

## Appendix 2 経営事務管理関連

Appendix 2- 1 : EUMP2009 年度 需給および財務バランスシート

Appendix 2- 2 : 事務管理業務体系

Appendix 2- 3 : ベースライン調査用チェックリスト

Appendix 2- 4 : 2009 年 3 月までの CP への宿題

Appendix 2- 5 : 2009 年 11 月までの CP への宿題項目

Appendix 2- 6 : EUMP 定款案

Appendix 2- 7 : 組織権限規定案

Appendix 2- 8 : EUMP 組織図

Appendix 2- 9 : 業務責任分担案 (事務管理部門)

Appendix 2-10 : 業務責任分担案 (技術部門)

Appendix 2-11 : 指揮命令系統

Appendix 2-12 : 就業規則

Appendix 2-13 : 社有車管理規定

Appendix 2-14 : 罰則規定

Appendix 2-15 : 経理業務の全般的なワークフロー

Appendix 2-16 : 2010 年 2 月までの CP への宿題項目

Appendix 2-17 : 事務管理部門担当者別ワークフロー

Appendix 2-18 : 2010 年 9 月までの CP への宿題項目

Appendix 2-19 : 電気料金の集金台帳 (例)

Appendix 2-20 : EUMP の会計報告 (例)

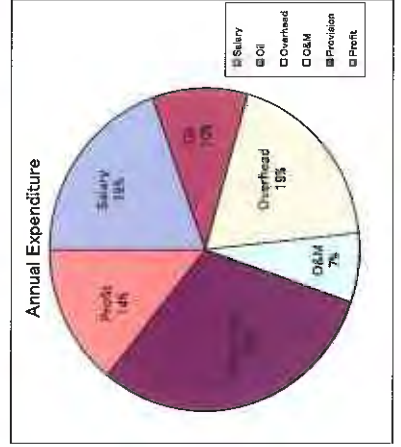
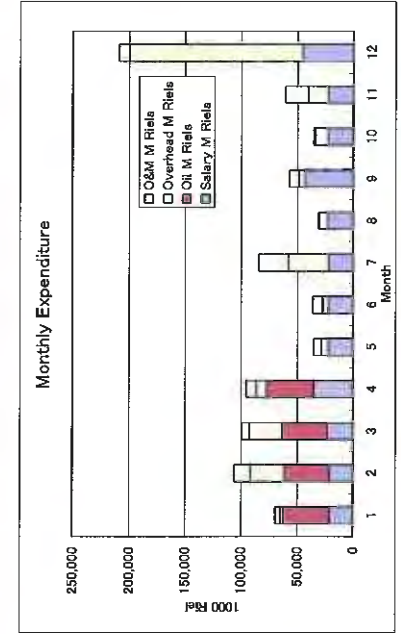
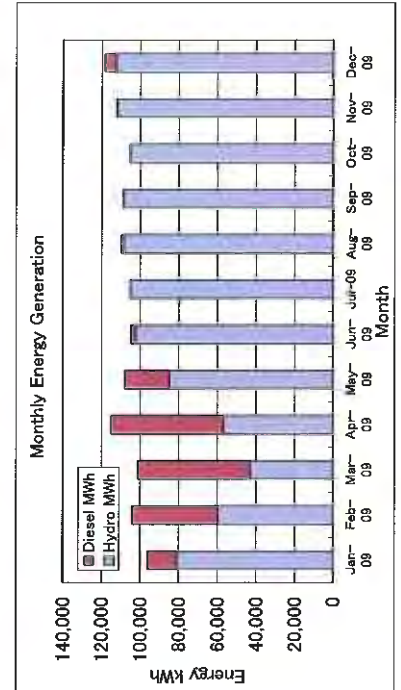
Appendix 2-1 : EUMP2009 年度 需給および財務バランスシート

Appendix 2-1

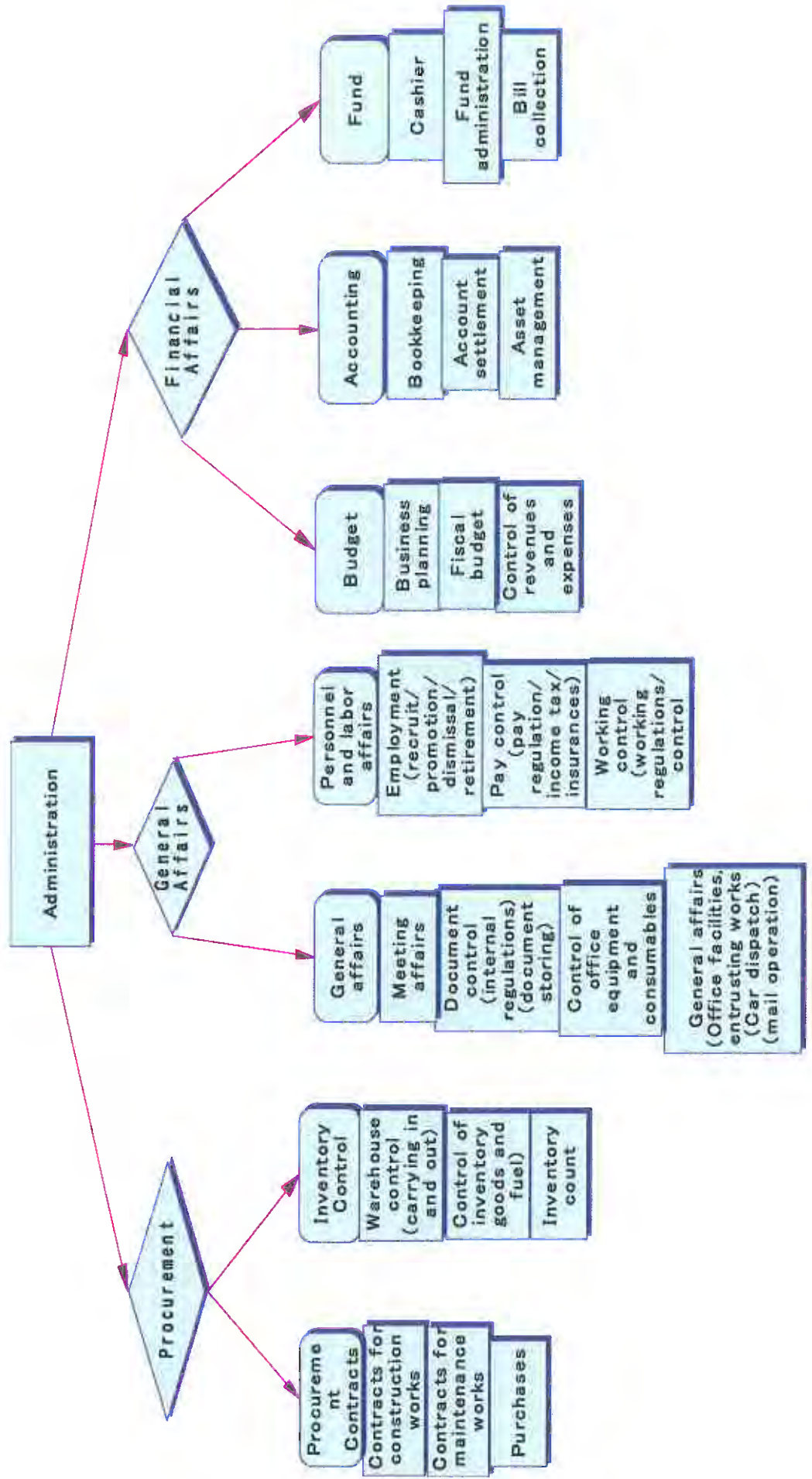
Annual Balance Sheet of Energy and Finance of EUMP in 2009

Exchange Rate 4.200 Riel/US\$  
 Oil Price 3,000 Riel/Liter  
 Fuel Efficiency 0.31 Liter/kWh  
 Tariff 1.633 Riel/kWh  
 Profit 14.2%

Date	Generation		Oil Spent Liter	Consumption		Tariff Riel/kWh	Revenue		Salary		Oil		Overhead		O&M		Sub-total		Provision (Deposit for Future)		Quart Total M Rials	MWh/Quart (Incrub) Rials	Profit M Rials	%
	Hydro MWh	Diesel MWh		Total MWh	E MWh		Loss MWh	M Rials	%	M Rials	M Rials	M Rials	M Rials	M Rials	M Rials	M Rials	M Rials	M Rials	M Rials	M Rials				
1 20-Nov-08	53,113	1,331	54,444	37,660	31%	1,831	66,736	0%	28,051	48,544	41,038	30,388	148,021	4,940	5,400	10,340	158,360	4,214	-89,701	-131%				
2 20-Dec-08	80,221	3,811	84,032	59,844	28%	1,852	110,813	4%	28,051	0	38,807	30,388	97,245	7,461	5,400	12,861	110,106	1,840	-3,415	-3%				
3 20-Jan-09	80,894	15,129	96,023	69,720	27%	1,933	136,158	2%	21,104	41,849	2,694	4,530	70,074	7,523	33,750	41,273	111,348	1,567	24,811	18%				
4 20-Feb-09	59,494	44,684	104,178	83,654	20%	1,670	136,549	4%	21,104	40,453	30,159	14,266	105,981	5,533	33,750	39,283	145,264	1,739	-10,953	-8%				
5 20-Mar-09	42,767	58,443	101,215	78,241	23%	1,676	131,138	1%	23,178	40,453	29,041	6,575	99,246	3,977	33,750	37,727	136,973	1,751	-6,580	-5%				
6 20-Apr-09	56,572	58,366	114,938	89,391	22%	1,672	149,454	3%	34,664	42,406	9,038	8,873	95,178	5,261	33,750	39,011	134,189	1,501	11,236	8%				
7 20-May-09	84,770	23,233	108,003	87,146	19%	1,672	145,745	3%	22,182	0	6,081	8,819	35,181	7,884	33,750	41,634	76,815	861	84,111	45%				
8 20-Jun-09	102,165	2,753	104,918	86,336	18%	1,665	143,808	1%	22,199	0	5,067	9,356	36,222	9,501	33,750	43,251	79,473	920	82,736	44%				
9 20-Jul-09	105,240	36	105,276	89,548	15%	1,549	138,707	3%	22,175	0	36,163	25,608	83,945	9,787	33,750	43,537	127,483	1,424	7,036	5%				
10 20-Aug-09	108,256	1,544	109,800	90,057	19%	1,562	140,696	5%	22,886	0	7,721	7,16	31,323	10,068	33,750	43,818	75,141	834	58,584	44%				
11 20-Sep-09	108,458	310	109,768	91,743	16%	1,558	142,902	5%	43,554	0	5,216	8,537	57,908	10,087	33,750	43,637	101,143	1,102	34,583	25%				
12 20-Oct-09	105,229	85	105,314	87,121	17%	1,542	134,386	2%	22,701	0	11,242	1,730	35,673	9,786	33,750	43,536	79,209	909	52,127	40%				
13 20-Nov-09	111,858	353	112,211	95,393	15%	1,566	149,410	2%	22,512	0	18,133	20,527	61,172	10,403	33,750	44,153	105,325	1,104	40,763	28%				
14 31-Dec-09	112,498	5,734	118,232	100,252	15%	1,569	157,247	4%	45,374	0	154,473	9,106	206,954	10,482	33,750	44,212	253,168	2,595	-102,367	-66%				
Y2009	1,079,201	210,673	1,289,874	1,048,557	10%	1,633	1,711,094	3%	323,833	365,108	314,825	110,341	920,977	100,273	405,000	505,272	1,455,530	1,300	2,061,716	14.2%				
Total							407,621		385,631	77,101	39,332	27,701	219,111	23,871	96,431	120,301	338,411	0.321	56,221					



Appendix 2-2: 事務管理業務体系



## Appendix 2-3 : ベースライン調査用チェックリスト

### Check List

有(have)

無(have not)

#### 1. Internal Regulations

Articles of incorporation/Organization/Meetings

Work division/Powers/Responsibilities

Operating rules(Accounting/General Affairs/Personnel/Procurement)

#### 2. Accounting Books

Journal

General Ledger

Cashbook

Asset Register

#### 3. Account Settlement & other reports

Form of account settlement statements

Form of reporting to EAC

Form of reporting to JCC and relevant authorities

#### 4. Control of Budget & Income and Expenditure

Form of business plan

Form of annual budget

Form of income/expenditure control

Form of cashflow control

#### 5. Metering/Billing/Collection

Form of electricity supply contract (incl. application form)

Form of customer management (customer list)

Form of metering

Form of billing and receipt

## 6. Personnel

- Form of employment contract
- Form of payroll (salary, personal income tax, insurance)
- Form of attendance sheet

## 7. General Affairs

- Form of minutes of meeting
- Form of document control
- Form of control of office equipment/furniture & consumables
- Form of contract for office facilities and entrusted works
- Form of business trip (application & order)

## 8. Procurement

- Form of construction contracts (application·approval·order to work·contract)
- Form of contract for maintenance works (application·approval·order to work·contract)
- Form of purchase (application·approval·contract)

## 9. Inventory Control

- Form of warehouse control (carrying-in & carrying-out)
- Form of control of stored goods and fuel
- Form of inventory control

**List of Things to Do before March 2009**

1. Preparation of Attendance Sheet for EUMP's staff (administrative and technical sections)
2. Preparation of Rules and Regulations for:
  - 1) Organization (including the purpose of EUMP, the definition and powers of management board, and organizational chart)
  - 2) Powers and responsibilities: Director, Sub-directors, Section Chiefs
  - 3) Task division of EUMP's personnel
3. Start of book keeping from January 1, 2009: journal and general ledger
4. Investigation of Company Law, Tax Law, Accounting Law, Labor Law

## Appendix 2- 5 : 2009 年 11 月までの CP への宿題項目

### List of Things to Do before November 2009

The Administrative Division must do the following things by the time shown in each item and gives them to the secretary of JICA project team, so that she can make translation and send them to JICA project team in Tokyo.

1. Prepare and authorize the internal regulation for billing system based on the proposed billing system by JICA project team and the actual operation of EUMP. Once prepared, send the internal regulation of billing system to EAC and its English version to JICA project team.

This task has not been done before June, so it must be finished before the end of July 2009 to send to EAC.

2. Establish the internal regulations regarding “Regulation on Organization and Powers and Duties”, “Employment Regulation”, “Disciplinary Code”, “Regulation for Control of the Corporation’s Vehicles” and “Disciplinary Code” as well as “Articles of Incorporation” before the end of July 2009.

3. Prepare the workflow and process description of the tasks of each administration staff, including the explanation of the steps of each task in a similar way to the proposed billing system by JICA project team. Once prepared, send its English version to JICA project team before the end of August 2009.

4. Investigation of Company Law, Tax Law, Accounting Law, Labor Law

This task has not been done either. San Darith is responsible for company law in relation with “Articles of Incorporation”, Ty Soyatra is responsible for Accounting Law to learn whether the accounting method is in compliance with the Accounting Law, Chres Malout is responsible for Tax Law to learn what kinds of taxes shall be paid by EUMP and Im Vichet is responsible for Labor Law in relation with “Employment Regulation”. Once the respective reports have been prepared, give them to the secretary of JICA project team, so that she can make translation and send them to JICA project team in Tokyo before the end of July 2009.

**Appendix 2- 6 : Articles of Incorporation**  
**(定款 : 案)**



## **Articles of Incorporation**

### **Section 1 General**

(Name of Corporation)

Article 1 This Corporation is named as Electric Unit of Mondul Kiri Province, shortly called EUMP.

(Foundation)

Article 2 This Corporation was founded as a public corporation by the Ministry of Industry Mines and Energy of Cambodian government with its Directive No. 1305 on 26<sup>th</sup> December 2006 for the purpose stated in the following article.

(Purpose)

Article 3 This Corporation has the purpose of doing the following businesses:

- (1) Generating electric power;
- (2) Transmitting and distributing electric power;
- (3) Supplying electric power to Senmonorom city and nearby areas of Mondul Kiri Province of Cambodia;
- (4) Battery charging;
- (5) Investment in such other businesses as will be approved as necessary for the business of the corporation; and,
- (6) Any other businesses associated with the above businesses.

(Main Offices)

Article 4 The main offices of the Corporation is registered at Senmonorom city of Mondul Kiri Province of Cambodia.

(Organization)

Article 5 The Corporation has the following organizations:

- (1) Joint Steering Committee
- (2) Board

### **Section 2 Ownership and Operation**

(Ownership)

Article 6 The Corporation is owned by Cambodian government.

(Operation)

Article 7 The Corporation shall be operated with financial independence.

### **Section 3 Joint Steering Committee**

(Joint Steering Committee)

Article 8 The Joint Steering Committee (shortly called JSC) is composed of the representatives from: the Ministry of Industry Mines and Energy of Cambodia, Electricity Authority of Cambodia, the Department of Industry Mines and Energy of Mondul Kiri Province, Electricite du Camodge and the Corporation.

(Convocation of a meeting of the Joint Steering Committee)

Article 9 A regular meeting of the Joint Steering Committee shall held in XXXX every year.

An extraordinary meeting may be held as necessary by the motion of any of the members of the Joint Steering Committee. A meeting, regular or extraordinary, shall be convoked by the representative of the Ministry of Industry Mines and Energy.

2 The meeting of the Joint Steering Committee shall be convoked at Senmonorom city or Phnom Penh.

(Chairmanship of a meeting of the Joint Steering Committee)

Article 10 The meeting of the Joint Steering Committee shall be chaired by the representative of the Ministry of Industry Mines and Energy.

(Resolution of the meeting of the Joint Steering Committee)

Article 11 Resolutions of the meeting of the Joint Steering Committee shall be made by majority vote.

(Agenda of the meeting of the Joint Steering Committee)

Article 12 The following issues shall be included in the agenda of the regular meeting of the Joint Steering Committee:

- (1) Appointment and dismissal of the board members of the corporation, when necessary; and,
- (2) Approval of the financial statements of the Corporation
- (3) Revision of the articles of incorporation of the Corporation, when necessary.

### **Section 4 Board of the Corporation**

(Number of the board members)

Article 13 The Corporation has three (3) board members: one (1) Director and two (2) Deputy Directors.

(Appointment and dismissal of the board members)

Article 14 The board members of the Corporation shall be appointed or dismissed by the resolution of the Joint Steering Committee.

(Term of office of the board members)

Article 15 The term of office of the board members shall be three (3) years and may be extended or shortened by the resolution of the Joint Steering Committee.

(Board meeting)

Article 16 A board meeting shall be convoked and chaired by the director as needed.

2 In the absence or disability of the director, other board member shall convoke and chair the board meeting in accordance with the rank order predetermined by the board meeting.

3 Resolutions of the meeting shall be made by unanimous consensus of the board members.

(Agenda of the board meeting)

Article 17 The following issues shall be included in the agenda of the board meeting as needed:

(1) Approval of internal regulations and their improvements and elimination;

(2) Long and mid-term planning;

(3) Decision of important investments;

(4) Approval of annual budget;

(5) Approval of financial statements;

(6) Employment and dismissal of employees of the Corporation; and,

(7) Personnel performance evaluation and salary review.

(Representation of the Corporation)

Article 18 The Corporation shall be represented by the director of the Corporation.

2 The director of the Corporation shall supervise and control the businesses of the Corporation.

3 In the absence or disability of the director, other board member shall substitute the duties of the director in accordance with the rank order predetermined by the board meeting.

### **Section 5 Accounting**

(Accounting year)

Article 18 The accounting year begins on the 1<sup>st</sup> January and ends on the 31<sup>st</sup> December every year.

### **Supplementary Provision**

The present Articles of Incorporation shall come into force as from dd/mm/year.

**Appendix 2- 7 : Regulation on Organization and  
Powers and Duties  
(組織権限規定)**

**Regulation on Organization and Powers and Duties**

**Section 1 General**

(Purpose)

Article 1 This regulation establishes the necessary organization for executing the Corporation's businesses and the exercise of powers and duties of each duty position.

Article 2 The organization and its operations shall be aimed to promote the Corporation's business purposes through good partnership of each section of the organization based on their self-imposed responsibilities and business efficiency and streamlining.

**Section 2 Top Management**

(Director)

Article 3 The Director shall preside over the execution of the Corporation's businesses in line with resolutions of the Corporation's Board.

(Deputy Directors)

Article 4 The Deputy Directors shall assist the Director and act as his proxy when the Director is in absence or disability according to the following order:

First: Deputy Director in charge of Administration Division

Second: Deputy Director in charge of Technical Division.

The Deputy Directors shall be responsible for the execution of duties of their respective Division as Division Manager.

**Section 3 Organization for Operations**

(Organization for Operations)

Article 5 The Corporation's organization for operations shall have the organization units shown in the Appendix 1 "Organization Chart" attached hereto.

(Duty Position)

Article 6 The Organization for Operations shall have the following duty positions.

Division Manager

Division Head

Section Chief

Group Leader

Group Member

The duty position of each personnel is shown in Appendix 3 “Task Assignment of the Personnel” attached hereto.

(Powers and Duties)

Article 7 Each of the duty positions shall have the powers and duties shown in Appendix 2 “Powers and Duties of Division”.

The superiors shall give appropriate commands and directions as needed in the exercise of their assigned duties to their subordinates. The subordinates shall execute their assigned duties according to the commands and directions given by their superiors and shall ask for approval and report the progress and results of the execution of the duties to their superiors. The commands and directions and the approvals and reporting shall be given according to the line of command and control as shown in the Appendix 4 “Line of Command and Control” attached hereto.

(Proxy when in absence or disability)

Article 8 When a superior is in absence or disability, the subordinate designated in advance by such a superior shall act as his proxy.

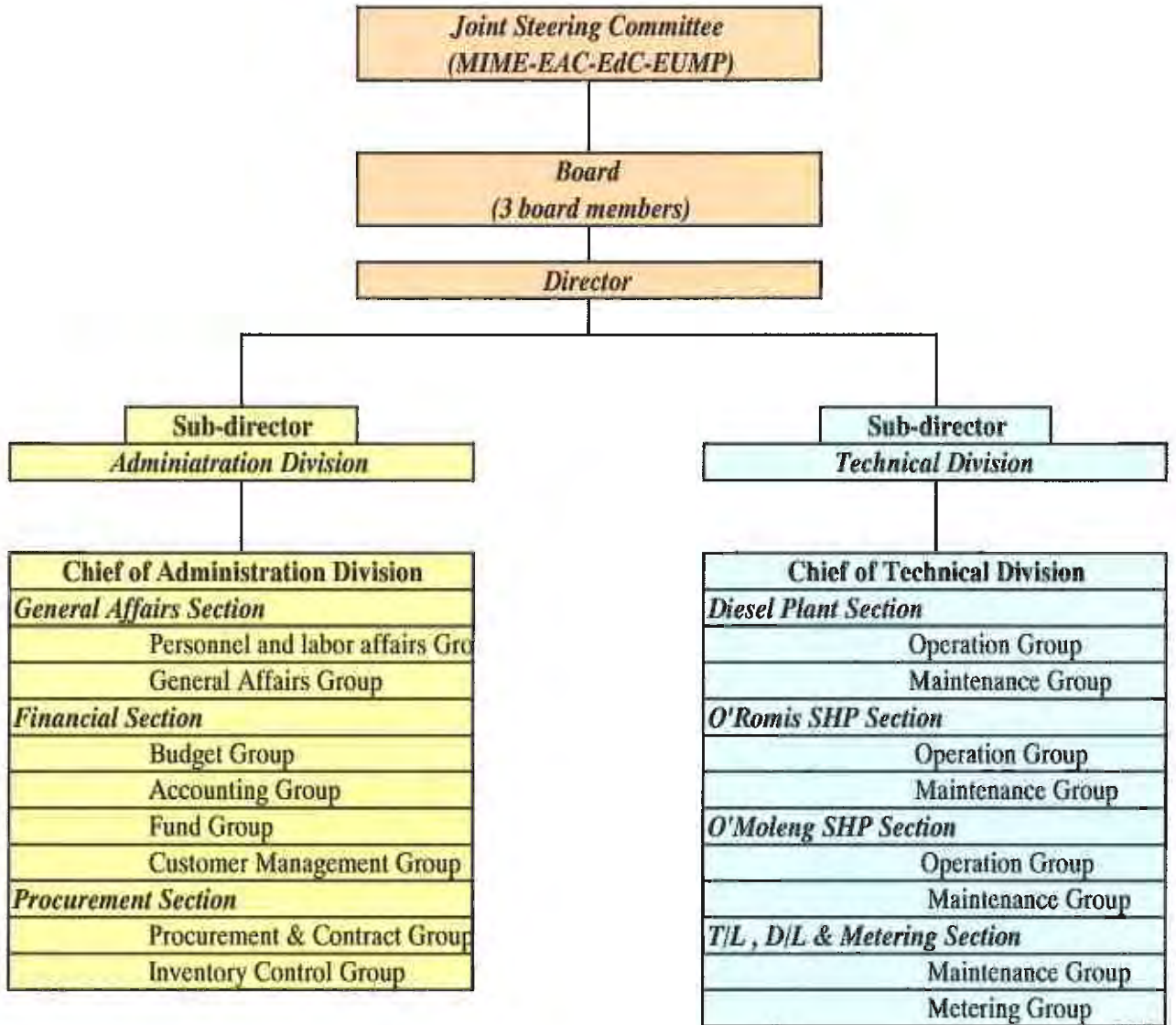
**Supplementary Provision**

1. This regulation shall come into force as from 1<sup>st</sup> July 2009.

**Appendices:**

1. Organization Chart
2. Powers and Duties of Division
3. Task Assignment of the Personnel
4. Line of Command and Control

**Organization Chart of EUMP**



Appendix 2-9 : 業務責任分担 (事務管理部門)

Administration Division			
Section	Group	Task Code	Task Description
General Affairs Section	Personnel and Labor Affairs Group	AG	
		AGP	
		AGP 1	Employment i) recruit ii) promotion iii) dismissal iv) retirement
		AGP 2	Pay control i) pay regulation ii) pay raise iii) payroll
		AGP 3	Working control i) working regulation ii) attendance sheet
		AGA	
	General Affairs Group	AGA 1	Meeting affairs i) meeting arrangement ii) minutes of meeting
		AGA 2	Document control i) internal regulations ii) filing & storing
		AGA 3	Control of office equipment & consumables i) office equipment & furniture ii) consumables iii) car dispatch
		AGA 4	Safety control i) power plant ii) working safety iii) safety regulation iv) disciplinary code
		AGA 5	Miscellaneous affairs i) entrusting works ii) mail operations iii) public relations iv) others
	Financial Section	Budget Group	AF
AFB			
AFB 1			Business planning i) Long & mid-term planning policy ii) Long & mid-term planning iii) Report to EAC iv) Power rate change
AFB 2			Fiscal budget i) budgeting policy ii) budgeting



Administration Division				
Section	Group	Task Code	Task Description	
	Accounting Group	AFB 3	Control of revenues and expenses i) check of receivables & payables ii) examination of expenses	
		AFA		
		AFA 1	Bookkeeping i) journal ii) ledger	
		AFA 2	Account settlement i) Balance sheet ii) Income statement iii) Financial report to MIME	
		AFA 3	Asset management i) Fixed asset register ii) Inventory book	
	Fund Group	AFF		
		AFF 1	Cashier i) cash receipt ii) cash payment iii) cashbook keeping iv) cash safekeeping & bank deposit	
		AFF 2	Fund administration i) cash planning ii) borrowing	
	Customer Management Group	AFC		
		AFC 1	Customer management i) customer book ii) billing book	
		AFC 2	Bill collection i) record of meter measurements ii) issue of electricity bill & receipt	
	Procurement Section	Procurement Group	AP	
			APP	
APP 1			Contracts for construction works	
APP 2			Contracts for maintenance works	
APP 3		Purchases		
Inventory Control Group		API		
		API 1	Warehouse control i) warehouse bookkeeping ii) record of carrying-in and - out	
	API 2	Control of inventory goods and fuel i) periodical inventory check ii) inventory count for account closing		

Appendix 2-10 : 業務責任分担(技術部門)

Technical Division			
Section	Group	Task Code	Task Description
General Technical Section		TG	
		TG	
		TG 1	General matter i) employment ii) evaluation of staff activities iii) working control iv) safety control v) metering
		TG 2	Document control i) operation records ii) maintenance records iii) fault & emergency records iv) daily, monthly and yearly operation plan
		TG 3	Long & Mid-term plan and budget i) maintenance plan ii) scheduled inspection plan iii) tool & spare parts procurement plan
		TG 4	Asset management i) fixed asset register ii) inventory book iii) maintenance of Administration office building
O' Moleng HP Section		TM	
		TM	Safety and quality control of operation and maintenance work at O'Moleng HP
		TM 1	Working control i) working regulation ii) attendance sheet iii) operators shift schedule
		TM 2	Data/records control i) operation records ii) Water level at Intake weir and Sedimentation iii) maintenance records iv) fault & emergency records v) daily, monthly and yearly operation plan vi) Long & Mid-term Plan
		TM 3	Operation and maintenance i) daily operation ii) daily, monthly and yearly maintenance iii) trouble shooting
		TM 4	Operation of civil facilities i) Intake gate ii) Sand flushing gate
		TM 5	Maintenance of civil facilities i) Removing the garbage in front of the screen ii) Small repairment
		TM 6	Daily, weekly, monthly Patrol for the civil structures i) Concrete structure, gate, penstock, access road and slope protection ii) Safety check around the area (Gate lock, keeping off outsiders, etc.)
		TM 7	Repairment planning of civil facilities

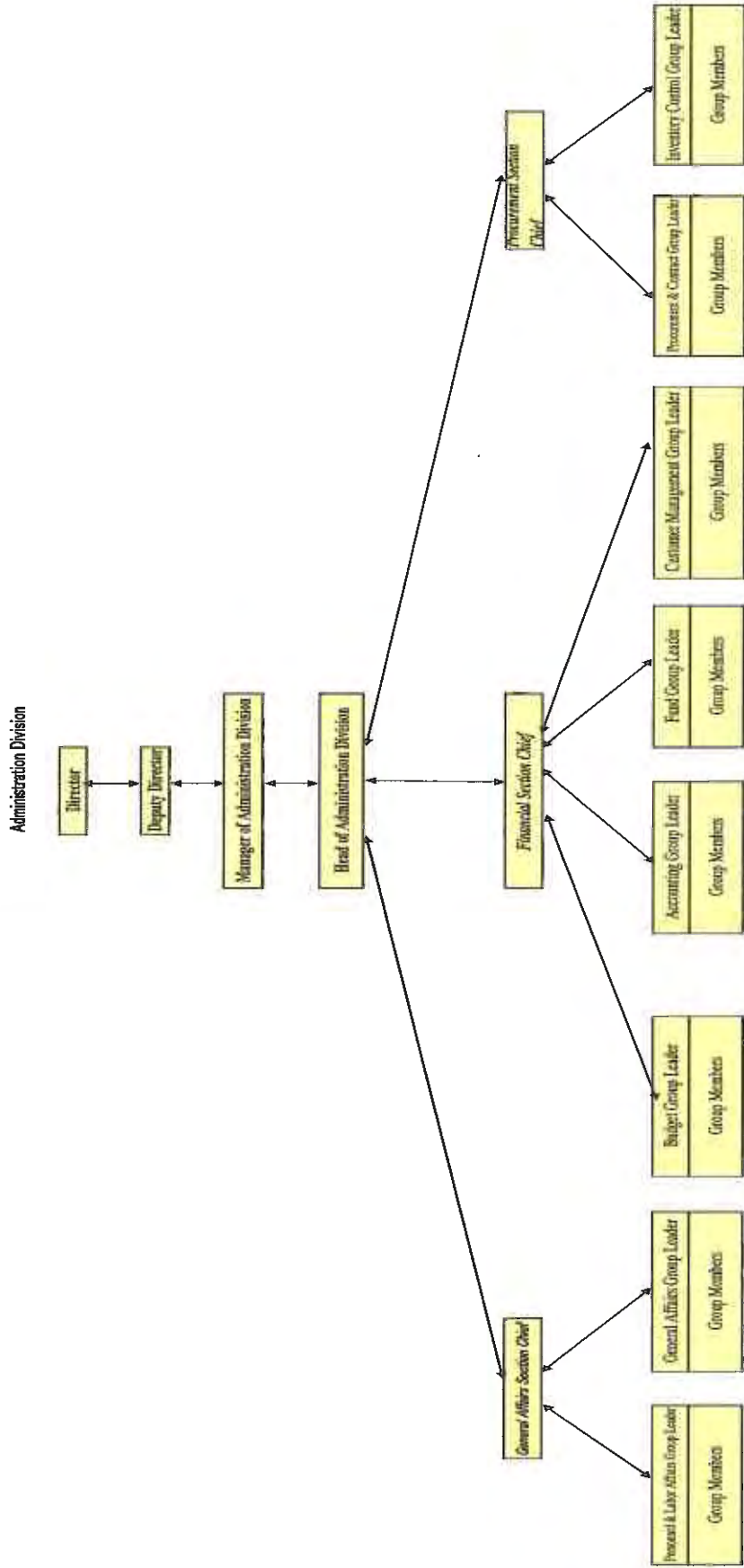
Technical Division			
Section	Group	Task Code	Task Description
O' Romis HP Section		TR	
		TR	Safety and quality control of operation and maintenance work at O' Romis HP
		TR 1	Working control i) working regulation ii) attendance sheet iii) operators shift schedule
		TR 2	Data/records control i) operation records ii) Water level at Intake weir and Water way and Head Tank iii) maintenance records iv) fault & emergency records v) daily, monthly and yearly operation plan vi) Long & Mid-term Plan
		TR 3	Operation and maintenance i) daily operation ii) daily, monthly and yearly maintenance iii) trouble shooting
		TR 4	Operation of civil facilities i) Intake gate ii) Sand flushing gate
		TR 5	Maintenance of civil facilities i) Removing the garbage in front of the screen ii) Small repairment
		TR 6	Daily, weekly, monthly Patrol for the civil structures i) Concrete structure, gate, penstock, access road and slope protection ii) Safety check around the area (Gate lock, keeping off outsiders, etc.)
	TR 7	Repairment planning of civil facilities	
Diesel Plant Section		TD	
		TD	Safety and quality control of operation and maintenance work at Diesel Plant
		TD 1	Working control i) working regulation ii) attendance sheet iii) operators shift schedule
		TD 2	Data/records control i) operation records ii) maintenance records iii) fault & emergency records iv) daily, monthly and yearly operation plan
		TD 3	Long & Mid-term plan and budget i) maintenance plan ii) scheduled inspection plan iii) tool & spare parts procurement plan
		TD 4	Operation and maintenance i) daily operation ii) daily, monthly and yearly maintenance iii) trouble shooting
		TD 5	Maintenance of civil and building facilities

Technical Division			
Section	Group	Task Code	Task Description
T/L, D/L and Metering Section		TT	
		TT	Safety and quality control of operation and maintenance work of T/L and D/L facilities
		TT 1	Working control i) working regulation ii) attendance sheet
		TT 2	Planning of T&D activity i) Long & Mid-term Plan, Budget ii) Daily Activity Plan (Operation, Maintenance and Construction)
		TT 3	Check of T&D operation i) Analyzing of operating condition (Load, T&D Loss, Voltage drop) ii) Measuring of Current & Voltage
		TT 4	Scheduled Outage Operation i) Making a switching procedure ii) Notification to customers iii) Ordering switching operations iv) Doing switching operations v) Record of result
		TT 5	Fault Outage Operation i) Decision of the method how to restore ii) Ordering each action to restore iii) Searching and restoration of fault iv) Record of result
		TT 6	Maintenance of T&D facilities i) Patrol & inspection ii) Record of result iii) Negotiation with owner of obstruct close to T&D line iv) Control of spare parts v) Maintaining of working tools
		TT 7	Customer's request or claim i) interruption of power supply ii) abnormal voltage iii) Wh Meter broken iv) Wh Meter checking
		TT 8	Construction of T&D facilities i) Making a specification of constructions ii) Constructing iii) Supervising construction work iv) Inspection of the result v) Revising Facility book
	TT 9	Customer contract issues i) Technical review of supply application ii) Connection work iii) Metering iv) Delivery of invoices v) Temporary disconnection & re-connection vi) Removal of Wh meter from ex-customers	

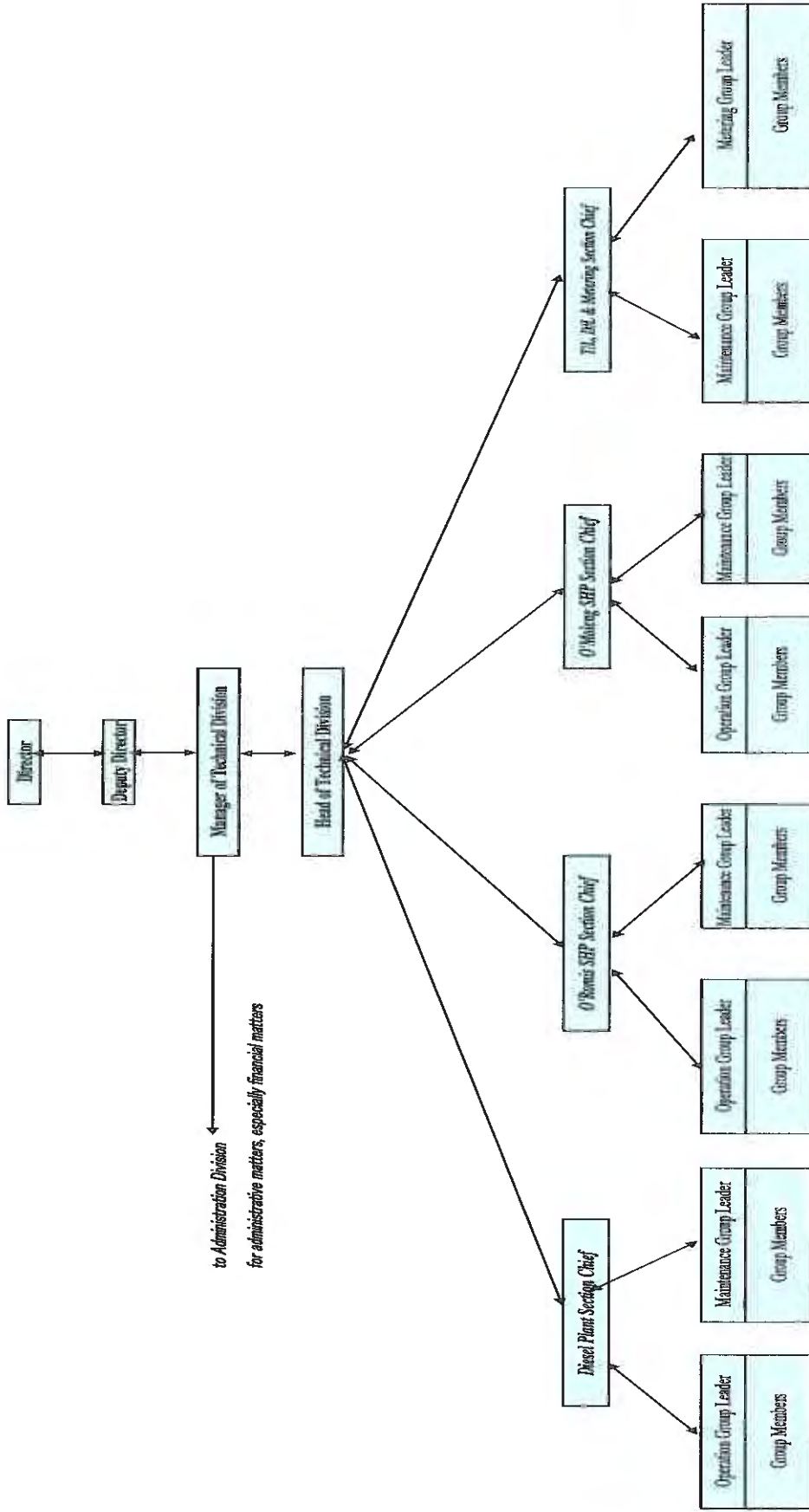
Appendix 2-11 : 指揮命令系統

Line of Command and Control

*Commands/directions and approval requests/reporting must follow this line of command and control*



Technical Division



**Appendix 2-12 : Employment Regulation**  
**(就業規則案)**

**Employment Regulation**

**Chapter 1 General**

(Purpose)

Article 1 This regulation stipulates the working conditions of the personnel of the Corporation.

(Classification of the Personnel)

Article 2 The following is the classification of the personnel of the Corporation:

- (1) Director
- (2) Deputy Director
- (3) Division Manager
- (4) Division Head
- (5) Section Chief
- (6) Group Leader
- (7) Staff I
- (8) Staff II
- (9) Staff III

(Application or Notification)

Article 3 When an application or notification is necessary according to this regulation, such application or notification shall be made in the prescribed form.

(Relation with Law)

Article 4 Where there is no stipulation in this regulation or there is some infringement on the relevant laws of Cambodia, such law shall be obeyed.

**Chapter 2 Personnel Affairs**

(Employment)

Article 5 A newly-employed person shall submit to the Division Manager of Administration the following documents:

- (1) Curriculum vitae
- (2) Certificate of academic background and/or qualification
- (3) Other document for personnel control



(Suspension of Employment)

Article 6 If an employee falls into one of the following causes, he or she shall be ordered to suspension of employment.

- (1) 3 months or longer absence from work due to accident or sickness not related with work: 1-year suspension of  
employment
- (2) Public service for 3 months or longer:  
Same period of public service
- (3) Punitive suspension of employment:  
Same period of punitive suspension of  
employment
- (4) 3 months or longer absence from work due to his or her personal  
circumstances: period determined by the Corporation
- (5) Unclear situation of life or death or whereabouts
- (6) Other special reason: period determined by the Corporation

(Resumption of Employment)

Article 7 The employee under the suspension of employment shall notify his or her resumption of employment to the Division Manager of Administration.

(Compulsory Retirement Age)

Article 8 The compulsory retirement age is 60 years old, provided that this age may be extended for a determined period when the Corporation deems necessary.

(Retirement)

Article 9 If an employee falls into one of the following causes, he or she shall be deemed to do retirement.

- (1) Application for retirement due to his or her personal circumstances
  - (2) When the period of suspension of employment due to (1), (4) or (5) of Article 6 ends.
  - (3) When the compulsory retirement age is reached.
  - (4) When he or she dies.
2. In the case of (1), the employee shall make an application of retirement 2 weeks ahead indicating the day and reason of retirement to the Division Manager of Administration. He or she shall obey the instructions given by his or her superiors

including handover of his or her tasks.

3. In the case of (3), the day of retirement shall be the end of the month to which the day of the compulsory retirement age belongs.

4. In the case of (4), he or she shall be removed from the register of the Corporation.

(Dismissal)

Article 10 If the employee falls into one of the following causes, he or she shall be dismissed:

- (1) When he or she receives punitive dismissal;
- (2) When he or she is deemed to be unable to continue work because of considerable physical or mental disability;
- (3) When the Corporation falls into unavoidable circumstances.

### Chapter 3 Working Rules

(Working Discipline)

Article 11. The employees shall observe the rules and regulations and the order of the Corporation and shall perform their duties according to their superiors.

(Confidentiality)

Article 12. The employees may not disclose confidential information to any others, whether it has relations with their duties, during the period of their employment and after their retirement.

(Types of Working)

Article 13. The types of working are: Normal work and Shift work.

(Working Hours)

Article 14. The working hours are as shown in the table below.

Types of working		Working hours	Starting time	Closing time	Break time
Normal work		8 hours/day 176 hours/month	7:00	17:00	11:00-13:00
Shift work	Shift 1	9 hours/day	7:00	16:00	
	Shift 2	5 hours/day	16:00	21:00	
	Shift 3	10 hours/day	21:00	7:00	
		180 hours/month			

When the employees come to the office and leave the office, they shall record the arrival and departure time in the attendance sheet.

(Holiday)

Article 15. The followings are holidays.

- (1) Sunday
- (2) Public holidays

Notwithstanding the foregoing, the Corporation may order employees to work in holidays.

(Overtime and holiday work)

Article 16. When deemed necessary for the Corporation, the Corporation may order employees to work overtime or in holidays.

(Late Arrival and Early Departure)

Article 17. When an employee arrives one hour or less later than the starting time, this shall be deemed to be late arrival. When an employee leaves the office two hours or earlier than the closing time, this shall be deemed to be early departure.

2. Three times of late arrival or early departure shall be deemed to be one work absence.
3. If an employee wishes to do late arrival or early departure, he or she shall ask his or her superior for it beforehand. Otherwise, because of unavoidable circumstances, he or she shall notify it to the superior without delay.
4. In the case of disaster, traffic accident or other cause of force majeure, late arrival or early departure may be treated as attendance of work.

(Half-holiday)

Article 18. When an employee works only for half of the working hours, this shall be deemed to be half-holiday. Two half-holidays shall be deemed to be one work absence.

(Work Absence)

Article 19. When an employee wishes work absence or half-holiday, he or she shall ask his or her superior for it with its reason beforehand. Otherwise, because of unavoidable circumstances, he or she shall notify it to the superior without delay.

2. If work absence continues for more than five days, a medical certificate shall be submitted to the superior.

(Work Absence without Notice)

Article 20. If an employee is absent from work without asking for it beforehand or without post notification, this shall be deemed to be work absence without notice.

(Long work absence)

Article 21. If work absence continues for more than a month, the period of such work absence shall be counted including holidays within.

2. An employee who was absent from work for more than one month resumes his or her attendance but become absent again within ten days because of the same reason, the periods of long work absence shall be combined.

(Paid Leave)

Article 22. The annual paid leave is 20 days. The unused paid leave may be carried over to the next year.

2. When an employee wishes to take a paid leave, he or she shall notify it to his or her superior beforehand. If the superior consider it necessary to change the timing and period of the asked paid leave on account of smooth business of the Corporation, such timing and period may be changed.

#### **Chapter 4 Salary and Allowances**

(Salary)

Article 23. The salary of the employees shall be stipulated in the pay scale determined by the Corporation.

(Retirement Allowance)

Article 24. When an employee retires or is dismissed, retirement allowance may be paid according to the pay scale determined by the Corporation.

(Travelling Expense)

Article 25. When an employee is order to do business trip, travelling expense shall be paid as follows.

#### **Chapter 5 Compensation**

(Accident Compensation)

Article 26. When an employee may receives compensation for injury, sickness or death because of work according to the determination of the Corporation.

2. When an employee causes damage to body and/or property of others, compensation shall be paid according to the determination of the Corporation, provided that such damage is not due to willful misconduct or gross negligence of the employee.

#### **Supplementary Provision**

This regulation shall come into effect as from 1<sup>st</sup> July 2009

**Appendix 2-13 : Regulation for Control of  
the Corporation's Vehicles  
(社有車管理規定)**

**Regulation for Control of the Corporation's Vehicles**

**(Purpose)**

**Article 1** This regulation stipulates the matters regarding the control and operation of the vehicles owned by the Corporation.

**(Definition of Vehicles)**

**Article 2** In this regulation, vehicle means any cars, trucks, and motorcycles, whether owned or leased by the Corporation for its conduct of business.

**(Controller)**

**Article 3** The general control shall be exercised by the Manager of Administration Division and the routine control shall be exercised by the General Affairs Section.

**(Control Book of vehicles)**

**Article 4** The General Affairs Section shall prepare a control book of vehicles to register all vehicles with the following descriptions:

- (1) Type of vehicle, major repairs with cost and cause of repair
- (2) Main purpose of use of vehicle
- (3) Major repairs: date of repair, part of repair, cost and cause of repair
- (4) Date of inspection of vehicle
- (5) Date of retirement or selling-out of vehicle
- (6) Record of accidents
- (7) Insurance
- (8) Tax

**(Custody of Key)**

**Article 5** The key of vehicles shall be in the custody of the General Affairs Group. The key may not be taken out without permission of the Section Chief of General Affairs.

**(Permission of Use of Vehicle)**

**Article 6** Before an employee uses a vehicle, he or she shall submit a permission of use of vehicle to his or her superior for approval and then shall submit it to the General Affairs Section for approval by the Manager of Administration Division. Immediately after use of vehicle, he or she shall return the vehicle to the designated parking lot of the Corporation and

shall return the key together with the permission.

**(Inspection of Vehicle)**

Article 7 Vehicles shall be inspected and kept in good conditions. When the driver finds some trouble or poor maintenance, he or she shall report it to the General Affairs Section.

In the case of trouble due to carelessness or rude driving of the driver, all or part of the repair cost may be charged to the driver.

**(Driving of Vehicle)**

Article 8 Driving shall be conducted in compliance with law.

(2) Driving shall be permitted only to the designated drivers

(3) When an accident occurs, the driver shall take measures stipulated by law and inform the Manager of Administration Division and the General Affairs Section for instruction.

(4) When an accident occurs, no private settlement may be done personally without consultation with the Corporation.

**(Private Use of Vehicle)**

Article 9 No use of vehicle shall be permitted for commuting to work or private use except when permission is given by superior.

**(Responsibility for fines)**

Article 10 When an employee violates traffic law and fines are imposed on him or her, the Corporation shall not assume any responsibility for it.

**(Punition)**

Article 11 When an employee cause an accident of vehicle, such an employee shall be given punishment according to the Discipline Code of the Corporation. If compensatory payment are made by the Corporation, the Corporation may claim indemnity for it to the person responsible for the accident.

**Supplementary Provision**

This regulation shall come into effect as from 1<sup>st</sup> July 2009.



**Appendix 2-14 : Disciplinary Code**  
**(罰則規定案)**

**Disciplinary Code**

(Purpose)

Article 1 This Code is to stipulate punishment on employees of the Corporation.

Article 2 Punition shall be determined in a cautious manner and processed without delay by the board of the Corporation.

(Cause for punition)

Article 3 Punishment shall be given for one of the causes enumerated below:

- (1) Poor attendance to work such as prolonged absence without permission;
- (2) Disturb order and debase morale of the Corporation;
- (3) Profiteering by use of duty position or through work of the Corporation;
- (4) Leakage of confidential information of the Corporation;
- (5) Willful acts or gross negligence causing disbenefit or damage to the Corporation;
- (6) Acts causing damage to the reputation or loss of credibility of the Corporation;
- (7) Poor supervision on subordinate; and,
- (8) Other acts violating the regulations of the Corporation.

(Category of punition)

Article 4 Punition shall fall into the following five categories and determined by the importance of the causing act:

- (1) Reprimand: caution for future;
- (2) Pay cut: monthly reduction of salary at a fixed rate for a period of one month to six months;
- (3) Suspension of attendance: daily suspension of attendance to work for a period;
- (4) Punitive suspension of employment: monthly suspension of employment for a period of one month to three months;
- (5) Punitive dismissal: Immediate dismissal

(Criteria for punition)

Article 5 The criteria for punition shall be as shown in the Annexes 1 and 2 attached hereto.

(Record of punition)

Article 6 Punition shall be recorded officially.

(Deletion of recorded punishment)

Article 7 Recorded punishment may be deleted from official record of the Corporation if the employee receiving the punishment works in a diligent manner and with a high achievement for a considerable period.

Supplementary Provision

This code shall come into effect as from 1<sup>st</sup> June 2009.

Annex 1: Criteria for punishment

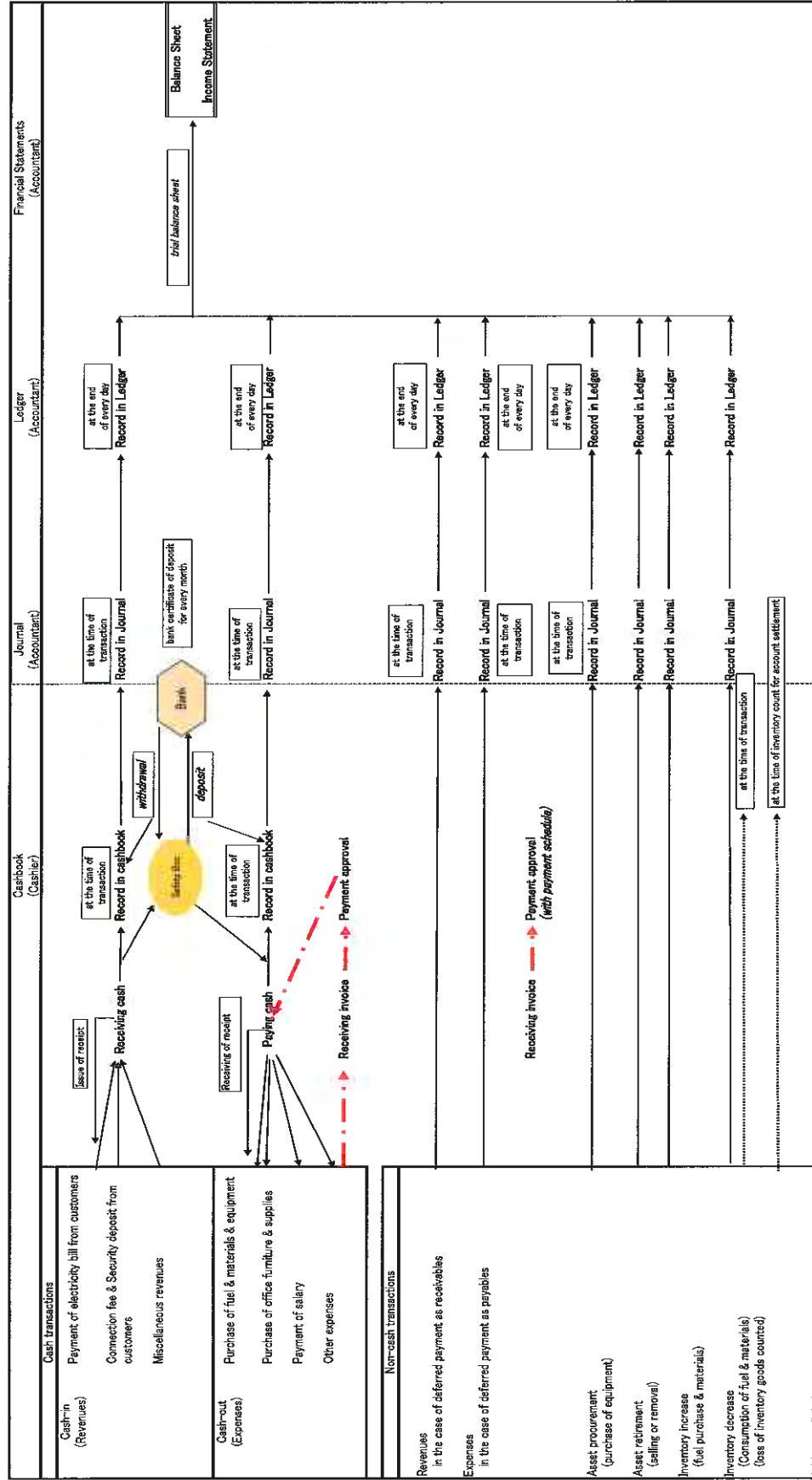
Cause for Punition			Punition
1. Violation of regulations, poor work performance			Reprimand or pay cut according to the degree of breach of discipline Suspension of attendance in the case of important breach
2. Fraudulent handling of money or property of the Corporation	by accident or negligence by negligent conduct of work by fraudulent handling		Reprimand Reprimand or pay cut
3. Fraudulent procurement of money or property of the Corporation	by fraud by abstraction by common bribery	common abstraction temporary borrowing	Dismissal Dismissal or suspension of attendance Suspension of attendance, pay cut or reprimand Dismissal, suspension of attendance or pay cut
4. Bribery	by common bribery in the case of small sum or other releivable considerations		Suspension of attendance, pay cut or reprimand
5. Credibility	by common act to lose credibility of the Corporation by act leading to the considerable loss of credibility of the Corporation		Reprimand Suspension of attendance or dismissal
6. Poor supervision	by common poor supervision by considerably poor supervision		Reprimand Pay cut
7. Violation of traffic law	See the Annex 2 for detail		Reprimand, pay cut, suspension of attendance or dismissal

Annex 2. Criteria for punishment due to violation of traffic law

Cause for punishment		Punition
1. Accident causing bodily injury or death by unlicensed or drinking driving		Dismissal or suspension of attendance for 6 months or less
2. Accident causing property damage by unlicensed or drinking driving		Suspension of attendance for 6 months or less
3. Unlicensed and drinking driving		Suspension of attendance for 4 months or less
4. Unlicensed driving exceeding the legal maximum speed		Suspension of attendance for 3 months or less
5. Unlicensed driving		Pay cut for 3 months or less, 1-month suspension of attendance or reprimand
6. Drinking driving exceeding the legal maximum speed		Suspension of attendance for 6 months or less
7. Drinking driving		1-month suspension of attendance or pay cut for 3 months or less
8. Driving exceeding the legal maximum speed	50km/hr or more 30km/hr to 50km/hr less than 30km/hr	Pay cut for 1 month or reprimand Reprimand or light reprimand Light reprimand or warning
9. Violation of either of the above causing malicious accident		Dismissal
10. Willful failure to report of the above violations or accidents		1-month suspension of attendance or pay cut for 3 months or less
11. Other malicious violation and accident than the above		Dismissal or suspension of attendance for 2 months or less
12. Accident by gross negligence due to other cause than the above		Pay cut for 1 month or reprimand
13. Accident by carelessness due to other cause than the above		Light reprimand or warning
14. Willful failure to report of other violations or accidents than the above		Light reprimand or warning
15. Ride together knowing the drinkin driving of the driver		1-month suspension of attendance or pay cut for 3 months or less
16. Drinking driving causing death or serious injury, failing to aid victims		Dismissal or suspension of attendance for 6 months or less

## Appendix 2-15 : General Work Flow for Accounting Works

General Accounting Workflow



## Appendix 2-15 :2010年2月までのCPへの宿題項目

### List of Things to Do before February 2010

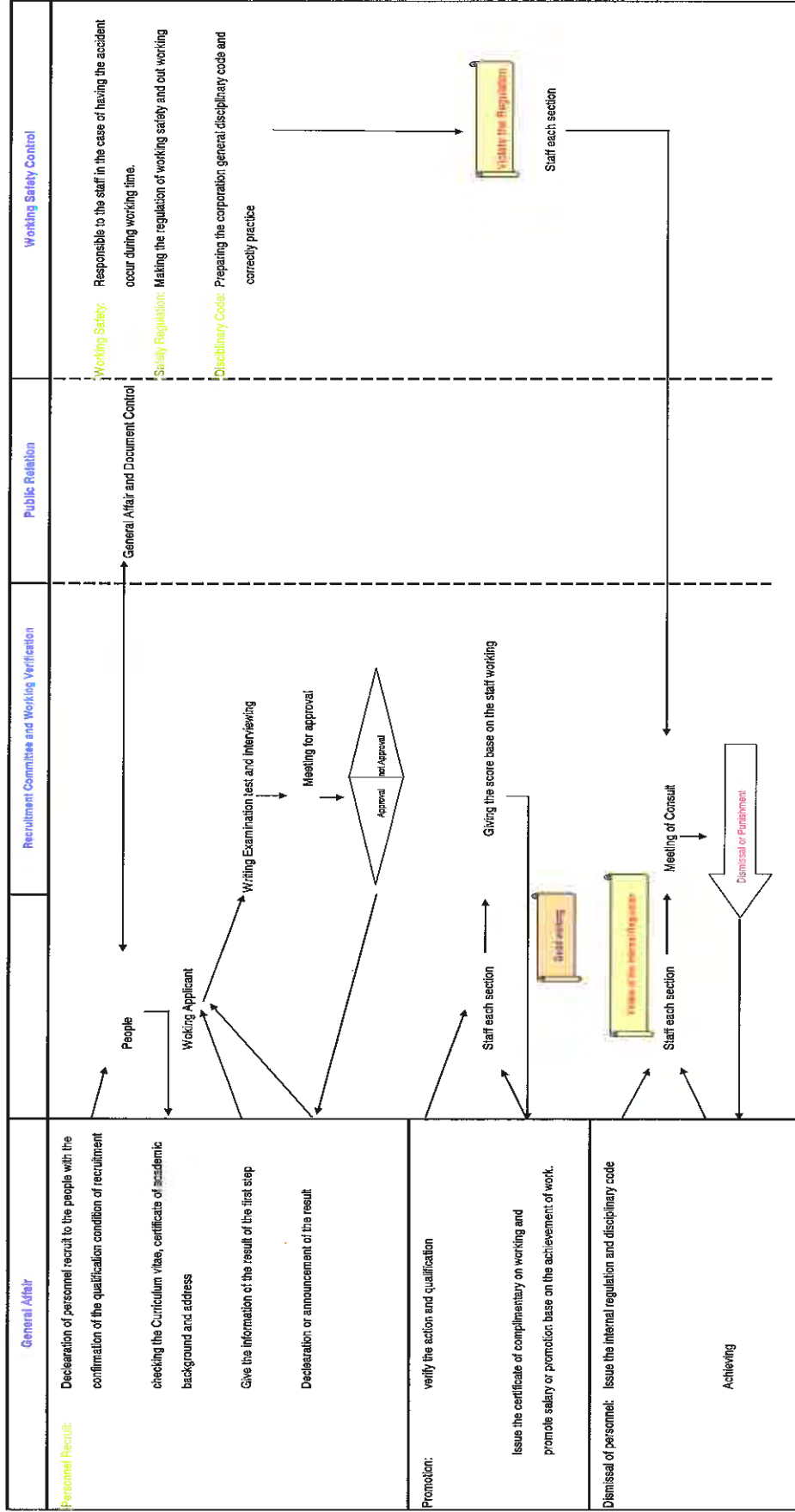
The Administrative Division must do the following things by the time shown in each item and gives them to the secretary of JICA project team, so that she can make translation and send them to JICA project team in Tokyo.

1. Authorize and issue the internal regulations regarding “”Billing System”, “Regulation on Organization and Powers and Duties”, “Employment Regulation”, “Disciplinary Code”, and “Regulation for Control of the Corporation’s Vehicles” as well as “Articles of Incorporation” in early December 2009.
2. Make inventory count of the warehouse together with the technical staff in December to be reflected in the balance sheet of EUMP as of the end of December.
3. Introduce a permanent salary system together with overtime payment system to replace the temporary salary system to start from January 2010.
4. Consider temporary payment for traveling expenses and make a decision in December.
5. Make analysis of incomes and expenses of 2009 and prepare annual budget for 2010 in December to start from January 2010.

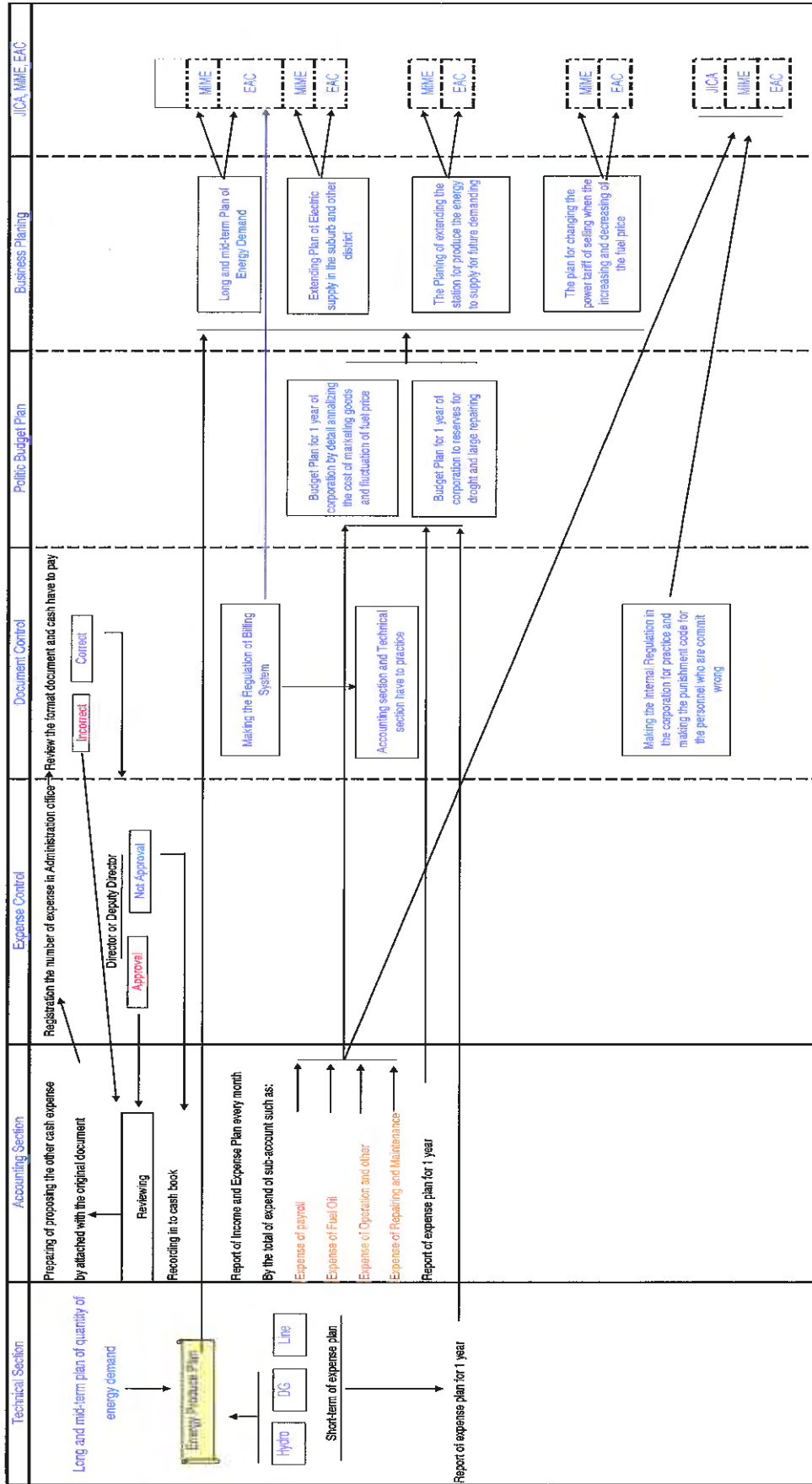
## Appendix 2-17：事務管理部門担当者別ワークフロー



**San Darfith**  
**Dep-Director In charge of Administration and Accounting Section**  
**Workflow (Administration)**

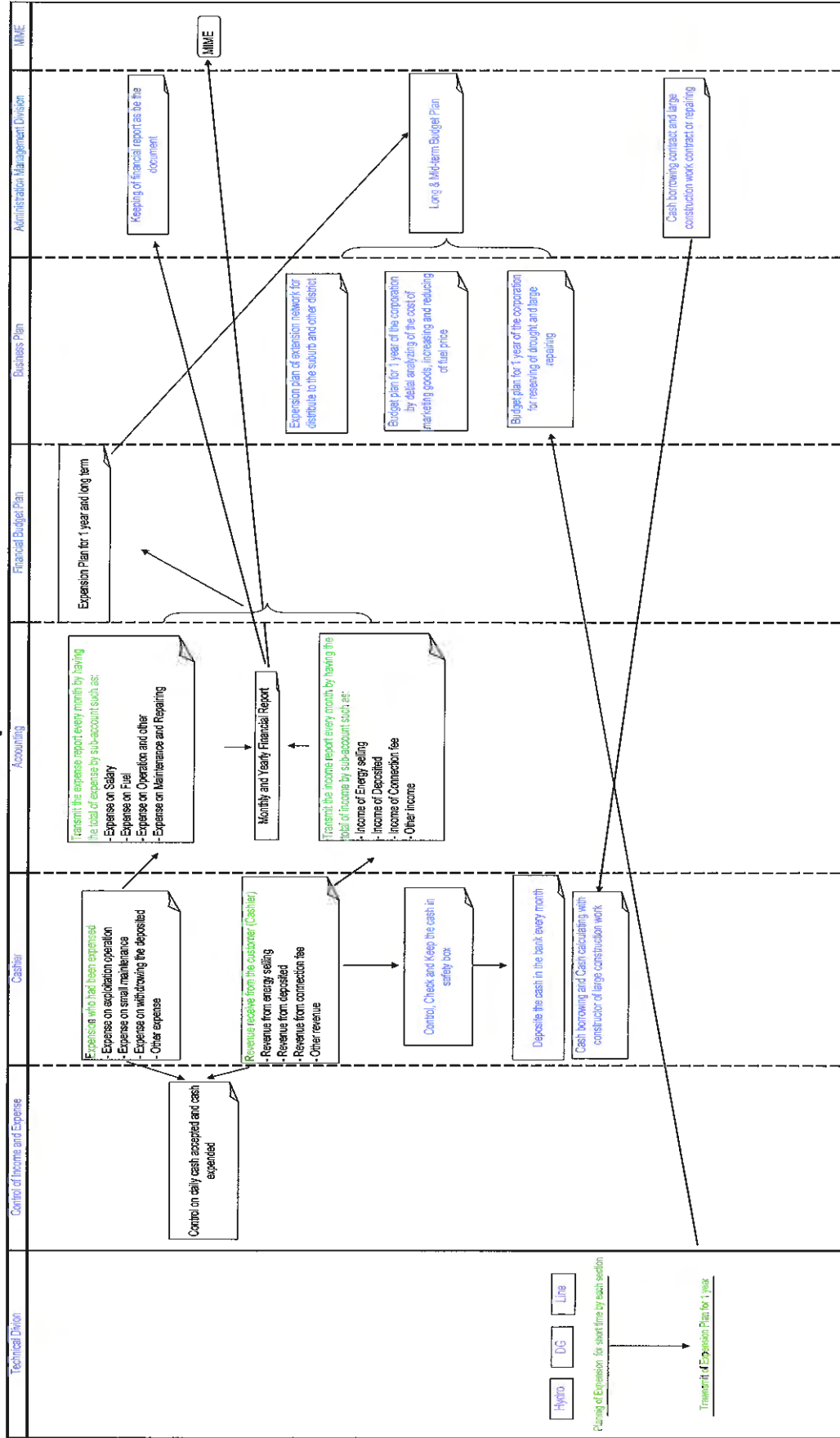


**San Darith**  
**Dep-Director in charge of Administration and Accounting Section**  
**Workflow (Accounting)**

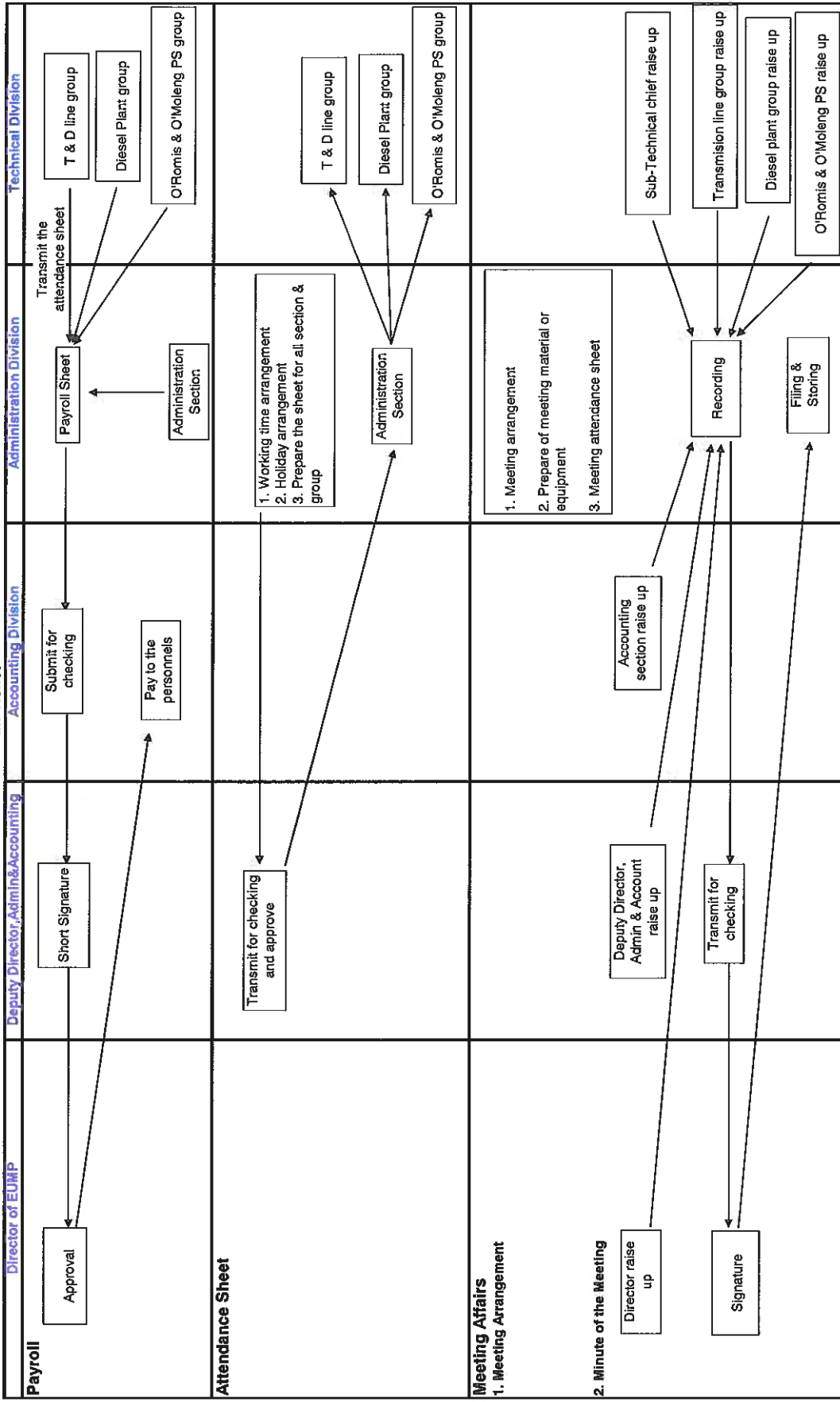


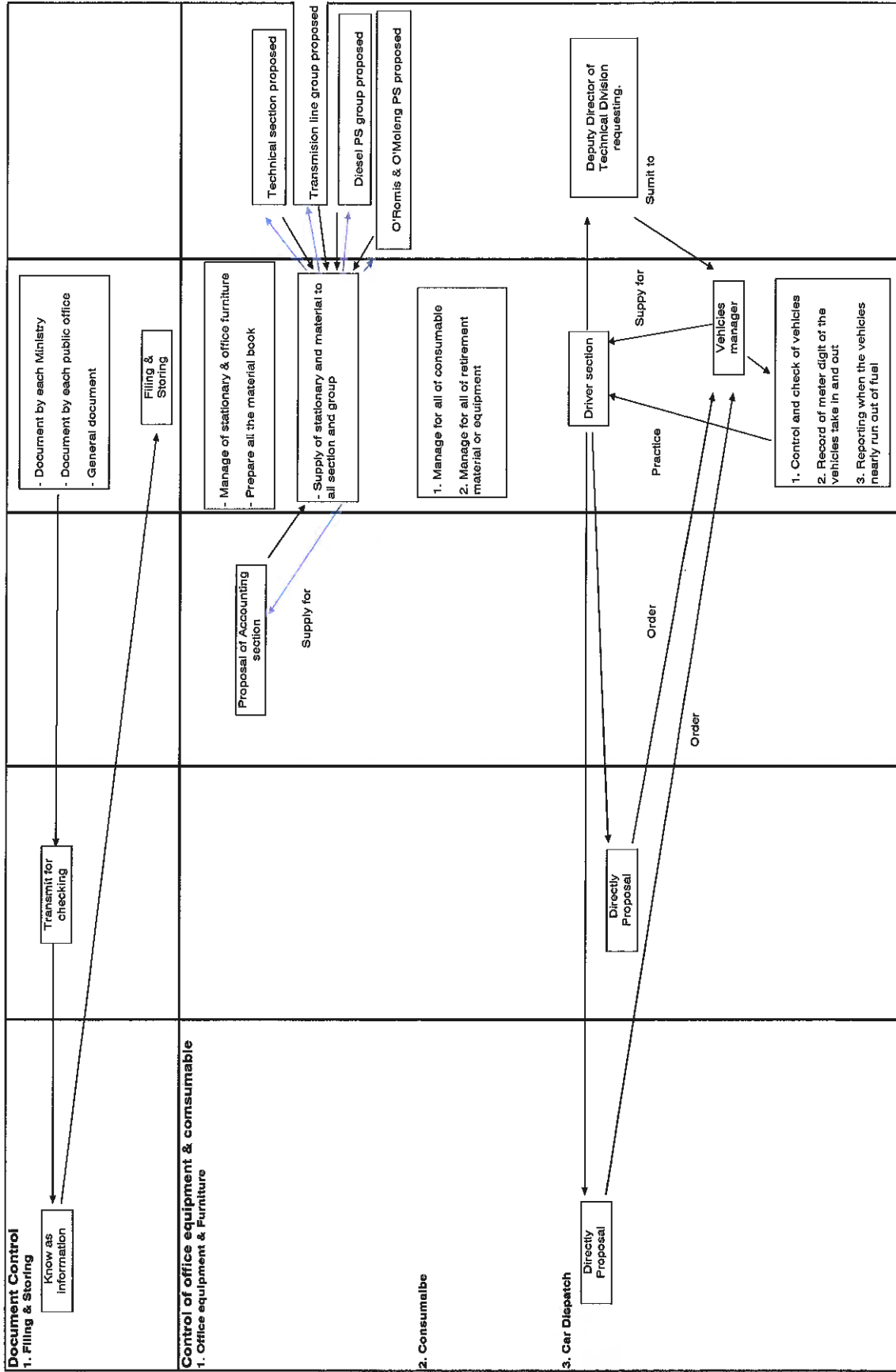
# Workflow of Accounting Chief

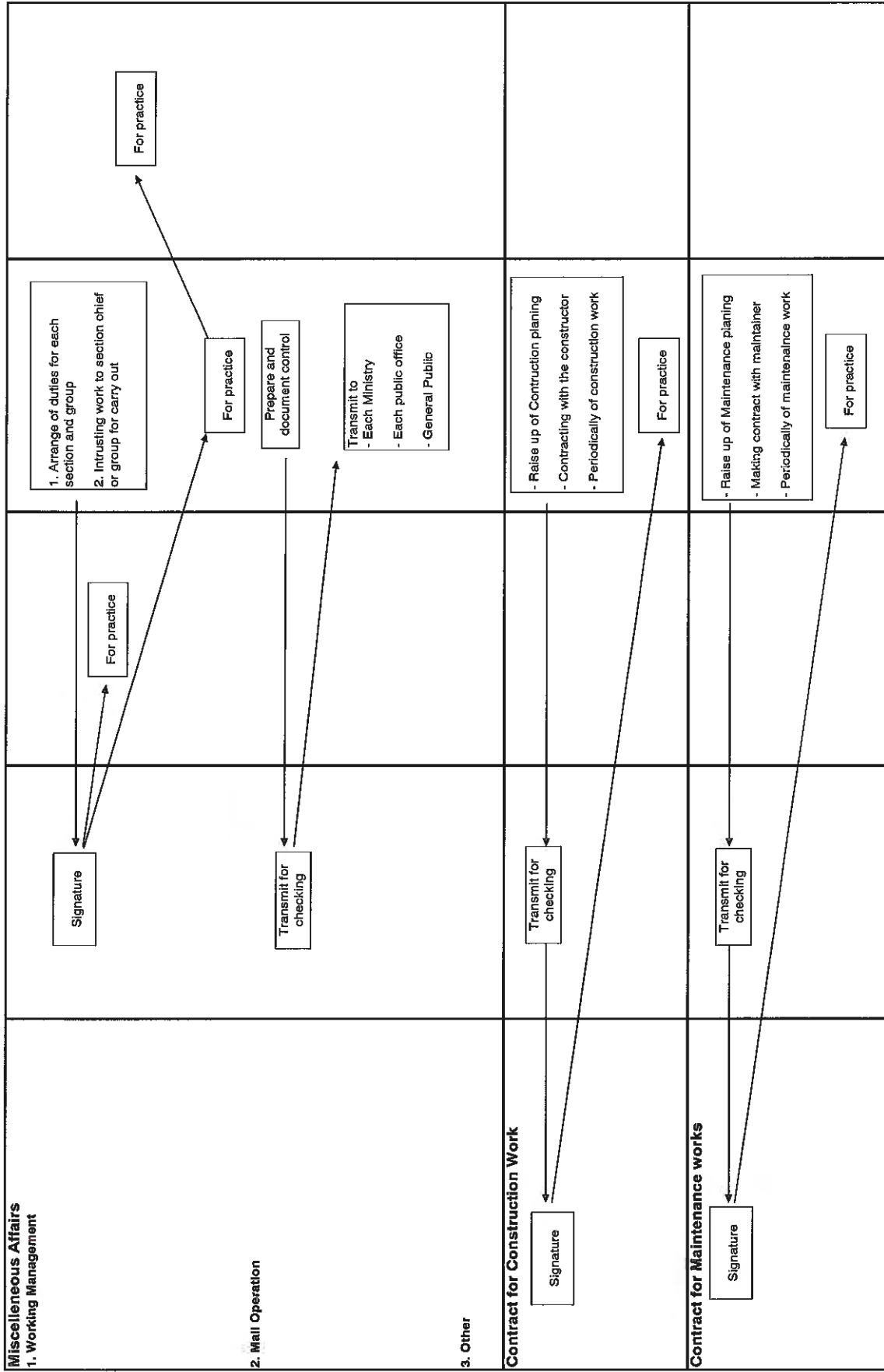
Mr. Pong Sammak



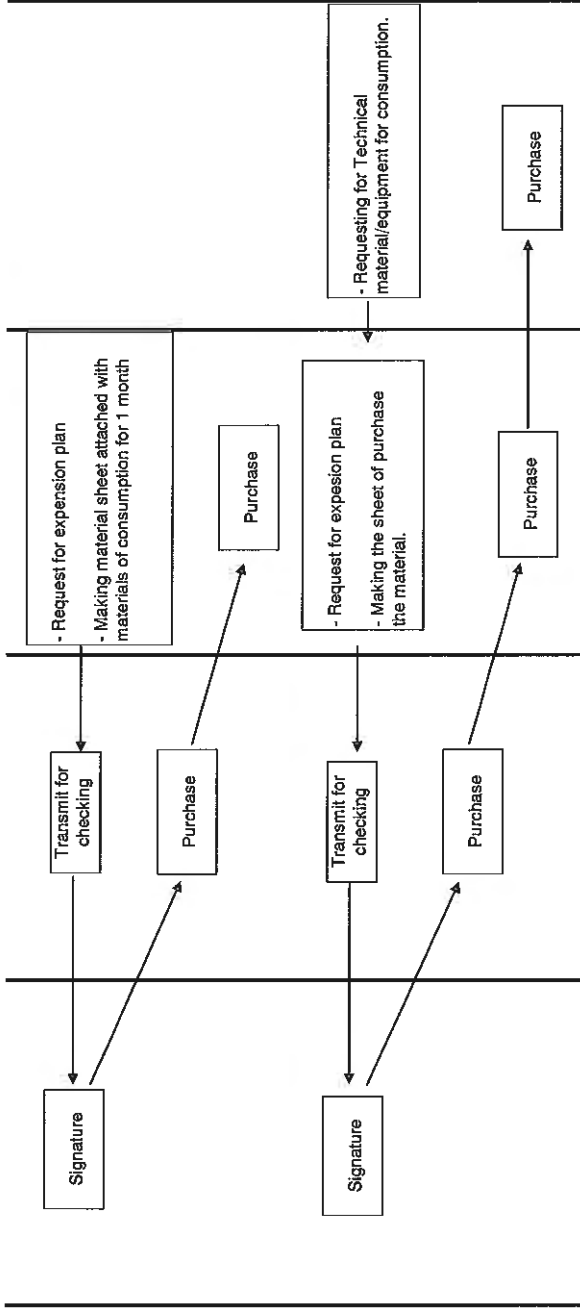
**Workflow of Administration and Procurement Section**  
**Im Vichet**



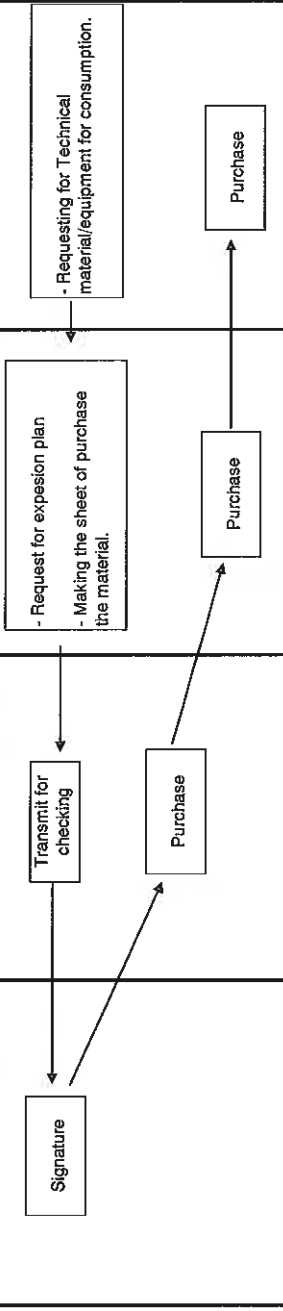


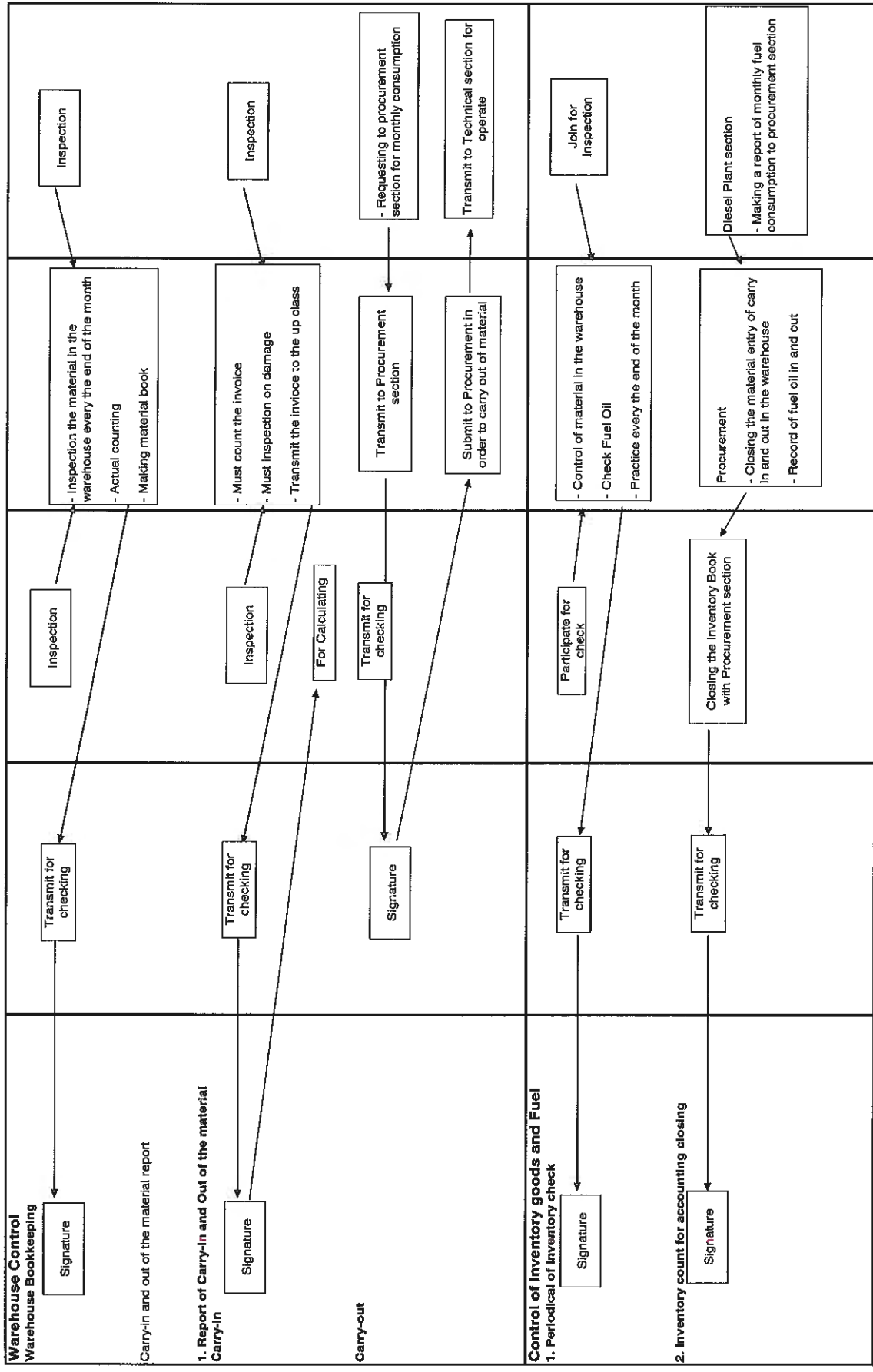


**Purchases**  
Purchase of Stationary



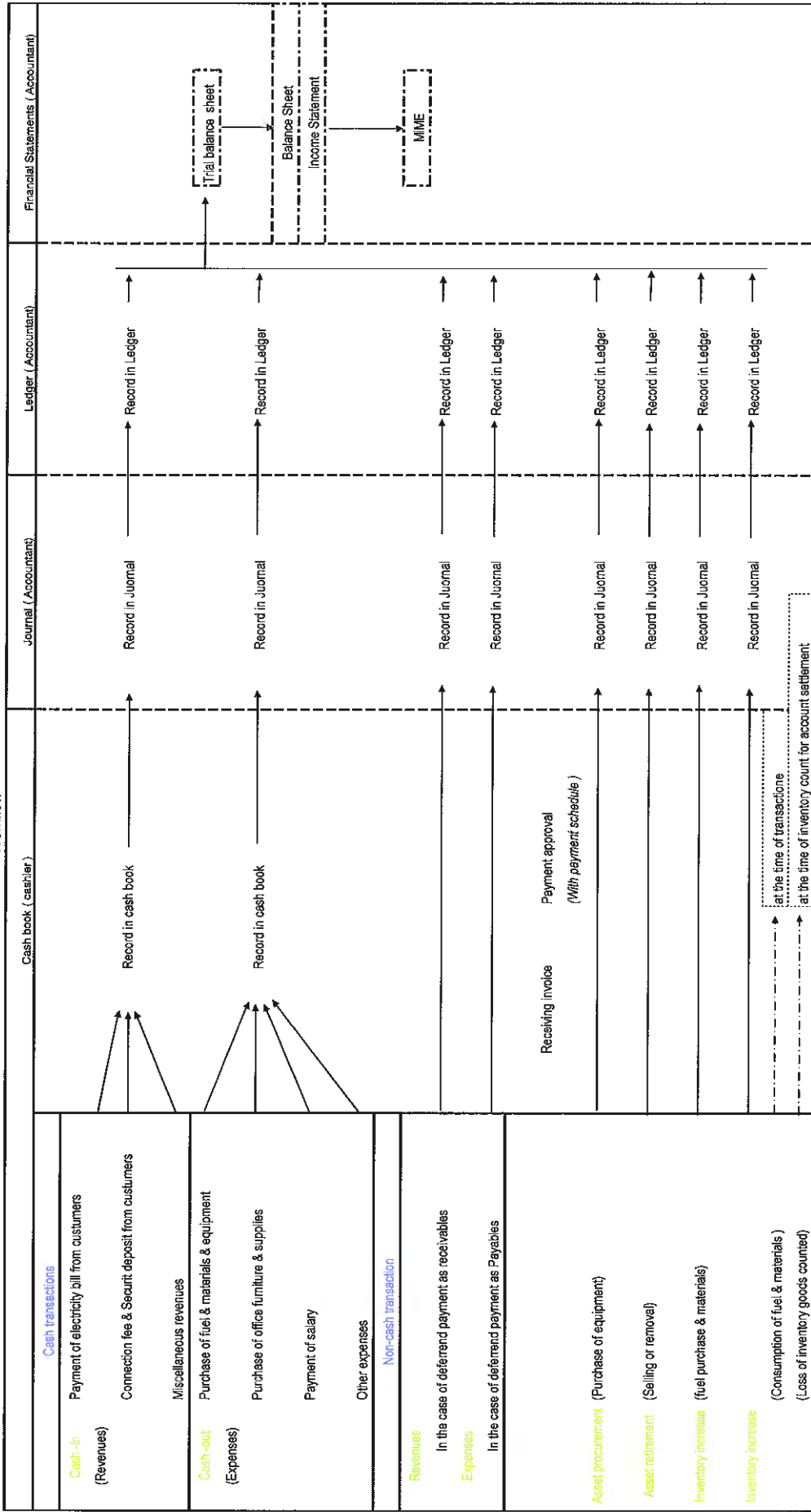
**Purchase of Technical equipment**





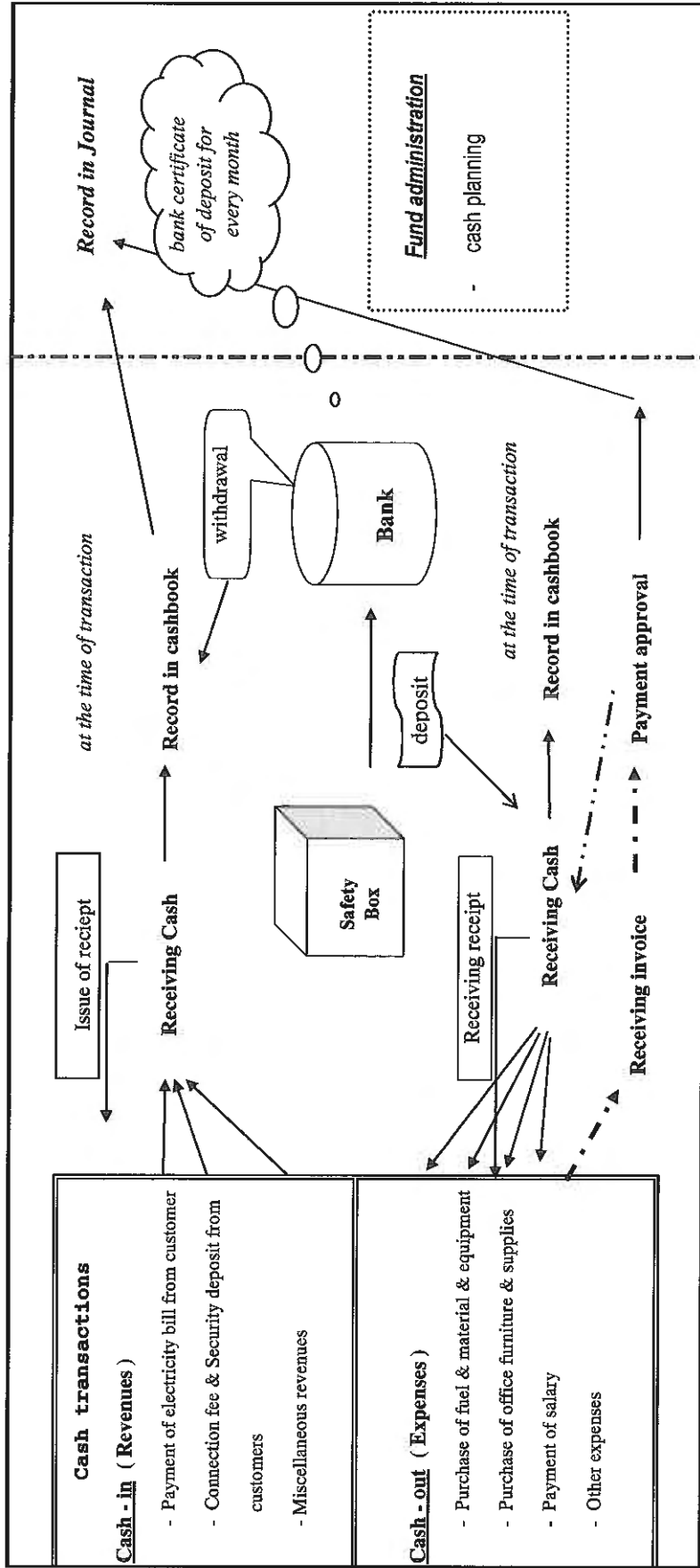


**Ty Suyatra**  
Assistant Accounting  
Workflow



# GENERAL ACCOUNTING WORKFLOW

CHRES MAOUD



**List of Things to Do through September 2010**

The Administrative Division must do the following things in each item and gives them to the secretary of JICA project team, so that she can make translation and send them to JICA project team in Tokyo. It is to be noted that the monthly reports mentioned below must be sent to JICA project team before the end of the first week of the respective next month.

1. Accounting Report for 2009 (for MIME & EAC)
2. Monthly report of budget execution: comparison between the budget and actual revenues and expenses showing the percentage of execution for each budget item
3. Monthly report of Balance Sheet and Income Statement
4. Monthly report of the amount of cash on hand to (must be actually counted) and bank deposit (must be evidenced by bank certificate): these amounts must be checked with the corresponding items of the Balance Sheet
5. Monthly record of warehouse control: if something is purchased and carried in to the warehouse, it must be recorded about its name, quantity and amount of money paid and if something is carried out of the warehouse, it must be recorded about its name, quantity and recorded amount of money; and, such transactions must be entered in the Balance Sheet.

Appendix 2-19 : Billing book ( Example : Data of June 2009)

 <p style="text-align: center;"> <b>ព្រះរាជាណាចក្រកម្ពុជា</b>  <b>ជាតិ សាសនា ព្រះមហាក្សត្រ</b>  <b>5</b>  <b>ផ្នែកគណនេយ្យភ្នាក់ងារ</b>  <b>Bill Management Section</b> </p>						
<b>របាយការណ៍សរុបក្នុងការបញ្ជូនថវិកាប្រចាំខែសម្រាប់ខែ (មិថុនា ២០០៩ )</b>						
លេខប្រុងប្រយ័ត្ន Number of Transformer	ចំនួនអតិថិជន Total of Customers	ចំនួនគីឡូវ៉ាត់ Total of Kwh	ទឹកប្រាក់សរុប Total Income	ចំនួនគ្រឿងបរិក្ខារ សរុប Total of Total	ចំនួនគ្រឿងបរិក្ខារ សរុប Total	ចំនួនបញ្ជីប្រាក់ Total Invoice Issue
P-01	28	5633	9,911,600 R	7	2	26
P-02	26	4751	8,170,000 R	6	1	25
P-03	23	518	836,800 R	1	1	22
P-04	52	4980	8,521,200 R	7	1	51
P-04 H	1	1835	2,936,000 R	0	0	1
P-05	35	1971	3,153,600 R	0	1	34
P-06	30	1768	2,828,800 R	0	1	29
P-07	20	1605	2,734,400 R	2	0	20
P-08	16	905	1,534,400 R	1	0	16
P-09	30	1968	3,167,000 R	1	1	29
P-10	10	1045	1,745,200 R	1	0	10
P-11	37	5244	8,744,200 R	3	0	37
P-12	13	991	1,652,200 R	4	1	12
P-13	6	604	1,043,600 R	2	0	6
P-14	46	3601	6,083,200 R	4	2	44
P-15	41	4756	8,131,200 R	4	0	41
P-16	263	18155	29,953,200 R	13	4	259
P-17	40	3572	6,002,800 R	3	2	38
P-18	8	311	497,600 R	0	0	8
P-19	75	3012	4,877,400 R	3	2	73
P-20	45	1795	2,894,200 R	1	0	45
P-21	30	991	1,585,600 R	0	0	30
P-22	19	1087	1,748,000 R	1	0	19
P-23	17	586	937,600 R	0	0	17
P-24	5	194	310,400 R	0	0	5
P-25	10	901	1,566,800 R	1	0	10
P-26	12	448	716,800 R	0	0	12
P-27	10	254	406,400 R	0	0	10
P-28	5	71	113,600 R	0	0	5
P-29	32	2096	3,483,600 R	3	0	32
P-30	26	1219	1,950,400 R	0	0	26
P-31	20	2200	3,829,600 R	3	0	20
P-32	31	1302	2,083,200 R	0	0	31
P-33	19	875	1,413,800 R	1	1	18
P-34	16	3212	5,139,200 R	0	0	16
P-35	11	738	1,180,800 R	0	1	10
Street-Light	1	972	1,555,200 R	0	0	1
P- 36 OR 066	2	230	368,000 R	0	0	2
<b>Total</b>	<b>1111</b>	<b>86396</b>	<b>143,807,600 R</b>	<b>72</b>	<b>21</b>	<b>1090</b>

ប្រធានគណនេយ្យ

ថ្ងៃទី ខែ ឆ្នាំ ២០០៩

Appendix 2-20 : EUMP の会計報告 (例)

Appendix 2-20 : Annual Financial Report of EUMP (A part of Example)

DEPARTMENT OF INDUSTRY MINE & ENERGY  
ELECTRICITY UNIT OF MONDULKIRI  
PROVINCE ( E U M P )

BALANCE SHEET  
At 31st December 2009

KINGDOM OF CAMBODIA  
NATION RELIGION KING  
rIs

	ASSETS		THIS YEAR			LAST YEAR	EQUITY & LIABILITIES		THIS YEAR	LAST YEAR
			GROSS	DEPRECIATION	NET					
FIX ASSET	Land	211	2,000,000,000		2,000,000,000	2,000,000,000.00		110	180,651,940	
	Building	213	23,595,616,800	1,376,158,934	22,219,457,866	23,394,701,866				
	Generators	2151	9,934,606,000	1,159,016,866	8,775,589,134	9,769,049,734	Profit This Year	120	978,700,461	
	Transmis&Distri.Line	2154	13,057,932,000	475,940,267	12,581,991,733	12,988,008,533	Equipment Subvention	131	49,051,784,000	
	Transport Equipment	2182	578,632,000	54,963,067	523,668,933	463,260,133	Subvention Transfer To			
	Informatc Equipment	2183	18,153,000	199,200	17,953,800	996,000	Result Account	139	-3,066,359,259	
	Office Equipment	2184	13,902,950	80,925	13,822,025	809,250				
		2751	41,500,000		41,500,000	41,500,000				
	<b>TOTAL</b>		<b>49,240,342,750</b>	<b>3,066,359,259</b>	<b>46,173,983,491</b>	<b>48,658,325,516</b>	<b>TOTAL EQUITY</b>		<b>47,144,777,142</b>	<b>48,794,442,206</b>
CURRENT ASSET		3221	40,459,632		40,459,632	48,285,283	Deposit Receive	1655	146,720,000	
		3222	23,585,280		23,585,280	4,062,850				
	Clients	411	121,051,100		121,051,100	56,130,800				
	Cash in Bank	512	826,121,970		826,121,970	68,572,860				
	Cash in Transit	531	88,669,669		88,669,669	45,153,947				
	Temporarily Borrow	534	1,200,000		1,200,000	22,830,950				
	Charge to be spread over several period	481	16,426,000		16,426,000					
	<b>TOTAL</b>		<b>1,117,513,651</b>	<b>0</b>	<b>1,117,513,651</b>	<b>245,036,690</b>	<b>TOTAL LIABILITIES</b>		<b>146,720,000</b>	<b>108,920,000</b>
	<b>TOTAL ASSETS</b>		<b>50,357,856,401</b>	<b>3,066,359,259</b>	<b>47,291,497,142</b>	<b>48,903,362,206</b>	<b>EQUITY &amp; LIABILITIES</b>		<b>47,291,497,142</b>	<b>48,903,362,206</b>

DIRECTOR OF DEPARTMENT OF INDUSTRY  
MINE AND ENERGY & E U M P

DIRECTOR OF ELECTRICITY UNIT  
OF MONDULKIRI PROVINCE

Mondulkiri, the 31st January 2010  
Accountant

DEPARTMENT OF INDUSTRY MINE & ENERGY  
ELECTRICITY OF MONDULKIRI  
PROVINCE ( E U M P )

INCOME STATEMENT  
Dated 31st December 2009

EXPENSE		Amount	Year 2008	REVENUE		Amount	Year 2008
Account	Number			Account	Number		
Combustibles Purchases	60221	165,158,339.00	48,543,173.00	Sales of goods purchased	707	1,713,442,000.00	179,522,800.00
Material & maintenances	60222	38,514,996.00	10,582,500.00	Incomes for service	706	20,260,000.00	125,280,000.00
Change in stock of combustible	603221	7,825,651.00	-48,285,283.00		7083	10,956,000.00	
Change in stock of Mat.&mainte	603222	-19,522,430.00	-4,062,850.00				
Supplies & repairs of equipment	6063	86,353,039.00	4,719,900.00				
Supplies for administrative service	6064	26,730,360.00	8,621,100.00	<b>Total I</b>		<b>1,744,658,000.00</b>	<b>304,802,800.00</b>
Other material & supplies	6068	27,404,850.00	15,328,400.00				
General sub-contract work	611	4,761,800.00	25,135,000.00	EXCEPTIONAL INCOME			
Repairs & maintenances	615	6,284,070.00	938,150.00	Portion f invest.relatling to			
Public relation,advertising & document	623	27,829,500.00	200,000.00	the period & transfered to			
Transport of goods	624	9,887,579.00	2,402,470.00	income	777	2,628,365,525.00	437,993,734.00
Mission & reception	625	62,287,785.00	2,035,600.00				
Telecommunication & postage	626	11,167,250.00	471,500.00				
Transport tax	63514	150,000.00	150,000.00				
Wages	6411	266,844,600.00	42,031,200.00				
Orther bonus	6414	36,977,950.00	14,070,000.00				
Fringe benefits	647	5,001,500.00	1,270,000.00				
Tax on mining & quarryings	651	2,300,700.00					
Tangible assets	681	2,628,365,525.00	437,993,734.00				
		<b>3,394,323,064.00</b>	<b>562,144,594.00</b>	<b>TOTAL II</b>		<b>2,628,365,525.00</b>	<b>437,993,734.00</b>
Profit for the year	120	<b>978,700,461.00</b>	<b>180,651,940.00</b>	Loss for the year	129		
<b>Total</b>		<b>4,373,023,525.00</b>	<b>742,796,534.00</b>	<b>Total</b>		<b>4,373,023,525.00</b>	<b>742,796,534.00</b>

DIRECTOR OF DEPARTMENT OF INDUSTRY MINE  
AND ENERGY & E U M P

DIRECTOR OF ELECTRICITY UNIT  
OF MONDULKIRI PROVINCE

Mondulkiri, January 31st 2010  
Accountant

## Appendix 3 土木設備技術関連

Appendix 3-1 : 流 量 測 定

Appendix 3-2 : 流量測定記録様式&記録例 (2009年12月15日測定)

Appendix 3-3 : 運用記録例 (オロミス地点 日記録表)

Appendix 3-4 : オロミス発電所アクセスパス 崩壊土砂取り除き作業

Appendix 3-5 : オロミス発電所 水槽付近電柱の根固め作業

Appendix 3-6 : オロミス発電所 アクセスパス横断水路設置

Appendix 3-7 : オロミス発電所 水路側溝の改良

## 流量測定

オロミス発電所水路の点検用マンホール地点で流量測定を実施。  
水路流量を算定するための水位-流量曲線の精度を上げるために、異なる水位で計4回の測定を実施した。

毎回、JICAチームの土木技術専門家が立会し、OJTによる反復指導を実施した。



流量測定状況

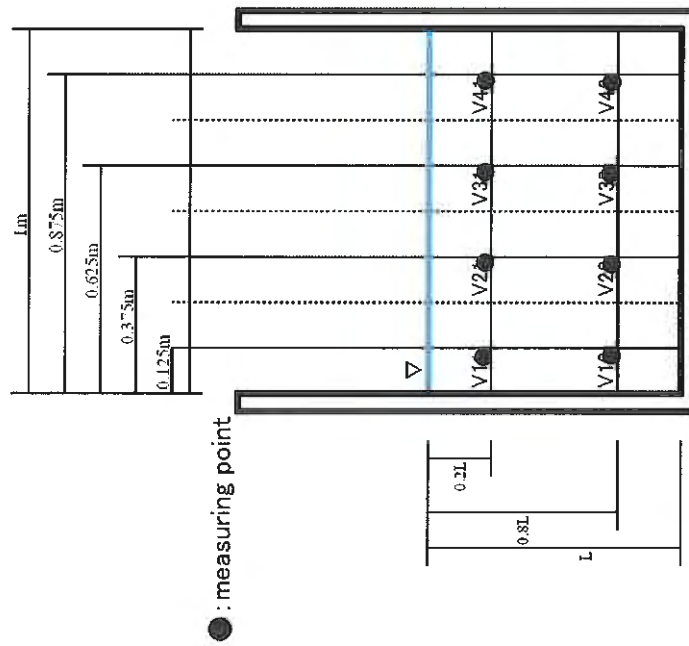
流量測定記録様式&記録例 (2009年12月15日測定)

Format - 2

O'Romis Waterway water flow measurement record sheet (Two Points Method)

Date 15 DEC, 2009

$0.5m < D < 0.8m$



D= 0.63 m

V11= 1.09 m/s      V31= 1.25 m/s

V12= 1.11 m/s      V32= 1.23 m/s

V21= 1.28 m/s      V41= 1 m/s

V22= 1.19 m/s      V42= 1.05 m/s

V1= (V11+V12)/2 = 1.102 m/s  
 V2= (V21+V22)/2 = 1.235 m/s  
 V3= (V31+V32)/2 = 1.238 m/s  
 V4= (V41+V42)/2 = 1.025 m/s

$$Q = 0.25 \times D \times (V1+V2+V3+V4) = 0.724 \text{ m}^3/\text{s}$$



Appendix 3-3 運用記録例 (オロミス地点 日記録表)

運用記録例 (オロミス地点 日記録表)

※運転記録と同一のシートに水位データを記録している。

Daily Operation Record (Hydropower)

Name of PS: O'Romis

DATE: 1 / June / 2009 Weather: (F)

Times	Generator(V)		Hz	Speed	Press. Mpa	GV	kW	Var	Generator(A)			Cos φ	Line(V)			kW	GMH	SWH	Line(A)			Temperature(°C)	Water Level of Head Tank	Water Level of Inbake Weir	Water Level of SB	Water Level of Waterway					
	RS	ST							TR	R	S		T	R	S				T	1	2						3	4	5	6	1
1:00	400			50	1,001	2.5	160	0				1	400			80	37856.6	24945.1					10								
2:00	400			50	1,001	2.5	130	0			1	400			80								10								
3:00	400			50	1,001	2.5	130	0			1	400			75								10								
4:00	400			50	1,001	2.5	130	0			1	400			75								10								
5:00	400			50	1,001	2.5	140	0			1	400			75								10								
6:00	400	400	400	50	1,001	2.5	40	100	0	140	140	1	400	400	400	100	37422.4	24955.3	140	140	140	30	31	38	39	40	25	10	0.97	0.99	0.80
7:00	400			50	1,001	2.5	110	0			1	400			110								10								
8:00	400			50	1,001	2.5	160	0			1	400			130								-2								
9:00	400			50	1,001	2.5	170	0			1	400			140								5								
10:00	400			50	1,001	2.5	125	0			1	400			125								5								
11:00	400			50	1,001	2.5	125	0			1	400			125								10								
12:00	400	400	400	50	1,001	2.5	50	125	0	180	180	1	400	400	400	125	37505.4	25050.4	180	180	180	34	36	42	42	50	29	10	0.97	0.99	0.80
13:00	400			50	1,001	2.5	170	0			1	400			120								3								
14:00	400			50	1,001	2.5	170	0			1	400			125								5								
15:00	400			50	1,001	2.5	180	0			1	400			130								5								
16:00	400			50	1,001	2.5	185	0			1	400			150								1								
17:00	400			50	1,001	2.5	180	0			1	400			130								7								
18:00	400	400	400	50	1,001	2.5	60	160	0	220	220	1	400	400	400	160	37505.5	25135.5	230	230	220	33	38	41	41	51	28	7	0.97	0.99	0.80
19:00	400			50	1,001	2.5	160	0			1	400			160								7								
20:00	400			50	1,001	2.5	160	0			1	400			160								7								
21:00	400			50	1,001	2.5	160	0			1	400			160								7								
22:00	400			50	1,001	2.5	180	0			1	400			115								7								
23:00	400			50	1,001	2.5	140	0			1	400			95								7								
24:00	400			50	1,001	2.5	53	140	0			1	400			80	37595.5	25220.7					10								

Approved by Deputy Director  
Technical and Operation Div.  
Signature: \_\_\_\_\_

Confirmed by Chief  
T & O Division  
Signature: \_\_\_\_\_

Name of Operators  
(1) \_\_\_\_\_

Total Running Hours:  
(2) \_\_\_\_\_ (3) \_\_\_\_\_ -4

Note: 1)

Note: 1)

Note: 1)

**Appendix 3-4 オロミス発電所アクセスパス 崩壊土砂取り除き作業**  
**オロミス発電所アクセスパス 崩壊土砂取り除き作業**



○工事前

降雨等により、斜面の土砂がアクセスパス上に流入

2009年9月8日撮影



○工事中

バックホウで土砂を取り除き

2009年9月23日撮影



○工事後

仕上がり状況の確認

2009年9月23日撮影

Appendix 3-5 オロミス発電所 水槽付近電柱の根固め作業  
オロミス発電所 水槽付近電柱の根固め作業



○工事前

降雨により、雨水が電柱の根元の地面を洗い流すように流れている。

2009年9月8日撮影



○工事後

電柱の根元をコンクリートで固めた。

2009年12月7日撮影

Appendix 3-6 オロミス発電所 アクセスパス横断水路設置  
オロミス発電所 アクセスパス横断水路設置



○工事前  
測量中の状況

2009年9月22日撮影



○工事中  
掘削中の状況

2009年9月23日



○工事後  
完成後の状況

2009年12月7日撮影



(出口側)

Appendix 3-7 オロミス発電所 水路側溝の改良  
オロミス発電所 水路側溝の改良



○工事前

溝に泥が堆積し、雨水が溢れている

2009年6月18日撮影



○工事中

接続部の素掘り側溝を拡幅

2009年9月13日撮影



○工事後

土砂取り除き、接続部の改良

2009年9月13日撮影

## Appendix 4 発電運用技術

- Appendix 4-1 : 年間電力需給記録（2008-2009 年度）
- Appendix 4-2 : 日運転記録(2009 年度サンプル)
- Appendix 4-3 : 日負荷カーブ記録（2009 年度雨季、乾季）
- Appendix 4-4 : 事故・点検計画シート(2009 年度サンプル)
- Appendix 4-5 : 定期点検報告書（第1回 2009/May, June）
- Appendix 4-6 : 定期点検報告書（第2回 2009/Nov, Dec）

Summary of the Energy Consumption

Month	Date	Number of Consumer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Consumer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Costumer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
Nov. 2008	21-Oct	465	60	15	32	54%	773	1,662	0.77	23,184	50
	22-Oct	495	110	35	57	52%	1,368	2,764	1.37	41.04	83
	23-Oct	499	115	35	63	55%	1,512	3,030	2.88	45.36	91
	24-Oct	515	115	40	60	52%	1,440	2,796	4.32	43.2	84
	25-Oct	533	125	35	62	50%	1,488	2,792	5.81	44.64	84
	26-Oct	548	125	38	66	53%	1,584	2,891	7.39	47.52	87
	27-Oct	548	130	35	63	48%	1,512	2,759	8.90	45.36	83
	28-Oct	574	133	35	66	50%	1,584	2,760	10.49	47.52	83
	29-Oct	574	135	40	71	53%	1,704	2,969	12.19	51.12	89
	30-Oct	595	135	32	67	50%	1,608	2,703	13.80	48.24	81
	31-Oct	595	130	35	64	49%	1,536	2,582	15.34	46.08	77
	1-Nov	620	135	30	71	53%	1,704	2,748	17.04	51.12	82
	2-Nov	638	140	30	67	48%	1,608	2,520	18.65	48.24	76
	3-Nov	642	160	30	82	51%	1,968	3,065	20.62	59.04	92
	4-Nov	673	155	35	74	48%	1,776	2,639	22.39	53.28	79
	5-Nov	682	147	33	67	46%	1,608	2,358	24.00	48.24	71
	6-Nov	689	140	30	69	49%	1,656	2,403	25.66	49.68	72
	7-Nov	699	145	35	72	50%	1,728	2,472	27.38	51.84	74
	8-Nov	715	150	30	74	49%	1,776	2,484	29.16	53.28	75
	9-Nov	720	150	30	70	47%	1,680	2,333	30.84	50.4	70
10-Nov	748	170	40	76	45%	1,824	2,439	32.66	54.72	73	
11-Nov	756	165	40	83	50%	1,992	2,635	34.66	59.76	79	
12-Nov	760	175	35	80	46%	1,920	2,526	36.58	57.6	76	
13-Nov	762	180	35	82	46%	1,968	2,583	38.54	59.04	77	
14-Nov	764	175	42	86	49%	2,064	2,702	40.61	61.92	81	
15-Nov	766	175	40	85	49%	2,040	2,663	42.65	61.2	80	
16-Nov	768	190	40	88	46%	2,112	2,750	44.76	63.36	83	
17-Nov	776	190	40	92	48%	2,208	2,845	46.97	66.24	85	
18-Nov	776	195	45	95	49%	2,280	2,938	49.25	68.4	88	
19-Nov	776	200	45	94	47%	2,256	2,907	51.50	67.68	87	
20-Nov	776	195	40	98	50%	2,352	3,031	53.86	70.56	91	

Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
Dec. 2008	21-Nov	776	200	50	96	48%	2,304	2,969	56.16	69.12	89
	22-Nov	776	195	45	95	49%	2,280	2,938	58.44	68.4	88
	23-Nov	776	195	45	95	49%	2,280	2,938	60.72	68.4	88
	24-Nov	779	200	45	95	48%	2,280	2,927	63.00	68.4	88
	25-Nov	779	205	50	97	47%	2,328	2,988	65.33	69.84	90
	26-Nov	781	205	50	103	50%	2,472	3,165	67.80	74.16	95
	27-Nov	784	205	50	103	50%	2,472	3,153	70.27	74.16	95
	28-Nov	792	215	50	102	47%	2,448	3,091	72.72	73.44	93
	29-Nov	801	215	45	104	48%	2,496	3,116	75.22	74.88	93
	30-Nov	810	200	50	104	52%	2,496	3,081	77.71	74.88	92
	1-Dec	820	215	55	104	48%	2,496	3,044	80.21	74.88	91
	2-Dec	824	220	55	110	50%	2,640	3,204	82.85	79.2	96
	3-Dec	826	225	55	108	48%	2,592	3,138	85.44	77.76	94
	4-Dec	828	215	60	114	53%	2,736	3,304	88.18	82.08	99
	5-Dec	830	230	55	114	50%	2,736	3,296	90.91	82.08	99
	6-Dec	832	230	50	119	52%	2,856	3,433	93.77	85.68	103
	7-Dec	835	218	55	115	53%	2,760	3,305	96.53	82.8	99
	8-Dec	842	235	65	119	51%	2,856	3,392	99.38	85.68	102
	9-Dec	842	225	60	116	52%	2,784	3,306	102.17	83.52	99
	10-Dec	844	230	62	123	53%	2,952	3,498	105.12	88.56	105
	11-Dec	844	215	60	113	53%	2,712	3,213	107.83	81.36	96
	12-Dec	846	235	55	124	53%	2,976	3,518	110.81	89.28	106
	13-Dec	853	230	70	131	57%	3,144	3,686	113.95	94.32	111
	14-Dec	853	240	70	125	52%	3,000	3,517	116.95	90	106
15-Dec	853	235	65	121	51%	2,904	3,404	119.86	87.12	102	
16-Dec	856	235	38	112	48%	2,688	3,140	122.54	80.64	94	
17-Dec	856	240	65	122	51%	2,928	3,421	125.47	87.84	103	
18-Dec	856	230	65	120	52%	2,880	3,364	128.35	86.4	101	
19-Dec	856	225	60	119	53%	2,856	3,336	131.21	85.68	100	
20-Dec	856	243	60	122	50%	2,928	3,421	134.14	87.84	103	
21-Dec	856	220	70	119	54%	2,856	3,336	136.99	85.68	100	
22-Dec	856	230	65	117	51%	2,808	3,280	139.80	84.24	98	
23-Dec	951	245	55	118	48%	2,834	2,980	142.63	85.02	89	
24-Dec	951	267	60	131	49%	3,142	3,304	145.78	94.26	99	



Month	Date	Number of Costumer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Costumer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Costumer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
Jan. 2009	25-Dec	951	251	60	131	52%	3,154	3,317	148.93	94.62	99
	26-Dec	951	257	60	130	50%	3,108	3,268	152.04	93.24	98
	27-Dec	951	235	65	124	53%	2,984	3,138	155.02	89.52	94
	28-Dec	951	258	65	127	49%	3,043	3,200	158.07	91.29	96
	29-Dec	958	258	60	129	50%	3,094	3,230	161.16	92.82	97
	30-Dec	960	259	70	133	51%	3,188	3,321	164.35	95.64	100
	31-Dec	962	267	70	146	55%	3,512	3,651	167.86	105.36	110
	1-Jan	962	262	65	138	53%	3,321	3,452	171.18	99.63	104
	2-Jan	962	246	60	127	52%	3,053	3,174	174.23	91.59	95
	3-Jan	965	230	60	122	53%	2,922	3,028	177.16	87.66	91
	4-Jan	967	221	65	126	57%	3,015	3,118	180.17	90.45	94
	5-Jan	969	250	75	137	55%	3,283	3,388	183.45	98.49	102
	6-Jan	970	252	70	133	53%	3,182	3,280	186.64	95.46	98
	7-Jan	970	234	60	124	53%	2,970	3,062	189.61	89.10	92
8-Jan	970	243	65	125	51%	2,999	3,092	192.60	89.97	93	
9-Jan	972	246	60	125	51%	3,002	3,088	195.61	90.06	93	
10-Jan	975	249	60	131	53%	3,139	3,219	198.75	94.17	97	
11-Jan	978	244	55	130	53%	3,118	3,188	201.86	93.54	96	
12-Jan	978	237	60	125	53%	2,988	3,055	204.85	89.64	92	
13-Jan	978	248	60	127	51%	3,050	3,119	207.90	91.50	94	
14-Jan	980	244	60	129	53%	3,099	3,162	211.00	92.97	95	

Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
	15-Jan	980	242	68	132	55%	3,171	3,236	214.17	95.13	97
	16-Jan	980	255	65	131	51%	3,147	3,211	217.32	94.41	96
	17-Jan	986	251	70	132	53%	3,164	3,209	220.48	94.92	96
	18-Jan	986	256	70	136	53%	3,268	3,314	223.75	98.04	99
	19-Jan	989	244	65	132	54%	3,167	3,202	226.92	95.01	96
	20-Jan	989	236	65	131	55%	3,143	3,178	230.06	94.29	95
	21-Jan	1021	263	65	133	51%	3,192	3,126	233.25	95.76	94
	22-Jan	1021	256	70	144	56%	3,446	3,375	236.70	103.38	101
	23-Jan	1021	251	75	147	59%	3,528	3,455	240.23	105.84	104
	24-Jan	1021	240	75	135	56%	3,229	3,163	243.46	96.87	95
	25-Jan	1021	264	70	145	55%	3,473	3,402	246.93	104.19	102
	26-Jan	1021	296	75	149	51%	3,583	3,509	250.51	107.49	105
	27-Jan	1021	307	90	157	51%	3,758	3,681	254.27	112.74	110
	28-Jan	1023	278	85	155	56%	3,719	3,635	257.99	111.57	109
	29-Jan	1023	262	75	149	57%	3,575	3,495	261.56	107.25	105
	30-Jan	1023	258	70	139	54%	3,324	3,249	264.89	99.72	97
	31-Jan	1023	276	70	133	48%	3,196	3,124	268.08	95.88	94
	1-Feb	1023	261	60	129	49%	3,093	3,024	271.18	92.79	91
	2-Feb	1023	270	60	132	49%	3,158	3,087	274.33	94.74	93
	3-Feb	1023	238	67	135	57%	3,241	3,168	277.58	97.23	95
	4-Feb	1023	247	63	135	55%	3,234	3,161	280.81	97.02	95
	5-Feb	1023	250	75	140	56%	3,353	3,278	284.16	100.59	98
	6-Feb	1023	258	65	137	53%	3,294	3,220	287.46	98.82	97
	7-Feb	1026	267	75	140	52%	3,358	3,273	290.81	100.74	98
	8-Feb	1026	257	80	147	57%	3,536	3,446	294.35	106.08	103
	9-Feb	1026	262	80	146	56%	3,497	3,408	297.85	104.90	102
	10-Feb	1026	257	75	148	57%	3,541	3,451	301.39	106.23	104
	11-Feb	1026	263	75	152	58%	3,637	3,545	305.03	109.11	106
	12-Feb	1026	262	0	146	56%	3,498	3,409	308.52	104.94	102
	13-Feb	1026	273	46	140	51%	3,362	3,277	311.89	100.86	98
	14-Feb	1028	280	99	156	56%	3,733	3,631	315.62	111.99	109
	15-Feb	1028	259	90	152	59%	3,647	3,547	319.27	109.40	106
	16-Feb	1028	270	85	151	56%	3,620	3,521	322.88	108.60	106
	17-Feb	1028	271	85	145	54%	3,480	3,385	326.36	104.40	102

Feb. 2009

Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
	18-Feb	1028	255	75	146	57%	3,501	3,406	329.87	105.03	102
	19-Feb	1028	277	80	148	53%	3,556	3,459	333.42	106.68	104
	20-Feb	1028	272	0	106	39%	2,544	2,475	335.97	76.32	74
	21-Feb	1033	281	90	155	55%	3,723	3,604	339.69	111.69	108
	22-Feb	1033	268	101	162	60%	3,889	3,765	343.58	116.67	113
	23-Feb	1033	268	108	166	62%	3,980	3,853	347.56	119.40	116
	24-Feb	1033	287	95	152	53%	3,639	3,523	351.20	109.17	106
	25-Feb	1033	273	95	145	53%	3,472	3,361	354.67	104.16	101
	26-Feb	1033	274	0	119	43%	2,856	2,765	357.53	85.68	83
	27-Feb	1033	262	80	147	56%	3,529	3,416	361.05	105.87	102
	28-Feb	1033	251	80	147	59%	3,528	3,415	364.58	105.84	102
	1-Mar	1033	248	80	149	60%	3,572	3,458	368.15	107.16	104
	2-Mar	1033	248	80	148	60%	3,550	3,437	371.70	106.50	103
	3-Mar	1033	266	70	147	55%	3,535	3,422	375.24	106.05	103
	4-Mar	1033	266	75	147	55%	3,531	3,418	378.77	105.93	103
	5-Mar	1033	265	75	143	54%	3,429	3,320	382.20	102.87	100
	6-Mar	1033	261	85	151	58%	3,622	3,506	385.82	108.66	105
	7-Mar	1037	269	95	150	56%	3,594	3,466	389.42	107.82	104
	8-Mar	1037	258	110	153	59%	3,677	3,546	393.09	110.31	106
	9-Mar	1037	265	95	156	59%	3,738	3,605	396.83	112.14	108
	10-Mar	1037	286	85	158	55%	3,788	3,653	400.62	113.64	110
	11-Mar	1037	283	88	165	58%	3,963	3,822	404.58	118.89	115
	12-Mar	1037	268	95	161	60%	3,872	3,734	408.45	116.16	112
	13-Mar	1037	272	95	160	59%	3,837	3,700	412.29	115.11	111
	14-Mar	1046	272	90	153	56%	3,670	3,509	415.96	110.10	105
	15-Mar	1046	258	80	145	56%	3,478	3,325	419.44	104.34	100
	16-Mar	1046	253	81	149	59%	3,569	3,412	423.01	107.07	102
	17-Mar	1046	268	85	152	57%	3,654	3,493	426.66	109.62	105
	18-Mar	1046	275	80	155	56%	3,713	3,550	430.37	111.39	106
	19-Mar	1046	271	85	157	58%	3,758	3,593	434.13	112.74	108
	20-Mar	1046	285	80	158	56%	3,799	3,632	437.93	113.97	109
	21-Mar	1052	277	90	156	56%	3,750	3,565	441.68	112.50	107
	22-Mar	1052	265	95	163	62%	3,914	3,720	445.60	117.42	112
	23-Mar	1052	285	90	166	58%	3,991	3,794	449.59	119.73	114

Mar. 2009

Month	Date	Number of Consumer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
	24-Mar	1052	265	95	161	61%	3,868	3,677	453.45	116.04	110
	25-Mar	1052	274	85	160	58%	3,834	3,644	457.29	115.02	109
	26-Mar	1052	270	85	151	56%	3,612	3,433	460.90	108.36	103
	27-Mar	1052	277	85	159	57%	3,807	3,619	464.71	114.21	109
	28-Mar	1055	272	95	161	59%	3,863	3,662	468.57	115.89	110
	29-Mar	1055	267	100	157	59%	3,759	3,563	472.33	112.77	107
	30-Mar	1055	265	90	152	57%	3,639	3,449	475.97	109.17	103
	31-Mar	1059	250	92	147	59%	3,529	3,332	479.50	105.87	100
	1-Apr	1059	248	83	141	57%	3,373	3,185	482.87	101.19	96
	2-Apr	1059	223	78	136	61%	3,258	3,076	486.13	97.74	92
	3-Apr	1059	237	83	136	57%	3,263	3,081	489.39	97.89	92
	4-Apr	1059	250	81	133	53%	3,182	3,005	492.57	95.46	90
	5-Apr	1059	239	81	139	58%	3,327	3,142	495.90	99.81	94
	6-Apr	1059	240	87	150	63%	3,607	3,406	499.51	108.21	102
	7-Apr	1062	262	70	149	57%	3,566	3,358	503.07	106.98	101
	8-Apr	1062	259	93	153	59%	3,679	3,464	506.75	110.37	104
	9-Apr	1062	276	90	151	55%	3,626	3,414	510.38	108.78	102
	10-Apr	1062	280	83	148	53%	3,563	3,355	513.94	106.89	101
	11-Apr	1062	263	85	147	56%	3,530	3,324	517.47	105.90	100
	12-Apr	1062	285	100	150	53%	3,599	3,389	521.07	107.97	102
	13-Apr	1062	302	95	168	56%	4,032	3,797	525.10	120.96	114
	14-Apr	1070	325	125	186	57%	4,454	4,163	529.56	133.62	125
	15-Apr	1070	333	105	181	54%	4,345	4,061	533.90	130.35	122
	16-Apr	1070	292	110	172	59%	4,134	3,864	538.04	124.02	116
	17-Apr	1070	291	110	167	57%	4,002	3,740	542.04	120.06	112
	18-Apr	1070	302	105	164	54%	3,932	3,675	545.97	117.96	110
	19-Apr	1070	250	90	145	58%	3,470	3,243	549.44	104.10	97
	20-Apr	1070	265	75	142	54%	3,405	3,182	552.84	102.15	95
	21-Apr	1071	260	90	151	58%	3,621	3,381	556.47	108.63	101
	22-Apr	1071	294	80	154	52%	3,698	3,453	560.16	110.94	104
	23-Apr	1071	284	105	161	57%	3,852	3,597	564.02	115.56	108
	24-Apr	1071	260	95	148	57%	3,543	3,308	567.56	106.29	99
	25-Apr	1071	260	90	149	57%	3,572	3,335	571.13	107.16	100
	26-Apr	1071	265	90	146	55%	3,506	3,274	574.64	105.18	98

Apr. 2009

Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
May, 2009	27-Apr	1071	268	85	156	58%	3,736	3,488	578.37	112.08	105
	28-Apr	1075	293	90	152	52%	3,651	3,396	582.02	109.53	102
	29-Apr	1075	259	85	150	58%	3,589	3,339	585.61	107.67	100
	30-Apr	1078	235	90	154	65%	3,684	3,417	589.30	110.52	103
	1-May	1078	263	95	155	59%	3,721	3,452	593.02	111.63	104
	2-May	1078	258	80	144	56%	3,444	3,195	596.46	103.32	96
	3-May	1078	286	80	144	50%	3,460	3,210	599.92	103.80	96
	4-May	1078	266	80	144	54%	3,454	3,204	603.38	103.62	96
	5-May	1078	281	85	148	53%	3,555	3,298	606.93	106.65	99
	6-May	1078	279	75	146	52%	3,502	3,249	610.43	105.06	97
	7-May	1083	267	90	149	56%	3,571	3,297	614.00	107.13	99
	8-May	1083	295	85	157	53%	3,772	3,483	617.78	113.16	104
	9-May	1083	277	80	150	54%	3,590	3,315	621.37	107.70	99
	10-May	1083	252	85	148	59%	3,540	3,269	624.91	106.20	98
	11-May	1083	269	80	145	54%	3,488	3,221	628.39	104.64	97
	12-May	1083	285	85	158	55%	3,796	3,505	632.19	113.88	105
	13-May	1083	275	100	163	59%	3,908	3,608	636.10	117.24	108
	14-May	1089	275	90	152	55%	3,653	3,354	639.75	109.58	101
	15-May	1089	291	90	145	50%	3,488	3,203	643.24	104.64	96
	16-May	1089	265	80	137	52%	3,295	3,026	646.53	98.85	91
	17-May	1089	265	90	140	53%	3,354	3,080	649.89	100.62	92
	18-May	1089	275	70	144	52%	3,450	3,168	653.34	103.50	95
	19-May	1089	240	80	139	58%	3,335	3,062	656.67	100.05	92
	20-May	1089	272	80	145	53%	3,477	3,193	660.15	104.31	96
	21-May	1092	257	80	142	55%	3,397	3,111	663.55	101.91	93
	22-May	1092	263	85	145	55%	3,470	3,178	667.02	104.10	95
	23-May	1092	260	80	137	53%	3,280	3,004	670.30	98.40	90
	24-May	1092	265	70	135	51%	3,245	2,972	673.54	97.35	89
	25-May	1092	250	75	140	56%	3,365	3,082	676.91	100.95	92
	26-May	1092	270	75	145	54%	3,475	3,182	680.38	104.25	95
27-May	1092	250	80	144	58%	3,460	3,169	683.84	103.80	95	
28-May	1100	275	80	142	52%	3,410	3,100	687.25	102.30	93	
29-May	1100	290	80	143	49%	3,434	3,122	690.69	103.02	94	
30-May	1100	255	80	140	55%	3,350	3,045	694.04	100.50	91	

Month	Date	Number of Costumer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Costumer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Costumer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
Jun. 2009	31-May	1100	272	80	141	52%	3,374	3,067	697.41	101.22	92
	1-Jun	1100	275	75	140	51%	3,368	3,062	700.78	101.04	92
	2-Jun	1100	268	75	141	52%	3,376	3,069	704.15	101.28	92
	3-Jun	1100	265	75	141	53%	3,389	3,081	707.54	101.67	92
	4-Jun	1100	140	75	137	98%	3,294	2,995	710.84	98.82	90
	5-Jun	1100	250	70	137	55%	3,285	2,986	714.12	98.55	90
	6-Jun	1100	250	75	131	52%	3,138	2,853	717.26	94.14	86
	7-Jun	1103	255	85	140	55%	3,355	3,042	720.61	100.65	91
	8-Jun	1103	260	80	140	54%	3,365	3,051	723.98	100.95	92
	9-Jun	1103	270	80	144	53%	3,455	3,132	727.43	103.65	94
	10-Jun	1103	277	80	149	54%	3,587	3,252	731.02	107.61	98
	11-Jun	1103	255	80	142	56%	3,415	3,096	734.44	102.45	93
	12-Jun	1103	265	80	145	55%	3,490	3,164	737.93	104.70	95
	13-Jun	1103	280	80	141	50%	3,385	3,069	741.31	101.55	92
	14-Jun	1110	270	90	143	53%	3,440	3,099	744.75	103.20	93
	15-Jun	1110	255	85	142	56%	3,405	3,068	748.16	102.15	92
	16-Jun	1110	240	75	143	59%	3,423	3,084	751.58	102.69	93
	17-Jun	1110	255	75	144	57%	3,465	3,122	755.04	103.95	94
	18-Jun	1110	250	90	148	59%	3,568	3,205	758.60	106.74	96
	19-Jun	1110	255	40	144	56%	3,456	3,114	762.06	103.68	93
	20-Jun	1110	255	75	136	53%	3,270	2,946	765.33	98.10	88
	21-Jun	1110	260	75	133	51%	3,200	2,883	768.53	96.00	86
	22-Jun	1110	260	85	146	56%	3,505	3,158	772.03	105.15	95
	23-Jun	1110	260	80	149	57%	3,565	3,212	775.60	106.95	96
	24-Jun	1110	260	85	150	58%	3,610	3,252	779.21	108.30	98
	25-Jun	1110	275	95	154	56%	3,705	3,338	782.91	111.15	100
	26-Jun	1110	240	85	150	63%	3,610	3,252	786.52	108.30	98
	27-Jun	1110	270	90	141	52%	3,380	3,045	789.90	101.40	91
	28-Jun	1110	240	85	135	56%	3,250	2,928	793.15	97.50	88
	29-Jun	1110	270	80	148	55%	3,560	3,207	796.71	106.80	96
	30-Jun	1112	255	90	151	59%	3,630	3,264	800.34	108.90	98
1-Jul	1112	265	85	147	56%	3,530	3,174	803.87	105.90	95	
2-Jul	1112	270	70	146	54%	3,505	3,152	807.38	105.15	95	
3-Jul	1112	255	70	144	57%	3,460	3,111	810.84	103.80	93	

Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
Jul. 2009	4-Jul	1112	288	70	142	49%	3,413	3.069	814.25	102.38	92
	5-Jul	1112	250	80	138	55%	3,300	2.968	817.55	99.00	89
	6-Jul	1112	260	75	141	54%	3,380	3.039	820.93	101.40	91
	7-Jul	1116	270	70	145	54%	3,480	3.118	824.41	104.40	94
	8-Jul	1116	265	75	148	56%	3,545	3.177	827.96	106.35	95
	9-Jul	1116	255	80	149	58%	3,580	3.208	831.54	107.40	96
	10-Jul	1116	270	85	151	56%	3,620	3.244	835.16	108.60	97
	11-Jul	1116	285	80	149	52%	3,580	3.208	838.74	107.40	96
	12-Jul	1116	280	85	150	54%	3,607	3.232	842.34	108.21	97
	13-Jul	1116	260	90	152	58%	3,645	3.266	845.99	109.35	98
	14-Jul	1119	260	75	147	56%	3,525	3.150	849.51	105.75	95
	15-Jul	1119	280	85	154	55%	3,690	3.298	853.20	110.70	99
	16-Jul	1119	255	85	154	60%	3,695	3.302	856.90	110.84	99
	17-Jul	1119	265	85	150	57%	3,600	3.217	860.50	108.00	97
	18-Jul	1119	265	80	141	53%	3,380	3.020	863.88	101.40	91
	19-Jul	1119	250	75	136	54%	3,265	2.918	867.14	97.95	88
	20-Jul	1119	270	80	143	53%	3,425	3.061	870.57	102.74	92
	21-Jul	1122	270	75	144	53%	3,460	3.084	874.03	103.80	93
	22-Jul	1122	250	75	145	58%	3,470	3.093	877.50	104.10	93
	23-Jul	1122	270	70	140	52%	3,370	3.003	880.87	101.10	90
	24-Jul	1122	280	75	147	52%	3,525	3.142	884.39	105.75	94
	25-Jul	1122	275	75	141	51%	3,390	3.021	887.78	101.70	91
	26-Jul	1122	265	90	150	56%	3,590	3.200	891.37	107.70	96
	27-Jul	1122	270	90	150	56%	3,605	3.213	894.98	108.14	96
	28-Jul	1128	260	75	145	56%	3,490	3.094	898.47	104.70	93
	29-Jul	1128	250	80	146	58%	3,500	3.103	901.97	105.00	93
	30-Jul	1128	220	85	144	65%	3,450	3.059	905.42	103.50	92
	31-Jul	1128	260	75	143	55%	3,420	3.032	908.84	102.60	91
	1-Aug	1128	255	75	141	55%	3,390	3.005	912.23	101.70	90
	2-Aug	1128	240	75	139	58%	3,345	2.965	915.57	100.35	89
3-Aug	1128	250	75	147	59%	3,525	3.125	919.10	105.75	94	
4-Aug	1128	265	70	148	56%	3,555	3.152	922.65	106.65	95	
5-Aug	1128	279	85	156	56%	3,750	3.324	926.40	112.50	100	
6-Aug	1128	270	80	156	58%	3,736	3.312	930.14	112.08	99	

Aug. 2009

Month	Date	Number of Costumer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Costumer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Costumer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
	7-Aug	1132	260	80	153	59%	3,660	3,233	933.80	109.80	97
	8-Aug	1132	285	85	154	54%	3,685	3,255	937.48	110.55	98
	9-Aug	1132	245	90	150	61%	3,590	3,171	941.07	107.70	95
	10-Aug	1132	270	85	146	54%	3,505	3,096	944.58	105.15	93
	11-Aug	1132	260	80	152	59%	3,653	3,227	948.23	109.58	97
	12-Aug	1132	270	85	153	57%	3,670	3,242	951.90	110.10	97
	13-Aug	1132	275	85	151	55%	3,635	3,211	955.53	109.04	96
	14-Aug	1137	275	80	154	56%	3,695	3,250	959.23	110.84	97
	15-Aug	1137	250	80	143	57%	3,430	3,017	962.66	102.90	90
	16-Aug	1137	265	75	144	54%	3,455	3,039	966.11	103.64	91
	17-Aug	1137	250	80	129	52%	3,093	2,720	969.21	92.79	82
	18-Aug	1137	280	60	134	48%	3,222	2,834	972.43	96.66	85
	19-Aug	1137	255	85	151	59%	3,618	3,182	976.05	108.54	95
	20-Aug	1137	265	80	153	58%	3,679	3,236	979.73	110.37	97
	21-Aug	1140	255	75	148	58%	3,550	3,114	983.28	106.50	93
	22-Aug	1140	270	90	148	55%	3,540	3,105	986.82	106.20	93
	23-Aug	1140	270	85	143	53%	3,420	3,000	990.24	102.60	90
	24-Aug	1140	270	80	148	55%	3,540	3,105	993.78	106.20	93
	25-Aug	1140	285	75	151	53%	3,615	3,171	997.39	108.45	95
	26-Aug	1140	275	90	149	54%	3,585	3,145	1,000.98	107.55	94
	27-Aug	1140	265	90	153	58%	3,680	3,228	1,004.66	110.40	97
	28-Aug	1148	260	70	145	56%	3,485	3,036	1,008.14	104.55	91
	29-Aug	1148	275	85	147	54%	3,532	3,077	1,011.67	105.96	92
	30-Aug	1148	255	80	140	55%	3,355	2,922	1,015.03	100.65	88
	31-Aug	1149	265	80	148	56%	3,550	3,090	1,018.58	106.50	93
	1-Sep	1149	260	80	153	59%	3,683	3,205	1,022.26	110.48	96
	2-Sep	1149	270	75	152	56%	3,650	3,177	1,025.91	109.50	95
	3-Sep	1150	270	75	134	50%	3,218	2,798	1,029.13	96.54	84
	4-Sep	1150	260	85	154	59%	3,689	3,208	1,032.82	110.66	96
	5-Sep	1150	270	85	159	59%	3,810	3,313	1,036.63	114.30	99
	6-Sep	1150	265	80	154	58%	3,690	3,209	1,040.32	110.70	96
	7-Sep	1150	275	75	157	57%	3,760	3,269	1,044.08	112.80	98
	8-Sep	1150	275	80	158	58%	3,800	3,304	1,047.88	114.00	99
	9-Sep	1151	275	75	157	57%	3,770	3,275	1,051.65	113.10	98



Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
	10-Sep	1151	285	75	153	54%	3,670	3,188	1,055.32	110.10	96
	11-Sep	1151	270	80	153	57%	3,680	3,197	1,059.00	110.40	96
	12-Sep	1151	275	85	145	53%	3,478	3,022	1,062.47	104.34	91
	13-Sep	1151	280	80	146	52%	3,505	3,045	1,065.98	105.15	91
	14-Sep	1151	260	80	145	56%	3,490	3,032	1,069.47	104.70	91
	15-Sep	1151	265	70	143	54%	3,425	2,975	1,072.89	102.74	89
	16-Sep	1152	250	75	141	56%	3,380	2,934	1,076.27	101.40	88
	17-Sep	1152	260	75	133	51%	3,200	2,778	1,079.47	96.00	83
	18-Sep	1152	220	80	126	57%	3,030	2,630	1,082.50	90.90	79
	19-Sep	1152	245	70	130	53%	3,110	2,700	1,085.61	93.30	81
	20-Sep	1152	230	85	131	57%	3,155	2,739	1,088.77	94.64	82
	21-Sep	1152	240	75	134	56%	3,225	2,799	1,091.99	96.75	84
	22-Sep	1152	250	75	139	56%	3,330	2,891	1,095.32	99.90	87
	23-Sep	1154	260	80	143	55%	3,440	2,981	1,098.76	103.20	89
	24-Sep	1154	280	80	143	51%	3,425	2,968	1,102.19	102.74	89
	25-Sep	1155	265	80	150	57%	3,595	3,113	1,105.78	107.85	93
	26-Sep	1155	260	85	141	54%	3,375	2,922	1,109.16	101.25	88
	27-Sep	1156	275	80	149	54%	3,580	3,097	1,112.74	107.40	93
	28-Sep	1156	285	70	157	55%	3,760	3,252	1,116.50	112.80	98
	29-Sep	1156	270	84	137	51%	3,294	2,849	1,119.79	98.82	85
	30-Sep	1156	255	80	154	60%	3,695	3,196	1,123.49	110.84	96
	1-Oct	1156	265	70	144	54%	3,465	2,997	1,126.95	103.95	90
	2-Oct	1157	270	70	142	53%	3,415	2,952	1,130.37	102.45	89
	3-Oct	1157	250	75	139	55%	3,325	2,874	1,133.69	99.75	86
	4-Oct	1157	265	75	143	54%	3,440	2,973	1,137.13	103.20	89
	5-Oct	1157	260	80	142	55%	3,405	2,943	1,140.54	102.15	88
	6-Oct	1161	255	80	142	56%	3,400	2,928	1,143.94	102.00	88
	7-Oct	1161	260	75	142	55%	3,415	2,941	1,147.35	102.45	88
	8-Oct	1162	275	70	143	52%	3,430	2,952	1,150.78	102.90	89
	9-Oct	1162	280	80	143	51%	3,440	2,960	1,154.22	103.20	89
	10-Oct	1163	265	70	143	54%	3,435	2,954	1,157.66	103.05	89
	11-Oct	1163	280	70	144	51%	3,446	2,963	1,161.10	103.38	89
	12-Oct	1163	280	75	148	53%	3,540	3,044	1,164.64	106.20	91
	13-Oct	1163	285	80	147	51%	3,520	3,027	1,168.16	105.60	91

Oct 2009

Month	Date	Number of Costumer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Costumer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Costumer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
	14-Oct	1164	285	75	148	52%	3,555	3,054	1,171.72	106.65	92
	15-Oct	1164	265	75	149	56%	3,580	3,075	1,175.30	107.40	92
	16-Oct	1164	280	80	154	55%	3,685	3,166	1,178.98	110.55	95
	17-Oct	1164	290	80	156	54%	3,745	3,217	1,182.73	112.35	97
	18-Oct	1165	280	80	154	55%	3,695	3,172	1,186.42	110.84	95
	19-Oct	1165	295	75	157	53%	3,760	3,227	1,190.18	112.80	97
	20-Oct	1165	275	90	156	57%	3,745	3,215	1,193.93	112.35	96
	21-Oct	1165	290	80	159	55%	3,825	3,283	1,197.75	114.75	98
	22-Oct	1165	295	90	156	53%	3,745	3,215	1,201.50	112.35	96
	23-Oct	1165	280	85	156	56%	3,740	3,210	1,205.24	112.20	96
	24-Oct	1165	270	85	149	55%	3,570	3,064	1,208.81	107.10	92
	25-Oct	1165	310	85	144	47%	3,460	2,970	1,212.27	103.80	89
	26-Oct	1165	315	80	114	36%	2,735	2,347	1,215.00	82.04	70
	27-Oct	1165	310	70	102	33%	2,439	2,094	1,217.44	73.17	63
	28-Oct	1165	265	80	147	56%	3,537	3,036	1,220.98	106.11	91
	29-Oct	1166	280	80	145	52%	3,480	2,985	1,224.46	104.40	90
	30-Oct	1166	285	80	148	52%	3,555	3,049	1,228.01	106.65	91
	31-Oct	1166	320	80	152	47%	3,640	3,122	1,231.65	109.20	94
	1-Nov	1166	300	90	160	53%	3,850	3,302	1,235.50	115.50	99
	2-Nov	1166	280	86	150	54%	3,606	3,093	1,239.11	108.18	93
	3-Nov	1166	280	80	150	54%	3,600	3,087	1,242.71	108.00	93
	4-Nov	1167	270	75	140	52%	3,365	2,883	1,246.07	100.94	86
	5-Nov	1167	285	70	149	52%	3,570	3,059	1,249.64	107.10	92
	6-Nov	1167	280	80	154	55%	3,685	3,158	1,253.33	110.55	95
	7-Nov	1167	300	90	158	53%	3,795	3,252	1,257.12	113.85	98
	8-Nov	1170	325	85	162	50%	3,888	3,323	1,261.01	116.64	100
	9-Nov	1171	275	80	152	55%	3,655	3,121	1,264.66	109.65	94
	10-Nov	1171	310	75	155	50%	3,720	3,177	1,268.38	111.60	95
	11-Nov	1171	285	85	160	56%	3,835	3,275	1,272.22	115.05	98
	12-Nov	1171	300	95	165	55%	3,960	3,382	1,276.18	118.80	101
	13-Nov	1173	285	80	156	55%	3,750	3,197	1,279.93	112.50	96
	14-Nov	1173	290	90	154	53%	3,690	3,146	1,283.62	110.70	94
	15-Nov	1173	285	75	149	52%	3,575	3,048	1,287.19	107.24	91
	16-Nov	1173	300	80	159	53%	3,820	3,256	1,291.01	114.60	98

Nov. 2009

Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
	17-Nov	1173	305	80	160	53%	3,850	3,282	1,294.86	115.50	98
	18-Nov	1173	315	80	160	51%	3,840	3,274	1,298.70	115.20	98
	19-Nov	1175	290	80	158	54%	3,780	3,217	1,302.48	113.40	97
	20-Nov	1175	290	70	154	53%	3,690	3,140	1,306.17	110.70	94
	21-Nov	1178	295	80	149	51%	3,585	3,043	1,309.76	107.55	91
	22-Nov	1178	305	65	155	51%	3,710	3,149	1,313.47	111.30	94
	23-Nov	1178	295	70	153	52%	3,670	3,115	1,317.14	110.10	93
	24-Nov	1178	295	70	155	53%	3,730	3,166	1,320.87	111.90	95
	25-Nov	1178	305	85	160	52%	3,835	3,255	1,324.70	115.05	98
	26-Nov	1178	300	80	157	52%	3,760	3,192	1,328.46	112.80	96
	27-Nov	1180	300	75	160	53%	3,848	3,261	1,332.31	115.44	98
	28-Nov	1180	310	75	155	50%	3,725	3,157	1,336.04	111.74	95
	29-Nov	1180	310	70	152	49%	3,644	3,088	1,339.68	109.32	93
	30-Nov	1180	320	66	160	50%	3,837	3,252	1,343.52	115.11	98
	1-Dec	1180	336	80	171	51%	4,109	3,482	1,347.63	123.26	104
	2-Dec	1181	344	85	170	49%	4,085	3,459	1,351.71	122.54	104
	3-Dec	1181	320	80	176	55%	4,213	3,567	1,355.92	126.39	107
	4-Dec	1181	330	85	168	51%	4,041	3,422	1,359.96	121.23	103
	5-Dec	1181	325	85	164	50%	3,930	3,328	1,363.89	117.90	100
	6-Dec	1182	319	85	164	51%	3,941	3,334	1,367.84	118.22	100
	7-Dec	1182	299	90	169	56%	4,050	3,426	1,371.89	121.50	103
	8-Dec	1182	357	80	162	45%	3,884	3,286	1,375.77	116.52	99
	9-Dec	1182	340	90	163	48%	3,922	3,318	1,379.69	117.66	100
	10-Dec	1182	318	85	163	51%	3,902	3,301	1,383.59	117.06	99
	11-Dec	1182	304	85	166	55%	3,977	3,364	1,387.57	119.30	101
	12-Dec	1182	340	85	167	49%	4,019	3,400	1,391.59	120.56	102
	13-Dec	1185	313	85	168	54%	4,026	3,397	1,395.61	120.78	102
	14-Dec	1185	333	85	173	52%	4,149	3,501	1,399.76	124.47	105
	15-Dec	1185	327	85	177	54%	4,247	3,584	1,404.01	127.40	108
	16-Dec	1185	310	90	177	57%	4,243	3,581	1,408.25	127.29	107
	17-Dec	1185	308	90	173	56%	4,148	3,500	1,412.40	124.44	105
	18-Dec	1187	308	90	172	56%	4,116	3,468	1,416.52	123.48	104
	19-Dec	1187	327	95	170	52%	4,068	3,427	1,420.59	122.04	103
	20-Dec	1187	288	90	168	58%	4,033	3,398	1,424.62	120.99	102

Dec. 2009

Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
	21-Dec	1188	327	85	173	53%	4,146	3,490	1,428.76	124.38	105
	22-Dec	1189	320	90	173	54%	4,141	3,483	1,432.91	124.23	104
	23-Dec	1189	312	80	171	55%	4,103	3,451	1,437.01	123.08	104
	24-Dec	1190	303	95	172	57%	4,128	3,469	1,441.14	123.84	104
	25-Dec	1190	303	90	173	57%	4,163	3,498	1,445.30	124.88	105
	26-Dec	1190	313	85	170	54%	4,090	3,437	1,449.39	122.70	103
	27-Dec	1190	344	90	176	51%	4,231	3,555	1,453.62	126.93	107
	28-Dec	1191	326	85	178	55%	4,271	3,586	1,457.89	128.12	108
	29-Dec	1191	338	80	175	52%	4,189	3,517	1,462.08	125.67	106
	30-Dec	1191	330	80	171	52%	4,096	3,439	1,466.18	122.88	103
	31-Dec	1191	355	85	186	52%	4,469	3,752	1,470.64	134.06	113
	1-Jan	1191	342	110	199	58%	4,785	4,018	1,475.43	143.55	121
	2-Jan	1194	390	100	202	52%	4,856	4,067	1,480.29	145.68	122
	3-Jan	1194	324	110	193	60%	4,642	3,888	1,484.93	139.26	117
	4-Jan	1194	319	100	181	57%	4,336	3,631	1,489.26	130.08	109
	5-Jan	1194	329	100	183	56%	4,399	3,684	1,493.66	131.97	111
	6-Jan	1194	320	90	178	56%	4,266	3,573	1,497.93	127.98	107
	7-Jan	1194	325	90	188	58%	4,501	3,770	1,502.43	135.03	113
	8-Jan	1196	302	85	185	61%	4,449	3,720	1,506.88	133.47	112
	9-Jan	1197	296	90	185	63%	4,442	3,711	1,511.32	133.26	111
	10-Jan	1997	302	110	184	61%	4,415	2,211	1,515.73	132.44	66
	11-Jan	1198	312	100	182	58%	4,366	3,644	1,520.10	130.98	109
	12-Jan	1198	316	95	187	59%	4,478	3,738	1,524.58	134.34	112
	13-Jan	1200	370	90	194	52%	4,648	3,873	1,529.23	139.44	116
	14-Jan	1200	327	100	193	59%	4,634	3,862	1,533.86	139.02	116
	15-Jan	1200	353	90	193	55%	4,622	3,852	1,538.48	138.66	116
	16-Jan	1200	350	100	191	54%	4,577	3,814	1,543.06	137.30	114
	17-Jan	1200	365	100	197	54%	4,727	3,939	1,547.79	141.80	118
	18-Jan	1200	320	105	192	60%	4,608	3,840	1,552.39	138.24	115
	19-Jan	1201	343	90	196	57%	4,710	3,922	1,557.10	141.30	118
	20-Jan	1201	319	95	186	58%	4,472	3,723	1,561.58	134.16	112
	21-Jan	1201	310	85	187	60%	4,490	3,738	1,566.07	134.70	112
	22-Jan	1203	303	90	182	60%	4,368	3,631	1,570.43	131.04	109
	23-Jan	1203	339	95	185	55%	4,438	3,689	1,574.87	133.13	111

Jan. 2010

Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
	24-Jan	1203	331	100	194	59%	4,656	3,870	1,579.53	139.68	116
	25-Jan	1203	337	95	182	54%	4,367	3,630	1,583.89	131.00	109
	26-Jan	1204	347	85	188	54%	4,510	3,746	1,588.40	135.30	112
	27-Jan	1204	325	100	191	59%	4,594	3,815	1,593.00	137.82	114
	28-Jan	1204	322	90	188	58%	4,503	3,740	1,597.50	135.09	112
	29-Jan	1204	316	105	192	61%	4,612	3,830	1,602.11	138.36	115
	30-Jan	1204	337	100	196	58%	4,697	3,901	1,606.81	140.90	117
	31-Jan	1204	330	100	192	58%	4,617	3,835	1,611.43	138.51	115
	1-Feb	1204	320	105	184	58%	4,426	3,676	1,615.85	132.78	110
	2-Feb	1204	321	100	190	59%	4,564	3,791	1,620.42	136.92	114
	3-Feb	1204	324	100	186	57%	4,464	3,708	1,624.88	133.92	111
	4-Feb	1205	350	110	195	56%	4,682	3,885	1,629.56	140.46	117
	5-Feb	1205	319	100	189	59%	4,540	3,768	1,634.10	136.20	113
	6-Feb	1205	330	95	195	59%	4,678	3,882	1,638.78	140.34	116
	7-Feb	1205	335	100	193	58%	4,638	3,849	1,643.42	139.14	115
	8-Feb	1205	346	95	194	56%	4,647	3,856	1,648.06	139.41	116
	9-Feb	1206	325	105	194	60%	4,651	3,857	1,652.72	139.53	116
	10-Feb	1207	330	110	194	59%	4,658	3,859	1,657.37	139.74	116
	11-Feb	1207	329	110	192	58%	4,607	3,817	1,661.98	138.20	115
	12-Feb	1207	342	105	192	56%	4,616	3,824	1,666.60	138.48	115
	13-Feb	1207	320	115	192	60%	4,612	3,821	1,671.21	138.36	115
	14-Feb	1207	402	105	202	50%	4,842	4,012	1,676.05	145.26	120
	15-Feb	1207	376	145	219	58%	5,258	4,356	1,681.31	157.74	131
	16-Feb	1207	355	140	217	61%	5,197	4,306	1,686.50	155.91	129
	17-Feb	1207	355	126	212	60%	5,087	4,214	1,691.59	152.60	126
	18-Feb	1208	336	120	203	60%	4,860	4,023	1,696.45	145.80	121
	19-Feb	1209	327	110	199	61%	4,786	3,959	1,701.24	143.58	119
	20-Feb	1209	326	100	201	62%	4,831	3,996	1,706.07	144.93	120
	21-Feb	1209	325	128	188	58%	4,505	3,726	1,710.57	135.14	112
	22-Feb	1209	336	120	184	55%	4,425	3,660	1,715.00	132.75	110
	23-Feb	1209	322	112	193	60%	4,637	3,835	1,719.63	139.10	115
	24-Feb	1209	334	100	194	58%	4,645	3,842	1,724.28	139.35	115
	25-Feb	1209	315	110	200	64%	4,805	3,974	1,729.08	144.14	119
	26-Feb	1209	321	108	197	61%	4,733	3,915	1,733.82	141.98	117

Feb. 2010

Month	Date	Number of Customer	Demand			Daily Load Factor %	Energy Daily Consumption (kwh)	per Customer (kwh)	Cumulative Energy (MWh)	Assumed Monthly Energy (MWh)	per Customer (kwh/Month)
			Max (kw)	Min (kw)	Ave (kw)						
Mar. 2010	27-Feb	1209	332	105	190	57%	4,570	3,780	1,738.39	137.10	113
	28-Feb	1209	319	123	193	61%	4,632	3,831	1,743.02	138.96	115
	1-Mar						-				
	2-Mar						-				
	3-Mar						-				
	4-Mar						-				
	5-Mar						-				
	6-Mar						-				
	7-Mar						-				
	8-Mar						-				
	9-Mar						-				
	10-Mar						-				
	11-Mar						-				
	12-Mar						-				
	13-Mar						-				
	14-Mar						-				
	15-Mar						-				
	16-Mar						-				
	17-Mar						-				
	18-Mar						-				
19-Mar						-					
20-Mar						-					

Daily Operatorin Record(Diesel Power) Name of Diesel DATE: 31 / 03 / 2009 Weather:

Time	Generator(v)		Hz	Speed	KW	Cosφ	GWH	Generator(A)			Bus (V)	Bus (A)	Engine Temp(oc)			Gen.Temp(OC)			Room	Vo meter
	RS	ST						TR	R	S			T	A	L.O	J.W	Ex	38G		
1:00	401	401	401	50	993	30	0.97	13599.2	55	56	56	400	400	235.2	45.6	46.5	46.0	46.3	87	4198.1
2:00	400	400	400	50	992	33	0.98	13855.9	48	48	48	400	400	224.9	45.1	45.6	45.6	45.9	27	4124.1
3:00	400	400	400	50	992	39	0.91	13899.1	45	47	46	400	400	220.0	44.7	45.5	45.0	45.3	28	4125.8
4:00	401	401	401	50	995	36	0.91	13908.4	54	55	54	400	400	227.9	44.4	45.1	44.6	44.9	28	4187.3
5:00	401	401	401	50	995	42	0.90	13906.6	67	67	67	400	400	241.8	44.3	45.0	44.5	44.8	27	4189.2
6:00	401	401	401	50	994	97	0.99	13923.7	149	150	151	400	400	291.6	44.0	45.6	45.1	45.3	28	4131.7
7:00	401	401	401	50	996	85	0.99	13925.0	146	144	150	400	400	287.8	44.6	46.7	46.2	46.8	28	4134.8
8:00	401	401	401	50	995	80	0.91	13931.4	125	128	128	400	400	280.5	44.5	46.9	46.9	47.2	26	4152.5
9:00	401	401	401	50	994	90	0.91	13940.6	138	138	138	400	400	288.8	46.5	48.8	48.8	48.6	27	4110.2
10:00	401	401	401	50	992	100	0.91	13940.7	162	162	160	400	400	311.0	47.4	50.1	49.7	49.8	28	4143.4
11:00	401	401	401	50	993	90	0.91	13950.8	148	149	149	400	400	314.1	47.8	51.3	50.9	51.1	29	4146.7
12:00	401	401	401	50	992	77	0.91	13955.8	118	110	118	400	400	295.1	48.5	51.6	51.4	51.4	29	4149.6
13:00	401	401	401	50	992	65	0.91	13975.2	107	109	114	400	400	280.9	49.9	51.9	51.4	51.7	29	4187.9
14:00	401	401	401	50	992	83	0.91	13982.8	122	125	128	400	400	291.9	49.6	52.5	52.0	52.2	29	4154.6
15:00	401	401	401	50	991	87	0.91	13991.9	138	138	138	400	400	301.8	49.9	53.3	52.8	53.1	30	4157.5
16:00	401	401	401	50	990	91	0.91	13999.4	140	139	139	400	400	303.2	49.9	53.2	52.8	53.0	30	4160.0
17:00	401	401	401	50	992	110	0.91	14000.0	174	178	172	400	400	315.2	49.1	52.6	52.2	52.4	29	4162.1
18:00	401	401	401	50	993	155	0.91	14000.0	230	231	231	400	400	337.8	48.2	52.8	52.5	52.6	28	4166.9
19:00	401	401	401	50	994	200	0.91	14043.1	303	303	303	400	400	357.0	47.3	55.6	55.4	55.5	28	4172.8
20:00	401	401	401	50	994	194	0.91	14050.3	296	296	296	400	400	354.5	47.0	55.1	54.8	55.0	28	4177.2
21:00	401	401	401	50	994	140	0.91	14078.9	208	208	208	400	400	336.5	46.9	52.2	51.9	52.0	28	4182.5
22:00	401	401	401	50	995	87	0.91	14088.8	137	136	136	400	400	301.0	46.3	49.2	48.8	49.0	28	4185.5
23:00	401	401	401	50	994	62	0.94	14096.9	96	95	95	400	400	283.1	45.7	47.1	46.9	47.1	28	4188.1
24:00	401	401	401	50	993	48	0.97	14101.1	68	68	68	400	400	249.9	45.3	46.4	46.0	46.2	28	4190.2

Approved by Deputy director  
Technical ant Operation Div.

Confirmed by Chief  
T & O Division

Name of Operators

Total Running Hours: 146.8

Signature: \_\_\_\_\_

(1)

(2)

(3)

Note: 1)

Note: 1)

Note: 1)







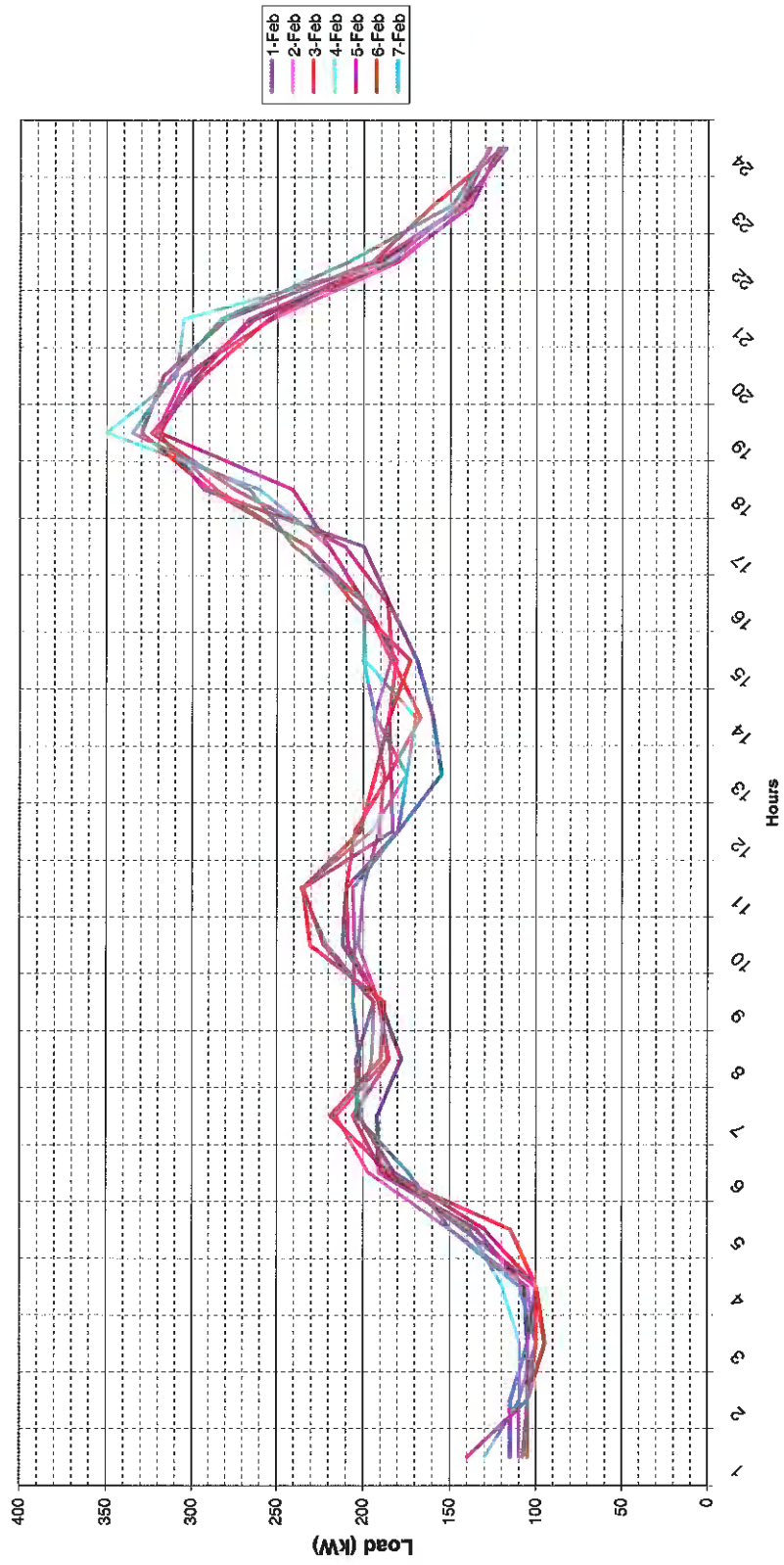
Appendix 4-3

Daily Load Curve, Report February, 2010

	1-Feb		2-Feb		3-Feb		4-Feb		5-Feb		6-Feb		7-Feb	
	Hydro	DG	Hydro	DG	Hydro	DG	Hydro	DG	Hydro	DG	Hydro	DG	Hydro	DG
1:00	115	115	110	105	105	130	140	140	105	140	105	140	105	108
2:00	115	115	110	105	105	110	105	110	105	105	105	105	105	105
3:00	105	105	100	100	100	110	105	110	105	105	95	105	100	100
4:00	50	57	105	100	100	120	100	100	100	100	100	100	100	110
5:00	50	85	135	150	115	94	139	130	142	142	142	142	150	150
6:00	50	141	191	50	139	189	45	139	184	40	145	185	40	134
7:00	50	142	192	50	166	216	45	157	202	50	179	219	40	164
8:00	40	138	178	50	136	186	45	150	195	50	150	190	40	182
9:00	50	140	190	40	151	191	45	149	194	40	138	188	40	166
10:00	50	162	212	40	163	203	45	176	221	40	181	231	40	165
11:00	50	160	210	40	160	210	45	191	236	40	195	235	40	166
12:00	100	80	180	40	151	191	45	150	195	40	162	202	40	140
13:00	155	98	188	40	145	185	175	85	99	85	103	193	40	135
14:00	160	160	194	90	77	167	170	85	100	85	95	185	90	103
15:00	40	129	169	90	94	184	50	149	199	95	86	173	90	110
16:00	50	135	185	90	110	200	50	150	200	45	154	199	40	159
17:00	50	150	200	40	193	233	40	171	220	50	170	220	40	200
18:00	100	193	293	40	246	296	50	210	260	50	191	241	40	176
19:00	100	220	320	90	231	321	120	230	350	100	219	319	90	225
20:00	100	197	297	90	216	306	100	209	309	90	212	302	90	202
21:00	90	176	266	40	213	253	90	215	305	40	223	283	40	183
22:00	40	150	190	40	140	180	40	145	185	40	142	182	40	169
23:00	40	103	143	40	100	140	40	106	146	50	88	138	40	109
24:00	40	78	118	40	88	128	40	87	127	40	82	122	40	87
Maximum	160	220	320	150	246	321	175	230	350	140	223	319	142	225
Minimum	40	57	105	40	94	100	40	87	110	40	82	100	40	87
Average	75	139	184	73	157	190	75	160	195	69	152	189	69	156
Energy	1790	2636	4428	1745	2819	4584	1805	2877	4682	1650	2850	4540	1657	2955
Daily Load Factor	40%	60%	100%	38%	62%	100%	39%	61%	100%	36%	64%	100%	35%	64%
			58%		59%		57%		56%		59%		59%	
User No			1204		1204		1204		1205		1205		1205	
Monthly Assumed /C			110		111		113		116		116		116	
Monthly Assumed Total			79,403		80,085		81,381		83,926		83,926		83,926	

1st-week

Daily Load Curve,  
February 2010

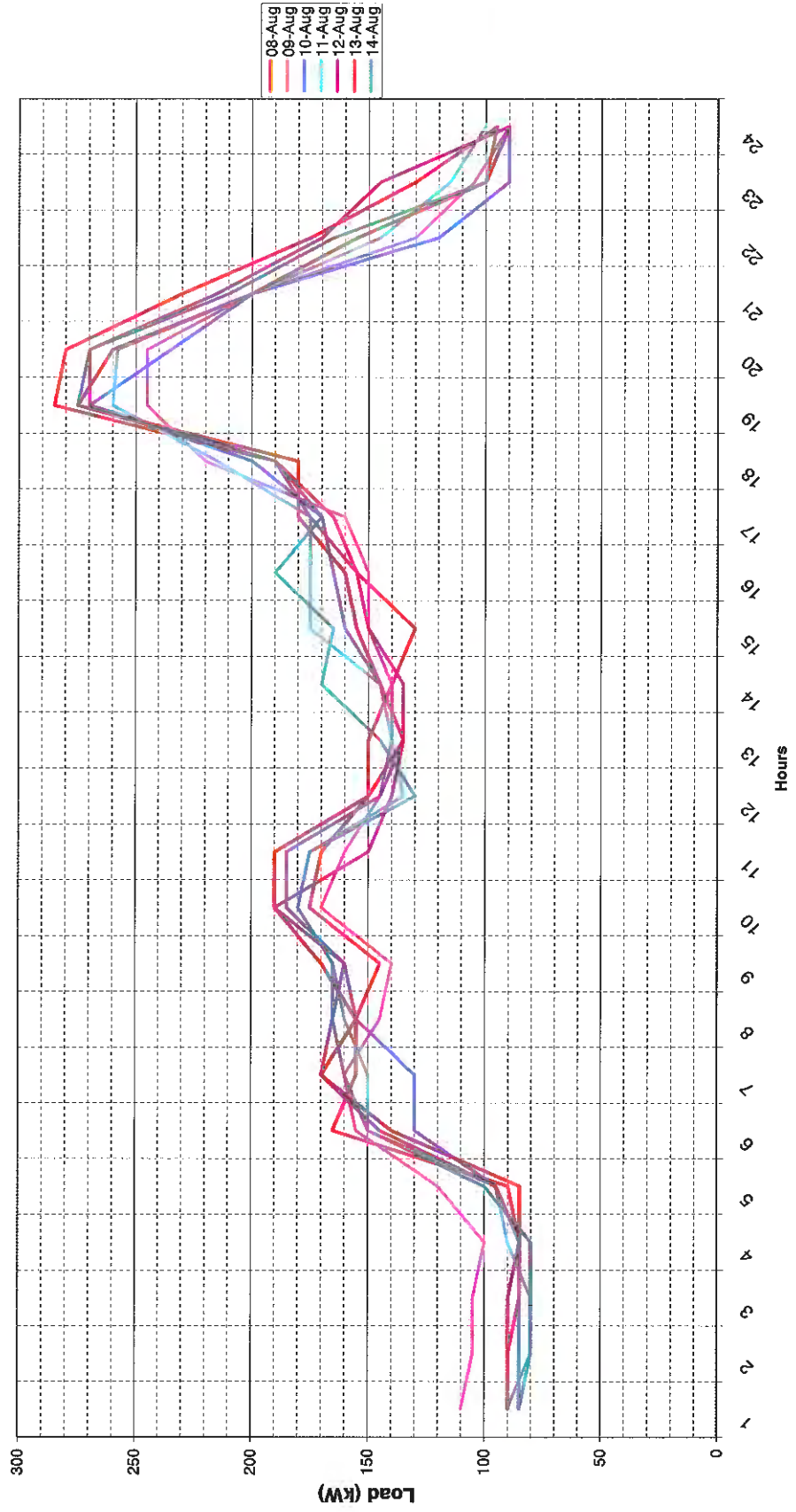


Daily Load Curve, Report August, 2009

	8-Aug			9-Aug			10-Aug			11-Aug			12-Aug			13-Aug			14-Aug		
	Hydro	DG	Total	Hydro	DG	Total	Hydro	DG	Total	Hydro	DG	Total	Hydro	DG	Total	Hydro	DG	Total	Hydro	DG	Total
1:00	90	0	90	110	0	110	85	0	85	90	0	90	90	0	90	90	0	90	85	0	85
2:00	90	0	90	105	0	105	85	0	85	80	0	80	90	0	90	90	0	90	80	0	80
3:00	90	0	90	105	0	105	85	0	85	80	0	80	90	0	90	85	0	85	80	0	80
4:00	85	0	85	100	0	100	85	0	85	90	0	90	85	0	85	85	0	85	80	0	80
5:00	90	0	90	120	0	120	95	0	95	95	0	95	95	0	95	95	0	95	100	0	100
6:00	165	0	165	155	0	155	130	0	130	150	0	150	145	0	145	140	0	140	150	0	150
7:00	155	0	155	160	0	160	130	0	130	150	0	150	170	0	170	170	0	170	160	0	160
8:00	155	0	155	145	0	145	155	0	155	160	0	160	165	0	165	155	0	155	165	0	165
9:00	145	0	145	140	0	140	160	0	160	165	0	165	160	0	160	170	0	170	165	0	165
10:00	175	0	175	170	0	170	185	0	185	180	0	180	190	0	190	190	0	190	180	0	180
11:00	170	0	170	160	0	160	185	0	185	175	0	175	150	0	150	190	0	190	175	0	175
12:00	150	0	150	145	0	145	145	0	145	135	0	135	140	0	140	150	0	150	130	0	130
13:00	150	0	150	140	0	140	135	0	135	140	0	140	135	0	135	135	0	135	145	0	145
14:00	140	0	140	140	0	140	145	0	145	145	0	145	135	0	135	145	0	145	170	0	170
15:00	130	0	130	150	0	150	160	0	160	175	0	175	150	0	150	155	0	155	165	0	165
16:00	155	0	155	150	0	150	165	0	165	175	0	175	155	0	155	160	0	160	190	0	190
17:00	165	0	165	160	0	160	170	0	170	175	0	175	175	0	175	180	0	180	170	0	170
18:00	190	0	190	220	0	220	200	0	200	215	0	215	190	0	190	180	0	180	190	0	190
19:00	285	0	285	245	0	245	270	0	270	260	0	260	270	0	270	275	0	275	275	0	275
20:00	280	0	280	245	0	245	235	0	235	258	0	258	270	0	270	260	0	260	270	0	270
21:00	230	0	230	200	0	200	200	0	200	200	0	200	215	0	215	200	0	200	210	0	210
22:00	175	0	175	130	0	130	120	0	120	145	0	145	170	0	170	155	0	155	165	0	165
23:00	130	0	130	105	0	105	90	0	90	115	0	115	145	0	145	100	0	100	100	0	100
24:00	95	0	95	90	0	90	90	0	90	100	0	100	90	0	90	90	0	90	95	0	95
Maximum	285	0	285	245	0	245	270	0	270	260	0	260	270	0	270	275	0	275	275	0	275
Minimum	85	0	85	90	0	90	85	0	85	80	0	80	85	0	85	85	0	85	80	0	80
Average	154	0	154	150	0	150	146	0	146	152	0	152	153	0	153	151	0	151	154	0	154
Energy	3685	0	3685	3590	0	3590	3505	0	3505	3653	0	3653	3670	0	3670	3635	0	3635	3695	0	3695
Daily Load Factor	100%	0%	100%	100%	0%	100%	100%	0%	100%	100%	0%	100%	100%	0%	100%	100%	0%	100%	100%	0%	100%
User No			1130			1130			1131			1131			1132			1133			1133
Monthly Assumed /C			98			95			93			97			96			96			98
Monthly Assumed Total			70,439			68,623			66,939			69,766			70,028			69,299			70,443

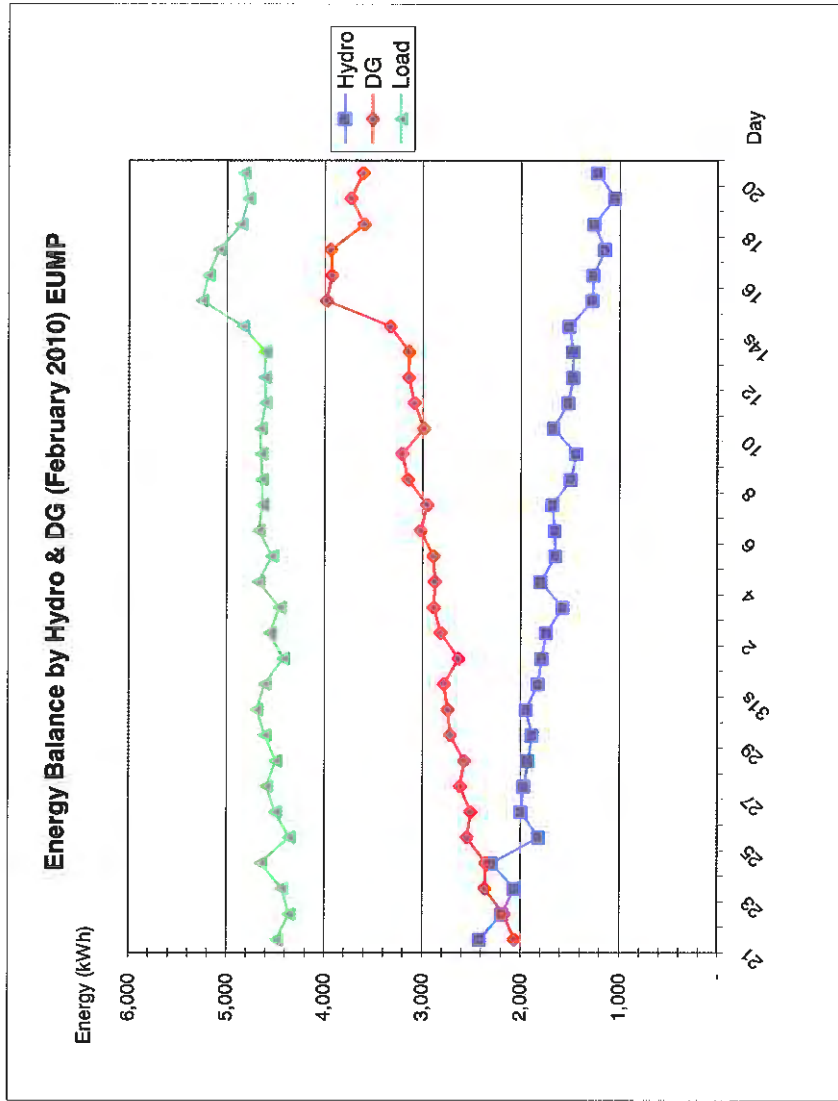
2nd-week

### Daily Load Curve, August'09



Energy Consumption for Mondul Kiri Power System February 2010

Day	kWh		kWh	kWh	
	Hydro	Load		DG	Load
21	2,420	4,490	2,070	4,368	
22	2,195	4,368	2,173	4,438	
23	2,070	4,438	2,368	4,656	
24s	2,300	4,656	2,356	4,367	
25	1,820	4,367	2,547	4,510	
26	2,000	4,510	2,510	4,594	
27	1,975	4,594	2,619	4,503	
28	1,925	4,503	2,578	4,612	
29	1,890	4,612	2,722	4,697	
30	1,950	4,697	2,747	4,617	
31s	1,830	4,617	2,787	4,426	
1	1,790	4,426	2,636	4,564	
2	1,745	4,564	2,819	4,464	
3	1,575	4,464	2,889	4,682	
4	1,805	4,682	2,877	4,540	
5	1,650	4,540	2,890	4,678	
6	1,657	4,678	3,021	4,638	
7s	1,683	4,638	2,955	4,647	
8	1,495	4,647	3,152	4,651	
9	1,440	4,651	3,211	4,658	
10	1,670	4,658	2,988	4,607	
11	1,520	4,607	3,087	4,616	
12	1,470	4,616	3,146	4,612	
13	1,470	4,612	3,142	4,842	
14s	1,510	4,842	3,332	5,258	
15	1,275	5,258	3,983	5,197	
16	1,265	5,197	3,932	5,087	
17	1,150	5,087	3,937	4,860	
18	1,260	4,860	3,600	4,786	
19	1,050	4,786	3,736	4,831	
20	1,220	4,831	3,611	4,831	
Total	52,075	144,496	92,421	144,496	
Average	1,680	4,661	2,981	4,661	



Energy Consumption for Mondul Kiri Power System October, 2009

	kWh		kWh Load
	Hydro	DG	
21	3,225	0	3,225
22	3,330	0	3,330
23	3,440	0	3,440
24	3,425	0	3,425
25	3,595	0	3,595
26	3,375	0	3,375
27s	3,580	0	3,580
28	3,760	0	3,760
29	3,294	0	3,294
30	3,695	0	3,695
1	3,465	0	3,465
2	3,415	0	3,415
3	3,325	0	3,325
4s	3,440	0	3,440
5	3,465	0	3,465
6	3,400	0	3,400
7	3,415	0	3,415
8	3,430	0	3,430
9	3,440	0	3,440
10	3,435	0	3,435
11s	3,455	0	3,455
12	3,540	0	3,540
13	3,520	0	3,520
14	3,555	0	3,555
15	3,580	0	3,580
16	3,685	0	3,685
17	3,745	0	3,745
18s	3,695	0	3,695
19	3,760	0	3,760
20	3,745	0	3,745
Total	105,229	0	105,229
Average	3,508	0	3,508

