTTOM CABLE ENTRY.																												
7	HT PANEL SHALL BE PROVIDED WITH NUMERICAL TYPE PROTECTION RELAY																												
8	ALL MAIN BUS BARS SHALL BE SUITABLY-PVC SLEEVED ELECTROLYTIC COPPER.																												
9	EMERGENCY TRIP PUSH BUTTON WILL BE PROVIDED NEAR THE HT SWITCHYARD.																												
10	VOLTMETER & AMMETER SHALL BE DIGITAL TYPE WITH INBUILT SELECTOR SWITCH.																												
11	RESTRICTED EARTHFAULT RELAY PROVIDED ON SECONDARY SIDE SHALL TRIP LT BREAKER THROUGH SEPARATE LOCKOUT RELY.																												
12	CT'S FOR TRANSFORMER RESTRICTED EARTH FAULT PROTECTION & STAND BY EARTH FAULT PROTECTION TO BE MOUNTED ON TRANSFORMER BUSHING. (SECONDARY).																												
13	THE CONTROL SCHEME SHALL INCLUDE ALL NECESSARY TIMERS , RELAYS AND SELECTOR /CONTROL SWITCHES. MANUAL OPERATION SHALL BE INCLUDED.																												
14	ALL PROTECTION RELAY SHALL BE OF THE FULLY WITHDRAWABLE TYPE.																												
15	VCB SHALL BE PROVIDED WITH OPERATION COUNTER.																												
16	AUXILIARY DC SUPPLY UNIT SHALL BE FROM INTERNAL POWER PACK INSTALLED IN HT PANEL.																												
17	AUXILIARY POWER SUPPLY SHALL BE AS FOLLOWS , ALL EQUIPMENT SHALL BE RATED FOR 24 VDC CONTINUOUS OPERATION																												
<table><tr><td>SERVICE</td><td>VOLTS</td><td>AC/DC</td><td>SUPPLY POWER DERIVED FROM</td></tr><tr><td>VCB CLOSING</td><td>110</td><td>DC</td><td>INTERNAL POWER PACK</td></tr><tr><td>VCB TRIPPING</td><td>110</td><td>DC</td><td>INTERNAL POWER PACK</td></tr><tr><td>SPRING CHARGED MOTOR</td><td>230</td><td>AC</td><td>EXTERNAL AC SUPPLY UNIT</td></tr><tr><td>CONTROL & INDICATION</td><td>110</td><td>DC</td><td>INTERNAL POWER PACK</td></tr><tr><td>METERS</td><td>230</td><td>AC</td><td>INTERNAL AC SUPPLY UNIT</td></tr><tr><td>AUX. RELAYS & CONTACTORS</td><td>110</td><td>DC</td><td>INTERNAL POWER PACK</td></tr></table>		SERVICE	VOLTS	AC/DC	SUPPLY POWER DERIVED FROM	VCB CLOSING	110	DC	INTERNAL POWER PACK	VCB TRIPPING	110	DC	INTERNAL POWER PACK	SPRING CHARGED MOTOR	230	AC	EXTERNAL AC SUPPLY UNIT	CONTROL & INDICATION	110	DC	INTERNAL POWER PACK	METERS	230	AC	INTERNAL AC SUPPLY UNIT	AUX. RELAYS & CONTACTORS	110	DC	INTERNAL POWER PACK
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METERS	230	AC	INTERNAL AC SUPPLY UNIT																										
AUX. RELAYS & CONTACTORS	110	DC	INTERNAL POWER PACK																										

14 PANEL, ANTI-CONSUMPTION HEATER SUPPLY SHALL BE 230 VAC.

15 CT & PT RATING AND CHARACTERISTICS SHALL BE CONFIRMED BY THE SWITCHGEAR VENDOR.

16 VENDORS TO INDICATE PURCHASER'S REFERENCE DRAWING NUMBER ON ALL DOCUMENTATION.

17 THE SWITCHGEAR VENDOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN AS DETAILED IN THE SPECIFICATION

18 RELEVANT STANDARDS AND ENGINEERING BEST PRACTICE.

19 CT , RELAY,METERING,LAMPS ETC SHOWN ARE INDICATIVE AND MINIMUM. ANY AUX RELAYS, METERS, INDICATING LAMPS,

20 CT SHALL BE PROVIDED.

21 SWITCHGEAR SHALL BE SUITABLE TO EXPANDABLE AT ONE SIDE FOR FUTURE EXPANSION.

22 PT(POTENTIAL TRANSFORMER) SHALL BE FIXED TYPE.

23 PANEL SHALL BE PROVIDED WITH BREAKER, TROLLEY AND EARTHING TRUCK.

24 BREAKER SHALL BE PROVIDED WITH SEPARATE DISCRETE AUX. RELAY.

25 EACH VCB SHALL BE PROVIDED WITH VCB SERVICE , VCB TEST AND VCB OPERATIONAL POSITION/CONDITION INDICATION LAMP.

26 HT PANEL SHALL BE OF MINIMUM INGRESS PROTECTION AS IP54.

27 HT PANEL SUPPLIER SHALL BE SUPPLIED CT FOR REF.

1	BREAKER CONTROL SWITCH
2	AUTO-MANUAL SWITCH
21	DISTANCE PROTECTION RELAY
25	UNDER VOLTAGE RELAY
27	UNDER VOLTAGE RELAY/NO VOLTAGE RELAY
32	REVERS POWER RELAY
49	OL TEMPERATURE INDICATOR
49 W	WINDING TEMPERATURE INDICATOR
50 N	INST. OVER CURRENT EARTH RELAY
50	INST. OVER CURRENT RELAY
50LBB	BREAKER PROTECTION RELAY
51	IDMT OVER CURRENT RELAY
51N	IDMT EARTH FAULT RELAY
51NS	STAND-BY EARTH FAULT RELAY
51V	VOLTAGE RESTRAINED OVER CURRENT RELAY
59	OVER VOLTAGE RELAY
64R	RESTRICTED EARTH FAULT RELAY
67	DIRECTION PHASE OVER CURRENT RELAY
67 N	DIRECTION EARTH FAULT RELAY
74	ALARM RELAY
78	OUT OF STEP (POLE SLIP FUNCTION)
81	UNDER FREQUENCY RELAY
86	MASTER TRIPPING RELAY
87 G	GENERATOR DIFFERENTIAL RELAY
87 B	BUSBAR PROTECTION RELAY
87 L	CABLE DIFFERENTIAL PROTECTION RELAY
87 T	TRANSFORMER DIFFERENTIAL RELAY
95	TRIP CIRCUIT SUPERVISION RELAY
97	PT USE FAILURE RELAY
95/96	SUPERVISION RELAY FOR MASTER TRIPPING RELAY

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REVISIONS:					
DATE	REV	REVIEW	CHECK BY	DESCRIPTION	

LEGEND NO.	
	11 VV VACUUM CIRCUIT BREAKER
	CURRENT TRANSFORMER (FIGURE INDICATES NO. OF CT'S)
	R-X-B INDICATING LAMPS
	EMERGENCY PUSH BUTTON
	VOLTAGE TRANSFORMER
	POWER METER
	3 CORE CT POTENTIAL TRANSFORMER
	2 CORE CT POTENTIAL TRANSFORMER
	DISTRIBUTION TRANSFORMER
	AMMETER, VOLTMETER
	FUSE
	TRIP/NEUTRAL/CLOSE SWITCH
	MCB
	CABLE TERMINATION
	TRIP CIRCUIT HEALTHY INDICATION
	CLOSING COIL
	TRIPPING COIL
	SPRING CHARGING MOTOR (BLUE COLOUR)
	BREAKER ON INDICATION (RED COLOUR)
	BREAKER OFF INDICATION (GREEN COLOUR)
	AUTO TRIP INDICATION (AMBER COLOUR)
	DC SUPPLY FAIL INDICATION
	AC SUPPLY ON INDICATION
	TEMPERATURE METER

INSTRUMENTATION	
A	AMMETER
ASS	AMMETER SELECTOR SWITCH
V	VOLTMETER
VSS	VOLTMETER SELECTOR SWITCH
DLM	DIGITAL LOAD MANAGER
EDM	ELECTRICAL DRAW OUT
MDO	MANUAL DRAW OUT
EPB	ENR. PUSH BUTTON
WPI	WINDING TEMPERATURE INDICATOR
LM	LOAD MANAGER WITH HIGH DEMAND ALARM
RPBR	RAPID PRESSURE RISE RELAY
RTTC	REMOTE TAP CHANGING CUBICLE
AVC	AUTOMATIC VOLTAGE RELAY
NGR	NEUTRAL GROUNDING RELAY
CT	CURRENT TRANSFORMER
NIC	NEUTRAL ISOLATING CONTACTOR
CTTB	CT TERMINAL BLOCK
ETB	EXTERNAL TERMINAL BLOCK
NL	NEUTRAL LINK
CC	CLOSING COIL
OC	OPENING COIL
IPB	ILLUMINATED PUSH BUTTON
PRV	PRESSURE RELIEF OF VALVE

21.08.23	R0	MAIL	CLIENT FOR STUDY
DATE	REV.	NOS	ISSUED TO DESCRIPTION

CLIENT :-
**KARNATAKA ANTIBIOTICS AND
PHARMACEUTICALS LTD.**

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RELEASE FOR :-		TENDER DRAWING	
TITLE :-		SINGLE LINE DIAGRAM 11KV/HT COMPRESSOR PANEL1	
DESIGN	KARTI	19.07.23	
DRAWING	KARTI	19.07.23	
CHECKED	SKD	24.07.23	
APPROVED	SKD	24.07.23	
PROJECT NO. - 926		SCALE - 1/125	
DRAWING NO.			
G28/KAP/HT-SD/EL-002A		REV	
		R-001	