(2) Supervisory in Bhutan

The consulting firm will send to Bhutan its personnel at critical points such as a pre-construction meeting, delivery to the sites of materials and equipment, check of installation/erection of equipment, field testing and tests on completion, and will guide and supervise the contractor thereby completing the required work and obligations within the period set forth in the Exchange of Notes.

5-4 Procurement Plan

The sources of procuring materials and equipment for the Project have been determined in overall consideration of prices and quantities of Indian-made products and various conceivable problems which might be encountered during construction, based upon the results of market surveys in Bhutan.

The sources of such procurement are as follows in principle.

(1) Bhutanese products, if usable and available, will be utilized to the all possible extent.

(2) Indian-made steel materials and miscellaneous materials easily obtained in Bhutan will be utilized.

(3) Major materials, equipment and supplies other than the materials mentioned (1) and (2) will be imported from Japan.

Details of the sources of procurement of materials, equipment and supplies are as given in Table 5-1.

Table 5-1 Sources of Procurement of Materials, Equipment and Supplies

Name of Materials, Equipment, etc.	Source of Procurement			Remarks
	Bhutan	India	Japan	
Equipment of Construction				
Cement	O			
Steel pipe with small aperture		O		
Shape steel		O		
Nail		O		
Corrugated Iron Plate		O		
Galvanized Wire Mesh		O		
Materials for House	O			
Wooden Cover	O			
Materials for Form	O			
Penstock			O	
Gate			O	
Screen			O	
Generating Equipment				
Inlet Valve			O	
Turbine			O	
Generator			O	
Control Board			O	
Cable			O	
Materials for Transmission Distribution Lines				
Tubular Steel Pole			O	
Line Conductor			O	
Insulator and Fittings for Stringing			O	
Log for Kicking Block	O			
Pole Transformer			O	
Switching Gear			O	
Lighting Apparatus			O	B.S. standardized goods
Receptacle (plug socket)			O	- do -

5-5 Implementation Plan

5-5-1 Implementation method

The construction works for this Project are to be done on the full responsibility of a contractor who is a Japanese juridical person, subject to the terms and conditions of the contract between the Government of Bhutan and the former.

Among the steps to follow are included tender, evaluation of tender proposals and selection of a contractor. The contract by and between the Department of Power and the Japanese contractor will come into force and effect upon verification by the Government of Japan thereof.

5-5-2 Outline of construction works

(1) Preparatory works

As datum points are to be placed in the neighbourhood of the respective structures, reference points surveyings from the said datum points will be performed. Upon placement of these reference points, the construction works will be commenced.

Such surveys by means of reference points should be performed as quickly as possible because of the tight schedule for completion of the required work. As for the possible transmission line routes, detailed ground surveys should be performed prior to the commencement of the construction works in order to determine pole setting locations. After the pole setting locations are identified, the construction works will commence. Therefore, it is essential that such ground surveys be carried out as soon as possible after the verification by the Government of Japan of a contract concluded by and between the Government of Bhutan and a Japanese contractor.

(2) Construction works of power plant

It is essential to commence the construction work in accordance with a more precise schedule for performing required work prepared in due consideration of the time needed for delivery of necessa materials and equipment to the sites which are scattered

throughout the country. In working out the construction schedule, meteorological conditions should be fully taken into account. Careful attention should be given to the traffic blockade especially during the rainy season (June through September) and any other factors which might affect the construction of the Project.

It is essential that civil works be undertaken during the dry season since river construction works must be done. Accordingly, construction works will be concentrated in a certain period of time, and complete preparations and arrangements should be done in advance.

5-6 Implementation Schedule

A series of work for the Project implemetation is to be done according to the terms and conditions of Japan's Grant Aid System upon signing of E/N to be concluded between both Governments. Thereafter the Department of Power will conclude a consultancy services contract with a Japanese consulting firm in connection with the procurement of materials and equipment and the construction of the Project and relevant work.

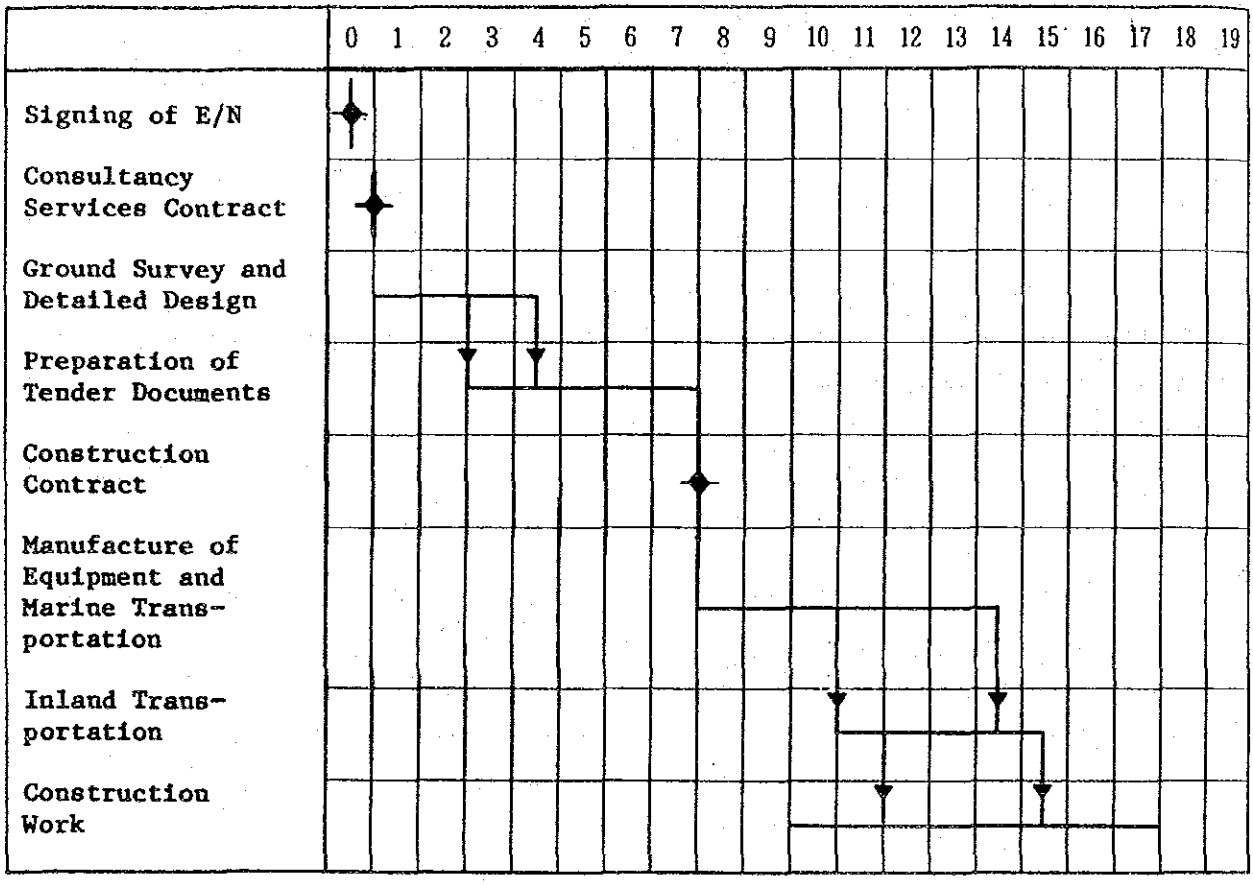
The said consulting will undertake detailed design after the conclusion of the contract and will proceed with the preparation of tender documents in draft form. Tenders are to be invited with the approval by the Governments of Japan and Bhutan thereof. The consulting firm will attend the conclusion of a contract between the Government of Bhutan and a Japanese successful tenderer.

The period for selection of a Japanese contractor will be approximately seven months when counted from the conclusion of E/N. There will be about another six and a half months for manufacture of turbines and generators as well as procurement, packing and marine transport of such materials and equipment. Furthermore, around one month will be needed for inland transportation of those materials and equipment.

Accordingly, the period of time which will be required prior to the commencement of technical guidance and construction works is estimated to be nine months. The period of construction works is estimated at eight months at the maximum.

The implementation schedule is as shown in Fig. 5-1.

Fig. 5-1 Implementation Schedule



CHAPTER 6 MAINTENANCE AND MANAGEMENT PLAN

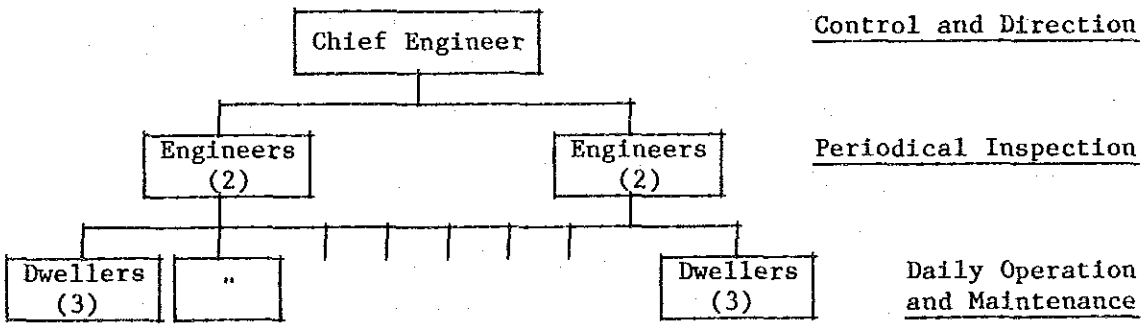
CHAPTER 6 MAINTENANCE AND MANAGEMENT PLAN

6-1 Maintenance and Management

6-1-1 Maintenance and management system

The Government of Bhutan (the Department of Power) intends to supply electricity from the respective power plants after the trial operation of the new facilities has been completed (upon completion of the Project). For this purpose, (1) local inhabitants in the supply areas of the new power plants will be engaged in the daily inspection and maintenance of the new power plants. (2) Technical personnel from the Department of Power will patrol each power plant periodically for technical inspection and repair thereof.

The daily operation and maintenance of each power plant is to be made by three (3) of these dwellers whereas the periodical visit thereto for inspection will be conducted by two (2) groups organized by the Department of Power and each group is composed of two (2) persons. A Chief Engineer to control the groups will be appointed and posted at the headquarters of the Department of Power. The organization is as follows.



Technical guidance in the operation and maintenance of the power plants will be rendered to personnel to be engaged in the operation and maintenance work under the framework of Japanese Grant Aid during the construction and trial operation of the new power plants.

Items of the said technical guidance would be as follows:

(1) Daily operation and maintenance manner

(2) Manner of response to and coping with emergencies including occasion of trouble(s) and/or failure(s) and manner of restore power plants and associated facilities to normal condition

(3) Maintenance manner of equipment (including treatment of operation records, etc.)

(4) Procedures for maintaining safety control

6-2 Operation and Maintenance Cost

The annual maintenance cost has been estimated on the following conditions because actual costs of maintenance of equipment of a similar nature in Bhutan were not available.

(1) Repair cost

50 percent extra to the cost adopted for the calculation criteria worked out by Japanese public utilities (for a power plant of 2,000 kW class) was employed for estimation of the repair cost of the power plants.

(2) Miscellaneous cost

This cost comprising the cost of office supplies, transportation and communication expenses and travelling expense will be higher than the cost stated in the above-mentioned criteria and is estimated at Nu 120 per kW. The reason is that technical personnel from the Department of Power are expected to patrol the power plants periodically for technical inspection and repair thereof and they will have considerably wider areas of their assignment, compared with the sphere of work done by operation and main-

tenance personnel, which provides a basis for calculation of the operation and maintenance costs of power plants in Japan.

(3) Personnel cost

Local people living at the sites will be engaged in the daily inspection of the power plants. Three (3) persons are to be in charge of one (1) power plant. Periodical inspection of the power plants will be made by technical personnel from the Department of Power. They will be composed of two (2) groups (each group of two (2) persons). In addition to these technical personnel, the cost of the administrative staff (Manager and his assistants) of the Department of Power has been calculated.

(4) Lubricant cost

The lubricant cost has been calculated in a percentage to the repair cost with reference to the actual records of a similar nature in Japan.

The results of the above-mentioned calculations are as shown in Table 6-1. The annual operation and maintenance cost amounts to Nu. 408,400. Salable energy will be Nu. 0.48/kWh. If the average energy sales rate is applied, it is expected that the annual energy sales revenue will amount to Nu. 553,000. Accordingly, the operation and maintenance cost of the new power plants will account for only 68% of the sales price of energy/kWh. The above-mentioned operation and maintenance cost can be easily paid without any difficulty.

The annual energy generation after completion of the ten (10) power plants is estimated to be as follows:

Annual Energy Generation (kWH)
= Installed capacity of P.S. (kW) x 365 (days) x 24 (hours) x plant factor (1 - consumption at P.S.)
= 380 (kW) x 365 x 24 x 0.25 x (1 - 0.05)
= 790,590
= 790,000 (kWH)

Table 6-1 Calculation of Annual O/M Expenses

Annual Expenses	Amount (in Nu)	Remarks
Repair Cost	110,700	380 kW x 1.08 ≒ 410 kW 410 kW x 270 Nu = 110,700 Nu which is 3,618 times/kW in case of a plant with an installed capacity of 2,000 kW or less in Japan. (3,168 20 = 181 Nu) But, increased by 50%, considering that the power plant is of small scale. 181 Nu x 1.5 = 271.5 270 Nu/kW
Miscellaneous Cost	49,200	Yen 1,200/kW for costs of office supplies and stationary, communication and transportation and travelling expenses (60 Nu/kW) But if increased by 100% in view of the distance to the site, 120 Nu/kW 410 kW x 120 Nu/kW = 49,200 Nu will be obtained.
Personnel Cost	220,800	1) Daily inspection (inhabitants) 3 persons/site x 10 sites x 12 months = 360 man months @300 Nu x 120% = 360 Nu 360 man months x 360 = 129k600 Nu 2) Periodical inspection (engineers) by 2 groups composed of 2 technical persons each 2 persons x 2 x 12 months = 48 persons-months @1,000 Nu + 130% local salary = 1,300 Nu/month 48 persons-months x 1,300 Nu/month = 62,400 Nu 3) Other staff-members of Dept. of Power (1) Manager 1 man x 1,300 Nu/month x 12 months = 15,600 Nu (2) Assistants to Manager (typist, accountant, etc.) 2 persons x 550 Nu/month x 12 months = 13,200 Nu Sub-total: 18,800 Nu
Lubricant Cost	27,700	Estimated at 25% of the maintenance cost.
Total	408,400	

CHAPTER 7 PROJECT EVALUATION

CHAPTER 7 PROJECT EVALUATION

Bhutan is characterised by the fact that most of the inhabitants live in smaller towns and villages scattered in mountainous areas. Due to such geographical conditions of the country, power supply in most areas except for particular places such as Phuntsholing, Paro, Thimphu, etc. is separately made only within each area. In other words, electric power is supplied indepently in each area.

Bhutan is rich in hydraulic resources and is reported to have such potentials of around 6 million kW. However, rivers in Bhutan have steep slopes. Geological conditions in the country are so complicated that there exist not so many sites suitable for development of large scale hydro power plants with reservoirs. Nevertheless, the characteristics that river in Bhutan have steep gradient indicate that a considerable number of sites are suitable for development of power plants of a run-of-river-type.

It can be said that the construction of small scale hydro power plants for meeting power demands arising from each separate area is most realistic if the foregoing situation is taken into account.

It is believed that this Project will provide the direct and indirect benefits as stated hereunder.

(1) It will be possible to electrify unelectrified areas. As a consequence of the electrification, improvement of a daily life, education, medical services and security among the inhabitants will be anticipated.

(2) Development of this Project will greatly contribute to social and economic advancement in Bhutan.

(3) Economic advancement in Bhutan will create more employment opportunities, thereby realizing enhancement of an income level of the inhabitants.

(4) Introduction of a reasonable standard of living to the daily life of the inhabitants and vitalization of societies can be anticipated.

(5) Forestry conservancy and flood control in rural towns and villages will be realized.

(6) Efficient exchange of information will be made possible, which will contribute to the improvement of labour productivity.

(7) Since it is anticipated that the operation hours of the existing diesel power plants in places such as Tongsa will be reduced, import of fuel will be decreased, which will result in saving an outflow of foreign exchanges.

(8) Nurture of technical personnel of the Department of Power and improvement of technical standard can be anticipated through technical transfer by dint of the Japanese grant aid. Consequently, a foundation for "supply of professional man-power" will be reinforced, thereby giving a technical impetus to the implementation of the Project as a whole.

(9) After the completion of the Project, the daily maintenance and inspection of the micro hydro power plants will be made by inhabitants dwelling in the Project Sites who will be the beneficiaries of the electrification whereas technical personnel from the Department of Power will patrol the above-mentioned power plants for periodical inspection thereof. Accordingly, it can be expected that the elaborate and attentive operation and maintenance of the completed facilities will be made possible, which will be of help to simplification of the organization of the Department of Power.

(10) It will be possible to appropriate necessary expenses for the operation and maintenance of the power plants out of the energy sales revenues.

In due consideration of the afore-mentioned benefits and effects, this Project is justifiable to be promoted.

CHAPTER 8 CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 8 CONCLUSIONS AND RECOMMENDATIONS

8-1 Conclusions

The Government of Bhutan has formulated the plan for development of 150 small scale hydro power plants all over the country in due consideration of the topographical characteristics of the country and the patterns of demands for electric power, requirements of transmission and distribution lines, etc. in the future.

This plan was worked out as an electrification scheme essential for the improvement and reinforcement of towns and villages scattered throughout Bhutan. However, the preparation and sorting of various data for putting the plan into practice are delayed due to a shortage of technical personnel whom the Department of Power has and on account of insufficient funds for the purpose.

The ten (10) proposed sites contained in the Project cover major towns and villages in the respective districts. Although these towns and villages have public institutions such as hospitals, schools, etc., they are in urgent need of electric power and electricity for medical treatment and lighting for the dormitories of schools, etc. as they are not or insufficiently supplied with electric power and electricity at present.

This Report has been prepared and compiled upon careful examination of the field surveys conducted and based on the outcome of a series of discussions made with the Government of Bhutan. The following conclusions could be enumerated.

(1) Construction of the micro hydro power plants will bring about electrification of villages and towns which have not yet been favoured with a civil minimum of "electricity". This will contribute to the improvement of a daily life, education, medical services, vitalization of economic activities, and the improvement of public security and the like.

(2) It is considered that construction of the micro hydro power plants will present no technical difficulties judging from the results of the field survey.

(3) The supply of electricity and electric power to unelectrified areas will materialize vitalization of industrial and economic activities, welfare of inhabitants, improvement of social life, etc.

Upon comprehensive consideration of the foregoing benefits and effects, it can be concluded that this Project is meaningful and greatly worthy to be implemented under Japanese Grant Aid.

8-2 Recommendations

8-2-1 Recommendations on the Project

The construction of the micro hydro power plants incorporated in this Project will lay a firm basis for the prosperity of Bhutan in the future. In order to maintain their functions for a long time, it is essential that the Government of Bhutan pay careful attention to the following points.

(1) This Project will be the first one of the plan for development of the 150 small scale hydro power plants. It is recommended that the Government of Bhutan make arrangement for enabling its personnel concerned with the Project to participate in the construction work of the Project and acquire a practical knowledge of hydro power generation from technical personnel of the Japanese contractor and the Japanese consultant.

(2) It is considered essential that the Government of Bhutan establish a reliable system of power supply upon formulation of a definite repair and maintenance plan and system through acquisition of techniques of the operation and maintenance of the micro hydro power plants from the Japanese technical persons.

(3) It is strongly recommended that the Government of Bhutan ensure the acquisition of lands for the facilities, construction and reinforcement of access roads for the transport of materials and equipment and construction works, compensation for clearance (cut

and removal) of interfering and danger trees so that the construction works of this Project can be carried out quite smoothly.

8-2-2 Recommendations on construction of hydro power plants

(1) Setting-up of systematic organizations

The organization of the Department of Power is as described in 2-2-1. The generating facilities owned by them are scattered throughout the country. It is, therefore, impossible for the Department of Power to know the situation of operation of such power plants instantly in Thimphu.

Accordingly, it is essential that tele-communication systems be established so that communication can be maintained among the hydro power plants scattered throghout the country.

The next important thing is to set up an organization or system of nurturing the man-power as stated hereunder.

a) Collection and control of hydraulic data

Sorting of hydraulic data available at the gauging stations under the umbrella of the Department of Power are insufficient for the purpose because of a limited number of experienced personnel. The measuring tools and instruments they have are not always reliable.

Hydraulic data which are most important for hydro power plants are far from being perfect. Actual records of operation of hydro power plants, data on stream discharge at intakes and records of discharge are not available. Hence, it is believed essential that professional personnel in this field be nurtured and that measuring instruments be procured and arranged.

b) Preparation of topographical maps

Maps on a scale of 1/50,000 covering whole Bhutan are available, but are considerably old. These maps are quite different from what the topographical features of Bhutan are. No indication is made on trunk roads although the surveying staff of the Department of Power is capable of conducting simple surveying work. They do not always have sufficient capability nor experience of preparing such maps. The number of the said staff-members are quite limited. It is, therefore, hardly possible to prepare and compile topographical maps. It is believed necessary that professional members in this field be trained and nurtured.

c) Personnel to be engaged in operation and maintenance of power plants

Most of the existing power plants are operated and maintained under the control and guidance of Indian engineers. Judging from very poor plant factors of the respective power plants, it cannot be said that these power plants are in smooth and proper operation. Hence, it is believed essential that reasonable organizations be set up in order to cope with the operation and maintenance of each of the power plants independently in the respective supply areas.

(2) Technical problems

Most of the existing power plants were constructed and are being operated with the technical assistance of India. Each power plant shows a very low plant factor, and a number of troubles and/or failures take place.

Operative generating facilities are forced to be run under overload operation, which probably causes such troubles and/or failures.

Large loss rates occurring in the distance between power plants and consumers indicate that the voltages of transmission lines are improper. As for civil structures, repair costs thereof are unexpectedly high because of immatured construction techniques.

It was felt that there are not a few fundamental points to which serious attention should be given not merely in respect of construction techniques but also in the aspects of various designs.

There will be, of course, the necessity of solving and improving these points of issue, and it is believed imperative to train technical personnel who are expected to undertake the construction of the small scale hydro power plants for purposes of not only the construction works but also the operation and maintenance of such power plants.

ANNEX PERTINENT DATA AND INFORMATION

ANNEX PERTINENT DATA AND INFORMATION

ANNEX NUMBER	
1.	Key Personnel with whom the Survey Team Met
2.	Member List
3.	Itinerary
4.	Minutes of Discussions (Photo Copy)
5.	List of Recieved Data and Information
6.	General Situation of the Kingdom of Bhutan
7.	Results of Power Demand Forecast for Each Proposed Site
8.	Discharge Data
9.	Discharge Duration Curves
10.	General Layout for Each Proposed Site
11.	Calculations for Open Channels
12.	Basic Design Drawings

Key Personnel with whom the Survey Team Met

Full Name	Position or Title	Organization Name & Address
His Excellency Takumi Hozaki	Ambassador Extra-ordinary and Plenipotentiary to India	Embassy of Japan Plot No. 4 & 5, 50-G, Chanakyapuri, New Delhi, India
Mr. Toyoji Miyanaga	First Secretary, Embassy of Japan in India	- ditto -
Mr. Tokukiyo Hirai	Representative of JICA Office in India	- ditto -
Mr. Kyoji Nishioka	Columbo Plan Expert	Paro District, Bhutan
Mr. Tomoaki Tsugawa	Volunteer of the United Nations	Department of Industries and Mines, Royal Government of Bhutan, P.O. Box 141 Thimphu, Bhutan
Mr. Yoshinori Watanabe	Administrative Officer	Consulate-General of Japan, Calcatta, India
Mr. Sangay Dorji	1st Secretary	Royal Bhutanese Embassy
Mr. Daw Penjo	3rd Secretary	- ditto -
Mr. Kinga Singye	Attache	Economic Division, Ministry of Foreign Affairs
Mr. Hari K. Chhehi	Under Secretary	Foreign Ministry
Mr. Dasho Lam Penjor	Deputy Minister	Planning Commission, Autonomous & Semi-autonomous Bodies
Mr. Ugyen Tsheving	Acting Director	Planning Commission, Autonomous & Semi-autonomous Bodies
Mr. Dorji Norbu	Assist Programme Officer	Planning Commission, Autonomous & Semi-autonomous Bodies

Full Name	Position or Title	Organization Name & Address
Mr. Sonan Tshong		Planning Commission, Autonomous & Semi-autonomous Bodies
Mr. Kunley Gyaltshen		Revenue Dept., Finance Ministry
Mr. Dasho C. Dorji	Secretary	Dept. of Industries & Mines., Ministry of Trade Industry & Power
Mr. A. K. Pradkan	Director	Department of Power, Ministry of Trade, Industry & Power
Mr. Jigne Karchung	Engineering Officer	- ditto -
Mr. Bhim Subba	Superintending Engineer	Planning Division, Department of Power
Mr. Sonam Tshering	Section Officer	Office of The Director, Department of Power
Mr. O. B. Chettri	Section Officer	- ditto -
Mr. J. N. Sharma	Section Officer	- ditto -
Mr. J. B. Basnet	Surveyor	- ditto -
Mr. Sherub Tenzin	Dasho Dzongda	Shemgang District
Mr. Tsewang Norbu	Block Head	Tshangkha, Tongsa District
Mr. Sthel	Asst. Head	Tangsibi, Tongsa District
Mr. Phub Dorji	Block Head	Tongsa, Tongsa District
Mr. Karha Wangchuk	Doctor	Tongsa Hospital, Tongsa District
Mr. Kota	Block Head	Tamjhing, Bumthang District (Jagar)
Mr. Tashi Dorjee	Block Head	Ura, Bumthang District

Full Name	Position or Title	Organization Name & Address
Mr. Tashi Phuntso	Head Master	Ura Primary School, Bumthang District
Mr. Frite Maurer	Master	Bumthang District (Swiss Colony)
Mr. Pema Dorje	Asst. Engineer	Tashigang Branch Office, D.P., Tashigang District
Mr. Sangay Wangchuk	Block Head	Yadi, Mongar District
Mr. Phub Thinley	Section Officer	Rukubji Branch office., D.P., Rukubji, Wangdiphodrang District
Mr. Thrinlay Dorje	Block Head	Thrinalaygang, Punakha District

MEMBER LIST

Name	Designation	Organization
Mr. Tetsuo Nishimura	General Direction (Leader)	Grant Aid Division of Economic Cooperation Bureau, Ministry of Foreign Affairs
Mr. Soichi Ohba	Electric Power Planning	Irrigation & Drainage Division of Construction Department, Agricultural Structure Improvement Bureau, Ministry of Agriculture, Forestry & Fisheries
Mr. Junji Yokokura	Planning and Superintendency	First Basic Design Study Division of Grant Aid Planning & Survey Department, Japan International Cooperation Agency (JICA)
Mr. Hideo Sato	Electric Power Planning and Hydrology	EPDC International Limited (EPDCI)
Mr. Hiroomi Kimura	Civil Engineering for Electric Power	EPDC International Limited (EPDCI)
Mr. Itsuo Ichinose	Electrical and Mechanical Engineering	EPDC International Limited (EPDCI)

I T I N E R A R Y

Ordinal Number of Days	Date	Day of Week	Description
1	April 7	Sun.	Leave Tokyo (Narita) International Airport.
2	8	Mon.	Arrive in Delhi, courtesy calls at the Embassy of Japan and JICA Office in India, briefing the contents of an Inception Report.
3	9	Tue.	Leave Delhi and arrive in Calcutta.
4	10	Wed.	The aeroplane took off once but returned to Buksa Duar Airport because of the bad weather in Paro Airport and adjacent places. The Team members waited for a while at Buksa Duar but finally returned to Calcutta.
5	11	Thur.	Leave Calcutta and arrive in Thimphu via Paro. Courtesy calls at the government agencies of Bhutan.
6	12	Fri.	Discussions with the Department of Power the final itinerary for field surveys.
7	13	Sat.	Collection of data including maps and briefing of the questionnaire.
8	14	Sun.	Arrangement for survey instruments and detailed discussions of field surveys.
9	15	Mon.	Leave Thimphu for survey of Rukubj Site and stay at Tongsa.

Original Number of Days	Date	Day of Week	Description	
			Group A	Group B
10	April 16	Tue.	Survery of Tongsa Site (No. 102) and Bumthang Site (No. 103) (Stay at Tongsa)	Survey of Tangsibi Site (Stay at Tongsa)
11	17	Wed.	Survery of Babja Site (Stay at Thimphu)	Survey of Tongsa Site (No. 102) (Stay at Tongsa)
12	18	Thur.	Discussions with the Department of Power questions (Stay at Thimphu)	Survey of Tamjhing Site (No. 103) (Stay at Bumthang)
13	19	Fri.	Courtesy call on Dasho Lam Penjor, Deputy Minister Discussions and preparation of data, observation of the intake of Chetta Hydro Power Plant and water-ways (Stay at Thimphu)	Survey of Ura Site (No. 4) and Tamjhing Site (Stay at Bumthang)
14	20	Sat.	Visit to Chukha Hydro Power Plant under construction Ohba and Sato (Stay at Phuntsholing) Nishimura and Yokokura (Stay at Thimphu)	Move from Bumthang to Mongar (Stay at Mongar)

Original Number of Days	Date	Day of Week	Description	
			Group A	Group B
15	April 21	Sun.	Investigation of the stockyard at Phuntsholing and collection of information of entry into and departure from Bhutan for transport of materials and equipment (Stay at Thimphu)	Survey of Yadi Site (No. 8) (Stay at Tashigang)
16	22	Mon.	Discussion with the Department of Power the Minutes of Discussion (draft) at the offices of Planning Commission Sato left Thimphu for site survey (Staying at Tongsa) Nishimura, Ohba and Yokokura remain at Thimphu (Stay at Thimphu)	Survey of Yadi Site (No. 8) (Stay at Mongar) Move from Mongar to Bumthang (Stay at Bumthang)
17	23	Tue.	Signing of the Minutes of Discussion Nishimura, Ohba and Yokokura Survey of Bubja Site (No. 6) (Stay at Thimphu) Sato (Stay at Shemgang)	

Original Number of Days	Date	Day of Week	Description	
			Group A	Group B
18	April 24	Wed.	Nishimura, Ohba and Yokokura Leave Paro and arrive in Delhi Sato Survey of Kekhar Site (No. 104) (Stay at Shemgang)	Move from Bumthang to Tongsa Collection and sorting of data (Stay at Tongsa)
19	25	Thur.	Explain to the Embassy of Japan and JICA Office in India the results of the field study Sato Suvey of Kekhar Site (No. 104) (Stay at Shemgang)	Survey of Rukubji Site (No. 3) (Stay at Wandiphodrang)
20	26	Fri.	Nishimura, Ohba and Yokokura Leave Delhi and arrive in Tokyo (Narita) International Airport via Bangkok Sato Survey of Surey Site (No. 7) (Stay at Gaylegphug)	Survey of candidate site (1) of Punakha Site (No. 101) (Stay at Wandiphodrang)
21	27	Sat.	Survey of Surey Site (No. 7) (Stay at Gaylegphug)	Survey of candidate site (2) of Punakha Site (No. 101) Survey of Punakha Site (No. 101) (Stay at Thimphu)

Original Number of Days	Date	Day of Week	Description	
			Group A	Group B
22	April 28	Sun.	Move from Gaylegphug to Tongsa (Stay at Tongsa)	Collection of additional data and sorting of collected data and information (Stay at Thimphu)
23	29	Mon.	Move to Thimphu from Tongsa via Wandiphodrang (Stay at Thimphu)	Collection of additional data and sorting of collected data and information (Stay at Thimphu)

Original Number of Days	Date	Day of Week	Description
24	April 30	Tue.	Receive answers to the Questionnaire from the Department of Power and examine additional questions (Stay at Thimphu)
25	May 1	Wed.	Discussion with Mr. Suda and three (3) other persons of the Department of Power details of the answers and the results of the field surveys (Stay at Thimphu)
26	2	Thur.	Collection of data and preparations for departure from Bhutan. (Stay at Paro)
27	3	Fri.	Leave Paro and arrive in Calcutta (Stay at Calcutta)
28	4	Sat.	Leave Calcutta and arrive in Bangkok (Stay at Bangkok)
29	5	Sun.	Leave Bangkok and arrive in Tokyo (Narita) International Airport

M I N U T E S O F D.I S C U S S I O N S

O N

ESTABLISHMENT PROJECT FOR

MICRO HYDRO POWER FACILITIES

I N

THE KINGDOM OF BHUTAN

In response to the request made by the Government of the Kingdom of Bhutan for the Establishment Project for micro hydro power facilities in the Kingdom of Bhutan (hereinafter referred to as "the Project"), the Government of Japan has sent, through the Japan International Cooperation Agency (hereinafter referred to as "JICA") which is an official agency implementing the technical cooperation of the Government of Japan, the team headed by Mr. Tetsuo Nishimura, to conduct the survey for 29 days from April 7th to May 5th, 1985.

The team carried out a field survey, held a series of discussions and exchanged views with the authorities concerned of the Government of the Kingdom of Bhutan.

Both parties have agreed to recommend to

.../....

their respective governments and the authorities concerned to examine the result of the survey attached herewith toward the realization of the Project.

23, April, 1985

Tetsuo Nishimura

TETSUO NISHIMURA
Head,
Japanese Survey
Team.

A.K. PRADHAN,
Director,
Department of Power,
Ministry of Trade,
Industries and Power,
Royal Government of
Bhutan : THIMPHU

T. N

A T T A C H M E N T

1 : The objectives of the project is to establish micro hydro power facilities on the sites where the people around the area needs supply of electric power urgently for their living.

2 : First priority for the supply of power is put to public facilities such as schools, hospitals, communications, veterinary centres etc.

3 : The scale of the micro-hydro power facilities should be what can be maintained by the community and standardization should be considered as much as engineering view allows for easier maintenance, operation and spare parts supply.

4 : The Japanese Survey Team will convey the Government of Japan the desire of the Government of the Kingdom of Bhutan that the former takes necessary measures to cooperate in implementing the Project and bears the cost of the items requested by the latter shown in Annexure.I within the scope of Japanese economic co-operation programme in grant form.

5 : The Government of the Kingdom of Bhutan will take necessary measures listed in Annexure.II under the condition that the grant aid assistance by the Government of Japan is extended to the Project.

SKJ

T. N

6 : The Bhutanese team accepted that the present JICA Basic Design Team was fielded to study only 10 (Ten) sites originally proposed. However, they informed the team of the additional request for 140 (One hundred and forty) sites and requested them to convey this desire to their Government.

7 : Both parties confirmed that the Survey Team explained Japan's grant aid programme and the Bhutan side has understood it.

AKI T. IV

ANNEXURE - I

1 : The following sites are requested by the Government of Bhutan to be established with micro-hydro facilities :-

In priority order -

1)	Ura	:	Bumthang
2)	Surey	:	Gaylegphug
3)	Yadi	:	Mongar
4)	Thimsung	:	Bumthang
5)	Khekhar	:	Shemgang
6)	Bubja	:	Tongsa
7)	Rukubji	:	Wangdiphodrong
8)	Tansibi	:	Tongsa
9)	Nakhujung (Thari Bacha)	:	Punakha
10)	Tonsa	:	Tongsa

2 : The following items are requested by the Government of the Kingdom of Bhutan as grant aid assistance.

i) Micro hydro power equipment- ten sites

ii) Civil works for as many sites as possible

Equipment (in priority order)

1 : Turbine, Generator

2 : Penstock

3 : Pipes for water way, gates

4 : Step-up transformer, Transmission line, Step-down transformer

5 : Distribution line to public facilities, Illumination apparatus inside the public facilities.

6 : Foundation for turbine and generator.

AKI

T. N

ANNEXURE : II

Following arrangements are requested to be taken by the Government of Kingdom of Bhutan.

No	Items	To be covered by recipient Side.	To be covered by Grant Aid Side
1	To secure required land	O	
2	To construct access to the construction site for transportation of materials and equipment	O	
3	To construct the gate and fence in and around the site, if necessary	O	
4	To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A		
	i) Advising commission of A/P	O	
	ii) Payment commission	O	
5	To ensure unloading and customs clearance air port of disembarkation in recipient country		
	i) Marine (Air) transportation of the products from Japan to the recipient country		(O)
	ii) Tax exemption and custom clearance of the products at the port of disembarkation	O	
	iii) Internal transportation from the port of disembarkation to the project site		(O)
6	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into recipient country and stay therein for the performance of their work	O	
7	To maintain and use properly and effectively that the facilities constructed and equipment purchased under the grant	O	
8	To bear all the expenses other than those to be borne by the grant, necessary for construction of the facilities as well as for the transportation and the installation of the equipment.	O	

List of Received Data and Information

Received Data & Information except items filled in the Questionnaire

Ref. No.	Title	Note
1.	General Information of Electric Power Supply in Bhutan	
(1)	Facts and Figures, Period ending March 1984	
(2)	Review of Power Development	
(3)	Power Map of Bhutan	
(4)	Schedule of Tariff	
(5)	Forecast of Power Requirement	
(6)	Daily Load Curve of Typical Day	
(7)	Monthly System Performance and Commercial Return for the System	
(8)	Monthly Performance of Hydel Power House	Hydel : Hydro Electric
(9)	Organization of Dapartment of Power	
(10)	Number of Employees of Department of Power	
(11)	Design Criteria adopted for Existing Hydro Power Station.	
2.	Outline of Proposed Sites	
(1)	Meteorological Data of Adjacent Areas	
(2)	Pre-investigation of Proposed 10 Sites	
(3)	Average Occurance of Snow Fall, Rain Fall and Thunder Storms during the Months	
(4)	Micro Hydro Proposed Sites List, 65 in 140 sites	
(5)	Pre-investigation Result of each 10 Proposed sites	
3.	Reference Data for Basic Design	
(1)	Specifications 1984 (Published by P.W.D)	
(2)	Schedule of Rates for PHUNTSHOLING, 1981	
(3)	Schedule of Rates for THIMPHU, 1984	Urban, Rural

(4)	Schedule of Rates for SAMDRUP JONKHAR, 1984	Urban, Rural
(5)	Scehdele of Rates for SAMCHI, 1984	Urban, Rural
(6)	Schedule of Rates for SARBHANG, 1984	Rural
(7)	List of Names of P.W.D	
(8)	List of Construction Equipment owned by P.W.D	
(9)	List of Contructar/Firm for Civil Engineering and Transmission Lines	
4.	Reference Data for Implementation Plan	
(1)	Filled in the Questionnaire	
5.	Reference Data for Operation and Maintenance plan	
(1)	Filled in the Questionnaire	
6.	Reference Data for Evolution Project	
(1)	Filled in the Questionnaire	
7.	Socio-Economic Data of Information	
(1)	Structure of Government	
(2)	Statistical Hand Book of Bhutan	
8.	Other Required Data and Information	
(1)	Dzong District Boundary Map (on a scale of 1:250,000) in 1972	
(2)	Topographical Map (on a scale of 1:50,000)	Copy of 22sheets
(3)	List of Indian Standard	
(4)	Tender Specification No. DPT-2/84 for 66kV Transmission Lines issued by D.P.	
(5)	Tender Specification No. DPT-3/84 for 66kV Transmission Lines issued by D.P.	
(6)	Mission Report for the Royal Goverment of Bhutan, Project BHU/81/019	
(7)	Maintenance Equipment Specification for Bhutan Project BHU/81/019	

(8)	"BHUTAN, HIMALAYAN KINGDOM"	
(9)	Delhi Electric Supply Undertaking, Public Notice News paper "Patriot, 9, April, 1985"	

ANNEX-6 GENERAL SITUATION OF THE KINGDOM OF BHUTAN

General Situations of the Kingdom of Bhutan

1. Geography & Climate

Bhutan is located in Himalaya being bordered by the Tibet region of China in the north and north-west and by India in south, the west and the last.

The land area is about 46,500 sq. km, with a population of about 1.2 million, most of which live in the intermediate zone having an altitude of 1,000 - 3,000 metres.

BHUTAN has a climate greatly diversified ranging from hot and humid sub-tropical conditions in the southern hill zone to the freezing coldness in the northern high mountain zone with perpetual snow and glaciers.

Generally speaking, the southwest monsoon lasts from June to September, bringing with it some 60 - 90% of annual precipitation, depending upon the region. The annual rainfall varies greatly in respective regions from 500 mm to 2,000 mm.

The climate is temperate throughout the year in the south and intermediate zones with an average daily temperature of 15°C in winter and 31°C in summer in the south and in the intermediate zone, for instance at Paro, with average temperatures of 5°C in January and 25°C in July. Above 4,000 metres in altitude, however, the climate becomes increasingly severe, with limited precipitation, short cool summers, and long cold winters.

2. History

Bhutan has long been in existence as a country with seclusionism in Himalayan mountains and it has been being organized as a state since the first king of the present monarchy came in to power in 1907.

The history in the preceding periods is not known much. Around the 16th century, chieftains called dzongs perhaps living in the fortresses emerged as a ruler of each valley. It is said that the first Kingdom was established by a penlop from Jongsa province and that Bhutan of those days was very much like Japan of the Turbulent Age.

In 1910, three years after the establishment of the Kingdom, Bhutan became a protectorate of Britain and assigned the sovereignty for foreign affairs to Britain and thenceforth Bhutan seldom appeared on the stage of the international society. In 1947 when India acquired independence from Britain, the diplomatic sight of Bhutan held by Britain until that time was assigned to India.

In August 1949, Bhutan signed a treaty of friendship with India and maintained a special relationship with India ever since, especially for diplomatic matters, having agreed to be guided by advice of the Indian Government. Consequently, Bhutan has not have individual diplomatic relationship with any other countries than India and all of its external relationship has been dealt with through India.

Since 1952, when H. M. late Jigme Dorji Wangchuck, the thrid king of Wangchuck Dynasty, came to the throne, liberation of surfs, establishment of National Assembly, promotion of education, reform of monastery system and other measures were executed to have started moderization of Bhutan. In 1964 Prime Minister Jigme Dorji, supporter of state sovereignty, was assassinated as the results of power struggles between the powerful local clans and the Court Revolution in November brought the supremacy to King Wangchuck. In 1972 following the death of the King, the then Crown Prince Jigme Singye Wangchuck assumed the Crown to have been the fourth King of the Duyasty.

3. Legislature, Administration, Judicature

Bhutan is a monarchy undergoing democratic reform under the young King.

National Assembly is the unicameral legislature comprising 100 representatives of the people and 10 representatives of the monastic establishment, both categories of which are elected for three year terms, and 40 governmental official representatives who hold their seats as long as they hold their positions in government.

The Assembly holds ordinary meetings; twice a year and a special meeting is convened as necessity arises.

The Assembly legislates laws and submits recommendation to the Government on the important matters. The Royal Advisory Council, which is always in session, advises the King on key issues of policy and monitors the implementation of National Assembly resolution. It comprises nine members, who must be approved by the Assembly - two appointed by the King, seven selected by the Assembly.

The system of ministries and a Cabinet created in 1968 to meet the administrative needs for the country's modernization. The cabinet consists of ministers, members of the Royal Advisory Council, and several other high-ranking Government officers.

Bhutan is divided into 18 districts. Each district is administered by a district officer (dzongdag), who is appointed by the King and reports to the Ministry of Home Affairs. Districts are subdivided into blocks. The head of each block is chosen by the villagers and administer the block.

The central and local administrative structure is shown in Fig. 1 and Fig. 2. The organization of the Department of Power is shown in Fig. 3.

In 1968, a separate judiciary was established independently from legislature and administration. At present it comprises the Court of Appeal headed by the King, the High Court consisting of six judges and district courts for each district.

4. Economy

The dominant sectors of economy are Agriculture, Animal Husbandry and Forestry, in which approx. 90% of the population is engages, accounting for about 63% of GDB. (Ref. Table 1-1)

Foodgrains production is inadequate to meet needs and additional amount are imported from India. Maize, grown mainly in the east, is the predominant foodgrain, accounting for almost half of total production.

Fig. 1 STRUCTURE OF GOVERNMENT

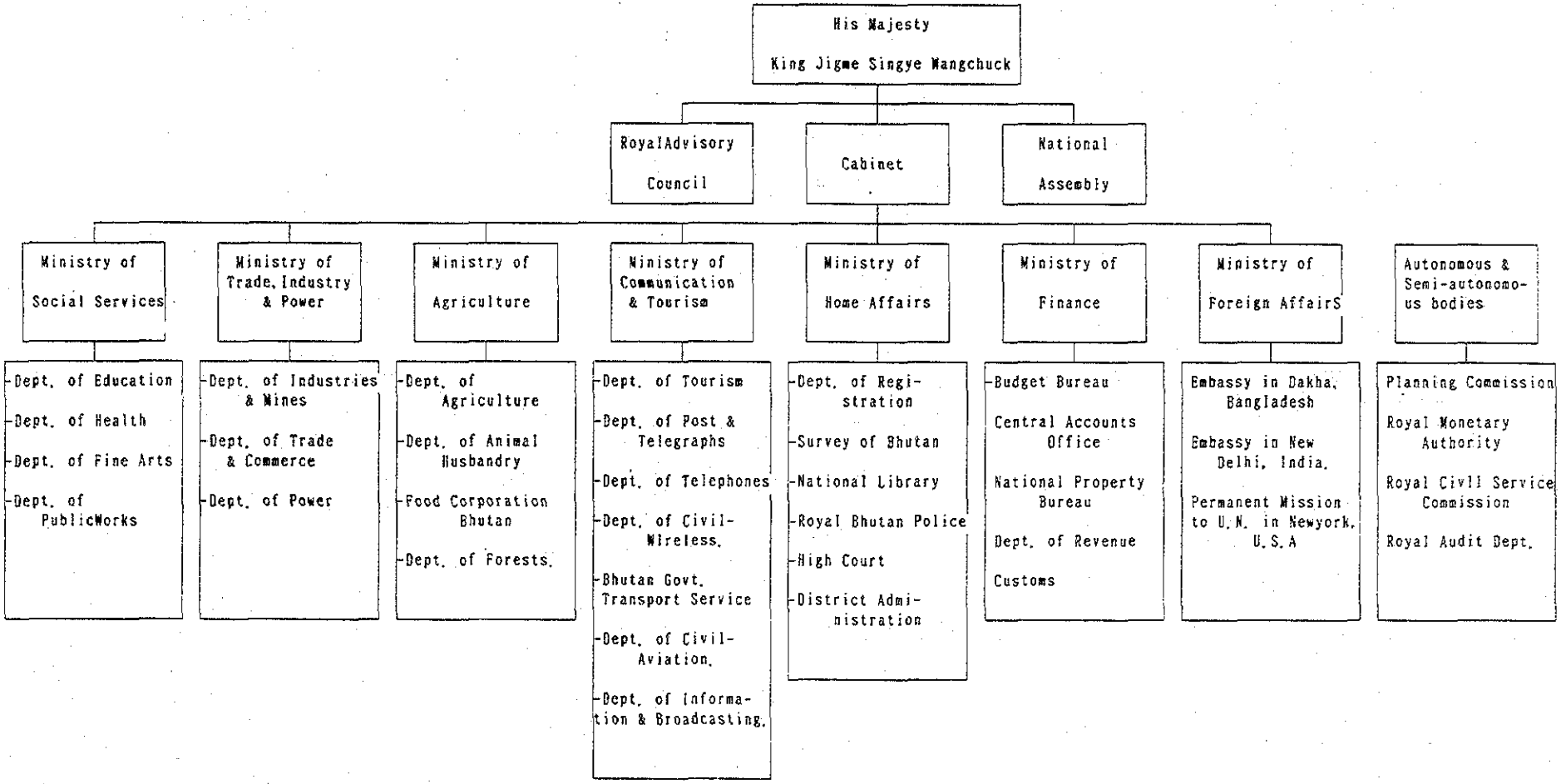


Fig. 2 ORGANIZATIONAL STRUCTURE OF A TYPICAL DISTRICT (DZONGKHAG)

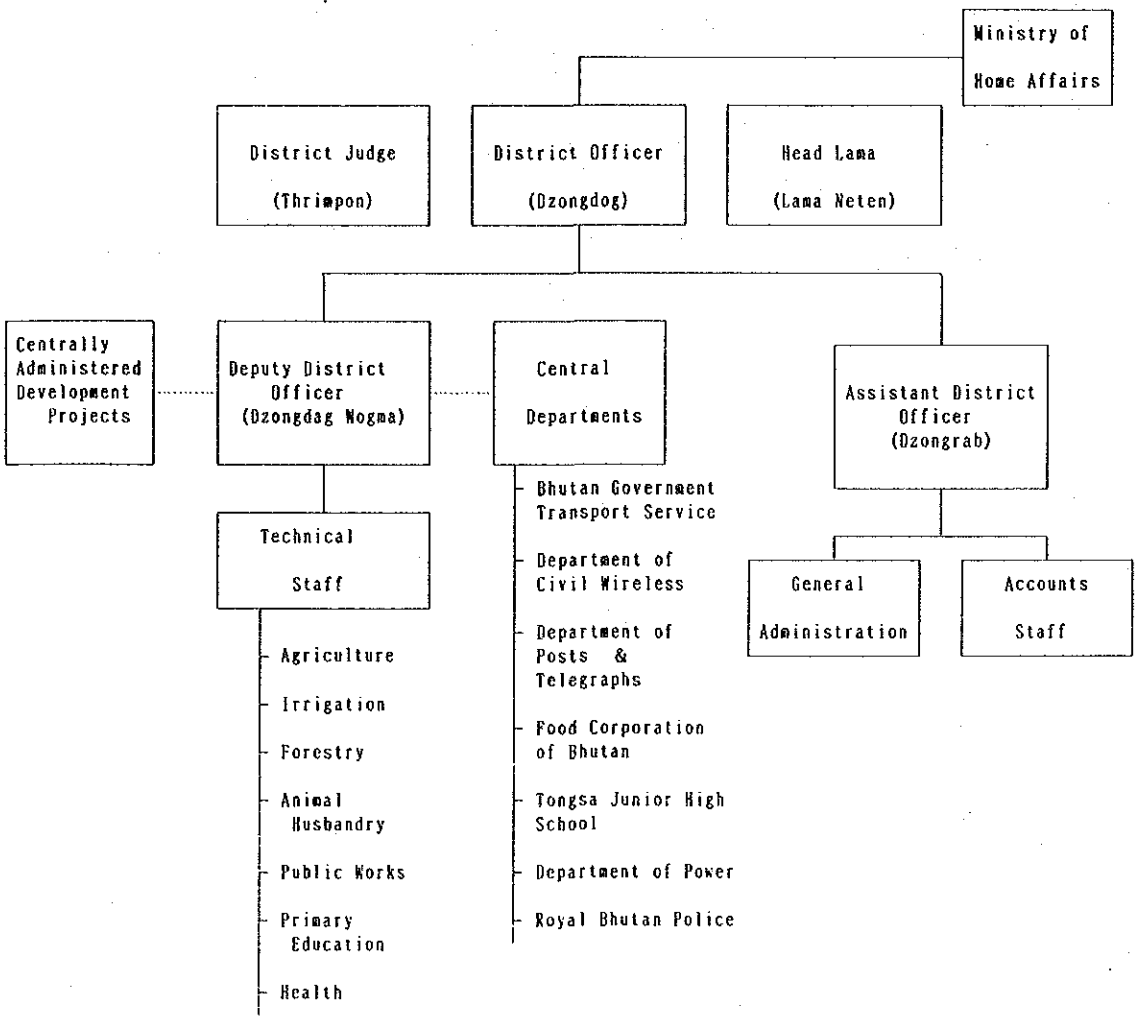
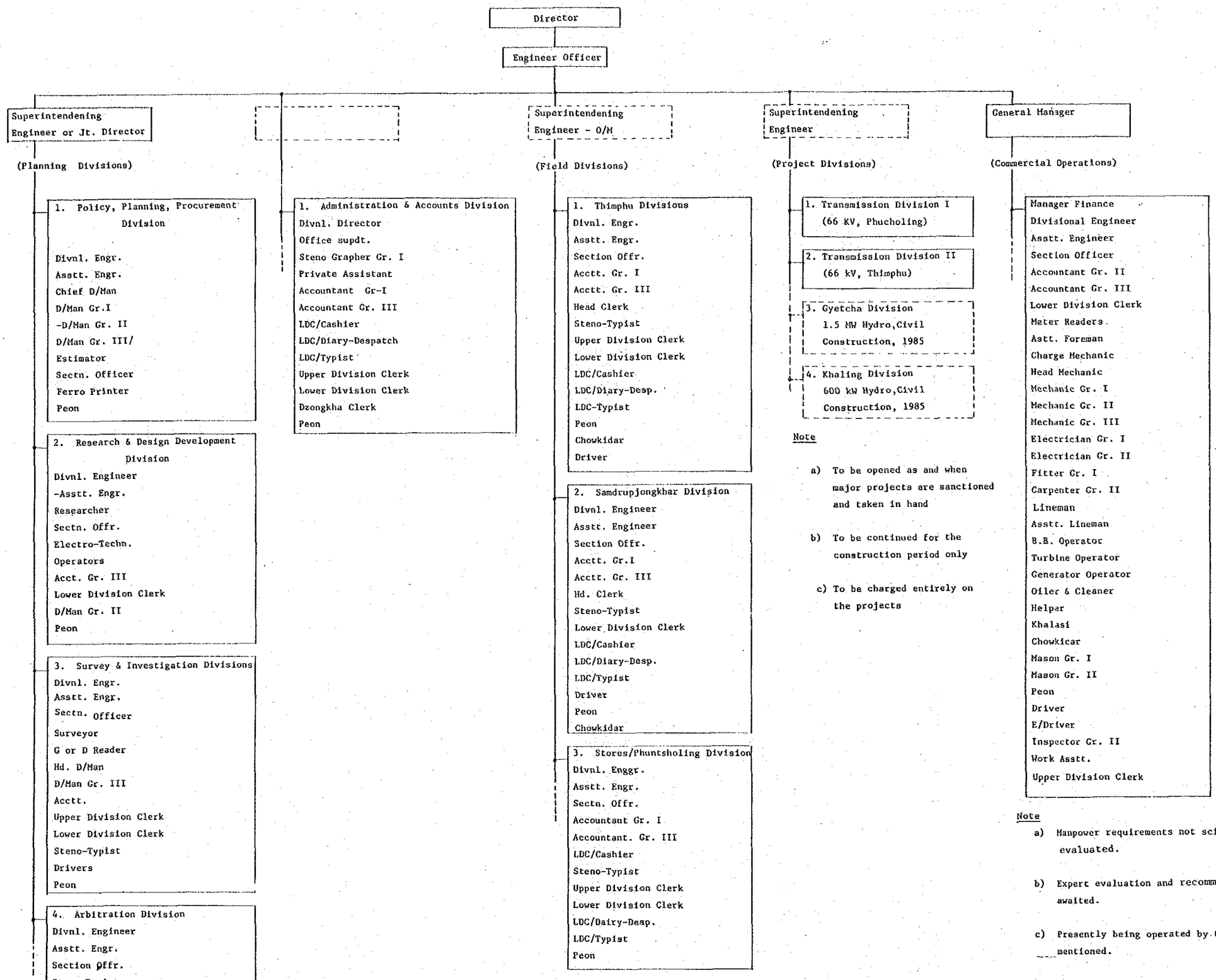


Fig. 3 ORGANIZATION OF THE DEPARTMENT OF POWER



Paddy, which accounts for about one-third of production, is the main crop in the west. Wheat and other foodgrains are grown at higher altitudes. Other important crops include chillies, pulses, potatoes, etc. In recent years, apples, oranges, and cardamoms have emerged as cash crops in the south and west.

Forestry is another branch of the primary sector of the economy. High land forests are endowed with valuable resources of pine, spruce and fir, while in intermediate altitudes oak is predominal and in lower altitudes broad leafed tropical hardwoods are dominant. Almost two-thirds of the land is covered by forests. Forestry contributed about 16% of GDP in 1980/81, in addition, about a half of the industrial units are based on wood resources which is an important contribution to the national economy. Modern forest management technics are being adopted for preservation of the forest resources and reforestation. Wood process factories in the private sector are sawmills, a matchsticks factory, a pencile slat factory, a tea chest batten factory and so on. In addition, the Government has recently constructed with UNDP assistance a veneer and sawmill complex to produce sawn wood and commercial and high value decorative veneers for export.

Industry accounts for only about 6% of GDP. Relatively large scale factories in Bhutan are a cement factory built by India's grant aid fund, a distillery, a fruits processing factory, etc. cement exceeding domestic needs is being exported to India and other countries.

Table 1-1 Gross Domestic Product (at Market Prices), 1980/81

Sector	Nu million	Percentage (%)
Agriculture and Related Sectors	645.2	63.2
Agriculture	409.4	40.1
Animal Husbandry	76.5	7.5
Forestry	159.3	15.6
Industry	63.5	6.3
Manufacturing and Processing	33.3	3.3
Mining	8.6	0.8
Power	2.7	0.3
Construction	18.9	1.9
Services	311.8	30.5
Transportation and Communication	33.4	3.3
Tourism	11.0	1.1
Financial Institutions	15.4	1.5
Trade	28.6	2.8
Social Services	34.8	3.4
Public Administration	106.8	10.4
Rental and Other Services	82.0	8.0
Total GDP	1,020.5	100.0

Source: ASIAN DEVELOPMENT BANK
RESTRICTED REPORT No. BHU - EC. 1

A recent exploration of mineral resources carried out with the aid of the Geological Survey of India revealed the existence of such resources exploitable as dolomite, limestone, gypsum, marble, lead, zinc, copper etc., among them dolomite and limestone being presently mined by the Government.

Tourism is Bhutan's principal hard currency earner. In 1980, 1,406 tourists visited the country and the receipts amounted to 1.29 million U.S. Dollars. Since 1983, trekking has been open to overseas visitors, and considerable increase in the number of tourists is expected, coupled with hotel accommodations for foreigners at 5 locations with 200 beds.

In order to achieve a leap in tourism, it is necessary for transportation means to be improved.

Chukha Hydro-Power Station with a maximum output of 336 MW is being constructed with assistance by India, which will harness the waters of the Wang Chu River between Phuntsholing and Thimphu. Upon completion of the project, the bulk of power generated will be exported to India, surplus beyond the demands in the western district, where the development of manufacturing industries is expected to accelerated thanks to the project.

The dominant and largest trading partner of Bhutan is India. The trade with India, however, tends to decrease recently, while the trades with F.R. Germany, Japan and other developed countries are increasing.

Japan's trade with Bhutan comprises mainly export of motor vehicles, electric appliances and other manufactured goods, and is rapidly increasing as shown below:

Japan's Trade with Bhutan

(Unit: '000 Nu)

Year	Export	Import	Balance
1981	3,293	85	3,208
1982	10,991	-	10,991
1983	18,284	309	17,975

ANNEX-7 RESULTS OF POWER DEMAND FORECAST FOR EACH PROPOSED SITE

Table 4.2-4 Demand Forecast of Typical Village at Rukubji Site (No. 3)

No.	Consumer	Kind of Load (Power Facilite)	Unit Capacity (W,VA)	No. of Unit	Installed Capacity (W,VA)
1	Power House	Lamp	60	2	120
2	(Village Office)	Lamp	60	10	600
		Public Address System	100	1	100
3	(Dispensary)	Lamp	60	5	300
		Room Heater	5,000	2	10,000
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
4	(Vet. Dispensary)	Lamp	60	5	300
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
5	(Junior High School)	Lamp	60	35	2,100
		Fluorescent Lamp	40	40	1,600
		Public Address System	100	1	100
		Video Disk & Television	140	1	140
6	(Food Corporation of Bhutan)	Lamp	60	5	300
7	(Branch Post Office)	Lamp	60	5	300
8	Street Lighting	Lamp	60	5	300
9	Private House				
(1)	Including Neighboring Villages	Lamp	60	65x5	19,500
		Radio	10	65	650
(2)	Excluding Neighboring Villages	Lamp	60	45x5	13,500
		Radio	10	45	450
10	Rice Milling Plant	Motor	3,700	1	3,700
11	(Wireless Station)	Lamp	60	5	300
		Power Source Equipment	1,000	1	1,000

12	Total				
(1)	Excluding Private House	Lamp			4,620
		Fluorescent Lamp			1,680
		Heater			17,200
		Power			1,740
		Total			25,240
(2)	Including Private House	Lamp			18,120
		Fluorescent Lamp			1,680
		Heater			17,200
		Power			5,890
		Total			42,890
(3)	Including Private House of other Villages	Lamp			24,120
		Fluorescent Lamp			1,680
		Heater			17,200
		Power			6,090
		Total			49,090

Calculation of Maximum Demand Forecast

Case 1 Excluding Private House

$$P \geq \left(\frac{4,620}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{1,740}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 3,080 + 14,939 = 18,019 \text{ (VA)}$$

Then, Required Power Plant Out Put is as follow:,

$$Pp = P \times K = 18.0 \times 1.2 = 22 \text{ (kVA)}$$

Where, K is Transmission & Distribution Loss Factor

Case 2 Including Private House

$$P \geq \left(\frac{18,120}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{5,890}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 9,268 + 19,802 = 29,070 \text{ (VA)}$$

$$Pp = P \times K = 29.1 \times 1.2 = 35 \text{ (kVA)}$$

Case 3 Including Private House of Other Villages

$$P \geq \left(\frac{24,120}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{6,090}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 12,018 + 20,037 = 32,055 \text{ (VA)}$$

$$Pp = P \times K = 32.1 \times 1.2 = 39 \text{ (kVA)}$$

Table 4.2-4 Demand Forecast of Typical Village at Tangsibi Site (No. 5)

No.	Consumer	Kind of Load (Power Facilite)	Unit Capacity (W,VA)	No. of Unit	Installed Capacity (W,VA)
1	Power House	Lamp	60	2	120
2	Village Office with Hall	Lamp	60	10	600
		Public Address System	100	1	100
3	(Sub-dispensary)	Lamp	60	5	300
		Room Heater	5,000	2	10,000
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
4	(Vet. Dispensary)	Lamp	60	5	300
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
5	(Primary School)	Lamp	60	35	2,100
		Fluorescent Lamp	40	40	1,600
		Public Address System	100	1	100
6	(Agriculture Office)	Lamp	60	5	300
7	(Branch Post Office)	Lamp	60	5	300
8	Street Lighting	Lamp	60	5	300
9	Private House				
(1)	Including Neighboring Villages	Lamp	60	131x5	39,300
		Radio	10	131	1,310
(2)	Excluding Neighboring Villages	Lamp	60	71x5	21,300
		Radio	10	71	700
10	Rice Milling Plant	Motor	3,700	1	3,700
11	Sawmill	Motor	5,500	1	5,500

12	Total				
(1)	Excluding Private House	Lamp			4,320
		Fluorescent Lamp			1,680
		Heater			17,200
		Power			600
		Total			23,800
(2)	Including Private House	Lamp			25,620
		Fluorescent Lamp			1,680
		Heater			17,200
		Power			10,500
		Total			55,000
(3)	Including Private House of other Villages	Lamp			43,620
		Fluorescent Lamp			1,680
		Heater			17,200
		Power			11,110
		Total			73,610

Calculation of Maximum Demand Forecast

Case 1 Excluding Private House

$$P \geq \left(\frac{4,320}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{600}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 2,943 + 13,603 = 16,546$ (VA)

Then, Required Power Plant Out Put is as follow:

$Pp = P \times K = 16.5 \times 1.2 = 20$ (kVA)

Where, K is Transmission & Distribution Loss Factor

Case 2 Including Private House

$$P \geq \left(\frac{25,620}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{10,500}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 12,705 + 25,205 = 37,910$ (VA)

$Pp = P \times K = 37.9 \times 1.2 = 46$ (kVA)

Case 3 Including Private House of Other Villages

$$P \geq \left(\frac{43,620}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{11,110}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 20,955 + 25,920 = 46,875$ (VA)

$Pp = P \times K = 46.9 \times 1.2 = 56$ (kVA)

Table 4.2-4 Demand Forecast of Typical Village at Bubja Site (No. 6)

No.	Consumer	Kind of Load (Power Facilite)	Unit Capacity (W,VA)	No. of Unit	Installed Capacity (W,VA)
1	Power House	Lamp	60	2	120
2	(Village Office with Hall)	Lamp	60	10	600
		Public Address System	100	1	100
3	Basic Health Unit	Lamp	60	5	300
		Room Heater	5,000	1	5,000
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
4	Vet. Dispensary	Lamp	60	5	300
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
5	Primary School	Lamp	60	35	2,100
		Fluorescent Lamp	40	40	1,600
		Public Address System	100	1	100
6	Agriculture Center	Lamp	60	5	300
7	(Branch Post Office)	Lamp	60	5	300
8	Street Lighting	Lamp	60	5	300
9	Private House	Lamp	60	48x5	14,400
		Radio	10	48	480
10	(Rice Milling Plant)	Motor	3,700	1	3,700
11	Telephone Exchange	Lamp	60	5	300
		Power Source Equipment	1,000	1	1,000
12	(Sawmill)	Motor	5,500	1	5,500

13	Total				
(1)	Excluding Private House	Lamp			4,620
		Fluorescent Lamp			1,680
		Heater			12,200
		Power			1,600
		Total			20,100
(2)	Including Private House	Lamp			19,020
		Fluorescent Lamp			1,680
		Heater			12,200
		Power			11,280
		Total			44,180
(3)	Including Private House of other Villages	Lamp	-	-	-
		Fluorescent Lamp	-	-	-
		Heater	-	-	-
		Power	-	-	-
		Total	-	-	-

Calculation of Maximum Demand Forecast

Case 1 Excluding Private House

$$P \geqq \left(\frac{4,620}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{12,200}{1.0 \times 1.0} + \frac{1,600}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 3,080 + 11,025 = 14,105 \text{ (VA)}$$

Then, Required Power Plant Out Put is as follow:

$$Pp = P \times K = 14.1 \times 1.2 = 17 \text{ (kVA)}$$

Where, K is Transmission & Distribution Loss Factor

Case 2 Including Private House

$$P \geqq \left(\frac{19,020}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{12,200}{1.0 \times 1.0} + \frac{11,280}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 9,680 + 22,369 = 32,049 \text{ (VA)}$$

$$Pp = P \times K = 32.0 \times 1.2 = 38 \text{ (kVA)}$$

Table 4.2-4 Demand Forecast of Typical Village at Surey Site (No. 7)

No.	Consumer	Kind of Load (Power Facilite)	Unit Capacity (W,VA)	No. of Unit	Installed Capacity (W,VA)
1	Power House	Lamp	60	2	120
2	(Village Office with Hall)	Lamp	60	10	600
		Public Address System	100	1	100
3	Dispensary	Lamp	60	5	300
		Room Heater	5,000	1	5,000
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
4	Vet. Dispensary	Lamp	60	5	300
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
5	Primary School	Lamp	60	35	2,100
		Fluorescent Lamp	40	40	1,600
		Public Address System	100	1	100
6	(Agriculture Extention Office)	Lamp	60	5	300
7	Branch Post Office	Lamp	60	5	300
8	Street Lighting	Lamp	60	5	300
9	Private House	Lamp	60	240x5	72,000
		Radio	10	240	2,400
10	(Rice Milling Plant)	Motor	3,700	1	3,700
11	(Sawmill)	Motor	5,500	1	5,500

12	Total				
(1)	Excluding Private House	Lamp			4,320
		Fluorescent Lamp			1,680
		Heater			12,200
		Power			600
		Total			18,800
(2)	Including Private House	Lamp			76,320
		Fluorescent Lamp			1,680
		Heater			12,200
		Power			12,200
		Total			102,400
(3)	Including Private House of other Villages	Lamp	-	-	-
		Fluorescent Lamp	-	-	-
		Heater	-	-	-
		Power	-	-	-
		Total	-	-	-

Calculation of Maximum Demand Forecast

Case 1 Excluding Private House

$$P \geq \left(\frac{4,320}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{12,200}{1.0 \times 1.0} + \frac{600}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 2,943 + 9,853 = 12,796$ (VA)

Then, Required Power Plant Out Put is as follow:

$Pp = P \times K = 12.8 \times 1.2 = 15$ (kVA)

Where, K is Transmission & Distribution Loss Factor

Case 2 Including Private House

$$P \geq \left(\frac{76,320}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{12,200}{1.0 \times 1.0} + \frac{12,200}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 35,943 + 23,447 = 59,390$ (VA)

$Pp = P \times K = 59.4 \times 1.2 = 71$ (kVA)

Table 4.2-4 Demand Forecast of Typical Village at Yadi Site (No. 8)

No.	Consumer	Kind of Load (Power Facilite)	Unit Capacity (W,VA)	No. of Unit	Installed Capacity (W,VA)
1	Power House	Lamp	60	2	120
2	Village Office (1985 -)	Lamp	60	5	300
		Public Address System	100	1	100
3	Dispensary	Lamp	60	5	300
		Room Heater	5,000	2	10,000
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
4	Vet. Hospital	Lamp	60	9	540
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
5	Primary School	Lamp	60	70	4,200
		Fluorescent Lamp	40	80	3,200
		Public Address System	100	1	100
6	Food Corporation of Bhutan (1985 -)	Lamp	60	5	300
7	Branch Post Office	Lamp	60	3	180
8	Street Lighting	Lamp	60	5	300
9	Private House				
(1)	Including Neighboring Villages	Lamp	60	115x5	34,500
		Radio	10	115	1,150
(2)	Excluding Neighboring Villages	Lamp	60	540x5	162,000
		Radio	10	540	5,400
10	Rice Milling Plant	Motor	3,700	1	3,700
				(3)	(11,100)
11	Wireless Station (1985 -)	Lamp	60	5	300
		Power Source Equipment	1,000	1	1,000
12	Sawmill	Motor	5,500	0	0
				(1)	(5,500)

13	Total				
(1)	Excluding Private House	Lamp			6,540
		Fluorescent Lamp			3,280
		Heater			17,200
		Power			1,600
		Total			28,620
(2)	Including Private House	Lamp			41,040
		Fluorescent Lamp			3,280
		Heater			17,200
		Power			6,450
		Total			67,970
(3)	Including Private House of other Villages	Lamp	-	-	168,540
		Fluorescent Lamp	-	-	3,280
		Heater	-	-	17,200
		Power	-	-	23,600
		Total	-	-	212,620

Calculation of Maximum Demand Forecast

Case 1 Excluding Private House

$$P \geq \left(\frac{6,540}{1.0} + \frac{3,280}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{1,600}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 4,877 + 14,775 = 19,652 \text{ (VA)}$$

Then, Required Power Plant Out Put is as follow:

$$Pp = P \times K = 19.7 \times 1.2 = 24 \text{ (kVA)}$$

Where, K is Transmission & Distribution Loss Factor

Case 2 Including Private House

$$P > = \left(\frac{41,040}{1.0} + \frac{3,280}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{6,450}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 20,689 + 20,459 = 41,148 \text{ (VA)}$$

$$Pp = P \times K = 41.1 \times 1.2 = 49 \text{ (kVA)}$$

Case 3 Including Private House of Other Villages

$$P > = \left(\frac{168,540}{1.0} + \frac{3,280}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{23,600}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 79,127 + 40,556 = 119,683 \text{ (VA)}$$

$$Pp = P \times K = 120.0 \times 1.2 = 144 \text{ (kVA)}$$

Table 4.2-4 Demand Forecast of Typical Village at Punakha Site (No. 101)

No.	Consumer	Kind of Load (Power Facilite)	Unit Capacity (W,VA)	No. of Unit	Installed Capacity (W,VA)
1	Power House	Lamp	60	2	120
2	Village Office with Hall	Lamp	60	10	600
		Public Address System	100	1	100
3	Dispensary	Fluorescent Lamp	40	22	880
		Room Heater	5,000	2	10,000
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
4	Vet. Dispensary	Lamp	60	9	540
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
5	Primary School	Lamp	60	35	2,100
		Fluorescent Lamp	40	40	1,600
		Public Address System	100	1	100
6	Food Corporation of Bhutan	Lamp	60	5	300
7	Agriculture Office	Lamp	60	5	300
8	Branch Post Office	Lamp	60	5	300
9	Street Lighting	Lamp	60	5	300
10	Private House				
(1)	Including Neighboring Villages	Lamp	60	32x5	9,600
		Radio	10	32	320
(2)	Excluding Neighboring Villages	Lamp	60	54x5	16,200
		Radio	10	54	540
11	Rice Milling Plant	Motor	3,700	4	14,800

12	Total				
(1)	Excluding Private House	Lamp			4,560
		Fluorescent Lamp			2,560
		Heater			17,200
		Power			600
		Total			24,920
(2)	Including Private House	Lamp			14,160
		Fluorescent Lamp			2,560
		Heater			17,200
		Power			15,720
		Total			49,640
(3)	Including Private House of other Villages	Lamp	-	-	20,760
		Fluorescent Lamp	-	-	2,560
		Heater	-	-	17,200
		Power	-	-	15,940
		Total	-	-	56,460

Calculation of Maximum Demand Forecast

Case 1 Excluding Private House

$$P \geq \left(\frac{4,560}{1.0} + \frac{2,560}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{600}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 3,557 + 13,603 = 17,160 \text{ (VA)}$$

Then, Required Power Plant Out Put is as follow:

$$Pp = P \times K = 17.2 \times 1.2 = 21 \text{ (kVA)}$$

Where, K is Transmission & Distribution Loss Factor

Case 2 Including Private House

$$P \geq \left(\frac{14,160}{1.0} + \frac{2,560}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{15,720}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 7,957 + 31,322 = 39,279 \text{ (VA)}$$

$$Pp = P \times K = 39.3 \times 1.2 = 47 \text{ (kVA)}$$

Case 3 Including Private House of Other Villages

$$P \geq \left(\frac{20,760}{1.0} + \frac{2,560}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{17,200}{1.0 \times 1.0} + \frac{15,940}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 10,982 + 31,580 = 42,562 \text{ (VA)}$$

$$Pp = P \times K = 42.6 \times 1.2 = 51 \text{ (kVA)}$$

Table 4.2-4 Demand Forecast of Typical Village at Tongsa Site (No. 102)

No.	Consumer	Kind of Load (Power Facilite)	Unit Capacity (W,VA)	No. of Unit	Installed Capacity (W,VA)
1	Power House	Lamp	60	2	120
2	Village Office (in Zong)	Lamp	60	20	1,200
		Public Address System	100	1	100
		Fluorescent Lamp	40	30	1,200
3	Hospital	Lamp	60	30	1,800
		Fluorescent Lamp	40	60	2,400
		Room Heater	5,000	4	20,000
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
		Vacuum Pump	750	1	750
		X-ray	20,000	1	20,000
4	Vet. Hospital	Lamp	60	30	1,800
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
5	Junior High School	Lamp	60	292	17,520
		Fluorescent Lamp	40	124	4,960
		Public Address System	100	1	100
		Video Disk & Television	140	1	140
6	Food Corporation of Bhutan (Agriculture Dept.)	Lamp	60	5	300
7	Bank of Bhutam, Branch Office	Lamp	60	5	300
8	Post Office	Lamp	60	5	300
9	Street Lighting	Lamp	60	10	600
10	Private House	Lamp	60	100x5	30,000
		Radio	10	100	1,000
11	Rice Milling Plant	Motor	3,700	1	3,700
12	Sawmill	Motor	5,500	1	5,500

13	Telephone Exchange Station	Lamp Power Source Equipment	60 1,000	5 1	300 1,000
14	Food Corporation of Bhutan (Agriculture Dept.)	Lamp	60	5	300
15	Wireless Station	Lamp Power Supply Equipment	60 1,000	5 1	300 1,000
16	Public Work Office Dept. Office	Lamp	60	8	480
17	Tourist Logde	Lamp Fluorescent Lamp	60 40	38 30	2,280 1,200
18	Forest Office	Lamp	60	22	1,320
19	Department of Power Branch Office	Lamp	60	19	1,140
20	Total				
(1)	Excluding Private House	Lamp Fluorescent Lamp Heater Power Total			30,060 9,840 27,200 23,490 90,590
(2)	Including Private House	Lamp Fluorescent Lamp Heater Power Total			60,060 9,840 27,200 33,690 130,790

Calculation of Maximum Demand Forecast

Case 1 Excluding Private House

$$P \geq \left(\frac{30,060}{1.0} + \frac{9,840}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{27,200}{1.0 \times 1.0} + \frac{23,490}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 19,415 + 47,927 = 67,342 \text{ (VA)}$$

Then, Required Power Plant Out Put is as follow:

$$Pp = P \times K = 67.3 \times 1.2 = 81 \text{ (kVA)}$$

Where, K is Transmission & Distribution Loss Factor

Case 2 Including Private House

$$P \geq \left(\frac{60,060}{1.0} + \frac{9,840}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{27,200}{1.0 \times 1.0} + \frac{33,690}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$$= 33,165 + 59,880 = 93,045 \text{ (VA)}$$

$$Pp = P \times K = 93.0 \times 1.2 = 112 \text{ (kVA)}$$

Table 4.2-4 Demand Forecast of Typical Village at Tamjhing Site (No. 103)

No.	Consumer	Kind of Load (Power Facilite)	Unit Capacity (W,VA)	No. of Unit	Installed Capacity (W,VA)
1	Power House	Lamp	60	2	120
2	(Village Office with Hall)	Lamp	60	10	600
		Public Address System	100	1	100
3	(Dispensary)	Lamp	60	5	300
		Room Heater	5,000	1	5,000
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
4	(Vet. Dispensary)	Lamp	60	5	300
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
5	(Primary School)	Lamp	60	35	2,100
		Fluorescent Lamp	22	40	880
		Public Address System	100	1	100
6	(Agriculture Section Office)	Lamp	60	5	300
7	(Branch Post Office)	Lamp	60	5	300
8	Street Lighting	Lamp	60	5	300
9	Private House				
(1)	Including Neighboring Villages	Lamp	60	35x5	10,500
		Radio	10	35	350
(2)	Excluding Neighboring Villages	Lamp	60	70x5	21,000
		Radio	10	70	700
10	(Sawmill)	Motor	5,500	1	5,500

11	Total				
(1)	Excluding Private House	Lamp			4,320
		Fluorescent Lamp			960
		Heater			12,200
		Power			600
		Total			18,080
(2)	Including Private House	Lamp			14,820
		Fluorescent Lamp			960
		Heater			12,200
		Power			6,450
		Total			34,430
(3)	Including Private House of other Villages	Lamp			25,320
		Fluorescent Lamp			960
		Heater			12,200
		Power			6,800
		Total			45,280

Calculation of Maximum Demand Forecast

Case 1 Excluding Private House

$$P \geq \left(\frac{4,320}{1.0} + \frac{960}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{12,200}{1.0 \times 1.0} + \frac{600}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 2,530 + 9,853 = 12,383$ (VA)

Then, Required Power Plant Out Put is as follow:

$Pp = P \times K = 12.4 \times 1.2 = 15$ (kVA)

Where, K is Transmission & Distribution Loss Factor

Case 2 Including Private House

$$P \geq \left(\frac{14,820}{1.0} + \frac{960}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{12,200}{1.0 \times 1.0} + \frac{6,450}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 7,343 + 16,709 = 24,052$ (VA)

$Pp = P \times K = 24.1 \times 1.2 = 29$ (kVA)

Case 3 Including Private House of Other Villages

$$P \geq \left(\frac{25,320}{1.0} + \frac{960}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{12,200}{1.0 \times 1.0} + \frac{6,800}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 12,155 + 17,119 = 29,274$ (VA)

$Pp = P \times K = 29.3 \times 1.2 = 35$ (kVA)

Table 4.2-4 Demand Forecast of Typical Village at Kekhar Site (No. 104)

No.	Consumer	Kind of Load (Power Facilite)	Unit Capacity (W,VA)	No. of Unit	Installed Capacity (W,VA)
1	Power House	Lamp	60	2	120
2	(Village Office with Hall)	Lamp	60	10	600
		Public Address System	100	1	100
3	(Dispensary)	Lamp	60	5	300
		Room Heater	5,000	1	5,000
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
4	(Vet. Dispensary)	Lamp	60	5	300
		Water Heater	3,600	1	3,600
		Refrigerator	200	1	200
		Germicidal Lamp	20	2	40
5	(Primary School)	Lamp	60	35	2,100
		Fluorescent Lamp	40	40	1,600
		Public Address System	100	1	100
6	(Agriculture Sub Center)	Lamp	60	5	300
7	(Branch Post Office)	Lamp	60	5	300
8	Street Lighting	Lamp	60	5	300
9	Private House	Lamp	60	27x5	8,100
		Radio	10	27	270
10	(Rice Milling Plant)	Motor	3,700	1	3,700
11	(Sawmill)	Motor	5,500	1	5,500

12	Total				
(1)	Excluding Private House	Lamp			4,320
		Fluorescent Lamp			1,680
		Heater			12,200
		Power			600
		Total			18,800
(2)	Including Private House	Lamp			12,420
		Fluorescent Lamp			1,680
		Heater			12,200
		Power			10,070
		Total			36,370

Calculation of Maximum Demand Forecast

Case 1 Excluding Private House

$$P \geq \left(\frac{4,320}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{12,200}{1.0 \times 1.0} + \frac{600}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 2,943 + 9,853 = 12,796$ (VA)

Then, Required Power Plant Out Put is as follow:

$Pp = P \times K = 12.8 \times 1.2 = 15$ (kVA)

Where, K is Transmission & Distribution Loss Factor

Case 2 Including Private House

$$P \geq \left(\frac{12,420}{1.0} + \frac{1,680}{0.8}\right) \times 0.5 \times \frac{1.1}{1.2} + \left(\frac{12,200}{1.0 \times 1.0} + \frac{10,070}{0.8 \times 0.8}\right) \times 0.75 \times \frac{1.1}{1.1}$$

$= 6,655 + 20,951 = 27,606$ (VA)

$Pp = P \times K = 27.6 \times 1.2 = 33$ (kVA)

ANNEX-8 DISCHARGE DATA

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	42.710	62.760	87.710	********	174.800	135.630	95.880	89.090	35.020	35.630	25.650	28.950
2	39.600	46.830	89.050	********	115.230	136.450	75.480	78.960	35.820	35.630	29.550	28.960
3	50.900	41.670	82.720	********	160.180	159.960	77.520	104.660	35.190	34.750	32.570	29.910
4	36.660	40.750	88.450	********	110.810	124.570	78.130	60.560	32.430	38.350	29.570	29.300
5	34.350	40.850	92.220	********	128.430	113.920	86.630	61.460	31.780	35.430	29.950	29.130
6	34.350	42.530	94.460	********	128.430	180.500	88.230	47.620	30.490	33.710	30.080	28.700
7	36.040	54.070	110.230	********	128.430	179.650	81.010	54.950	34.900	33.710	33.830	29.780
8	32.260	54.070	85.710	********	111.020	145.650	77.320	40.740	36.770	32.480	30.990	29.190
9	34.230	54.070	102.660	********	109.370	144.560	77.640	49.070	32.240	34.040	30.670	29.040
10	33.450	54.070	109.320	********	153.460	134.890	83.340	47.690	31.300	34.500	29.950	29.631
11	29.460	54.070	135.330	********	132.150	152.240	114.380	37.260	33.180	35.560	29.370	29.300
12	34.460	54.070	120.110	********	159.000	122.630	68.970	37.470	31.230	34.400	32.950	29.190
13	34.790	54.070	96.220	********	115.590	135.450	92.240	40.500	31.010	33.550	31.700	31.220
14	33.810	54.070	91.980	********	172.620	183.420	111.430	40.220	31.960	34.770	31.700	39.220
15	36.960	54.070	90.210	********	98.340	177.090	14.380	38.020	36.770	32.050	31.050	39.350
16	35.910	54.070	97.390	********	113.130	148.530	92.640	39.920	31.850	32.050	30.780	28.980
17	42.930	54.070	92.350	********	130.910	209.860	85.070	38.370	25.130	32.570	33.180	34.040
18	45.760	70.950	105.070	********	143.800	198.940	104.600	38.920	30.820	30.640	35.350	30.400
19	47.650	73.150	164.450	180.000	128.410	170.570	91.960	38.170	30.730	32.300	30.060	39.900
20	49.760	75.680	99.570	132.550	119.870	144.280	85.080	35.840	31.270	31.400	30.700	34.090
21	44.540	87.240	77.880	167.160	115.660	193.780	79.660	38.180	30.550	31.410	28.790	31.260
22	46.850	90.580	96.990	139.930	115.660	122.900	105.740	36.460	28.280	30.500	29.370	31.220
23	45.270	93.110	91.980	195.240	115.660	158.130	85.740	36.510	31.540	33.850	26.230	28.690
24	43.190	88.340	100.340	171.920	146.810	159.150	76.360	32.970	27.730	38.880	25.280	29.830
25	46.890	87.710	145.720	166.900	147.590	103.570	62.090	37.490	27.530	30.450	28.620	25.650
26	46.550	73.580	109.120	148.530	158.000	123.900	62.510	36.510	27.530	30.240	27.610	26.700
27	46.360	77.860	148.010	134.000	152.040	132.150	61.300	40.580	27.190	30.240	29.220	36.960
28	48.180	87.710	********	166.000	119.910	118.710	51.200	38.430	28.490	30.950	26.880	31.220
29	44.610	112.740	********	185.990	145.650	76.240	90.880	36.410	25.470	34.000		33.570
30	55.170	89.950	********	122.220	179.220	111.620	96.200	32.970	29.950	30.300		34.360
31		89.950		122.220	179.220		96.200		29.550	30.200		34.360
TOTAL	1230.230	2068.710	********	********	4245.440	4399.780	2633.810	1386.440	963.700	1028.540	842.090	871.101
AVERAGE	41.010	66.733	********	********	136.950	146.659	84.962	46.215	31.087	33.179	30.075	31.326
MAXIMUM	55.170	112.740	164.450	195.240	192.040	209.860	114.380	104.660	36.770	38.880	35.350	39.900
MINIMUM	29.460	40.750	********	********	98.340	76.240	51.200	32.970	25.130	30.200	25.280	25.650

MAX-NICHI DATE < 840917 > 209.860
95-NICHI DATE < 840829 > 145.650
95-NICHI DATE < 841030 > 96.200
185-NICHI DATE < 840506 > 42.530
275-NICHI DATE < 841210 > 31.300
355-NICHI DATE < 840708 > **********
MIN-NICHI DATE < 840718 > **********
*ITEM(8)

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	209.860	**********

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	********	74.460	112.740	178.940	********	********	********	57.960	50.800	********	********	********
2	40.700	110.590	126.960	295.300	********	********	********	64.540	49.170	********	********	********
3	40.350	93.230	113.460	214.780	********	********	********	64.140	43.630	********	********	********
4	37.890	89.150	137.070	176.510	********	********	********	53.350	40.070	********	********	********
5	35.820	70.210	141.590	392.570	********	********	********	46.020	38.990	********	********	********
6	60.330	73.090	163.040	314.780	********	********	********	48.970	39.610	********	********	********
7	41.260	137.690	116.570	176.610	********	********	********	44.850	34.660	********	********	********
8	41.260	84.660	139.820	188.160	********	********	********	43.850	34.580	********	********	********
9	42.140	76.700	125.120	165.370	********	********	********	43.560	35.480	********	********	********
10	39.210	74.240	115.930	155.790	********	********	********	42.560	35.550	********	********	********
11	39.210	70.160	114.830	119.190	********	********	********	36.450	35.550	********	********	********
12	44.360	68.320	136.920	132.040	********	********	********	35.330	37.940	********	********	********
13	37.330	77.480	106.000	126.250	********	********	********	39.330	36.490	********	********	********
14	42.390	68.320	93.860	176.251	********	********	********	42.440	36.490	********	********	********
15	41.420	70.670	109.360	259.680	********	********	********	39.810	40.980	********	********	********
16	41.960	82.520	162.510	139.680	********	********	********	33.700	36.770	********	********	********
17	44.180	70.480	116.560	188.920	********	********	170.810	48.500	36.770	********	********	********
18	41.270	120.860	158.930	188.920	********	********	143.180	53.590	36.770	********	********	********
19	50.660	105.490	123.280	174.400	********	********	154.780	51.620	38.280	********	********	********
20	41.280	103.130	163.450	170.720	********	********	137.890	51.620	38.120	********	********	********
21	40.120	103.870	153.230	181.380	********	********	137.830	51.620	35.720	********	********	********
22	39.040	118.870	201.050	200.860	********	********	130.640	51.380	35.720	********	********	********
23	52.870	111.510	174.400	186.830	********	********	124.960	50.130	34.490	********	********	********
24	39.320	111.910	179.180	188.920	********	********	113.780	40.310	32.930	********	********	********
25	39.830	85.000	193.410	********	********	********	115.320	39.410	37.260	********	********	********
26	39.190	83.920	195.800	********	********	********	110.520	48.790	32.360	********	********	********
27	52.830	83.920	195.800	********	********	********	105.610	49.230	34.450	********	********	********
28	41.660	100.710	188.380	********	********	********	108.580	54.110	34.180	********	********	********
29	83.910	101.380	145.330	********	********	********	96.360	52.470	32.650	********	********	********
30	92.120	96.230	233.100	********	********	********	94.680	52.470	34.100	********		********
31		96.230		********	********		94.680		34.100	********		********
TOTAL	********	2815.400	4437.770	********	********	********	********	1437.150	1154.660	********	********	********
AVERAGE	********	90.819	147.926	********	********	********	********	47.905	37.247	********	********	********
MAXIMUM	92.120	137.690	233.100	392.570	********	********	170.810	64.540	50.800	********	********	********
MINIMUM	********	68.320	93.860	********	********	********	********	33.700	32.360	********	********	********

MAX-NICHI DATE < 830705 > 392.570
35-NICHI DATE < 830629 > 145.330
95-NICHI DATE < 830515 > 74.240
185-NICHI DATE < 821230 > 34.100
275-NICHI DATE < 821016 > **********
355-NICHI DATE < 820720 > **********
MIN-NICHI DATE < 820331 > **********

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	392.570	**********

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	3.885	4.501	********	20.594	26.544	6.195	********	1.902	0.972	3.731	3.740	3.740
2	4.061	3.885	********	24.514	25.763	8.804	3.594	1.650	0.930	3.899	3.720	3.740
3	4.326	3.965	********	24.481	15.733	7.693	2.862	1.410	0.930	3.899	3.740	3.740
4	5.801	3.773	********	22.667	17.702	5.387	3.180	1.326	0.888	3.899	3.700	3.633
5	3.626	3.787	********	17.990	16.534	7.504	2.874	1.710	0.888	3.731	3.780	3.680
6	4.130	3.598	********	59.542	16.408	16.527	2.708	1.320	0.888	3.899	3.160	3.680
7	3.563	3.773	********	60.690	14.931	42.420	3.534	1.260	0.954	3.899	3.760	3.663
8	3.402	3.787	********	46.536	12.131	20.231	2.928	1.260	0.954	3.899	3.570	3.660
9	3.563	3.787	********	43.962	12.712	16.464	2.676	1.236	1.080	3.899	3.570	3.660
10	3.563	3.626	********	33.985	9.059	15.638	2.130	1.236	1.092	3.731	3.700	3.650
11	3.402	3.787	********	35.203	7.812	11.424	2.070	1.236	1.110	3.899	3.430	3.650
12	3.563	3.885	********	42.532	7.749	11.473	2.214	1.266	1.440	4.067	3.700	3.750
13	3.563	4.046	********	36.967	7.301	********	2.100	1.212	1.788	3.897	3.720	3.680
14	3.563	3.941	********	32.221	6.944	********	2.226	1.170	1.602	3.899	3.680	3.750
15	3.563	3.941	********	28.735	6.594	********	1.992	1.170	1.398	3.899	3.710	3.750
16	3.598	4.212	********	27.454	4.235	********	1.812	1.170	1.074	4.123	3.870	3.790
17	3.563	5.243	********	28.364	3.619	********	2.214	1.314	1.050	3.820	3.710	3.730
18	5.250	129.122	********	22.470	3.619	********	5.400	1.320	1.032	4.151	3.710	3.730
19	3.724	43.792	********	14.238	4.704	********	4.530	1.170	1.032	4.123	3.740	3.660
20	4.686	95.329	********	24.342	3.558	********	3.540	1.170	1.032	3.899	3.710	3.780
21	4.853	38.878	********	32.665	4.623	********	3.492	1.080	0.996	4.061	3.710	3.650
22	4.536	60.739	********	96.484	3.619	********	2.934	1.080	0.996	4.061	3.710	3.750
23	3.598	106.857	********	54.152	4.893	********	2.886	1.044	0.996	4.061	3.710	3.780
24	3.759	49.847	********	46.781	4.319	********	2.556	1.110	0.996	3.899	3.710	3.800
25	3.757	55.981	********	35.042	4.319	********	2.556	1.110	0.996	3.899	3.710	3.800
26	3.598	42.140	********	35.668	5.535	********	2.940	0.984	0.936	3.899	3.710	3.620
27	3.598	35.564	********	64.645	5.061	********	2.070	1.110	0.936	4.067	3.710	3.760
28	4.242	24.274	********	64.645	4.788	********	1.908	1.068	0.936	3.899	3.890	3.700
29	3.859	25.319	********	40.215	4.788	********	2.016	1.026	0.936	4.067		3.900
30	3.430	23.653	********	32.812	4.942	********	2.064	1.021	0.954	3.899		3.760
31		23.653		32.812	4.942		2.064		0.954	3.899		3.760
TOTAL	117.951	826.629	********	1183.078	219.694	********	********	37.141	32.766	121.974	103.280	115.296
AVERAGE	3.932	26.665	********	38.164	5.022	********	********	1.238	1.057	3.935	3.689	3.719
MAXIMUM	5.801	129.122	********	96.484	26.544	42.420	5.400	1.902	1.788	4.151	3.890	3.800
MINIMUM	3.402	3.598	********	14.238	3.558	********	********	0.984	0.888	3.731	3.160	3.620

MAX-NICHI DATE < 840518 > 129.122
95-NICHI DATE < 840801 > 26.544
75-NICHI DATE < 840816 > 4.235
25-NICHI DATE < 850204 > 3.770
275-NICHI DATE < 841114 > 1.170
355-NICHI DATE < 840921 > **********
MIN-NICHI DATE < 841001 > **********
ITEM 7 1

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	129.122	**********

NANGLAM RYLRYO 25.00 KM**2 1983-NENDO (S-58)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	2.490	2.940	4.732	19.096	15.932	22.792	5.800	6.360	4.560	3.745	3.318	1.750
2	2.786	3.230	4.732	17.045	13.524	16.926	5.317	6.146	4.711	3.450	3.024	1.673
3	2.464	4.613	4.732	15.085	16.435	15.855	7.532	8.113	4.186	3.299	2.926	1.589
4	2.744	3.752	4.305	18.956	9.630	19.855	6.594	5.397	4.186	2.793	3.059	1.589
5	2.877	3.157	11.361	33.044	5.772	13.482	6.140	5.397	4.186	3.171	2.159	1.673
6	2.254	4.340	8.652	26.530	12.905	12.838	6.237	6.118	4.151	3.171	3.059	1.589
7	2.464	71.188	26.850	19.600	15.915	10.899	6.237	5.579	4.151	3.311	3.059	1.589
8	2.254	9.520	12.527	10.360	11.830	24.248	6.118	5.397	3.976	3.458	3.059	1.673
9	2.344	10.143	17.444	10.360	16.765	65.758	5.719	5.397	3.976	3.171	3.059	1.673
10	3.017	9.057	13.048	15.757	7.812	44.303	6.216	5.320	3.976	3.171	2.926	1.750
11	2.943	4.428	12.265	11.893	9.310	48.736	6.706	5.145	3.976	3.458	2.900	1.589
12	2.505	3.031	11.669	15.722	9.310	79.926	6.167	4.970	3.808	2.779	1.666	1.589
13	2.744	4.473	9.828	21.413	9.387	40.166	6.027	5.145	3.976	3.171	1.666	3.059
14	2.744	4.326	10.668	21.798	11.228	21.290	5.596	4.970	3.976	3.605	1.666	1.918
15	2.786	5.976	14.669	30.569	12.782	24.892	5.530	5.145	3.808	3.171	1.750	1.918
16	2.786	4.326	7.385	13.034	8.974	22.708	5.530	5.859	4.123	3.059	1.666	1.918
17	2.744	5.334	9.758	23.611	7.945	18.739	8.337	5.103	4.123	3.059	1.666	1.918
18	2.744	7.133	9.009	16.772	7.945	19.656	8.337	5.103	3.948	2.926	1.666	1.918
19	2.254	10.136	21.007	15.344	10.465	20.587	7.413	5.285	3.948	3.759	1.666	3.059
20	1.764	9.366	21.007	12.094	7.672	18.907	70.028	5.103	3.948	3.129	1.750	3.059
21	2.422	10.962	21.007	11.641	33.852	17.703	6.475	5.068	3.948	2.926	1.666	2.884
22	2.555	9.989	21.007	21.294	29.920	16.891	7.210	5.068	4.123	3.059	1.666	2.884
23	2.422	7.210	18.662	10.950	18.732	13.440	6.104	5.068	3.948	3.059	1.666	3.024
24	2.628	7.056	24.626	19.078	28.826	17.915	6.069	5.593	3.948	3.199	1.666	1.918
25	2.688	6.419	15.126	11.830	23.408	18.166	5.880	5.068	3.899	3.059	1.587	1.918
26	2.828	6.202	17.509	27.363	27.792	17.717	5.999	5.593	3.899	3.059	1.666	1.918
27	3.045	4.592	19.324	42.161	30.177	18.046	6.195	5.410	4.123	2.926	1.666	1.918
28	3.080	4.645	10.900	14.619	21.224	13.615	6.146	4.880	3.750	3.059	2.926	1.827
29	2.940	4.760	28.497	23.002	21.378	11.431	6.146	4.711	3.899	3.059	2.926	1.827
30	2.940	4.445	16.982	17.978	18.438	11.193	6.146	4.711	3.710	3.171		1.827
31		4.445		17.978	18.438		6.146		3.710	3.171		1.827
TOTAL	79.856	250.644	422.548	585.645	501.723	724.578	268.097	162.222	124.650	98.603	66.195	62.265
AVERAGE	2.662	8.085	14.085	18.892	16.185	24.153	8.648	5.407	4.021	3.181	2.282	2.009
MAXIMUM	3.080	71.188	28.497	42.161	33.852	79.926	70.028	8.113	4.711	3.759	3.318	3.059
MINIMUM	1.764	2.940	4.305	10.360	7.672	10.899	5.530	4.711	3.710	2.779	1.587	1.589

MAX-NICHI DATE < 830512 > 79.926

95-NICHI DATE < 830720 > 21.007

95-NICHI DATE < 830929 > 11.421

185-NICHI DATE < 831120 > 5.103

275-NICHI DATE < 840207 > 3.059

355-NICHI DATE < 840222 > 1.676

MIN-NICHI DATE < 840225 > 1.587

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
3347.016	9.145	79.926	1.587

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	********	********	********	********	7.140	6.937	12.033	7.238	5.068	********	********	********
2	********	********	********	********	11.529	7.196	8.162	7.128	4.298	********	********	********
3	********	********	********	********	11.704	5.964	7.812	6.363	4.725	********	********	********
4	********	********	********	********	17.270	6.933	7.973	6.909	5.873	********	********	********
5	********	********	********	********	9.309	7.217	15.932	5.705	6.713	********	********	********
6	********	********	********	********	6.930	7.642	8.715	7.679	5.586	********	********	********
7	********	********	********	********	7.581	7.280	11.665	9.666	6.188	********	********	********
8	********	********	********	********	8.316	8.078	9.535	7.679	5.418	********	********	********
9	********	********	********	********	9.809	9.322	11.665	5.705	5.313	********	********	********
10	********	********	********	********	8.645	11.767	14.700	8.673	3.930	********	********	********
11	********	********	********	********	7.966	10.752	10.710	8.232	3.542	********	********	********
12	********	********	********	20.692	9.175	5.250	10.570	8.225	3.829	********	********	********
13	********	********	********	15.535	10.122	14.728	9.975	8.225	3.969	********	********	********
14	********	********	********	13.710	5.140	10.622	5.327	5.292	2.310	********	********	********
15	********	********	********	11.690	6.678	17.052	6.469	7.238	2.163	********	********	********
16	********	********	********	7.812	10.297	14.500	4.630	7.910	2.989	********	********	********
17	********	********	********	9.022	9.863	13.855	7.280	7.693	3.990	********	********	********
18	********	********	********	13.202	10.553	14.301	7.392	7.910	3.882	********	********	********
19	********	********	********	8.715	10.551	13.552	7.987	6.825	3.423	********	********	********
20	********	********	********	5.614	11.053	14.462	7.427	5.908	3.682	********	********	********
21	********	********	********	7.329	7.630	16.116	6.853	5.908	3.549	********	********	********
22	********	********	********	11.256	7.042	12.891	8.211	6.275	3.171	********	********	********
23	********	********	********	5.614	7.987	12.250	8.078	5.628	3.950	********	********	********
24	********	********	********	********	8.405	11.536	8.421	6.135	3.171	********	********	********
25	********	********	********	********	7.805	10.614	8.428	5.985	3.171	********	********	********
26	********	********	********	********	11.270	9.660	7.427	6.845	3.297	********	********	********
27	********	********	********	********	8.022	11.445	8.323	6.202	3.297	********	********	********
28	********	********	********	********	10.843	13.605	7.903	4.704	3.773	********	********	********
29	********	********	********	********	10.545	12.131	8.232	6.546	3.458	********		********
30	********	********	********	********	12.557	10.787	8.337	3.470	3.458	********		********
31		********		********	12.557		8.337		3.458	********		********
TOTAL	********	********	********	********	292.467	328.485	274.509	203.907	124.644	********	********	********
AVERAGE	********	********	********	********	9.434	10.950	8.855	6.797	4.021	********	********	********
MAXIMUM	********	********	********	20.692	17.270	17.052	15.932	9.666	6.713	********	********	********
MINIMUM	********	********	********	********	5.140	5.250	4.630	3.470	2.163	********	********	********

MAX-NIGHT DATE < 820712 > 20.692
35-NIGHT DATE < 820920 > 10.787
65-NIGHT DATE < 820507 > 7.280
185-NIGHT DATE < 820430 > **********
275-NIGHT DATE < 820731 > **********
355-NIGHT DATE < 820321 > **********
MIN-NIGHT DATE < 820231 > **********
*ITEM 7 *

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	20.692	**********

TASHIYANGTSI FYURYO 20.00 KM**2 1984-NENDO (S-59)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	0.301	0.578	0.413	0.266	1.253	********	0.826	0.699	0.470	0.294	0.280	0.245
2	0.322	0.518	0.413	0.368	1.155	********	0.819	0.672	0.504	0.294	0.280	0.241
3	0.322	0.469	0.357	0.982	1.022	********	0.819	0.672	0.504	0.287	0.270	0.250
4	0.322	0.490	0.357	0.875	0.847	********	0.791	0.672	0.560	0.300	0.270	0.250
5	0.301	0.399	0.343	0.805	0.903	********	0.791	0.651	0.560	0.294	0.270	0.250
6	0.273	0.371	0.343	1.057	0.889	********	0.777	0.651	0.539	0.294	0.270	0.252
7	0.273	0.413	0.539	1.057	0.889	********	0.756	0.637	0.539	0.287	0.270	0.252
8	0.273	0.497	0.574	0.840	0.875	********	0.756	0.637	0.539	0.280	0.270	0.252
9	0.273	0.511	0.574	0.693	0.875	********	0.756	0.637	0.644	0.266	0.270	0.260
10	0.273	0.539	0.560	0.868	********	0.924	0.742	0.665	0.644	0.259	0.270	0.260
11	0.273	0.518	0.560	0.868	********	0.896	0.742	0.665	0.609	0.259	0.270	0.250
12	0.273	0.518	0.546	1.050	********	1.029	0.728	0.651	0.609	0.252	0.270	0.250
13	0.273	0.539	0.476	0.707	********	1.295	0.728	0.651	0.595	0.252	0.270	0.270
14	0.267	0.595	0.434	0.784	********	1.295	0.966	0.651	0.595	0.259	0.270	0.270
15	0.267	0.546	0.938	0.784	********	1.183	1.176	0.644	0.595	0.232	0.270	0.261
16	0.267	0.658	0.938	1.141	********	1.183	1.050	0.644	0.581	0.273	0.270	0.261
17	0.273	0.658	0.665	1.036	********	1.183	0.966	0.595	0.581	0.276	0.260	0.261
18	0.279	0.840	0.595	0.868	********	2.072	0.966	0.581	0.546	0.273	0.260	0.270
19	0.294	0.840	0.595	0.819	********	1.253	0.966	0.581	0.546	0.273	0.260	0.270
20	0.301	0.714	0.567	0.714	********	1.183	0.938	0.581	0.539	0.273	0.270	0.270
21	0.322	0.518	0.868	0.917	********	1.120	0.917	0.567	0.539	0.276	0.270	0.273
22	0.322	0.756	0.574	1.085	********	1.120	0.819	0.567	0.476	0.276	0.260	0.273
23	0.301	0.476	0.749	1.050	********	1.092	0.819	0.567	0.455	0.266	0.270	0.270
24	0.273	0.469	1.050	1.176	********	1.029	0.805	0.560	0.455	0.266	0.250	0.270
25	0.273	0.490	1.106	0.910	********	0.945	0.749	0.532	0.455	0.276	0.250	0.270
26	0.273	0.420	0.840	1.330	********	0.882	0.749	0.532	0.448	0.276	0.250	0.270
27	0.273	0.413	0.784	1.288	********	0.868	0.763	0.518	0.448	0.273	0.250	0.270
28	0.267	0.490	0.763	1.085	********	0.868	0.749	0.497	0.441	0.273	0.250	0.270
29	0.267	0.476	0.945	0.966	********	0.840	0.749	0.490	0.441	0.270		0.270
30	0.469	0.476	1.337	1.330	********	********	0.728	0.490	0.441	0.276		0.270
31		0.476		1.330	********		0.728		0.441	0.276		0.270
TOTAL	8.734	16.575	19.606	30.345	********	********	25.634	19.067	16.339	8.481	7.440	8.121
AVERAGE	0.291	0.535	0.660	0.979	********	********	0.827	0.602	0.527	0.274	0.246	0.262
MAXIMUM	0.469	0.940	1.337	1.330	1.253	2.072	1.176	0.699	0.644	0.300	0.280	0.273
MINIMUM	0.267	0.371	0.343	0.693	********	********	0.728	0.400	0.441	0.232	0.250	0.241

MAX-NICHI DATE < 940918 > 2.072

75-NICHI DATE < 940701 > 0.966

95-NICHI DATE < 941026 > 0.749

185-NICHI DATE < 950221 > 0.476

275-NICHI DATE < 950213 > 0.270

355-NICHI DATE < 940731 > **********

MIN-NICHI DATE < 940930 > **********

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	2.072	**********

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	0.434	0.945	0.546	********	0.525	0.903	0.740	0.427	0.294	0.483	0.463	********
2	0.420	1.057	0.532	********	0.595	0.889	0.642	0.427	0.294	0.476	0.392	********
3	0.406	0.966	0.560	********	0.497	0.847	0.672	0.420	0.294	0.483	0.420	********
4	0.420	0.840	0.503	********	0.511	0.875	0.728	0.413	0.261	0.469	0.392	********
5	0.392	0.658	0.553	********	0.518	0.819	0.700	0.406	0.266	0.469	0.405	********
6	0.406	0.798	0.560	********	0.637	0.701	0.686	0.406	0.266	0.476	********	********
7	0.483	0.763	0.735	0.567	0.686	0.882	0.686	0.371	0.252	0.483	********	0.469
8	0.357	0.854	0.662	0.539	0.552	0.840	0.651	0.371	0.266	0.465	********	0.455
9	0.945	0.777	0.763	0.511	0.553	0.903	0.651	0.392	0.266	0.497	********	0.441
10	0.630	0.763	0.546	0.567	0.665	0.777	0.686	0.392	0.266	0.565	********	0.357
11	0.700	0.651	0.519	0.405	0.616	1.057	0.700	0.378	0.266	0.476	********	0.414
12	0.497	0.672	0.497	0.406	0.598	0.868	0.728	0.378	0.266	0.450	********	0.476
13	0.413	1.036	0.477	0.420	0.721	1.630	0.651	0.371	0.252	0.490	********	0.518
14	0.406	0.926	0.483	0.554	0.637	1.176	0.567	0.371	0.252	0.406	********	0.483
15	0.403	0.700	0.469	1.806	0.580	1.050	0.679	0.322	0.252	0.448	********	0.483
16	0.364	0.651	0.476	0.532	0.819	0.587	0.679	0.343	0.252	0.490	********	0.455
17	0.392	0.644	0.553	0.448	0.693	1.015	0.644	0.336	0.252	0.467	********	0.476
18	0.336	0.651	0.539	0.370	0.784	0.987	0.595	0.336	0.252	0.441	********	0.497
19	0.371	0.651	0.518	0.364	0.728	0.868	0.581	0.329	0.252	0.427	********	0.518
20	0.434	1.302	0.497	0.497	1.022	0.958	0.567	0.329	0.250	0.441	********	0.483
21	0.406	0.763	0.497	0.455	0.931	0.910	0.532	0.308	0.270	0.413	********	0.497
22	0.574	1.470	0.560	1.120	1.022	0.966	0.532	0.308	0.294	0.357	********	0.455
23	0.700	0.938	0.553	0.658	0.987	1.085	0.518	0.301	0.287	0.441	********	0.413
24	0.644	0.910	0.497	0.476	1.155	1.057	0.518	0.308	0.287	0.427	********	0.466
25	0.497	0.763	0.483	0.868	0.987	0.945	0.511	0.308	0.250	0.441	********	0.392
26	0.525	0.651	0.573	0.546	0.889	0.868	0.511	0.315	0.320	0.427	********	0.392
27	0.357	0.679	0.644	0.595	0.847	0.910	0.537	0.308	0.322	0.441	********	0.406
28	0.812	0.693	0.623	0.532	0.956	0.840	0.480	0.308	0.294	0.357	********	0.420
29	0.977	0.672	0.644	0.623	1.022	0.833	0.462	0.300	0.294	0.413	********	0.420
30	0.840	0.672	0.763	1.037	0.903	0.714	0.462	0.294	0.287	0.441		0.406
31		0.672		1.037	0.903		0.462		0.287	0.441		0.406
TOTAL	15.541	25.088	16.624	********	24.399	28.160	18.760	10.576	8.463	14.009	********	********
AVERAGE	0.518	0.809	0.561	********	0.787	0.939	0.605	0.353	0.273	0.452	********	********
MAXIMUM	0.977	1.470	0.763	1.806	1.155	1.630	0.740	0.427	0.322	0.565	0.463	0.518
MINIMUM	0.336	0.644	0.469	********	0.497	0.701	0.462	0.294	0.250	0.357	********	********

MAX-NICHI DATE < 830715 > 1.806
35-NICHI DATE < 830821 > 0.931
95-NICHI DATE < 830512 > 0.672
185-NICHI DATE < 840101 > 0.483
275-NICHI DATE < 830718 > 0.370
355-NICHI DATE < 840224 > **********
MIN-NICHI DATE < 840306 > **********
*ITEM(6)

ANNUAL			
TOTAL	AVERAGE	MAXIMUM	MINIMUM
***********	***********	1.806	***********

TASHIYANGTSI PYURYO 20.00 KM**2 1982-NENDO (S-57)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	********	********	0.320	0.750	0.930	1.230	0.850	0.770	0.812	********	********	********
2	********	********	0.300	0.740	1.210	1.230	0.830	0.730	0.889	********	********	********
3	********	********	0.310	1.010	1.650	1.180	0.960	0.700	0.833	********	********	********
4	********	********	0.310	1.020	1.340	1.260	0.850	0.760	0.812	********	********	********
5	********	********	0.330	0.920	1.100	1.150	0.870	0.780	0.749	********	********	********
6	********	********	0.290	1.120	1.160	1.350	0.890	0.770	0.791	********	********	********
7	********	********	0.320	0.930	1.100	1.400	0.820	0.770	0.560	********	********	********
8	********	********	0.540	0.930	1.290	1.320	0.800	0.740	0.553	********	********	********
9	********	********	0.620	1.290	1.270	1.250	0.850	0.730	0.553	********	********	********
10	********	********	0.720	0.940	1.160	1.180	0.820	0.820	0.560	********	********	********
11	********	********	1.030	0.900	1.210	1.380	0.940	0.720	0.546	********	********	********
12	********	********	0.740	0.930	1.590	1.300	0.830	0.760	0.616	********	********	********
13	********	0.560	0.660	1.060	1.170	1.180	0.820	0.750	0.560	********	********	********
14	********	0.550	0.520	1.130	1.310	1.340	0.790	0.670	0.574	********	********	********
15	********	0.560	1.060	0.940	1.620	1.180	0.760	0.700	0.560	********	********	********
16	********	0.490	0.650	0.870	1.720	1.340	0.780	0.670	0.540	********	********	********
17	********	0.340	0.540	0.980	1.470	1.220	0.720	0.640	0.553	********	********	********
18	********	0.300	1.920	0.940	1.290	1.170	0.770	0.670	0.560	********	********	********
19	********	0.380	0.740	0.830	1.410	1.150	0.770	0.670	0.497	********	********	********
20	********	0.340	1.240	0.870	1.530	1.240	0.760	0.670	0.518	********	********	********
21	********	0.370	1.050	0.850	1.470	1.140	0.820	0.640	0.546	********	********	********
22	********	0.410	0.740	0.830	1.250	1.160	0.820	0.630	0.553	********	********	********
23	********	0.310	0.700	1.140	1.290	1.090	1.360	0.610	0.546	********	********	********
24	********	0.310	0.670	0.990	1.530	1.140	0.990	0.600	0.560	********	********	********
25	********	0.300	0.840	0.870	1.260	1.100	0.800	0.620	0.570	********	********	********
26	********	0.290	1.010	0.990	1.280	0.980	0.800	0.600	0.560	********	********	********
27	********	0.290	0.770	1.210	1.400	1.000	0.770	0.600	0.560	********	********	********
28	********	0.300	0.650	1.100	1.340	0.900	0.760	0.590	0.497	********	********	********
29	********	0.270	1.060	1.400	1.180	0.940	0.760	0.600	0.497	********		********
30	********	0.320	0.720	1.250	1.850	0.990	0.750	0.580	0.476	********		********
31		0.320		1.250	1.850		0.750		0.476	********		********
TOTAL	********	********	21.450	31.260	42.230	35.520	25.660	20.550	18.477	********	********	********
AVERAGE	********	********	0.715	1.008	1.362	1.184	0.828	0.685	0.596	********	********	********
MAXIMUM	********	0.560	1.920	1.400	1.850	1.400	1.360	0.920	0.889	********	********	********
MINIMUM	********	********	0.290	0.740	0.930	0.900	0.720	0.580	0.476	********	********	********

MAX-NICHI DATE < 820618 > 1.920
35-NICHI DATE < 820825 > 1.260
95-NICHI DATE < 821202 > 0.885
185-NICHI DATE < 821207 > 0.560
275-NICHI DATE < 820512 > **********
355-NICHI DATE < 830321 > **********
MIN-NICHI DATE < 830231 > **********
*ITEM(6)

ANNUAL			
TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	1.920	**********

<DAY>	4	5	6	7	8	9	10	11	12	1	2	3
1	********	13.510	********	37.630	********	********	128.570	27.690	18.130	********	********	********
2	********	21.280	********	62.260	********	********	122.520	26.920	18.040	********	********	********
3	********	14.240	********	27.630	********	********	117.880	26.630	17.900	********	********	********
4	********	12.160	********	46.500	********	********	106.890	26.480	17.900	********	********	********
5	********	11.160	********	45.170	********	********	103.380	26.370	17.900	********	********	********
6	********	10.650	********	51.280	********	********	94.760	26.260	15.090	********	********	********
7	********	11.160	********	123.060	********	********	97.750	25.870	17.780	********	********	********
8	********	15.130	********	98.650	********	********	94.850	25.730	15.090	********	********	********
9	********	15.930	********	84.990	********	********	90.340	22.670	15.090	********	********	********
10	********	17.920	********	97.020	********	********	76.860	22.670	15.090	********	********	********
11	********	20.010	********	81.760	********	********	77.710	25.680	15.020	********	********	********
12	********	20.480	********	105.580	********	********	68.740	22.350	14.880	********	********	********
13	********	21.820	********	119.570	********	********	67.100	22.280	14.860	********	********	********
14	********	25.680	********	88.220	********	********	67.100	22.090	18.360	********	********	********
15	********	21.070	********	85.910	********	********	92.070	22.090	17.930	********	********	********
16	********	24.790	********	80.280	********	********	72.760	22.020	14.760	********	********	********
17	********	19.680	********	82.110	********	********	73.460	21.820	14.650	********	********	********
18	********	45.260	********	********	********	********	77.330	21.650	14.580	********	********	********
19	********	54.320	********	********	********	********	73.460	21.650	14.480	********	********	********
20	********	35.060	********	********	********	********	69.600	21.520	14.380	********	********	********
21	********	29.500	********	********	********	********	77.330	21.530	14.380	********	********	********
22	********	42.540	********	********	********	********	74.740	21.440	14.380	********	********	********
23	********	100.310	********	********	********	********	71.060	18.640	14.220	********	********	********
24	********	61.930	********	********	********	********	68.740	18.530	14.220	********	********	********
25	********	50.550	********	********	********	********	68.740	18.500	14.220	********	********	********
26	********	55.880	********	********	********	********	72.050	18.360	14.220	********	********	********
27	********	44.220	********	********	********	********	72.050	18.360	14.020	********	********	********
28	********	45.560	********	********	********	********	71.520	18.270	14.020	********	********	********
29	********	37.370	********	********	********	********	66.530	18.130	13.900	********		********
30	********	27.650	********	********	********	********	67.100	18.130	13.900	********		********
31		27.650		********	********		67.100		13.900	********		********
TOTAL	********	966.430	********	********	********	********	2550.090	670.330	477.290	********	********	********
AVERAGE	********	31.175	********	********	********	********	82.261	22.344	15.396	********	********	********
MAXIMUM	********	100.310	********	123.060	********	********	128.570	27.690	18.360	********	********	********
MINIMUM	********	10.650	********	********	********	********	66.530	18.130	13.900	********	********	********

MAX-NICHI DATE < 841001 > 128.570
75-NICHI DATE < 841020 > 69.600
95-NICHI DATE < 841125 > 18.500
180-NICHI DATE < 840615 > **********
270-NICHI DATE < 840930 > **********
355-NICHI DATE < 850321 > **********
MIN-NICHI DATE < 850331 > **********
<ITEM(5)

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	128.570	**********

MUNSITAR RYLRYO 30.00 KM**2 1983-HENDO (S-58)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	14.450	********	********	********	********	********	********	********	********	20.570	18.110	12.700
2	14.450	********	********	********	********	********	********	********	********	20.570	13.110	11.520
3	16.210	********	********	********	********	********	********	********	********	15.150	13.800	12.700
4	15.830	********	********	********	********	********	********	********	********	13.010	13.800	12.700
5	15.830	********	********	********	********	********	********	********	********	13.620	12.900	12.430
6	16.210	********	********	********	********	********	********	********	********	13.620	13.140	12.430
7	13.360	********	********	********	********	********	********	********	********	13.480	12.760	12.430
8	17.360	********	********	********	********	********	********	********	********	14.910	12.510	13.410
9	14.950	********	********	********	********	********	********	********	********	14.910	12.510	12.700
10	15.760	********	********	********	********	********	********	********	********	14.910	12.510	12.710
11	14.950	********	********	********	********	********	********	********	********	14.250	12.760	15.150
12	20.220	********	********	********	********	********	********	********	********	13.440	12.510	14.090
13	15.760	********	********	********	********	********	********	********	********	14.360	12.510	14.200
14	17.360	********	********	********	********	********	********	********	********	14.360	12.510	14.790
15	15.370	********	********	********	********	********	********	********	********	14.980	12.390	16.690
16	15.370	********	********	********	********	********	********	********	********	13.940	11.150	15.860
17	16.310	********	********	********	********	********	********	********	********	14.610	11.150	17.080
18	15.370	********	********	********	********	********	********	********	********	14.610	11.150	15.940
19	25.550	********	********	********	********	********	********	********	********	14.290	12.390	21.460
20	25.550	********	********	********	********	********	********	********	********	13.540	12.390	22.940
21	28.700	********	********	********	********	********	********	********	********	14.290	12.350	20.760
22	********	********	********	********	********	********	********	********	********	14.130	14.250	21.580
23	********	********	********	********	********	********	********	********	********	13.450	13.110	17.900
24	********	********	********	********	********	********	********	********	********	14.450	13.800	17.900
25	********	********	********	********	********	********	********	********	********	13.720	12.390	16.800
26	********	********	********	********	********	********	********	********	********	13.450	12.350	16.800
27	********	********	********	********	********	********	********	********	********	13.370	12.390	16.920
28	********	********	********	********	********	********	********	********	********	13.110	********	14.940
29	********	********	********	********	********	********	********	********	********	13.110	********	14.940
30	********	********	********	********	********	********	********	********	********	14.280		14.940
31		********		********	********		********		********	14.280		14.940
TOTAL	********	********	********	********	********	********	********	********	********	448.470	********	482.350
AVERAGE	********	********	********	********	********	********	********	********	********	14.467	********	15.560
MAXIMUM	28.700	********	********	********	********	********	********	********	********	20.570	18.110	22.940
MINIMUM	********	********	********	********	********	********	********	********	********	13.010	********	11.520

MAX-NICHI DATE < 830421 > 28.700
35-NICHI DATE < 830409 > 14.950
95-NICHI DATE < 840214 > 12.510
185-NICHI DATE < 830705 > **********
275-NICHI DATE < 831003 > **********
355-NICHI DATE < 831222 > **********
MIN-NICHI DATE < 840229 > **********
*ITEM(5)

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	28.700	**********

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	15.804	20.860	14.340	********	********	37.710	25.710	18.090	16.090	********	********	********
2	32.908	20.860	14.170	********	********	36.590	26.190	24.150	17.850	********	********	********
3	15.804	27.290	14.570	********	********	21.130	22.516	24.160	18.850	********	********	********
4	7.974	29.070	15.130	********	********	27.110	24.310	23.370	16.030	********	********	********
5	16.727	40.260	15.630	********	********	27.110	24.740	22.080	27.270	********	********	********
6	15.185	35.130	14.230	********	********	27.110	21.690	22.080	14.830	********	********	********
7	21.385	20.930	15.670	********	********	23.630	21.650	20.470	14.980	********	********	********
8	15.185	27.280	28.140	********	********	25.690	21.530	20.470	14.700	********	********	********
9	15.185	32.220	37.020	********	********	23.810	21.960	22.140	14.700	********	********	********
10	15.185	32.220	37.020	********	********	25.690	25.300	22.140	14.700	********	********	********
11	19.460	32.220	37.020	********	********	25.270	23.200	20.810	14.980	********	********	********
12	17.707	37.250	37.020	********	********	32.690	21.280	20.810	14.700	********	********	********
13	18.477	35.580	39.420	********	********	27.110	21.470	19.180	14.990	********	********	********
14	18.496	27.620	39.420	********	********	49.470	21.470	19.180	14.990	********	********	********
15	17.185	37.250	39.420	********	********	93.430	20.770	18.140	17.690	********	********	********
16	17.185	27.620	42.900	********	********	49.990	20.770	18.720	17.960	********	********	********
17	25.693	23.250	42.900	********	********	59.030	20.770	17.640	14.450	********	********	********
18	25.693	21.790	42.900	********	********	48.040	20.770	18.250	14.870	********	********	********
19	21.690	21.190	42.900	********	********	40.550	27.060	18.250	17.520	********	********	********
20	31.690	21.190	42.900	********	********	37.480	27.060	17.400	16.060	********	********	********
21	17.389	23.200	34.360	********	********	37.480	28.700	17.400	16.060	********	********	********
22	17.185	17.450	34.360	********	********	34.790	28.700	17.590	14.890	********	********	********
23	17.185	15.640	38.800	********	********	38.990	26.700	20.420	16.060	********	********	********
24	16.878	14.130	38.800	********	********	38.990	57.730	18.050	16.060	********	********	********
25	16.878	14.130	38.800	********	********	38.990	41.730	18.050	14.890	********	********	********
26	23.000	20.010	38.800	********	25.140	27.110	25.900	17.380	14.420	********	********	********
27	25.305	15.110	38.800	********	30.620	27.110	25.900	17.380	14.420	********	********	********
28	17.461	17.980	38.800	********	32.200	29.630	31.830	23.380	15.290	********	********	********
29	23.786	17.980	38.800	********	35.430	26.490	24.080	15.070	15.000	********		********
30	23.786	14.420	39.050	********	36.370	23.600	25.270	15.970	14.040	********		********
31		14.420		********	36.370		25.270		14.040	********		********
TOTAL	593.451	756.480	992.050	********	********	1052.220	804.026	568.220	493.380	********	********	********
AVERAGE	19.782	24.499	33.068	********	********	35.074	25.936	19.607	15.915	********	********	********
MAXIMUM	32.908	40.260	42.900	********	36.370	93.430	57.730	24.160	27.270	********	********	********
MINIMUM	7.974	14.130	14.170	********	********	21.130	20.770	15.070	14.040	********	********	********

MAX-NIGHT DATE < 820615 > 93.430
95-NIGHT DATE < 820610 > 37.020
90-NIGHT DATE < 821029 > 24.080
185-NIGHT DATE < 820607 > 15.630
275-NIGHT DATE < 820825 > **********
355-NIGHT DATE < 820321 > **********
MIN-NIGHT DATE < 830331 > **********
*ITEM(5)

ANNUAL			
TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	93.430	**********

PEMAGYAT ... RYLPYC ... 15.00 KM**2 ... 1984-NENCO (S-591)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	0.436	0.427	0.578	1.611	21.040	8.852	5.217	********	0.898	1.330	1.141	1.620
2	0.447	0.427	0.578	1.611	27.880	8.362	4.991	********	0.961	1.295	1.141	0.990
3	0.462	0.387	0.908	1.710	15.610	5.340	5.027	********	0.982	1.324	1.141	1.010
4	0.433	0.376	0.953	1.516	4.674	9.901	5.537	********	0.926	1.324	1.111	0.970
5	0.451	0.387	1.026	1.238	27.663	5.657	5.811	********	0.917	1.324	1.111	0.970
6	0.437	0.367	1.075	1.293	15.942	13.501	5.027	********	0.945	1.294	1.140	1.010
7	0.417	0.357	1.453	2.016	13.603	13.067	4.816	********	1.043	1.253	1.140	0.990
8	0.424	0.367	1.865	1.764	10.829	9.501	4.791	********	1.055	1.282	1.111	0.950
9	0.411	0.429	1.585	1.849	10.768	9.901	4.084	********	1.128	1.192	1.090	0.990
10	0.410	0.425	1.571	2.107	10.588	3.133	5.114	********	1.140	1.226	1.070	0.970
11	0.373	0.392	1.377	2.167	********	2.632	3.546	********	1.056	1.253	1.050	0.950
12	0.393	0.837	1.350	2.040	********	2.720	3.652	********	0.898	1.143	1.050	0.950
13	0.411	0.409	1.350	2.513	********	3.340	3.773	********	1.128	1.143	1.050	0.990
14	0.399	0.418	1.353	3.901	********	3.346	4.192	********	1.274	1.082	1.050	0.940
15	0.381	0.387	2.023	3.722	********	4.529	3.521	********	0.991	1.130	1.020	0.950
16	0.411	0.450	2.956	3.558	********	5.748	3.627	********	1.067	1.151	1.070	0.920
17	0.416	0.457	3.737	2.768	********	5.228	3.627	********	1.117	1.199	1.050	0.950
18	0.450	0.496	2.753	2.513	********	3.827	4.141	********	1.067	1.177	1.020	0.910
19	0.427	0.917	3.610	2.443	********	3.655	3.287	********	0.970	1.199	1.020	0.910
20	0.423	0.667	2.074	3.229	********	3.477	3.287	********	0.930	1.151	1.060	0.950
21	0.424	0.779	2.115	3.329	********	3.477	********	********	0.951	1.128	1.020	0.910
22	0.406	1.170	1.864	6.577	********	3.557	********	********	0.921	1.143	1.050	0.880
23	0.417	2.370	1.650	5.306	********	3.215	********	********	0.896	1.121	1.070	0.900
24	0.380	3.197	1.650	********	********	3.188	********	********	0.879	1.096	1.050	0.850
25	0.392	1.766	1.424	********	10.334	2.983	********	********	0.930	1.077	1.070	0.920
26	0.372	1.805	1.362	********	6.690	3.109	********	********	0.886	1.082	1.020	0.890
27	0.418	1.565	1.257	********	6.627	3.243	********	********	********	1.106	1.020	0.410
28	0.405	1.503	1.387	********	7.457	3.056	********	********	********	1.082	1.050	0.430
29	0.395	1.445	2.015	********	8.963	2.778	********	********	********	1.416		0.360
30	********	1.348	1.611	********	8.663	2.778	********	********	********	1.082		0.360
31		1.348		********	8.663		********		********	1.082		0.360
TOTAL	********	27.665	51.360	********	********	165.541	********	********	********	36.888	30.026	27.150
AVERAGE	********	0.892	1.712	********	********	5.518	********	********	********	1.190	1.072	0.876
MAXIMUM	0.462	3.197	3.737	6.577	27.880	13.501	5.811	********	1.274	1.416	1.141	1.620
MINIMUM	********	0.357	0.908	********	********	2.632	********	********	********	1.077	1.020	0.360

MAX-NICHI DATE < 840802 > 27.880

95-NICHI DATE < 841006 > 5.027

95-NICHI DATE < 840709 > 1.849

185-NICHI DATE < 850217 > 1.050

275-NICHI DATE < 840513 > 0.405

355-NICHI DATE < 841125 > **********

MIN-NICHI DATE < 841231 > **********

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	27.880	********

ITEM(4)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	0.303	0.476	0.449	0.990	2.535	2.128	3.700	1.997	1.478	1.225	0.410	0.360
2	0.303	0.476	0.449	1.084	2.411	2.128	3.673	2.085	1.525	0.454	0.394	0.352
3	0.303	0.476	0.449	0.966	2.705	1.834	3.365	1.957	1.459	0.482	0.379	0.338
4	0.314	0.476	0.438	1.142	2.177	1.628	3.612	1.987	1.459	0.482	0.394	0.366
5	0.302	0.488	0.449	1.215	2.297	1.502	2.997	1.869	1.361	0.441	0.409	0.383
6	0.315	0.488	0.464	1.045	2.587	1.640	3.359	1.779	1.386	0.448	0.392	0.385
7	0.310	0.513	0.568	1.057	2.411	1.600	2.997	1.936	1.416	0.438	0.399	0.368
8	0.322	0.513	0.618	0.949	2.297	1.871	2.997	1.722	1.402	0.428	0.383	0.352
9	0.298	0.557	0.520	0.936	2.032	1.950	3.673	1.708	1.372	0.428	0.391	0.345
10	0.310	0.510	0.515	0.921	1.012	1.950	3.906	1.800	1.402	0.428	0.391	0.352
11	0.352	0.547	0.492	0.867	2.569	2.168	4.177	1.800	1.402	0.428	0.409	0.359
12	0.303	0.595	0.464	0.813	2.049	2.417	3.760	1.800	1.372	0.419	0.400	0.359
13	0.310	0.610	0.483	0.899	2.049	2.747	2.625	1.800	1.328	0.438	0.409	0.352
14	0.298	0.525	0.472	1.131	2.049	2.611	3.602	1.449	1.220	0.448	0.400	0.338
15	0.309	0.578	0.484	3.251	1.871	2.747	2.997	1.622	1.250	0.448	0.399	0.345
16	0.315	0.498	0.496	3.137	1.950	2.781	3.070	1.532	1.288	0.430	0.366	0.345
17	0.298	0.486	0.483	2.428	1.871	2.270	2.946	1.532	1.288	0.411	0.364	0.352
18	0.303	0.550	0.464	1.025	2.007	2.373	2.781	1.532	1.260	0.390	0.369	0.352
19	0.310	0.566	0.472	2.457	1.871	2.925	2.912	1.570	1.260	0.429	0.357	0.353
20	0.322	0.485	0.472	2.457	1.920	2.797	2.545	1.532	1.997	0.429	0.368	0.488
21	0.303	0.515	0.980	2.478	2.076	2.797	2.768	1.416	1.222	0.429	0.478	0.476
22	0.310	0.485	0.859	2.028	2.688	2.797	2.658	1.383	1.275	0.411	0.431	0.401
23	0.315	0.469	0.809	2.132	1.800	2.797	2.576	1.844	1.303	0.430	0.401	0.363
24	0.322	0.469	0.762	2.411	1.800	3.756	2.475	1.347	1.303	0.429	0.406	0.375
25	0.298	0.457	0.680	2.586	2.118	5.406	2.272	1.424	1.303	0.429	0.393	0.366
26	0.303	0.457	0.683	2.758	1.947	4.538	2.534	1.425	1.316	0.429	0.368	0.338
27	0.298	0.448	0.926	3.245	1.989	5.410	2.251	1.372	1.347	0.402	********	0.305
28	0.488	0.429	0.983	2.811	1.909	3.756	2.059	1.349	1.248	0.419	********	0.350
29	0.455	0.429	1.048	3.014	1.909	3.323	2.100	1.293	1.225	0.411	********	0.374
30	0.488	0.449	0.950	2.297	1.909	********	2.185	1.293	1.225	0.437		0.317
31		0.449		2.297	1.909		2.185		1.225	0.437		0.317
TOTAL	9.821	15.573	18.527	57.717	64.724	********	92.756	49.156	41.917	14.187	********	11.176
AVERAGE	0.327	0.502	0.618	1.862	2.088	********	2.992	1.639	1.352	0.458	********	0.361
MAXIMUM	0.488	0.610	1.048	3.251	2.705	5.410	4.177	2.085	1.997	1.225	0.478	0.488
MINIMUM	0.298	0.429	0.438	0.813	1.012	********	2.059	1.293	1.220	0.390	********	0.305

MAX-NIGHT DATE < 820927 > 5.410
95-NIGHT DATE < 820916 > 2.787
95-NIGHT DATE < 820826 > 1.947
185-NIGHT DATE < 820627 > 0.926
275-NIGHT DATE < 820111 > 0.428
355-NIGHT DATE < 820421 > 0.303
MIN-NIGHT DATE < 840229 > ********** ********** 5.410 **********
*ITEM(4)

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	5.410	**********

PEMAGYAT ... RYLPYO ... 15.00 KM**2 1982-MENOO (S-57)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	0.996	0.966	0.917	1.926	3.776	1.941	2.951	1.446	1.098	********	********	********
2	0.916	0.966	1.025	2.027	3.776	1.856	2.627	1.404	1.019	********	********	********
3	0.856	1.180	0.996	2.119	4.736	1.743	2.495	1.446	1.005	********	********	********
4	0.880	1.245	1.003	2.217	4.491	1.941	2.291	1.479	1.111	********	********	********
5	0.836	1.354	0.956	2.438	4.491	1.717	2.107	1.350	1.056	********	********	********
6	0.836	0.987	0.919	9.632	4.736	1.959	2.103	1.350	1.005	********	********	********
7	0.816	1.249	1.219	9.633	5.505	1.836	1.929	1.350	1.082	********	********	********
8	1.068	1.054	1.710	11.923	5.505	1.595	1.929	1.298	0.968	********	********	********
9	1.145	0.956	7.392	15.875	4.050	1.776	1.902	1.298	0.925	********	********	********
10	1.078	1.151	1.513	15.975	4.050	1.837	1.902	1.298	0.992	********	********	********
11	1.078	0.987	1.389	19.212	3.821	1.591	1.983	1.298	0.960	********	********	********
12	1.202	1.064	1.966	13.309	3.285	1.643	1.392	1.298	0.861	********	********	********
13	0.944	1.215	1.819	11.923	3.286	1.715	1.669	1.298	0.925	********	********	********
14	1.066	1.064	1.319	11.923	2.888	1.928	1.759	1.298	0.925	********	********	********
15	1.122	1.064	1.372	9.633	3.976	2.203	1.420	1.201	0.978	********	********	********
16	0.966	1.040	1.246	7.228	3.576	3.220	1.652	1.218	0.941	********	********	********
17	1.102	0.931	1.319	5.521	3.713	4.175	1.585	1.269	0.941	********	********	********
18	0.914	0.996	1.199	4.232	2.930	3.921	1.595	1.096	0.912	********	********	********
19	0.914	0.796	1.760	3.786	1.677	4.145	1.537	1.171	0.912	********	********	********
20	0.916	0.796	1.913	3.786	2.228	3.921	1.491	1.236	0.838	********	********	********
21	1.014	0.938	5.124	4.050	1.522	3.525	1.517	1.125	0.874	********	********	********
22	0.917	0.938	3.978	3.686	1.643	3.524	1.517	1.157	0.874	********	********	********
23	0.917	0.804	2.392	3.127	1.906	3.675	1.631	1.204	0.837	********	********	********
24	0.954	0.804	2.149	4.142	2.113	3.357	1.631	1.114	0.861	********	********	********
25	1.041	0.798	2.262	5.505	2.137	2.598	1.608	1.142	0.826	********	********	********
26	1.135	0.966	2.283	7.361	2.057	3.270	1.608	1.100	0.844	********	********	********
27	0.933	0.966	2.168	7.671	2.057	3.084	1.526	1.100	********	********	********	********
28	0.924	1.011	2.086	5.505	2.137	2.951	1.438	1.047	********	********	********	********
29	0.998	0.866	2.763	4.736	2.137	3.379	1.397	1.100	********	********		********
30	0.906	0.866	1.956	4.491	2.113	3.379	1.463	1.100	********	********		********
31		0.866		4.491	2.113		1.463		********	********		********
TOTAL	29.285	29.898	59.493	218.882	98.431	79.804	55.118	37.295	********	********	********	********
AVERAGE	0.976	0.964	1.982	7.061	3.175	2.660	1.778	1.243	********	********	********	********
MAXIMUM	1.202	1.354	7.392	19.212	5.505	4.175	2.951	1.479	1.111	********	********	********
MINIMUM	0.816	0.796	0.917	1.926	1.522	1.591	1.392	1.047	********	********	********	********

MAX-NIGHT DATE < 820711 > 19.212

35-NIGHT DATE < 820622 > 3.978

55-NIGHT DATE < 821007 > 1.325

185-NIGHT DATE < 821127 > 1.100

275-NIGHT DATE < 821231 > **********

355-NIGHT DATE < 830321 > **********

MIN-NIGHT DATE < 830331 > **********

*ITEM(4)

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	19.212	**********

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	141.340	101.750	348.750	917.850	1101.100	832.900	404.010	242.340	155.280	122.340	80.730	52.870
2	54.440	111.710	341.510	755.850	1237.630	54.100	473.880	248.260	148.640	126.930	79.880	64.440
3	99.330	116.310	281.510	705.960	934.030	858.690	496.440	229.730	144.390	114.410	80.450	55.960
4	95.650	116.310	282.620	815.150	791.530	832.230	413.700	233.330	141.680	115.050	82.130	60.530
5	91.490	128.260	300.790	766.370	629.470	902.570	399.910	222.880	131.940	109.900	73.310	54.310
6	56.940	129.160	420.040	954.100	630.110	1089.250	282.060	219.940	137.010	116.050	60.330	57.190
7	56.940	131.460	436.440	1004.340	54.107	1038.420	343.060	224.610	149.130	101.640	60.120	48.320
8	58.440	132.680	487.300	1170.140	505.510	880.740	352.400	217.000	150.080	116.050	61.810	55.300
9	54.660	133.370	432.040	954.100	627.370	791.460	330.050	192.650	150.080	975.805	9.710	58.420
10	58.530	141.330	517.810	846.950	568.680	732.350	329.290	178.390	147.260	95.830	52.990	58.420
11	54.550	163.420	602.410	766.370	594.880	741.200	263.090	185.780	149.130	82.960	57.160	61.190
12	52.790	154.780	596.660	1164.540	541.690	720.320	355.090	185.780	144.920	91.690	62.210	60.970
13	51.760	176.770	522.900	1011.340	578.850	753.780	413.700	175.910	141.680	89.640	64.660	52.140
14	51.760	172.440	528.190	832.230	540.420	756.390	355.640	183.190	144.920	88.220	73.870	58.030
15	55.520	197.330	583.270	1020.920	539.110	961.450	427.490	173.420	144.920	96.860	73.140	57.820
16	55.240	372.800	789.280	954.100	553.100	838.840	395.750	170.340	141.680	95.180	63.890	54.670
17	53.550	353.010	80.523	1026.920	574.560	1073.670	413.700	173.530	136.580	106.200	64.460	53.800
18	55.960	396.060	454.300	954.100	558.500	1065.880	320.800	173.350	133.870	102.660	57.610	52.960
19	55.700	396.060	382.850	766.370	612.860	838.840	330.050	167.900	132.590	94.020	57.610	51.110
20	60.300	371.990	442.650	73.962	638.400	791.520	339.290	167.900	127.200	91.690	62.840	54.670
21	59.490	327.100	660.200	916.480	518.150	853.040	363.090	157.670	125.380	89.950	53.630	53.830
22	58.440	317.480	528.190	1101.120	518.150	696.270	348.530	170.400	122.360	94.870	55.950	52.990
23	55.510	435.620	507.640	1155.020	522.870	753.780	340.760	160.580	119.660	91.380	54.140	52.600
24	57.580	309.620	602.410	1050.300	500.400	753.780	322.700	162.440	118.380	89.080	52.430	40.120
25	73.330	315.110	923.650	968.800	547.370	605.320	310.080	158.140	118.880	89.950	43.270	44.750
26	80.000	297.730	739.620	1645.980	834.430	538.160	253.500	152.430	117.710	88.200	50.560	52.600
27	93.830	277.940	605.320	1341.320	502.570	527.990	290.120	167.670	113.280	90.790	49.750	50.760
28	102.080	372.800	570.520	2044.380	75.840	552.770	250.750	163.280	114.290	89.060	51.590	49.930
29	83.190	456.840	559.940	1784.050	1101.340	461.530	283.360	153.840	110.770	75.810		50.190
30	100.840	396.060	538.160	1171.540	1156.780	445.730	266.850	141.180	112.530	77.230		55.090
31		396.060		1171.540	1156.780		266.850		112.530	77.230		55.090
TOTAL	2159.120	7903.270	********	********	********	********	********	5563.460	4138.750	3886.675	1690.230	1680.980
AVERAGE	73.304	254.944	502.251	1026.197	667.632	758.099	353.871	185.449	133.508	125.377	60.365	54.225
MAXIMUM	141.340	456.840	923.650	2044.380	1237.630	1089.250	496.440	248.260	155.280	975.805	82.130	64.440
MINIMUM	51.760	101.750	80.523	73.962	54.107	54.100	266.850	141.180	110.770	75.810	9.710	40.120

MAX-NICHI DATE < 840728 > 2044.380
95-NICHI DATE < 840721 > 916.480
85-NICHI DATE < 840622 > 528.190
185-NICHI DATE < 840514 > 172.440
275-NICHI DATE < 850128 > 80.060
355-NICHI DATE < 850319 > 51.110
MIN-NICHI DATE < 850209 > 9.710
*ITEM(7)

ANNUAL			
TOTAL	AVERAGE	MAXIMUM	MINIMUM
129351.657	351.649	2044.380	9.710

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	89.390	150.040	252.370	484.260	581.110	414.840	421.980	166.230	157.490	97.410	86.640	91.760
2	129.260	121.140	264.760	602.280	441.390	373.930	319.040	170.180	159.480	116.440	88.630	109.220
3	145.250	167.160	291.270	532.300	362.990	414.840	314.870	162.450	160.550	116.440	84.210	96.790
4	116.270	136.710	306.250	464.110	326.100	470.260	305.300	163.810	148.820	107.050	86.410	10.245
5	145.990	124.430	374.150	780.590	317.120	300.400	250.460	161.580	143.930	89.110	101.010	99.000
6	112.350	135.990	291.730	586.440	309.710	309.510	260.610	151.900	142.200	95.670	83.740	98.790
7	116.780	178.570	403.420	455.050	309.710	373.810	272.960	149.320	136.400	86.950	86.600	99.680
8	116.080	289.120	388.670	213.470	281.560	358.800	229.430	162.750	133.370	81.770	83.670	94.070
9	9.963	199.890	336.720	329.700	273.930	298.800	237.850	164.920	140.700	71.770	92.560	90.410
10	10.015	147.040	228.360	308.100	381.500	356.470	141.610	179.620	138.010	59.880	86.510	92.930
11	88.290	113.770	176.190	297.430	518.150	1195.810	252.340	180.800	150.780	72.870	83.790	90.860
12	85.920	129.220	157.650	278.730	627.370	683.230	259.340	174.450	137.880	84.420	89.090	105.850
13	92.650	169.390	178.110	241.560	460.110	423.690	156.710	155.150	137.010	83.210	88.550	99.170
14	94.780	145.500	181.750	231.950	500.490	546.460	231.930	162.700	137.010	91.620	81.960	103.500
15	93.580	126.270	194.500	327.960	527.590	388.330	214.360	163.590	130.490	93.200	82.580	128.760
16	102.660	122.660	246.330	228.430	729.980	562.000	219.630	187.330	128.410	10.246	86.420	119.120
17	101.500	161.040	196.220	27.998	500.080	583.810	195.850	179.980	132.130	11.284	85.240	101.100
18	97.210	198.420	235.870	447.130	537.200	775.250	198.030	173.010	128.430	99.670	92.350	91.760
19	95.080	725.760	195.810	547.310	565.340	598.800	218.210	179.380	138.500	97.840	90.430	87.500
20	89.550	228.380	219.560	552.200	493.080	489.230	185.100	172.530	123.320	98.530	95.320	92.670
21	89.610	252.390	222.920	588.330	598.820	470.260	191.620	173.010	127.000	111.750	84.070	94.200
22	88.750	264.920	272.270	648.900	560.110	493.690	174.440	184.670	128.840	86.380	84.140	90.040
23	92.350	160.570	246.650	526.250	532.600	455.200	167.580	183.190	129.260	136.730	84.960	96.770
24	95.400	160.980	427.750	568.620	509.510	664.120	163.920	172.780	129.260	125.790	111.720	104.820
25	105.990	167.200	354.410	722.470	479.040	474.240	173.430	162.210	144.030	104.480	111.880	92.670
26	97.860	156.800	324.530	688.450	441.810	95.780	161.610	147.400	134.300	88.130	111.720	92.076
27	96.540	156.000	303.710	667.530	537.520	720.320	157.200	160.140	129.890	98.710	104.020	90.270
28	117.050	200.340	480.640	667.530	484.200	648.110	152.510	153.980	129.850	115.540	104.020	90.270
29	231.700	194.100	609.370	759.460	455.200	406.740	160.340	169.570	135.390	97.480	104.020	89.390
30	148.020	134.440	591.370	1283.000	565.340	352.180	170.110	158.800	123.160	113.000		89.090
31		134.440		1283.000	565.340		170.110		123.160	113.000		89.090
TOTAL	3096.242	5751.410	9353.450	********	********	********	6771.780	5035.430	4298.040	2806.370	2656.660	2921.971
AVERAGE	103.208	185.529	311.782	527.098	415.545	497.302	218.445	167.848	138.646	90.528	91.609	94.254
MAXIMUM	231.700	725.760	609.370	1283.000	729.980	1195.810	421.980	187.330	195.380	136.730	111.880	128.760
MINIMUM	9.963	113.770	157.650	27.998	273.930	95.780	141.610	147.400	123.160	10.246	81.960	10.245

MAX-NICHI DATE < 830730 > 1283.000
95-NICHI DATE < 830719 > 547.310
185-NICHI DATE < 830626 > 309.710
275-NICHI DATE < 830524 > 160.980
355-NICHI DATE < 830225 > 104.020
MIN-NICHI DATE < 830215 > 82.580
MIN-NICHI DATE < 830409 > 9.963

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
85691.891	242.228	1283.000	9.963

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	142.640	103.100	********	********	********	********	********	********	180.710	********	********	********
2	146.502	174.686	********	********	********	********	********	********	92.790	********	********	********
3	119.973	153.698	********	********	********	********	********	********	112.330	********	********	********
4	184.606	145.937	********	********	********	********	********	********	100.670	********	********	********
5	151.036	142.572	********	********	********	********	********	********	113.300	********	********	********
6	155.335	167.116	********	********	********	********	********	********	28.250	********	********	********
7	152.861	170.271	********	********	********	********	********	********	103.190	********	********	********
8	97.890	150.300	********	********	********	********	********	********	97.090	********	********	********
9	********	233.144	********	********	********	********	********	********	131.570	********	********	********
10	********	177.714	********	********	********	********	********	********	127.220	********	********	********
11	********	132.736	********	********	********	********	********	********	106.740	********	********	********
12	********	146.080	********	********	********	********	********	********	94.010	********	********	********
13	********	151.816	********	********	********	********	********	********	100.470	********	********	********
14	********	157.245	********	********	********	********	********	********	106.740	********	********	********
15	********	232.644	********	********	********	********	********	********	101.730	********	********	********
16	********	190.158	********	********	********	********	********	********	87.060	********	********	********
17	********	197.874	********	********	********	********	********	********	98.970	********	********	********
18	********	321.512	********	********	********	********	********	102.158	90.900	********	********	********
19	********	221.694	********	********	********	********	********	102.158	117.760	********	********	********
20	********	221.684	********	********	********	********	********	115.640	101.570	********	********	********
21	********	284.713	********	********	********	********	********	101.560	98.670	********	********	********
22	********	385.745	********	********	********	********	********	111.260	108.500	********	********	********
23	********	188.866	********	********	********	********	********	98.510	98.980	********	********	********
24	********	192.964	********	********	********	********	********	122.790	117.050	********	********	********
25	********	180.866	********	********	********	********	********	153.530	98.670	********	********	********
26	********	140.401	********	********	********	********	********	146.520	107.380	********	********	********
27	********	129.062	********	********	********	********	********	165.480	104.790	********	********	********
28	********	164.917	********	********	********	********	********	102.820	100.240	********	********	********
29	********	246.304	********	********	********	********	********	96.740	100.240	********		********
30	********	171.114	********	********	********	********	********	108.030	105.130	********		********
31		171.114		********	********		********		105.130	********		********
TOTAL	********	5872.641	********	********	********	********	********	********	3307.850	********	********	********
AVERAGE	********	189.440	********	********	********	********	********	********	106.705	********	********	********
MAXIMUM	184.606	385.745	********	********	********	********	********	165.480	180.710	********	********	********
MINIMUM	********	103.100	********	********	********	********	********	********	87.060	********	********	********

MAX-NIGHT DATE < 820522 > 385.745

95-NIGHT DATE < 820401 > 142.640

95-NIGHT DATE < 820420 > **********

185-NIGHT DATE < 820619 > **********

275-NIGHT DATE < 821117 > **********

355-NIGHT DATE < 820321 > **********

MIN-NIGHT DATE < 830231 > **********

*ITEM 3)

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	385.745	**********

KHALHG PYLEYO 30.00 KM**2 1984-NENDO (S-59)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	0.563	0.539	1.737	2.198	2.842	8.335	1.477	1.134	0.889	0.500	********	0.410
2	0.560	0.602	1.533	1.953	2.698	4.704	1.393	1.134	0.959	0.480	********	0.430
3	0.574	0.567	1.533	3.003	2.688	4.704	1.750	1.071	0.889	0.520	********	0.459
4	0.516	0.511	1.657	2.502	2.667	4.046	1.750	1.071	0.889	0.520	********	0.430
5	0.532	0.511	1.652	2.254	3.115	4.970	1.400	1.071	0.989	0.520	********	0.430
6	0.434	0.539	3.339	2.254	2.506	5.047	1.400	1.071	0.777	0.480	********	0.430
7	0.331	0.602	2.520	3.339	2.506	4.214	1.372	1.071	0.777	0.480	********	0.430
8	0.406	0.511	2.198	3.142	2.292	4.074	1.330	1.071	0.854	0.480	********	0.430
9	0.406	0.798	2.198	2.576	2.016	3.493	1.330	1.071	0.777	0.560	********	0.410
10	0.563	0.798	1.652	4.221	2.016	3.430	1.330	1.071	0.777	0.520	********	0.430
11	0.406	0.899	1.737	3.339	2.212	3.430	1.330	1.071	0.854	0.560	********	0.430
12	0.371	0.798	1.484	3.339	1.960	3.332	1.316	1.071	0.854	0.520	********	0.410
13	0.427	0.749	1.484	3.339	1.960	3.003	1.316	1.071	0.777	0.520	********	0.460
14	0.518	0.849	3.143	2.075	1.960	3.003	1.330	1.071	0.854	0.520	********	0.460
15	0.392	0.749	3.983	2.282	2.254	3.003	1.491	1.071	0.854	0.460	********	0.460
16	0.371	0.847	3.143	2.016	1.960	3.003	1.330	1.043	0.777	0.520	********	0.441
17	0.455	0.686	2.475	2.212	1.960	3.003	1.330	0.966	0.777	0.520	********	0.430
18	0.392	0.903	3.003	1.694	1.960	3.003	1.295	1.043	0.724	0.480	********	0.390
19	0.495	0.903	3.039	1.645	2.198	3.003	1.316	0.966	0.742	0.590	********	0.410
20	0.392	0.728	3.143	1.645	2.212	3.003	1.316	1.043	0.742	0.520	********	0.410
21	0.500	0.693	3.003	2.016	2.198	3.003	1.246	1.015	0.742	0.490	********	0.410
22	0.550	0.952	2.457	4.032	1.960	3.003	1.246	1.043	0.742	0.450	********	0.380
23	0.550	0.966	2.254	5.460	1.960	3.003	1.246	1.043	0.742	0.450	********	0.390
24	0.590	0.882	2.107	3.528	2.254	3.003	1.246	0.931	0.742	0.480	********	0.410
25	0.590	0.826	2.198	4.368	2.198	3.003	1.204	0.931	0.742	0.420	********	0.390
26	0.540	0.903	2.142	2.842	2.198	1.890	1.204	1.001	0.742	0.450	********	0.410
27	0.500	0.728	2.142	3.528	3.822	1.799	1.162	0.931	0.638	0.490	********	0.410
28	0.580	0.882	2.142	4.368	3.822	1.440	1.162	0.931	0.637	0.490	********	0.410
29	0.670	0.826	3.003	3.731	3.255	1.393	1.162	0.931	0.607	0.440		0.390
30	0.550	0.826	********	3.003	3.255	1.344	1.127	0.899	0.607	0.430		0.410
31		0.826		3.003	3.255		1.127		0.607	********		0.410
TOTAL	15.166	23.789	********	90.922	76.139	100.688	41.034	30.998	23.980	********	********	13.001
AVERAGE	0.506	0.754	********	2.932	2.456	3.356	1.324	1.030	0.774	********	********	0.419
MAXIMUM	0.550	0.966	3.983	5.460	3.822	8.239	1.750	1.134	0.959	0.590	********	0.460
MINIMUM	0.331	0.511	********	1.645	1.960	1.344	1.127	0.899	0.607	********	********	0.380

MAX-NICHI DATE < 840501 > 8.239
35-NICHI DATE < 840708 > 3.143
95-NICHI DATE < 840810 > 2.016
185-NICHI DATE < 841129 > 0.931
275-NICHI DATE < 850101 > 0.500
355-NICHI DATE < 850218 > **********
MIN-NICHI DATE < 850228 > **********
*ITEM(2)

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	8.239	**********

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	0.800	1.066	0.867	1.170	1.890	1.720	1.700	0.753	0.710	0.904	0.685	0.656
2	0.685	1.273	0.940	1.350	1.520	1.780	1.581	0.753	0.640	0.733	0.767	0.656
3	0.868	1.341	0.754	2.440	1.590	2.310	1.450	0.831	0.710	0.800	0.656	0.628
4	0.968	1.273	0.867	1.760	1.390	1.600	1.510	0.753	0.710	0.685	0.656	0.628
5	0.800	1.120	0.754	4.630	1.470	1.380	1.430	0.710	0.640	0.685	0.734	0.701
6	0.800	1.341	0.940	3.300	1.690	1.670	1.230	0.760	0.710	0.685	0.734	0.628
7	0.800	1.099	0.754	2.200	1.690	1.991	1.302	0.760	0.710	0.832	0.756	0.628
8	0.800	1.099	1.060	1.590	1.608	1.991	1.340	0.860	0.710	0.832	0.628	0.760
9	0.868	1.300	1.060	1.750	1.650	1.991	1.390	0.760	0.640	0.832	0.734	0.628
10	0.868	0.940	1.012	1.650	1.420	4.630	1.390	0.830	0.670	0.832	0.642	0.746
11	0.733	0.904	0.976	1.370	1.920	5.400	1.760	0.760	0.670	0.832	0.642	0.628
12	0.868	0.834	0.900	1.440	1.740	18.100	1.260	0.760	0.670	0.767	0.734	0.628
13	0.868	0.976	0.904	1.390	1.931	5.280	1.840	0.760	0.670	0.734	0.734	0.832
14	0.832	0.940	0.834	1.510	1.750	3.870	1.490	0.760	0.670	0.701	0.628	0.656
15	0.832	0.834	0.904	8.370	1.690	2.630	1.840	0.760	0.610	0.642	0.628	0.656
16	0.656	0.768	0.834	1.390	1.450	2.550	1.030	0.760	0.610	0.642	0.756	0.767
17	0.656	1.012	0.940	1.590	1.620	2.034	0.960	0.760	0.640	0.768	0.796	0.832
18	0.832	1.012	0.867	1.610	1.600	2.040	0.960	0.740	0.580	0.642	0.642	0.832
19	0.868	0.976	0.976	1.360	1.500	1.930	1.020	0.740	0.580	0.701	0.701	0.904
20	0.868	0.976	1.012	1.320	1.550	1.930	0.900	0.740	0.570	0.760	0.642	0.904
21	0.656	0.900	1.012	1.630	1.690	2.630	0.960	0.680	0.497	0.760	0.701	0.834
22	0.656	0.976	0.855	1.520	1.930	3.630	0.960	0.740	0.532	0.640	0.760	0.733
23	0.468	0.824	0.976	1.700	1.740	2.550	0.900	0.740	0.504	0.640	0.656	0.733
24	0.468	0.940	0.855	1.510	1.930	1.930	0.960	0.740	0.511	0.599	0.796	0.868
25	0.904	0.867	0.867	2.050	1.690	1.910	0.900	0.820	0.670	0.599	0.656	0.885
26	0.468	0.867	0.976	1.570	2.000	2.020	0.830	0.740	0.570	0.640	0.656	0.733
27	0.468	0.940	1.048	1.300	1.720	1.700	0.830	0.740	0.580	0.796	0.701	0.834
28	0.834	1.120	1.250	1.800	1.850	1.850	0.830	1.010	0.520	0.796	0.701	0.656
29	1.066	0.867	1.273	1.410	1.440	********	0.890	0.740	0.570	0.796	0.701	0.868
30	0.976	0.794	1.568	1.290	1.740	********	0.890	0.740	0.520	0.767		0.800
31		0.794		1.290	1.740		0.890		0.520	********		0.800
TOTAL	23.134	30.788	28.845	61.710	52.089	********	37.213	23.000	19.114	********	20.303	23.042
AVERAGE	0.771	0.993	0.962	1.991	1.680	********	1.200	0.767	0.617	********	0.700	0.743
MAXIMUM	1.066	1.341	1.568	8.370	2.000	18.100	1.840	1.010	0.710	0.904	0.796	0.904
MINIMUM	0.468	0.768	0.754	1.170	1.390	********	0.830	0.680	0.497	********	0.628	0.628

MAX-NICHI DATE < 820912 > 18.100
95-NICHI DATE < 830801 > 1.890
95-NICHI DATE < 830711 > 1.370
185-NICHI DATE < 831108 > 0.860
275-NICHI DATE < 840322 > 0.733
355-NICHI DATE < 831230 > 0.520
MIN-NICHI DATE < 840131 > **********
ITEM 2)

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	18.100	**********

CYETSA ..... PYLPYO 60.00 KM**2 1984-NENDO (S-55)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	3.920	7.798	5.285	10.641	10.409	10.990	6.257	5.676	3.180	2.807	2.420	2.128
2	3.770	5.108	5.068	8.708	11.053	10.962	6.306	4.138	2.910	2.611	2.269	2.268
3	3.667	4.914	4.188	12.117	11.725	13.853	5.279	5.172	2.252	2.906	2.212	1.981
4	3.764	4.298	3.624	8.477	8.631	13.293	7.021	5.642	2.950	2.674	2.110	1.960
5	3.663	4.196	4.188	8.687	8.631	11.725	6.167	5.123	2.484	2.484	2.040	2.765
6	3.541	4.210	5.068	8.295	5.709	14.455	6.167	5.357	2.517	2.611	2.290	2.548
7	3.820	5.257	11.169	8.295	8.652	10.409	7.312	3.520	2.873	2.772	2.250	2.604
8	3.070	5.159	9.705	9.177	7.903	9.767	5.405	5.625	2.484	2.772	2.250	2.443
9	2.920	5.068	8.561	8.413	9.303	10.647	6.357	5.540	2.169	2.702	2.640	2.660
10	3.940	6.902	6.152	8.918	7.574	10.962	9.310	3.910	2.439	3.157	2.560	2.289
11	3.590	7.224	5.008	11.403	7.477	10.962	9.004	4.778	2.169	2.793	2.660	2.443
12	3.460	6.335	5.564	14.519	7.259	9.982	9.527	4.857	2.873	2.730	2.540	2.653
13	3.640	6.706	6.244	10.409	7.812	12.460	9.261	3.800	2.517	2.570	2.630	2.617
14	3.960	5.145	6.244	15.750	7.518	********	8.676	4.291	2.950	2.583	2.510	3.519
15	3.220	7.128	13.447	9.667	7.036	********	10.213	3.313	2.460	2.562	2.660	2.996
16	3.350	8.393	14.057	15.996	9.499	********	9.135	4.823	2.517	3.060	2.510	2.750
17	4.771	7.084	12.425	8.211	9.647	********	9.103	4.125	2.517	3.234	2.380	2.100
18	5.270	5.999	9.923	14.871	8.981	********	7.287	3.633	2.467	2.709	2.440	2.853
19	4.150	6.489	8.652	11.725	10.724	********	8.141	3.991	2.950	2.968	2.360	2.639
20	3.260	5.624	7.342	8.456	10.675	********	9.247	3.897	2.517	3.101	2.100	2.919
21	4.770	5.033	9.968	11.508	10.255	********	12.021	3.631	2.460	2.709	2.250	2.839
22	4.140	10.280	10.409	11.053	8.841	********	11.417	3.483	2.873	2.870	2.350	2.665
23	4.000	6.881	10.409	10.017	11.452	********	8.803	3.483	1.856	2.870	2.250	2.618
24	3.224	5.761	2.418	10.472	11.430	********	8.605	3.897	2.073	2.821	2.340	2.604
25	3.270	5.931	10.871	11.725	11.430	********	7.267	3.827	2.426	2.022	2.300	2.492
26	3.971	5.656	15.750	11.170	11.430	********	7.300	3.985	2.621	2.213	2.500	2.604
27	3.650	5.474	10.472	10.409	13.174	********	6.864	3.168	2.877	2.142	2.500	3.157
28	3.770	5.809	12.062	9.667	13.419	********	7.612	3.297	2.685	3.352	0.200	2.905
29	10.050	6.531	10.808	10.641	13.419	********	5.605	3.003	2.621	2.653		2.870
30	7.550	5.831	12.173	11.032	13.419	********	6.784	********	2.037	2.807		2.793
31		5.931		11.032	13.419		6.784		2.037	2.807		2.793
TOTAL	122.427	197.955	257.259	331.452	311.906	********	244.237	********	78.761	85.073	64.521	81.475
AVERAGE	4.081	6.063	8.577	10.692	10.061	********	7.879	********	2.541	2.744	2.304	2.628
MAXIMUM	10.050	10.280	15.750	15.996	13.419	14.455	12.021	5.676	3.180	3.352	2.660	3.519
MINIMUM	2.920	4.196	2.418	8.211	7.036	********	5.279	********	1.856	2.022	0.200	1.960

MAX-NICHI DATE < 840716 > 15.996
35-NICHI DATE < 840722 > 11.053
95-NICHI DATE < 840704 > 8.477
185-NICHI DATE < 841117 > 4.125
275-NICHI DATE < 850205 > 2.640
355-NICHI DATE < 840521 > **********
MIN-NICHI DATE < 841130 > **********
*ITEM(1)

ANNUAL

TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	15.996	**********

KEALHG ... RYCRYC ... 30.00 KM-2 ... [illegible]

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	1.855	0.915	0.885	1.372	1.273	0.904	0.832	0.832	0.703	1.226	1.375	0.653
2	1.619	0.827	0.855	1.372	1.273	0.800	0.767	0.832	0.703	1.165	1.360	0.653
3	1.664	0.915	0.855	1.372	1.531	0.800	0.832	0.832	0.868	1.163	1.417	0.852
4	1.366	1.199	1.099	1.408	1.552	0.868	0.767	0.767	0.868	1.131	1.423	0.852
5	1.143	1.199	1.066	1.365	1.273	0.733	0.946	0.868	0.868	1.176	1.423	0.852
6	1.139	1.199	1.199	1.660	1.480	0.834	0.734	0.868	0.868	1.168	0.719	0.852
7	1.128	1.199	2.021	1.371	1.635	0.904	0.796	0.968	0.868	1.238	0.733	0.852
8	0.883	1.159	2.021	1.371	1.273	0.867	0.796	0.968	0.800	1.264	0.745	0.852
9	0.827	1.159	1.358	1.371	1.624	0.904	0.734	0.800	0.800	1.196	0.619	0.852
10	0.770	1.192	1.732	1.371	1.341	0.834	0.734	0.868	0.800	1.217	0.669	0.930
11	0.647	1.192	1.656	1.371	1.341	0.834	0.760	0.868	0.800	1.151	0.325	0.786
12	0.883	1.066	1.444	1.371	1.341	0.885	0.760	0.800	0.800	1.408	0.768	0.786
13	0.855	0.976	1.258	1.588	1.341	0.885	0.701	0.868	0.800	1.397	0.686	0.852
14	0.798	0.976	1.300	1.531	0.772	1.000	0.701	0.868	0.868	1.260	0.659	0.793
15	0.672	1.033	1.326	1.588	0.712	1.033	0.760	0.733	0.868	1.306	0.659	0.793
16	0.885	1.033	1.300	1.313	0.610	1.120	0.760	0.733	0.868	1.332	0.659	0.793
17	1.120	1.000	1.199	1.273	0.690	0.885	0.701	0.733	0.868	1.340	0.659	0.793
18	1.033	1.000	1.326	1.552	0.673	0.867	0.701	0.733	0.868	1.488	0.744	0.793
19	0.855	1.000	1.280	1.552	0.757	0.867	0.832	0.868	0.800	1.459	0.659	0.793
20	0.855	0.985	1.935	1.552	0.757	0.868	0.832	0.868	0.733	1.495	0.744	0.639
21	0.855	0.827	2.011	1.552	0.610	0.834	0.832	0.968	0.800	1.423	0.744	0.639
22	0.855	0.827	1.939	1.311	0.670	0.834	0.832	0.832	0.800	1.412	0.744	0.639
23	0.855	0.927	1.552	1.552	0.643	0.867	1.192	0.832	0.800	1.374	0.744	0.347
24	0.855	0.927	1.358	1.552	0.643	0.940	1.192	0.832	0.733	1.374	0.659	0.347
25	0.885	0.827	1.564	1.311	0.673	0.800	0.832	0.832	0.733	1.374	0.744	0.921
26	1.128	0.955	1.371	1.630	0.504	0.868	0.832	0.832	0.733	1.366	0.744	0.857
27	1.219	0.798	1.588	1.398	0.610	0.767	0.832	0.767	0.733	1.321	0.659	0.921
28	1.128	0.855	1.431	1.398	0.504	0.767	0.832	0.767	0.800	1.321	0.744	0.751
29	1.025	0.966	1.444	1.624	0.504	0.832	0.767	0.767	0.800	1.397		0.857
30	0.565	0.855	1.298	1.588	0.610	0.767	0.767	0.703	0.733	1.379		0.857
31		0.855		1.588	0.610		0.767		0.733	1.379		0.857
TOTAL	30.767	30.443	42.851	45.226	31.030	25.968	25.123	24.507	24.817	40.734	22.827	24.014
AVERAGE	1.026	0.982	1.428	1.459	1.001	0.866	0.810	0.817	0.801	1.314	0.815	0.775
MAXIMUM	1.855	1.199	2.021	1.660	1.635	1.120	1.192	0.968	0.868	1.499	1.423	0.930
MINIMUM	0.647	0.798	0.855	1.273	0.610	0.733	0.701	0.703	0.703	1.131	0.325	0.347

MAX-NICHI DATE < 820607 > 2.021
35-NICHI DATE < 820806 > 1.480
95-NICHI DATE < 820808 > 1.273
185-NICHI DATE < 821214 > 0.868
275-NICHI DATE < 830318 > 0.753
355-NICHI DATE < 830321 > 0.639
MIN-NICHI DATE < 830211 > 0.325
*ITEM(2)

ANNUAL			
TOTAL	AVERAGE	MAXIMUM	MINIMUM
369.307	1.009	2.021	0.325

GYETSA RYLRYO 60.00 KM**2 1983-NENDO (S-58)

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	3.290	6.125	5.656	11.040	13.013	********	6.492	3.124	3.056	3.339	3.101	3.334
2	3.420	10.346	5.579	10.710	5.425	********	6.807	3.122	7.905	3.745	4.045	3.255
3	3.170	10.731	5.824	12.990	4.696	********	6.335	3.724	2.863	3.584	3.213	3.521
4	3.206	11.601	6.055	13.390	5.528	********	5.509	4.944	2.772	3.402	3.087	3.654
5	3.206	8.585	6.713	15.187	6.761	********	5.054	5.708	2.891	3.402	3.311	3.073
6	2.970	8.869	6.335	10.542	5.550	********	5.054	2.849	3.052	3.402	3.220	3.031
7	3.550	12.404	7.587	12.144	5.030	********	4.508	4.235	3.213	3.584	2.702	3.066
8	3.470	9.163	10.255	12.144	6.718	********	6.492	4.445	2.814	3.766	2.674	3.066
9	5.047	8.085	8.169	10.670	5.234	********	7.749	3.425	2.814	3.087	3.003	3.031
10	4.487	8.092	6.013	11.316	5.235	********	8.414	3.066	3.101	3.402	2.856	3.038
11	4.018	6.713	5.908	9.706	4.887	********	8.393	2.849	2.793	2.401	2.856	2.842
12	3.857	6.650	5.712	10.765	5.350	********	5.208	3.241	2.360	2.842	3.304	4.144
13	3.857	12.047	4.697	13.421	5.350	********	6.230	3.066	3.269	3.766	3.045	3.885
14	3.885	8.617	4.521	8.398	5.642	********	7.539	3.437	4.032	2.947	2.926	3.750
15	3.528	8.393	8.239	9.829	5.873	********	6.174	3.654	3.171	3.311	2.926	3.815
16	3.857	12.271	7.725	8.370	6.985	********	5.852	3.521	3.045	3.493	3.101	4.543
17	3.551	7.672	7.266	7.341	6.170	********	6.090	2.961	2.961	2.975	2.975	3.857
18	4.025	9.142	6.545	6.867	5.310	********	5.775	3.059	2.821	3.101	3.150	3.255
19	3.542	9.366	7.266	5.452	5.978	********	5.425	3.374	2.863	3.563	3.192	3.521
20	3.521	9.940	7.072	7.048	5.308	********	4.697	3.500	3.127	3.072	3.584	3.311
21	3.717	10.136	6.825	6.727	6.590	********	4.697	3.010	7.702	2.982	3.745	3.500
22	3.927	12.607	6.685	12.375	5.120	********	5.292	2.961	2.497	********	3.676	3.528
23	5.166	7.882	3.356	10.106	6.570	********	5.663	3.409	2.562	********	3.808	3.374
24	4.221	6.797	3.381	12.946	11.472	********	5.778	2.842	2.639	********	2.842	3.311
25	4.592	6.384	5.350	12.711	8.960	********	4.697	2.842	2.450	********	4.473	3.164
26	5.194	6.587	4.459	11.091	7.935	********	4.403	3.045	2.814	********	3.556	3.402
27	6.384	6.587	5.056	10.771	6.369	********	4.354	3.045	3.150	********	3.031	3.584
28	6.902	6.489	5.655	13.013	6.710	********	4.633	2.793	3.024	********	3.031	3.808
29	5.380	6.244	6.256	13.013	7.116	********	3.920	2.835	3.024	********	3.031	3.584
30	6.426	5.859	10.550	13.013	9.215	********	4.343	2.795	3.017	********		3.769
31		5.856		13.013	9.215		4.343		3.017	********		3.259
TOTAL	129.356	266.337	190.842	336.576	204.809	********	175.900	100.281	95.824	********	93.414	106.785
AVERAGE	4.319	8.592	6.361	10.957	6.607	********	5.674	3.346	3.091	********	3.271	3.445
MAXIMUM	6.980	12.607	10.550	15.187	13.013	********	8.414	5.208	7.905	3.766	4.473	4.543
MINIMUM	2.970	5.856	3.356	5.452	4.696	********	3.920	2.795	2.360	********	2.674	2.842

MAX-NICHI DATE < 830105 > 15.187
35-NICHI DATE < 830529 > 9.940
95-NICHI DATE < 830827 > 6.365
185-NICHI DATE < 840108 > 3.766
275-NICHI DATE < 840310 > 3.038
355-NICHI DATE < 830829 > **********
MIN-NICHI DATE < 840131 > **********

ANNUAL			
TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	15.187	**********

DAY	4	5	6	7	8	9	10	11	12	1	2	3
1	4.040	5.845	6.242	7.791	10.493	********	5.859	4.144	4.144	5.782	2.547	2.758
2	5.586	5.943	5.789	7.203	10.878	********	5.859	5.047	3.906	5.106	3.280	4.039
3	6.167	6.804	5.502	14.175	14.700	********	5.530	4.088	3.668	5.040	3.465	3.262
4	4.695	8.330	10.010	15.463	17.269	********	5.579	4.690	3.819	5.341	3.402	3.706
5	4.895	7.630	7.910	10.976	11.606	********	4.809	4.515	3.668	4.571	3.402	3.262
6	7.559	6.713	6.468	8.932	10.255	********	4.879	4.018	3.836	4.515	2.814	3.262
7	5.695	6.104	7.728	10.563	9.709	********	4.522	4.165	3.745	4.718	3.402	3.073
8	5.026	7.126	5.194	10.108	12.656	********	5.082	3.948	3.465	4.260	3.437	3.325
9	6.222	8.267	6.846	13.584	10.220	********	4.907	4.095	3.465	4.571	4.025	2.814
10	4.697	6.680	8.953	12.285	10.808	********	4.501	4.634	3.600	4.312	3.437	2.898
11	4.481	6.930	6.440	10.318	12.201	********	4.235	4.144	3.556	4.669	3.339	3.164
12	4.514	6.475	6.363	10.010	11.095	********	4.438	4.438	3.836	4.417	2.898	2.940
13	4.697	11.641	5.566	9.065	10.178	********	4.088	4.193	3.465	3.479	3.255	2.814
14	6.674	7.868	7.357	9.950	11.648	********	4.690	3.976	3.836	3.724	3.206	2.856
15	5.869	6.394	6.572	9.321	9.489	********	4.438	4.025	3.745	3.500	2.962	2.898
16	6.074	6.251	11.130	11.606	8.163	********	4.438	3.115	3.465	3.787	3.493	2.940
17	5.874	6.328	7.882	12.670	10.493	********	4.088	3.878	3.836	4.221	3.220	2.758
18	5.117	8.596	12.894	11.767	8.302	********	4.261	3.878	3.465	3.598	3.269	3.199
19	5.691	6.363	16.482	7.868	8.085	********	4.165	3.878	3.936	3.647	3.269	2.898
20	3.850	6.279	16.324	6.921	6.142	********	4.438	3.878	3.885	3.150	2.940	3.472
21	5.418	5.593	14.399	9.366	10.192	********	4.186	3.976	3.856	3.150	3.631	3.164
22	4.263	6.251	10.185	7.497	7.630	********	4.186	3.528	3.472	3.500	3.472	3.062
23	5.642	5.516	10.759	7.700	7.322	********	5.500	3.626	3.297	3.150	2.962	4.165
24	5.684	5.334	10.010	13.517	11.130	********	6.825	3.528	3.390	3.122	3.164	4.095
25	3.563	5.061	14.063	12.607	12.285	********	9.309	3.339	3.647	2.989	3.164	5.501
26	7.448	5.544	15.540	8.498	16.219	********	6.230	3.437	3.850	3.031	3.262	4.095
27	6.644	4.522	13.902	12.971	11.067	********	7.137	3.626	3.448	3.255	2.262	4.025
28	5.079	6.979	9.478	13.951	11.606	********	7.104	3.626	2.982	4.319	3.269	3.899
29	5.509	6.069	11.060	12.901	9.891	********	5.488	3.915	2.898	3.479		4.641
30	5.565	4.858	11.095	10.318	12.607	********	4.907	3.374	3.017	2.869		4.417
31		4.858		10.318	12.607		4.907		3.017	2.869		4.417
TOTAL	169.047	202.142	288.542	331.620	329.966	********	163.595	118.622	111.115	122.141	93.649	107.819
AVERAGE	5.602	6.553	9.631	10.762	10.967	********	5.277	3.954	3.584	3.940	3.345	3.478
MAXIMUM	9.079	11.641	16.482	15.463	17.269	********	9.500	5.047	4.144	5.782	4.025	5.501
MINIMUM	3.563	4.522	5.194	7.203	7.322	********	4.088	3.115	2.898	2.869	2.814	2.758

MAX-NICHI DATE < 820804 > 17.269
95-NICHI DATE < 820812 > 11.095
90-NICHI DATE < 820908 > 7.126
185-NICHI DATE < 821012 > 4.438
275-NICHI DATE < 830203 > 3.465
355-NICHI DATE < 820920 > **********
MIN-NICHI DATE < 820930 > **********
ITEM 1 1

ANNUAL			
TOTAL	AVERAGE	MAXIMUM	MINIMUM
**********	**********	17.269	**********

ANNEX-9 DISCHARGE DURATION CURVES

Fig. 4.3-2-(1) Discharge Duration Curve

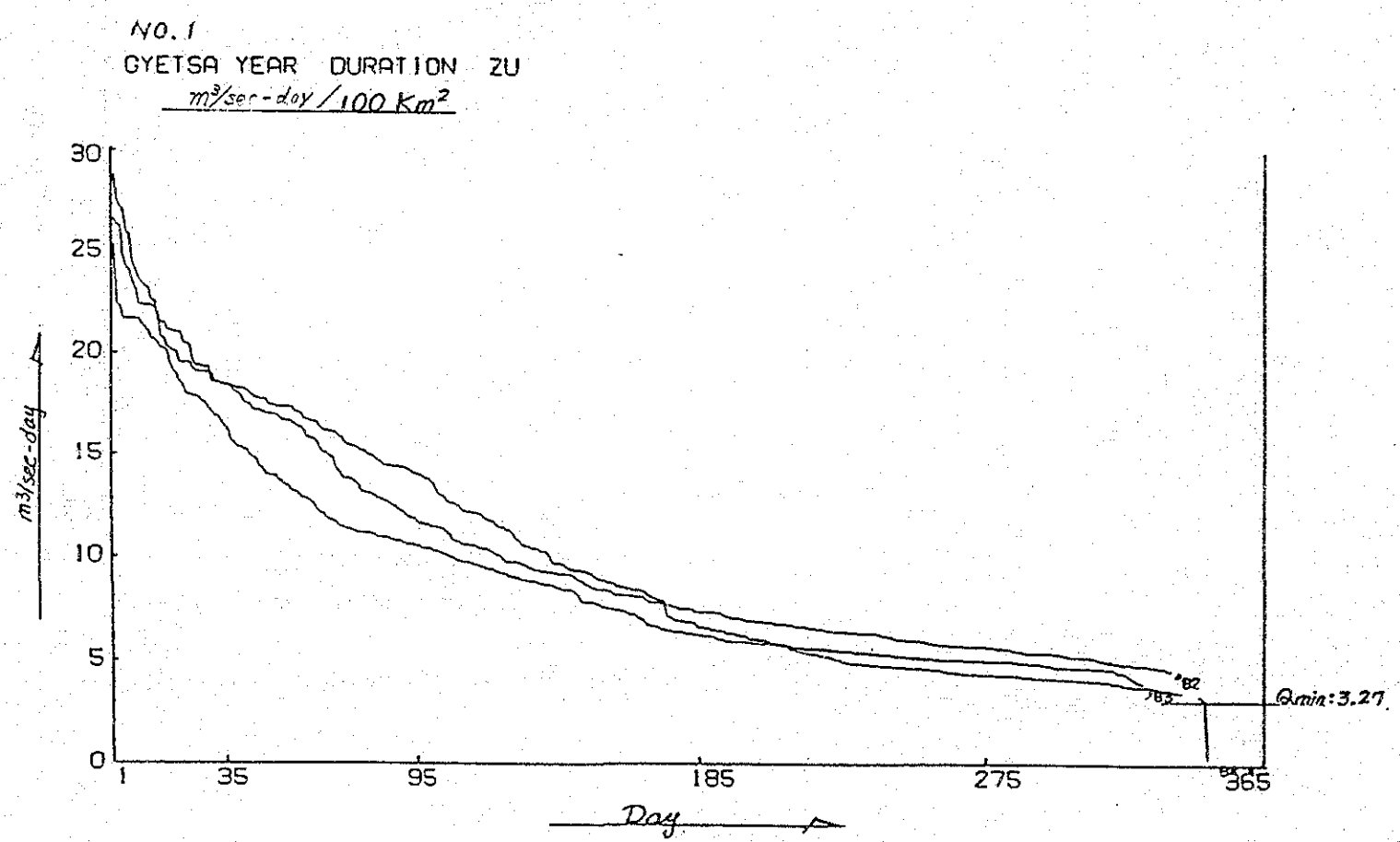


Fig. 4.3-2-(2) Discharge Duration Curve

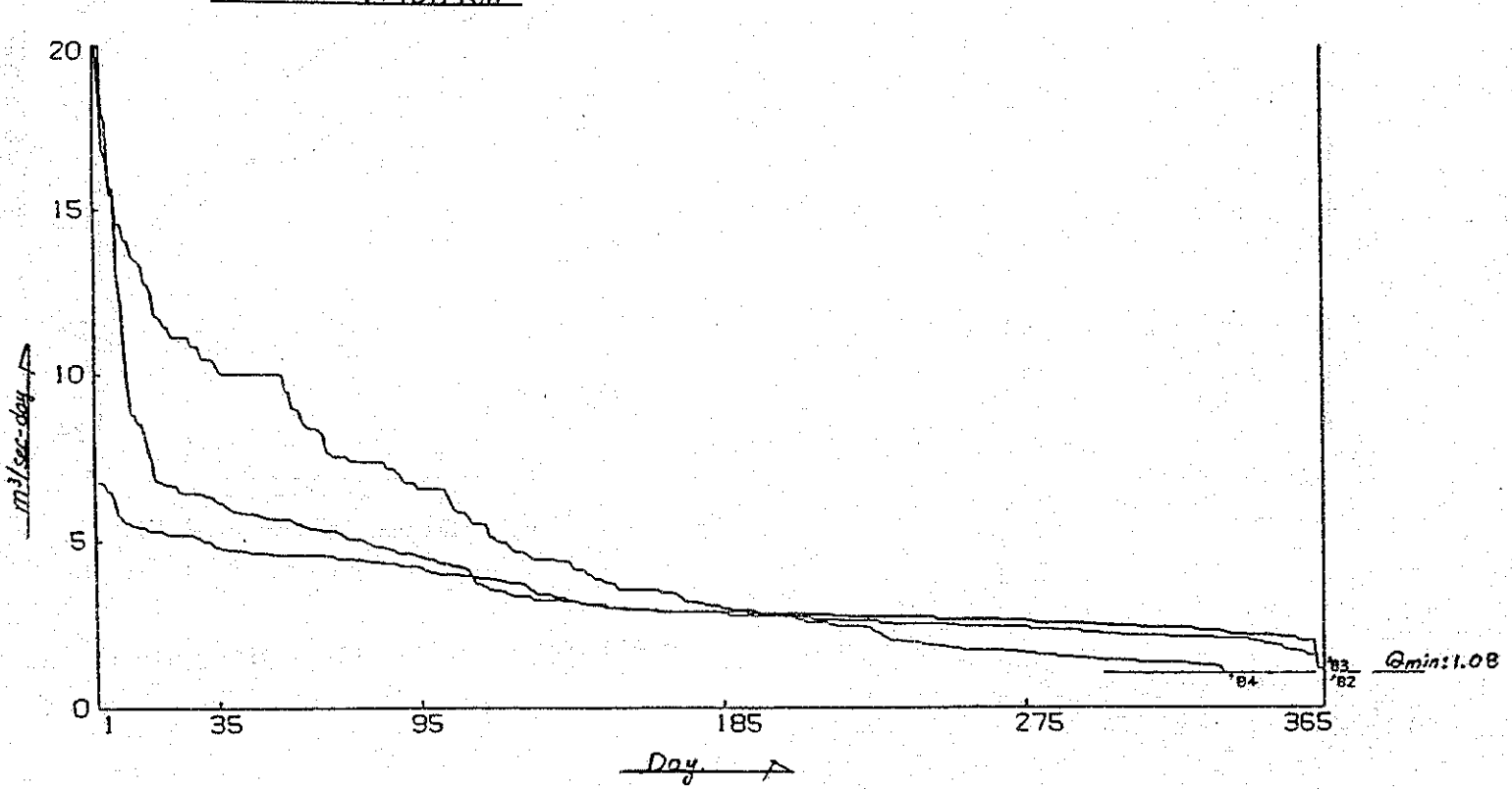


Fig 4.3-2- (3) Discharge Duration Curve

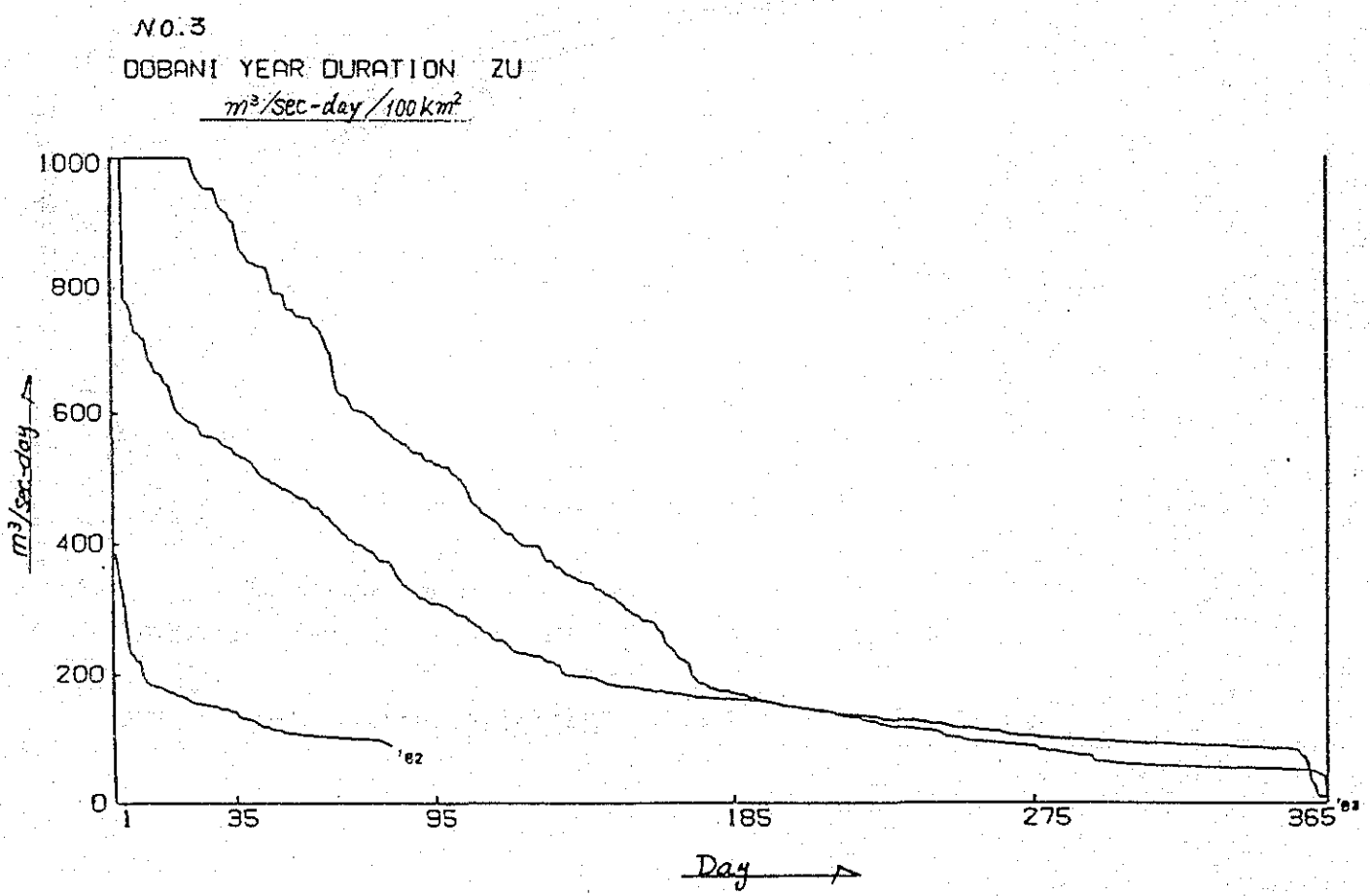


Fig. 4.3-2-(4) Discharge Duration Curve

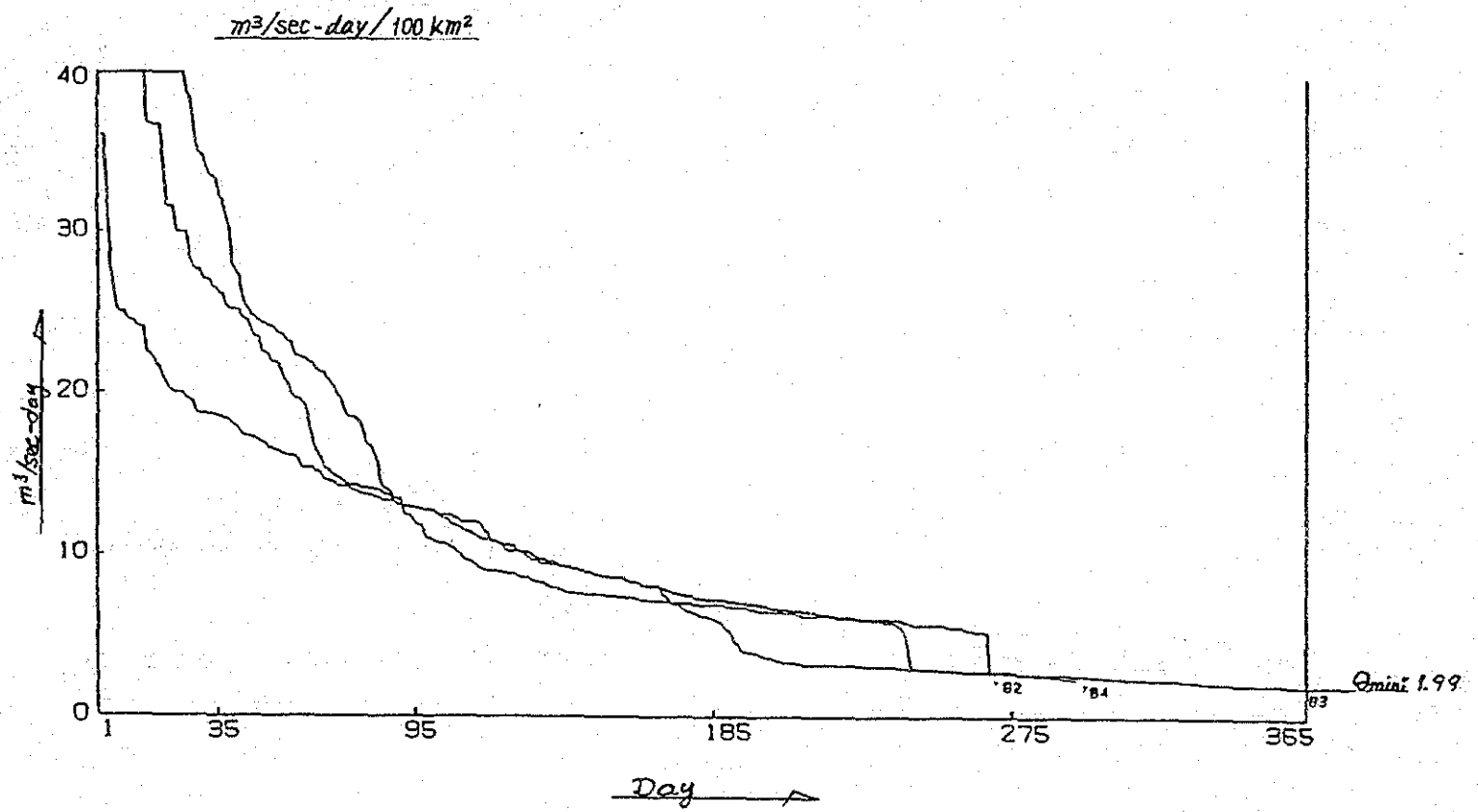


Fig. 4.3-2-(5) Discharge Duration Curve