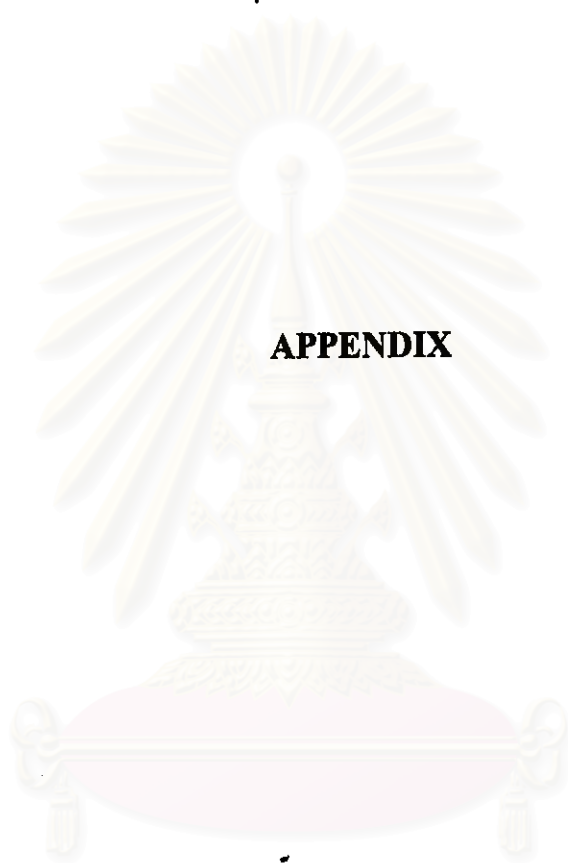


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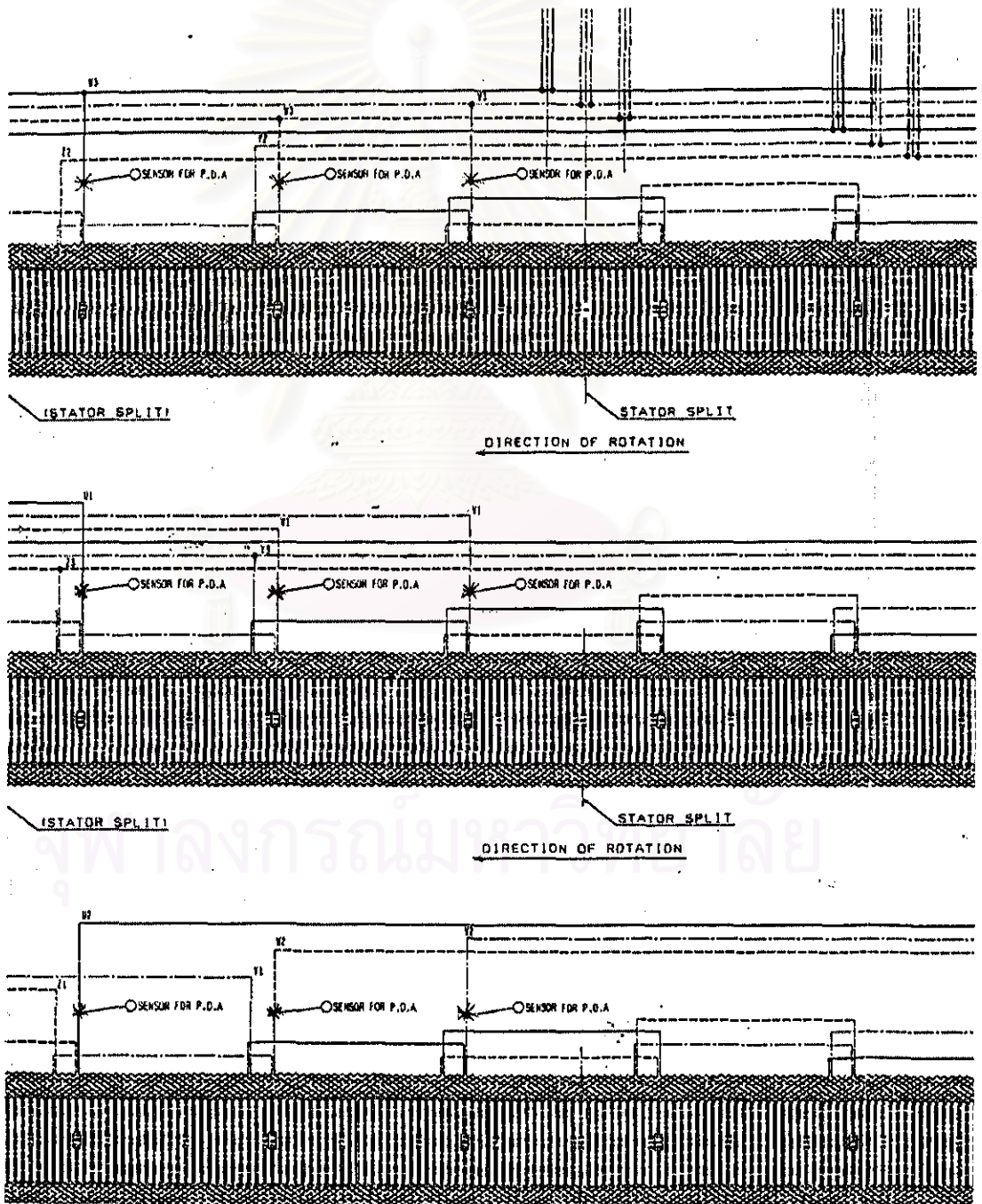
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APPENDIX

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

Generator Unit 2 winding diagram for coupler installation



INSULATION TESTS

ROTATING MACHINERY

GENERATOR MOTORS ECT. (capacitor coupled)

LOCATION OF TEST: EGAT's head office STATOR INSULATION: ASPHALT-MICA

EQUIPMENT TEST: Insulation analyzer 10KVAC EPOXY-MICA

SERIAL NO. _____ STATATOR TEMP. °C _____ POLYESTER-MICA

CAPACITY: KV. _____ MVA. _____ MW _____ HP. _____ EF. _____ % _____

ROTOR VOLTS _____ ROTOR IN ROTOR OUT SPEED _____ RPM. OTHER: XLPE

MFR. _____ TYPE _____ AEG _____

EQUIVALENT 10 KV READINGS

LINE NO.	PHASE			TEST KV.	MILLIAMPERES			WATTS			% POWER FACTOR	% P.F. TIP-UP	CAPACITANCE (PF.)
	ENERG	GRD	UST		METER READING	MULTIPLIER	MILLI AMPERES	METER READING	MULTIPLIER	WATTS			
1				10							0.35		81.9
2				10							0.34		79.5
3				10							0.37		80.9
4				10							0.30		81.4
5				10							0.39		80.7
6				10							0.33		80.7
7				10							0.34		80.2
8				10							0.34		81.9
9				10							0.33		82.1
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													

DIAGRAM	REMARK
	<u>HV power cable 25 KV XLPE insulation copper core and copper shield 9 cc. for Sivil com. # 2</u>

TEST BY: 1622207 DATE: 11/5/1997 WITNESSED BY: 2500, 07007



POWER CABLE

ททท-5

LOCATION	RATED VOLTAGE 25 KV.	INS. THICKNESS
UNIT No	RATED CURRENT A.	AMB. TEMP. 32 °C
MANUFACTURER	CONDUCTOR SIZE 30 mm ²	WDG. TEMP. - °C
INSULATION TYPE XLPE	NO. OF CONDUCTOR	NO. OF SHIELD -
	RELATIVE HUMIDITY %	SERIAL No -

PRE TEST
 FINAL TEST
 OTHER _____

INSULATION RESISTANCE TEST

DESCRIPTION	PHASE	2,500 V.DC. 1 MINUTE (MΩ)	
		BEFORE DC. HV. TEST	AFTER DC. HV. TEST

DIELECTRIC HIGH VOLTAGE TEST

DC HIGH POTENTIAL TEST
 AC HIGH POTENTIAL TEST
 TEST VOLTAGE 48.62kV

DESCRIPTION	PHASE	LEAKAGE CURRENT (μA) AT ANY TIME (MINUTE)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
capacitor coupler	Ng 1	3.4													
	Ng 2	3.2													
	Ng 3	4.0													
	Ng 4	4.1													
	Ng 5	3.9													
	Ng 6	3.0													
	Ng 7	3.0													
	Ng 8	3.0													
	Ng 9	2.5													

REMARK: Instrument: Hipotronic 0-20kVdc.

TEST BY 1872207 DATE 11/5/97 WITNESSED BY gm 6101-5



GENERATOR STATOR

11111-5

LOCATION <i>Snikit power plant</i>	OUTPUT VOLTAGE <i>13,200</i>	V.	SPEED <i>125</i>	RPM
CAPACITY <i>132,000 kVA</i>	OUTPUT CURRENT <i>5,522</i>	A.	FREQUENCY <i>50</i>	HZ.
MANUFACTURER	EXCITATION VOLTAGE	V.	POLE <i>48</i>	PHASE <i>3</i>
TYPE	FIELD CURRENT	A.	PF. <i>0.95</i> %	INS. CLASS <i>B</i>
WDG. TEMP. °C	AMB. TEMP. °C	RELATIVE HUMIDITY	%	SERIAL NO

PRE TEST FINAL TEST OTHER _____

INSULATION RESISTANCE TEST

VOLTAGE (V.D.C.)	TIME (MINUTE)	INSULATION RESISTANCE (MΩ)				REMARK
		PHASE U	PHASE V	PHASE W	U+V+W	
<input type="checkbox"/> 1000 V. <input checked="" type="checkbox"/> 2000 V. <input type="checkbox"/> 2500 V.	1	950	1000	950	380	
	2					
	4					
	6					
	8					
	10	1900	2100	2000	850	
P.I.		2	2.1	2.1	2.2	

DC RESISTANCE TEST

PHASE	VOLTAGE (V.)	CURRENT (A.)	RESISTANCE (Ω)	REMARK
U - X				
V - Y				
W - Z				

IMPEDANCE TEST

PHASE	VOLTAGE (V.)	CURRENT (A.)	IMPEDANCE (Ω)	REMARK
U - X				
V - Y				
W - Z				

CAPACITANCE TEST

PHASE	VOLTAGE (V.)	CURRENT (mA)	CAPACITANCE (μF)	REMARK
U - GROUND				
V - GROUND				
W - GROUND				
U+V+W - GROUND				

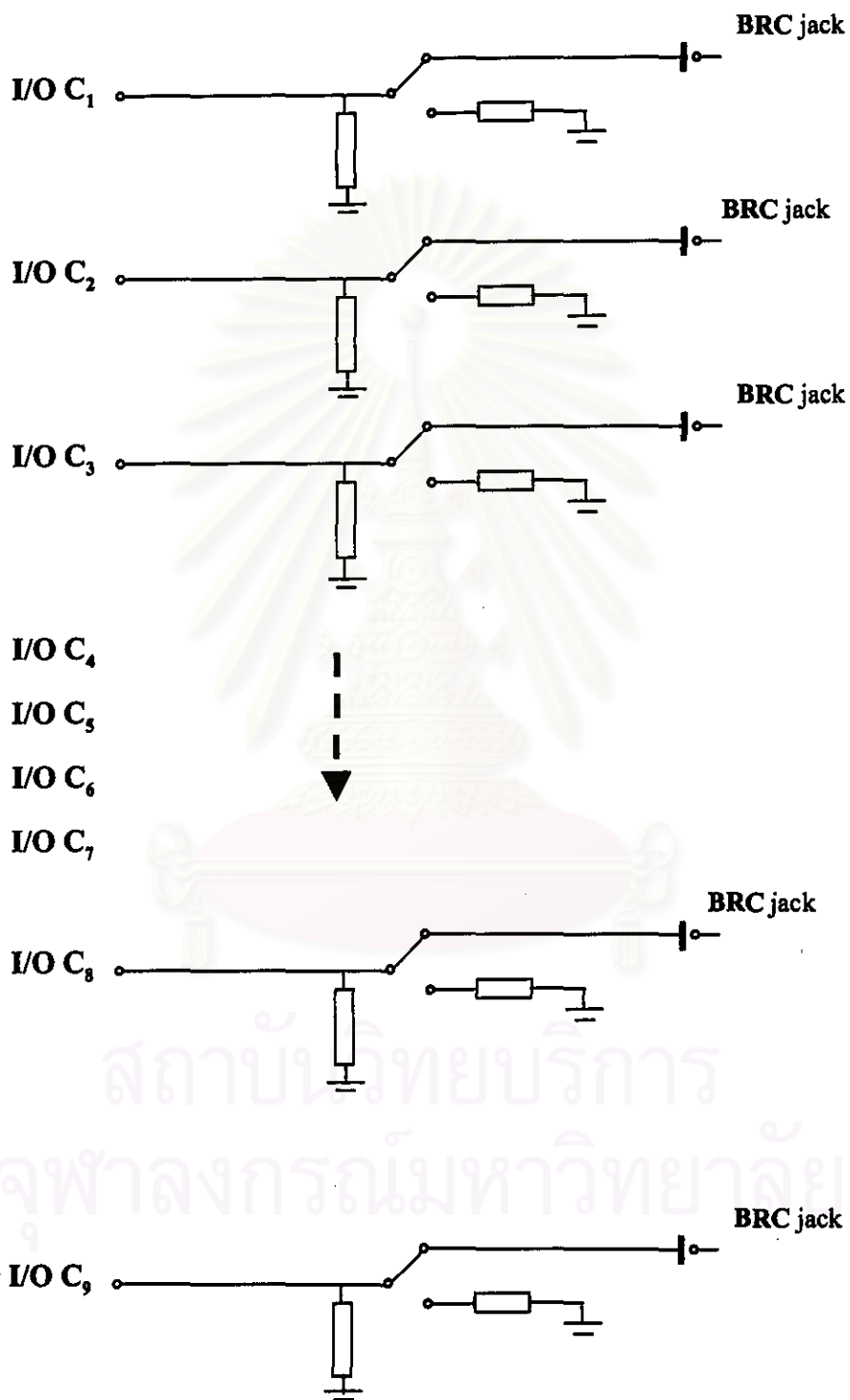
DIELECTRIC HIGH VOLTAGE TEST

DC HIGH POTENTIAL TEST		AC HIGH POTENTIAL TEST		REMARK
PHASE	ACCEPTABLE	UNACCEPTABLE	Leakage Current (μA)	TEST VOLTAGE = 100 %
U - GROUND	✓		71	=48.62 k
V - GROUND	✓		74	ANSI C50
W - GROUND	✓		65	
U+V+W - GROUND	✓		89	

THROUGH BOLT INSULATION RESISTANCE TEST

INSULATION RESISTANCE AT 1000 V.D.C. 1 MINUTE						VIEW FROM TURBINE
NUMBER OF BOLT	1	7	13	19	25	
	2	8	14	20	26	
	3	9	15	21	27	
	4	10	16	22	28	
	5	11	17	23	29	
	6	12	18	24	30	

TEST BY *1872307* DATE *23/11/1997* WITNESSED BY *11111-5*



Circuit Diagram of measuring coaxial lead connection

BIOGRAPHY



Mr. Surapon Puthwattana was born on March 21, 1956 in Cheingmai, Thailand. He graduated from King Mongkut's Institute of Technology, Thonburi (KMIT-T) with a Bachelor's Degree in Electrical Engineering, since 1979. He continued his education with a Master's Degree in Engineering Management at Chulalongkorn University in 1997.

He first was a maintenance engineer in P.charernpan Food mill industry for half year and then became to be a staff of Electricity Generating Authority of Thailand (EGAT) in power plant maintenance engineer position. Today he is the manager of Engineering and Testing Section, Electrical Maintenance Division, Maintenance Business Unit of EGAT.

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย