

**THE STUDY FOR ESTABLISHMENT OF ELECTRIC
POWER
TECHNICAL STANDARDS AND GUIDELINES
IN
KINGDOM OF CAMBODIA**

FINAL REPORT

MAIN REPORT

Vol. III

SURVEY REPORT OF POWER FACILITIES

JICA LIBRARY



1175275(5)

FEBRUARY 2004

**ELECTRIC POWER DEVELOPMENT CO., LTD.
TOKYO-JAPAN**

**CHUBU ELECTRIC POWER CO.,INC.
NAGOYA-JAPAN**

MPN

JR

04-048

JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)
MINISTRY OF INDUSTRY, MINES AND ENERGY(MIME)
KINGDOM OF CAMBODIA

**THE STUDY FOR ESTABLISHMENT OF ELECTRIC
POWER
TECHNICAL STANDARDS AND GUIDELINES
IN
KINGDOM OF CAMBODIA**

FINAL REPORT

MAIN REPORT

Vol. III

SURVEY REPORT OF POWER FACILITIES

FEBRUARY 2004

**ELECTRIC POWER DEVELOPMENT CO., LTD.
TOKYO-JAPAN**

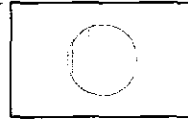
**CHUBU ELECTRIC POWER CO.,INC.
NAGOYA-JAPAN**



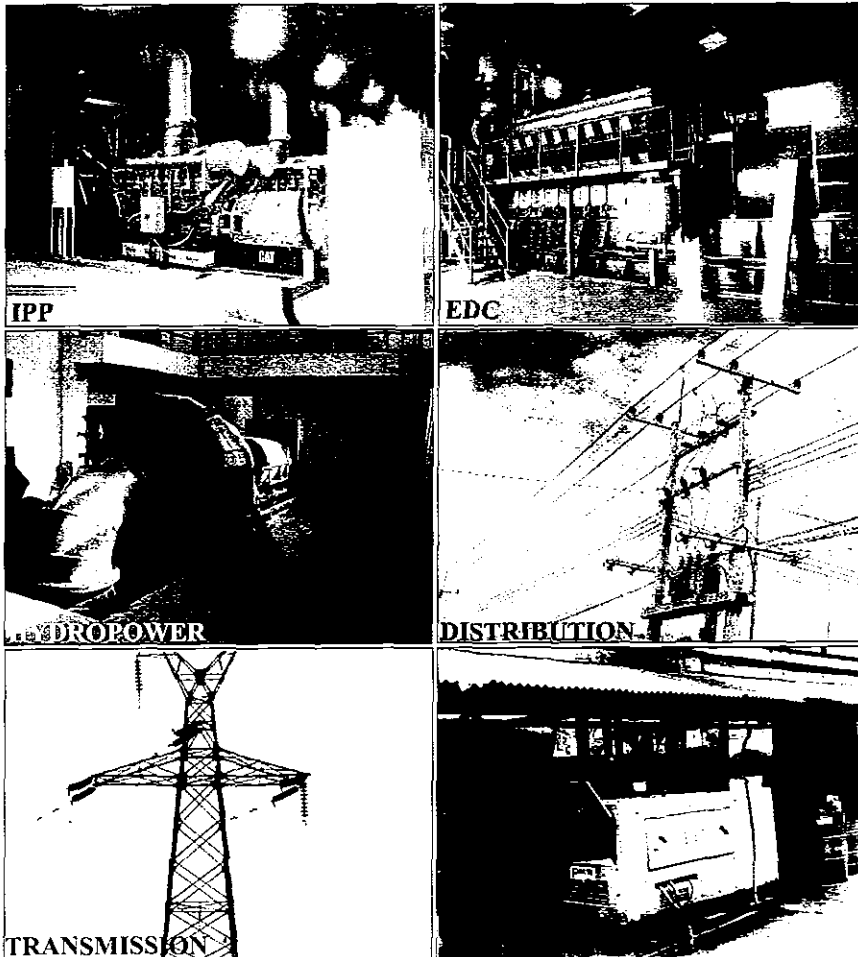
1175275【5】



ELECTRIC POWER FACILITIES SURVEY
OF
THE KINGDOM OF CAMBODIA



2003



MINISTRY OF INDUSTRY MINES AND ENERGY
ELECTRICITY AUTHORITY OF CAMBODIA
ELECTRICITÉ DU CAMBODGE
JICA STUDY TEAM

PREFACE

Judging from the long-term electric power demand forecast, the electric power demand in Cambodia shows quite high increase in spite of the recession of the world economy, and the demand will be forecasted steady increase based on the improvement of peoples' living.

The Electricity Law has been issued by the Government of the Kingdom of Cambodia, and it was established the frameworks of generation, transformation, transmission and distribution of electricity of the Kingdom of Cambodia. In order to establish the stable supply of the electric power to the consumers, it will be expected to improve technical standards to ensure safety and protection of the environment in order to maintain the stable electric power supply.

For the above, it will be important to grasp the current status of electric power facilities in the Kingdom of Cambodia and fully utilize the data for the preservation and development of the facilities.

This survey has been made by the local consultant Cheang Engineering Consultants Co., Ltd (CEC) who was awarded by JICA Study Team as a part of the Study for Establishment of Electric Power Technical Standards and Guidelines in the Kingdom of Cambodia.

All power stations for power industries are fully covered. Almost all of the private power generation facilities more than 100kW are covered except in remote areas.

The addresses of the above power stations are also listed up for easy reference.

We are very happy that all peoples who are related to the power industries utilize this survey result.

Phnom Penh, February 2003

Takuya Takaoka

Team Leader

JICA Study Team of the Study of Electric
Power Technical Standards and Guidelines
in the Kingdom of Cambodia

TABLE OF CONTENTS

	PAGE
<u>PREFACE</u>	1
<u>TABLE OF CONTENTS</u>	2
<u>SUMMARY</u>	4
<u>1. THERMAL POWER PLANTS</u>	5
1-1 - List of Thermal Power Plants	6
1-2 - Cambodia Map with Thermal and Hydro Power Plants Locations	7
1-3 - PHNOM PENH	8
Phnom Penh Map with Power Plants Locations	9
Outline of Electric Power Facilities-Diesel- C1	10
Outline of Electric Power Facilities-D1&St- C2	11
Outline of Electric Power Facilities-Diesel- C3	13
Outline of Electric Power Facilities-Diesel- C5	14
Outline of Electric Power Facilities-Diesel- C6	15
1-4 - SIEM REAP	16
Siem Reap Map with Power Plant Location	17
Outline of Electric Power Facilities-Diesel	18
1-5 - SIHANOUKVILLE	19
Sihanoukville Map with Power Plant Location	20
Outline of Electric Power Facilities-Diesel	21
1-6 - KAMPONG CHAM	22
Outline of Electric Power Facilities-Diesel	23
1-7 - BATTAMBANG	24
Outline of Electric Power Facilities-Diesel	25
<u>2. HYDRO POWER PLANTS</u>	26
2-1 - RATTANAKKIRI (O CHUM)	27
Equipment of Hydropower Plant O Chum	28
2-2 - KOH KONG (KIRIROM)	33
Equipment of Hydropower Plant Kirirom 1	34
<u>3. EDC/IPP OF PROVINCIAL TOWN</u>	39
3-1 - List of EDC/IPP of Provincial Town	40
3-2 - EDC/IPP of Provincial Town	41
<u>4. IPP OF DISTRICTS</u>	69
<u>5. ENERGY BOUGHT FROM NEIGHBORING COUNTRIES</u>	76
<u>6. POWER DISTRIBUTION SYSTEM</u>	78
6-1 - MSP DEVELOPMENT COMPANY (D)	79
6-2 - FRANASIE IMPORT EXPORT COMPANY (D)	83
6-3 - ANCO BROTHERS COMPANY (D)	84
6-4 - DUTY FREE SHOP (D)	89
6-5 - DISTRIBUTION LINES	90
<u>7. POWER TRANSMISSION SYSTEM</u>	91
7-1 - TRANSMISSION LINES	92
7-2 - SUBSTATIONS	94

8. <u>OWN GENERATION GREATER THAN 100 kW</u>	96
8-1 - LIST OF OWN GENERATION	98
8-2 - PHNOM PENH	102
8-3 - SIEM REAP	220
8-4 - SIHANOUKVILLE	248
8-5 - KAMPONG CHAM	269
8-6 - BATTAMBANG	274
8-7 - PAILIN	277
9. BATTERY CHARGING SERVICES COMPANIES	279
9-1 - BATTAMBANG	280
9-2 - SIEM REAP	282
9-3 - SIHANOUKVILLE	284
9-4 - PHNOM PENH	286

SUMMARY OF THE FINAL SURVEY REPORT FEBRUARY 2003

N°	PROVINCE / MUNICIPALITIES	1-Thermal Power Plants	2-Hydro Power Plants	3-Own generation >100kW	4-EDC/IPP Provincial Town	5-IPP of District in Cambodia	6-Energy Bought from Neighboring	7-Battery Charging Companies	8-Power Distribution Companies
1	Banteay Mean Chey	0	0	0	1	9	2	0	1
2	Battambang	1	0	2	1	14	3	2	1
3	Kampong Cham	1	0	4	1	36	2	0	
4	Kampong Chhnang	0	0	0	1	0	0	0	
5	Kampong Speu	0	0	0	0	21	0	0	
6	Kampong Thom	0	0	0	3	8	0	0	
7	Kampot	0	0	0	1	0	0	0	
8	Kandal	0	0	0	2	4	0	0	
9	Koh Kong	0	1	0	1	1	1	0	
10	Kratie	0	0	0	1	4	0	0	
11	Mondol Kiri	0	0	0	1	0	0	0	
12	Phnom Penh	5	0	117	0	1	0	4	
13	Preah Vihear	0	0	0	0	3	0	0	
14	Prey Veng	0	0	0	4	10	0	0	
15	Pursat	0	0	0	1	15	0	0	
16	Rattanakiri	0	1	0	0	0	0	0	
17	Siem Reap	1	0	27	1	1	0	2	
18	Sihanoukville	1	0	20	1	6	0	2	
19	Stueng Treng	0	0	0	1	0	0	0	
20	Svay Rieng	0	0	0	1	14	1	0	
21	Takeo	0	0	0	4	30	0	0	
22	Odor Mean Chey	0	0	0	1	0	2	0	1
23	Krong Kep	0	0	0	0	0	0	0	
24	Krong Pailin	0	0	1	1	0	1	0	1
	TOTAL	9	2	171	28	177	12	10	4

1. THERMAL POWER PLANTS

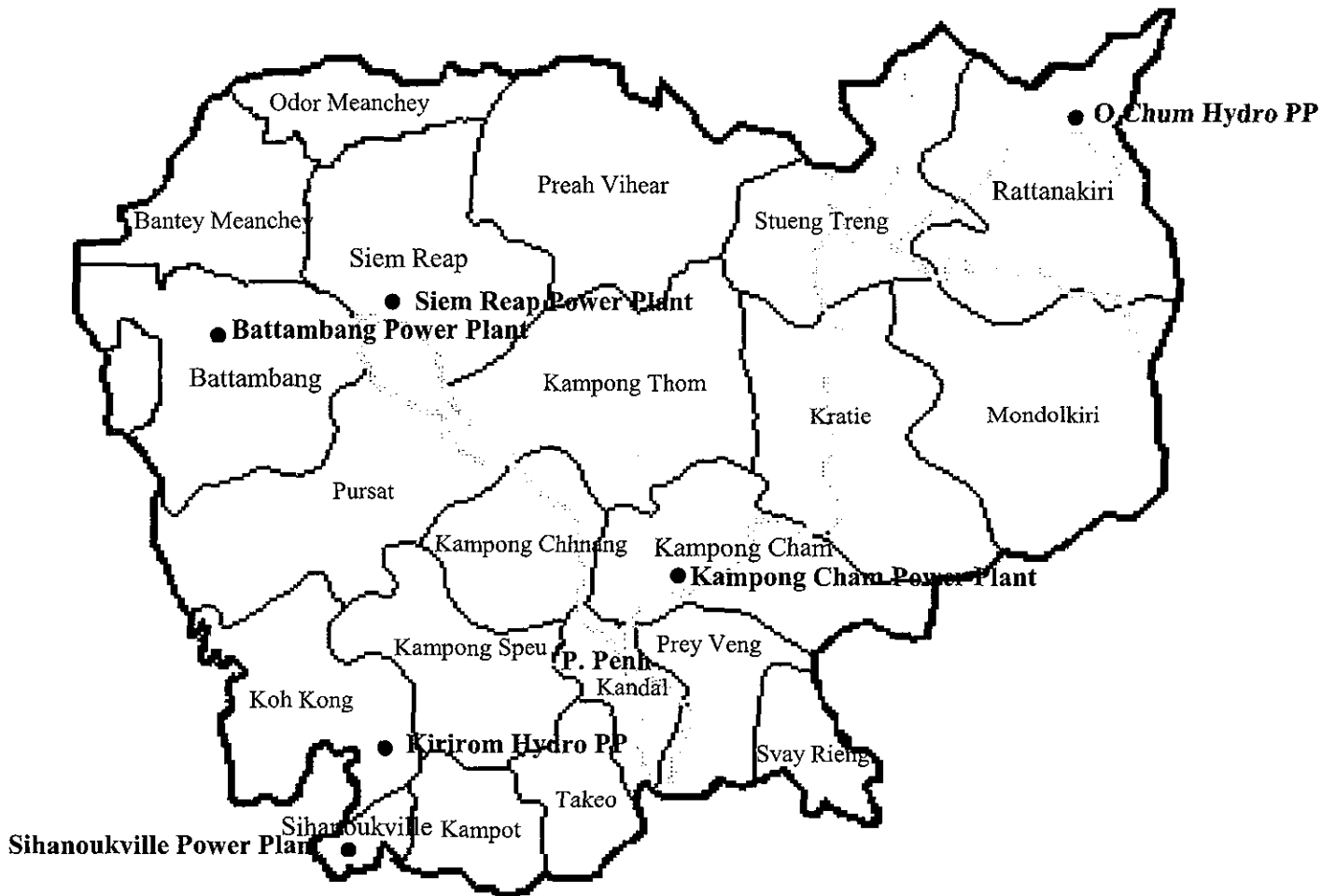
○ Thermal Power Plant C1 (Diesel): 28,000kVA	10
○ Thermal Power Plant C2 (Diesel): 38,640kVA	11
○ Thermal Power Plant C2 (Steam): 22,500kVA	12
○ Thermal Power Plant C3 (Diesel): 19,450kVA	13
○ Thermal Power Plant C5 (Diesel): 12,500kVA	14
○ Thermal Power Plant C6 (Diesel): 23,250kVA	15
○ Thermal Power Plant Siem Reap (Diesel): 7,505kVA	18
○ Thermal Power Plant Sihanoukville (Diesel): 3,250kVA	21
○ Thermal Power Plant Kampong Cham (Diesel): 3,650kVA	23
○ Thermal Power Plant Battambang (Diesel): 4,400kVA	25

1-1 - LIST OF THERMAL POWER PLANTS

N°	Name of Company	No. of Gen.	Capacity, kVA	Address	Tel	Page
1	Jupiter Power (C1)	14	28,000	Road 68, Phnom Penh	023 884 777	10
2	Cambodia Utilities (C2)	7	38,640	National Rd No 2, P Penh	023 425 592	11
3	EDC (C2)	3	22,500	National Rd No 2, P Penh	023 426 018	12
4	EDC (C3)	6	19,450	Road 271, Phnom Penh	023 366 187	13
5	EDC (C5)	2	12,500	Road 68, Phnom Penh	023 722 271	14
6	EDC (C6)	3	23,250	Road 68, Phnom Penh	023 722 271	15
			144,340	Total Phnom Penh		
7	Chea Sopha/EDC	8	7,505	National Rd 5, Siem Reap	063 760 216	18
			7,505	Total Siem Reap		
8	EDC	1	3,250	Sihanoukville	034 933 713-4	21
			3,250	Total Sihanoukville		
9	GTS/EDC	3	3,650	Kampong Cham	042 941 440	23
			3,650	Total Kampong Cham		
10	Jupiter POWER	4	4,400	Battambang	023 884 777	25
			4,400	Total Battambang		
			163,145	GRAND TOTAL		

Note: EDC Electricité du Cambodge
GTS - Global Technological Support SDN BHD.

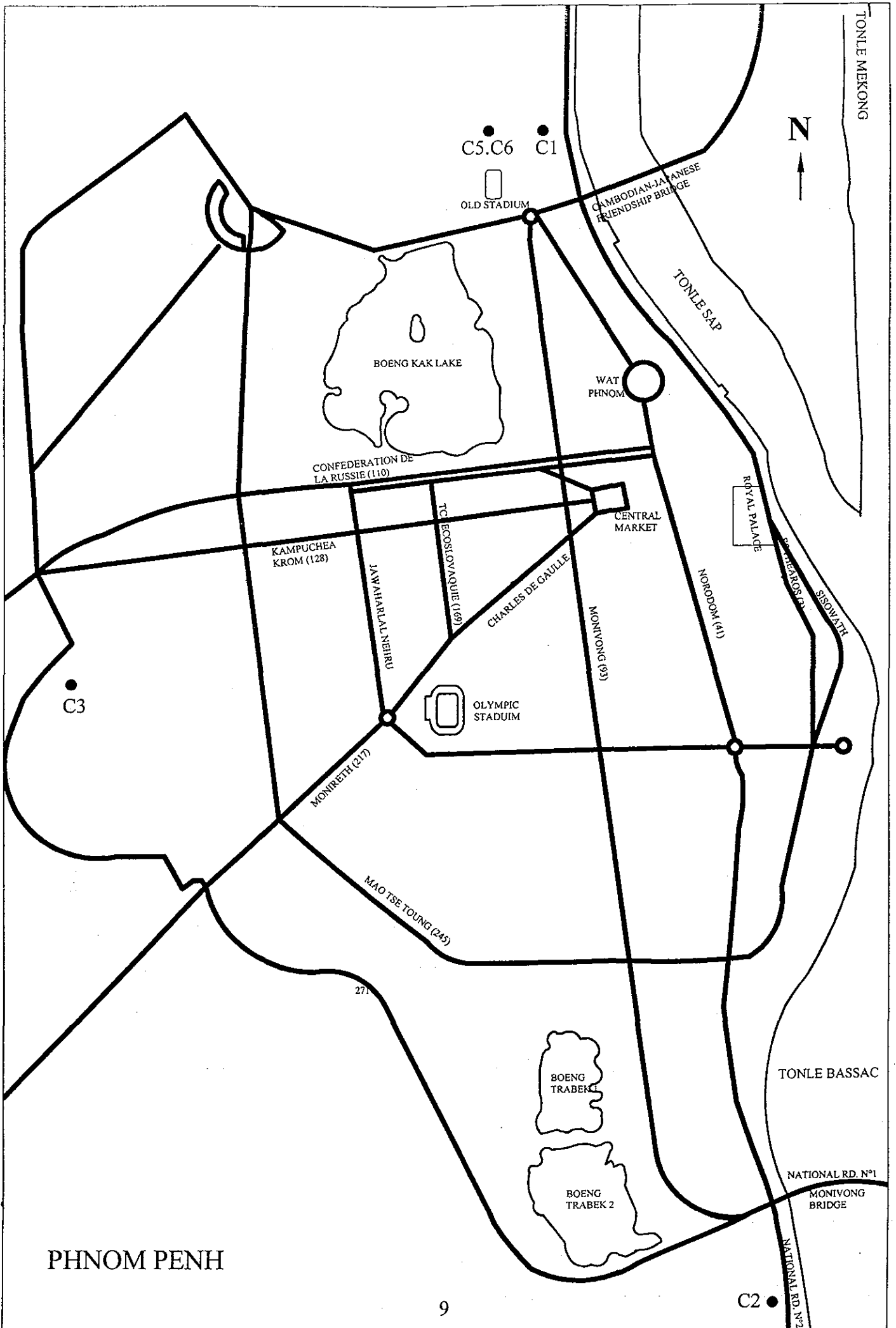
1-2 - CAMBODIA MAP WITH THERMAL AND HYDRO POWER PLANTS LOCATIONS



- Number of provinces/municipalities 24
- Number of districts 183
- Number of communes 1,609
- Number of villages 13,406

1-3 - PHNOM PENH

TOTAL POWER: 144340kVA



PHNOM PENH

C2 ●

C3 ●

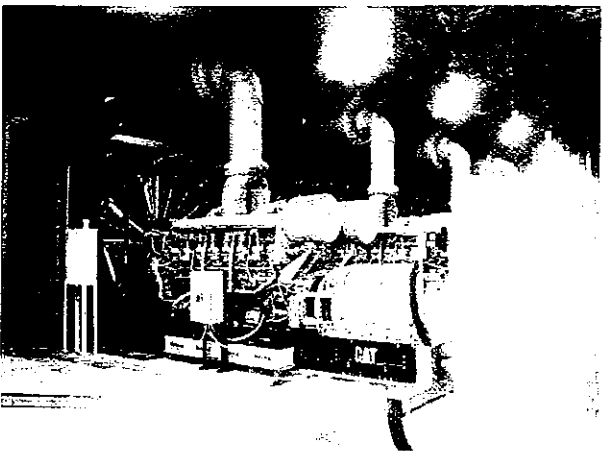
C5.C6 ● C1 ●



Outline of Electric Power Facilities - C1

Thermal Power Stations (Diesel)

Item		Name of P.S	Power Station C1	
		Name of Company	Jupiter POWER	
Address		Phnom Penh		
Name of Unit		No.1 - No 10	No 11 - No.14	
Date of commercial Operation				
Max. output (kW)		16000	6400	
Diesel Engine	Type	3516BHD	3516BHD	
	Output (kW) x No.	1600 X 10	1600 x 4	
	RPM (r p m)	1500	1500	
	No. of Cylinders	16	16	
	Calorific Value (kcal.kg)			
	Manufacturer	Caterpillar	Caterpillar	
Generator	Type	3516B STD	3516B STD	
	Capacity (kVA) x No.	2000 X 10	2000 X 4	
	Output Voltage (kV)	0.4	0.4	
	Power Factor (%)	0.8	0.8	
	Manufacturer	Caterpillar	Caterpillar	
Main Transformer	Type	ONAN	ONAN	
	Capacity (kVA) x No	4500 X 5	5000 X 2	
	Voltage (kV) } Primary	0.4	0.4	
	Voltage (kV) } Secondary	22	22	
	Type of Connection	Star - Delta	Star-Delta	
Chimney	Type of Structure	steel	steel	
	Height (m)	3	4.5	
	Manufacturer	local	local	
Tanks	H F O (kl x No)	(200m ³ + 250m ³) X 2 270 x 1 158 x 1 (all engines use the common tanks)		
	L F.O (kl x No.)			
	Raw Water (ton x No)			
	Industrial Water (tonxNo)			
Main Cooling System	Type	Radiator	Radiator	
	Capacity (m ³ /h)			
	Temp inlet/Outlet (°C)			
	Manufacturer			

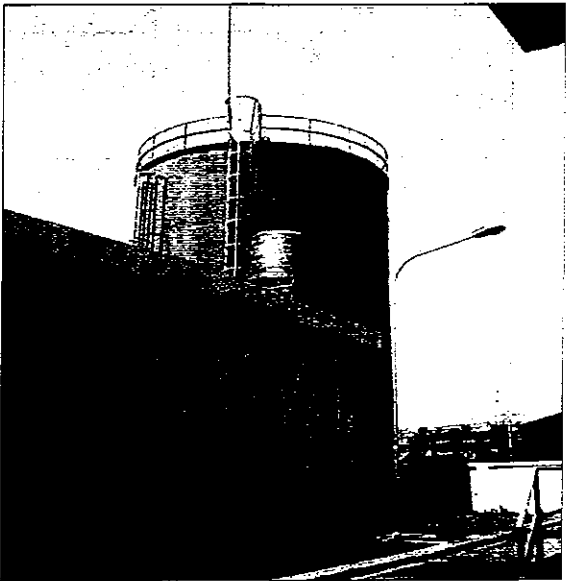
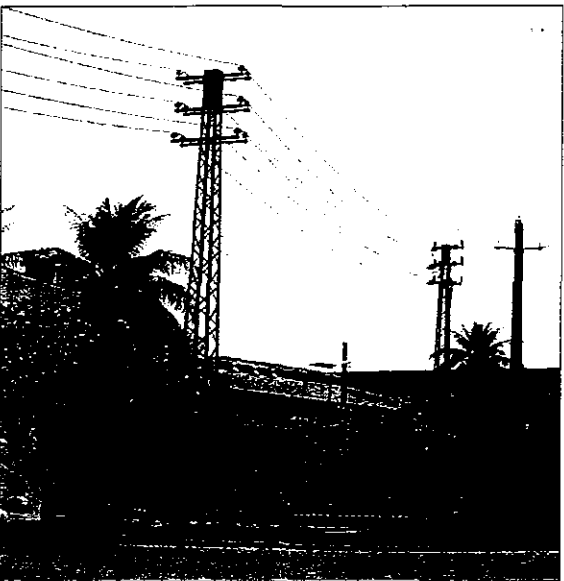
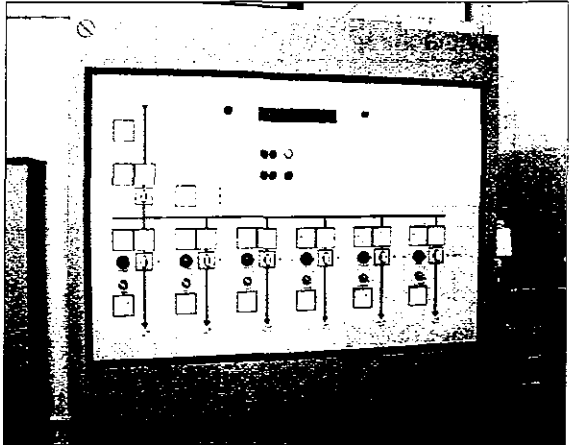
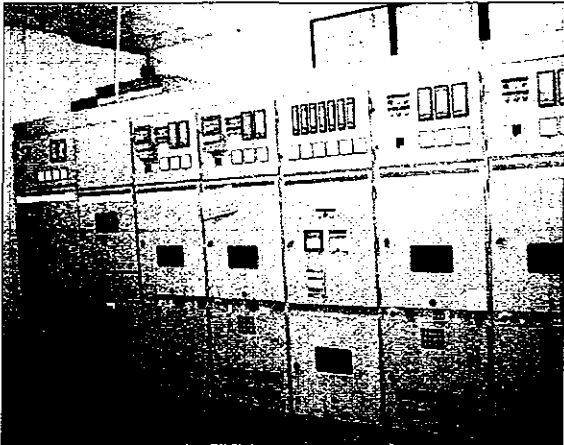
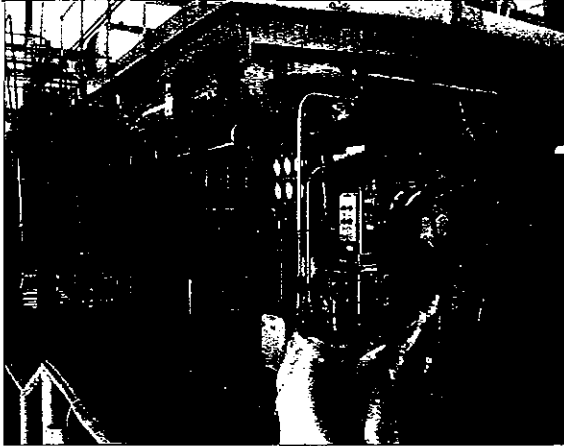
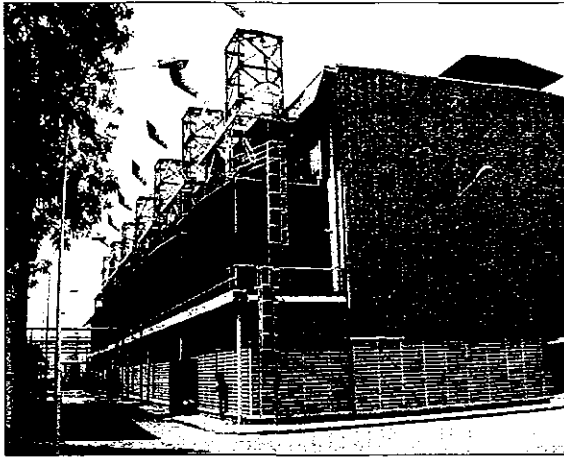


PHNOM PENH POWER PLANT-C1

Outline of Electric Power Facilities - C2

Thermal Power Station (Diesel)

Name of P.S		Power Station C2
Item	Name of Company	Cambodia Utilities
Address		Phnom Penh
Name of Unit		
Date of commercial Operation		1997
Max. output (kW)		30900
Diesel Engine	Type	GMT 420.12
	Output (kW) x No.	5592 X 7
	RPM (r.p.m.)	500
	No. of Cylinders	12
	Calorific Value (kcal/kg)	
	Manufacturer	Fincantieri-GMT
Generator	Type	GSN 11 S12
	Capacity (kVA) x No.	5520 x 7
	Output Voltage (kV)	6.3
	Power Factor (%)	0.8
	Manufacturer	Ansaldo
Main Transformer	Type	T30TN7500
	Capacity (kVA) x No.	5600 X 7
	Voltage (kV) } Primary	6.3
	Voltage (kV) } Secondary	22
	Type of Connection	Star with N - d11
	Manufacturer	Gonella
Chimney	Type of Structure	steel
	Height (m)	16
	Manufacturer	local
Tanks	H.F.O.(kl x No.)	2500m ³ X 2
	L.F.O.(kl x No.)	250m ³ x 2
	Raw Water (ton x No.)	
	Industrial Water (tonxNo.)	
Main Cooling System	Type	
	Capacity (m ³ /h)	
	Temp. inlet/Outlet (°C)	
	Manufacturer	

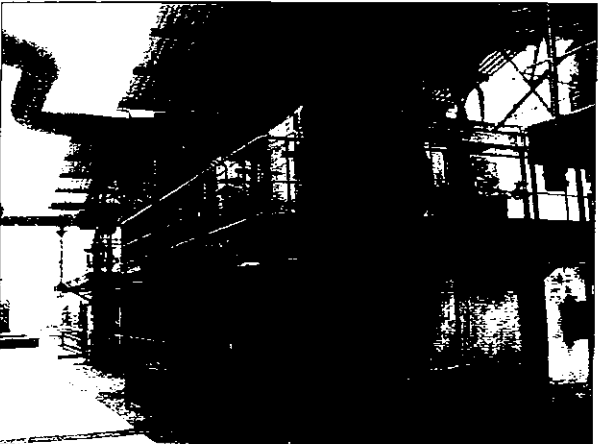
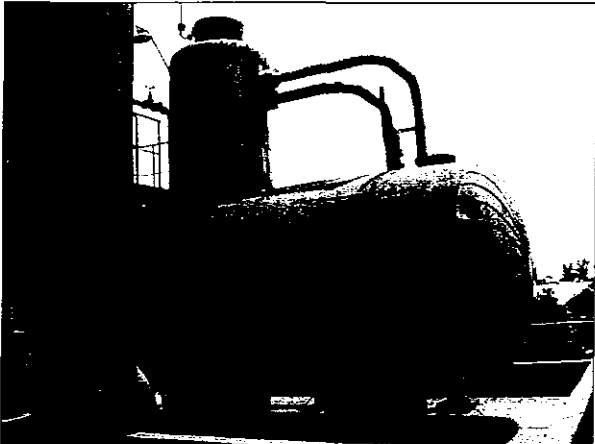
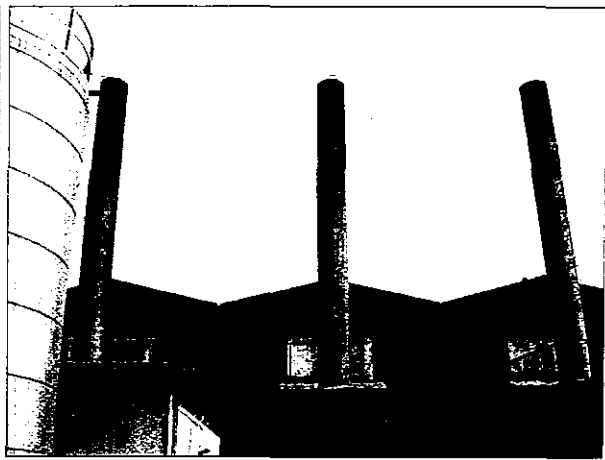


PHNOM PENH POWER PLANT-C2 DIESEL

Outline of Electric Power Facilities - C2

Thermal Power Stations (Steam)

Item		Name of P.S	Power Station C2 (steam)
		Name of Company	EDC
Address		National Rd. 2, Phnom Penh	
Name of Unit			
Date of Commercial Operation		1996	
Max. output (kW)		18000	
Steam Turbine	Type	K6-35	
	Output (kW) x No.	5000 x 3	
	Steam Press.(kg/cm ²)	38-40	
	Steam Temp.(°C)	400	
	RPM (r.p.m.)	3000	
	Vacuum (mmHg)		
	No. of bleeders		
	Manufacturer	SKODA Breno (Czechoslovakia)	
Boiler	Type	CKD	
	Steam Press.(kg/cm ²)	38-40	
	Steam Temp.(°C)	400	
	Max.evaporation (t/h) x No.		
	Calorific Value (kcal/kg)	10080	
	Manufacturer	Czech	
Generator	Type	6H 5461/2	
	Capacity (kVA) x No.	7500 X 3	
	Power Factor (%)	0.8	
	Manufacturer	SKODA Breno (Czechoslovakia)	
Main Transformer	Type		
	Capacity (kVA) x No.	8000 x 3	
	Voltage (kV) } Primary	6.3	
	Voltage (kV) } Secondary	15	
	Type of Connection	Delta-Star	
Manufacturer	Czech		
Chimney	Type of Structure	Steel	
	Hight (m)	25	
	Manufacturer	local	
Tanks	H.F.O.(kl x No.)	2500m ³ x 2	
	L.F.O.(kl x No.)		
	Raw Water (ton x No.)	Basak	
	Industrial Water (ton x No.)	1500m ³ /h	
Main Cooling System	Type	CKD	
	Capacity (m ³ /h)	60	
	Temp. inlet/Outlet (°C)	55/34	
	Manufacturer	Czech	

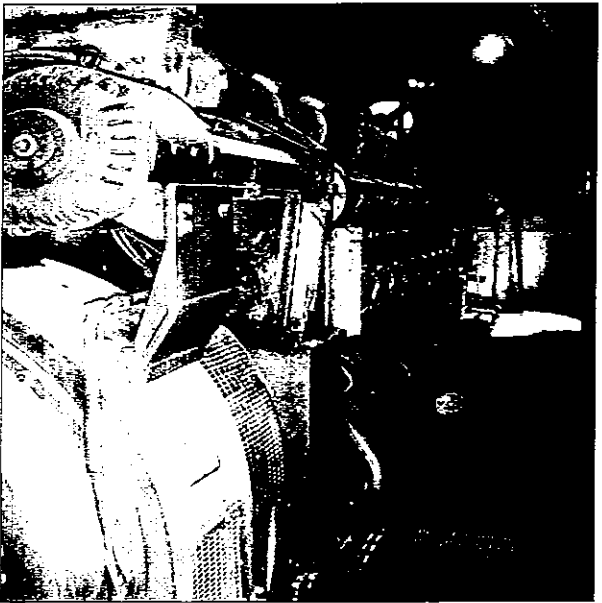
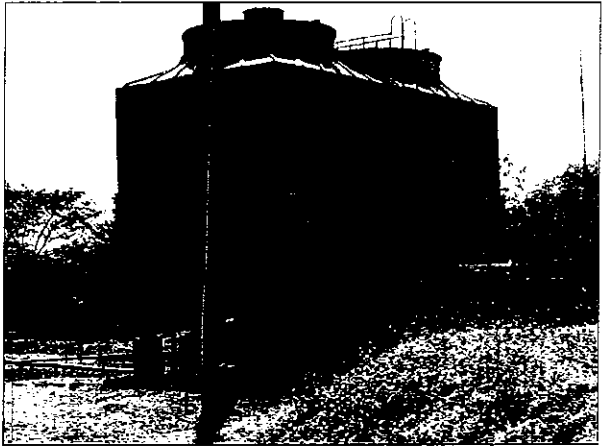
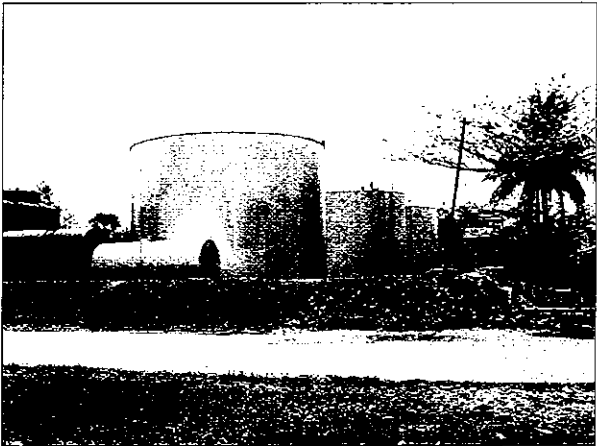
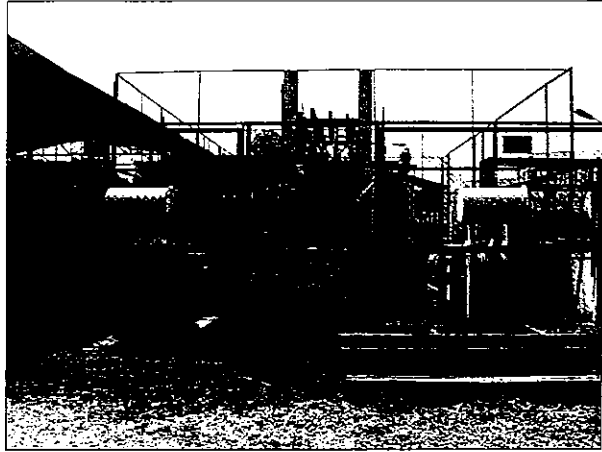


PHNOM PENH POWER PLANT-C2 STEAM

Outline of Electric Power Facilities - C3

Thermal Power Stations (Diesel)

Name of P.S		Power Station C3	
Item	Name of Company	EDC	
Address		Phnom Penh	
Name of Unit			
Date of commercial Operation		1996	1996
Max. output (kW)		10000	3800
Diesel Engine	Type	CAT-3612TA	20-645-E4
	Output (kW) x No.	2980 x 4	2330 x 2
	RPM (r.p.m.)	750	750
	No. of Cylinders	12	20
	Calorific Value (kcal.kg)		
	Manufacturer	CATERPILLAR (USA)	GM (USA)
Generator	Type	KATO 11564	A20T-24
	Capacity (kVA) x No.	3550 X 4	2625 x 2
	Output Voltage (kV)	4.16	4.16
	Power Factor (%)	0.8	0.8
	Manufacturer	CATERPILLAR (USA)	GM (USA)
Main Transformer	Type	SZ7-8000/15	D130
	Capacity (kVA) x No.	8000 X 2	5000 x 1
	Voltage (kV) } Primary	4.16	4.16
	Voltage (kV) } Secondary	15	15
	Type of Connection	Delta-Star	Delta-Star
	Manufacturer	CHINA	Sierra (USA)
Chimney	Type of Structure	Mash-Steel	Steel
	Height (m)	7.12	6
	Manufacturer	CHINA	USA
Tanks	H.F.O.(kl x No.)		
	L.F.O.(kl x No.)	650 x 1	480 x 2
	Raw Water (ton x No.)	50m ³ x 1	
	Industrial Water.(tonxNo.)		
Main Cooling System	Type	10BNZF-500 FRP	Radiator
	Capacity (m ³ /h)	500	
	Temp. inlet/Outlet (°C)	53.5-42	
	Manufacturer	CHINA	

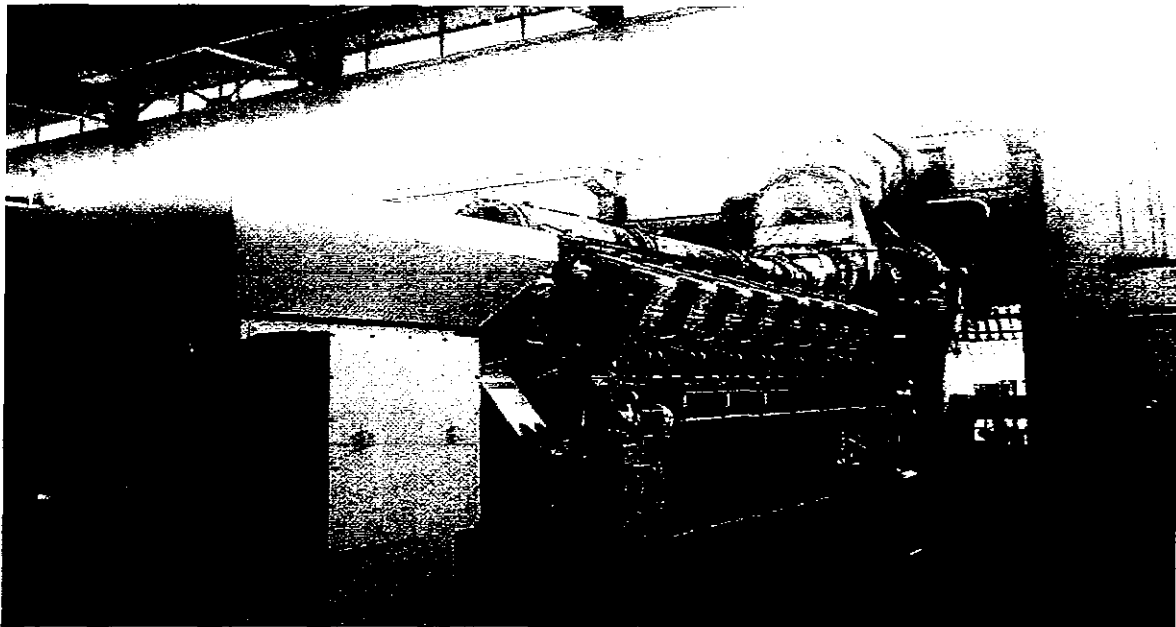
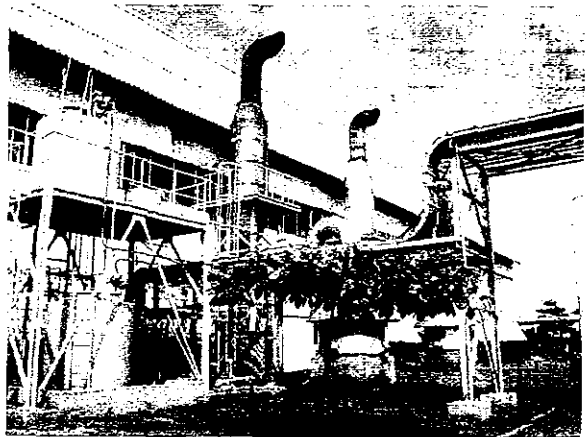
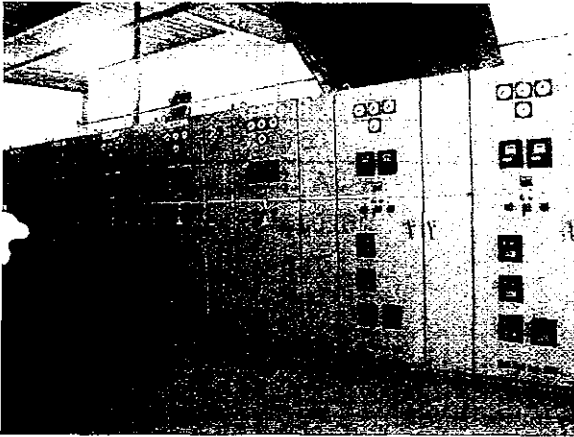


PHNOM PENH POWER PLANT-C3

Outline of Electric Power Facilities - C5

Thermal Power Stations (Diesel)

Name of P.S		Power Station C5
Item	Name of Company	EDC
Address		Phnom Penh
Name of Unit		M1, M2
Date of commercial Operation		M1: 1995, M2: 1996
Max. output (kW)		10000
Diesel Engine	Type	16KV30A
	Output (kW) x No.	5000 X 2
	RPM (r.p.m.)	750
	No. of Cylinders	16
	Calorific Value (kcal.kg)	974
	Manufacturer	mitsubishi
Generator	Type	JEC-114-1979
	Capacity (kVA) x No.	6250 X 2
	Output Voltage (kV)	6.3
	Power Factor (%)	0.8
	Manufacturer	TOSHIBA CORPORATION
Main Transformer	Type	IEC-76-1979
	Capacity (kVA) x No.	6300 X 2
	Voltage (kV) } Primary	6.3
	Voltage (kV) } Secondary	15
	Type of Connection	Star-Delta with N
Manufacturer	TOSHIBA CORPORATION	
Chimney	Type of Structure	Steel
	Height (m)	14
	Manufacturer	MITSUBISHI
Tanks	H.F.O.(kl x No.)	
	L.F.O.(kl x No.)	5m ³ +5m ³ +(1000m ³ x2)
	Raw Water (ton x No.)	
	Industrial Water (tonxNo.)	
Main Cooling System	Type	Cooling Tower
	Capacity (m ³ /h)	204
	Temp. inlet/Outlet (°C)	50/35
	Manufacturer	TOSHIBA CORPORATION

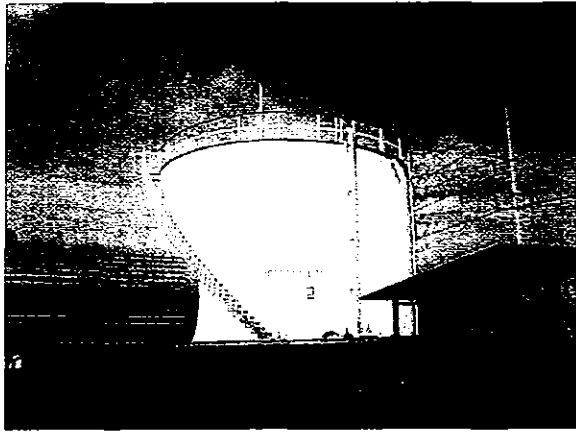
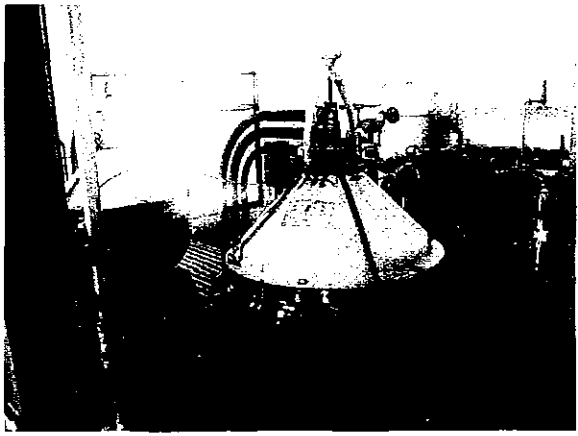
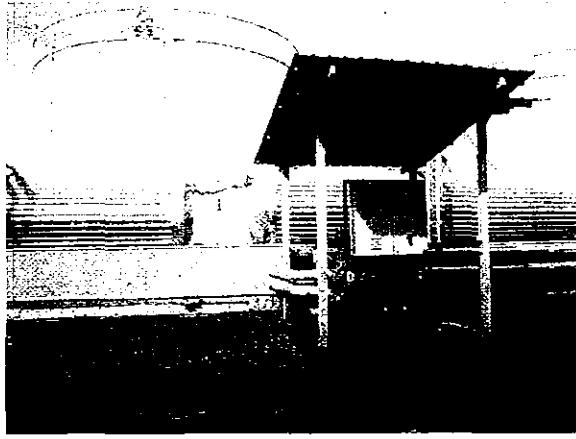
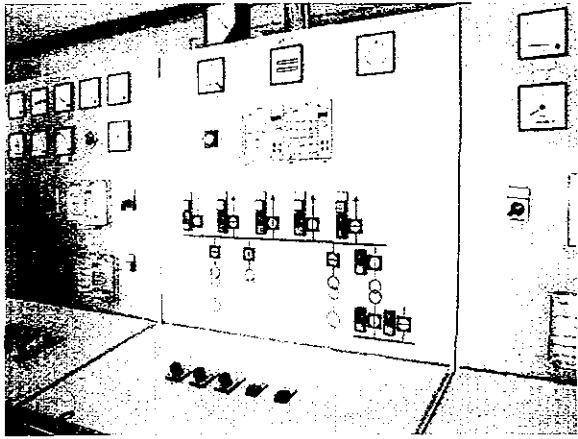


PHNOM PENH POWER PLANT-C5

Outline of Electric Power Facilities - C6

Thermal Power Stations (Diesel)

		Name of P.S	Power Station C6
Item		Name of Company	EDC
Address		Phnom Penh	
Name of Unit		W1, W2, W3	
Date of commercial Operation		Apr-96	
Max. output (kW)		18612	
Diesel Engine	Type	VASA 18V32	
	Output (kW) x No.	6200 x 3	
	RPM (r.p.m.)	750	
	No. of Cylinders	18	
	Calorific Value (kcal.kg)	974	
	Manufacturer	WARTSILA DIESEL	
Generator	Type	HSG 900 X 58	
	Capacity (kVA) x No.	7750 x 3	
	Output Voltage (kV)	6.3	
	Power Factor (%)	0.8	
	Manufacturer	ABB Industry	
Main Transformer	Type	KTRP 24NC 3000	
	Capacity (kVA) x No.	8000 x 3	
	Voltage (kV) } Primary	6.3	
	Voltage (kV) } Secondary	15/22	
	Type of Connection	Star-Delta N d1	
Manufacturer	ABB Stromberg Power (Finland)		
Chimney	Type of Structure	Steel	
	Height (m)	15.5	
	Manufacturer	OY PALOSAAREN METALLI AB	
Tanks	H.F.O.(kl x No.)	40m ³ +40m ³ +(800m ³ x2)	
	L.F.O.(kl x No.)	40m ³ +40m ³	
	Raw Water (ton x No.)		
	Industrial Water (tonxNo.)		
Main Cooling System	Type	Radiator	
	Capacity (m ³ /h)	216	
	Temp. inlet/Outlet (°C)	55/38	
	Manufacturer	WARTSILA (Finland)	

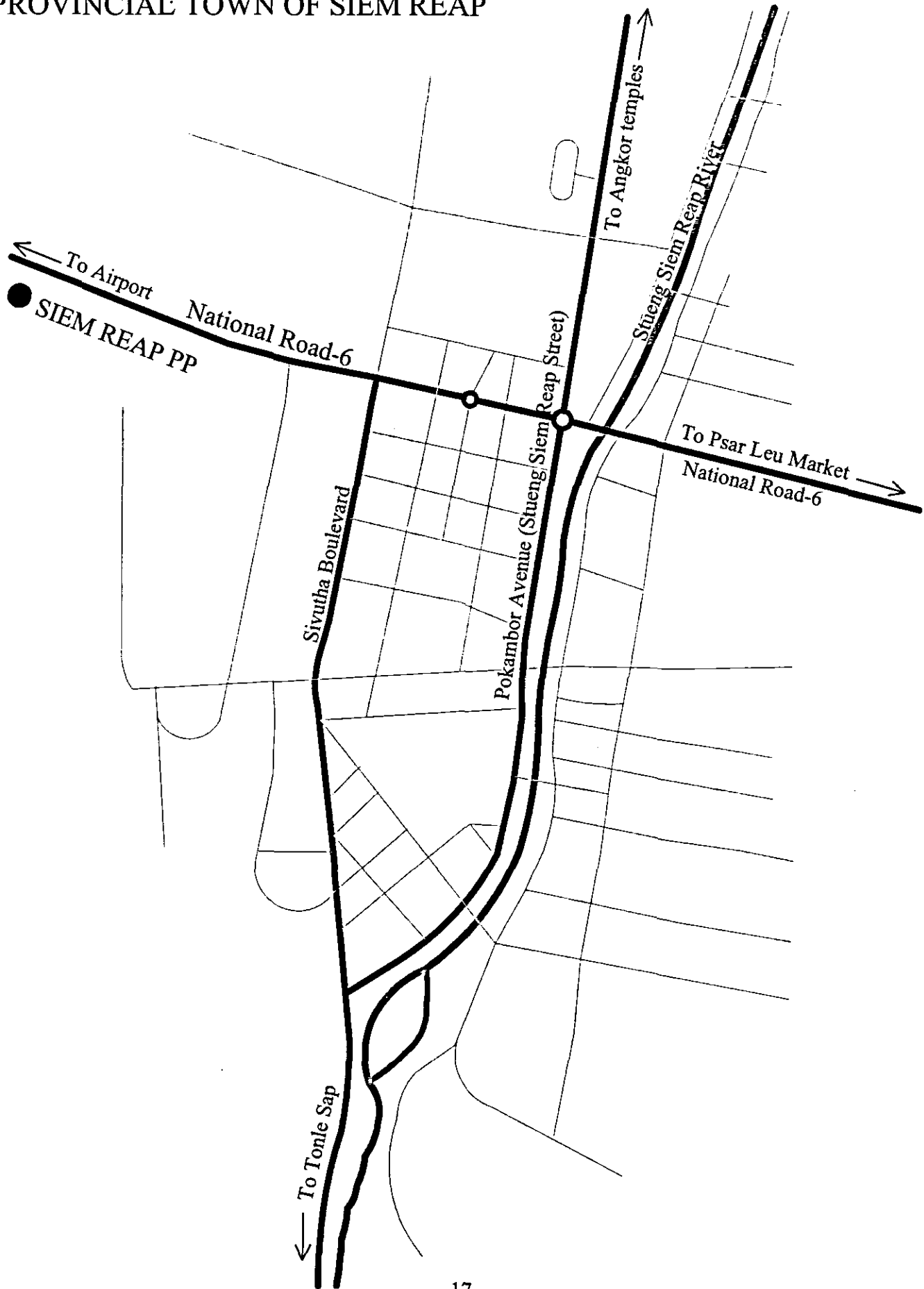


PHNOM PENH POWER PLANT-C6

1-4 - SIEM REAP

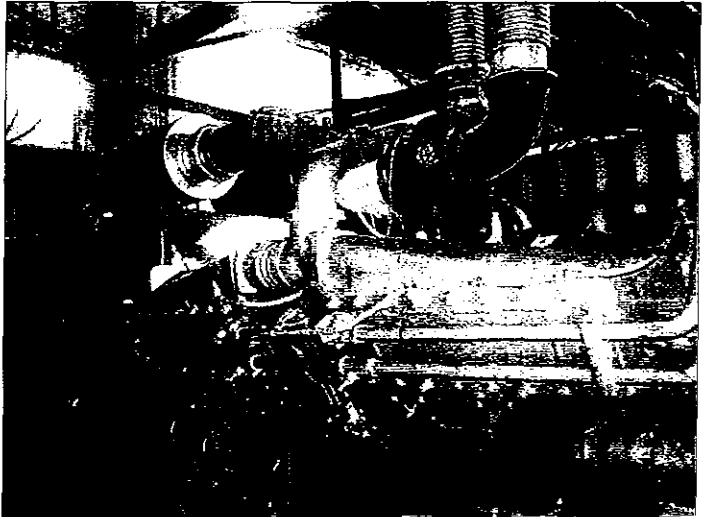
TOTAL POWER: 7505kVA

PROVINCIAL TOWN OF SIEM REAP



**Outline of Electric Power Facilities
Thermal Power Stations (Diesel)**

Name of P.S		Siem Reap Power Plant			
		Chea Sopha		EDC	
Item	Name of Company	National Rd. 6, Siem Reap			
Address		National Rd. 6, Siem Reap			
Name of Unit		Unit 1+2+3	Unit 4+5+6	Unit 7+8	Unit 9+10
Date of commercial Operation		1997		1987	
Max. output (kW)		780 x 3	1000 x 2 + 500	400 x 2	160 X 2
Diesel Engine	Type	KTA38-G5	KTA50-G3,KTA28-G5	DG72	DGA315
	Output (kW) x No.	800 x 3	1020 x 2 + 520	800	260
	RPM (r.p.m.)	1500	1500	375	500
	No. of Cylinders	12	12	6	6
	Calorific Value (kcal.kg)				
Manufacturer		CUMMINS	CUMMINS	RUSSIAN	RUSSIAN
Generator	Type	KTA38-G5	KTA50-G3,KTA28-G5	DG72	DGA315
	Capacity (kVA) x No.	1000 x 3	1270 x 2 + 650	1000	315
	Output Voltage (kV)	0.4	0.4	6.3	0.4
	Power Factor (%)	0.8	0.8	0.8	0.8
	Manufacturer	CUMMINS	CUMMINS	RUSSIAN	RUSSIAN
Main Transformer	Type				
	Capacity (kVA) x No.	1. 7500kVAx1 , 0.4kV → 6.3kV (Malaysia)			
	Voltage (kV) } Primary	2. 400kVAx1 , 0.4kV → 6.3kV (Russia)			
	Voltage (kV) } Secondary	3. 1000kVAx1 , 0.4kV → 22kV (Thailand)			
	Type of Connection	4. 1000kVAx1 , 0.4kV → 22kV (England)			
Manufacturer	5. 400kVAx1 , 6.3kV → 22kV (Korea)				
Chimney	Type of Structure				
	Height (m)				
	Manufacturer				
Tanks	H.F.O.(kl x No.)	3 x 3			
	L.F.O.(kl x No.)	300 x 2 + 9 x 2			
	Raw Water (ton x No.)				
	Industrial Water (tonxNo.)				
Main Cooling System	Type				
	Capacity (m ³ /h)				
	Temp. inlet/Outlet (°C)				
	Manufacturer				

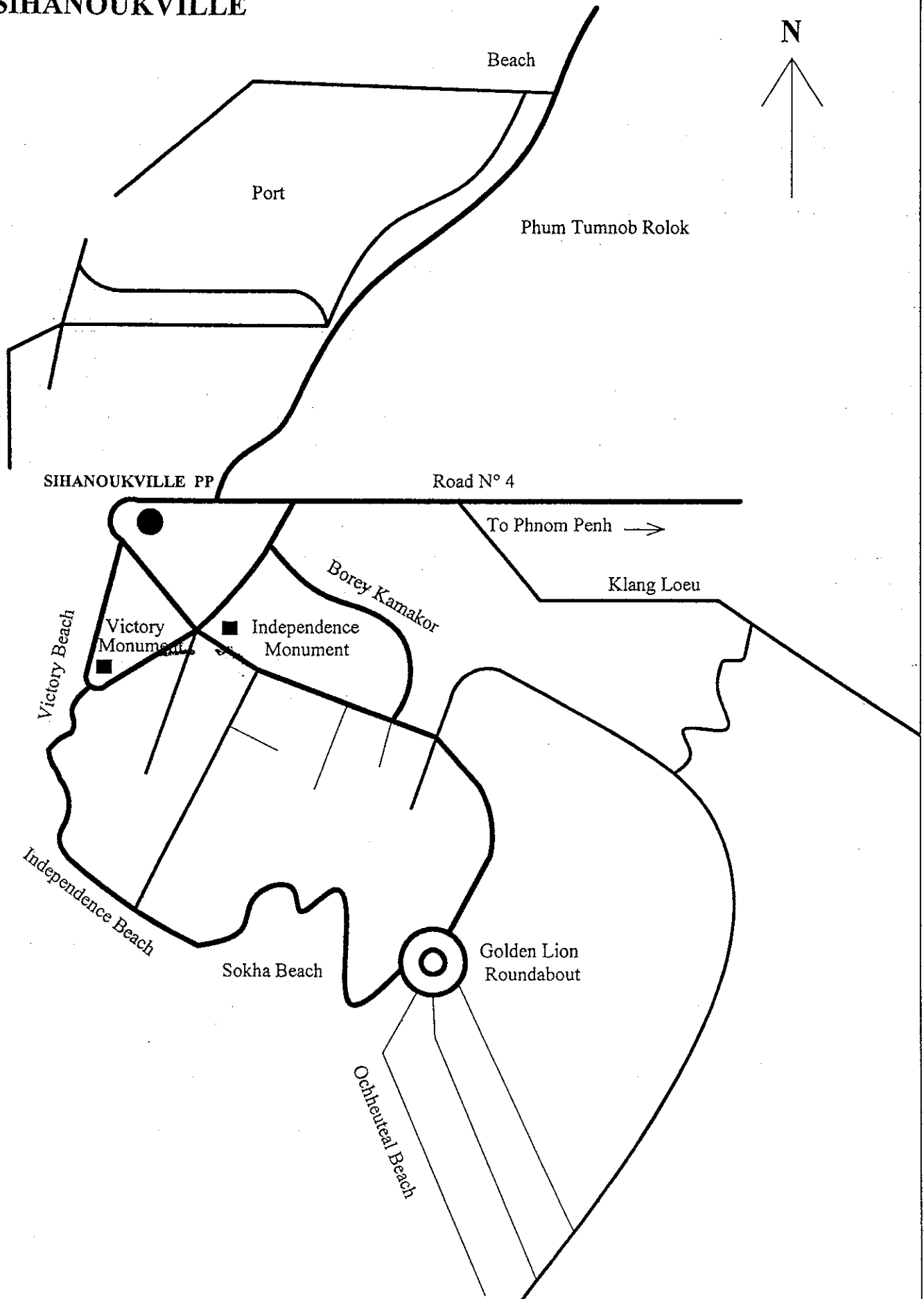


SIEM REAP POWER PLANT

1-5 - SIHANOUKVILLE

TOTAL POWER: 3250kVA

SIHANOUKVILLE



Outline of Electric Power Facilities

Thermal Power Stations (Diesel)

		Name of P.S	Sihanoukville Power Plant
Item	Name of Company		EDC
Address		Sihanoukville	
Name of Unit			
Date of commercial Operation		March-99	
Max. output (kW)		5200	
Diesel Engine	Type	8L32D	
	Output (kW) x No.	2700 x 2	
	RPM (r.p.m.)	750	
	No. of Cylinders	8	
	Calorific Value (kcal.kg)	10800	
	Manufacturer	WARTSILA (Finland)	
Generator	Type	AMG 710LP8S	
	Capacity (kVA) x No.	3250	
	Output Voltage (kV)	6.3	
	Power Factor (%)	0.8	
	Manufacturer	ABB (Finland)	
Main Transformer	Type		
	Capacity (kVA) x No.	3150 x 2	
	Voltage (kV) } Primary	6.3	
	Voltage (kV) } Secondary	22	
	Type of Connection	Delta-Star , Star N d11	
Manufacturer	ABB (Finland)		
Chimney	Type of Structure.	Steel	
	Height (m)	16	
	Manufacturer	ABB (Finland)	
Tanks	H.F.O.(kl x No.)		
	L.F.O.(kl x No.)	500 x 2	
	Raw Water (ton x No.)		
	Industrial Water (tonxNo.)		
Main Cooling System	Type		
	Capacity (m ³ /h)	5.4	
	Temp. inlet/Outlet (°C)	70/60	
	Manufacturer	ABB (Finland)	

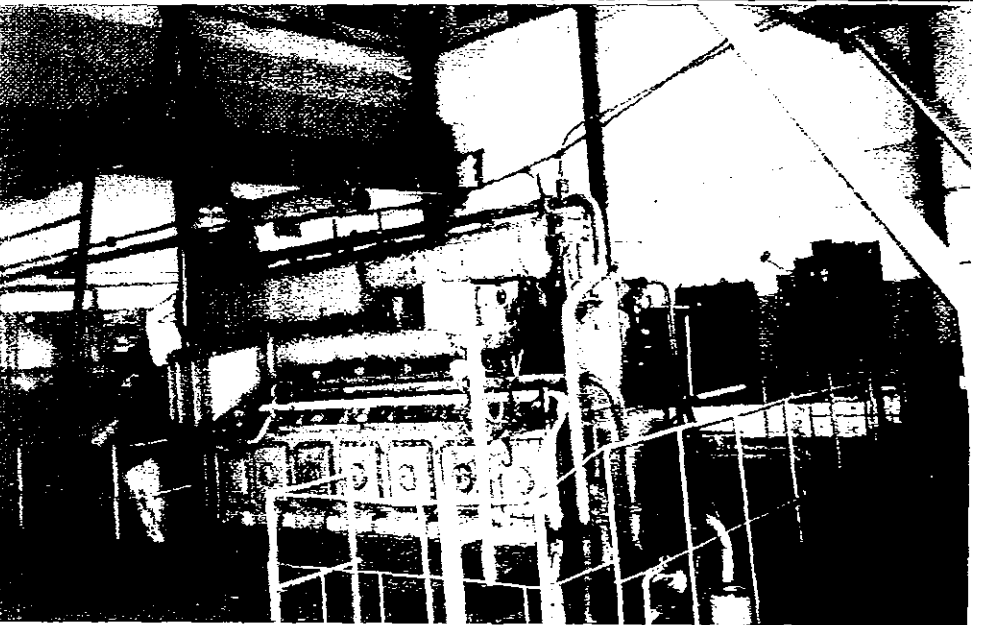
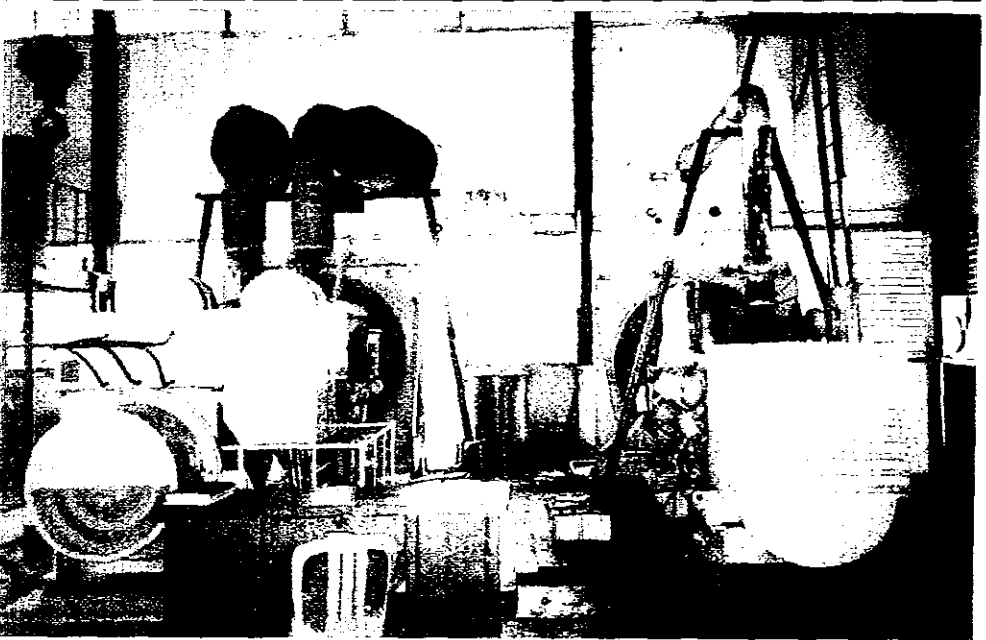
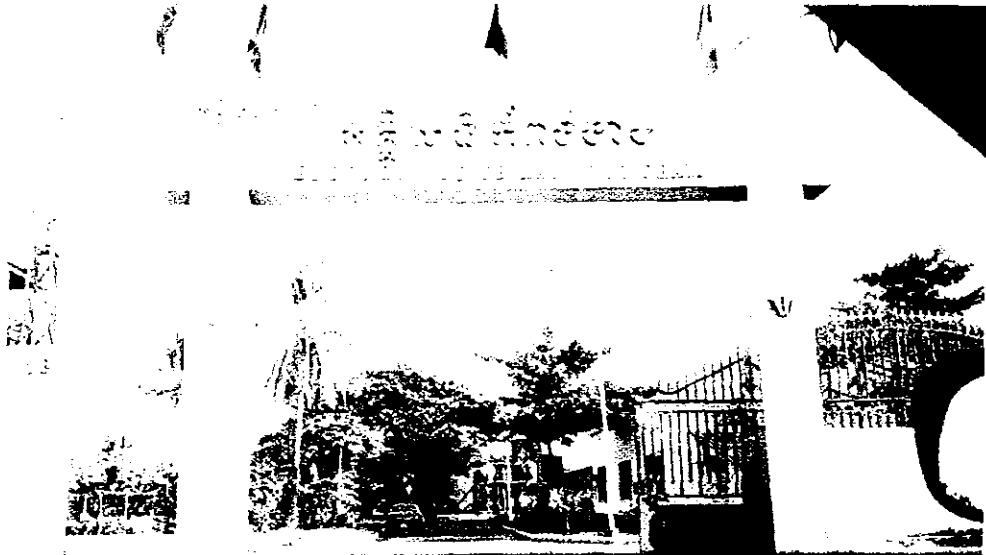
1-6 - KAMPONG CHAM

TOTAL POWER: 3650kVA

Outline of Electric Power Facilities

Thermal Power Stations (Diesel)

Item \ Name of P.S		Kampong Cham Power Plant		
		GTS		EDC
Name of Company		Kampong Cham		
Address		Kampong Cham		
Name of Unit		Unit 1	Unit 2	Unit 3
Date of commercial Operation		1997	1997	1987
Max. output (kW)		1200	720	500
Diesel Engine	Type	3516A	399D	DG72
	Output (kW) x No.	1360	750	800
	RPM (r.p.m.)	1500	1000	375
	No. of Cylinders	12	12	6
	Calorific Value (kcal.kg)			
Manufacturer		CATERPILLAR	CATERPILLAR	USSR
Generator	Type	3516A	399D	DG72
	Capacity (kVA) x No.	1700	950	1000
	Output Voltage (kV)	0.4	0.4	6.3
	Power Factor (%)	0.8	0.8	0.8
	Manufacturer	CATERPILLAR	CATERPILLAR	USSR
Main Transformer	Type	1. 1000kVAX1 , 0.4kV → 6.3kV (Caterpillar) 2. 630kVAX1 , 6.3kV → 0.4kV (USSR)		
	Capacity (kVA) x No.			
	Voltage (kV) } Primary			
	Voltage (kV) } Secondary			
Type of Connection				
Manufacturer				
Chimney	Type of Structure			
	Height (m)			
	Manufacturer			
Tanks	H.F.O.(kl x No.)	40+10x3		
	L.F.O.(kl x No.)			
	Raw Water (ton x No.)			
	Industrial Water (tonxNo.)			
Main Cooling System	Type			
	Capacity (m ³ /h)			
	Temp. inlet/Outlet (°C)			
	Manufacturer			



KAMPONG CHAM POWER PLANT

1-7 - BATTAMBANG

TOTAL POWER: 4400kVA

Outline of Electric Power Facilities

Thermal Power Stations (Diesel)

Name of P.S		Battambang Power Plant
Item	Name of Company	Jupiter
Address		Battambang Power Plant
Name of Unit		Unit 1+2+3+4
Date of commercial Operation		Oct-98
Max. output (kW)		3500
Diesel Engine	Type	
	Output (kW) x No.	875 x 4
	RPM (r.p.m.)	1500
	No. of Cylinders	12
	Calorific Value (kcal.kg)	
Manufacturer		Caterpillar
Generator	Type	
	Capacity (kVA) x No.	1100 x 4
	Output Voltage (kV)	0.4
	Power Factor (%)	0.8
Manufacturer		Caterpillar
Main Transformer	Type	ONAN
	Capacity (kVA) x No.	1250
	Voltage (kV) } Primary	0.4
	Voltage (kV) } Secondary	6.3
	Type of Connection	Star - Delta
Manufacturer		ONAN
Chimney	Type of Structure	steel
	Height (m)	6
	Manufacturer	local
Tanks	H.F.O.(kl x No.)	
	L.F.O.(kl x No.)	200m ³ X 2
	Raw Water (ton x No.)	
	Industrial Water (tonxNo.)	
Main Cooling System	Type	Radiator
	Capacity(m ³ /h)	
	Temp. inlet/Outlet (°C)	
	Manufacturer	

2. HYDRO POWER PLANTS

- O Chum Hydropower Plant (Rattanakiri): 960kW 27
- Kirirom 1 Hydropower Plant (Koh Kong): 12000kW 33

2-1 - RATTANAKIRI (O CHUM)

Power: 960kW

Equipment of Hydropower Plant O Chum

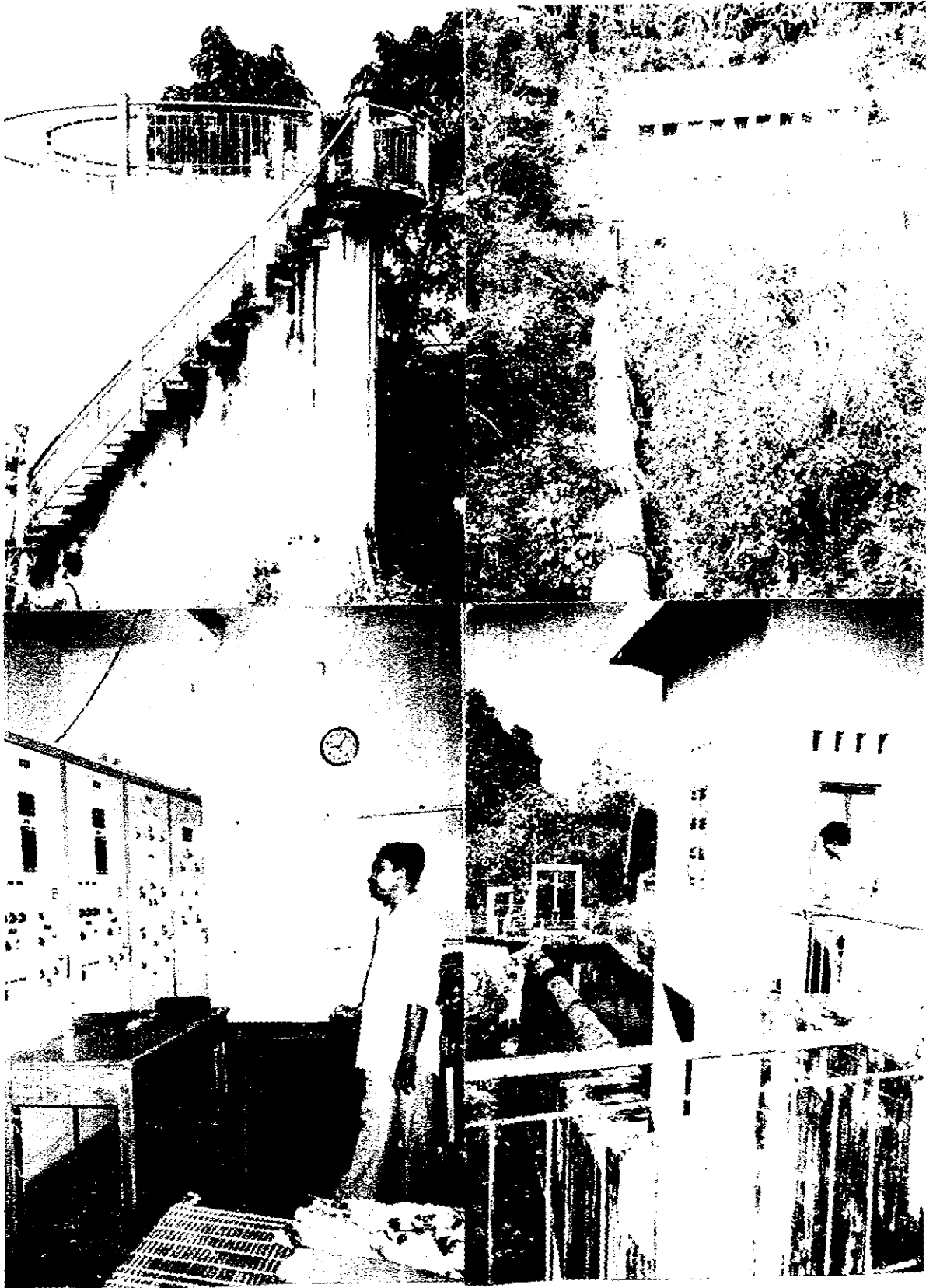
Name of Company : Provincial Dep. of Industry, Mines and Energy Ratanakiri

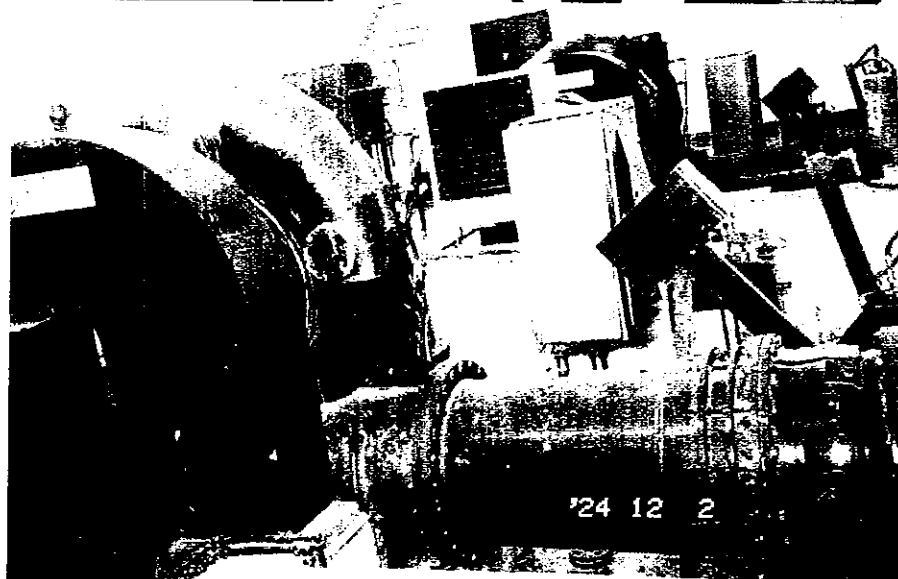
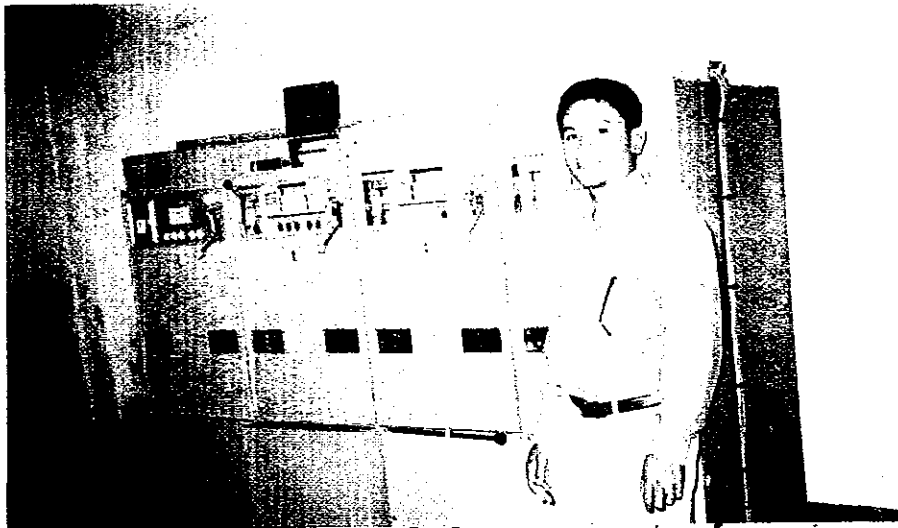
Name of Power Plant : O Chum Hydropower Plant

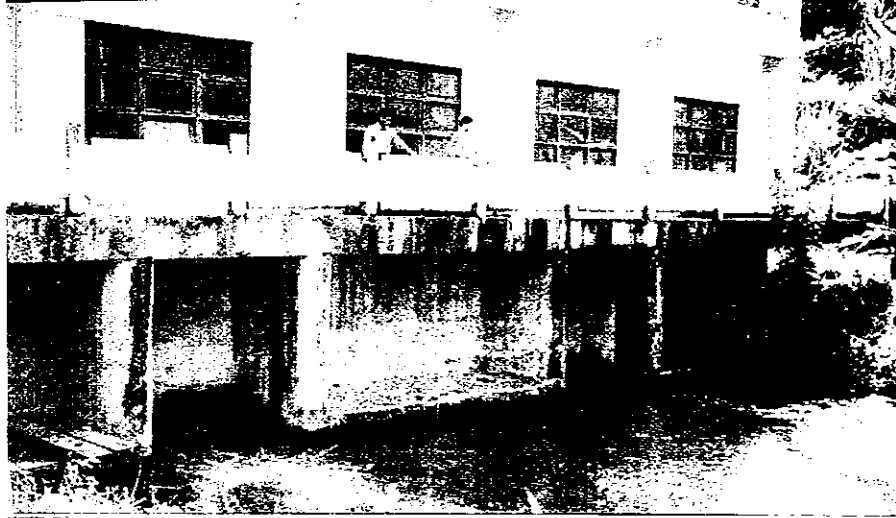
Location : O Chum Commune, O Chum District, Ratanakiri Province

Main-Items	Sub-Items	Unit	Contents / Dimensions	
Name of River Systems – Name of River			O Chum, Sesan tributary	
Authorized Output	Max. [Firm]	kW	960	
	Firm Peak	kW	910	
Turbine Discharge	Max. [Firm]	m ³ /s	3.75	
Effective Head	Max. [Firm]	m	31	
Theoretical Output		kW	1,139	
Project License	Type of License		No license	
	Date of License		-	
Dam	Name		O Chum 1	O Chum 2
	Type		Earth-fill dam	Earth-fill dam
	Dam Height	m	22	
	Crest Length	m	860	
	Dam Volume	10 ³ m ³	12,600	
	Catchment Area	km ²	23.10	44.7
	Design Flood	m ³ /s	64.0	210.0
Gate of Dam	Type		no gate	no gate
	Number	set	(overflow	(overflow
	Size (Width × Height)	m	spillway)	spillway)
Reservoir / Regulating Pond	Name		O Chum 1	O Chum 2
	Total Storage Capacity [Active]	m ³	13,100,000	146,000
	Normal High Water Level (NHWL)	m.MSL	291.5	254.00
	Effective Depth	m	14.46 LWL279	1.5 LWL252.50
	Surface Area at NHWL	km ²	1.60	
Intake	Type		Reinforced concrete culvert with fixed cone disperser valve	Reinforced concrete culvert with fixed cone disperser valve
	Size (Width × Height × Length)	m	2x1.5x106	
	Intake Water Level	m.MSL	254.50	
Headrace	Type		None	
	Size	m	None	
	Length	m	None	
	Thickness of Lining	m	None	
Tailrace	Type		None	
	Size	m	None	
	Length	m	None	
	Thickness of Lining	m	None	
Outlet	Type		concrete	
	Size (Width × Height × Length)	m	Not sure	
	Outlet Water Level	m.MSL	219.50	
Head Tank or Surge Tank	Type		Reinforced concrete surge tank	
	Size (Liner diameter × Length)	m	4.6x10	

Main-Items	Sub-Items	Unit	Contents / Dimensions
Penstock	Number		1
	Length	m	63
	Liner diameter (Max. ~Min.)	m	1.2
	Pipe Shell Thickness (Max. ~Min.)	mm	10
	Material		steel
	Manufacturer		From Russia
	Type of Sluice Valve		Butterfly valve
Turbine	Type		Francis (horizontal shaft)
	Number of Units	unit	2
	Rated Output	kW	510
	Rated Discharge	m ³ /s	1.875
	Rated Head	m	31
	Rotation Speed	rpm	750
	Type of Governor		Electrical-Hydraulic Governor
	Type of Draft Tube & Suction Head		
	Manufacturer		Dumont S.A
Generator	Type		Three phase AC synchronous
	Number of Units	unit	2
	Rated Voltage	kV	0.4
	Rated Output	kVA	600
	Rated Power Factor	%	80
	Frequency	Hz	50
	Manufacturer		Alsthom
Transformer	Type		Outside
	Number of Units	unit	2
	Phase Number		3
	Capacity	kVA	630
	Voltage [Primary, Secondary, Tertiary]	kV	0.4/10
	Manufacturer		Alsthom
Transmission Line	Nominal Voltage	kV	10
	Number of Circuits	cct	1
	Length	km	16
Operating Date			1993







2-2 – KOH KONG (KIRIROM)

POWER: 12000kW

Equipment of Hydropower Plant Kirirom 1

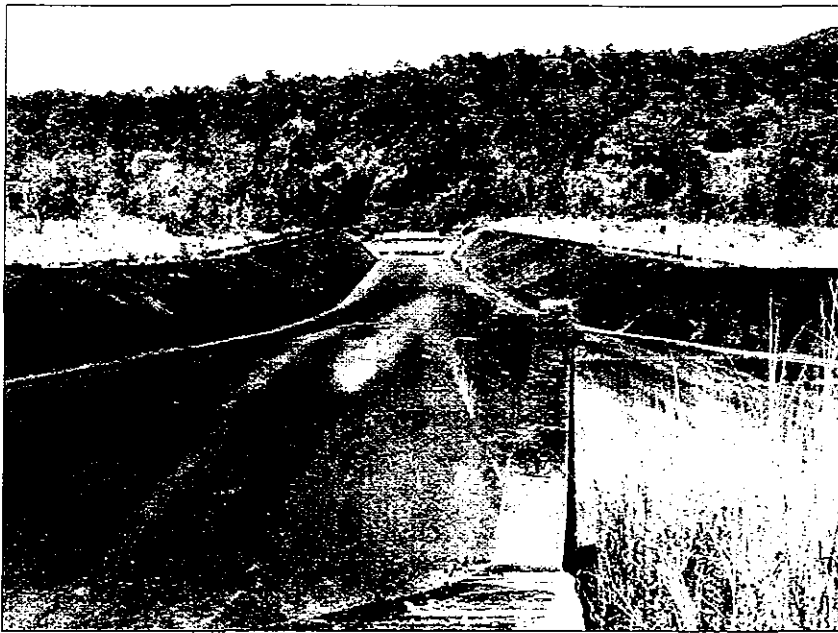
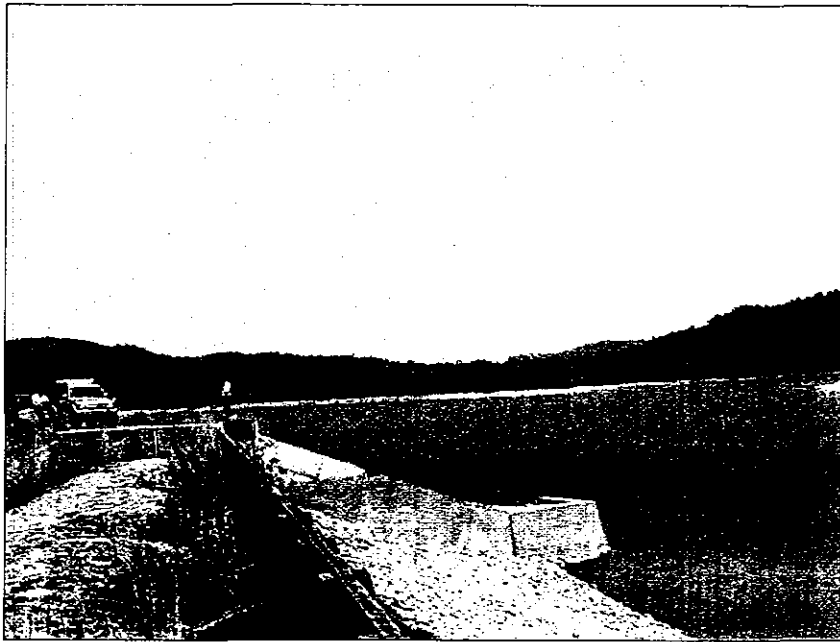
Name of Company: CETIC (China Electric Technique Import&Export Corporations)

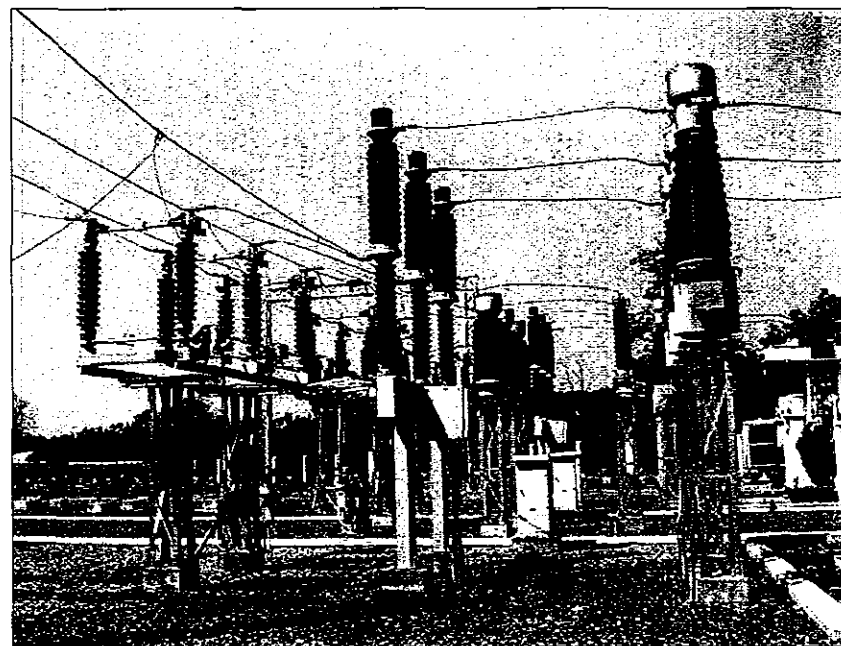
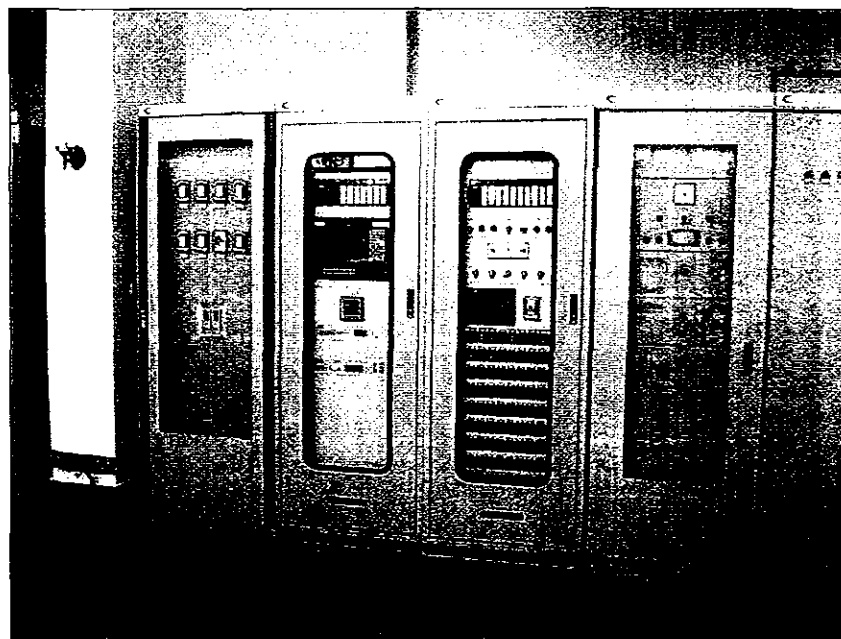
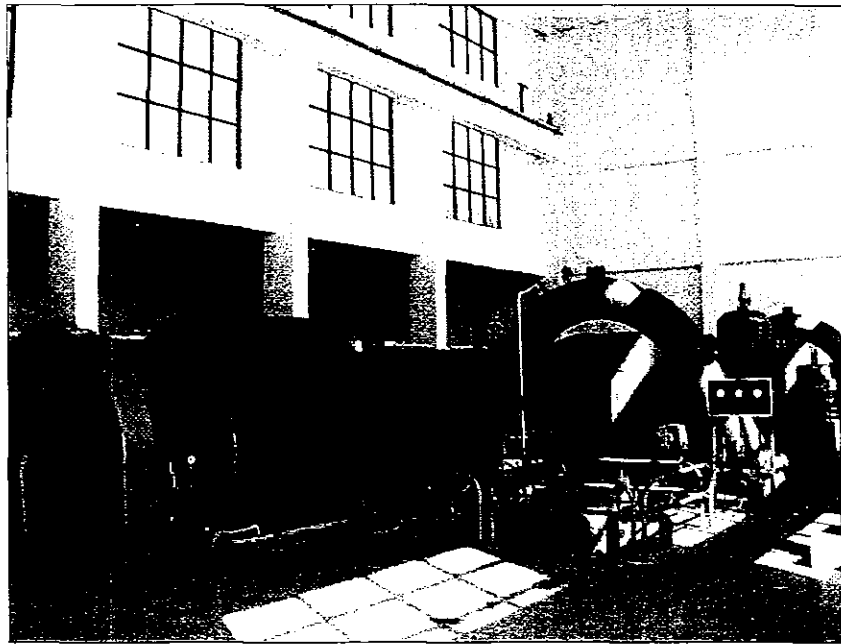
Name of Power Plant: Kirirom 1 Hydropower Plant

Location: Kirirom Plateau, Koh Kong Province

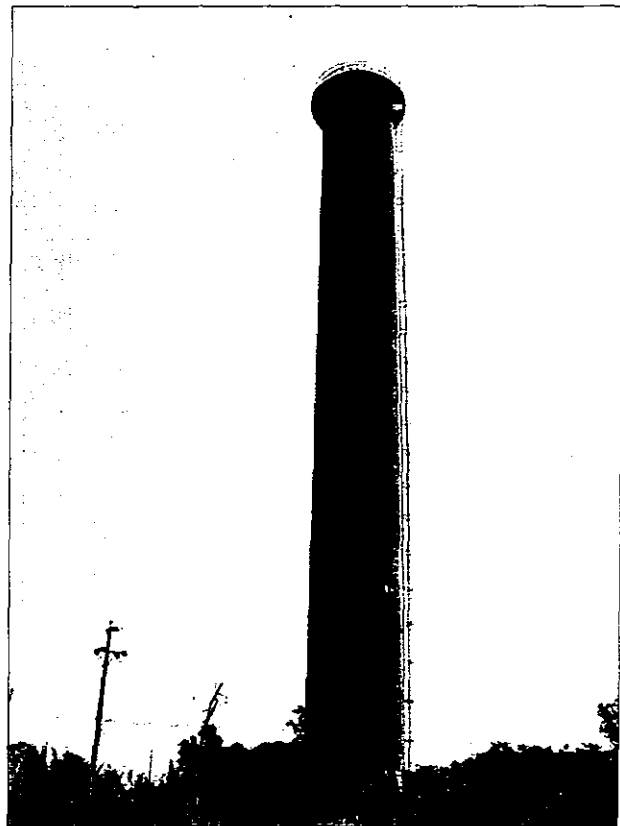
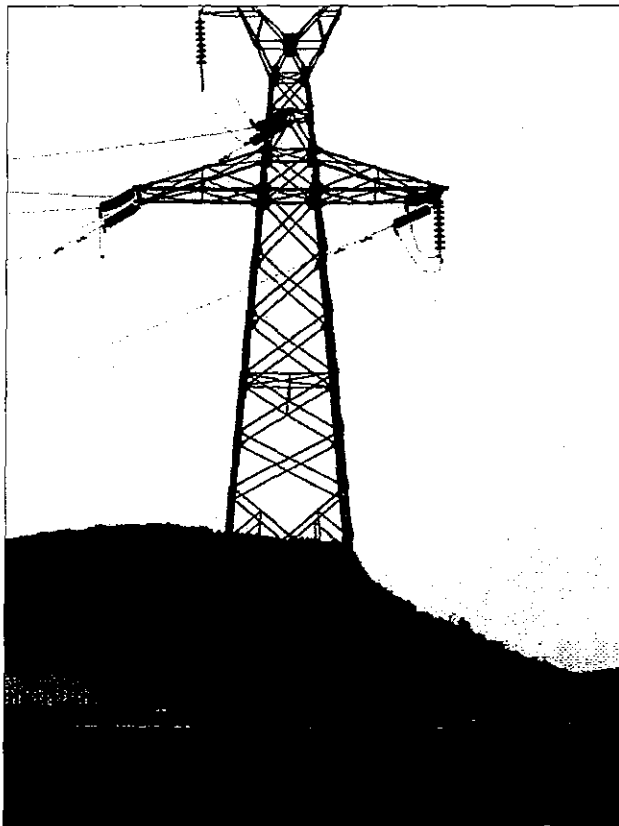
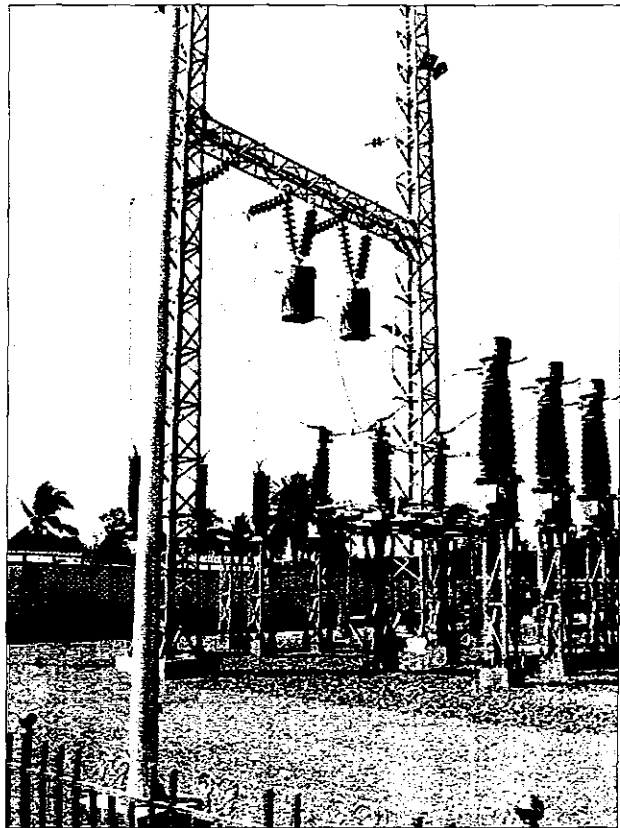
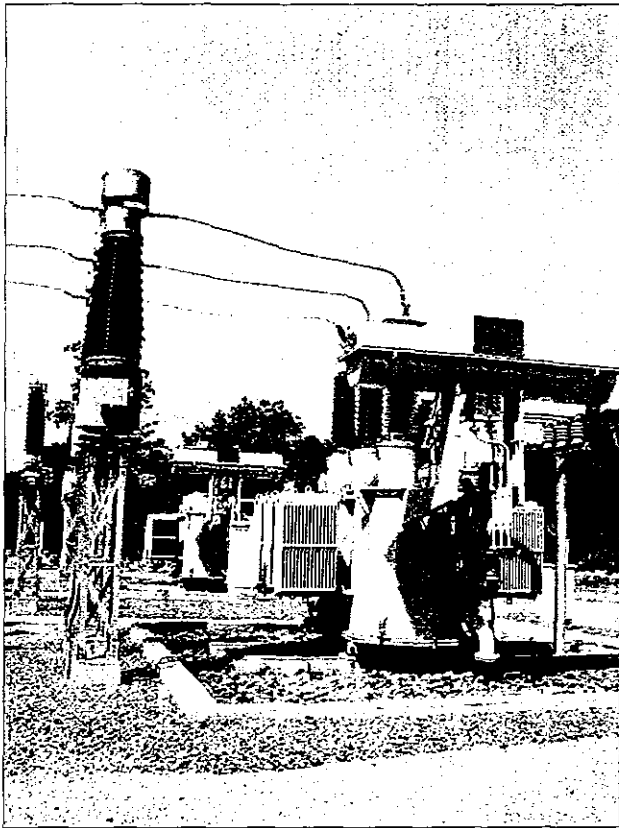
Main-Items	Sub-Items	Unit	Contents / Dimensions
Name of River Systems—Name of River			Stueng Chral River
Authorized Output	Max. [Firm]	kW	12,000
	Firm Peak	kW	12,000 (at the gen. terminals)
Turbine Discharge	Max. [Firm]	m ³ /s	110 (max.)
Effective Head	Max. [Firm]	m	rated head: 373.5
Theoretical Output		kW	14,421
Project License	Type of License		Generation License (007L)
	Date of License		April 05, 2002
Dam	Name		No name
	Type		earth-rock fill type with wide inclined earth core
	Dam Height	m	34 (maximum) Crest elevation: 498.5m
	Crest Length	m	343 Crest width: 6m
	Dam Volume	10 ³ m ³	
	Catchment Area	km ²	
	Design Flood	m ³ /s	1,110
Gate of Dam	Type		plain steel gate
	Number	set	6
	Size (Width×Height)	m	1.13 x 1.7
Reservoir / Regulating Pond	Name		no name
	Total Storage Capacity [Active]	m ³	9,800,000 [regulating: 9,300,000]
	Normal High Water Level (NHWL)	m.MSL	496 Highest Water Level 497m
	Effective Depth	m	9m Dead water level: 487m
	Surface Area at NHWL	km ²	
Intake	Type		deep vertical shaft type
	Size (Width×Height×Length)	m	
	Intake Water Level	m.MSL	480.55m at the center of the gate
Headrace	Type		underground penstock is type of reinforced concrete pipe with steel liner
	Size	m	1.4 (diameter)
	Length	m	3,400
	Thickness of Lining	m	
Tailrace	Type		
	Size	m	
	Length	m	

Man-Items	Sub-Items	Unit	Contents / Dimensions
	Thickness of Lining	m	
Outlet	Type		
	Size (Width × Height × Length)	m	
	Outlet Water Level	m.MSL	
Head Tank or Surge Tank	Type		surge tower
	Size(Liner diameter × Length)	m	4x54.3 max. working water level: 512.7
Penstock	Number		1
	Length	m	2,608.4
	Liner diameter (Max.~Min.)	m	1.3 ~ 1.0
	Pipe Shell Thickness (Max.~Min.)	mm	
	Material		steel
	Manufacturer		
	Type of Sluice Valve		pressured oil-controlled valve
Turbine	Type		Pelton (horizontal shaft)
	Number of Units	unit	2
	Rated Output	kW	6320
	Rated Discharge	m ³ /s	1.97
	Rated Head	m	373.5
	Rotation Speed	rpm	600
	Type of Governor		electro-hydraulic governor
	Type of Draft Tube & Suction Head		runner diameter: 1.3m
	Manufacturer		
Generator	Type		SFW 6000-10/2150
	Number of Units	unit	2
	Rated Voltage	kV	nominal voltage: 6.3
	Rated Output	kVA	7500
	Rated Power Factor	%	0.8
	Frequency	Hz	50
	Manufacturer		
Transformer	Type		SF9-8000/115
	Number of Units	unit	2
	Phase Number		3
	Capacity	kVA	8000
	Voltage [Primary, Secondary, Tertiary]	kV	6.3/115
	Manufacturer		
Transmission Line	Nominal Voltage	kV	115
	Number of Circuits	cct	1
	Length	km	110
Operating Date			2002





37 Hydro PP Kirirom



3. EDC/IPP OF PROVINCIAL TOWN

- **Grand Total Power: 35026kW**
- **Power Estimate Done: 100%**

3-1 - LIST OF EDC/IPP OF PROVINCIAL TOWN

Nº	Name of Company	No. of Gen.	Capacity, kW	Address	Page
1	Huor Peng	3	420	Kampong Thom	41
2	Chilbo Industrial Co.Ltd	3	1,520	Kampong Thom	42
3	Te Kok Eng	4	140	Kampong Thom	43
			2,080	Total Kampong Thom	
4	Mak Thorn	5	508	Takeo	44
5	Srey Sokhom	1	80	Takeo	45
6	Ke Kuyhuoy	2	48	Takeo	46
7	Chhou Lay	1	56	Takeo	47
			692	Total Takeo	
8	Bun Liv	8	2,072	Prey Veng	48
9	Ky Sophear	4	276	Prey Veng	49
10	Prey Veng Electric Utility	3	760	Prey Veng	50
			3,108	Total Prey Veng	
11	Nov Sokha	3	448	Kandal	51
12	Sok Khim	3	460	Kandal	52
			908	Total Kandal	
13	GTS	3	2,920	Kampong Cham	53
			2,920	Total Kampong Cham	
14	Jutiper (Pursat P. Plant)	4	1,000	Pursat	54
			1,000	Total Pursat	
15	Jutiper (K.Chnang P. Plant)	3	750	Kampong Chnang	55
			750	Total Kampong Chnang	
16	Jutiper (Battambang P. Plant)	4	3,500	Battambang	56
			3,500	Total Battambang	
17	Chea Sopha	10	6,072	Siem Reap	57
			6,072	Total Siem Reap	
18	Wan Long	3	1,280	Kampot	58
			1,280	Kampot	
19	Energy Supply Co. Ltd	3	1,360	Svay Rieng	59
			1,360	Total Svay Rieng	
20	Kratie Electric Utility	5	1,180	Kratie	60
			1,180	Total Kratie	
21	Khun Vannak	4	824	Pailin	61
			824	Total Pailin	
22	Chheng Keang	5	932	Stueng Treng	62
			932	Total Stueng Treng	
23	Banteay Meanchey El. Utility	5	800	Banteay Meanchey	63
			800	Total Banteay Meanchey	
24	Koh Kong Duty Free Shop	N/A	2,000	Koh Kong	64
			2,000	Total Koh Kong	
25	No Name	2	120	Mondol Kiri	65
			120	Total Mondol Kiri	
26	Lam Kimlang	2	200	Preah Vihear	66
			200	Total Preah Vihear	
27	Chan Phon	2	100	Odor Meanchey	67
			100	Total Odor Meanchey	
28	EDC	2	5,200	Sihanoukville	68
			5,200	Total Sihanoukville	
			35,026	GRAND TOTAL	

3-2 - EDC/IPP OF PROVINCIAL TOWN

Electric Power Utilities

HUOR PENG THERMAL POWER PLANT IN KAMPONG THOM (C)

1. Facilities of the Generation

Power generation facilities of HUOR PENG Company are 525kVA in total. The plant supplies electricity to consumers in areas of Kampong Thmor town, Khum Balang, Baray district and Khum Kampong Thmor, Santuk district, Kampong Thom province.

License No. 006L was issued to the company on April 01, 2002.

2. General Specifications

The power generation facilities of the company consist of 3 generators. Power ratings of the generators are: two generators manufactured by MITSUBISHI have power rating of 250kVA and 200kVA, one manufactured made in the USSR has power rating of 75kVA. Fuel used for the engines is Diesel.

Code No.		
Name of Company	HUOR PENG	
Address	Baray District, Kampong Thom	
Total No. of Employee	10	
(No. of Engineers)	0	
(No. of Technical Staff)	5	
Supply Area	Kampong Thmor	
No. of Consumers	650	
Installed Electric Power (kW)	420	
Energy sold (kWh)/month	20000	
Tariff Rates (Riels/kWh)	1000	
Name of Power Plant	HUOR PENG	
No. of Unit x kW	200+160+60	

CHILBO INDUSTRIAL THERMAL POWER PLANT IN KAMPONG THOM (C)

1. Facilities of the Generation

Power generation facilities of CHILBO Company in Kampong Thom are 1520kW in total. The plant of the company is situated temporarily in the premise of Power Plant of provincial MIME, Phum Kampong Ro, Khum Domrey Chuan Klar, Stoeng Sen district, Provincial town of Kampong Thom. This power plant will move to new location at Phum Achar Lak, Khum Achar Lak, Stoeng Sen district, National road 5, provincial town of Kampong Thom. The plant supplies electricity to its distribution system under agreement between Sung Jin and Chilbo Industrial Company and Ministry of Industry, Mine and Energy signed on October 01, 2001. License No. 012L was issued to the company on August 09, 2002.

2. General Specifications

The power generation facilities of the company consist of 3 diesel generators. Power ratings of the generators are: 1 diesel engine trademark Yanmar is 1000kVA, 1 diesel engine trademark Mitsubishi is 500kVA, and 1 diesel engine trademark Mitsubishi is 400kVA.

Code No		
Name of Company	CHILBO INDUSTRIAL CO, LTD	
Address	Stoeng Sen District, K. Thom	
Total No. of Employee	30	
(No. of Engineers)	1	
(No. of Technical Staff)	15	
Supply Area	Kampong Thom Town	
No. of Consumers	2800	
Installed Electric Power (kW)	1520	
Energy sold (kWh)/month	95000	
Tariff Rates (Riels/kWh)	1000	
Name of Power Plant	CHILBO Kampong Thom	
No. of Unit x kW	800+400+320	

TE KOK ENG THERMAL POWER PLANT IN KAMPONG THOM (C)

1. Facilities of the Generation

Power generation facilities of TE KOK ENG Company are 175kVA in total. The plant supplies electricity to consumers in areas of Khum Treal town, Baray district, Kampong Thom province. License No. 019L was issued to the company on December 12, 2002.

2. General Specifications

The power generation facilities of the company consist of 4 generators. Power ratings of the generators are 70kVA, 50kVA, 30kVA and 25kVA. Fuel used for the engines is Diesel.

Code No.		
Name of Company	TE KOK ENG	
Address	Baray District, Kampong Thom	
Total No. of Employee	6	
(No. of Engineers)	0	
(No. of Technical Staff)	3	
Supply Area	Khum Treal Town	
No. of Consumers	300	
Installed Electric Power (kW)	140	
Energy sold (kWh)/month	10000	
Tariff Rates (Riels/kWh)	1000	
Name of Power Plant	TE KOK ENG	
No. of Unit x kW	56+40+24+20	

MAK THORN THERMAL POWER PLANT IN TAKEO (C)

1. Facilities of the Generation

Power generation facilities of MAK THORN Company are 635kVA in total. The plant supplies electricity to consumers in areas of Psar Tonlap town, Khum Preah Bathchanchum, Kirivong district, Takeo province.

License No. 013L was issued to the company on September 06, 2002.

2. General Specifications

The power generation facilities of the company consist of 5 generators. Power ratings of the generators are: one generator trademark SCODA has power rating of 250kVA, 2 generators trademark MITSUBISHI has power rating of 125kVA each, one generator trademark Daewoo is 90kVA and one HINO is 45kVA. Fuel used for the engines is Diesel.

Code No		
Name of Company	MAK THORN	
Address	Kirivong District, Takeo	
Total No. of Employee	8	
(No. of Engineers)	0	
(No. of Technical Staff)	3	
Supply Area	Psar Tonlap	
No. of Consumers	650	
Installed Electric Power (kW)	508 (total of 5 gen.)	
Energy sold (kWh)/month	18000	
Tariff Rates (Riels/kWh)	1400	
Name of Power Plant	MAK THORN	
No. of Unit x kW	200+100+100+72+36	

SREY SOKHOM THERMAL POWER PLANT IN TAKEO (C)

1. Facilities of the Generation

Power generation facilities of SREY SOKHOM Company are 100kVA in total. The plant supplies electricity to consumers in areas of Psar Samrong Yorng town, Khum Trapaeng Sab, Baty district, Takeo province.

License No. 015L was issued to the company on November 22, 2002

2. General Specifications

The power generation facilities of the company consist of only one generator. Power rating of the generator is 100kVA. The manufacturer is Komatsu. Fuel used for the engines is Diesel.

Code No.		
Name of Company	SREY SOKHOM	
Address	Baty District, Takeo	
Total No. of Employee	5	
(No. of Engineers)	0	
(No. of Technical Staff)	2	
Supply Area	Psar Samrongyong	
No. of Consumers	170	
Installed Electric Power (kW)	80	
Energy sold (kWh)/month	7000	
Tariff Rates (Riels/kWh)	1400	
Name of Power Plant	SREY SOKHOM	
No of Unit x kW	1 x 80	

KE KUYHUOY THERMAL POWER PLANT IN TAKEO (C)

1. Facilities of the Generation

Power generation facilities of KE KUYHUOY Company are 60kVA in total. The plant supplies electricity to consumers in areas of Psar Kampong Chrey town, Trang and Koh Andet districts, Takeo province.

License No. 016L was issued to the company on November 22, 2002

2. General Specifications

The power generation facilities of the company consist of 2 generators. Power ratings of the generators are: one generator manufactured by HINO has power rating of 40kVA, and one made in USSR has power rating of 20kVA. Fuel used for the engines is Diesel.

Code No.		
Name of Company	KE KUYHUOY	
Address	Trang District, Takeo	
Total No. of Employee	5	
(No. of Engineers)	0	
(No. of Technical Staff)	2	
Supply Area	Psar Kampongchrey	
No. of Consumers	100	
Installed Electric Power (kW)	48	
Energy sold (kWh)/month	4000	
Tariff Rates (Riels/kWh)	1400	
Name of Power Plant	KE KUYHUOY	
No. of Unit x kW	32+16	

CHHOU LAY THERMAL POWER PLANT IN TAKEO (C)

1. Facilities of the Generation

Power generation facilities of CHHOU LAY Company are 70kVA in total. The plant supplies electricity to consumers in areas of Psar Preylvear town, Khum Preylvear, Prey Kabas district, Takeo province.

License No. 020L was issued to the company on December 30, 2002

2. General Specifications

The power generation facilities of the company consist of only one generator. Power rating of the generator is 70kVA. Manufacturer is DENYO. Fuel used for the engine is Diesel.

Code No.		
Name of Company	CHHOU LAY	
Address	Preykabas District, Takeo	
Total No. of Employee	4	
(No. of Engineers)	0	
(No. of Technical Staff)	2	
Supply Area	Psar Preylvear	
No. of Consumers	120	
Installed Electric Power (kW)	56	
Energy sold (kWh)/month	6000	
Tariff Rates (Riels/kWh)	1400	
Name of Power Plant	CHHOU LAY	
No. of Unit x kW	56 x 1	

BUN LIV THERMAL POWER PLANT IN PREY VENG (C)

1. Facilities of the Generation

Power generation facilities of BUN LIV Company are 2590kVA in total. The plant supplies electricity to consumers in areas of Neak Loeung town (areas east of Mekong River), Peam Ro district, Prey Veng province.

License No. 017L was issued to the company on November 29, 2002

2. General Specifications

The power generation facilities of the company consist of 8 generators. Power ratings of the generators are: 4 generators model SKL have power rating of 450kVA each, one generator manufactured by HINO has power rating of 250kVA, one made in USSR is 250kVA, and 2 generators manufactured by MITSUBISHI are 165kVA and 125kVA. Fuel used for the engines is Diesel.

Code No.		
Name of Company	BUN LIV	
Address	Peam Ro District, Prey Veng	
Total No. of Employee	35	
(No. of Engineers)	1	
(No. of Technical Staff)	16	
Supply Area	Neak Loeung Town (east)	
No. of Consumers	3700	
Installed Electric Power (kW)	2072	
Energy sold (kWh)/month	150000	
Tariff Rates (Riels/kWh)	1100	
Name of Power Plant	BUN LIV	
No. of Unit x kW	360x4+200x2+132+100	

KY SOPHEAR THERMAL POWER PLANT IN PREY VENG (C)

1. Facilities of the Generation

Power generation facilities of KY SOPHEAR Company are 345kVA in total. The plant supplies electricity to consumers in areas of Psar Snaypul town, Khum Roka, Pearang district, Prey Veng province.

License No. 018L was issued to the company on November 29, 2002

2. General Specifications

The power generation facilities of the company consist of 4 generators. Power ratings of the generators are: one generator made in Korea has power rating of 200kVA, one made in the Soviet Union has power rating of 75kVA, one made in China is 35kVA and one made in the Soviet Union is 35kVA. Fuel for the engines is Diesel.

Code No.		
Name of Company	KY SOPHEAR	
Address	Pearang District, Prey Veng	
Total No. of Employee	8	
(No. of Engineers)	0	
(No. of Technical Staff)	3	
Supply Area	Psar Snaypul Town	
No. of Consumers	600	
Installed Electric Power (kW)	276	
Energy sold (kWh)/month	16000	
Tariff Rates (Riels/kWh)	1100	
Name of Power Plant	KY SOPHEAR	
No. of Unit x kW	160+60+28+28	

PREY VENG ELECTRIC UTILITY THERMAL POWER PLANT IN PREY VENG

1. Facilities of the Generation

Power generation facilities of PREY VENG ELECTRIC UTILITY are 760kW in total. The plant of the company situates in provincial town of Prey Veng. The plant supplies electricity to the areas of the town.

2. General Specifications

The power generation facilities of the company consist of 3 diesel generators. Power ratings of each generator are: 500kVA (CATERPILLAR), 250kVA (PERKINS), and 200kVA (CUMMINS).

Code No.		
Name of Company	Prey Veng Electric Utility	
Address	Kampong Leav	
Total No. of Employee	41	
(No. of Engineers)	2	
(No. of Technical Staff)	15	
Supply Area	Kampong Leav	
No. of Consumers	2100	
Installed Electric Power (kW)	760	
Energy sold (kWh)/month	65564	
Tariff Rates (Riels/kWh)	1100	
Name of Power Plant	Prey Veng El. Utility	
No. of Unit x kW	400+200+160	

NOV SOKHA THERMAL POWER PLANT IN KANDAL (C)

1. Facilities of the Generation

Power generation facilities of NOV SOKHA Company are 560kVA in total. The plant supplies electricity to consumers in areas of Neak Loeung town (areas west of Mekong River), Leukdek district, Kandal province.

License No. 021L was issued to the company on December 30, 2002

2. General Specifications

The power generation facilities of the company consist of 3 diesel generators. Power ratings of the generators are: one generator manufactured by HINO has power rating of 250kVA, another HINO is 185kVA, and one manufactured by MITSUBISHI has power rating of 125kVA.

Code No.		
Name of Company	NOV SOKHA	
Address	Leukdek District, Kandal	
Total No. of Employee	10	
(No. of Engineers)	0	
(No. of Technical Staff)	5	
Supply Area	Neak Loeung Town (west)	
No. of Consumers	650	
Installed Electric Power (kW)	448	
Energy sold (kWh)/month	20000	
Tariff Rates (Riels/kWh)	1500	
Name of Power Plant	NOV SOKHA	
No. of Unit x kW	200+148+100	

SOK KHIM THERMAL POWER PLANT IN KANDAL

1. Facilities of the Generation

Power generation facilities of SOK KHIM are 460kW in total. The plant of the company situates in Kien Svay district of Kandal province and supplies the electricity to the areas of Kien Svay.

2. General Specifications

The power generation facilities of the company consist of 3 diesel generators. Power ratings of these 3 generators are: 250kVA (China), 200kVA (Mitsubishi), and 125kVA (Mitsubishi).

Code No.		
Name of Company	Sok Khim	
Address	Kien Svay District	
Total No. of Employee	11	
(No. of Engineers)	0	
(No. of Technical Staff)	6	
Supply Area	Kien Svay District	
No. of Consumers	700	
Installed Electric Power (kW)	460	
Energy sold (kWh)/month	20500	
Tariff Rates (Riels/kWh)	1500	
Name of Power Plant	Sok Khim	
No. of Unit x kW	200+160+100	

GTS THERMAL POWER PLANT IN KAMPONG CHAM (G)

1. Facilities of the Generation

Power generation facilities of GTS Company are 2920kW in total. The plant of the company situates in the premise of the Kampong Cham Power Plant, Phum 7, Sangkat Kampong Cham, provincial town of Kampong Cham. The plant supplies electricity to distribution system of Electricité de Kampong Cham under agreement between the company and EDC signed on May 06, 1998. License No. 004L was issued to the company on March 29, 2002

2. General Specifications

The power generation facilities of the company consist of 3 diesel generators. Power rating of the generators are: one generator made in Russia has power rating of 1000kVA, one generator manufactured by CATERPILLAR with power rating of 1700kVA, and one generator manufactured by CATERPILLAR with power rating of 950kVA. Type of fuel used for the engines is Light Distillate Oil (LDO).

Code No.		
Name of Company	GTS	
Address	Kampong Cham Town	
Total No. of Employee	30	
(No. of Engineers)	1	
(No. of Technical Staff)	15	
Supply Area	K.Cham (Electricite du K. Cham)	
No. of Consumers	5000	
Installed Electric Power (kW)	2920	
Energy sold (kWh)/month	180000	
Tariff Rates (Riels/kWh)	850	
Name of Power Plant	GTS Kampong Cham	
No. of Unit x kW	1360+800+760	

JUPITER THERMAL POWER PLANT IN PURSAT (G)

1. Facilities of the Generation

Power generation facilities of JUPITER Company in Pursat are 1000kW in total. The plant of the company situates in the premise of the Pursat Power Plant, Phum Pea Nheak 2, Sangkat Pteah Prey, Sampov Meas district, provincial town of Pursat. The plant supplies electricity to distribution system of Electricité de Pursat under agreement between the company and Electricité de Pursat signed on May 08, 1996.

License No. 003L was issued to the company on March 29, 2002

2. General Specifications

The power generation facilities of the company in Pursat consist of 4 generators model SS-GK05-250. Power rating of each generator is 250kW. Manufacturer of these generators is Detroit. Type of fuel used for the engines is Light Distillate Oil (LDO).

Code No.		
Name of Company	JUPITER (Pursat P. Plant)	
Address	Sampov Meas District, Pursat	
Total No. of Employee	13	
(No. of Engineers)	0	
(No. of Technical Staff)	7	
Supply Area	Pursat (to Electricite du Pursat)	
No. of Consumers	4500	
Installed Electric Power (kW)	1000	
Energy sold (kWh)/month	182000	
Tariff Rates (Riels/kWh)	1100	
Name of Power Plant	JUPITER Pursat	
No. of Unit x kW	250 x 4	

JUPITER THERMAL POWER PLANT IN KAMPONG CHHNANG (G)

1. Facilities of the Generation

Power generation facilities of JUPITER Company in Kampong Chnang are 750kW in total. The plant of the company situates in the premise of the Kampong Chnang Power Plant, Phum 1, Sangkat Ksan, Kampong Chnang district, provincial town of Kampong Chnang. The plant supplies electricity to distribution system of Electricité de Kampong Chnang under agreement between the company and Electricité de Kampong Chnang signed on June 02, 1997.

License No. 003L was issued to the company on March 29, 2002

2. General Specifications

The power generation facilities of the company in Kampong Chnang consist of 3 generators, which 2 generators are model TS-GK05-250 with power rating of 250kW each, and 1 generator is model SS-GK05-250 with power rating of 250kW. Manufacturer of these generators is Detroit. Type of fuel used for the engines is Light Distillate Oil (LDO).

Code No.		
Name of Company	JUPITER (K. Chnang P. Plant)	
Address	K Chnang District, K Chnang	
Total No. of Employee	13	
(No. of Engineers)	0	
(No. of Technical Staff)	13	
Supply Area	K. Chnang (Electricite du K Ch)	
No. of Consumers	4150	
Installed Electric Power (kW)	750	
Energy sold (kWh)/month	145000	
Tariff Rates (Riels/kWh)	1100	
Name of Power Plant	JUPITER K. Chnang	
No. of Unit x kW	250 x 3	

JUPITER THERMAL POWER PLANT IN BATTAMBANG (G)

1. Facilities of the Generation

Power generation facilities of JUPITER Company in Battambang are 3500kW in total. The plant of the company situates in the premise of the Battambang Power Plant, Street No.1, Phum Kamakor, Sangkat Svay Por, Battambang district, provincial town of Battambang. The plant supplies electricity to distribution system of Electricité de Battambang under agreement between the company and Electricité de Battambang signed on October 30, 1998.

License No. 003L was issued to the company on March 29, 2002

2. General Specifications

The power generation facilities of the company in Battambang consist of 4 generators of model 3512 STD. Power rating of each generator is 875kW. Type of fuel used for the engines is Light Distillate Oil (LDO).

Code No.		
Name of Company	JUPITER (Battambang P. Plant)	
Address	BB District, Battambang	
Total No. of Employee	35	
(No. of Engineers)	2	
(No. of Technical Staff)	20	
Supply Area	Battambang (Electricite du BB)	
No. of Consumers	6000	
Installed Electric Power (kW)	3500	
Energy sold (kWh)/month	200000	
Tariff Rates (Riels/kWh)	950	
Name of Power Plant	JUPITER Battambang	
No. of Unit x kW	875 x 4	

CHEA SOPHA THERMAL POWER PLANT IN SIEM REAP (G)

1. Facilities of the Generation

Power generation facilities of CHEA SOPHA Company are 6072kW in total maximum. The plant situates in the premise of the Siem Reap Power Plant on National road 6, Phum Kruos, Khum Svay Dangkom, Siem Reap district, provincial town of Siem Reap. The plant supplies electricity to distribution system of Electricité de Siem Reap.

License No. 005L was issued to the company on April 01, 2002

2. General Specifications

The plant of the company consists of two parts: one consists of 4 old Russian generators that provide maximum power of 400kWx2+160kWx2 and the other consists of 6 new generators of CHEA SOPHA with power ratings of 1000kVAx3+1270kVAx2+650kVA. The old generators are now not for normal use and they are used only when the power is not enough due to any new generator breakdown or maintenance. In fact the original power ratings of the old generators are 1000kVAx2+315kVAx2, because they are too old, they can provide only half of their original powers. The new generators are manufactured by CUMMINS.

Code No.		
Name of Company	CHEA SOPHA	
Address	National Rd.6, Siem Reap town	
Total No. of Employee	80	
(No. of Engineers)	4	
(No. of Technical Staff)	30	
Supply Area	Siem Reap Town	
No. of Consumers	9000	
Installed Electric Power (kW)	6072	
Energy sold (kWh)/month	350000	
Tariff Rates (Riels/kWh)	900	
Name of Power Plant	Siem Reap Power Plant JPP	
No. of Unit x kW	800x3+1016x2+520+400x2+160x2	

WAN LONG THERMAL POWER PLANT IN KAMPOT (G)

1. Facilities of the Generation

Power generation facilities of WAN LONG Company are 1600kVA in total. The plant of the company situates in the premise of the Kampot Power Plant, Phum Tvear Khang Choeng, Khum Andong Khmer, Kampong Bay district, Provincial town of Kampot. The plant supplies electricity to distribution system of Electricité de Kampot.

License No. 010L was issued to the company on May 27, 2002

2. General Specifications

The power generation facilities of the company consist of 3 diesel generators. Two generators have power ratings of 650kVA each (CHIDONG) and one other has 300kVA (Mitsubishi). Type of fuel used for the engines is Light Distillate Oil (LDO).

Code No.		
Name of Company	WAN LONG	
Address	Kampong Bay District, Kampot	
Total No. of Employee	37	
(No. of Engineers)	1	
(No. of Technical Staff)	19	
Supply Area	Kampot (Electricite du Kampot)	
No. of Consumers	4100	
Installed Electric Power (kW)	1280	
Energy sold (kWh)/month	145000	
Tariff Rates (Riels/kWh)	1200	
Name of Power Plant	Kampot Power Plant IPP	
No. of Unit x kW	520 x 2 + 240	

ENERGY SUPPLY Co., LTD THERMAL POWER PLANT IN SVAY RIENG

1. Facilities of the Generation

Power generation facilities of ENERGY SUPPLY are 1360kW in total. The plant of the company situates in Provincial town of Svay Rieng. The plant supplies electricity to the areas of the town.

2. General Specifications

The power generation facilities of the company consist of 3 diesel generators. Power ratings of two generators are 650kVA each (USA) and one other is 400kVA (USSR).

Code No.		
Name of Company	ENERGY SUPPLY Co.LTD	
Address	Electricity of Svay Rieng	
Total No. of Employee	25	
(No. of Engineers)	0	
(No. of Technical Staff)	12	
Supply Area	Svay Rieng Town	
No. of Consumers	2605	
Installed Electric Power (kW)	1360	
Energy sold (kWh)/month	95000	
Tariff Rates (Riels/kWh)	1600	
Name of Power Plant	Energy Supply Co.LTD	
No. of Unit x kW	520x2+320	

KRATIE ELECTRIC UTILITY THERMAL POWER PLANT IN KRATIE

1. Facilities of the Generation

Power generation facilities of KRATIE ELECTRIC UTILITY are 1180kW in total. The plant of the company situates in provincial town of Kratie. The plant supplies electricity to the areas of the town.

2. General Specifications

The power generation facilities of the company consist of 5 diesel generators. Power ratings of two generators are 250kVA each (China), one is 315kVA (USSR) and two other are 320kVA and 340kVA.

Code No.		
Name of Company	Kratie Electric Utility	
Address	Kratie City	
Total No. of Employee	10	
(No. of Engineers)	0	
(No. of Technical Staff)	6	
Supply Area	Kratie	
No. of Consumers	2025	
Installed Electric Power (kW)	1180	
Energy sold (kWh)/month	90000	
Tariff Rates (Riels/kWh)	1200	
Name of Power Plant	Kratie Electric Utility	
No. of Unit x kW	200x2+256+252+272	

KHUN VANNAK THERMAL POWER PLANT IN PAILIN

1. Facilities of the Generation

Power generation facilities of KHUN VANNAK are 824kW in total. The plant of the company situates in provincial town of Pailin. The plant supplies electricity to the areas of the town.

2. General Specifications

The power generation facilities of the company consist of 4 diesel generators. Power ratings of 3 generators are 250kVA each, and one other is 280kVA. The manufacturer of these generators is Mitsubishi.

Code No.		
Name of Company	Khun Vannak	
Address	Pailin City	
Total No. of Employee	12	
(No. of Engineers)	0	
(No. of Technical Staff)	4	
Supply Area	Pailin City	
No. of Consumers	820	
Installed Electric Power (kW)	824	
Energy sold (kWh)/month	27000	
Tariff Rates (Riels/kWh)	1500	
Name of Power Plant	Khun Vannak	
No. of Unit x kW	200x3+224	

CHHENG KEANG THERMAL POWER PLANT IN STUENG TRENG

1. Facilities of the Generation

Power generation facilities of CHHENG KEANG are 932kW in total. The plant of the company situates in provincial town of Stung Treng. The plant supplies electricity to the areas of the town.

2. General Specifications

The power generation facilities of the company consist of 5 diesel generators. Power ratings of 4 generators are 250kVA each, and one other is 165kVA. The manufacturer of these generators is Mitsubishi.

Code No.		
Name of Company	Chheng Keang	
Address	Stueng Treng town	
Total No. of Employee	9	
(No. of Engineers)	0	
(No. of Technical Staff)	4	
Supply Area	Stung Treng City	
No. of Consumers	1350	
Installed Electric Power (kW)	932	
Energy sold (kWh)/month	31000	
Tariff Rates (Riels/kWh)	1800	
Name of Power Plant	ChhengKeang	
No. of Unit x kW	200x4+132	

BANTEY MEANCHEY ELECTRIC UTILITY THERMAL POWER PLANT IN BANTEY MEANCHEY

1. Facilities of the Generation

Power generation facilities of BANTEY MEANCHEY ELECTRIC UTILITY are 800kW in total. The plant of the company situates in provincial town of Bantey Meanchey. The plant supplies electricity to the areas of the town.

2. General Specifications

The power generation facilities of the company consist of 5 diesel generators. Power ratings of 3 generators are 250kVA each (CUMMINS), and 2 other are 125kVA each (HINO).

Code No.		
Name of Company	BanteayMeanchey El. Utility	
Address	Serey Saophuan	
Total No. of Employee	30	
(No. of Engineers)	2	
(No. of Technical Staff)	23	
Supply Area	Serey Saophuan	
No. of Consumers	4850	
Installed Electric Power (kW)	800	
Energy sold (kWh)/month	120000	
Tariff Rates (Riels/kWh)	1500	
Name of Power Plant	BanteayMeanchey El. Utility	
No. of Unit x kW	200x3+100x2	

KOH KONG DUTY FREE SHOP THERMAL POWER PLANT IN KOH KONG

KOH KONG DUTY FREE SHOP dose not generate electric power itself. The company buys electric energy from Thailand and sells it to the areas of the town. Maximum power the company can supply to the town is 2000kW. The energy sold is approximately 815180kWh per month.

Code No.		
Name of Company	Koh Kong Duty Free Shop	
Address	Dang Tong. Koh Kong	
Total No. of Employee	8	
(No. of Engineers)	1	
(No. of Technical Staff)	5	
Supply Area	Dang Tong. Koh Kong	
No. of Consumers	2275	
Installed Electric Power (kW)	2000	
Energy sold (kWh)/month	815180	
Tariff Rates (Riels/kWh)	600	
Name of Power Plant	Koh Kong Duty Free Shop	
No. of Unit x kW	Power import from Thailand	

THERMAL POWER PLANT IN MONDOL KIRI

1. Facilities of the Generation

Power generation facilities of company are 120kW in total. The plant of the company situates in provincial town of Mondol Kiri. The plant supplies electricity to the areas of the town.

2. General Specifications

The power generation facilities of the company consist of 2 diesel generators, which power rating of each generator is 75kVA (China).

Code No.		
Name of Company	No Name	
Address	Sen Monorom	
Total No. of Employee	6	
(No. of Engineers)	0	
(No. of Technical Staff)	2	
Supply Area	Sen Monorom	
No. of Consumers	190	
Installed Electric Power (kW)	120	
Energy sold (kWh)/month	9000	
Tariff Rates (Riels/kWh)	1800	
Name of Power Plant		
No. of Unit x kW	60 x 2	

LAM KIMLANG THERMAL POWER PLANT IN PREAH VIHEAR

1. Facilities of the Generation

Power generation facilities of LAM KIMLANG are 200kW in total. The plant of the company situates in provincial town of Preah Vihear. The plant supplies electricity to the areas of the town.

2. General Specifications

The power generation facilities of the company consist of 2 diesel generators, which power rating of each generator is 125kVA. Manufacturer of these generators is Mitsubishi.

Code No.		
Name of Company	Lam Kimlang	
Address	Tbeng Meanchey	
Total No. of Employee	7	
(No. of Engineers)	0	
(No. of Technical Staff)	2	
Supply Area	Tbeng Meanchey	
No. of Consumers	300	
Installed Electric Power (kW)	200	
Energy sold (kWh)/month	10000	
Tariff Rates (Riels/kWh)	1800	
Name of Power Plant	Lam Kimlang	
No. of Unit x kW	100x2	

CHAN PHON THERMAL POWER PLANT IN ODOR MEANCHEY

1. Facilities of the Generation

Power generation facilities of CHAN PHON are 100kW in total. The plant of the company situates in provincial town of Odor Meanchey and supplies the electricity to the areas of the town.

2. General Specifications

The power generation facilities of the company consist of 2 old diesel generators. Power ratings of these 2 generators are 75kVA and 50kVA.

Code No.		
Name of Company	Chan Phon	
Address	Odor Meanchey town	
Total No. of Employee	4	
(No. of Engineers)	0	
(No. of Technical Staff)	2	
Supply Area	Kien Svay District	
No. of Consumers	300	
Installed Electric Power (kW)	100	
Energy sold (kWh)/month	12000	
Tariff Rates (Riels/kWh)	1200	
Name of Power Plant		
No. of Unit x kW	60+40	

EDC THERMAL POWER PLANT IN SIHANOUKVILLE (C)

1. Facilities of the Generation

Power generation facilities of EDC power plant in Sihanoukville are 6500kVA in total. The plant situates in Sihanoukville and supplies electricity to distribution system of Electricité de Sihanoukville.

2. General Specifications

The power generation facilities of the plant consist of 2 diesel generators. The generators have power ratings of 3250kVA each and manufactured by ABB (Finland).

Code No.		
Name of Company	EDC	
Address	Sihanoukville	
Total No. of Employee	40	
(No. of Engineers)	2	
(No. of Technical Staff)	20	
Supply Area	Sihanoukville	
No. of Consumers	7500	
Installed Electric Power (kW)	5200	
Energy sold (kWh)/month	300000	
Tariff Rates (Riels/kWh)	1200	
Name of Power Plant	Sihanoukville Power Plant	
No. of Unit x kW	2600 x 2	

4. IPP OF DISTRICTS

- Kandal : 4 Companies, total power 1108kVA
- Phnom Penh : 1 Company, total power 225kVA
- Siem Reap : 1 Company, total power 120kVA
- Preah Vihear : 2 Companies, total power 137.5kVA
- Kratie : 4 Companies, total power 225kVA
- Koh Kong : 1 Company, total power 400kVA
- Prey Veng : 10 Companies, total power 1715kVA
- Svay Rieng : 13 Companies, total power 255.5kVA
- Pursat : 15 Companies, total power 892.5kVA
- Takeo : 30 Companies, total power 1584.75kVA
- Sihanoukville : 6 Companies, total power 1701.25kVA
- Kampong Thom : 8 Companies, total power 1620.75kVA
- Kampong Cham : 36 Companies, total power 3147.5kVA
- Battambang : 14 Companies, total power 4136.25kVA
- Kampong Speu : 21 Companies, total power 2005.5kVA
- Banteay Meanchey : 9 Companies, total power 2173kVA

Total: 21447.5kVA

- Power Estimate Done: 90%

PROVINCE: KANDAL

No.	Date of Permission	Name	Location	Capacity (kVA)
1	22-Jun-00	Mrs Khiev Nareth	District Kandal Province	353
2	26-Mar-98	Mr Ong Sorphondara	District Ang Snoul	285
3	17-Feb-99	Mr Nov Sokha	District Kandal Province	250
4	27-Apr-98	Mrs Sar Phal Kea	District Takhmao	220

PROVINCE: PHNOM PENH

No.	Date of Permission	Name	Location	Capacity (kVA)
1	17-Feb-99	Mr Ven Veasna	District Russey Keo Phnom Penh City	225

PROVINCE: SIEM REAP

No.	Date of Permission	Name	Location	Capacity (kVA)
1	08-Nov-99	Mr Chhom Sophay	District Sotmikoum	120

PROVINCE: PRAEH VIHEAR

No.	Date of Permission	Name	Location	Capacity (kVA)
1			District Tbeng Meanchey	N/A
2			District Kampong Pranak	125
3			District Rovieng	12.5

PROVINCE: KRATIE

No.	Date of Permission	Name	Location	Capacity (kVA)
1			District Snoul	62.5
2			District Chhlong	62.5
3			District Sambor	62.5
4			District Prek Prasab	37.5

PROVINCE: KOH KONG

No.	Date of Permission	Name	Location	Capacity (kVA)
1	18-May-98	Mr Sam Rith Sothy	District Sre Ambel	400

PROVINCE: PREY VENG

No.	Date of Permission	Name	Location	Capacity (kVA)
1		Mr Bun Liv	District Neak Loeung	1075
2		Mr Mouy Molika	District Svay Antor	146.25
3		Mr Ki Sophea	District Snay Pul	118.75
4		Mr Nov Sokha	District Kampong Trabek	100
5		Mr Keo Dara	District Kampong Ampil	93.75
6		Mr Lun Samon	District Prekchangkran Rey	93.75
7		Mr Hass Chhoeun	District Preah Sdah	25
8		Mr Lak Heng	District Sithor Kandal	25
9		Mr Chhun Sothea	District Mesang	18.75
10		Mr Ke Chamreun	District Kanh Chreach	18.75

PROVINCE: SVAY RIENG

No.	Date of Permission	Name	Location	Capacity (kVA)
1			District Kampong Ro	N/A
2			District Prasac 3 Svay Chroum	100
3			District Kompong Trach Romeah Hek	25
4			District Donsor Svay Chroum	18.75
5			District Kompong Trach Romeah Hek	18.75
6			District Kraolko Svay Chrom	18
7			District Kompongtrach Romeah Hek	12.5
8			District Ang Prosre Romeah Hek	12.5
9			District Kondeng Rey Svayteap	12.5
10			District Svay Chrom	10
11			District Chanthey Romeah Hek	8.75
12			District Kondeng Rey Svayteap	6.25
13			District Chrok Mtes Svayteap	6.25
14			District Preyangku Svayteap	6.25

PROVINCE: PURSAT

No.	Date of Permission	Name	Location	Capacity (kVA)
1	N/A	Mr Youk Savong	District Krakor	245
2		Mr Yeab Lao	District Phnom Kravanh	192.5
3	N/A	Mrs Van Seng	District Krakor	93.75
4		Mr Oun Sarun	District Krakor	75
5		Mr Chhour Ngoun	District Bakan	62.5
6	N/A	Mr Teum Touch	District Bakan	62.5
7	N/A	Mr Ya Sambath	District Bakan	50
8	N/A	Mr Lach Pengly	District Kandieng	18.75
9	N/A	Mr Chhun Touch	District Phnom Kravanh	18.75
10		Mr Keo Sophal	District Krakor	15
11		Mr Prak Phoeun	District Phnom Kravanh	15
12		Mr Pech Meng Hoang	District Kandieng	12.5
13	N/A	Mr Ear Kimleng	District Kandieng	12.5
14	N/A	Mr Lim Tangnhin	District Kandieng	12.5
15	N/A	Mr Cheth Kimnhin	District Kandieng	6.25

PROVINCE: TAKEO

No.	Date of Permission	Name	Location	Capacity (kVA)
1	Jan-02		District Tramkok	125
2			District Kirivong	125
3	23-Apr-00	Mr Chhen Seng	District Tramkok	100
4	25-Apr-00	Mr Mak Thork	District Kirivong	100
5			District Prey Kabas	100
6	28-Aug-00	Mr Chhuo Sengtao	District Prey Kabas	80
7			District Tramkok	75
8			District Bati	75
9			District Koh Andet	75
10			District Prey Kabas	75
11	05-Jul-00	Mr Ou Sokhom	District Tramkok	60
12	N/A	Mr Ouch Por	District Prey Kabas	60
13	30-Mar-00	Mr Srey Sokhom	District Bati	60
14	30-Mar-00	Mr Try klork	District Kuch AnDet	60
15			District Samraong	50
16	31-Aug-00	Mr Pich Sopheap	District Samraong	40
17			District Tramkok	37.5
18			District Trang	30
19			District Angkor Borey	30
20	25-Apr-00	Mr Mok Chin	District Xvao Samrong	24
21	28-Aug-00	Mr Lach Peou	District Angkor Borey	24
22	04-May-00	Mr Ker Kuyhour	District Trang	24
23			District Borey Cholsar	22.5
24			District Kirivong (Phnom Den)	22.5
25			District Samraong	22.5
26			District Samraong (Rovieng)	18.75
27	27-Jun-00	Mr Kuy Tei	District Samraong (Lomchang)	18
28	25-Apr-00	Mr Lunch Siem	District Kirivong	18
29	30-Mar-00	Mr Kong Phat	District Borey Cholsar	18
30	04-Jun-00	Mr Sar Se	District Samraong (Rovieng)	15

PROVINCE: SIHANOUKVILLE

No.	Date of Permission	Name	Location	Capacity (kVA)
1			District Tumubrolok	700
2			District Veal Rinh	600
3	21-Sep-99	Mr Li Sotha	District Prey Nop	200
4			District Ochrov	81.25
5			District Ream Prey Nop	60
6			District Otres Stoeung Hav	60

PROVINCE: KAMPONG THOM

No.	Date of Permission	Name	Location	Capacity (kVA)
1	30-Dec-99	Mr Krich Chheang	District Balangk Baray	636
2	N/A	Mr Ngin Kong	District Soyong Baray	255
3	N/A	Mr Te Kok Eng	District Treall	206
4	30-Dec-99	Mr Ngin Kong	District Soyong Baray	200
5	N/A	Mr Ong Hoksia	District Staung	125
6	N/A	Mr Kim Chan Dara	District Baray	115
7	N/A	Mr Im Eamhouy	District Staung	43.75
8	N/A	Mr Hang Hong Seng	District Santok	40

PROVINCE: KAMPONG CHAM

No.	Date of Permission	Name	Location	Capacity (kVA)
1	20-Jun-00	Mr Koy Sour	District Tbong Khmom	500
2		Mr Khun Sambo	District Prey Chho	330
3		Mr Ku So	District Tbong Khmom	250
4		Mr Ly Kheang	District Chamkar Leu	150
5		Mr Keat Mengkhu	District Owe Rieng Ov	137.5
6		Mr Heng Phirun	District Stueng Trang	137.5
7		Mr Lim Skhon	District Stung Trang	137.5
8	10-Oct-94	Mr Khun Sam Bo	District Prey Chho (Chrey Vien)	125
9		Mr Kim Hour	District Chamkar Leu	125
10		Mr Keung Pothearith	District Cheung Prey	112.5
11		Mr Por Seng	District Ponhea Krek	93.75
12		Mr Sim Sokha	District Tbong Khmom	75
13		Mr Khuth Bun Pich	District Chamkar Leu	75
14		Mr Mean Vanna	District Chamkar Leu	75
15		Mr Chou Srean	District Prey Chho	62.5
16		Mr Nhim Bunnin	District Kaung Meas	62.5
17		Mr Sok Hour	District Kaung Meas	62.5
18		Mr Hong Vantha	District Owe Rieng Ov (Ampil Ta Pok)	62.5
19		Mr Chang Bunnareth	District Batheay	56.25
20		Mr Chea Yean	District Srey Santhor	50
21		Mr Seng Chinleang	District Srey Santhor	50
22		Mr Hok Heang	District Kroch Chhmar	50
23		Mr Hak Thoeun	District Tbong Khmom	46.25
24		Mr Leng Bunchhorn	District Chamkar Leu	43.75
25		Mr Touch Bunny	District Kampong Siem	37.5
26		Mr Sin Neary	District Ponhea Krek	37.5
27		Mr Chhouk Hong	District Tbong Khmom	37.5
28		Mr Ly Hok	District Koh Sotin	37.5
29		Mr Nam Mengchin	District Owe Rieng Ov	25
30		Mr Sin Man	District Ponhea Krek	25
31		Mr Ly Math	District Kaung Meas	18.75
32		Mr Vong Sok	District Srey Santhor	12.5
33		Mr Ly Sreang	District Srey Santhor	12.5
34		Mr Phan Mary	District Tbong Khmom	12.5
35		Mr Orn Danal	District Koh Sotin	12.5
36		Mr Kuch Treng	District Kampong Siem	8.75

PROVINCE: BATTAMBANG

No.	Date of Permission	Name	Location	Capacity (kVA)
1			District Battambang	552.5
2			District Mong Russey	500
3			District Bavel	462.5
4			District Thmor Kol	451.25
5		Mrs Meas Chanthary	District Bavel	362.5
6			District Sang Ke	258.75
7		Mrs Tieng Chenda	District Mong Russey	250
8			District Ek Phnom	246.25
9	19-Feb-98	Mrs Sea Kech	District Mong Russey	240
10			District Banan	202.5
11	05-Jun-00	Mrs Tieng chenda	District Mong Ressey	200
12		Mr Lay Se	District Battambang (Thmor Kol)	187.5
13	21-Sep-99	Mr Lay Se	District Battambang	150
14			District Rattanakmondol	72.5

PROVINCE: KAMPONG SPEU

No.	Date of Permission	Name	Location	Capacity (kVA)
1		Mr Ouk Vanna	District Chbar Mon (Roka Thom)	437.5
2		Mr Mom Sokha	District Odong (Veang Chah)	250
3	17-Dec-98	Mr Mom Sokha	District Odong	200
4		Mr Hout Mory	District Chbar Mon (Roka Thom)	133.75
5		Mr Kong Sun	District Chbar Mon (Kandaol Dom)	127.5
6		Mr Touch Neang Heng	District Phnom Sruoch	106.25
7		Mr Oun Youthy	District Phnom Sruoch (Kiri Voan)	106.25
8		Mr Ut Thy	District Kong Pisey	100
9	02-Jan	Mr So Rinda	District Borset	80
10		Army Thmat Poug	District Odong (Phnom Touch, Thmat Pong)	80
11		Mr Sok Phearom	District Chbar Mon	65
12		Mr Men Kunthea	District Phnom Sruoch (O commune)	62.5
13		Mr Kong Sun	District Samraong Tong (Voa Sor)	50
14		Mr Uy Sophat	District Samraong Tong	33.75
15		Mr Nap Leng	District Samraong Tong (Tropangkong)	31.875
16		Mr Seth Chea Chay	District Odong (Ksemksan)	28.125
17		Mr Nam Songleng	District Chbar Mon (Preyslek)	27.75
18		Mr Samrith Kiri	District Odong (Krangchek)	25
19		Mr Chay Song Meng	District Borset (Phearymeanchay)	22.75
20		Mr Lim Peng Hong	District Borset (Svayrompe)	18.75
21		Mr Pin Sam Unn	District Kong Pisey	18.75

PROVINCE: BANTEAY MEANCHEY

No.	Date of Permission	Name	Location	Capacity (kVA)
1	13-Jan-98	Mr Kry Bunthong	District Ochrov	535
2	05-Aug-98	Mr Khun Sarun	District Serey Saophuan	500
3	30-Jun-98	Mr Sok Song	District Serey Saophuan	350
4	13-Jan-98	Mr Gnoun Samm	District Ochrov	335
5	26-Jul-94	Mr Kheng Kong	District Russey Srok	115
6	26-Jul-94	Mr Ngoun Saing	District Ochrov (Poi Pet)	115
7	26-Jul-94	Mr Chheuy Saren	District Serey Saopuan (O Ambel)	88
8	26-Jul-94	Mr Sou Vorn / Keo Choum	District Ochrov (Poi Pet)	75
9	26-Jul-94	Mr Try Bunthong	District Ochrov, (Poi Pet, Balilay)	60