RESERVOIR OPERATION STUDY FOR PUMPED STORAGE SCHEME -A CASE STUDY

A DISSERTATION

submitted in partial fulfillment of the
requirements for the award of the degree
of
MASTER OF ENGINEERING
in
WATER RESOURCES DEVELOPMENT

By

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Allah, who taught (the use of) the Pen

Taught man that, Which Allah knew not

(Qur'an: Al Alaq 4-5)

For their love, support, and advice,

this dissertation is dedicated to

my parents, my wife Desi, my son Pandu (Papas),

and my family.

They are with me always

and is my highest inspiration

CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the dissertation entitled "**RESERVOIR OPERATION STUDY FOR PUMPED STORAGE SCHEME - A CASE STUDY** " in partial fulfilment of the requirement for the award of the Degree of **Master of Engineering in Water Resources Development (Civil)** submitted in the Water Resources Development Training Centre of the University is an authentic record of my own work carried out during a period from July, 2000 to January, 2001 under the supervision of Dr. B.N. ASTHANA, Emeritus Fellow at WRDTC, University of Roorkee, Roorkee, India.

The matter embodied in this dissertation has not been submitted by me for the award of any other degree.

Place: Roorkee

Date: January , 2001

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This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

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ABSTRACT

In the modern industrialized society, there has been tremendous increase in the requirement of electricity. On one hand and at same time, management of greater variations in the energy used between day and night, weekdays and weekends or holidays and on the other hand, daily, weekly and yearly maximum loads pose serious problems to the electricity supply industries to deal with. If sufficient generating capacity is provided to meet the maximum system load, it requires heavy expenditure on plants with very little earning of revenue from it.

The electrical energy as such cannot be stored in large quantities. Energy storage system in the form of pumped storage can reduce the overall cost of power by reducing the amount of generating capacity required by absorbing energy during off-peak period and delivering it during peak load. The use of hydro pumped storage facilities to meet peaking capacity has been growing at an increasing rate in some countries. It has been adopted recently in India.

Reservoir operation study is very useful part of the project and should not be over looked. A correctly prepared operation schedule can show how the reservoir should be operated to derive maximum benefits.

Optimizing of reservoir operation of a pumped storage scheme is complex. Since computers are available as fast calculating tools, the problem of reservoir operation in small periods (such as hourly period for pumped storage scheme) can be easily solved. Computer program for such a study has been developed in this dissertation and its applicability has been illustrated in case of Tehri Hydro Electric Project. The study has shown that slight variations in project operation schedule of Tehri Pumped Storage Scheme have resulted in better irrigation facilities from the project and substantial increase in power generation.

CONTENTS

	Page
CANDIDATE'S DECLARATION	i
ACKNOWLEDGEMENT	ii
ABSTRACT	iii
CONTENTS	v
LIST OF TABLES	vii
LIST OF FIGURES	ix
CHAPTER-1: INTRODUCTION	1
CHAPTER -2: RESERVOIR OPERATION STUDY ON PUMPED STORAGE SCHEME	5
2.1 Pumped Storage Scheme	5
2.1.1 **Definition of Pumped Storage**	5
2.1.2 **Type of Pumped Storage**	6
2.1.3 **Role of Pumped Storage Schemes**	7
2.1.4 **Development Pumped Storage in India**	12
2.1.4.1 Trend of Development	12
2.1.4.2 Future Development	12
2.1.5 **World Scenario of Pumped Storage Scheme Development**	13
2.2 Reservoir Operation Study	14
2.3 Decision on Operating Criteria	15
CHAPTER -3: DEVELOPMENT OF INPUT-OUTPUT MODEL	17
3.1 The Model	17
3.2 Input	18
3.3 Output	18
3.4 Computation Procedure	19
3.5 Computer Program	20
3.6 Explanation of Program Output	20

CHAPTER -4: APPLICATION OF MODEL IN CASE OF TEHRI HYDRO ELECTRIC PROJECT 25

4.1 Tehri Hydro Electric Project 25

4.2 Project Data 28

4.3 Proposed Operation Schedule 34

4.3.1 Trial Combination of Peaking and Non-Peaking Hours 34

4.3.2 Trial with Maximum Water to be Released or Pumped in Each Step Combination of Peaking And Non-Peaking Hours 41

CHAPTER -5: DISCUSSION OF RESULT 53

5.1 Project Data 53

5.2 Proposed Operation Schedule 54

CHAPTER -6: CONCLUSION 61

REFERENCES 65

APPENDIX I : PROJECT DATA

APPENDIX II : DROPS (D_Reservoir Operation of Pumped Storage Scheme) Program

- Definition of Variables
- Flowchart
- Listing of Computer Program
- Instruction for User

APPENDIX III :

- Input of Program
- Output of Program

LIST OF TABLES

Title	Page
Table 4.1 Result of Reservoir Operation Study Model with Project Operation Schedule. **RESULT OF DROPS: SROINT1.OUT (WITH PROJECT DATA)**	30
Table 4.2 **Ten Daily Schedule of Generating and Pumping at Tehri Reservoir**	31
Table 4.3 Result of Reservoir Operation Study Model with Input Basic Duration of Peaking and Non-peaking Hour Time. **RESULT OF DROPS: SROBAS1.OUT (WITH BASIC DURATION TIME DATA, STAGE I)**	37
Table 4.4 Ten Daily Schedule of Generating and Pumping (Input and output for Stage I Process)	38
Table 4.5.a Result of Reservoir Operation Study Model with 9 Combination of Peaking and Non-peaking Hour. **RESULT OF DROPSC:COMBINAT.OUT (STAGE II)**	43
Table 4.5.b Input Data to Develop Curve of **% Meeting Irrigation Demand – Average Annual System Energy Generated**	43
Table 4.6 Result of Reservoir Operation Study Model with Proposed Peaking and Non-peaking Hour with Maximum Water Releasing and Pumping. **RESULT OF DROPS: SROMAX1.OUT (STAGE III)**	45
Table 4.7 Ten Daily Schedule of Generating and Pumping (Input and output for Stage III Process)	46
Table 4.8 Result of Reservoir Operation Study Model with Proposed Operation Schedule. **RESULT OF DROPS: SROPRF1.OUT (WITH PROPOSED DATA, STAGE IV)**	49

Table 4.9 **Proposed of Ten Daily Schedule of Generating and Pumping at Tehri Reservoir** 50

Table 5.1 **Calculation of Dependable Annual Energy Generated with Project Schedule Opertaion** 59

Table 5.2 **Calculation of Dependable Annual Energy Generated with Proposed Schedule Opertaion** 60

LIST OF FIGURES

Title	Page
Fig. 1.1 **Daily compensation of load fluctuations**	1
Fig. 2.1.a **Re-Circulating Type of Pumped Storage Scheme**	6
Fig. 2.1.b **Multi-use Type of Pumped Storage Scheme**	6
Fig. 2.1.c **Water Transfer Type of Pumped Storage Scheme**	7
Fig. 4.1 **Location Map of Tehri Hydro Electric Project**	26
Fig. 4.2 **Tehri Dam (Lay out of works)**	27
Fig. 4.3 Reservoir flow condition :	
Fig. 4.3.1 **First Peak Hour Condition**	34
Fig. 4.3.2 **First Non-peak Hour Condition**	35
Fig. 4.3.3 **Second Peak Hour Condition**	35
Fig. 4.3.4 **Second Non-peak Hour Condition**	35
Fig. 4.3.5 **Break Hour Condition**	36
Fig. 4.4 Curve showing of **% of Meeting Irrigation Demand vs Average Annual System Energy Generated**	44
Fig. 5.1 **Relation of Generator-motor capacity vs pump turbine performance**	53
Fig. 5.2 **Comparison of Project & Proposed Schedule Operation (in Yearly Basis)**	57
Fig. 5.3 **Comparison of Project & Proposed Schedule Operation (in ly Basis)**	58

Chapter 1
INTRODUCTION

In the modern industrialized society, there has been tremendous increase in the requirements of electricity. On one hand and at same time, management of greater variations in the energy used between day and night, weekdays and weekends or holidays, and on the other hand, daily, weekly and yearly maximum loads pose serious problems to the electricity supply industries to deal with. If sufficient generating capacity is provided to meet the maximum system load, it requires heavy expenditure on plant with very little earning of revenue from it.

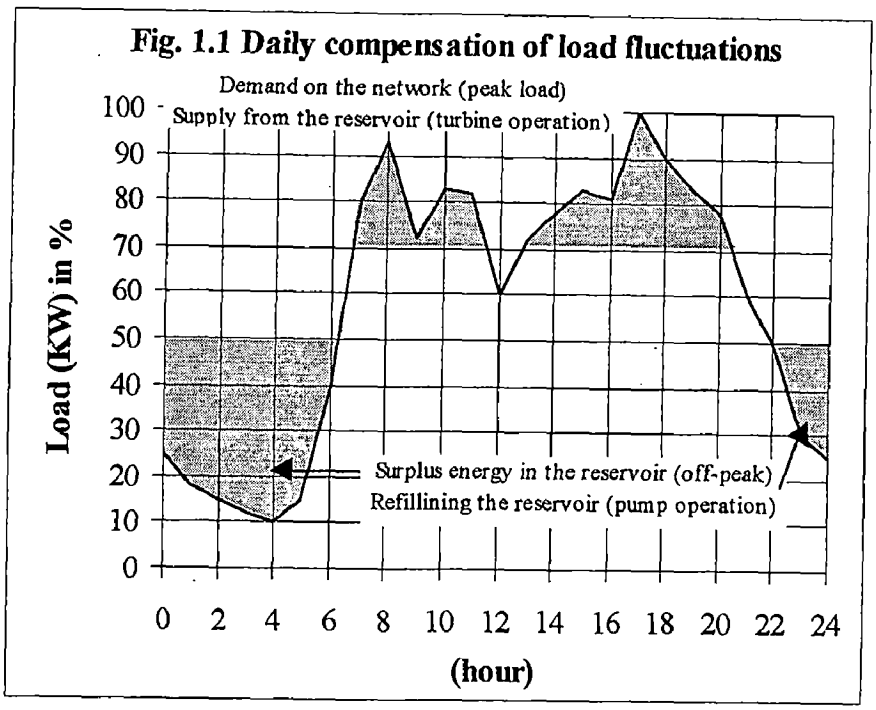

Fig. 1.1 Daily compensation of load fluctuations

Since electrical energy cannot be stored in large quantities, the production of electricity must be adopted for whole time so that it corresponds at any given moment to the immediate consumption. Thus, sufficient generating capacity must be constructed to meet the peak load.

Technically this problem has been tackled by two ways either by storing energy generated by the base load power plants during off-peak hours, or by installing special peak load power plants having low fixed charges. One method of storing energy is by pumping water from lower reservoir downstream to upper reservoir, at times when the general demand for power is low and then by utilizing

the water stored in upper reservoir to generate hydroelectric power during the peak load periods. This is the concept of Pumped Storage Scheme.

One of the important things in Water Resources Planning, especially in a project of storage reservoir, is Reservoir Operation Study. This study can show us the behavior of reservoir during operation, and give a operation schedule which may optimize the utilization of storage.

To evaluate the behavior of reservoirs in a pumped storage scheme, we have to study the operation during each time step on hourly basis. It involves a huge amount of calculation if we have to process the time series data for the last 20 – 30 years.

This problem can be solved with the aid of computers. Capability of a computer recently is very amazing, so we can make a detailed study of the behavior of reservoir, and make operation schedule for the reservoir to optimize the benefits.

Reservoir Operation Study of Pumped Storage scheme has objectives as follow :

Design Stage :

a. to determine the storage capacity and therefore the height of the dams
b. to determine install capacity of pumped storage plant.

Operation Stage :

a. to determine the yield, of the mean volume that could be released from the reservoir to fulfil its purposes;
b. to optimize the operating schedule (schedule of generation time and pumping time) by simulating the reservoir operation using the series project data of the last 20 - 30 years.

In this dissertation, the objective is to develop a computer program for reservoir operation of a pumped storage scheme. The program is validated with the data of Tehri project, and the existing operating schedule or working table of Tehri stage II Hydro Electric project has been optimized by trial and errors of several combinations.

The dissertation has following chapters:

Chapter 2 presents the definition, principle, and types of pumped storage scheme and development of such schemes in India.

Chapter 3 presents literature review of reservoir operation study in general, and for pumped storage scheme.

Chapter 4 presents development of the input and output program DROPS (D_Reservoir Operations of Pumped Storage Scheme). It includes the steps of calculation.

Chapter 5 deals with application of model or program in case of Tehri Hydro electric Project and gives analysis and results of model runs for optimizing operation schedule.

Chapter 6 it deals with conclusions.

Appendices are Program Flowchart, listing of DROPS Program, example input and output of case study, and original project data.

Chapter 2

RESERVOIR OPERATION STUDY ON PUMPED STORAGE SCHEME

2.1 Pumped Storage Scheme

The advent of an ever-increasing number of large base-load generating units and the growth of high peak load demand has greatly increased the need for flexible peak load generating capacity. This peak load generating capacity could be provided by either quick start generating units such as combustion turbines, combined cycle units, diesels, and small common header compressed air, and batteries. [3]

Another effective alternative is to convert low cost surplus off peak electric power into peak power. Pumped hydro is one of the methods to do this conversion, although it is relatively expensive to install and the number of suitable sites is also limited. [14]

The use of hydro pumped storage facilities to meet peaking capacity has been growing at an increasing rate in some countries. In addition, these schemes can contribute to the overall electric power system by performing the function of load regulation, quick response reserve capacity to off-set short term generation or transmission outage and increase overall system energy. [15]

Because of their high effectiveness in utilization of power system, large capacity, high head, high speed, pumped storage power plants (PSPP) are now being constructed in the world. It is also gaining momentum in India.

2.1.1 Definition of Pumped Storage:

Pumped storage scheme is a combined pumping and generating plant; hence it is not a primary producer of electrical power but, by means of the conversions, stores the surplus power of the network and returns it in peak load periods. [14]

In this scheme water generates power during peak demand, while the same water is pumped back in the reservoir during lean demand period. The provision is based on economics of operation and the availability of enough spare capacity in the grid to operate the machines as pump in the low load period.[8]

2.1.2 Type of Pumped Storage Scheme [8]

a. **Storage** or **Re-Circulating** type, water from reservoir A (Fig. 2.1.a) is used to produce power at station P and the discharge through tailrace is stored in reservoir B. During lean periods, the water from reservoir B is pumped back to A which later produces energy in time of need.

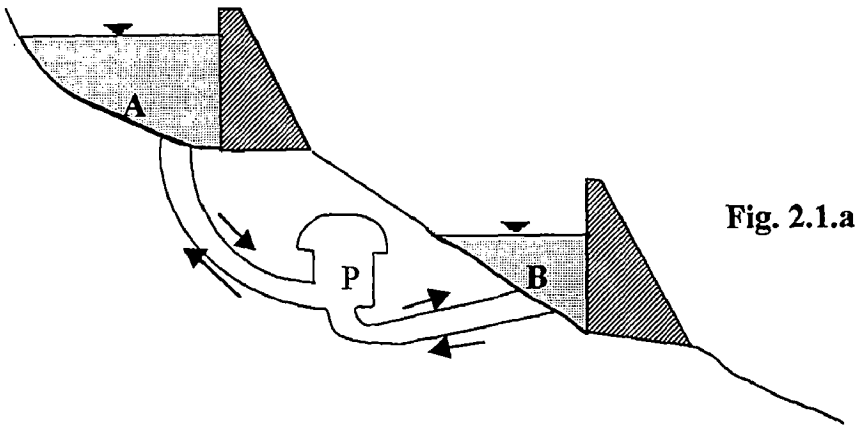

Fig. 2.1.a

b. **Pondage** or **Multi-use** type in addition to the pumping back of reservoir B to reservoir A for producing peak power at station P_1, some water of reservoir B is also used to produce power at station P_2 in the downstream (Fig. 2.1.b). Releases from P_2 will meet other water needs in the downstream.

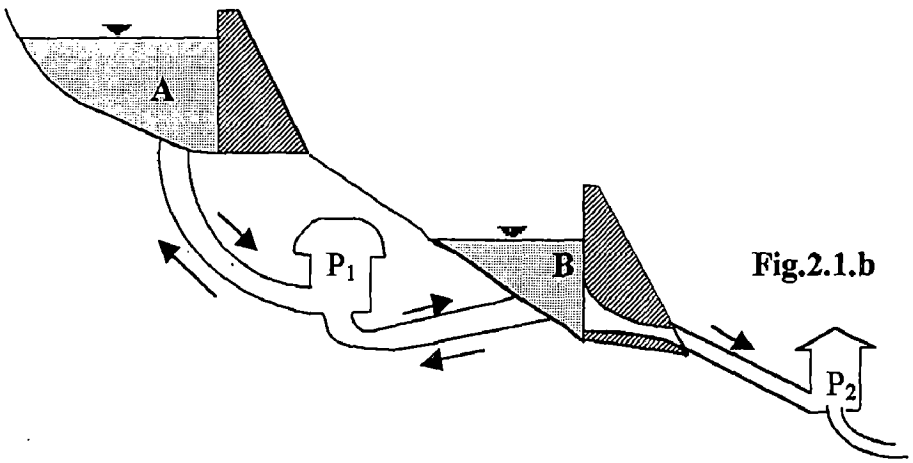

Fig.2.1.b

c. **Part Head** or **Water Transfer** type water of reservoir B is pumped to an elevated reservoir A in another valley. The water of reservoir A is utilized to produce power at station P in a third valley (Fig. 2.1.c).

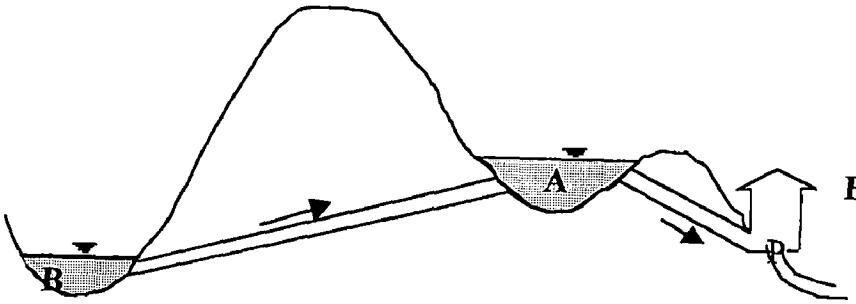

Fig.2.1.c

In this dissertation we consider the type of Multi-use Pumped Storage, It means there are some release from down stream reservoir to meet the requirement of several other interests. This type of pumped storage schemes is more common.

2.1.3 Role of Pumped Storages Schemes [15]

The role of pumped storage schemes in a power system is described in the following paragraph. These have all the merits of a hydropower station plus some additional advantages as is evident from the following.

Most Efficient and Practical means for Storing Large Quantity of Energy

Pumped storage hydroelectric schemes have proved technologically the most attractive method of storing excess system thermal energy during off peak hours and returning it to the system during peak hours. Although net extra energy production is not involved in pumped storage schemes, the conversion of otherwise excess night energy into high productive peak energy has provided the economic base for these schemes. Thus these schemes provide the most efficient and practical means for storing large quantity of energy. These plants spread in value between base power and peak power.

Reduction in System Minimum Loading

During off peak hours, when the load is low, some of the base load units may have to run at part load. If the minimum load is low enough, the sum of minimum operating levels of the committed base load units may still exceed the minimum load level. In this situation, the base load energy will be dumped or is forced to sell to the neighboring utilities at very low rates. If pumped storage scheme is available in the system, this dump energy can be used for pumping operation. Even if the system does not need that stored energy during the peak, having stored that energy allows the utility to sell it on peak to utilities at a profit.

Improvement in Efficiency and Economy of the Thermal Power Stations

The operation of thermal and nuclear power plants at very low load (during off peak period) would adversely affect the efficiency of the power system, power plant life and fuel consumption per KWh generated. Thus increasing number of large base load thermal and nuclear power plants, which cannot be operated at low loads due to economic reasons would need construction of pumped storage power projects. The pumped storage schemes improve the plant load factor, efficiency and durability of thermal units and reduce severe cycling of these units and hence they improve the operational performance of thermal power plants. These allow thermal generating units to operate at nearly constant output all the time and at the best efficiency instead of ramping up and down for the daily load cycle. This translates into lower thermal and mechanical stresses on the boiler and turbine. Reduction in wear and tear on an expensive base load unit can prolong its life, lower its maintenance costs, and improve its availability. All these benefits can result into significant cost savings. Frequent starting and stopping of thermal generating unit's results in the economic losses as well as adverse effects of the equipments. Thus the pumped storage hydroelectric schemes help in improving the operational and economic performances of thermal plants by creating favorable conditions in the power system, which facilitate base load operation of thermal/nuclear power plants.

Spinning Reserve Benefits

Spinning reserve benefits come from the fact that pumped storage schemes have a fast response time. Spinning reserve provided by thermal units is costly

because it forces a thermal unit to be operated at part load, which is inefficient, when pumped storage system is not generating at full load, its unused generating capacity can be used to meet the utility's spinning reserve requirements. Efficiency for pumped storage is not as sensitive to part load as that of thermal plant. Even if the pumped storage units are not generating, as long as there is water in the upper reservoir, the full rating of storage generating capacity is credited towards spinning reserve.

Thus, these schemes provide system-spinning reserve at no cost by operating the installation at partial load. When operated in this manner, the PSPP in many cases can achieve overall power system savings by redacting the portion of the required spinning reserves assigned to operating units and standby in steam electric plants. These schemes serve extremely well with their reserve capacity to maintain the power supply in case of failure of thermal and nuclear generating units or in case where there is an unanticipated high demand for electric power due to the availability to come rapidly on line at full load from no-load synchronized spinning reserve in as a little as 15 seconds.

Power Generation Load Leveling

As there may be severe fluctuations in the daily power consumption patterns, it has become increasingly necessary to optimize the various type of electric power generation in order to achieve the most cost efficient supply of electricity. Pumped storage hydroelectric schemes can make this possible by utilizing power from thermal and nuclear generation facilities at night (off peak hours) to pump water from lower reservoir to upper reservoir, where it can repeatedly be used to generate power during peak demand hours.

In a power system without pumped storage generation, electricity power generation like thermal and nuclear are also primarily to meet peak demand. When the fluctuation in the demand become severe, the repeated start up and shut down required to make the required generation output adjustment result in high fuel costs and lower performance level for these power plants.

In a power system with PSPP, the power needs during peak demand periods can be met by these pumped storage schemes. In this way the system enables to modify the high and low extremes in operating levels of thermal and nuclear power

plants, thus facilitating a load leveling effect, which may result in an increased operating efficiency and reduced costs. Therefore, although the pumped storage schemes consume more energy than they generate and do not increase power system energy supply unless there is natural inflow into upper reservoir, these schemes level the peak and valleys of a typical electricity utility load curve and provide emergency power. These schemes create an artificial demand in the power system at low load periods by pumping water from lower pond to upper pond, which is then utilized to generate power to meet peak demands.

Voltage and Power Factor Correction

Voltage and power factor correction are additional operating benefits of pumped storage schemes, when the pumped storage units can operate in a voltage regulation mode like a synchronous condensor and can reduce losses as well as maintain the quality of services to customers.

Improved System Reliability

System operating reliability can be improved by having a pumped storage scheme in the system. The availability of a pumped storage plant is much higher than that of combustion turbines. The speed at which a reversible unit can be brought on line makes it ideal for covering for forced outages of thermal units in the system.

Output Adjustment Capabilities

Another continually growing importance/role of the pumped storage hydroelectric schemes is there availability for providing a quick employable reserve source of power and possibility for enabling load frequency regulations. Electricity is normally supplied at a frequency of 50 Hz. However this frequency is not constant, as it declines when supply capacity falls short of demand and increases in demand when supply is in excess of demand in the power system. Failure to keep supply and demand of the electricity can have an adverse effect on electrical and electronic equipment connected as the loads and may even cause power failures. Therefore the adjustment of generation output in response to demand fluctuations is an important way of ensuring the supply of high quality power at suitable

frequency. The important characteristics of PSPP (to reach maximum output within a very short period, say 3 to 5 minutes of start up and adjustment in their output within a matter of seconds) make them more flexible than thermal and nuclear power plants.

Environmentally Friendly

Pumped storage hydroelectric schemes are environmentally friendly. These schemes generate electric power by regulating water between upper and lower regulating reservoir. Once the water has been stored, it can be used repeatedly without changes in water levels downstream, except during the initial filling of the reservoirs. Thus the pumped storage hydroelectric schemes have got very limited, if any adverse effect on environment of the region and help in reducing pollution and others adverse effects which are otherwise likely to results from the development of alternative sources of energy for meeting the peak requirements. Further configuration of pumped storage schemes in mountain regions often provides for underground location of powerhouse and other key elements of the system, thus avoiding disruption of scenery and minimizing the esthetic impact of the new structure.

Other Attributes Offered by Pumped Storage Power Plants

The pumped storage hydroelectric schemes are economically advantageous because they convert low value, low cost, off peak energy to high value, on peak capacity energy and highly flexible peaking power. In addition these schemes are comparatively more flexible from the considerations of selection of their sites. These schemes require much less capital investment. Low investment, ruggedness in nature, easiness in maintenance due to simplicity in mechanism, flexibility in operation and design (short term peaking, spinning or ready reserve), high reliability, and hydrologic independence etc. are other attributes offered by PSPP.

2.1.4 Development Pumped Storage in India [15]

2.1.4.1 Trend of Development

It was Sixth Plan, when the first pumped storage hydroelectric scheme Nagarjunasagar (7 x 100 MW) in Andhra Pradesh was installed in India. First six units of 100 MW each of the project were commissioned in the Sixth Five Year Plan in the existing conventional Nagarjunasagar powerhouse (having one conventional unit of 110 MW already in operation). However, the units of the scheme are being operated as conventional units due to non-availability of the tail pond dam. Paithon(1 x 12 MW) in Maharashtra was the second pumped storage hydroelectric scheme installed in India during the same Plan. Thus, the total Hydro installed capacity under pumped storage schemes was 612 MW at the end of Sixth Five Year Plan.

The seventh unit of 100 MW at Nagarjunasagar pumped storage scheme and all the four units of Kadamparai pumped storage scheme (4 x 100 MW) in Tamil Nadu, aggregating to 500 MW were commissioned during Seventh Five Year Plan. Thus, the total hydroelectric installed capacity under pumped storage schemes was stepped up to 1112 MW at the end of Seventh Five Year Plan.

Kadana Stage I (2 x 60 MW) pumped storage scheme in Gujarat and reversible Panchet Hill second unit of 40 MW under Damodar Valley Corporation in Bihar were commissioned in 1990-91. Thus the total hydroelectric installed capacity under pumped storage schemes in operation as on 31st March 1992 (at the end of the Annual Plans 1990-91 and 1991-92) rose to 1272 MW.

During the Eight Five Year Plan, two pumped storage scheme, viz. – Ujjani (1 x 12 MW, commissioned), Bhira PSS (1 x 150 MW, rolled on 29th March 1995) and unit of 1 of 60 MW of Kadana Stage II (rolled on 31st March 1996). These on adding raising pumped storage installed capacity to 1494 MW on 31st March 1997.

2.1.4.2 Future Development.

Four sanctioned pumped storage schemes and unit 2 of 60 MW Kadana Stage II in the existing Kadana Stage I PSS in Gujarat with an aggregate installed capacity of 3310 MW are under various stages of construction in India. These schemes are Ghatgar (2 x 125 MW) in Maharashtra, Sardar Sarovar RBPH (6 x 200

MW) in Gujarat, Srisailam LBPH (6 x 150 MW) in Andhra Pradesh, Purulia PSS (4 x 225 MW) in West Bengal.

In addition to these Central Electricity Authority has cleared two pumped storage scheme, viz.- Bhivpuri PSS (1 x 90 MW) in Maharashtra and Tehri Stage II (4 x 250 MW) in Uttar Pradesh with an aggregate installed capacity of 1090 MW.

Further, Central Electricity Authority has identified 56 additional potential sites for development of pumped storage schemes with a probable installed capacity of 93,920 MW.

2.1.5 World Scenario of Pumped Storage Schemes Development[15]

Pumped storage hydroelectric schemes has its beginning in Switzerland, where the first pure pumped storage plant was constructed in 1904. This system of pumped storage power generation had separate turbine/generator and pump motor installation. The generator-motor system (tandem type) for combined usage as generator and motor was developed in 1910 and used in Italy.

In country like Germany where thermal power was main, the pumped storage power schemes were completed for the purpose of daily or weekly regulations so as to make effective the midnight surplus capacities of thermal power station and of imparting adaptability to be quick coping with fluctuations in power demand.

In 1925 a plant having greater capacity began operating in Federal Republic of Germany. In 1930s the first pumped storage plant in Japan was built.

To improve the economics of PSPP, reversible pump-turbines were developed in 1930s. Research and development of this type were carried out in various countries resettled in the introduction of high efficiency, high head, large capacity of pumped storage power stations. Today practically all pumped storage power stations have adopted this type.

The first significant progress in pumped storage (the beginning of single runner reversible pump/turbine development) was identified on the early 1940s in Brazil. The early 1950s saw the advent of the era of increased pumped storage construction. Canadian power authority developed the Niagara Falls installations, the first truly daily/nightly cycle pumped storage plants with reversible units. This

plant was converted from existing hydroelectric installations demonstrating the technological advancement in pumped storage developments.

Before 1960, there were about 40 PSPP with an aggregate approximate installed capacity of 2700 MW. At the end of 1974 additional 90 number of pumped storage power plants with a combined total installed capacity 10 times greater were in operation and many were in various stages of construction.

There are 290 PSPP with an aggregate installed capacity of about 82800 MW in operation in the world. USA has the credit of having the largest numbers of PPSP (38 number with 18091 MW total installed capacity). The second largest numbers of PSPP in operation are in Japan (38 number with 17005 MW total installed capacity). The third largest producer of PSPP is Italy (20 number with 6449 MW total installed capacity), followed by Germany (35 number with 5688 MW total installed capacity).

The unit capacity-wise, World's largest capacity of pump-turbine unit (398 MW) is installed at Helms PSPP in USA, installed in 1984. The second largest unit size (386 MW) is also in USA at Racoon Mountain installed in 1979.

There are 42 PSPP with an aggregate installed capacity of about 27400 MW in various stage of construction in the World. Maximum numbers of PSPP under construction are in Japan (8 number with 5480 MW total installed capacity).

About 550 number of PSPP aggregating to about 392,000 MW installations have been planed all over the world. Japan has planned the largest number of PSPP (440 number with 329,116 MW total installed capacity) for future development.

2.2 Reservoir Operation Study

The reservoir operation table is the result of reservoir operation study, which is also termed as working table shows the pattern of the inflow of water into the reservoir, and demand for the corresponding period, surplus to be stored or released during period. This is to be studied for the optimum utilization of the runoff. A correctly prepared operation table can show at a glance how the reservoir is going to behave after it has been put into operation. Operation table is very useful part of the project and should not be over looked. It will also prove the adequacy of the capacity of the reservoir tentatively fixed earlier. [8]

The reservoir operation plan is devised to achieve the greatest value or benefit from the storage capacity. The plan must be based on [7]:

a. Knowledge of the flow characteristic of the stream.
b. The purpose or purposes of the reservoir must be analyzed to determine, how the hydrograph of flow should be altered to produce the greatest benefits.
c. Special considerations, such as the effect of sudden releases of stream flows and long sustained flows from the reservoir on agricultural developments and other interests in the valley below the reservoir.

The cooperation of two or more water uses generally permit savings large enough to make multi purpose storage reservoir economically attractive.

The manner in which the coordination of different purposes is realized is controlled by the most important utilization of storage in the reservoir. The character of the sites determines this in turn. For instance, power generation is usually considered a secondary benefit in comparison to the other uses, but in some instances, power is the main objective. In such cases, the flood moderation capacity is provided as the surcharge capacity, so that any restriction on power generation should be precluded.

A multi purpose operation does not differ essentially from the single purpose one. Identical principles apply to each water use without any regard to other uses, which are served by the same reservoir. The main difference is the necessity of allocating the specific capacity for each of the uses served. [7]

For pumped storage power project, operation is based on the principle of power generation by exchange of the water between two impoundment. These impoundments are often man made, resulting from the damming of a free flowing stream. This scheme uses the energy of stored water to generate and store electric power. [15]

2.3 Decision on Operating Criteria [15]

The success of the pumped storage power development depends on the availability of the pumping up energy. Therefore the pumping up energy should be carefully studied to ensure the availability of it.

When total firm output of the base load power stations linked to the power system exceeds the off period demand, the difference becomes the availability of pumping up energy.

The pumping energy resources can be calculated based on demand projection, the power development projects and daily load curve on the typical highest load days and the lowest load days and the lean period. The difference between the daily loads curved produced for future demand and the base load during the night can be evaluated as pumping energy resources.

From projected typical daily load curve characteristic and availability of electric power, decision can be taken regarding:

- The hours during which and time when the surplus energy would be available in a day for pumping water from lower reservoir to the upper reservoir utilizing this surplus energy and therefore to decide number of pumping hours.
- The load curve would also indicate the deficit energy duration in hours and its period in order to use the available amount of water for the peak power generation.

Chapter 3

DEVELOPMENT OF INPUT-OUTPUT MODEL

3.1 The Model.

The proposed model is meant to be simple and easy to operate. It provides for each time step (that is each period of peak hour or non-peak hour), the water balance of Pumped Storage Reservoir System. It can be stated as follows.

[Inflow to the System] – [Outflow from the System] = [Change in Storage System]

In case of Pumped Storage Scheme with two reservoir (Mixed use type):

Reservoir A : $S_i = S_{i-1} + Q_i + P_i + Qp_i - E_i - I_i - Qa_i - Sp_i$

Reservoir B : $S_i = S_{i-1} + Q_i + P_i + Qa_i - Qpi - E_i - I_i - Qa_i - Sp_i - D_i$

Where, S_i = Storage at the end of the period i

Q_i = Inflow during the period i

P_i = Precipitation over the reservoir during the period i

Qp_i = Pumping flow during the period i

E_i = Evaporation from the reservoir during the period i

I_i = Infiltration under the reservoir during the period i

Qa_i = Release through power tunnel from reservoir A to reservoir B during the period i

Sp_i = Spill from the reservoir during the period i

D_i = Release from B during the period i to meet downstream demand

Qp_i = 0 at peak hour

Qa_i = 0 at non-peak hour

S_{i-1} = define it.

In this study the precipitation over the reservoir and infiltration through reservoir have been neglected, so water balance formula has been rewritten as below:

Reservoir A : $S_i = S_{i-1} + Q_i + Qp_i - E_i - Qa_i - Sp_i$

Reservoir B : $S_i = S_{i-1} + Q_i + Qa_i - Qpi - E_i - Qa_i - Sp_i - D_i$

3.2 Input

Input to computer program (DROPS program) of reservoir operation model consist of the storage-elevation curve and the area-elevation curve for each reservoir (File name "RACAP.DAT" and "RBCAP.DAT"), and value of S_{max} and S_{min} of each reservoir, data of physical construction (File name "SCHEME.DAT") are read in. This program also facilitated with interactive input of physical construction data if needed.

The following input data available on monthly basis has been computerized:

1. Inflow into. (File name is "INTEHRI.DAT")
2. Evaporation losses. (File name "EVAP.DAT")
3. Irrigation demand. (File name "IRRDM.DAT")

This data has been converted into ten daily bases, as the proposed project operation schedule is also on ten daily bases.

3.3 Output

Outputs from the reservoir operation model are:

1. Water elevation and volume of water in storage as a function of time for the operation period, for each reservoir, volume of water into the reservoirs and water release for irrigation demand. (File name "ROAXXXx.OUT", and "ROBXXXx.OUT)
2. Gross head, net head, discharge for energy generation on upper and lower powerhouses, corresponding to volume of water release for irrigation demand, percentage of irrigation supply and total energy generated from whole system. (File name "ENGXXXx.OUT")
3. Annual water balance showing the monthly inflow, evaporation, yield and spilling of each reservoir. (File name "SROXXX0.OUT")
4. Average annual energy generated for full series of inflow data, average percentage of meeting irrigation demand. (File name "SROXXX1.OUT")
5. Average 10 daily percentage of meeting irrigation demand for full series of inflow data. (File name "SROXXX1.OUT")

3.4 Computation Procedure

The water balance study is subject to the following assumptions:

1. Inflow/runoff, irrigation demand, and evaporation losses are uniform in hourly basis. Actually is depending on the data we have.
2. SA_0, initial storage at upper reservoir (upper reservoir = 'A'), corresponding to HA_0, initial elevation at reservoir A = FRL (Full Reservoir Level) at the end of monson period (1st October). SB_0, initial storage at lower reservoir (lower reservoir = 'B'), corresponding to HB_0, initial elevation at reservoir B = MDDL (Minimum Draw Down Level).
3. All water release in operation of reservoir A and B is through powerhouse during non-monsoon period.

Calculation in each step period:

a. General
   1. All calculations of water releasing and pumping, are subject to condition the water level in the both reservoir will in no case fall below MDDL
   2. Maximum amount of water release from A is equal to live storage capacity of the reservoir B that is smaller storage capacity.
   3. Amount of water release from A shall meet irrigation demand, evaporation loss and shall fill reservoir B upto FRL. Spilling from B is minimized. Except in monsoon period, when inflow is too much, i.e. more than storage capacity of both reservoirs.
   4. If S_i is greater than S_{max}, the storage capacity, then :
      $Sp_i = S_i - S_{max}$, $S_i = S_{max}$
      This condition states that the storage in the reservoir should not exceed S_{max}.
   5. Pumping of water from B to A, is restricted to the maximum water release from A or to the amount of water available above the MDDL at B, or to the amount of water which will fill A up to FRL.
   6. Release from B to meet the irrigation demand subject to 24 hours release.

b. In case of optimization of operation schedule of existing pumped storage scheme, there are some additional constraints to be considered for above calculation:

1. Maximum capacity of water conductor.
2. Maximum capacity of turbine in generating mode or pumping mode.
3. Maximum installed capacity.
4. Period for pumping back of water.

3.5 Computer Program

Beside the DROPS program (D_Reservoir Operation of Pumped Storage Scheme) where details are given in Appendix I, Another computer program DROPSC program (D_Reservoir Operation of Pumped Storage Scheme with different Combination of peaking and non-peaking hours) has been developed. Basically it is same as DROPS but looping for each combination of peaking and non-peaking hours for all 35 years series data, and not all OUTPUT of DROPS program has been taken in files. It is for reducing the time of Program running and reducing memory consumption. In DROPSC only the summary of the reservoir operation, to see the relation between Percentage of Success of Irrigation Demand and Total Energy Generated is taken on file name COMBINAT.OUT.

3.6 Explanation of Program Output

Outputs of the program are in form of tables and the program will be automatically divide the output file in every 8 years data,

ROAXXXx : ROA = Reservoir Operation at A (upper reservoir),

XXX = Three initial first letter from input of Inflow data file

x = Number of file automatically given by program, start from 0

In ROA file, there are the name of month, year of operation and 11 columns, the value of flow is +ve if into the reservoir and –ve if out from reservoir

Column 1, DATE: Date of operation

Column 2, PERIOD: Condition of period (Peak or non-peak hours)

Column 3, DURATION: Duration of period in hours

Column 4, INFLA: Natural inflow to the reservoir A in M^3

Column 5, QPUMP: Volume of water pumping from lower reservoir in M^3

Column 6, EVAPLA: Evaporation Losses of reservoir A in M^3

Column 7, QA: Volume of water releases from reservoir A, through power tunnel in M^3

Column 8, SPILLA: Volume of water spills from reservoir A in M^3

Column 9, STOREA: Volume of water stores in reservoir A in M^3

Column 10, AREA: Area of water surfaces in reservoir A in M^3

Column 11, EL.A: Elevation of water surface in reservoir A in M

ROBXXXx : ROB = Reservoir Operation at B (lower reservoir),

XXX = Three initial first letter from input of Inflow data file

x = Number of file automatically given by program, start from 0

In ROB file, there are the name of month, year of operation and 12 columns, the value of flow is +ve if into the reservoir and –ve if out from reservoir

Column 1, DATE: Date of operation

Column 2, PERIOD: Condition of period (Peak or non-peak hours)

Column 3, DURATION: Duration of period in hours

Column 4, INFLB: Natural inflow + Spill from reservoir A to the reservoir B in M^3

Column 5, QA: Volume of water release from reservoir A to reservoir B, through power tunnel in M^3

Column 6, IRRS: Volume of water release from B to meet irrigation demand in M^3

Column 7, EVAPLB: Evaporation Losses of reservoir B in M^3

Column 8, QPUMP: Volume of water pumping to upper reservoir in M^3

Column 9, SPILLB: Volume of water spills from reservoir B in M^3

Column 10, STOREB: Volume of water stores in reservoir B in M^3

Column 11, BREA: Area of water surfaces in reservoir B in M^3

Column 12, EL.B: Elevation of water surface in reservoir B in M

After end of month, there is summation of spilling water from reservoir B in M^3

ENGXXXx : ENG = Total Energy Generated,

XXX = Three initial first letter from input of Inflow data file

x = Number of file automatically given by program, start from 0

In ENG file, there are the name of month, year of operation and 13 columns.

Column 1, DATE: Date of operation

Column 2, PERIOD: Condition of period (Peak or non-peak hours)

Column 3, DURATION: Duration of period in hours

Column 4, GROSSH: Gross Head in M

Column 5, NETTH: Net Head = Gross Head – Friction head loss in M

Column 6, Q: Discharge through power tunnel of U/S powerhouse in M^3/sec

Column 7, STARTP: Power Generated at start period in MW

Column 8, ENDP: Power Generated at end period in MW

Column 9, AV.ENERGY: Average Energy Generated at U/S powerhouse in MWh

Column 10, QD: Discharge through D/S powerhouse in M^3/sec

Column 11, ENERGY: Energy Generated at D/S powerhouse in MWh

Column 12, TOT.ENERGY: Total Energy Generated at U/S and D/S powerhouse in MWh

Column 13, IRR.: Percentage Irrigation Supply inn each period

SROXXXx : SRO = Summary of Reservoir Operation,

XXX = Three initial first letter from input of Inflow data file

x = Number of file automatically given by program, 0 and 1

SROXXX0 = File Summary of Reservoir Operation in Every Year (monthly basis)

In SROXXX0 file, there are the year of operation and 12 columns

Column 1, MONTH: Month of operation

Column 2, RUNOFF A: Summary of Inflow to Reservoir A in M^3

Column 3, RUNOFF B: Summary of Inflow to Reservoir B in M^3

Column 4, TOTAL: RUNOFF A + RUNOFF B in M^3

Column 5, IRRIG.DEMAND: Total Irrigation Demand in M^3

Column 6,EVAP.LOSS: Evaporation Losses of reservoir in mm/day

Column 7, IRRIG.SUPPLY: Total Irrigation Supply in M^3

Column 8, IRRIG.DEMAND STATUS: Status of Percentage Meeting Irrigation Demand. Succeed = 100%

Column 9, AV.POWER START: Average Power Generated at start period in MW

Column 10, AV.POWER END: Average Power Generated at end period in MW

Column 11, AV.ENERGY GENERATED: Total Average Energy Generated in MWh at U/S powerhouse

Column 12, SPILL AT B: Total Volume of water spills from reservoir B in M^3

After end of year, there is summation of all parameters, and the minimum elevation occur in reservoir A and reservoir B

SROXXX1 = File Summary of Reservoir Operation in 35 Years (yearly basis)

In SROXXX1 file, there are 2 tables with 10 and 4 columns respectively

In first table, it is Summary of Reservoir Operation in 35 Years (yearly basis)

Column 1, YEAR: Year of operation

Column 2, TOTAL INFLOW: TOTAL RUNOFF on this year in M^3

Column 3, IRRIG.DEMAND: Total Irrigation Demand on this year in M^3

Column 4, IRRIG.SUPPLY: Total Irrigation Supply on this year in M^3

Column 5, IRRIG.DEMAND STATUS: Status of Percentage Meeting Irrigation Demand.

Column 6, AV.ENERGY GENERATED: Total Average Energy Generated in MWh at U/S powerhouse on this year

Column 7 SPILL AT B: Total Volume of water spills from reservoir B on this year in M^3

Column 8, HA MIN: Minimum Elevation Occurs in reservoir A in M

Column 9, HB MIN: Minimum Elevation Occurs in reservoir B in M

Column 10, TOT. SYSTEM EN. GENERATE: Total System Energy Generated in MWh on this year

After end of 35 years operation, there are Average Percentage Meeting Irrigation Demand, Average Annual of Energy Generated, and the minimum elevation occur in reservoir A and reservoir B

Second table is Summary of ten daily Average Percentage Meeting Irrigation Demand;

Column 1, MONTH: Name of month

Column 2: Average Percentage Meeting Irrigation Demand in first 10 daily for all 35 years operation on this month.

Column 3: Average Percentage Meeting Irrigation Demand in second 10 daily for all 35 years operation on this month

Column 4: Average Percentage Meeting Irrigation Demand in third 10 daily for all 35 years operation on this month

Chapter 4

APPLICATION OF MODEL IN CASE OF TEHRI HYDRO ELECTRIC PROJECT

4.1 Tehri Hydro Electric Project [9,15]

Tehri Hydro Electric Project is located at Tehri, Uttaranchal. The project is under construction across river Bhagirathi, a tributary of river Ganga it is a project to meet irrigation requirements and hydropower development. A location map of the scheme is given at Figure 4.1

Upper Reservoir

The scheme envisages creation of an upper reservoir by constructing a dam across Bhagirathi River in Tehri Garhwal district of Uttaranchal. It is an earth and rockfill type 260.5 m high and dam, with a live storage capacity of 2615 MCM.

Lower Reservoir

The lower reservoir for the scheme would be at Koteshwar, which is to be created by constructing a dam across Bhagirathi River with a live storage capacity of 36 MCM. It is about 4 km downstream of upper reservoir. It has FRL equal to TWL of upper reservoir i.e. 612.0 M and MDDL at the riverbed level below upper dam i.e. 598.5 M.

Water Conductor System

Water conductor system of the scheme would have two submerged type intakes at the left bank of Bhagirathi River, two headrace tunnels and four penstocks for one power house of four units.

Powerhouse

The underground powerhouse complex at Tehri comprises of eight machines of 250 MW each. Four of these machines housed in one cavity are conventional type having an installed capacity of 1000 MW (4 x 250 MW). The other four machines are reversible machines and these can operate in turbine as well

as pumping mode. The capacity of each reversible machine is also 250 MW and these are installed in another cavity called the PSP. Apart from this, there is another surface powerhouse at Koteshwar with an installed capacity of 400 MW (4 x 100 MW). The layout of the project is shown in Figure 4.2

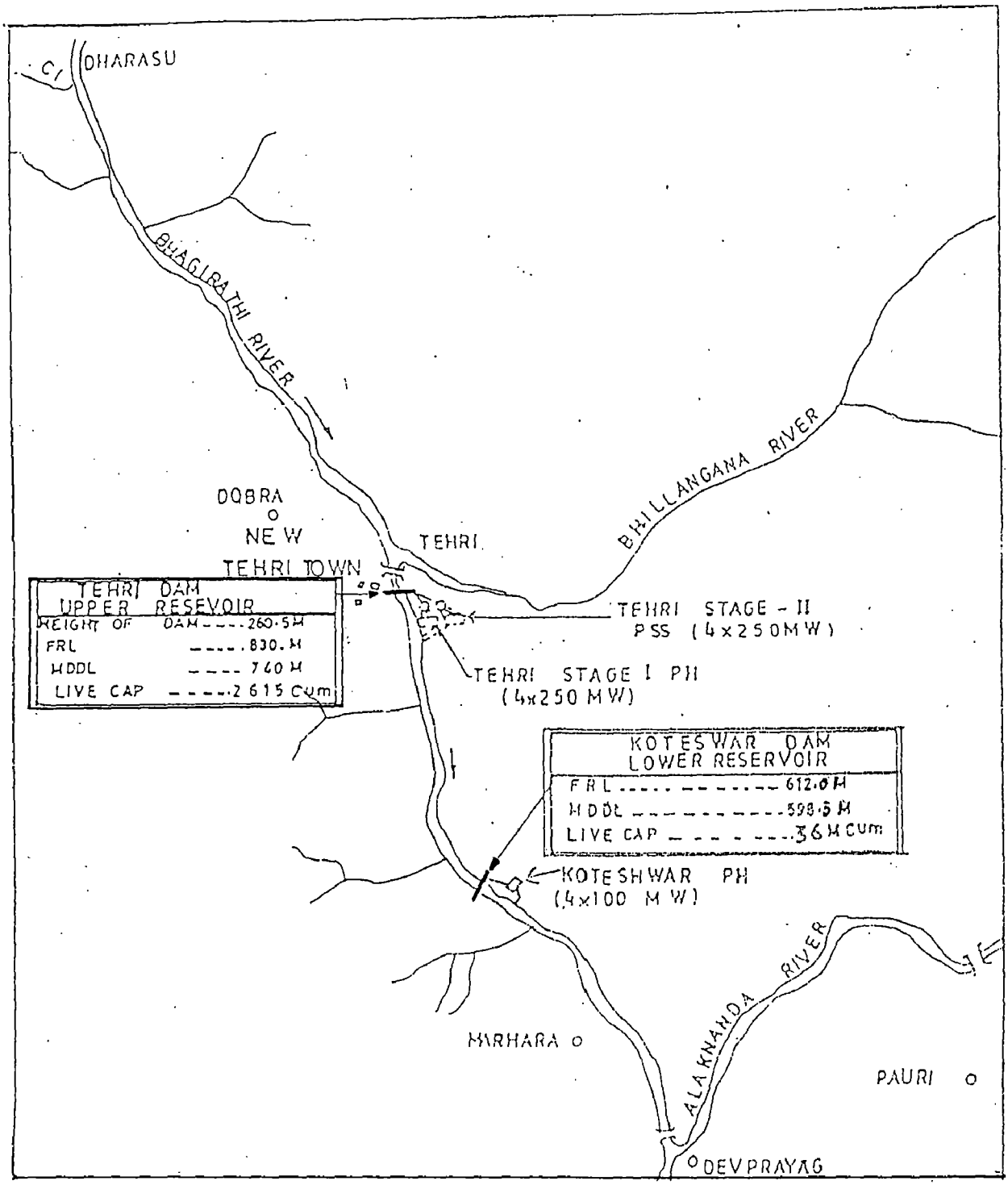

Fig. 4.1 Location Map of Tehri Hydro Electric Project

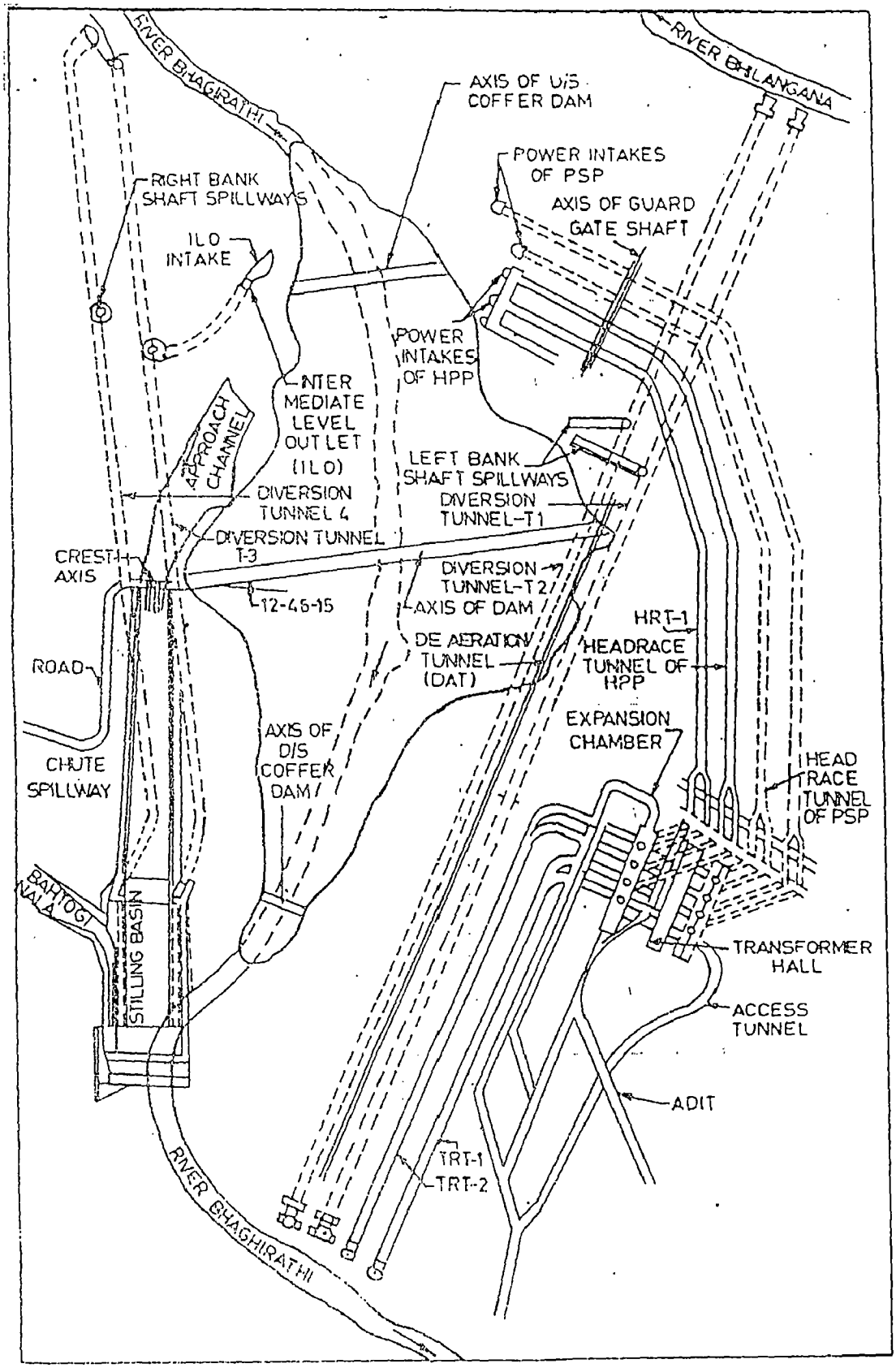

Fig. 4.2 Tehri Dam (Lay out of works)

4.2 Project Data

Detail of the project data can be seen in Appendix II. These are briefly summarized below:

- Inflow runoff data series to Tehri reservoir (upper reservoir i.e. Reservoir A) on monthly basis is available for 35 years, from 1963 – 1997. No additional inflow to Koteshwar reservoir (lower reservoir i.e. Reservoir B), except releases is expected from the intervening catchments from reservoir A.
- Evaporation losses on monthly basis.
- Irrigation demand downstream of reservoir B on monthly basis. There is no irrigation demand from this project in July, August, and September months.
- Area-capacity data of Tehri reservoir and Koteshwar reservoir are available.
- FRL at A = 830 M
- MDDL at A = 740 M
- FRL at B = 612 M
- MDDL at B = 598.5 M
- Install capacity at Tehri (upper powerhouse) 8 x 250 MW, with 4 machines reversible type and 4 machines conventional type.
- All assumption in section 3.4 are applicable
- Additional physical constraint based on project data:
  1. Maximum discharge capacity of turbine in generating mode has been worked out from the maximum release shown in project operation schedule. It is on 1st ten daily of January: Maximum volume of water release = 17.79 MCM

$$\frac{17.79\ \text{MCM}}{4\ \text{hr}} = \frac{17.19\times10^{6}}{4\times3600} = 1235.42\ \frac{\text{M}^3}{\text{sec}}\ \text{for 8 machines or } 154.43\ \frac{\text{M}^3}{\text{sec}}$$

  each machine.

  2. Maximum discharge capacity of turbine in pumping mode has been worked out from the releases on 2nd ten daily of June of project operation schedule:

$$\frac{2.36\ \text{MCM}}{1.1\ \text{hr}} = \frac{2.36\times10^{6}}{1.1\times3600} = 595.96\ \frac{\text{M}^3}{\text{sec}}\ \text{for 4 machines or } 148.99\ \frac{\text{M}^3}{\text{sec}}$$

  each machine. Maximum capacity for pumping by 4 machines in 8 hours

$$= 595.96 \frac{M^3}{sec} \text{ x } 8 \text{ hr x } 3600 \text{ sec} = 17.16 \text{ MCM}$$

3. Power tunnel [15]: 2 nos., diameter, D = 8.5 M, length, L = 1100 M
4. Other assumptions:
   - Efficiency of turbine and machine, $\eta = 0.85$
   - Coefficient of friction, $f = 0.02$
   - Net head of Koteshwar powerhouse $H_n = 75$ M
   - Head losses, $Hl = \frac{fLv^2}{2gD}$
5. Maximum discharge capacity through Koteshwar powerhouse:

$$Q = \frac{P}{9.81 H_n \eta} = \frac{400 \times 10^3}{9.81 \times 75 \times 0.85} = 625.39 \frac{M^3}{sec}$$

6. Availability period for pumping up water at night from 10.00 pm. to 06.00 am.
7. The combination of peaking and non-peaking hours and net inflows are taken as given in project operation schedule. It will become the maximum limit of water releasing or pumping.

Using the input data based on project data the DROPS program was run for 35 years inflow series to work out the percentage of success to meeting irrigation demand and generation of energy. The results are given in table 4.1 and table 4.2

TABLE 4.1 SUMMARY OF TOTAL RESERVOIR OPERATION

YEAR OF	TOTAL INFLOW (M3)	IRRIG. DEMAND (M3)	IRRIG. SUPPLY (M3)	IRRIG. DEMAND STATUS	AV.ENERGY GENERATED (MWh)	SPILL AT B (M3)		HA MIN (M)	HB MIN (M)	TOT. SYSTEM EN.GENERATE (MWh)
1963	.9010E+09	.9832E+09	.9299E+09	94.58%	.621E+06	.222E+09		823.08	598.50	.782E+06
1964	.5643E+10	.4606E+10	.4450E+10	96.61%	.354E+07	.151E+10	✓	747.71	598.50	.432E+07
1965	.7066E+10	.4606E+10	.4431E+10	96.21%	.345E+07	.226E+10		740.07	598.50	.422E+07
1966	.8281E+10	.4606E+10	.4538E+10	98.52%	.366E+07	.366E+10		759.19	598.50	.445E+07
1967	.6760E+10	.4606E+10	.4496E+10	97.61%	.362E+07	.226E+10		753.99	598.50	.440E+07
1968	.6859E+10	.4606E+10	.4527E+10	98.28%	.356E+07	.226E+10		753.06	598.50	.435E+07
1969	.7090E+10	.4606E+10	.4560E+10	98.99%	.353E+07	.246E+10		740.58	598.50	.433E+07
1970	.7501E+10	.4606E+10	.4521E+10	98.15%	.360E+07	.299E+10		752.53	598.50	.439E+07
1971	.7100E+10	.4606E+10	.4403E+10	95.59%	.365E+07	.267E+10		773.16	598.50	.441E+07
1972	.7346E+10	.4606E+10	.4475E+10	97.16%	.350E+07	.282E+10		740.07	598.50	.428E+07
1973	.7128E+10	.4606E+10	.4497E+10	97.64%	.365E+07	.259E+10		764.60	598.50	.443E+07
1974	.7481E+10	.4606E+10	.4455E+10	96.73%	.348E+07	.298E+10		761.77	598.50	.425E+07
1975	.6439E+10	.4606E+10	.4129E+10	89.64%	.332E+07	.229E+10		740.05	598.50	.404E+07
1976	.9728E+10	.4606E+10	.4487E+10	97.42%	.372E+07	.513E+10		770.95	598.50	.450E+07
1977	.1192E+11	.4606E+10	.4606E+10	100.00%	.373E+07	.727E+10		753.86	600.01	.453E+07
1978	.1099E+11	.4606E+10	.4444E+10	96.48%	.358E+07	.658E+10		740.10	598.50	.436E+07
1979	.8547E+10	.4606E+10	.4503E+10	97.76%	.352E+07	.402E+10		740.12	598.50	.430E+07
1980	.7977E+10	.4606E+10	.4525E+10	98.23%	.360E+07	.340E+10	✓	755.16	598.50	.438E+07
1981	.6130E+10	.4606E+10	.4507E+10	97.86%	.347E+07	.154E+10	✓	760.92	598.50	.425E+07
1982	.7302E+10	.4606E+10	.4530E+10	98.34%	.350E+07	.272E+10		741.95	598.50	.428E+07
1983	.5631E+10	.4606E+10	.4190E+10	90.96%	.330E+07	.150E+10	✓	740.08	598.50	.403E+07
1984	.8785E+10	.4606E+10	.4438E+10	96.35%	.351E+07	.424E+10		749.83	598.50	.428E+07
1985	.8798E+10	.4606E+10	.4484E+10	97.34%	.358E+07	.426E+10		747.10	598.50	.436E+07
1986	.5945E+10	.4606E+10	.4383E+10	95.16%	.339E+07	.155E+10	✓	769.38	598.50	.415E+07
1987	.8491E+10	.4606E+10	.4514E+10	98.00%	.355E+07	.386E+10		741.52	598.50	.433E+07
1988	.7139E+10	.4606E+10	.4415E+10	95.85%	.356E+07	.273E+10		765.29	598.50	.433E+07
1989	.7205E+10	.4606E+10	.4504E+10	97.80%	.362E+07	.262E+10		753.40	598.50	.440E+07
1990	.6484E+10	.4606E+10	.4524E+10	98.21%	.351E+07	.190E+10		744.62	598.50	.430E+07
1991	.8231E+10	.4606E+10	.4556E+10	98.91%	.358E+07	.363E+10		759.33	598.50	.437E+07
1992	.6705E+10	.4606E+10	.4529E+10	98.33%	.348E+07	.215E+10		740.08	598.50	.426E+07
1993	.9172E+10	.4606E+10	.4474E+10	97.14%	.360E+07	.461E+10		766.71	598.50	.438E+07
1994	.7031E+10	.4606E+10	.4524E+10	98.21%	.354E+07	.249E+10		750.32	598.50	.433E+07
1995	.7264E+10	.4606E+10	.4551E+10	98.81%	.347E+07	.261E+10		740.14	598.50	.426E+07
1996	.8222E+10	.4606E+10	.4462E+10	96.87%	.360E+07	.370E+10		784.87	598.50	.437E+07
1997	.9878E+10	.4606E+10	.4556E+10	98.92%	.363E+07	.513E+10		766.22	598.50	.442E+07
AVERAGE ANNUAL =				97.11%	.354E+07	.317E+10				.432E+07

MIN.ELEVATION AT A = 740.05 M
MIN.ELEVATION AT B = 598.50 M

10 DAYS % AVERAGE MEETING IRR. DEMAND

MONTH	1st	2nd	3rd
JANUARY	100.00	100.00	100.00
FEBRUARY	100.00	100.00	100.00
MARCH	100.00	100.00	100.00
APRIL	100.00	99.98	99.82
MAY	98.02	95.01	92.59
JUNE	99.26	99.56	98.99
JULY	.00	.00	.00
AUGUST	.00	.00	.00
SEPTEMBER	.00	.00	.00
OCTOBER	100.00	100.00	99.96
NOVEMBER	91.64	78.90	78.66
DECEMBER	99.81	99.84	99.59

Table 4.2-1 Ten Daily Schedule of Generating and Pumping at Tehri Reservoir

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	% Irrigation Supply *Theoretical	% Irrigation Supply **Reservoir Op. Study
JAN (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3 13.30		8T 4 17.79	4P 8 -10.13	20.96	99.47	100.00
JAN (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3.5 15.15		8T 4 17.51	4P 8 -10.71	21.95	104.17	100.00
JAN (21-31)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3.8 16.35		8T 4 17.28	4P 8 -11.17	22.46	106.59	100.00
FEB (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.05		8T 4 17.05	4P 7 -10.25	23.85	104.44	100.00
FEB (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3.5 14.63		8T 4 16.82	4P 8 -12.1	19.35	84.74	100.00
FEB (21-28)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 16.47		8T 4 16.47	4P 7.8 -12.29	20.65	90.43	100.00
MAR (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 16.24		8T 4 16.24	4P 7.1 -11.66	20.82	106.26	100.00
MAR (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 15.9		8T 4 15.9	4P 8 -10.89	20.91	106.72	100.00
MAR (21-31)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 15.65		8T 4 15.65	4P 6.8 -12.09	19.21	98.04	100.00
APR (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 15.32		8T 4 15.32	4P 7.4 -13.36	17.28	92.74	100.00
APR (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 15.09		8T 4 15.09	4P 6.7 -12.3	17.88	95.96	99.98
APR (21-30)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 14.86		8T 4 14.86	4P 4.8 -9.07	20.65	110.82	99.82

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. Study % Irrigation Supply = Average of 35 years reservoir operation simulation study

Table 4.2-2 Ten Daily Schedule of Generating and Pumping at Tehri Reservoir

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	% Irrigation Supply *Theoretical	% Irrigation Supply **Reservoir Op. Study
MAY (1-10)	Units running		8T		8T	4P			
	Hrs of running		4		4	2.7			
	Net inflow in D/S reservoir (MCM)		14.51		14.51	-5.26	23.76	107.65	98.02
MAY (11-20)	Units running		8T		8T	4P			
	Hrs of running		4		4	3.4			
	Net inflow in D/S reservoir (MCM)		14.17		14.17	-6.74	21.6	97.87	95.01
MAY (21-31)	Units running		8T		8T	4P			
	Hrs of running		4		4	2.5			
	Net inflow in D/S reservoir (MCM)		14.05		14.05	-5.03	23.07	104.53	92.59
JUN (1-10)	Units running		8T		8T	4P			
	Hrs of running		4		4	1.8			
	Net inflow in D/S reservoir (MCM)		13.71		13.71	-3.83	23.59	147.59	99.26
JUN (11-20)	Units running		8T		8T	4P			
	Hrs of running		4		4	1.1			
	Net inflow in D/S reservoir (MCM)		13.36		13.36	-2.36	24.36	152.41	99.56
JUN (21-30)	Units running		8T		8T	4P			
	Hrs of running		4		4	5.5			
	Net inflow in D/S reservoir (MCM)		13.36		13.36	-11.79	14.93	93.41	98.99
JUL (1-10)	Units running		8T		8T	4P			
	Hrs of running		4		4	5.9			
	Net inflow in D/S reservoir (MCM)		13.59		13.59	12.32	39.5		
JUL (11-20)	Units running		8T		8T	4P			
	Hrs of running		4		4	7.4			
	Net inflow in D/S reservoir (MCM)		14.17		14.17	-14.52	13.82		
JUL (21-31)	Units running		8T		8T	4P			
	Hrs of running		2.6		4	8			
	Net inflow in D/S reservoir (MCM)		10.38		15.67	-13.82	12.23		
AUG (1-10)	Units running		8T		8T	4P			
	Hrs of running		1.2		4	8			
	Net inflow in D/S reservoir (MCM)		5.16		17.28	-11.29	11.15		
AUG (11-20)	Units running		8T		8T	4P			
	Hrs of running		0.5		4	8			
	Net inflow in D/S reservoir (MCM)		1.96		17.39	-9.33	10.02		
AUG (21-31)	Units running		8T	8T	8T				
	Hrs of running		4	1.1	4				
	Net inflow in D/S reservoir (MCM)		16.93	4.76	16.93		38.62		

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. Study % Irrigation Supply = Average of 35 years reservoir operation simulation study

Table 4.2-3 Ten Daily Schedule of Generating and Pumping at Tehri Reservoir

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	% Irrigation Supply *Theoretical	% Irrigation Supply **Reservoir Op. Study
SEP	Units running		8T		8T				
(1-10)	Hrs of running		4		4				
	Net inflow in D/S reservoir (MCM)		16.62		16.82		33.44		
SEP	Units running		8T		8T	4P			
(11-20)	Hrs of running		3.8		4	8			
	Net inflow in D/S reservoir (MCM)		15.92		16.82	-8.64	24.1		
SEP	Units running		8T		8T	4P			
(21-30)	Hrs of running		2.4		4	8			
	Net inflow in D/S reservoir (MCM)		10.05		16.82	-8.64	18.23		
OCT	Units running		8T		8T	4P			
(1-10)	Hrs of running		2.1		4	8			
	Net inflow in D/S reservoir (MCM)		9.01		16.82	-8.64	17.19	302.43	100.00
OCT	Units running		8T		8T	4P			
(11-20)	Hrs of running		2.2		4	8			
	Net inflow in D/S reservoir (MCM)		9.16		16.93	-8.64	17.45	307.01	100.00
OCT	Units running		8T		8T	4P			
(21-30)	Hrs of running		1		4	8			
	Net inflow in D/S reservoir (MCM)		4.29		17.05	-8.64	12.7	223.44	99.96
NOV	Units running		8T		8T	4P			
(1-10)	Hrs of running		0.6		4	8			
	Net inflow in D/S reservoir (MCM)		2.65		17.05	-8.64	11.06	97.25	91.64
NOV	Units running		8T		8T	4P			
(11-20)	Hrs of running		0.7		4	8			
	Net inflow in D/S reservoir (MCM)		3.02		17.05	-8.75	11.32	99.53	78.90
NOV	Units running		8T		8T	4P			
(21-30)	Hrs of running		0.8		4	8			
	Net inflow in D/S reservoir (MCM)		3.3		17.16	-8.75	11.71	102.96	78.66
DEC	Units running		8T		8T	4P			
(1-10)	Hrs of running		2.3		4	8			
	Net inflow in D/S reservoir (MCM)		10.92		17.16	-8.99	19.09	127.05	99.81
DEC	Units running		8T		8T	4P			
(11-20)	Hrs of running		2.7		4	8			
	Net inflow in D/S reservoir (MCM)		11.73		17.39	-9.33	19.79	131.71	99.84
DEC	Units running		8T		8T	4P			
(21-31)	Hrs of running		2.02		4	8			
	Net inflow in D/S reservoir (MCM)		9		17.72	-5.61	21.11	140.49	99.59

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. Study % Irrigation Supply = Average of 35 years reservoir operation simulation study

4.3 Proposed Operation Schedule

To achieve the objective of study i.e., to optimize the project operation schedule trial and error procedure is adopted. To develop and propose an optimized operation, we have done trial on two parameters of operation schedule, i.e.:

1. Combination of peaking and non-peaking hours in 24 hours in every ten daily basis period of operation schedule. These are called Stage I and II process.
2. Maximum water to be released or pumped (Net inflow) in each step combination of peaking and non-peaking hours, in every ten daily basis period of operation schedule. These are called Stage III and IV process.

4.3.1 Trial Combination of Peaking and Non-Peaking Hours

The combination of hours is denoted as below in the program:

DT(1) = first peak hour, there will be releases from A and also from B.

DT(2) = first non-peak hour, there will be no releases from A but there will be releases from B.

DT(3) = second peak hour, there will be releases from A and also from B.

DT(4) = second non-peak hour, there will be pumping to A and also releases from B.

DT(5) = break hour, there will be no releases or pumping but there may be releases from B.

In all above time combinations there is inflow to A and also release from B to meet the irrigation demands down stream of the project, to simplify the problem for the first trial we use the same combination of peaking and non-peaking hours in each time step of operation schedule.

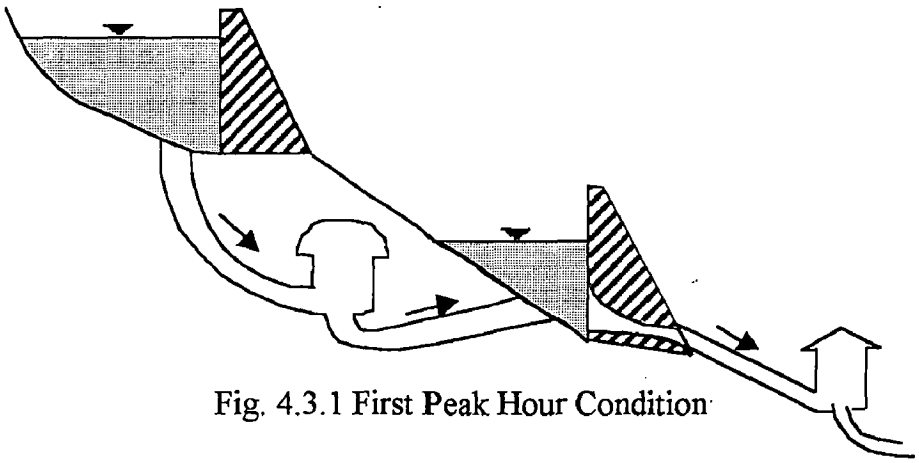

Fig. 4.3.1 First Peak Hour Condition

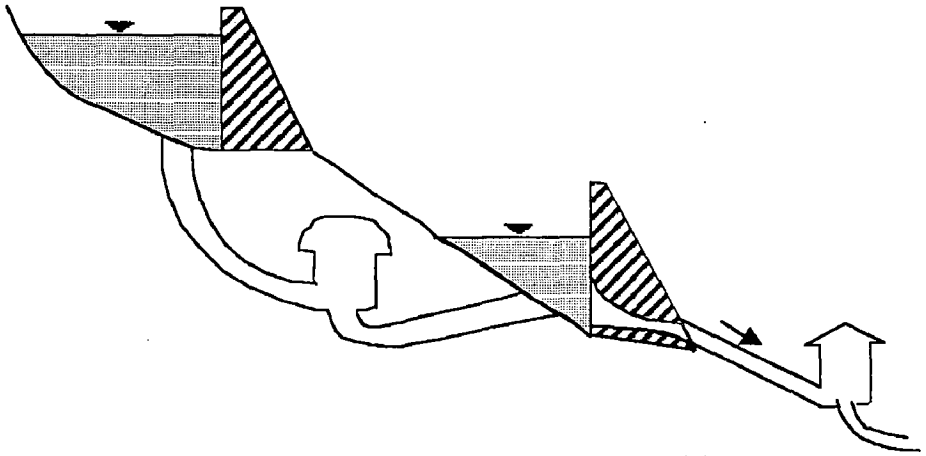

Fig 4.3.2 First Non-peak Hour Condition

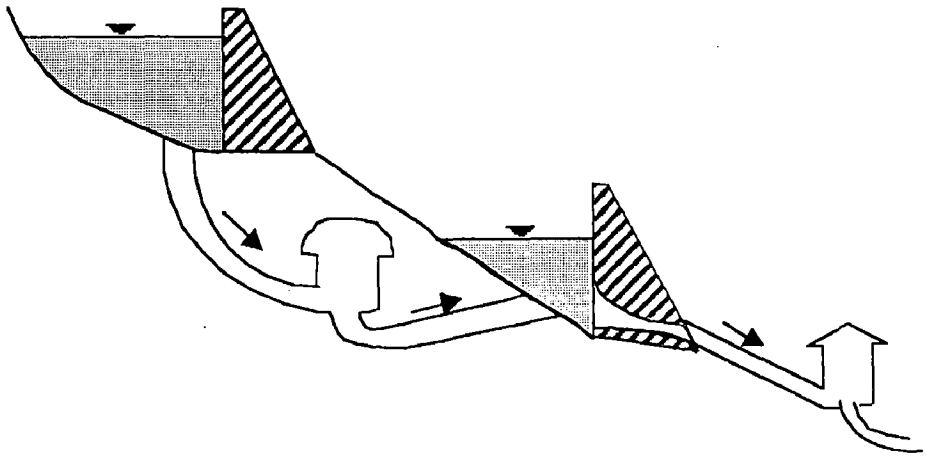

Fig.4.3.3 Second Peak Hour Condition

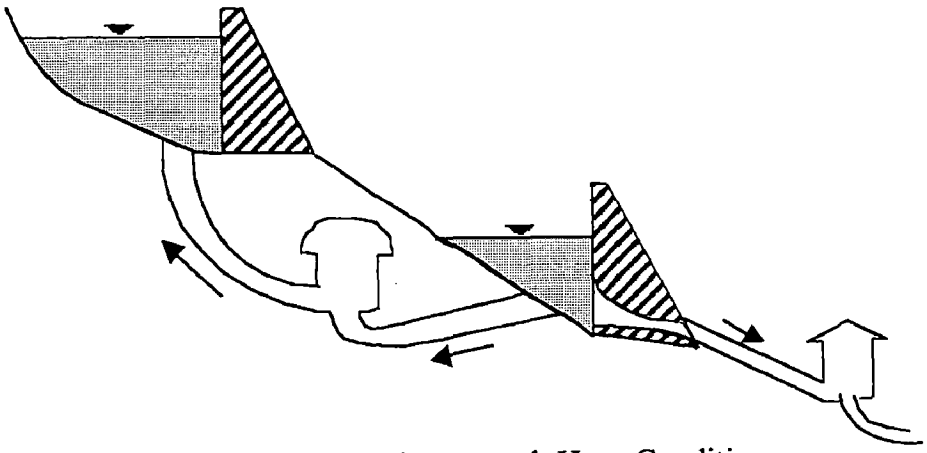

Fig. 4.3.4 Second Non-peak Hour Condition

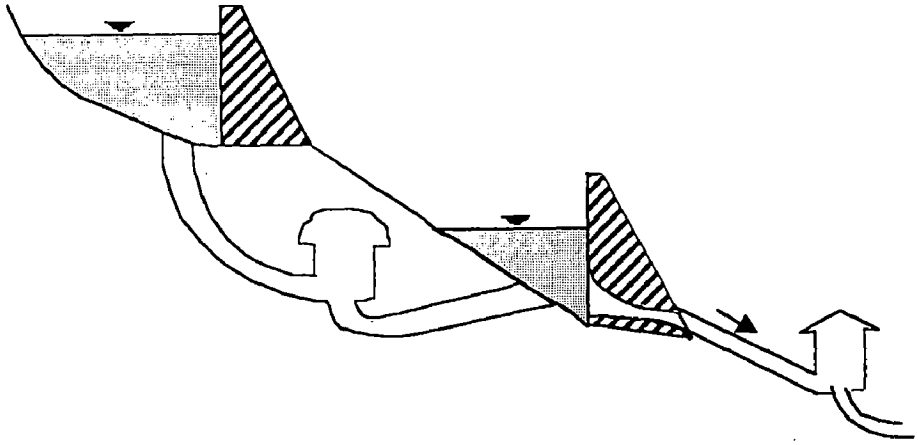

Fig. 4.3.5 Break Hour Condition

Stage I (using DROPS program); DROPS program is run with input of following combination of peaking and non-peaking hours. It is called "base duration time" combination; it is same as in project data.

DT(1) = First peak hour from 08.00 to 12.00 (4 hours)

DT(2) = First non peak hour from 12.00 to 18.00 (6 hours)

DT(3) = Second peak hour from 18.00 to 22.00 (4 hours)

DT(4) = Second non peak hour from 22.00 to 06.00 (8 hours)

DT(5) = Break hour from 06.00 to 08.00 (2 hours)

In this case maximum value of water releasing and pumping has been allowed in all ten dailies. The results are given in table 4.3 and table 4.4. The results as compared to table 4.1 and table 4.2 show that energy generation has increased but irrigation requirements are not met during April, May and June.

TABLE 4.3 SUMMARY OF TOTAL RESERVOIR OPERATION

YEAR OF	TOTAL INFLOW (M3)	IRRIG. DEMAND (M3)	IRRIG. SUPPLY (M3)	IRRIG. DEMAND STATUS	AV.ENERGY GENERATED (MWh)	SPILL AT B (M3)	HA MIN (M)	HB MIN (M)	TOT. SYSTEM EN.GENERATE (MWh)
1963	.9010E+09	.9832E+09	.9832E+09	100.00%	.148E+07	.670E+09	809.28	600.97	.165E+07
1964	.5643E+10	.4606E+10	.4259E+10	92.47%	.414E+07	.169E+10	740.08	598.50	.488E+07
1965	.7066E+10	.4606E+10	.4105E+10	89.13%	.438E+07	.279E+10	740.06	598.50	.509E+07
1966	.8281E+10	.4606E+10	.4316E+10	93.71%	.461E+07	.378E+10	740.10	598.50	.536E+07
1967	.6760E+10	.4606E+10	.4305E+10	93.48%	.454E+07	.251E+10	740.11	598.50	.529E+07
1968	.6859E+10	.4606E+10	.4228E+10	91.79%	.442E+07	.253E+10	740.06	598.50	.515E+07
1969	.7090E+10	.4606E+10	.4034E+10	87.59%	.443E+07	.294E+10	740.06	598.50	.513E+07
1970	.7501E+10	.4606E+10	.4294E+10	93.23%	.458E+07	.323E+10	740.11	598.50	.532E+07
1971	.7100E+10	.4606E+10	.4606E+10	100.00%	.469E+07	.250E+10	743.65	600.97	.549E+07
1972	.7346E+10	.4606E+10	.3991E+10	86.65%	.435E+07	.327E+10	740.06	598.50	.505E+07
1973	.7128E+10	.4606E+10	.4563E+10	99.07%	.469E+07	.255E+10	740.14	598.50	.549E+07
1974	.7481E+10	.4606E+10	.4341E+10	94.24%	.450E+07	.289E+10	740.05	598.50	.525E+07
1975	.6439E+10	.4606E+10	.3873E+10	84.10%	.432E+07	.275E+10	740.04	598.50	.499E+07
1976	.9728E+10	.4606E+10	.4606E+10	100.00%	.495E+07	.491E+10	744.48	600.97	.575E+07
1977	.1192E+11	.4606E+10	.4421E+10	95.99%	.499E+07	.719E+10	740.11	598.50	.576E+07
1978	.1099E+11	.4606E+10	.4374E+10	94.96%	.494E+07	.689E+10	740.10	598.50	.570E+07
1979	.8547E+10	.4606E+10	.4183E+10	90.81%	.461E+07	.433E+10	740.07	598.50	.534E+07
1980	.7977E+10	.4606E+10	.4490E+10	97.49%	.473E+07	.357E+10	740.14	598.50	.551E+07
1981	.6130E+10	.4606E+10	.4362E+10	94.71%	.401E+07	.185E+10	740.09	598.50	.477E+07
1982	.7302E+10	.4606E+10	.3940E+10	85.54%	.429E+07	.309E+10	740.04	598.50	.498E+07
1983	.5631E+10	.4606E+10	.3842E+10	83.42%	.401E+07	.211E+10	740.04	598.50	.468E+07
1984	.8785E+10	.4606E+10	.3905E+10	84.77%	.439E+07	.440E+10	740.03	598.50	.507E+07
1985	.8798E+10	.4606E+10	.4357E+10	94.61%	.471E+07	.459E+10	740.11	598.50	.547E+07
1986	.5945E+10	.4606E+10	.4558E+10	98.96%	.399E+07	.164E+10	740.19	598.50	.478E+07
1987	.8491E+10	.4606E+10	.3807E+10	82.65%	.429E+07	.424E+10	740.04	598.50	.495E+07
1988	.7139E+10	.4606E+10	.4549E+10	98.76%	.460E+07	.265E+10	740.19	598.50	.539E+07
1989	.7205E+10	.4606E+10	.4317E+10	93.73%	.457E+07	.290E+10	740.08	598.50	.532E+07
1990	.6484E+10	.4606E+10	.4056E+10	88.06%	.425E+07	.239E+10	740.05	598.50	.495E+07
1991	.8231E+10	.4606E+10	.4335E+10	94.12%	.451E+07	.365E+10	740.09	598.50	.526E+07
1992	.6705E+10	.4606E+10	.4124E+10	89.54%	.441E+07	.253E+10	740.05	598.50	.513E+07
1993	.9172E+10	.4606E+10	.4606E+10	100.00%	.487E+07	.447E+10	740.22	600.97	.567E+07
1994	.7031E+10	.4606E+10	.4374E+10	94.95%	.455E+07	.278E+10	740.10	598.50	.531E+07
1995	.7264E+10	.4606E+10	.4025E+10	87.38%	.434E+07	.306E+10	740.05	598.50	.504E+07
1996	.8222E+10	.4606E+10	.4606E+10	100.00%	.483E+07	.355E+10	762.40	600.97	.563E+07
1997	.9878E+10	.4606E+10	.4606E+10	100.00%	.501E+07	.477E+10	743.97	601.11	.581E+07
AVERAGE ANNUAL =				93.03%	.452E+07	.388E+10			.527E+07

MIN.ELEVATION AT A = 740.03 M
MIN.ELEVATION AT B = 598.50 M

10 DAYS % AVERAGE MEETING IRR. DEMAND

MONTH	1st	2nd	3rd
JANUARY	100.00	100.00	100.00
FEBRUARY	100.00	100.00	100.00
MARCH	100.00	100.00	97.26
APRIL	94.68	90.10	77.22
MAY	70.86	62.54	60.65
JUNE	97.37	98.53	98.53
JULY	.00	.00	.00
AUGUST	.00	.00	.00
SEPTEMBER	.00	.00	.00
OCTOBER	100.00	100.00	100.00
NOVEMBER	100.00	100.00	100.00
DECEMBER	100.00	100.00	100.00

Table 4.4-1 Ten Daily Schedule of Generating and Pumping (Stage I)

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	*Theoretical % Irr. Supply
JAN (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	87.42
JAN (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	87.42
JAN (21-31)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	87.42
FEB (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	80.66
FEB (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	80.66
FEB (21-28)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	80.66
MAR (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	94.01
MAR (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	94.01
MAR (21-31)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	94.01
APR (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	98.86
APR (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	98.86
APR (21-30)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	98.86

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. study % of Irrigation Supply = Average of 35 years reservoir operation simulation study

Table 4.4-2 Ten Daily Schedule of Generating and Pumping (Stage I)

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	*Theoretical % Irr. Supply
MAY	Units running		8T		8T	4P		
(1-10)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	83.46
MAY	Units running		8T		8T	4P		
(11-20)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	83.46
MAY	Units running		8T		8T	4P		
(21-31)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	83.46
JUN	Units running		8T		8T	4P		
(1-10)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	115.25
JUN	Units running		8T		8T	4P		
(11-20)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	115.25
JUN	Units running		8T		8T	4P		
(21-30)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	115.25
JUL	Units running		8T		8T	4P		
(1-10)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
JUL	Units running		8T		8T	4P		
(11-20)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
JUL	Units running		8T		8T	4P		
(21-31)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
AUG	Units running		8T		8T	4P		
(1-10)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
AUG	Units running		8T		8T	4P		
(11-20)	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
AUG	Units running		8T		8T	4P		
(21-31)	Hrs of running		4	2	4	0		
	Net inflow in D/S reservoir (MCM)		17.79	13.29	17.79	0	48.87	

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. study % of Irrigation Supply = Average of 35 years reservoir operation simulation study

Table 4.4-3 Ten Daily Schedule of Generating and Pumping (Stage I)

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	*Theoretical % Irr. Supply
SEP (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
SEP (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
SEP (21-30)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
OCT (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	324.07
OCT (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	324.07
OCT (21-30)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	324.07
NOV (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	161.96
NOV (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	161.96
NOV (21-30)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	161.96
DEC (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	122.59
DEC (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	122.59
DEC (21-31)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	122.59

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. study % of Irrigation Supply = Average of 35 years reservoir operation simulation study

Stage II (using DROPSC program);

With this program, we carried out the study to determine the effect of irrigation supply on total energy generated. Irrigation supplies changing by changing the combination hours of duration time.

The combinations of hours have been generate by reducing and increasing the first peak hour duration (DT(1)) with 0.5 hour difference. We have explored this possibility of the variation seem in first peak hour period in project operation schedule. The second peak hour period is constant during in project operation schedule, the pumping period of 8 hours is kept constant in all combinations, so the change in first peak hour duration has caused corresponding change in break hour period i.e. DT(5). The results of these runs are given in table 4.5 and fig.4.4. The results of these runs have helped in generating a trade of curve between the percentage of meeting irrigation demand and the energy generated. It's shown in table 4.5.b and fig.4.4

4.3.2 Trial with Maximum Water to be Released or Pumped in Each Step Combination of Peaking And Non-Peaking Hours

Stage III (using again DROPS program); DROPS program is run with only proposed combination of peaking and non-peaking hours and input of maximum possibility value in water releasing and pumping.

To increase the percentage of meeting irrigation demands trial runs are made by reducing the duration of first peak hour (DT(1)) in the period of 3rd ten daily of July to 2nd ten daily of August and from 3rd ten daily of September to the end of December. In this period the first peak hour on project operation schedule is less than 4 hour.

The basis of selecting proposed operation schedule, may depend on the following aspects:

a. The irrigation supply is meeting irrigation demand 100%
b. The maximum energy generation
c. Theoretical % irrigation supply (Table 4.7), it should more and nearly 100%

From table 4.6 and table 4.7 the year operation that fulfils all above aspects is year of 1977. We take this year operation, as basis of the proposed operation schedule.

Next step is rounded the value of net inflow of year 1977 to 0.01 MCM and,

Stage IV (using DROPS program); DROPS program is run with proposed combination of peaking and non-peaking hours and proposed net inflow (after rounded the net inflow in operation of year 1977). The results of these runs are given in table 4.8 and table 4.9.

Table 4.5.a RESULT OF DROPSC: COMBINAT.OUT

COMB	DT(1)	DT(2)	DT(3)	DT(4)	DT(5)	AVIRR	AVERAGE ANNUAL EN.GEN	AVERAGE ANNUAL SYS.EN.GEN	
1	2.00	6.00	4.00	8.00	4.00	88.81%	.287E+07	.358E+07	
2	2.50	6.00	4.00	8.00	3.50	97.70%	.337E+07	.416E+07	
3	3.00	6.00	4.00	8.00	3.00	98.26%	.395E+07	.473E+07	
4	3.50	6.00	4.00	8.00	2.50	97.07%	.446E+07	.523E+07	
5	4.00	6.00	4.00	8.00	2.00	93.03%	.452E+07	.527E+07	***
6	4.50	6.00	4.00	8.00	1.50	93.03%	.459E+07	.533E+07	
7	5.00	6.00	4.00	8.00	1.00	93.03%	.464E+07	.538E+07	
8	5.50	6.00	4.00	8.00	.50	93.03%	.468E+07	.542E+07	
9	6.00	6.00	4.00	8.00	.00	93.02%	.471E+07	.546E+07	

ENERGY MAX GENERATED= .546E+07 MWh
% MAX. IRR. SUPPLAY = 98.26 %

Note: *** Combination of "Base Duration Time"

Table 4.5.b Input Data to Develop Curve of % Meeting Irrigation Demand vs Average Annual System Energy Generated

COMBINATION	AV. % MEETING IRRIGATION DEMAND	AV. ANNUAL SYS. EN. GENERATED ($\times 10^9$ KWh)	REMARK
1	88.81%	3.58	
2	97.70%	4.16	
	97.10%	4.32	Proj. Data
3	98.26%	4.73	
	98.50%	5.22	Propose
4	97.07%	5.23	
5	93.03%	5.27	
6	93.03%	5.33	
7	93.03%	5.38	
8	93.03%	5.42	
9	93.02%	5.46	

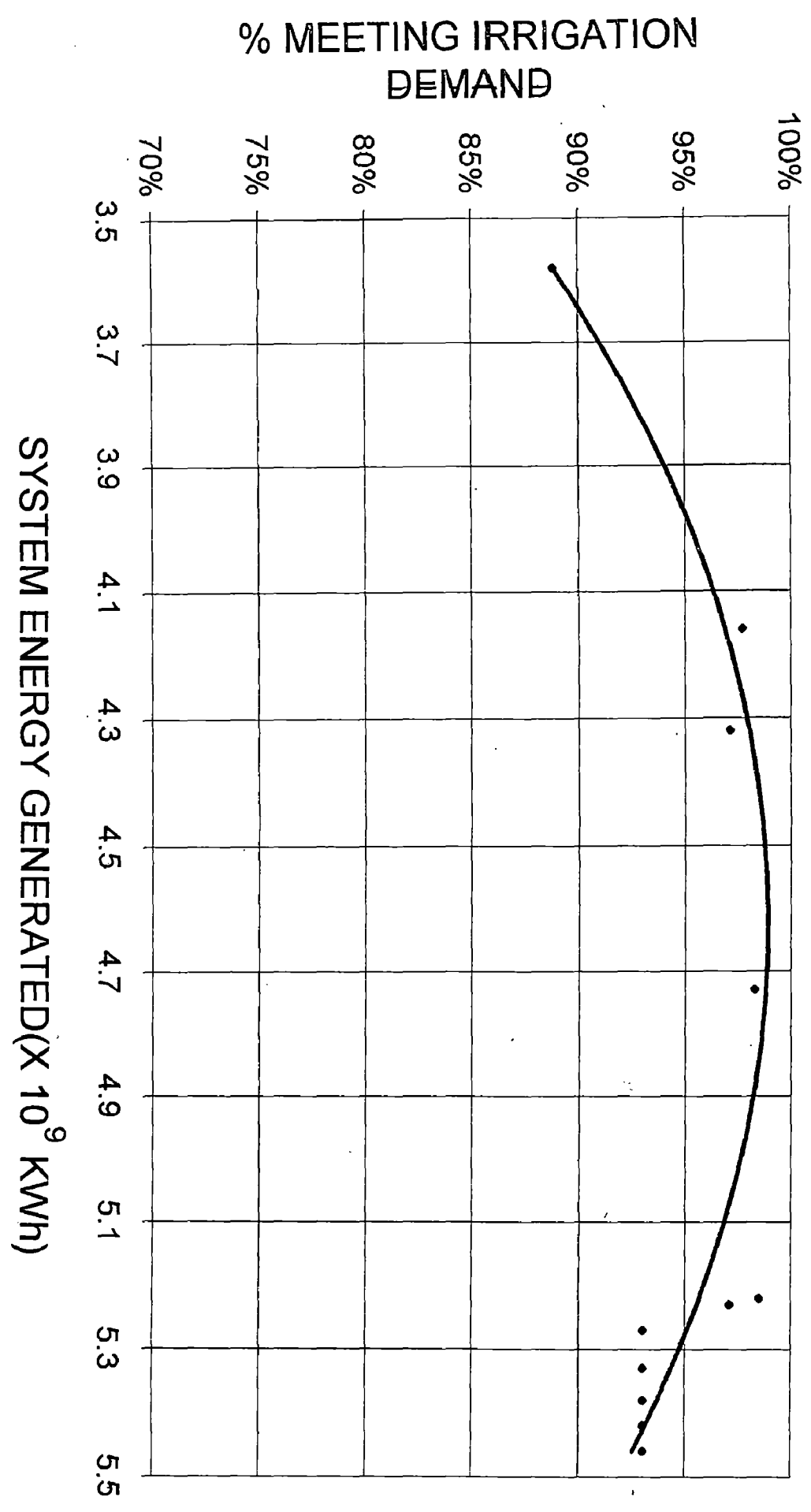

Fig.4.4 % MEETING IRRIGATION DEMAND - ANNUAL SYSTEM ENERGY GENERATED

TABLE 4.6 SUMMARY OF TOTAL RESERVOIR OPERATION

YEAR OF	TOTAL INFLOW (M3)	IRRIG. DEMAND (M3)	IRRIG. SUPPLY (M3)	IRRIG. DEMAND STATUS	AV.ENERGY GENERATED (MWh)	SPILL AT B (M3)	HA MIN (M)	HB MIN (M)	TOT. SYSTEM EN.GENERATE (MWh)
1963	.9010E+09	.9832E+09	.9832E+09	100.00%	.104E+07	.255E+09	820.61	600.42	.121E+07
1964	.5643E+10	.4606E+10	.4606E+10	100.00%	.439E+07	.156E+10	743.08	600.42	.519E+07
1965	.7066E+10	.4606E+10	.4292E+10	93.19%	.416E+07	.232E+10	740.07	598.50	.490E+07
1966	.8281E+10	.4606E+10	.4605E+10	99.98%	.442E+07	.347E+10	749.70	598.50	.522E+07
1967	.6760E+10	.4606E+10	.4606E+10	100.00%	.457E+07	.219E+10	750.22	600.42	.537E+07
1968	.6859E+10	.4606E+10	.4606E+10	100.00%	.432E+07	.215E+10	746.69	600.42	.512E+07
1969	.7090E+10	.4606E+10	.4534E+10	98.45%	.431E+07	.245E+10	740.04	598.50	.510E+07
1970	.7501E+10	.4606E+10	.4606E+10	100.00%	.456E+07	.295E+10	749.70	600.42	.536E+07
1971	.7100E+10	.4606E+10	.4606E+10	100.00%	.458E+07	.249E+10	765.89	600.42	.538E+07
1972	.7346E+10	.4606E+10	.4453E+10	96.69%	.433E+07	.284E+10	740.07	598.50	.510E+07
1973	.7128E+10	.4606E+10	.4606E+10	100.00%	.458E+07	.248E+10	759.13	600.42	.538E+07
1974	.7481E+10	.4606E+10	.4599E+10	99.85%	.422E+07	.277E+10	750.76	598.50	.502E+07
1975	.6439E+10	.4606E+10	.4184E+10	90.83%	.418E+07	.231E+10	740.05	598.50	.491E+07
1976	.9728E+10	.4606E+10	.4606E+10	100.00%	.455E+07	.497E+10	765.52	600.42	.535E+07
1977	.1192E+11	.4606E+10	.4606E+10	100.00%	.475E+07	.719E+10	750.08	600.97	.555E+07
1978	.1099E+11	.4606E+10	.4563E+10	99.06%	.460E+07	.661E+10	740.10	598.50	.539E+07
1979	.8547E+10	.4606E+10	.4462E+10	96.87%	.436E+07	.404E+10	740.12	598.50	.514E+07
1980	.7977E+10	.4606E+10	.4606E+10	100.00%	.439E+07	.328E+10	748.97	600.42	.519E+07
1981	.6130E+10	.4606E+10	.4606E+10	100.00%	.416E+07	.155E+10	751.37	600.42	.496E+07
1982	.7302E+10	.4606E+10	.4452E+10	96.65%	.415E+07	.270E+10	740.12	598.50	.492E+07
1983	.5631E+10	.4606E+10	.4239E+10	92.03%	.410E+07	.160E+10	740.08	598.50	.484E+07
1984	.8785E+10	.4606E+10	.4414E+10	95.83%	.419E+07	.409E+10	740.15	598.50	.496E+07
1985	.8798E+10	.4606E+10	.4606E+10	100.00%	.454E+07	.420E+10	742.74	600.42	.534E+07
1986	.5945E+10	.4606E+10	.4606E+10	100.00%	.419E+07	.149E+10	760.17	600.42	.499E+07
1987	.8491E+10	.4606E+10	.4346E+10	94.37%	.428E+07	.385E+10	740.11	598.50	.503E+07
1988	.7139E+10	.4606E+10	.4606E+10	100.00%	.445E+07	.254E+10	756.58	600.42	.525E+07
1989	.7205E+10	.4606E+10	.4606E+10	100.00%	.455E+07	.254E+10	747.29	600.42	.535E+07
1990	.6484E+10	.4606E+10	.4556E+10	98.93%	.421E+07	.183E+10	740.10	598.50	.500E+07
1991	.8231E+10	.4606E+10	.4606E+10	100.00%	.438E+07	.355E+10	754.77	600.42	.518E+07
1992	.6705E+10	.4606E+10	.4516E+10	98.05%	.421E+07	.217E+10	740.08	598.50	.499E+07
1993	.9172E+10	.4606E+10	.4606E+10	100.00%	.444E+07	.446E+10	758.76	600.42	.524E+07
1994	.7031E+10	.4606E+10	.4606E+10	100.00%	.434E+07	.245E+10	746.93	600.42	.514E+07
1995	.7264E+10	.4606E+10	.4487E+10	97.41%	.417E+07	.263E+10	740.07	598.50	.495E+07
1996	.8222E+10	.4606E+10	.4606E+10	100.00%	.446E+07	.355E+10	779.04	598.56	.526E+07
1997	.9878E+10	.4606E+10	.4606E+10	100.00%	.460E+07	.508E+10	764.46	599.44	.540E+07
AVERAGE ANNUAL =				98.52%	.437E+07	.311E+10			.516E+07

MIN.ELEVATION AT A = 740.04 M
MIN.ELEVATION AT B = 598.50 M

10 DAYS % AVERAGE MEETING IRR. DEMAND MONTH	1st	2nd	3rd
JANUARY	100.00	100.00	100.00
FEBRUARY	100.00	100.00	100.00
MARCH	100.00	100.00	100.00
APRIL	100.00	100.00	100.00
MAY	97.70	91.28	83.96
JUNE	97.82	98.53	98.53
JULY	.00	.00	.00
AUGUST	.00	.00	.00
SEPTEMBER	.00	.00	.00
OCTOBER	100.00	100.00	100.00
NOVEMBER	99.96	100.00	100.00
DECEMBER	100.00	100.00	100.00

Table 4.7-1 Ten Daily Schedule of Generating and Pumping (Stage III)

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	*Theoretical % Irr. Supply
JAN (1-10)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	87.42
JAN (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	87.42
JAN (21-31)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	87.42
FEB (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	80.66
FEB (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	80.66
FEB (21-28)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	80.66
MAR (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	94.01
MAR (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	94.01
MAR (21-31)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	94.01
APR (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	98.86
APR (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	98.86
APR (21-30)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	98.86

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. Study % Irrigation Supply = Average of 35 years reservoir operation simulation study

Table 4.7-2 Ten Daily Schedule of Generating and Pumping (Stage III)

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	*Theoretical % Irr. Supply
MAY (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42	83.46
MAY (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42	83.46
MAY (21-31)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42	83.46
JUN (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42	115.25
JUN (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42	115.25
JUN (21-30)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42	115.25
JUL (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42	
JUL (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42	
JUL (21-31)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3 17.79		8T 4 17.79	4P 8 -17.16	18.42	
AUG (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3 17.79		8T 4 17.79	4P 8 -17.16	18.42	
AUG (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3 17.79		8T 4 17.79	4P 8 -17.16	18.42	
AUG (21-31)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79	8T 6 13.29	8T 4 17.79	4P 0 0	48.87	

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. Study % Irrigation Supply = Average of 35 years reservoir operation simulation study

Table 4.7-3 Ten Daily Schedule of Generating and Pumping (Stage III)

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	*Theoretical % Irr. Supply
SEP (1-10)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
SEP (11-20)	Units running		8T		8T	4P		
	Hrs of running		4		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
SEP (21-30)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	
OCT (1-10)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	324.07
OCT (11-20)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	324.07
OCT (21-30)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	324.07
NOV (1-10)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	161.96
NOV (11-20)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	161.96
NOV (21-30)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	161.96
DEC (1-10)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	122.59
DEC (11-20)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	122.59
DEC (21-31)	Units running		8T		8T	4P		
	Hrs of running		3		4	8		
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42	122.59

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. Study % Irrigation Supply = Average of 35 years reservoir operation simulation study

TABLE 4.8 SUMMARY OF TOTAL RESERVOIR OPERATION

YEAR OF	TOTAL INFLOW (M3)	IRRIG. DEMAND (M3)	IRRIG. SUPPLY (M3)	IRRIG. DEMAND STATUS	AV.ENERGY GENERATED (MWh)	SPILL AT B (M3)	HA MIN (M)	HB MIN (M)	TOT. SYSTEM EN.GENERATE (MWh)
1963	.9010E+09	.9832E+09	.9832E+09	100.00%	.117E+07	.255E+09	820.49	603.16	.134E+07
1964	.5643E+10	.4606E+10	.4606E+10	100.00%	.437E+07	.157E+10	742.93	601.11	.517E+07
1965	.7066E+10	.4606E+10	.4290E+10	93.13%	.414E+07	.232E+10	740.07	598.50	.488E+07
1966	.8281E+10	.4606E+10	.4606E+10	100.00%	.455E+07	.347E+10	749.55	601.11	.535E+07
1967	.6760E+10	.4606E+10	.4606E+10	100.00%	.455E+07	.219E+10	750.04	601.11	.535E+07
1968	.6859E+10	.4606E+10	.4606E+10	100.00%	.445E+07	.215E+10	746.53	601.11	.525E+07
1969	.7090E+10	.4606E+10	.4532E+10	98.39%	.443E+07	.245E+10	740.08	598.50	.522E+07
1970	.7501E+10	.4606E+10	.4606E+10	100.00%	.455E+07	.295E+10	749.54	601.11	.535E+07
1971	.7100E+10	.4606E+10	.4606E+10	100.00%	.457E+07	.249E+10	765.77	601.11	.537E+07
1972	.7346E+10	.4606E+10	.4451E+10	96.63%	.431E+07	.284E+10	740.07	598.50	.508E+07
1973	.7128E+10	.4606E+10	.4606E+10	100.00%	.457E+07	.248E+10	759.00	601.11	.537E+07
1974	.7481E+10	.4606E+10	.4599E+10	99.85%	.435E+07	.277E+10	750.63	598.50	.515E+07
1975	.6439E+10	.4606E+10	.4181E+10	90.77%	.417E+07	.231E+10	740.05	598.50	.490E+07
1976	.9728E+10	.4606E+10	.4606E+10	100.00%	.467E+07	.497E+10	765.40	601.11	.547E+07
1977	.1192E+11	.4606E+10	.4606E+10	100.00%	.473E+07	.719E+10	749.94	601.51	.553E+07
1978	.1099E+11	.4606E+10	.4558E+10	98.96%	.457E+07	.661E+10	740.10	598.50	.537E+07
1979	.8547E+10	.4606E+10	.4462E+10	96.87%	.435E+07	.404E+10	740.12	598.50	.512E+07
1980	.7977E+10	.4606E+10	.4606E+10	100.00%	.451E+07	.328E+10	748.81	601.11	.531E+07
1981	.6130E+10	.4606E+10	.4606E+10	100.00%	.428E+07	.155E+10	751.24	601.11	.508E+07
1982	.7302E+10	.4606E+10	.4449E+10	96.60%	.428E+07	.270E+10	740.02	598.50	.505E+07
1983	.5631E+10	.4606E+10	.4236E+10	91.97%	.409E+07	.160E+10	740.08	598.50	.483E+07
1984	.8785E+10	.4606E+10	.4414E+10	95.84%	.431E+07	.409E+10	740.15	598.50	.508E+07
1985	.8798E+10	.4606E+10	.4606E+10	100.00%	.453E+07	.420E+10	742.58	601.11	.533E+07
1986	.5945E+10	.4606E+10	.4606E+10	100.00%	.418E+07	.150E+10	760.05	601.11	.498E+07
1987	.8491E+10	.4606E+10	.4344E+10	94.31%	.426E+07	.385E+10	740.11	598.50	.502E+07
1988	.7139E+10	.4606E+10	.4606E+10	100.00%	.443E+07	.254E+10	756.45	601.11	.523E+07
1989	.7205E+10	.4606E+10	.4606E+10	100.00%	.454E+07	.254E+10	747.13	601.11	.534E+07
1990	.6484E+10	.4606E+10	.4554E+10	98.87%	.434E+07	.183E+10	740.10	598.50	.513E+07
1991	.8231E+10	.4606E+10	.4606E+10	100.00%	.451E+07	.355E+10	754.64	601.11	.531E+07
1992	.6705E+10	.4606E+10	.4514E+10	98.00%	.433E+07	.217E+10	740.08	598.50	.511E+07
1993	.9172E+10	.4606E+10	.4606E+10	100.00%	.457E+07	.446E+10	758.63	601.11	.537E+07
1994	.7031E+10	.4606E+10	.4606E+10	100.00%	.447E+07	.245E+10	746.77	601.11	.527E+07
1995	.7264E+10	.4606E+10	.4484E+10	97.35%	.430E+07	.263E+10	740.02	598.50	.508E+07
1996	.8222E+10	.4606E+10	.4606E+10	100.00%	.456E+07	.355E+10	778.94	601.11	.536E+07
1997	.9878E+10	.4606E+10	.4606E+10	100.00%	.472E+07	.508E+10	764.34	601.11	.552E+07
AVERAGE ANNUAL =				98.50%	.443E+07	.311E+10			.522E+07

MIN.ELEVATION AT A = 740.02 M
MIN.ELEVATION AT B = 598.50 M

10 DAYS % AVERAGE MEETING IRR. DEMAND

MONTH	1st	2nd	3rd
JANUARY	100.00	100.00	100.00
FEBRUARY	100.00	100.00	100.00
MARCH	100.00	100.00	100.00
APRIL	100.00	100.00	100.00
MAY	97.64	91.21	83.70
JUNE	97.82	98.53	98.53
JULY	.00	.00	.00
AUGUST	.00	.00	.00
SEPTEMBER	.00	.00	.00
OCTOBER	100.00	100.00	100.00
NOVEMBER	100.00	100.00	100.00
DECEMBER	100.00	100.00	100.00

Table 4.9-1 Proposed of Ten Daily Schedule of Generating and Pumping at Tehri Reservoir

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	% Irrigation Supply *Theoretical	% Irrigation Supply **Reservoir Op. Study
JAN (1-10)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-5.61	21.07	100.00	100.00
JAN (11-20)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-14.51	21.07	100.00	100.00
JAN (21-31)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.34	-11.06	21.07	100.00	100.00
FEB (1-10)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.49	-9.44	22.84	100.02	100.00
FEB (11-20)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.49	-9.44	22.84	100.02	100.00
FEB (21-28)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.49	-9.44	22.84	100.02	100.00
MAR (1-10)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.21	-12.4	19.6	100.03	100.00
MAR (11-20)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.21	-12.4	19.6	100.03	100.00
MAR (21-31)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.21	-12.4	19.6	100.03	100.00
APR (1-10)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.13	-13.27	18.65	100.09	100.00
APR (11-20)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.13	-13.27	18.65	100.09	100.00
APR (21-30)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		14.13	-13.27	18.65	100.09	100.00

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. Study % Irrigation Supply = Average of 35 years reservoir operation simulation study

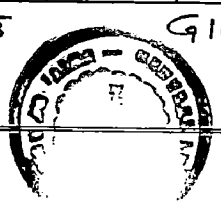

Table 4.9-2 Proposed of Ten Daily Schedule of Generating and Pumping at Tehri Reservoir

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	% Irrigation Supply	
								*Theoretical	**Reservoir Op. Study
MAY (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 14.41	4P 8 -10.12	22.08	100.04	97.64
MAY (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 14.41	4P 8 -10.12	22.08	100.04	91.21
MAY (21-31)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 14.41	4P 8 -10.12	22.08	100.04	**83.70**
JUN (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 12.28	4P 8 -14.08	15.99	100.04	97.82
JUN (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 12.27	4P 8 -14.07	15.99	100.04	98.53
JUN (21-30)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 12.26	4P 8 -14.06	15.99	100.04	98.53
JUL (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42		
JUL (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79		8T 4 17.79	4P 8 -17.16	18.42		
JUL (21-31)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3 13.34		8T 4 13.34	4P 8 -17.16	9.52		
AUG (1-10)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3 13.34		8T 4 13.34	4P 8 -17.16	9.52		
AUG (11-20)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 3 13.34		8T 4 13.34	4P 8 -17.16	9.52		
AUG (21-31)	Units running Hrs of running Net inflow in D/S reservoir (MCM)		8T 4 17.79	2 13.29	8T 4 17.79	4P 0 0	48.87		

Note:

*. Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. Study % Irrigation Supply = Average of 35 years reservoir operation simulation study

Table 4.9-3 Proposed of Ten Daily Schedule of Generating and Pumping at Tehri Reservoir

PERIOD	PARAMETERS	06-08 hrs 2 hrs	08-12 hrs 4 hrs	12-18 hrs 6 hrs	18-22 hrs 4 hrs	22-06 hrs 8 hrs	Net D/S release	% Irrigation Supply *Theoretical	% Irrigation Supply **Reservoir Op. Study
SEP (1-10)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42		
SEP (11-20)	Units running		8T		8T	4P			
	Hrs of running		4		4	8			
	Net inflow in D/S reservoir (MCM)		17.79		17.79	-17.16	18.42		
SEP (21-30)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-17.16	9.52		
OCT (1-10)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-17.16	9.52	167.49	100.00
OCT (11-20)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-17.16	9.52	167.49	100.00
OCT (21-30)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-17.16	9.52	167.49	100.00
NOV (1-10)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-15.3	11.38	100.06	100.00
NOV (11-20)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-15.3	11.38	100.06	100.00
NOV (21-30)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-15.3	11.38	100.06	100.00
DEC (1-10)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-11.65	15.03	100.03	100.00
DEC (11-20)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-11.65	15.03	100.03	100.00
DEC (21-31)	Units running		8T		8T	4P			
	Hrs of running		3		4	8			
	Net inflow in D/S reservoir (MCM)		13.34		13.34	-11.65	15.03	100.03	100.00

Note:

* Theoritical % Irrigation Supply = Net D/S release : Irrigation Demand in that period

** Reservoir Op. Study % Irrigation Supply = Average of 35 years reservoir operation simulation study

Chapter 5

DISCUSSION OF RESULTS

5.1 Project Data (Output of DROPS program)

1. Efficiency of reversible pump turbine = $\frac{\text{Capacity pumping mode.}}{\text{Capacity generating mode}}$ = $\frac{148.99 M^3/\text{sec}}{154.43 M^3/\text{sec}}$ = 96.5 % or *ratio of turbine maximum discharge to pump maximum discharge* $= \frac{Q_T \max}{Q_P \max} = \frac{154.43\ M^3/\text{sec}}{148.99\ M^3/\text{sec}} = 1.04$, from reference 14, page 828; and if *ratio of turbine maximum head to pump maximum head* is 1.0, it means $\alpha = 1.3$, where $\alpha = \frac{\text{Motor Capacity (KW)}}{\text{Generator Capacity (KVA)}}$; so, motor capacity (KW) is substantially more than generator capacity (KVA)

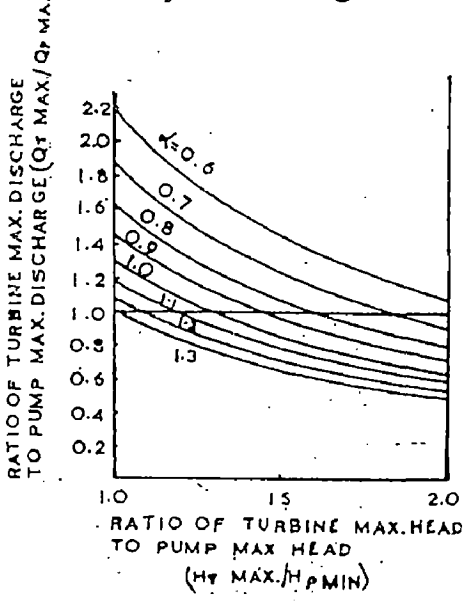

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Fig. 5.1 Relation of generator-motor capacity vs pump turbine performance

2. The average percentage of meeting irrigation demands with the project data obtained by simulating 35 years inflows runs is 97.10% and Annual energy generated of the system in 35 years is 4.32 x 10^9 KWh. The minimum average percentage irrigation demands occurs in the month of November

(Table 4.1 and Table 4.2). The percentage irrigation demands are met 100 % in the year i.e. 1977

5.2 Proposed Operation Schedule

Stage I Project Data of Construction, Base Duration Time and Maximum Possible Value of Water Release or Pumping. (Output DROPS program)

The average percentage of meeting irrigation demands with this data for all 35 years data is 93.03% and Annual energy generated of the system in 35 years is 5.27 x 10^9 KWh. The minimum average percentage irrigation demands occurs in the month of May (Table 4.3 and Table 4.4). This operation schedule yields more energy generation but lesser percentage of meeting irrigation demands as compared to project operation schedule.

Stage II Project Data of Construction, Changing Duration Time and Maximum Possible Value of Water Release or Pumping (Output DROPSC program)

On reducing first peak hour DT(1) from "base duration time of 4 hours", the percentage of meeting irrigation demands has increased but energy generated reduce, when first peak period is reduced to 2 hours, the percentage of meeting irrigation demands decreased along with the decrease in energy generation.

Similarly when the peak hour DT(1) is increased, the percentage of meeting irrigation demands remained practically constant but energy generation increased

From these results of stage II and the project operation schedule, attempt was made to increase the percentage of meeting irrigation demands. Model runs have shown that by reducing the duration of first peak hour (DT(1)) in 3rd ten daily of July to 2nd ten daily of August and from 3rd ten daily of September to the end of December, to 3 hour. Maximum percentage of meeting irrigation demands of 98.26% could be achieved. (Table 4.5 and Fig.4.4).

Stage III Project Data of Construction, Proposed Duration Time and Maximum Possible Value of Water Release or Pumping. (Output DROPS program)

The average percentage of meeting irrigation demands with this data for all 35 years data is 98.52% and Annual energy generated of the system in 35 years is 5.16×10^9 KWh. The minimum average percentage irrigation demands occurs in the month of May (Table 4.6 and Table 4.7). This operation schedule yields more energy generation and more percentage of meeting irrigation demands as compared to project operation schedule.

The result of year where the irrigation demands is 100% and maximum energy generated is year of 1977.

To obtain proposed net inflow in optimized operation schedule we take this year 1977 operation, as basic of the proposed operation schedule of net inflow and rounded it to 0.01 MCM.

Stage IV Project Data of Construction, Proposed Duration Time and Proposed Net Inflow (after rounded the value to 0.01 MCM). (Output DROPS program)

The average percentage of meeting irrigation demands with this data for all 35 years data is 98.50% and Annual energy generated of the system in 35 years is 5.22×10^9 KWh. The minimum average percentage irrigation demands occurs in the month of May (Table 4.8 and Table 4.9). This operation schedule yields more energy generation and more percentage of meeting irrigation demands as compared to project operation schedule, but less in percentage of meeting irrigation demand than result in Stage III.

Comparison between Project and Proposed Schedule Operation

1. From the curve between Annual Average Energy Generated vs. Years, shown in Fig. 5.2 it can be seen that in each year the Annual Average Energy Generated through proposed operation schedule is more than the Annual Average Energy Generated by project operation schedule.
2. From the curve between Annual Volume of Water Spill from B vs. Year, shown in Fig. 5.2 it can be seen that each year the Annual Volume of Water

Spill from B in proposed operation schedule is slightly less than the Annual Volume of Water Spill from B in project operation schedule.

3. From Fig. 5.3 the difference in generating and pumping duration hours is in first peak hour and second non-peak hour (pumping hour) i.e.:
    - In months of March to July duration of first peak hour is same, but pumping hours of the project schedule are less duration than proposed schedule in this period.
    - And in months of August to February duration of second non-peak hour (pumping hour) is same, but first peak hours of the project schedule are less than these proposed schedule in this period.
4. From Fig. 5.3 the differences of volume of water released and pumped are as below:
    - In first peak hour it can be seen that in whole year volume of water released in proposed operation schedule is more than project operation schedule.
    - In second peak hour, from September to April the volume of water released in proposed operation schedule is less than project operation schedule and the other months the trend is reversed.
    - In second non-peak hour (pumping hour), almost in the whole year the volume of water pumped in proposed operation schedule is more than project operation schedule.
5. From tables 5.1 and 5.2, 70% dependable annual energy generated is as below:
    - Project operation schedule: 4.28×10^9 KWh
    - Proposed operation schedule: 5.08×10^9 KWh
    - Difference: 0.8×10^9 KWh or 18.69%

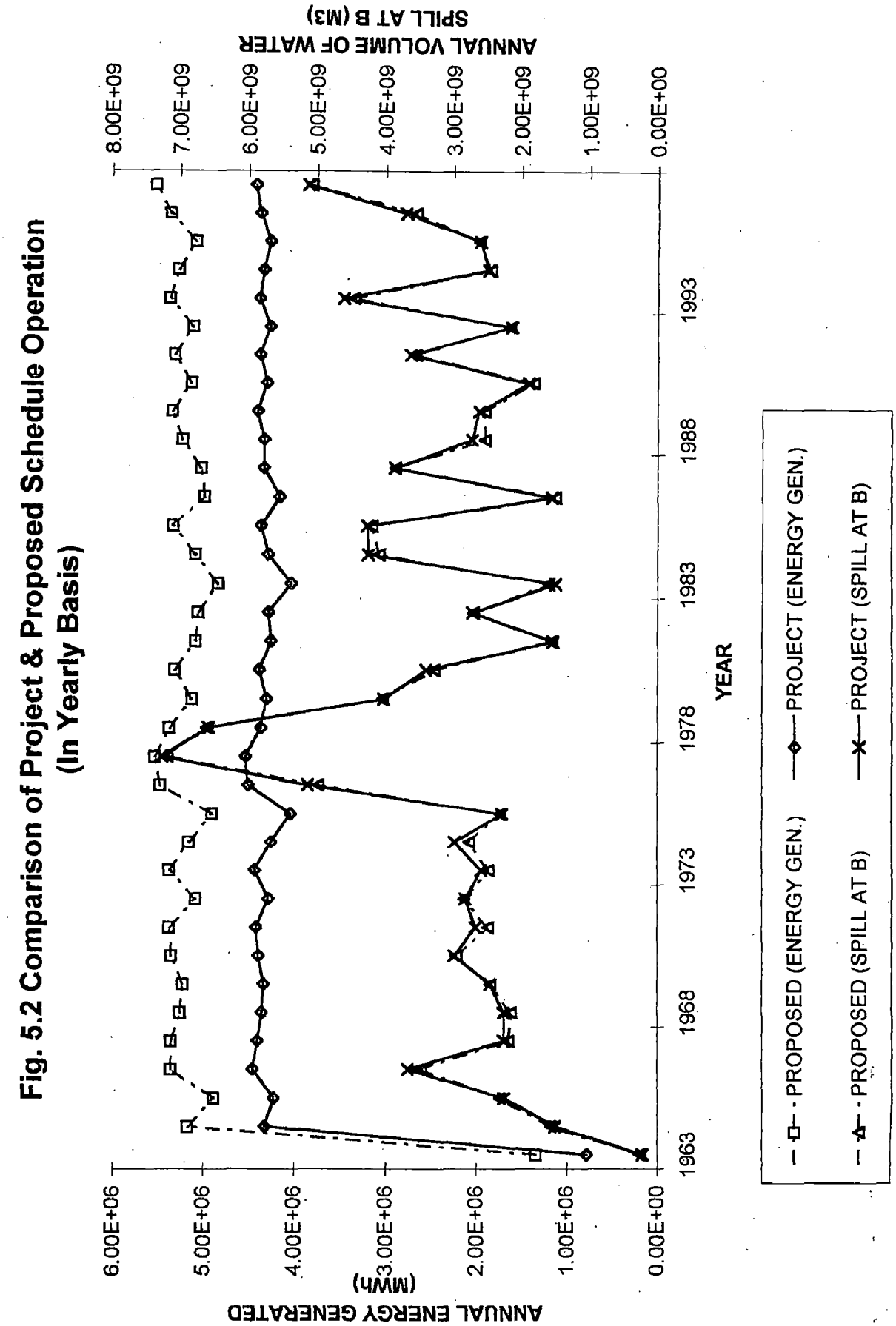


Fig. 5.2 Comparison of Project & Proposed Schedule Operation (In Yearly Basis)

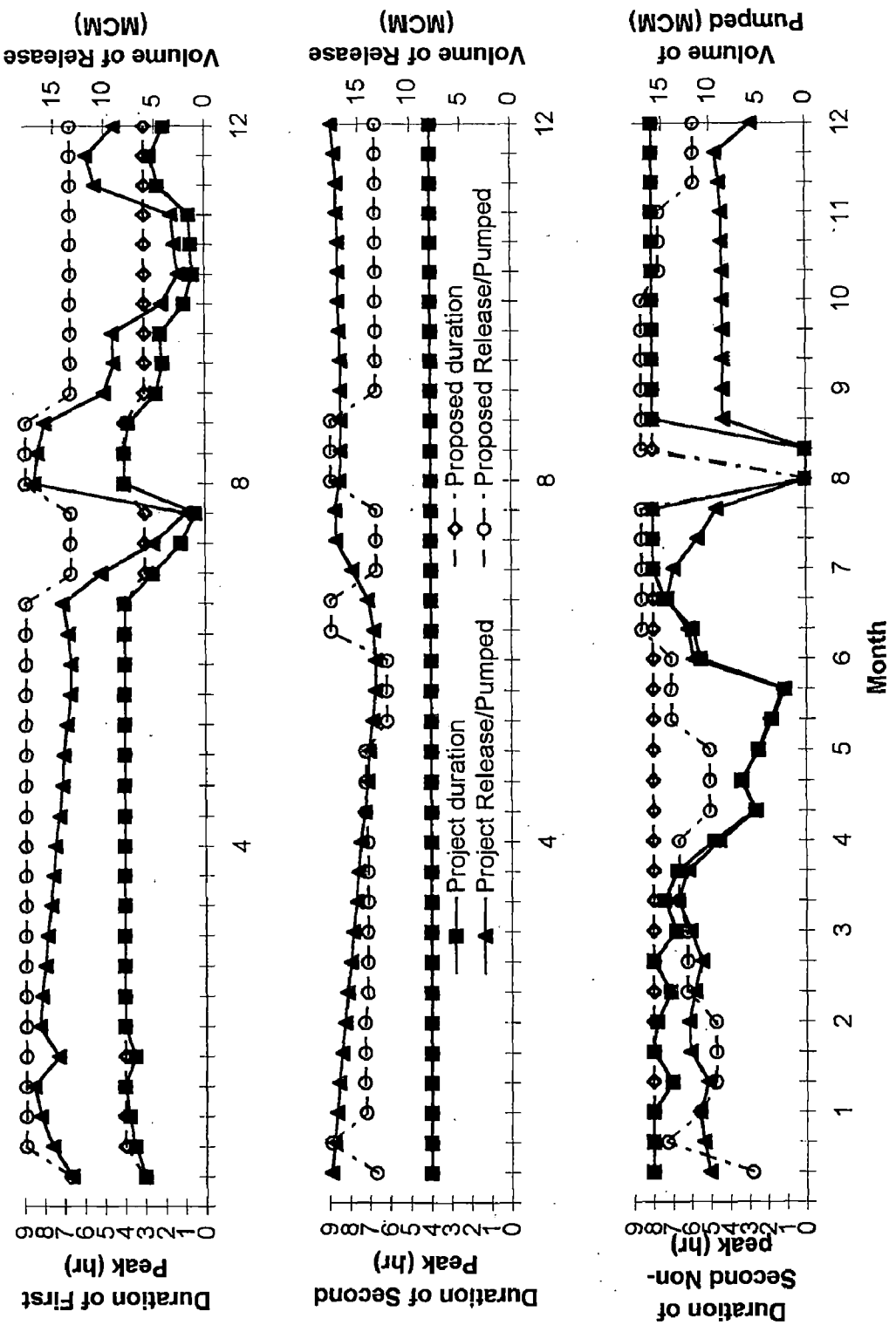


Fig. 5.3 Comparison of Project & Proposed Schedule Operation (In Monthly Basis)

Table 5.1 Calculation Dependable Annual Energy Generated with Project Schedule Operation

n	YEAR	ENERGY GENERATED	[illegible]
0.25	1963	7.82E+05	99.29%
1.25	1983	4.03E+06	96.45%
2.25	1975	4.04E+06	93.62%
3.25	1986	4.15E+06	90.78%
4.25	1965	4.22E+06	87.94%
5.25	1974	4.25E+06	85.11%
6.25	1981	4.25E+06	82.27%
7.25	1992	4.26E+06	79.43%
8.25	1995	4.26E+06	76.60%
9.25	1972	4.28E+06	73.76%
10.25	1982	4.28E+06	70.92%
11.25	1984	4.28E+06	68.09%
12.25	1979	4.30E+06	65.25%
13.25	1990	4.30E+06	62.41%
14.25	1964	4.32E+06	59.57%
15.25	1969	4.33E+06	56.74%
16.25	1987	4.33E+06	53.90%
17.25	1988	4.33E+06	51.06%
18.25	1994	4.33E+06	48.23%
19.25	1968	4.35E+06	45.39%
20.25	1978	4.36E+06	42.55%
21.25	1985	4.36E+06	39.72%
22.25	1991	4.37E+06	36.88%
23.25	1996	4.37E+06	34.04%
24.25	1980	4.38E+06	31.21%
25.25	1993	4.38E+06	28.37%
26.25	1970	4.39E+06	25.53%
27.25	1967	4.40E+06	22.70%
28.25	1989	4.40E+06	19.86%
29.25	1971	4.41E+06	17.02%
30.25	1997	4.42E+06	14.18%
31.25	1973	4.43E+06	11.35%
32.25	1966	4.45E+06	8.51%
33.25	1976	4.50E+06	5.67%
34.25	1977	4.53E+06	2.84%

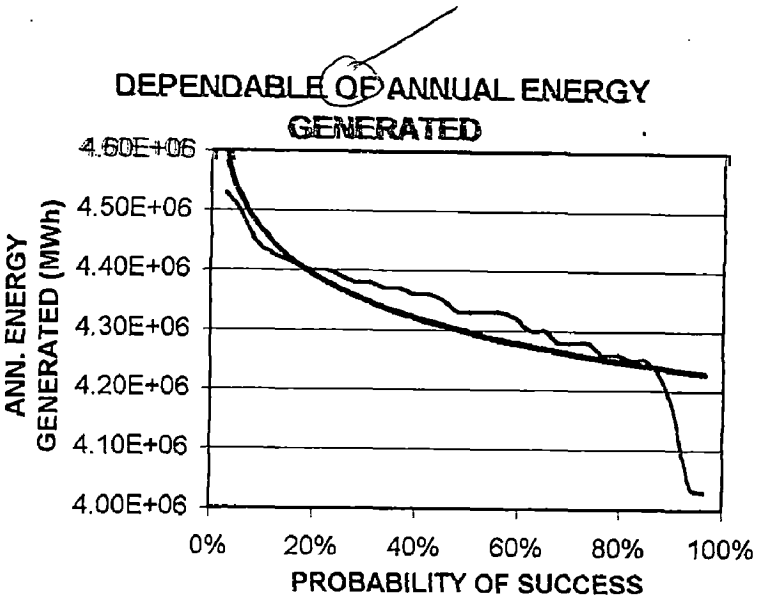
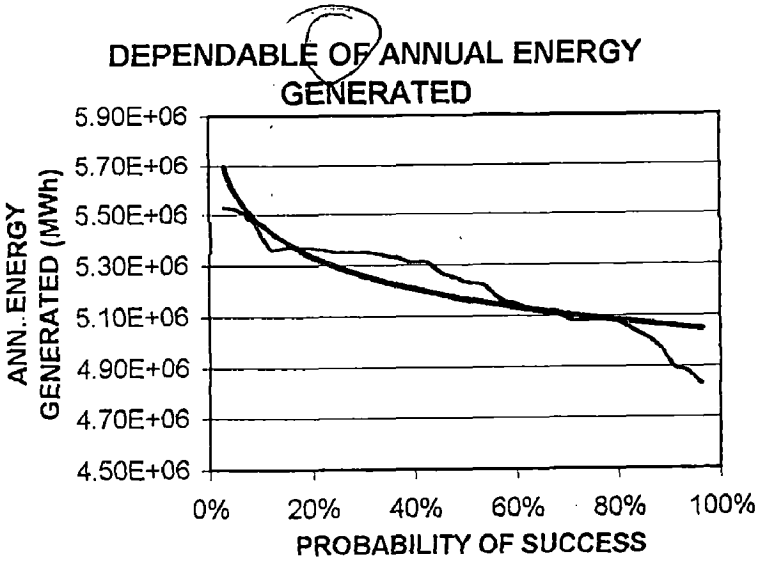


Table 5.2 Calculation of Dependable Annual Energy Generated with Proposed Schedule Operation

n	YEAR	ENERGY GENERATED	{1-n/(m+1)}
0.25	1963	1.34E+06	99.29%
1.25	1983	4.83E+06	96.45%
2.25	1965	4.88E+06	93.62%
3.25	1975	4.90E+06	90.78%
4.25	1986	4.98E+06	87.94%
5.25	1987	5.02E+06	85.11%
6.25	1982	5.05E+06	82.27%
7.25	1972	5.08E+06	79.43%
8.25	1981	5.08E+06	76.60%
9.25	1984	5.08E+06	73.76%
10.25	1995	5.08E+06	70.92%
11.25	1992	5.11E+06	68.09%
12.25	1979	5.12E+06	65.25%
13.25	1990	5.13E+06	62.41%
14.25	1974	5.15E+06	59.57%
15.25	1964	5.17E+06	56.74%
16.25	1969	5.22E+06	53.90%
17.25	1988	5.23E+06	51.06%
18.25	1968	5.25E+06	48.23%
19.25	1994	5.27E+06	45.39%
20.25	1980	5.31E+06	42.55%
21.25	1991	5.31E+06	39.72%
22.25	1985	5.33E+06	36.88%
23.25	1989	5.34E+06	34.04%
24.25	1966	5.35E+06	31.21%
25.25	1967	5.35E+06	28.37%
26.25	1970	5.35E+06	25.53%
27.25	1996	5.36E+06	22.70%
28.25	1971	5.37E+06	19.86%
29.25	1973	5.37E+06	17.02%
30.25	1978	5.37E+06	14.18%
31.25	1993	5.37E+06	11.35%
32.25	1976	5.47E+06	8.51%
33.25	1997	5.52E+06	5.67%
34.25	1977	5.53E+06	2.84%



Chapter 6

CONCLUSIONS

From the pumped storage reservoir operation study for 35 years of Tehri Project presented in Chapter 4 and discussed in Chapter 5, it is seen that both the irrigation and power benefits can be improved upon. The results of the project operation schedule and the proposed optimized operation schedule have been compared below:

1. Proposed operation schedule has better result, average percentage of meeting irrigation demands is more succeed and more energy generated.

Description	Average Annual % of Meeting Irrigation Demand	Average Annual Energy Generated in 35 years ($x\ 10^9$ KWh)
1. Project Operation Schedule (Table 4.1and Table 4.2)	97.11	4.32
2. Proposed Operation Schedule (Table 4.8 and Table 4.9)	98.50	5.22
Difference	1.39	0.90 (20.83%)

2. The comparison of the period of deficient irrigation the two sets of operation schedule is given below:

Description	Water Deficient Months	Minimum Average % Meeting Irrigation Demand
1. Project Operation Schedule (Table 4.1and Table 4.2)	April, May, June, November, and December	3rd ten daily period of November (78.66 %)
2. Proposed Operation Schedule (Table 4.8 And Table 4.9)	May and June	3rd ten daily period of May (83.70 %)

The above comparison shows that the proposed operation schedule gives better irrigation facility. Deficiency irrigation in November and December during Rabi corps is not very desirable.

The percentage of irrigation demands deficiency during April to June has been reduced substantially with the proposed operation schedule.

3. The proposed optimized operation schedule, because of improvement both in irrigation and power generation is recommended for adoption.

   The results show that the proposed operation schedule slightly improves irrigation facility from the project but the increase in power generation is substantial.

   The increase in power generation is associated with increase in total generating and pumping hours in a year. The average annual increase is as below:

$$\text{Increase in generating hours} = \frac{2777\ \text{hr} - 2580.62\ \text{hr}}{2580.62\ \text{hr}} \times 100\ \% = 7.61\ \%$$

$$\text{Increase in pumping hours} = \frac{2832\ \text{hr} - 2324.70\ \text{hr}}{2324.70\ \text{hr}} \times 100\ \% = 21.82\ \%$$

4. The models runs have helped in developing a trade of curve between percentage of meeting irrigation demand and power generation. It is helpful in selecting the

operation schedule based on the weightage to be given to the two benefits of the project i.e. irrigation and power generation.

Suggestion for further study

The computer program developed in this study for reservoir operation of a pumped storage scheme can be used as a tool to optimize the installed capacity as well as the capacity of the lower reservoir.

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The catchment area of of river Bhagirathi upto Tehri Dam Site is 7511 Sq Km, out of which about 2300 Sq Km area is snow bound. The catchment area upto Koteshwar dam site is 7691 Sq Km which also includes the snow bound area of 2300 Sq Km. The river runoff data at Tehri dam site is enclosed. Some contribution of the intervening catchment area of 180 Sq Km may be suitably assumed. There is no major tributary joining the main river in the reach of 20 Km between Tehri and Koteshwar.

For Tehri Reservoir:

F.R.L. = 830.00 m.
M.D.D.L = 740.00 m.

For Koteshwar Reservoir:

F.R.L. = 612.00 m.
M.D.D.L = 598.50 m.

The power house complex at Tehri comprises of 8 machines of 250 MW each. Four of these machines are turbines and have an installed capacity of 1000 MW (4X250MW). The other four machines are reversible machines and these can operate in turbine as well as pump mode. The capacity of the reversible machines is also 250 MW each and these reversible machines are installed in the PSP. Apart from this there is another power house at Koteshwar with an installed capacity of 400 MW. This lower power house is equipped with four turbines of 100 MW each,

TAKE CARE OF UNITS OF ALL THE DATA.

MONTHLY RUNOFF DATA OF RIVER BHAGIRATHI AT TEHRI SITE
(Runoff in Million Cubic Metre)

	JAN	FEB	MAR	APR	MAY	JUNE
1963	173.	206.	201.	293.	293.	581.
1964	174.	175.	178.	185.	254.	877.
1965	168.	163.	402.	191.	229.	658.
1966	215.	205.	234.	260.	321.	944.
1967	175.	175.	181.	194.	358.	762.
1968	192.	187.	182.	229.	309.	561.
1969	143.	124.	133.	191.	247.	1051.
1970	138.	175.	157.	198.	363.	596.
1971	154.	152.	213.	359.	605.	1158.
1972	143.	137.	132.	187.	240.	501.
1973	150.	180.	209.	372.	455.	832.
1974	127.	125.	158.	276.	487.	753.
1975	126.	105.	86.	114.	175.	369.
1976	141.	118.	278.	318.	703.	1440.
1977	138.	150.	159.	272.	373.	1481.
1978	135.	95.	83.	145.	321.	998.
1979	98.	90.	111.	216.	388.	700.
1980	105.	102.	226.	327.	456.	888.
1981	115.	110.	149.	279.	565.	824.
1982	118.	139.	125.	138.	395.	853.
1983	84.	73.	74.	113.	247.	654.
1984	109.	99.	109.	200.	493.	1283.
1985	132.	145.	171.	234.	346.	682.
1986	104.	100.	206.	389.	628.	828.
1987	166.	131.	128.	164.	368.	828.
1988	104.	96.	198.	289.	610.	925.
1989	153.	140.	174.	256.	436.	1005.
1990	153.	154.	159.	153.	333.	603.
1991	172.	154.	178.	280.	449.	709.
1992	137.	130.	142.	160.	251.	648.
1993	170.	159.	158.	241.	578.	964.
1994	160.	147.	160.	224.	318.	645.
1995	173.	154.	153.	149.	239.	438.
1996	230.	195.	333.	383.	577.	950.
1997	286.	239.	188.	211.	403.	643.

MONTHLY RUNOFF DATA OF RIVER BHAGIRATHI AT TEHRI SITE
(Runoff in Million Cubic Metre)

	JULY	AUG	SEP	OCT	NOV	DEC
1963	1724.	2172.	1459.	431.	263.	207.
1964	1329.	1241.	567.	267.	207.	189.
1965	1606.	2265.	769.	238.	196.	181.
1966	1439.	2991.	865.	342.	248.	217.
1967	1538.	1954.	730.	306.	205.	182.
1968	1311.	2098.	1014.	332.	237.	207.
1969	1162.	2126.	1049.	356.	270.	238.
1970	1864.	2193.	1032.	373.	231.	181.
1971	1355.	1354.	1024.	360.	199.	167.
1972	1794.	2176.	1256.	404.	206.	170.
1973	1397.	2035.	758.	369.	207.	164.
1974	1267.	1809.	1433.	598.	283.	165.
1975	1814.	1782.	1142.	380.	200.	146.
1976	2091.	2228.	1457.	489.	262.	203.
1977	2437.	3167.	2281.	794.	484.	187.
1978	3430.	3445.	1445.	578.	180.	136.
1979	2540.	2271.	1242.	572.	213.	106.
1980	1739.	2355.	1051.	375.	235.	118.
1981	1261.	1247.	757.	353.	332.	138.
1982	1350.	2062.	1269.	450.	240.	163.
1983	1406.	1437.	1026.	264.	147.	106.
1984	1615.	2323.	1398.	761.	264.	131.
1985	2592.	2851.	936.	375.	186.	148.
1986	1061.	1132.	923.	282.	169.	123.
1987	2012.	2660.	1176.	460.	224.	174.
1988	1336.	1650.	1195.	398.	213.	125.
1989	1654.	1917.	815.	270.	221.	164.
1990	1545.	1618.	1008.	343.	234.	181.
1991	1225.	2493.	1651.	469.	266.	185.
1992	1438.	1446.	1418.	506.	258.	171.
1993	2096.	2275.	1526.	514.	280.	211.
1994	1362.	1795.	1436.	369.	234.	181.
1995	1461.	1983.	1538.	447.	283.	246.
1996	1344.	1986.	1225.	458.	281.	260.
1997	2037.	2303.	1654.	1018.	555.	341.

AREA CAPACITY DATA OF KOTESHWAR RESERVOIR

Elevation in Metre	Surface Area in Sq Km	Capacity in Million Cubic Metre
530.0	0.0	0.00
540.0	0.045	1.00
550.0	0.18	2.40
560.0	0.45	5.00
570.0	0.90	11.40
580.0	1.29	20.80
590.0	1.65	38.90
600.0	2.04	58.00
610.0	2.40	80.20
620.0	3.15	106.80

AREA CAPACITY DATA OF TEHRI RESERVOIR

Elevation in Metre	Surface Area in Sq Km	Capacity in Million Cubic Metre
620.0	0.4	8.0
630.0		15.0
640.0	1.8	25.0
650.0		50.0
660.0	4.1	85.0
670.0		140.0
680.0	6.4	200.0
690.0		270.0
700.0	10.2	350.0
710.0		450.0
720.0	13.8	590.0
730.0		735.0
740.0	17.3	925.0
750.0		1100.0
760.0	22.4	1315.0
770.0		1550.0
780.0	27.6	1820.0
790.0		2110.0
800.0	33.0	2420.0
810.0		2780.0
820.0	40.0	3150.0
830.0	43.8	3540.0
835.0		3770.0

EVAPORATION LOSSES IN mm/month

Month	Evaporation	Month	Evaporation
January	39.0	July	124.0
February	57.0	August	108.0
March	102.0	September	108.0
April	172.0	October	101.0
May	210.0	November	68.0
June	193.0	December	42.0

IRRIGATION REQUIREMENTS

(Irrigation Requirement in Million Cubic Metre per Month)

Month	Irrigation Requirement	Month	Irrigation Requirement
January	653.2	July	0.0
February	639.4	August	0.0
March	607.4	September	0.0
April	559.0	October	176.2
May	684.2	November	341.2
June	479.5	December	465.8

16 Daily Schedule of Generation & Pumping at Tehri Reservoir

PERIOD	PARAMETERS	06-08 hrs	8-12hrs	12-18hrs	18-22 hrs	22-06 hrs
JAN (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 3.00 (+) 13.30		8 T 4.00 (+) 17.79	4 P 8.00 (-) 10.13
JAN (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 3.50 (+) 15.15		8 T 4.00 (+) 17.51	4 P 8.00 (-) 10.71
JAN (21-31)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 3.80 (+) 16.35		8 T 4.00 (+) 17.28	4 P 8.00 (-) 11.17
FEB (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 17.05		8 T 4.00 (+) 17.05	4 P 7.00 (-) 10.25
FEB (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 3.50 (+) 14.63		8 T 4.00 (+) 16.82	4 P 8.00 (-) 12.10
FEB (21-28)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 16.47		8 T 4.00 (+) 16.47	4 P 7.80 (-) 12.29
MAR (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 16.24		8 T 4.00 (+) 16.24	4 P 7.10 (-) 11.66
MAR (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 15.90		8 T 4.00 (+) 15.90	4 P 8.00 (-) 10.89
MAR (21-31)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 15.65		8 T 4.00 (+) 15.65	4 P 6.80 (-) 12.09
APR (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 15.32		8 T 4.00 (+) 15.32	4 P 7.40 (-) 13.36
APR (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 15.09		8 T 4.00 (+) 15.09	4 P 6.70 (-) 12.30
APR (21-30)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 14.86		8 T 4.00 (+) 14.86	4 P 4.80 (-) 9.07

8 T → Eight Machines in Turbine Mode
4 P → Four Machines in P

PERIOD	PARAMETERS	06-08 hrs	8-12hrs	12-18hrs	18-22 hrs	22-06 hrs
MAY (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 14.51		8 T 4.00 (+) 14.51	4 P 2.70 (-) 5.26
MAY (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 14.17		8 T 4.00 (+) 14.17	4 P 3.40 (-) 6.74
MAY (21-31)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 14.05		8 T 4.00 (+) 14.05	4 P 2.50 (-) 5.03
JUNE (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 13.71		8 T 4.00 (+) 13.71	4 P 1.80 (-) 3.83
JUNE (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 13.36		8 T 4.00 (+) 13.36	4 P 1.10 (-) 2.36
JUNE (21-30)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 13.36		8 T 4.00 (+) 13.36	4 P 5..50 (-) 11.79
JULY (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 13.59		8 T 4.00 (+) 13.59	4 P 5.90 (-) 12.32
JULY (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 14.17		8 T 4.00 (+) 14.17	4 P 7.40 (-) 14.52
JULY (21-31)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 2.60 (+) 10.38		8 T 4.00 (+) 15.67	4 P 8.00 (-) 13.82
AUG (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 1.20 (+) 5.16		8 T 4.00 (+) 17.28	4 P 8.00 (-) 11.29
AUG (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 0.50 (+) 1.96		8 T 4.00 (+) 17.39	4 P 8.00 (-) 9.33
AUG (21-31)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 16.93	8 T 1.10 (+) 4.76	8 T 4.00 (+) 16.93	

PERIOD	PARAMETERS	06-08 hrs	8-12hrs	12-18hrs	18-22 hrs	22-06 hrs
SEP (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 4.00 (+) 16.62		8 T 4.00 (+) 16.82	
SEP (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 3.80 (+) 15.92		8 T 4.00 (+) 16.82	4 P 8.00 (-) 8.64
SEP (21-30)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 2.40 (+) 10.05		8 T 4.00 (+) 16.82	4 P 8.00 (-) 8.64
OCT (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 2.10 (+) 9.01		8 T 4.00 (+) 16.82	4 P 8.00 (-) 8.64
OCT (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 2.20 (+) 9.16		8 T 4.00 (+) 16.93	4 P 8.00 (-) 8.64
OCT (21-31)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 1.00 (+) 4.29		8 T 4.00 (+) 17.05	4 P 8.00 (-) 8.64
NOV (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 0.60 (+) 2.65		8 T 4.00 (+) 17.05	4 P 8.00 (-) 8.64
NOV (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 0.70 (+) 3.02		8 T 4.00 (+) 17.05	4 P 8.00 (-) 8.75
NOV (21-30)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 0.80 (+) 3.30		8 T 4.00 (+) 17.16	4 P 8.00 (-) 8.75
DEC (1-10)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 2.30 (+) 10.92		8 T 4.00 (+) 17.16	4 P 8.00 (-) 8.99
DEC (11-20)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 2.70 (+) 11.73		8 T 4.00 (+) 17.39	4 P 8.00 (-) 9.33
DEC (21-31)	Units Running Hrs of running Net inflow in.D/S reservoir (MCM)		8 T 2.02 (+) 9.00		8 T 4.00 (+) 17.72	4 P 4.60 (-) 5.61

APPENDIX II

DROPS (D_Reservoir Operation of Pumped Storage Scheme) Program

Appendix IIA

Definition of Variables

The major arrays and symbols used in the program are defined below, some temporary storage variables are not defined here, but their definitions are evident from the context.

ARA = Surface Area of Reservoir A from data (M^2)

ARB = Surface Area of Reservoir B from data (M^2)

AREA = Surface Area of Reservoir A from calculation (M^2)

ASTORE = Storage at Reservoir A (M^3)

AVEN = Average Energy Generated (MWh)

AVEP = Average Power Generated at end period (MW)

AVGTE = Average Annual Energy Generated of U/S powerhouse (MWh)

AVGSY = Average Annual Energy Generated of System (MWh)

AVIRR = Average Percentage of Irrigation Supply

AVSP = Average Power Generated at start period (MW)

BMDDLA = Lower Limit of Minimum Draw Down Level (MDDL) at Reservoir A (M)

BREA = Surface Area of Reservoir B from calculation (M^2)

BSTORE = Storage at Reservoir B (M^3)

CAPA = Capacity storage at Reservoir A (M^3)

CAPB = Capacity storage at Reservoir B (M^3)

DATE = Date of the day

DAY = Number of days in a month

DIA = Diameter of power tunnel (M)

DMAX = Discharge Release Max through water conductor (cumec)

DPMAX = Pumping Discharge Max through water conductor (cumec)

DT = Duration time of period (hour)

EFF = Efficiency of Powerhouse

ELA = Elevation at Reservoir A from data (M)

ELB = Elevation at Reservoir B from data (M)

END = Energy Generated at D/S Powerhouse (MWh)

ENSYS = Energy Generated from System (MWh)

EP = Power Generated at end period (MW)

EVAP = Data of Evaporation Losses (mm/day)

EVAPLA = Evaporation Losses at Reservoir A (M^3)

EVAPLB = Evaporation Losses at Reservoir B (M^3)

F = Coefficient of friction

GH = Gross Head (M)

GSYS = Grand Total Energy Generated from System (MWh)

GTEN = Grand Total Energy Generated (MWh)

HA = Elevation at Reservoir A from calculation (M)

HA0 = Initial Elevation at Reservoir A (M)

HAMIN = Minimum Elevation at Reservoir A (M)

HB = Elevation at Reservoir B from calculation (M)

HB0 = Initial Elevation at Reservoir B (M)

HBMIN = Minimum Elevation at Reservoir B (M)

HD = Net Head of D/S Powerhouse (M)

HF = Losses of Head due to friction (M)

HHAMIN = Minimum Elevation at Reservoir A for all year of data (M)

HHBMIN = Minimum Elevation at Reservoir B for all year of data (M)

HN = Net Head of U/S Powerhouse (M)

INFLA = Inflow to Reservoir A (M^3)

INFLAM = Inflow to Reservoir A in a month (M^3)

INFLB = Inflow to Reservoir B (M^3)

INFLBM = Inflow to Reservoir B in a month (M^3)

IR = Status of Irrigation

IRRD = Irrigation Demand (M^3)

IRRDM = Irrigation Demand in a month (M^3)

IRRS = Irrigation Supply (M^3)

KMDDLA = Upper limit of MDDL of Reservoir A (M)

L = Step of Duration Time (1 to 4)

M = Number of data of Area-Capacity Data of Reservoir A

MDDLA = Minimum Draw Down Level at Reservoir A (M)

MDDLB = Minimum Draw Down Level at Reservoir B (M)

MONTH = Number of month in a year

MYEAR = Number of year of data

N = Number of data of Area-Capacity Data of Reservoir B

ND = Number of power tunnel

NMONTH = Name of the month

NPEAK = Number of period in a day

NYEAR = Name of year

PD = Power Generated from D/S Powerhouse (MW)

PMDDL = Percentage reach of MDDL at Reservoir A

PPMDDL = Percentage reach of MDDL at Reservoir A for all year

PSIRR = Percentage of Irrigation supply

PIGG = Percentage of Irrigation supply for each time step

Q = Discharge for Power Generation (cumec)

QA = Volume of water Release for Power Generation (M^3)

QD = Discharge for Power Generation (cumec) for D/S Powerhouse

QDMAX = Discharge Maximum for Power Generation (cumec) for D/S Powerhouse

QIRR = Volume of water release for Irrigation and Evaporation at B (M^3)

QPUMP = Volume of water pumped up from Reservoir B (M^3)

QR = Volume of water release beside for Irrigation and Evaporation (M^3)

SIRRD = Summation of Irrigation demand (M^3)

SIRRDM = Summation of Irrigation demand in a month (M^3)

SMAXA = Maximum Storage Capacity at Reservoir A (M^3)

SMAXB = Maximum Storage Capacity at Reservoir B (M^3)

SMDDLA = Storage Capacity at MDDL of Reservoir A (M^3)

SMDDLB = Storage Capacity at MDDL of Reservoir B (M^3)

SP = Power Generated at start (MW)

SPILLA = Volume of water spill from Reservoir A (M^3)

SPILLB = Volume of water spill from Reservoir B (M^3)

SPIRR = Summation of Irrigation Percentage

SSIRRD = Total summation of Irrigation demand (M^3)

SUMDT = Summation of duration time (hour)

SUMEN = Summation of Energy Generated (MWh)

SUMIR = Summation of hourly Irrigation Supply (M^3)

SUMSPB = Summation of water spill from Reservoir B (M^3)

SUMSYS = Summation of Energy Generated from system (MWh)

TEN = Total Energy Generated (MWh)

TINFLA = Total Inflow to Reservoir A (M^3)

TINFLB = Total Inflow to Reservoir B (exclude from Reservoir A) (M^3)

TINFLM = Total Inflow to Reservoir A and B (M^3)

TL = Length of Power tunnel (M)

TOL = Tolerance for Irrigation Supply Success

TOTSPB = Total Volume of water spill from Reservoir B (M^3)

TP = PEAK or NON-PEAK period

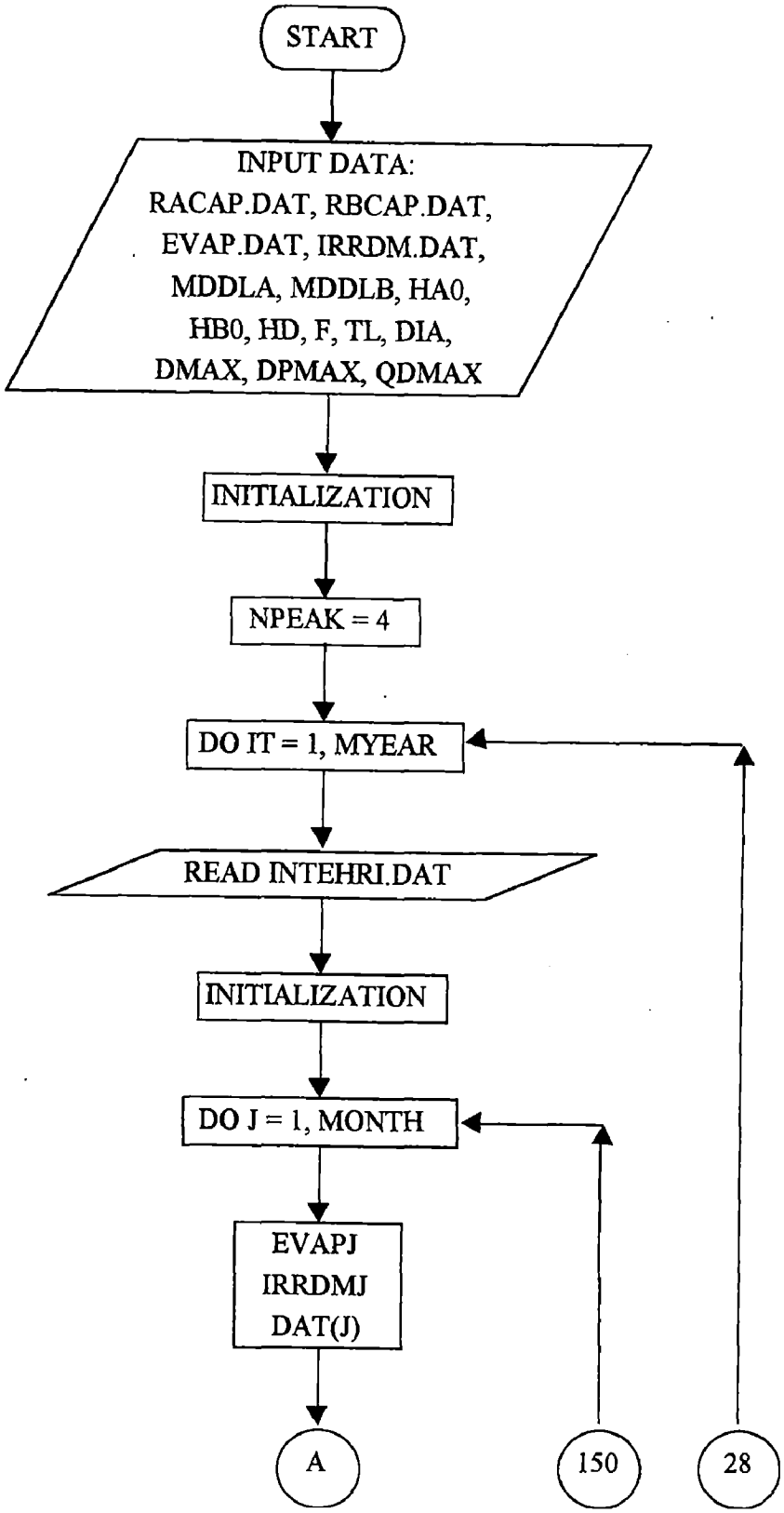
TSYS = Total Energy Generated from system (MWh)

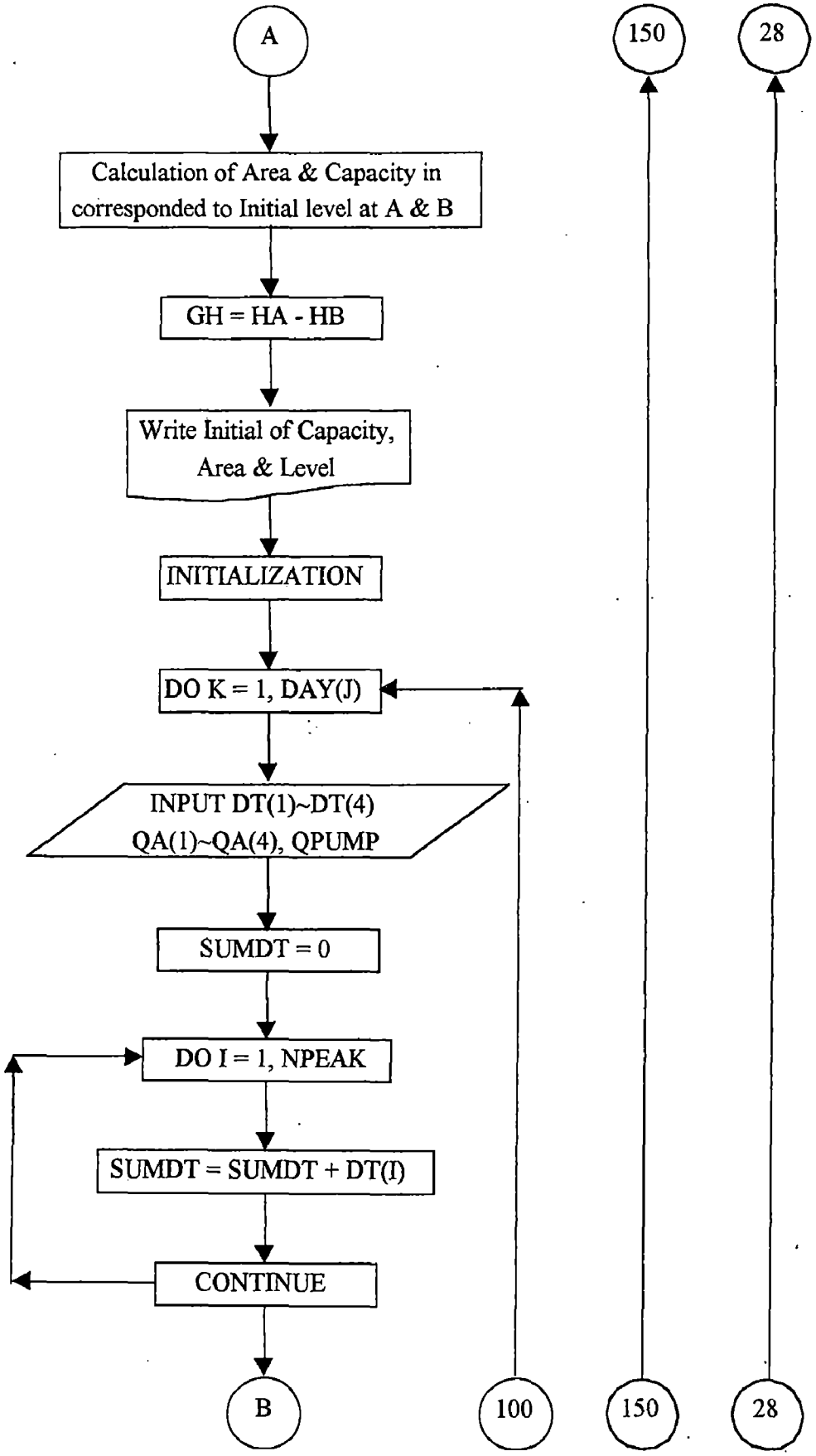
TTINFL = Total Inflow to Reservoir A and B in a year (M^3)

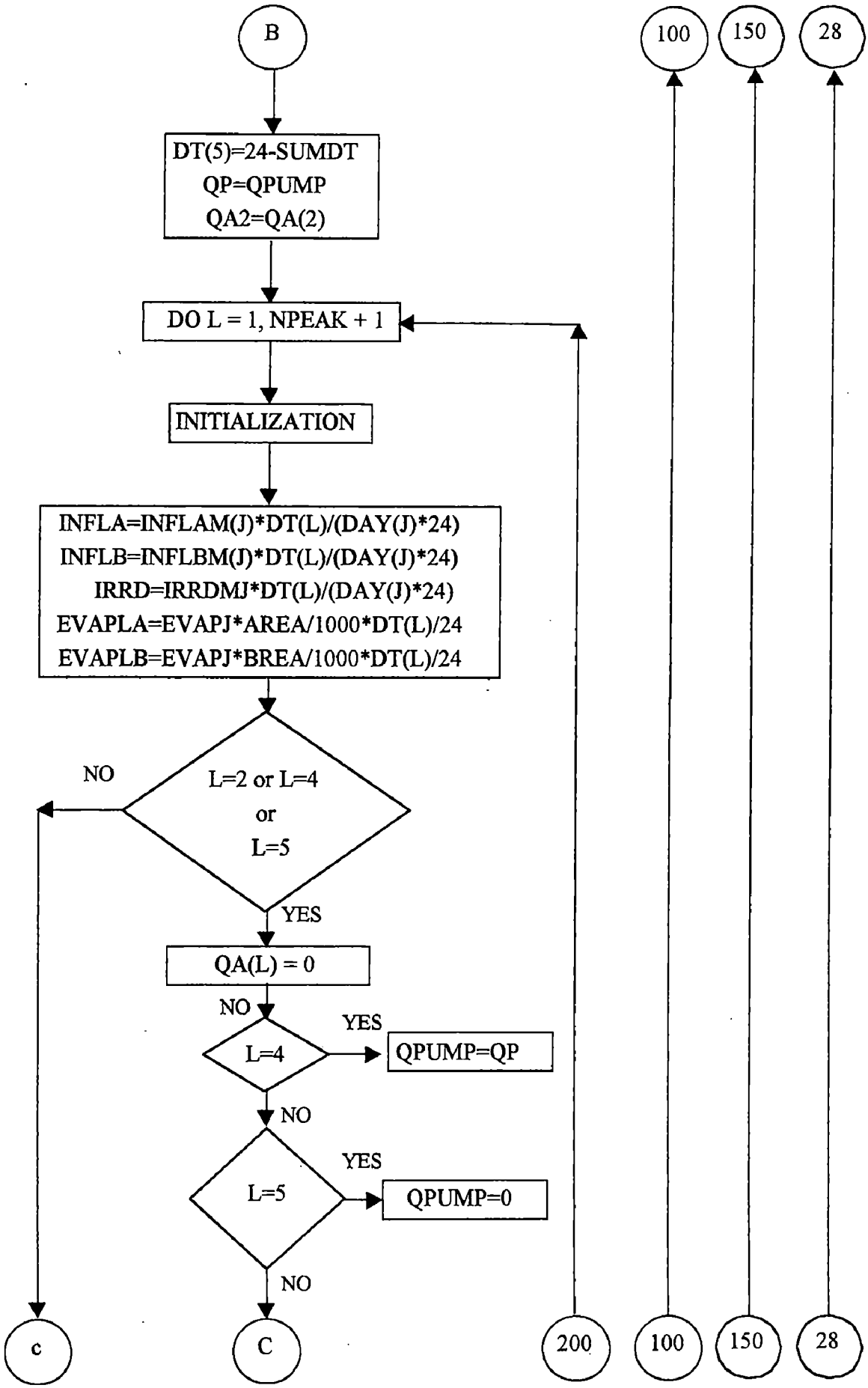
V = Velocity of water through power tunnel (M/sec)

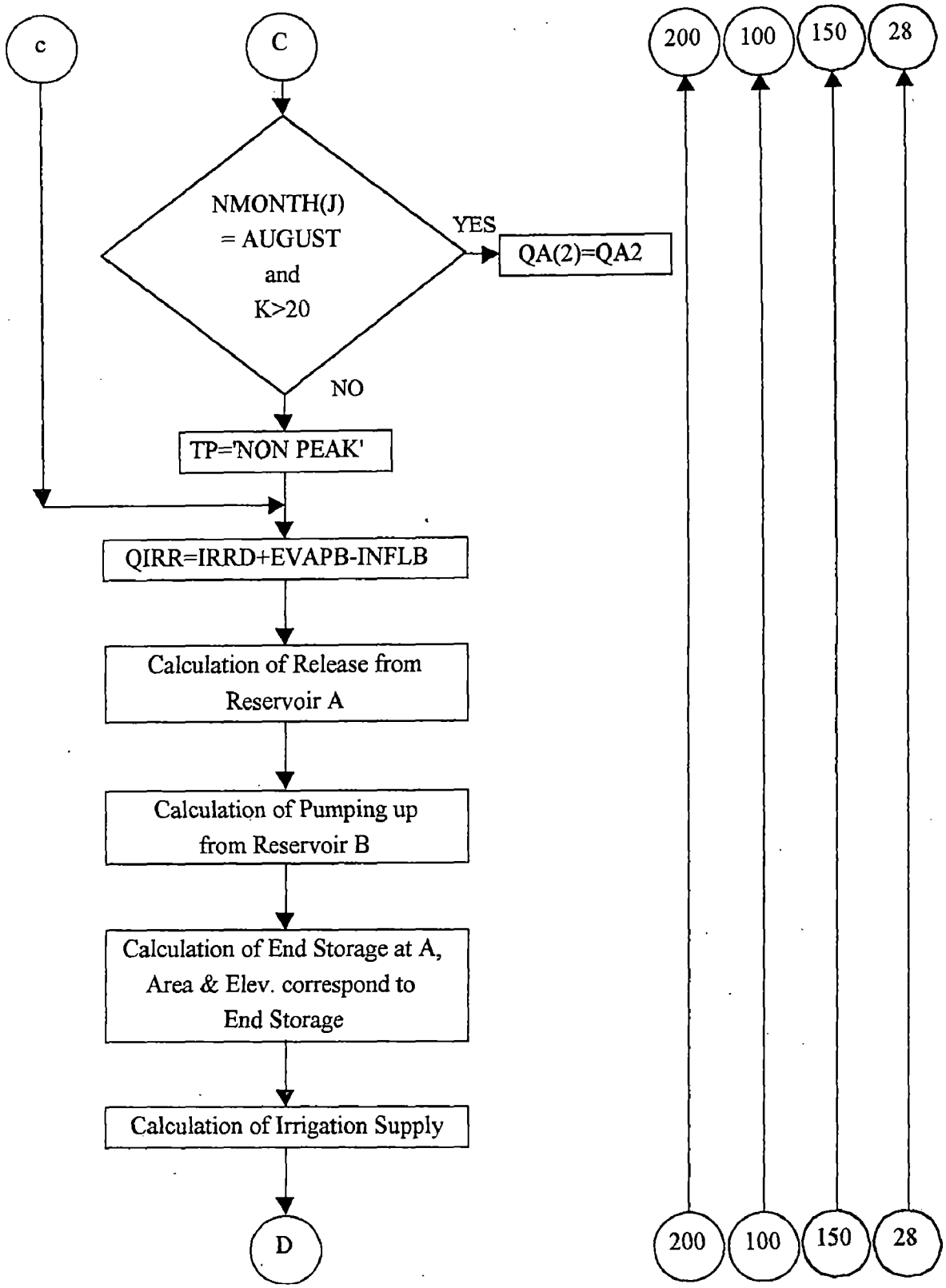
APPENDIX IIB

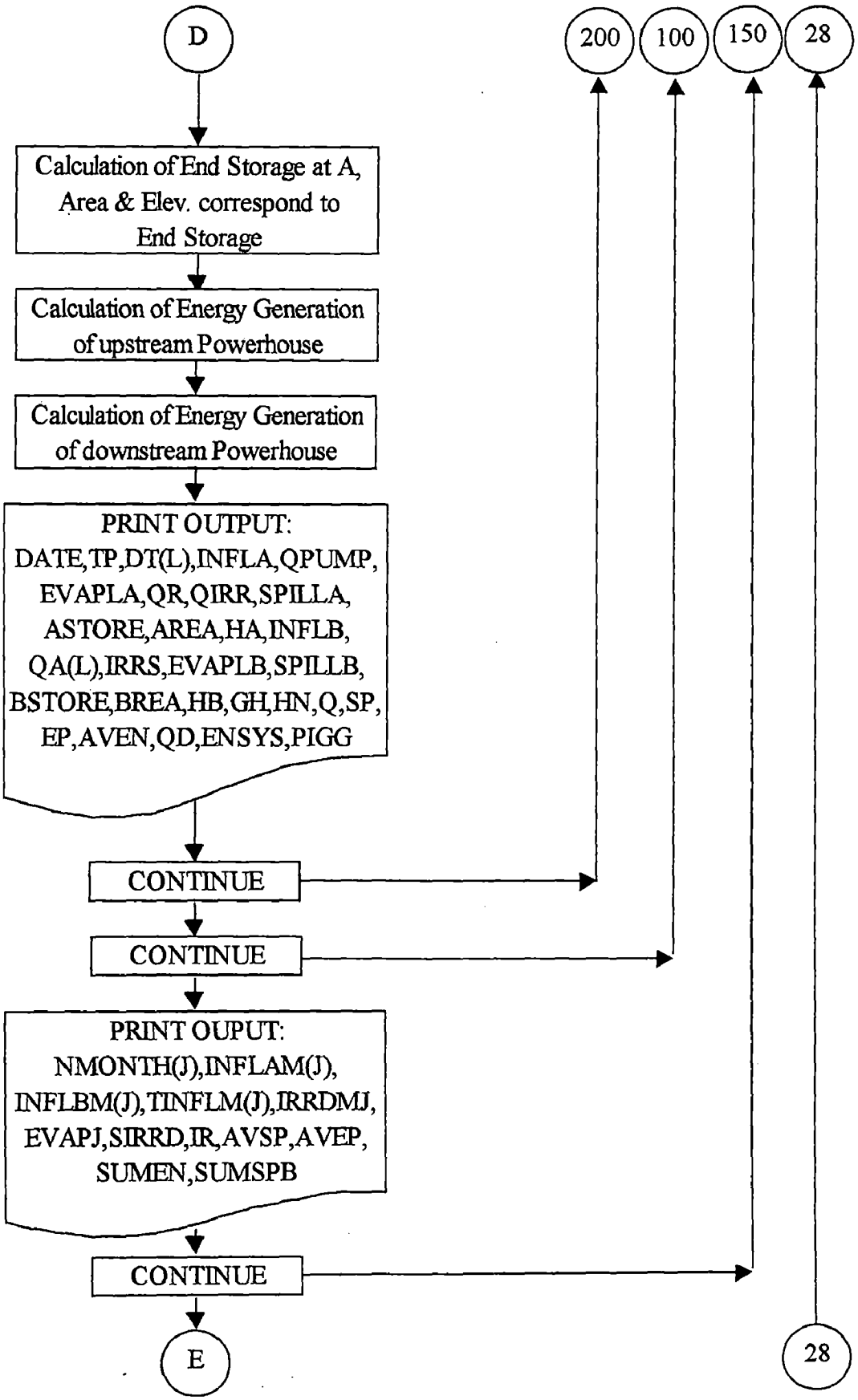
Flowchart

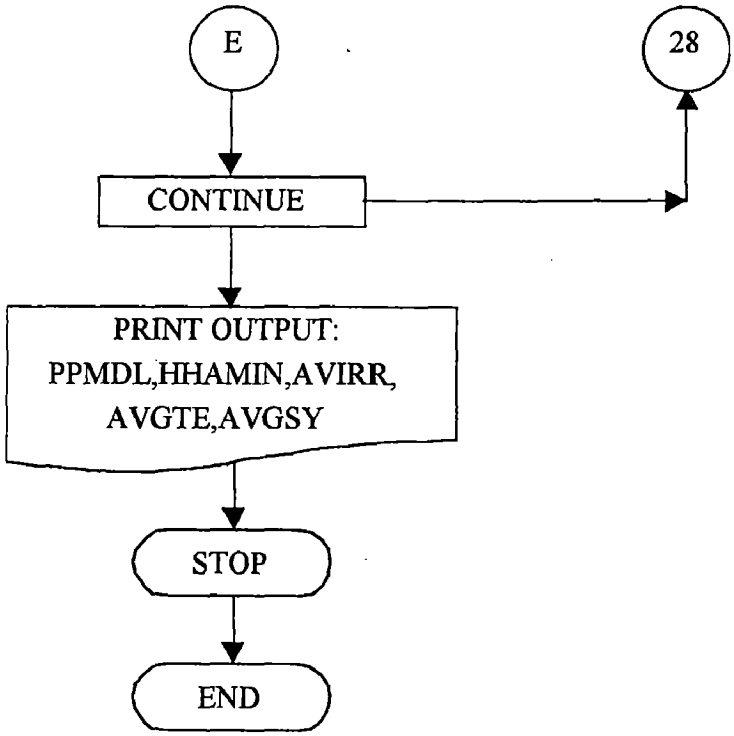



A
Calculation of Area & Capacity in corresponded to Initial level at A & B
GH = HA - HB
Write Initial of Capacity, Area & Level
INITIALIZATION
DO K = 1, DAY(J)
INPUT DT(1)~DT(4) QA(1)~QA(4), QPUMP
SUMDT = 0
DO I = 1, NPEAK
SUMDT = SUMDT + DT(I)
CONTINUE
B
100
150
28
150
28


B
DT(5)=24-SUMDT
QP=QPUMP
QA2=QA(2)
DO L = 1, NPEAK + 1
INITIALIZATION
INFLA=INFLAM(J)*DT(L)/(DAY(J)*24)
INFLB=INFLBM(J)*DT(L)/(DAY(J)*24)
IRRD=IRRDMJ*DT(L)/(DAY(J)*24)
EVAPLA=EVAPJ*AREA/1000*DT(L)/24
EVAPLB=EVAPJ*BREA/1000*DT(L)/24
L=2 or L=4 or L=5
NO
YES
QA(L) = 0
NO
L=4
YES
QPUMP=QP
NO
L=5
YES
QPUMP=0
NO
c
C
200
100
150
28
100
150
28


c
C
NMONTH(J)
= AUGUST
and
K>20
YES
QA(2)=QA2
NO
TP='NON PEAK'
QIRR=IRRD+EVAPB-INFLB
Calculation of Release from Reservoir A
Calculation of Pumping up from Reservoir B
Calculation of End Storage at A, Area & Elev. correspond to End Storage
Calculation of Irrigation Supply
D
200
100
150
28
200
100
150
28


D
Calculation of End Storage at A, Area & Elev. correspond to End Storage
Calculation of Energy Generation of upstream Powerhouse
Calculation of Energy Generation of downstream Powerhouse
PRINT OUTPUT: DATE,TP,DT(L),INFLA,QPUMP, EVAPLA,QR,QIRR,SPILLA, ASTORE,AREA,HA,INFLB, QA(L),IRRS,EVAPLB,SPILLB, BSTORE,BREA,HB,GH,HN,Q,SP, EP,AVEN,QD,ENSYS,PIGG
CONTINUE
CONTINUE
PRINT OUPUT: NMONTH(J),INFLAM(J), INFLBM(J),TINFLM(J),IRRDMJ, EVAPJ,SIRRD,IR,AVSP,AVEP, SUMEN,SUMSPB
CONTINUE
E
200
100
150
28
28


E
28
CONTINUE
PRINT OUTPUT:
PPMDL,HHAMIN,AVIRR,
AVGTE,AVGSY
STOP
END

Appendix IIC

Listing of DROPS Program

```
*     Program of Reservoir Operation of Pumped Storage Scheme
*     With Control the MDDL by Control of Qrelease and
*     Qpump (Output file:ROAXXXx,ROBXXXx,SROXXXx)
$TITLE:'DROPS Program by Dinny'
      PROGRAM DROPS
      REAL INFLA,INFLB,MDDLA,MDDLB,IRRD,IRRDM,IRRDMJ,INFLAM,INFLBM,IRRS,
     1IRR1
      DOUBLE PRECISION ASTORE,HA,BSTORE,HB,PI
      INTEGER DAY,DATE
      CHARACTER TP*10,NMONTH*10,NNMONT*10,IR*11,FILE*13
      CHARACTER*13 FILE1,FILE2,FILE3,FILE4,FILE5,FILE7,FILE6,FILE8,
     1FILE9,FILE20,FILE26
      DIMENSION ELA(10),ARA(10),CAPA(10),ELB(10),ARB(10),CAPB(10),DT(5),
     1EVAP(12),DAY(12),IRRDM(12),INFLAM(12),INFLBM(12),NMONTH(12),
     2TINFLM(12),FILE(30),QA(5),QP(5),AV(12,3),QDAT(5)
      WRITE(*,*)'*********       PROGRAM DROPS       **********'
      WRITE(*,*)'*      Program of Reservoir Operation        *'
      WRITE(*,*)'* for Pumped Storage Scheme with 2 Reservoir *'
      WRITE(*,*)'*        (C) Dinny Suryakencana-2000         *'
      WRITE(*,*)'*********************************************'
C      WRITE(*,*) 'How many peak hour per day'
C      WRITE(*,*) '  1) Once a day'
C      WRITE(*,*) '  2) Twice a day'
C      WRITE(*,*) '     Choose 1 or 2'
C      READ (*,*) LC
C -------- Default is Once a day
      IF ((LC .LT. 1) .OR. (LC .GT. 2)) LC = 1
******Read Data********
      LC=2
      NPEAK=2
      IF(LC.NE.1)NPEAK=4
C      WRITE(*,*)'File Name for Input Data of Area-Capacity of Res. A'
C      READ (*,*)FILE1
C      OPEN (UNIT=1,FILE=FILE1,STATUS='OLD')
C      WRITE(*,*)'File Name for Input Data of Area-Capacity of Res. B'
C      READ (*,*)FILE2
C      OPEN (UNIT=2,FILE=FILE2,STATUS='OLD')
C      WRITE(*,*)'File Name for Input Data of Evaporation Losses'
C      READ (*,*)FILE5
C      OPEN (UNIT=5,FILE=FILE5,STATUS='OLD')
C      WRITE(*,*)'File Name for Input Data of Irrigation Demands'
C      READ (*,*)FILE6
C      OPEN (UNIT=6,FILE=FILE6,STATUS='OLD')
      WRITE(*,*)'File Name for Input Data of Inflow to A & B Res.'
      READ (*,47)FILE7
      OPEN (UNIT=7,FILE=FILE7,STATUS='OLD')
   47 FORMAT(A13)
      OPEN (1,FILE='RACAP.DAT',STATUS='OLD')
      OPEN (2,FILE='RBCAP.DAT',STATUS='OLD')
      OPEN (5,FILE='EVAP.DAT',STATUS='OLD')
      OPEN (6,FILE='IRRDM.DAT',STATUS='OLD')
      OPEN (70,FILE='TEMP.DAT',STATUS='NEW')
      WRITE(70,109)FILE7
      CLOSE(70)
      OPEN (70,FILE='TEMP.DAT',STATUS='OLD')
```

```
      READ(70,109)FILE7
      CLOSE(70,STATUS='DELETE')
  109 FORMAT(A3)
      WRITE(*,*)'Your Output file name will be :'
      WRITE(*,113)'ROA',FILE7,'x','.OUT,','ROB',FILE7,'x','.OUT,','ENG',
     1FILE7,'x','.OUT,','SRO',FILE7,'x','.OUT'
  113 FORMAT(1X,2A3,A1,A5,1X,2A3,A1,A5,1X,2A3,A1,A5,1X,2A3,A1,A4)
      PI=3.141592654
      WRITE(*,*) 'Do you want use File Data SCHEDULE.DAT?'
      WRITE(*,*) '  1) Yes !'
      WRITE(*,*) '  2) No !'
      WRITE(*,*) '     Choose 1 or 2'
      READ (*,*) LC2
C ------- Default is use SCHEDULE.DAT
      IF ((LC2.LT. 2) .OR. (LC2.GT. 2)) LC2= 1
      FILE26='SCHEDULE.DAT'
      IF(LC2.EQ.2)THEN
        WRITE(*,*)'File Name of Working Table? '
        READ (*,47)FILE26
      ENDIF
      WRITE(*,*) 'Do you want use File Data SCHEME.DAT?'
      WRITE(*,*) '  1) Yes !'
      WRITE(*,*) '  2) No !'
      WRITE(*,*) '     Choose 1 or 2'
      READ (*,*) LC1
C ------- Default is use SCHEME.DAT
      IF ((LC1.LT. 1) .OR. (LC1.GT. 2)) LC1= 1
      OPEN (UNIT=25,FILE='SCHEME.DAT',STATUS='OLD')
      READ(25,*)EFF,F,TL,DIA,ND,MDDLA,MDDLB,DMAX,DPMAX,QDMAX,HA0,HB0,HD
      CLOSE(25)
      IF(LC1.EQ.2)THEN
       WRITE(*,*)' INPUT EFFICIENCY FACTOR OF M/C & TURBINE = '
       READ(*,*)EFF
       WRITE(*,*)' INPUT FRICTION LOSSES FACTOR             = '
       READ(*,*)F
       WRITE(*,*)' INPUT LENGTH OF POWER TUNNEL (M)         = '
       READ(*,*)TL
       WRITE(*,*)' INPUT DIAMETER OF POWER TUNNEL (M)       = '
       READ(*,*)DIA
       WRITE(*,*)' INPUT NUMBER OF POWER TUNNEL             = '
       READ(*,*)ND
       WRITE(*,*)' INPUT MDDL AT RESERVOIR A (M)            = '
       READ(*,*)MDDLA
       WRITE(*,*)' INPUT MDDL AT RESERVOIR B (M)            = '
       READ(*,*)MDDLB
       WRITE(*,*)' INPUT DISCHARGE MAX. FOR RELEASE (CUMEC) = '
       READ(*,*)DMAX
       WRITE(*,*)' INPUT DISCHARGE MAX. FOR PUMPING (CUMEC) = '
       READ(*,*)DPMAX
       WRITE(*,*)' INPUT DISCHARGE MAX. FOR D/S POWERHOUSE  = '
       READ(*,*)QDMAX
       WRITE(*,*)' INPUT INITIAL EL. AT RESERVOIR A (M)     = '
       READ(*,*)HA0
       WRITE(*,*)' INPUT INITIAL EL. AT RESERVOIR B (M)     = '
       READ(*,*)HB0
       WRITE(*,*)' INPUT NETT HEAD OF D/S POWERHOUSE (M)    = '
       READ(*,*)HD
      ENDIF
```

```
      KMDDLA=MDDLA-.005
      BMDDLA=MDDLA+.005

      READ(1,*)N
      DO 10 I=1,N
   10    READ(1,*) ELA(I),ARA(I),CAPA(I)
      SMAXA=CAPA(1)
      CLOSE(1)
      READ(2,*)M
      DO 20 I=1,M
   20    READ(2,*)ELB(I),ARB(I),CAPB(I)
      SMAXB=CAPB(1)
      CLOSE(2)
      DO 21 I=1,N
         IF(MDDLA.LE.ELA(I).AND.MDDLA.GT.ELA(I+1))THEN
         C1=(MDDLA-ELA(I+1))/(ELA(I)-ELA(I+1))
         SMDDLA=CAPA(I+1)+C1*(CAPA(I)-CAPA(I+1))
         ENDIF
   21 CONTINUE
      DO 23 I=1,M
         IF(MDDLB.LE.ELB(I).AND.MDDLB.GT.ELB(I+1))THEN
         C1=(MDDLB-ELB(I+1))/(ELB(I)-ELB(I+1))
         SMDDLB=CAPB(I+1)+C1*(CAPB(I)-CAPB(I+1))
         ENDIF
   23 CONTINUE
      READ(5,*)MONTH
      DO 25 I=1,MONTH
   25    READ(5,*)EVAP(I)
      CLOSE(5)
      READ(6,*)MONTH
      SIRRDM=0
      DO 27 I=1,MONTH
   27    READ(6,*)IRRDM(I)
      CLOSE(6)
      HA=HA0
      HB=HB0
      HHAMIN=ELA(1)
      HHBMIN=ELB(1)
      NNMDDL=0
      NNIT=0
      GTEN=0
      GSYS=0
      SPIRR=0
      ASTEMP=0
      READ(7,*)MYEAR
      IF(MYEAR.GT.8)THEN
      NMYEAR=MYEAR/8
      DMYEAR=FLOAT(MYEAR)/8-NMYEAR
      IF(DMYEAR.EQ.0)NMYEAR=NMYEAR-1
      OPEN (70,FILE='TEMP.DAT',STATUS='NEW')
      WRITE(70,111)'ROA',FILE7,0,'.OUT','ROB',FILE7,0,'.OUT','ENG',
     1FILE7,0,'.OUT'
      WRITE(70,111)'SRO',FILE7,0,'.OUT','SRO',FILE7,1,'.OUT'
      DO 49 I=1,NMYEAR
   49    WRITE(70,111)'ROA',FILE7,I,'.OUT','ROB',FILE7,I,'.OUT','ENG',
     1   FILE7,I,'.OUT'
      CLOSE(70)
      OPEN(70,FILE='TEMP.DAT',STATUS='OLD')
      READ(70,112)FILE3,FILE4,FILE20
```

```
      READ(70,112)FILE8,FILE9
      DO 50 I=1,NMYEAR
         NF1=9+I
         NF2=15+I
         NF3=20+I
         READ(70,112)FILE(NF1),FILE(NF2),FILE(NF3)
   50 CONTINUE
      ENDIF
      OPEN (UNIT=3,FILE=FILE3,STATUS='NEW')
      OPEN (UNIT=4,FILE=FILE4,STATUS='NEW')
      OPEN (UNIT=8,FILE=FILE8,STATUS='NEW')
      OPEN (UNIT=9,FILE=FILE9,STATUS='NEW')
      OPEN (UNIT=20,FILE=FILE20,STATUS='NEW')
  111 FORMAT(A3,A3,I1,A4,1X,A3,A3,I1,A4,1X,A3,A3,I1,A4)
  112 FORMAT(3A12)
      CLOSE(70,STATUS='DELETE')

      WRITE(*,*)'Please Wait for Data Processing!'
      WRITE(9,7551)
        NJAN=0
        NFEB=0
        NMAR=0
        NAPR=0
        NMAY=0
        NJUN=0
        NJUL=0
        NAUG=0
        NSEP=0
        NOCT=0
        NNOV=0
        NDEC=0
        SV11=0
        SV21=0
        SV31=0
        SV12=0
        SV22=0
        SV32=0
        SV13=0
        SV23=0
        SV33=0
        SV14=0
        SV24=0
        SV34=0
        SV15=0
        SV25=0
        SV35=0
        SV16=0
        SV26=0
        SV36=0
        SV17=0
        SV27=0
        SV37=0
        SV18=0
        SV28=0
        SV38=0
        SV19=0
        SV29=0
        SV39=0
        SV110=0
```

```
        SV210=0
        SV310=0
        SV111=0
        SV211=0
        SV311=0
        SV112=0
        SV212=0
        SV312=0
      DO 28 IT=1,MYEAR
      READ(7,*)NYEAR,MONTH
      DO 29 I=1,MONTH
   29    READ(7,8000)INFLAM(I),INFLBM(I),NMONTH(I)
      DYEAR=FLOAT(NYEAR)/4-NYEAR/4

******Initialization********
      HAMIN=ELA(1)
      HBMIN=ELB(1)
      DATE=0
      TEN=0
      TSYS=0
      NMDDL=0
      NIT=0
      TOTSPB=0
      TINFLA=0
      TINFLB=0
      TTINFL=0
      SSIRRD=0
      SIRRDM=0
      IF(IT.EQ.8)THEN
          CLOSE(3)
          CLOSE(4)
          CLOSE(20)
          OPEN (UNIT=10,FILE=FILE(10),STATUS='NEW')
          OPEN (UNIT=16,FILE=FILE(16),STATUS='NEW')
          OPEN (UNIT=21,FILE=FILE(21),STATUS='NEW')
      ELSEIF(IT.EQ.15)THEN
          CLOSE(10)
          CLOSE(16)
          CLOSE(21)
          OPEN (UNIT=11,FILE=FILE(11),STATUS='NEW')
          OPEN (UNIT=17,FILE=FILE(17),STATUS='NEW')
          OPEN (UNIT=22,FILE=FILE(22),STATUS='NEW')
      ELSEIF(IT.EQ.22)THEN
          CLOSE(11)
          CLOSE(17)
          CLOSE(22)
          OPEN (UNIT=12,FILE=FILE(12),STATUS='NEW')
          OPEN (UNIT=18,FILE=FILE(18),STATUS='NEW')
          OPEN (UNIT=23,FILE=FILE(23),STATUS='NEW')
      ELSEIF(IT.EQ.29)THEN
          CLOSE(12)
          CLOSE(18)
          CLOSE(23)
          OPEN (UNIT=13,FILE=FILE(13),STATUS='NEW')
          OPEN (UNIT=19,FILE=FILE(19),STATUS='NEW')
          OPEN (UNIT=24,FILE=FILE(24),STATUS='NEW')
      ENDIF
******Calculation Reservoir Operation*******
      WRITE(8,7550)NYEAR
```

```
OPEN(26,FILE=FILE26,STATUS='OLD')
DO 150 J=1,MONTH
IF(IT.LE.7)THEN
WRITE(3,9000)NMONTH(J),NYEAR,'A'
WRITE(4,9000)NMONTH(J),NYEAR,'B'
WRITE(20,9001)NMONTH(J),NYEAR
ELSEIF(IT.GT.7.AND.IT.LE.14)THEN
WRITE(10,9000)NMONTH(J),NYEAR,'A'
WRITE(16,9000)NMONTH(J),NYEAR,'B'
WRITE(21,9001)NMONTH(J),NYEAR
ELSEIF(IT.GT.14.AND.IT.LE.21)THEN
WRITE(11,9000)NMONTH(J),NYEAR,'A'
WRITE(17,9000)NMONTH(J),NYEAR,'B'
WRITE(22,9001)NMONTH(J),NYEAR
ELSEIF(IT.GT.21.AND.IT.LE.28)THEN
WRITE(12,9000)NMONTH(J),NYEAR,'A'
WRITE(18,9000)NMONTH(J),NYEAR,'B'
WRITE(23,9001)NMONTH(J),NYEAR
ELSEIF(IT.GT.28)THEN
WRITE(13,9000)NMONTH(J),NYEAR,'A'
WRITE(19,9000)NMONTH(J),NYEAR,'B'
WRITE(24,9001)NMONTH(J),NYEAR
ENDIF

IF(NMONTH(J).EQ.'JANUARY')THEN
EVAPJ=EVAP(1)
IRRDMJ=IRRDM(1)
DAY(J)=31
ELSEIF(NMONTH(J).EQ.'FEBRUARY')THEN
EVAPJ=EVAP(2)
IRRDMJ=IRRDM(2)
DAY(J)=28
IF(DYEAR.EQ.0)DAY(J)=29
ELSEIF(NMONTH(J).EQ.'MARCH')THEN
EVAPJ=EVAP(3)
IRRDMJ=IRRDM(3)
DAY(J)=31
ELSEIF(NMONTH(J).EQ.'APRIL')THEN
EVAPJ=EVAP(4)
IRRDMJ=IRRDM(4)
DAY(J)=30
ELSEIF(NMONTH(J).EQ.'MAY')THEN
EVAPJ=EVAP(5)
IRRDMJ=IRRDM(5)
DAY(J)=31
ELSEIF(NMONTH(J).EQ.'JUNE')THEN
EVAPJ=EVAP(6)
IRRDMJ=IRRDM(6)
DAY(J)=30
ELSEIF(NMONTH(J).EQ.'JULY')THEN
EVAPJ=EVAP(7)
IRRDMJ=IRRDM(7)
DAY(J)=31
ELSEIF(NMONTH(J).EQ.'AUGUST')THEN
EVAPJ=EVAP(8)
IRRDMJ=IRRDM(8)
DAY(J)=31
ELSEIF(NMONTH(J).EQ.'SEPTEMBER')THEN
EVAPJ=EVAP(9)
```

```
      IRRDMJ=IRRDM(9)
      DAY(J)=30
      ELSEIF(NMONTH(J).EQ.'OCTOBER')THEN
      EVAPJ=EVAP(10)
      IRRDMJ=IRRDM(10)
      DAY(J)=31
      ELSEIF(NMONTH(J).EQ.'NOVEMBER')THEN
      EVAPJ=EVAP(11)
      IRRDMJ=IRRDM(11)
      DAY(J)=30
      ELSEIF(NMONTH(J).EQ.'DECEMBER')THEN
      EVAPJ=EVAP(12)
      IRRDMJ=IRRDM(12)
      DAY(J)=31
      ENDIF
******Calculation of Area & Capacity at Initial Level*******
      DO 30 I=1,N
         IF(HA.LE.ELA(I).AND.HA.GT.ELA(I+1))THEN
         C1=(HA-ELA(I+1))/(ELA(I)-ELA(I+1))
         AREA=ARA(I+1)+C1*(ARA(I)-ARA(I+1))
         ASTORE=CAPA(I+1)+C1*(CAPA(I)-CAPA(I+1))
         ENDIF
   30 CONTINUE
      DO 40 I=1,M
         IF(HB.LE.ELB(I).AND.HB.GT.ELB(I+1))THEN
         C1=(HB-ELB(I+1))/(ELB(I)-ELB(I+1))
         BREA=ARB(I+1)+C1*(ARB(I)-ARB(I+1))
         BSTORE=CAPB(I+1)+C1*(CAPB(I)-CAPB(I+1))
         ENDIF
   40 CONTINUE
      GH=HA-HB
      IF(IT.LE.7)THEN
      WRITE(3,5000)
      WRITE(3,6000)
      WRITE(3,5000)
      WRITE(3,5175)ASTORE,AREA,HA
      WRITE(4,5050)
      WRITE(4,6100)
      WRITE(4,5050)
      WRITE(4,5250)BSTORE,BREA,HB
      WRITE(20,5001)
      WRITE(20,6001)
      WRITE(20,5001)
      WRITE(20,*)' '
      ELSEIF(IT.GT.7.AND.IT.LE.14)THEN
      WRITE(10,5000)
      WRITE(10,6000)
      WRITE(10,5000)
      WRITE(10,5175)ASTORE,AREA,HA
      WRITE(16,5050)
      WRITE(16,6100)
      WRITE(16,5050)
      WRITE(16,5250)BSTORE,BREA,HB
      WRITE(21,5001)
      WRITE(21,6001)
      WRITE(21,5001)
      WRITE(21,*)' '
      ELSEIF(IT.GT.14.AND.IT.LE.21)THEN
      WRITE(11,5000)
```

```
      WRITE(11,6000)
      WRITE(11,5000)
      WRITE(11,5175)ASTORE,AREA,HA
      WRITE(17,5050)
      WRITE(17,6100)
      WRITE(17,5050)
      WRITE(17,5250)BSTORE,BREA,HB
      WRITE(22,5001)
      WRITE(22,6001)
      WRITE(22,5001)
      WRITE(22,*)' '
      ELSEIF(IT.GT.21.AND.IT.LE.28)THEN
      WRITE(12,5000)
      WRITE(12,6000)
      WRITE(12,5000)
      WRITE(12,5175)ASTORE,AREA,HA
      WRITE(18,5050)
      WRITE(18,6100)
      WRITE(18,5050)
      WRITE(18,5250)BSTORE,BREA,HB
      WRITE(23,5001)
      WRITE(23,6001)
      WRITE(23,5001)
      WRITE(23,*)' '
      ELSEIF(IT.GT.28)THEN
      WRITE(13,5000)
      WRITE(13,6000)
      WRITE(13,5000)
      WRITE(13,5175)ASTORE,AREA,HA
      WRITE(19,5050)
      WRITE(19,6100)
      WRITE(19,5050)
      WRITE(19,5250)BSTORE,BREA,HB
      WRITE(24,5001)
      WRITE(24,6001)
      WRITE(24,5001)
      WRITE(24,*)' '
      ENDIF
******Calculation of Area & Capacity at each period*******
      DATE=1
      SUMSP=0.
      SUMEP=0.
      SUMEN=0.
      SUMSYS=0.
      SUMSPB=0.
      SIRRD=0
      SPILLA=0
      NSP=0
      SDPIGG=0
      DO 100 K=1,DAY(J)
  777 IF(K.EQ.1)THEN
      READ(26,8001)NNMONT
      READ(26,*)DT(1),QDAT(1),DT(2),QDAT(2),DT(3),QDAT(3),DT(4),QDAT(4)
     ELSEIF(K.EQ.11)THEN
      READ(26,*)DT(1),QDAT(1),DT(2),QDAT(2),DT(3),QDAT(3),DT(4),QDAT(4)
     ELSEIF(K.EQ.21)THEN
      READ(26,*)DT(1),QDAT(1),DT(2),QDAT(2),DT(3),QDAT(3),DT(4),QDAT(4)
     ENDIF
     IF(NNMONT.NE.NMONTH(J))THEN
```

```
      READ(26,*)DT(1),QDAT(1),DT(2),QDAT(2),DT(3),QDAT(3),DT(4),QDAT(4)
      READ(26,*)DT(1),QDAT(1),DT(2),QDAT(2),DT(3),QDAT(3),DT(4),QDAT(4)
      GOTO 777
     ENDIF
     DO 2 I=1,NPEAK
   2   QA(I)=QDAT(I)
     SUMDT=0
     DO 3 I=1,NPEAK
   3   SUMDT=SUMDT+DT(I)
     DT(5)=24.-SUMDT
     DO 4 I=1,2
   4   QP(I)=QA(I*2)
     QA2=QA(2)
     ASTEMP=0
     SPIGG=0
     SUMIR=0
       DO 200 L=1,NPEAK+1
          INFLA=INFLAM(J)*DT(L)/(DAY(J)*24.)
          INFLB=INFLBM(J)*DT(L)/(DAY(J)*24.)
          IRRD=IRRDMJ*DT(L)/(DAY(J)*24.)
          IRR=IRRDMJ/DAY(J)
          EVAPLA=EVAPJ*AREA/1000*DT(L)/24.
          EVAPLB=EVAPJ*BREA/1000*DT(L)/24.
*******Calculation release from DAM A*******
          IF(L.EQ.2.OR.L.EQ.4.OR.L.EQ.5)THEN
            QA(L)=0.0
            IF(L.EQ.4)QPUMP=QP(2)
            IF(L.EQ.5)QPUMP=0.0
            IF(NMONTH(J).EQ.'AUGUST'.AND.K.GT.20)QA(2)=QA2
            TP='NON-PEAK'
          ENDIF
          QRC=QA(L)
          N5=0
*******Calculation adding release for irr.demand & evap.losses at B****
          QIRR=IRRD+EVAPLB-INFLB-SPILLA
 888      IF(QIRR.LT.0.OR.L.EQ.2.OR.L.EQ.4.OR.ASTORE.LT.SMDDLA)QIRR=0.
*******Calculation release for power generation*******
          QR1=SMAXB-BSTORE
          ASTORA=ASTORE+INFLA+QPUMP-EVAPLA-(QIRR+QR1)
          IF(ASTORA.GE.SMDDLA)QR=QR1-EVAPLA-QIRR
          QR=ASTORE-SMDDLA-EVAPLA-QIRR-ASTEMP
          IF(ASTORA.EQ.SMAXA.AND.BSTORE.EQ.SMAXB)
   1       QR=SMAXB-SMDDLB-EVAPLA-QIRR
          IF(QR.LT.0.)QR=QR1-EVAPLA-QIRR
          IF(QR.GT.QRC-QIRR)QR=QRC-QIRR
          CALL CHECK(QR,QIRR,DT,DMAX,QR)
          IF(QR.LT.0.)QR=0.0
          IF(L.EQ.2.AND.NMONTH(J).EQ.'AUGUST'.AND.K.GT.20)QTEMP=QA2
          IF(L.EQ.2.OR.L.EQ.4.OR.L.EQ.5)THEN
          QR=0.0
          IF(NMONTH(J).EQ.'AUGUST'.AND.K.GT.20)THEN
            IF(L.EQ.2)THEN
              QR=QTEMP-QIRR
              QPUMP=0.0
            ENDIF
          ENDIF
          IF(L.EQ.5)QPUMP=0.0
          TP='NON-PEAK'
          ENDIF
```

```
*******Calculation total release for power generation*******
           IF(QR.EQ.0)QIRR=0
*******Calculation for pumping up*******
           QPMAX=DPMAX*DT(L)*3600
           QP1=BSTORE-SMDDLB-EVAPLB-IRRD
           QA(L)=QR+QIRR
           ASTOR1=ASTORE+INFLA+QPUMP-EVAPLA-QA(L)
           IF(ASTOR1.LT.SMAXA)QPUMP=QP1-(IRR-SUMIR)
           IF(ASTOR1.GE.SMAXA)QPUMP=SMAXA-ASTORE-EVAPLB-IRRD-
     1       (IRR-SUMIR)
           BSTOR1=BSTORE+INFLB+QA(L)-IRRD-EVAPLB-QPUMP
           IF(BSTOR1.LT.SMDDLB)QPUMP=BSTORE-SMDDLB-EVAPLB-IRRD-
     1       (IRR-SUMIR)
           IF(QPUMP.GT.QP(L/2))QPUMP=QP(L/2)
           IF(QPUMP.GT.QPMAX)QPUMP=QPMAX
           ASTOR1=ASTORE+INFLA+QPUMP-EVAPLA-QA(L)
           IF(ASTOR1.GE.SMAXA)QPUMP=0.0
           IF(QPUMP.LT.0.OR.L.EQ.5)QPUMP=0.0
           IF(L.EQ.2.AND.NMONTH(J).EQ.'AUGUST'.AND.K.GT.20)QPUMP=0.0
           IF(L.EQ.1.OR.L.EQ.3)THEN
           QPUMP=0.0
           TP='PEAK'
           ENDIF
*******Calculation of end storage at A*******
           ASTOR1=ASTORE+INFLA+QPUMP-EVAPLA-QA(L)
           SPILLA=ASTOR1-SMAXA
           IF(SPILLA.LT.0.)SPILLA=0.
           IF(SPILLA.GT.0.AND.(L.EQ.1.OR.L.EQ.3))THEN
             QR=SMAXB-SMDDLB-EVAPLA-QIRR+SPILLA
             IF(QR.LT.0.)QR=SMAXB-BSTORE-EVAPLA-QIRR+SPILLA
             IF(QR.GT.QRC-QIRR)QR=QRC-QIRR
             CALL CHECK(QR,QIRR,DT,DMAX,QR)
             IF(QR.LT.0.)QR=0.0
             QA(L)=QR+QIRR
             ASTOR1=ASTORE+INFLA+QPUMP-EVAPLA-QA(L)
             IF(ASTOR1.GE.SMAXA)QPUMP=0.0
             ASTOR1=ASTORE+INFLA+QPUMP-EVAPLA-QA(L)
             SPILLA=ASTOR1-SMAXA
             IF(SPILLA.LT.0.)SPILLA=0.
           ENDIF
           ASTOR2=ASTOR1-SPILLA
           SA=.8*SMAXA
           SB=.8*SMAXB
           IF(ASTOR2.GT.SA.AND.BSTORE.GT.SB.AND.(L.EQ.1.OR.L.EQ.3))
     1     QR=SMAXB-SMDDLB-EVAPLA-QIRR+SPILLA
           IF(QR.GT.QRC-QIRR)QR=QRC-QIRR
           CALL CHECK(QR,QIRR,DT,DMAX,QR)
           QA(L)=QR+QIRR
           ASTOR2=ASTORE+INFLA+QPUMP-EVAPLA-QA(L)-SPILLA
           IF(N5.EQ.250)THEN
        WRITE(*,*)'Res.A may be Below MDDL, wait for Iteration process!'
             QR=ASTORE-SMDDLA-EVAPLA-QIRR-ASTEMP
             IF(L.EQ.2.OR.L.EQ.4.OR.QR.LT.0)QR=0.0
             IF(QR.GT.QRC-QIRR)QR=QRC-QIRR
             CALL CHECK(QR,QIRR,DT,DMAX,QR)
             QA(L)=QR+QIRR
             ASTORE=ASTORE+INFLA+QPUMP-EVAPLA-QA(L)
             GOTO 666
           ENDIF
```

```
            IF(ASTOR2.LT.SMDDLA)THEN
              QIRR=0.0
C              IRRD=0.0
              N5=N5+1
              GOTO 888
            ENDIF
            ASTORE=ASTOR2
  666       IF(ASTORE.LT.0)ASTORE=0
            IF(L.EQ.1.OR.L.EQ.3)ASTEMP=ASTORE-SMDDLA
            DO 70 I=1,N
               IF(ASTORE.LE.CAPA(I).AND.ASTORE.GT.CAPA(I+1))THEN
               C2=CAPA(I)-CAPA(I+1)
               IF(C2.LE.0)GOTO 70
               C1=(ASTORE-CAPA(I+1))/(CAPA(I)-CAPA(I+1))
               AREA=ARA(I+1)+C1*(ARA(I)-ARA(I+1))
               HA=ELA(I+1)+C1*(ELA(I)-ELA(I+1))
               IF(HA.LT.HAMIN)HAMIN=HA
               ENDIF
               IF(HA.GE.KMDDLA.AND.HA.LE.BMDDLA)NMDDL=NMDDL+1
               NIT=NIT+1
   70       CONTINUE
            IRRS=IRRD
            BSTOR1=BSTORE+INFLB+QA(L)-IRRS-EVAPLB-QPUMP+SPILLA
            IF(BSTOR1.LT.SMDDLB)THEN
              IRR1=0.0
              BSTOR2=BSTORE+INFLB+QA(L)-IRR1-EVAPLB-QPUMP+SPILLA
              IRRS=BSTOR2-SMDDLB-EVAPLB
              IF(IRRS.LT.0.)IRRS=0.0
            ENDIF
            BSTORE=BSTORE+INFLB+QA(L)-IRRS-EVAPLB-QPUMP+SPILLA
            IF(SMAXB.GT.BSTORE)THEN
              SPILLB=0.0
            ELSE
              SPILLB=BSTORE-SMAXB
              SUMSPB=SUMSPB+SPILLB
              BSTORE=SMAXB
            ENDIF
            IF(BSTORE.LT.0)BSTORE=0
            SUMIR=SUMIR+IRRS
            DO 90 I=1,M
               IF(BSTORE.LE.CAPB(I).AND.BSTORE.GT.CAPB(I+1))THEN
               C2=CAPB(I)-CAPB(I+1)
               IF(C2.LE.0)GOTO 90
               C1=(BSTORE-CAPB(I+1))/(CAPB(I)-CAPB(I+1))
               BREA=ARB(I+1)+C1*(ARB(I)-ARB(I+1))
               HB=ELB(I+1)+C1*(ELB(I)-ELB(I+1))
               IF(HB.LE.HBMIN)HBMIN=HB
               ENDIF
   90       CONTINUE.
            IF(IRRD.LE.0)THEN
              PIGG=0
              GOTO 5
            ENDIF
            PIGG=IRRS*100/IRRD
*******Energy Computation of U/S PH***********
    5       IF(DT(L).EQ.0)THEN
              Q=0
              GOTO 6
            ENDIF
```

```
          Q=QA(L)/(DT(L)*3600)
*******Calculation of nett Head***********
    6     V=(Q/ND)/(PI*DIA*DIA/4)
          HF=(F*TL*V*V)/(2*9.81*DIA)
          HN=GH-HF
          SP=9.81*Q*HN*EFF/1000
          IF(SP.GT.0)NSP=NSP+1
          SUMSP=SUMSP+SP
          GH=HA-HB
          HN=GH-HF
          EP=9.81*Q*HN*EFF/1000
          SUMEP=SUMEP+EP
          AVEN=(SP+EP)/2*DT(L)
          SUMEN=SUMEN+AVEN
*******Energy Computation of D/S PH***********
          IF(DT(L).EQ.0)THEN
            QD=0
            GOTO 8
          ENDIF
          QD=IRRS/(DT(L)*3600)
    8     IF(QD.GT.QDMAX)QD=QDMAX
          PD=9.81*QD*HD*EFF/1000
          END=PD*DT(L)
          ENSYS=AVEN+END
          SUMSYS=SUMSYS+ENSYS
          IF(SPILLA.GT.0)INFLB=SPILLA+INFLB
          IF(L.EQ.1)THEN
      IF(IT.LE.7)THEN
      WRITE(3,5100)DATE,TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
     1ASTORE,AREA,HA
      WRITE(4,5125)DATE,TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,
     1-SPILLB,BSTORE,BREA,HB
      WRITE(20,5126)DATE,TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
      ELSEIF(IT.GT.7.AND.IT.LE.14)THEN
      WRITE(10,5100)DATE,TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
     1ASTORE,AREA,HA
      WRITE(16,5125)DATE,TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,
     1-SPILLB,BSTORE,BREA,HB
      WRITE(21,5126)DATE,TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
      ELSEIF(IT.GT.14.AND.IT.LE.21)THEN
      WRITE(11,5100)DATE,TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
     1ASTORE,AREA,HA
      WRITE(17,5125)DATE,TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,
     1-SPILLB,BSTORE,BREA,HB
      WRITE(22,5126)DATE,TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
      ELSEIF(IT.GT.21.AND.IT.LE.28)THEN
      WRITE(12,5100)DATE,TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
     1ASTORE,AREA,HA
      WRITE(18,5125)DATE,TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,
     1-SPILLB,BSTORE,BREA,HB
      WRITE(23,5126)DATE,TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
      ELSEIF(IT.GT.28)THEN
      WRITE(13,5100)DATE,TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
     1ASTORE,AREA,HA
      WRITE(19,5125)DATE,TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,
     1-SPILLB,BSTORE,BREA,HB
      WRITE(24,5126)DATE,TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
      ENDIF
          ELSE
     1
```

```
          IF(DT(5).EQ.0.AND.L.EQ.5)GOTO 11
       IF(IT.LE.7)THEN
       WRITE(3,5150)TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
      1ASTORE,AREA,HA
       WRITE(4,5200)TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,-SPILLB,
      1BSTORE,BREA,HB
       WRITE(20,5201)TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
       ELSEIF(IT.GT.7.AND.IT.LE.14)THEN
       WRITE(10,5150)TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
      1ASTORE,AREA,HA
       WRITE(16,5200)TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,-SPILLB,
      1BSTORE,BREA,HB
       WRITE(21,5201)TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
       ELSEIF(IT.GT.14.AND.IT.LE.21)THEN
       WRITE(11,5150)TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
      1ASTORE,AREA,HA
       WRITE(17,5200)TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,-SPILLB,
      1BSTORE,BREA,HB
       WRITE(22,5201)TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
       ELSEIF(IT.GT.21.AND.IT.LE.28)THEN
       WRITE(12,5150)TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
      1ASTORE,AREA,HA
       WRITE(18,5200)TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,-SPILLB,
      1BSTORE,BREA,HB
       WRITE(23,5201)TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
       ELSEIF(IT.GT.28)THEN
       WRITE(13,5150)TP,DT(L),INFLA,QPUMP,-EVAPLA,-QA(L),-SPILLA,
      1ASTORE,AREA,HA
       WRITE(19,5200)TP,DT(L),INFLB,QA(L),-IRRS,-EVAPLB,-QPUMP,-SPILLB,
      1BSTORE,BREA,HB
       WRITE(24,5201)TP,DT(L),GH,HN,Q,SP,EP,AVEN,QD,END,ENSYS,PIGG
       ENDIF
 11       ENDIF
          SPIGG=SPIGG+PIGG
          SIRRD=SIRRD+IRRS
200     CONTINUE
        DATE=DATE+1
        DPIGG=SPIGG/(NPEAK+1)
        IF(DT(5).EQ.0)DPIGG=SPIGG/NPEAK
        SDPIGG=SDPIGG+DPIGG
        IF(K.EQ.10)AV1=SDPIGG/10
        IF(K.EQ.20)AV2=(SDPIGG-AV1*10)/10
        IF(K.EQ.DAY(J))AV3=(SDPIGG-AV1*10-AV2*10)/(DAY(J)-20)
100  CONTINUE
     IF(NMONTH(J).EQ.'JANUARY')THEN
       SV11=SV11+AV1
       SV21=SV21+AV2
       SV31=SV31+AV3
       NJAN=NJAN+1
     ELSEIF(NMONTH(J).EQ.'FEBRUARY')THEN
       SV12=SV12+AV1
       SV22=SV22+AV2
       SV32=SV32+AV3
       NFEB=NFEB+1
     ELSEIF(NMONTH(J).EQ.'MARCH')THEN
       SV13=SV13+AV1
       SV23=SV23+AV2
       SV33=SV33+AV3
       NMAR=NMAR+1
```

```
      ELSEIF(NMONTH(J).EQ.'APRIL')THEN
        SV14=SV14+AV1
        SV24=SV24+AV2
        SV34=SV34+AV3
        NAPR=NAPR+1
      ELSEIF(NMONTH(J).EQ.'MAY')THEN
        SV15=SV15+AV1
        SV25=SV25+AV2
        SV35=SV35+AV3
        NMAY=NMAY+1
      ELSEIF(NMONTH(J).EQ.'JUNE')THEN
        SV16=SV16+AV1
        SV26=SV26+AV2
        SV36=SV36+AV3
        NJUN=NJUN+1
      ELSEIF(NMONTH(J).EQ.'JULY')THEN
        SV17=SV17+AV1
        SV27=SV27+AV2
        SV37=SV37+AV3
        NJUL=NJUL+1
      ELSEIF(NMONTH(J).EQ.'AUGUST')THEN
        SV18=SV18+AV1
        SV28=SV28+AV2
        SV38=SV38+AV3
        NAUG=NAUG+1
      ELSEIF(NMONTH(J).EQ.'SEPTEMBER')THEN
        SV19=SV19+AV1
        SV29=SV29+AV2
        SV39=SV39+AV3
        NSEP=NSEP+1
      ELSEIF(NMONTH(J).EQ.'OCTOBER')THEN
        SV110=SV110+AV1
        SV210=SV210+AV2
        SV310=SV310+AV3
        NOCT=NOCT+1
      ELSEIF(NMONTH(J).EQ.'NOVEMBER')THEN
        SV111=SV111+AV1
        SV211=SV211+AV2
        SV311=SV311+AV3
        NNOV=NNOV+1
      ELSEIF(NMONTH(J).EQ.'DECEMBER')THEN
        SV112=SV112+AV1
        SV212=SV212+AV2
        SV312=SV312+AV3
        NDEC=NDEC+1
      ENDIF
C      IR='NON-SUCCEED'
      DEL=ABS(SIRRD-IRRDMJ)
      IF(IRRDMJ.EQ.0)GOTO 7
      AR=SIRRD*100/IRRDMJ
      TOL=DEL/IRRDMJ
      IF(SIRRD.GE.IRRDMJ.OR.TOL.LT.0.01)IR='SUCCEED'
    7 IF(IRRDMJ.EQ.0)IR='   '
      AVSP=SUMSP/NSP
      AVEP=SUMEP/NSP
      TEN=TEN+SUMEN
      TSYS=TSYS+SUMSYS
      TOTSPB=TOTSPB+SUMSPB
      TINFLM(J)=INFLAM(J)+INFLBM(J)
```

```
      IF(SIRRD.GE.IRRDMJ.OR.TOL.LT.0.01.OR.IRRDMJ.EQ.0)THEN
      WRITE(8,7525)NMONTH(J),INFLAM(J),INFLBM(J),TINFLM(J),IRRDMJ,
     1EVAPJ,SIRRD,IR,AVSP,AVEP,SUMEN,SUMSPB
      GOTO 88
      ENDIF
      WRITE(8,7526)NMONTH(J),INFLAM(J),INFLBM(J),TINFLM(J),IRRDMJ,
     1EVAPJ,SIRRD,AR,AVSP,AVEP,SUMEN,SUMSPB
   88 TINFLA=TINFLA+INFLAM(J)
      TINFLB=TINFLB+INFLBM(J)
      TTINFL=TTINFL+TINFLM(J)
      SSIRRD=SSIRRD+SIRRD
      SIRRDM=SIRRDM+IRRDMJ
      IF(IT.LE.7)THEN
        WRITE(3,5000)
        WRITE(4,5050)
        WRITE(4,7000)-SUMSPB
        WRITE(20,5001)
        WRITE(20,7002)SUMEN,SUMSYS
        WRITE(20,7001)AV1,AV2,AV3
      ELSEIF(IT.GT.7.AND.IT.LE.14)THEN
        WRITE(10,5000)
        WRITE(16,5050)
        WRITE(16,7000)-SUMSPB
        WRITE(21,5001)
        WRITE(21,7002)SUMEN,SUMSYS
        WRITE(21,7001)AV1,AV2,AV3
      ELSEIF(IT.GT.14.AND.IT.LE.21)THEN
        WRITE(11,5000)
        WRITE(17,5050)
        WRITE(17,7000)-SUMSPB
        WRITE(22,5001)
        WRITE(22,7002)SUMEN,SUMSYS
        WRITE(22,7001)AV1,AV2,AV3
      ELSEIF(IT.GT.21.AND.IT.LE.28)THEN
        WRITE(12,5000)
        WRITE(18,5050)
        WRITE(18,7000)-SUMSPB
        WRITE(23,5001)
        WRITE(23,7002)SUMEN,SUMSYS
        WRITE(23,7001)AV1,AV2,AV3
      ELSEIF(IT.GT.28)THEN
        WRITE(13,5000)
        WRITE(19,5050)
        WRITE(19,7000)-SUMSPB
        WRITE(24,5001)
        WRITE(24,7002)SUMEN,SUMSYS
        WRITE(24,7001)AV1,AV2,AV3
      ENDIF
  150 CONTINUE
      CLOSE(26)
      NNMDDL=NNMDDL+NMDDL
      NNIT=NNIT+NIT
      GTEN=GTEN+TEN
      GSYS=GSYS+TSYS
      PMDDL=FLOAT(NMDDL)/(NIT)*100
      PSIRR=SSIRRD/SIRRDM*100
      SPIRR=SPIRR+PSIRR
******Write the Output*******
      WRITE(8,7575)
```

```
      WRITE(8,7600)TINFLA,TINFLB,TTINFL,SIRRDM,SSIRRD,PSIRR,TEN,TOTSPB
      WRITE(9,7602)NYEAR,TTINFL,SIRRDM,SSIRRD,PSIRR,TEN,TOTSPB,HAMIN,
     1HBMIN,TSYS
      IF(IT.LE.7)THEN
        WRITE(4,7000)TOTSPB
        WRITE(20,7003)TEN,TSYS
      ELSEIF(IT.GT.7.AND.IT.LE.14)THEN
        WRITE(16,7000)TOTSPB
        WRITE(21,7003)TEN,TSYS
      ELSEIF(IT.GT.14.AND.IT.LE.21)THEN
        WRITE(17,7000)TOTSPB
        WRITE(22,7003)TEN,TSYS
      ELSEIF(IT.GT.21.AND.IT.LE.28)THEN
        WRITE(18,7000)TOTSPB
        WRITE(23,7003)TEN,TSYS
      ELSEIF(IT.GT.28)THEN
        WRITE(19,7000)TOTSPB
        WRITE(24,7003)TEN,TSYS
      ENDIF
C      WRITE(8,7500)PMDDL
      WRITE(8,7601)ELA(1),MDDLA,HAMIN,ELB(1),MDDLB,HBMIN
      WRITE(*,4000)IT,MYEAR
      IF(HAMIN.LT.HHAMIN)HHAMIN=HAMIN
      IF(HBMIN.LT.HHBMIN)HHBMIN=HBMIN
   28 CONTINUE
        AV(1,1)=SV11/NJAN
        AV(1,2)=SV21/NJAN
        AV(1,3)=SV31/NJAN
        AV(2,1)=SV12/NFEB
        AV(2,2)=SV22/NFEB
        AV(2,3)=SV32/NFEB
        AV(3,1)=SV13/NMAR
        AV(3,2)=SV23/NMAR
        AV(3,3)=SV33/NMAR
        AV(4,1)=SV14/NAPR
        AV(4,2)=SV24/NAPR
        AV(4,3)=SV34/NAPR
        AV(5,1)=SV15/NMAY
        AV(5,2)=SV25/NMAY
        AV(5,3)=SV35/NMAY
        AV(6,1)=SV16/NJUN
        AV(6,2)=SV26/NJUN
        AV(6,3)=SV36/NJUN
        AV(7,1)=SV17/NJUL
        AV(7,2)=SV27/NJUL
        AV(7,3)=SV37/NJUL
        AV(8,1)=SV18/NAUG
        AV(8,2)=SV28/NAUG
        AV(8,3)=SV38/NAUG
        AV(9,1)=SV19/NSEP
        AV(9,2)=SV29/NSEP
        AV(9,3)=SV39/NSEP
        AV(10,1)=SV110/NOCT
        AV(10,2)=SV210/NOCT
        AV(10,3)=SV310/NOCT
        AV(11,1)=SV111/NNOV
        AV(11,2)=SV211/NNOV
        AV(11,3)=SV311/NNOV
        AV(12,1)=SV112/NDEC
```

```
        AV(12,2)=SV212/NDEC
        AV(12,3)=SV312/NDEC

       PPMDDL=FLOAT(NNMDDL)/(NNIT)*100
       AVIRR=SPIRR/MYEAR
       AVGTE=GTEN/MYEAR
       AVGSY=GSYS/MYEAR
       WRITE(8,7603)HHAMIN,HHBMIN
       WRITE(9,7542)
       WRITE(9,7553)AVIRR,AVGTE,AVGSY
       WRITE(9,7552)
       WRITE(9,7603)HHAMIN,HHBMIN
       WRITE(9,8019)
       DO 99 I=1,12
   99    WRITE(9,8020)NMONTH(I),(AV(I,J),J=1,3)
******Format the Output*******
 4000 FORMAT('  PROCESSING THE NO.',I3,' OF ',I3,' YEAR DATA')
 5000 FORMAT('==========================================================',
     1'==============================================')
 5001 FORMAT('==========================================================',
     1'==========================================================')
 5050 FORMAT('==========================================================',
     1'==========================================================')
 5100 FORMAT(I3,1X,A9,F10.2,5F10.0,2E10.3,F10.2)
 5125 FORMAT(I3,1X,A9,F10.2,6F10.0,2E10.3,F10.2)
 5126 FORMAT(I3,1X,A9,F10.2,10F9.0)
 5150 FORMAT(4X,A9,F10.2,5F10.0,2E10.3,F10.2)
 5175 FORMAT(73X,2E10.3,F10.2)
 5200 FORMAT(4X,A9,F10.2,6F10.0,2E10.3,F10.2)
 5201 FORMAT(4X,A9,F10.2,10F9.0)
 5250 FORMAT(83X,2E10.3,F10.2)
 6000 FORMAT(
     1' DATE   PERIOD    DURATION  INFLA     QPUMP     EVAPLA     QA    ',
     2'    SPILLA    STOREA     AREA      EL.A'/
     3'                    (HR)     (M3)      (M3)      (M3)      (M3)  ',
     4'     (M3)      (M3)      (M2)      (M)')
 6001 FORMAT(
     1'DATE   PERIOD   DURATION   GROSSH    NETTH     Q     STARTP      ',
     2'ENDP  AV.ENERGY     QD     ENERGY TOT.ENERGY  IRR.'/
     3'                  (HR)      (M)       (M)    (M3/S)    (MW)      ',
     4'(MW)    (MWh)     (M3/S)    (MWh)   (MWh)     (%)')
 6100 FORMAT(
     1'DATE   PERIOD   DURATION   INFLB       QA        IRRS     EVAPLB',
     2'   QPUMP     SPILLB    STOREB     BREA       EL.B    '/
     4'                  (HR)      (M3)      (M3)      (M3)      (M3)  ',
     4'    (M3)      (M3)      (M3)      (M2)       (M)')
 7000 FORMAT(74X,E9.3)
 7001 FORMAT(2X,'AVERAGE % 10 DAILY IRR.SUPPLY =',53X,3F9.2)
 7002 FORMAT(2X,'T O T A L                      =',35X,F9.0,18X,F9.0)
 7003 FORMAT(2X,'T O T A L   A N N U A L        =',35X,F9.0,18X,F9.0)
C 7500 FORMAT(2X,'REACH OF MDDL AT A = ',F9.2,' %')
 7525 FORMAT(A10,4E10.4,F6.2,E10.4,1X,A11,2F8.2,F9.0,E9.3)
 7526 FORMAT(A10,4E10.4,F6.2,E10.4,1X,F7.2,'%',3X,2F8.2,F9.0,E9.3)
 7550 FORMAT(/'SUMMARY OF RESERVOIR OPERATION ',I5/
     1'==========================================================',
     2'==============================================='/
     3'MONTH              RUNOFF          TOTAL     IRRIG.  EVAP.  IRRIG',
     4'.    IRRIG.        AV.POWER    AV.ENERGY  SPILL'/
     5' OF             A        B                  DEMAND  LOSS   SUPPL',
```

```
     6'Y    DEMAND      START      END  GENERATED  AT B'/
     1'                (M3)      (M3)       (M3)       (M3)    (MM/D)   (M3)',
     2'     STATUS       (MW)     (MW)     (MWh)      (M3)'/
     7'=================================================================',
     8'==============================================')
 7551 FORMAT('SUMMARY OF TOTAL RESERVOIR OPERATION '/
     1'=================================================================',
     1'=========================='/
     2'YEAR   TOTAL      IRRIG.   IRRIG.     IRRIG. AV.ENERGY  SPILL     ',
     2'  HA        HB  TOT. SYSTEM'/
     3' OF   INFLOW      DEMAND   SUPPLY     DEMAND GENERATED  AT B      ',
     3'  MIN       MIN EN.GENERATE'/
     4'         (M3)       (M3)      (M3)      STATUS    (MWh)      (M3)     ',
     4'  (M)       (M)     (MWh)'/
     5'=================================================================',
     5'=========================')
 7542 FORMAT(
     1'-----------------------------------------------------------------',
     2'-------------------------')
 7552 FORMAT(
     1'=================================================================',
     2'=========================')
 7553 FORMAT('AVERAGE =',27X,F6.2,'%',E9.3,27X,E9.3)
 7575 FORMAT(
     1'=================================================================',
     2'==============================================')
 7600 FORMAT(10X,4E10.4,6X,E10.4,2X,F6.2,'%',19X,F9.0,E9.3/)
 7601 FORMAT(2X,'FRL. AT A           = ',F9.2,' M'/
     1       2X,'MDDL. AT A          = ',F9.2,' M'/
     2       2X,'MIN.ELEVATION AT A = ',F9.2,' M'//
     3       2X,'FRL. AT B           = ',F9.2,' M'/
     4       2X,'MDDL. AT B          = ',F9.2,' M'/
     5       2X,'MIN.ELEVATION AT B = ',F9.2,' M')
 7602 FORMAT(I4,3E10.4,2X,F6.2,'%',2E9.3,2F9.2,E9.3)
 7603 FORMAT(2X,'MIN.ELEVATION AT A = ',F9.2,' M'/
     2       2X,'MIN.ELEVATION AT B = ',F9.2,' M'/)
C     3       2X,'TOT.ENERGY GENERATE= ',E9.4,' MWh')
 8000 FORMAT(2F13.2,A10)
 8001 FORMAT(A10)
 8019 FORMAT(
     1'=======================================',,/
     2'  10 DAYS % AVERAGE MEETING IRR. DEMAND',,/
     3'   MONTH         1st       2nd       3rd    ',,/
     5'=======================================')
 8020 FORMAT(2X,A10,3F9.2)
 9000 FORMAT(/2X,'MONTH OF : ',A10,' YEAR : 'I5,2X,'OPERATION AT RESERVO
     1IR',A2)
 9001 FORMAT(/2X,'MONTH OF : ',A10,' YEAR : 'I5,2X,'ENERGY GENERATION IN
     1 U/S, D/S POWER HOUSE AND % MEETING IRR.DEMAND')
      STOP
      END

      SUBROUTINE CHECK(QR,QIRR,DT,DMAX,QR1)
       QA=QR+QIRR
       DQR=QA/(DT*3600)
       IF(DQR.GT.DMAX)QR1=DMAX*DT*3600-QIRR
      RETURN
      END
```

APPENDIX IID
Instruction for User

DROPS INSTALLATION AND EXECUTION

The DROPS software is written in FORTRAN 77 language for the IBM/PC/XT/AT and true compatible. It requires 512K RAM and MS-DOS 3.2 or higher.
The software uses the notation and procedures developed in:
SURYAKENCANA, D., RESERVOIR OPERATIONS FOR PUMPED STORAGE SCHEME - A CASE STUDY, Water Resources Development Training Centre, University of Roorkee,India - 2000.

DROPS should be executed from the hard disk (c:).

DISKETTE CONTENTS:
README.DOC
DROPS.EXE
DROPS.FOR
RACAP.DAT
RBCAP.DAT
EVAP.DAT
IRRDM.DAT
INTEHRI.DAT
SCHEME.DAT
SCHEDULE.DAT

7 example-data files needed (*.dat) taken from ., RESERVOIR OPERATIONS FOR PUMPED STORAGE SCHEME - A CASE STUDY

INSTALLATION ON HARD DISK:
Make a separate directory named DROPS (or any other name of your choice) and copy all the contents of this diskette into the created directory.

STEP-BY-STEP HARD DISK INSTALLATION:
1. Turn on the computer.
2. Make new directory named DROPS:
   At the DOS prompt C:>, type md DROPS and press ENTER (or RETURN) key.
3. At the DOS prompt C:>, type cd DROPS and press ENTER.
4. Place the DROPS diskette in the 3.5" (or 5.25") drive (A or B).
5. At the DOS prompt C:\DROPS>, type copy a:\DROPS*.* (if diskette is in drive A)
   copy b:\DROPS*.* (if diskette is in drive B)and press ENTER.
6. The installation is now complete.

EXECUTION:
To execute DROPS from the directory in which it is installed, type DROPS and then press ENTER. The software is NOT totally menu driven and hence requires instruction manual.

These Menu and Comment will be appear on your monitor:

```
C:\>DROPS
*********       PROGRAM DROPS        **********
*      Program of Reservoir Operation          *
* for Pumped Storage Scheme with 2 Reservoir   *
*        (C) Dinny Suryakencana-2000           *
************************************************
File Name for Input Data of Inflow to A & B Res.
INTEHRI.DAT
Your Output file name will be :
ROAINTx.OUT, ROBINTx.OUT, ENGINTx.OUT, SROINTx.OUT
Do you want use File Data SCHEDULE.DAT?
  1) Yes !
  2) No !
     Choose 1 or 2
1
Do you want use File Data SCHEME.DAT?
  1) Yes !
  2) No !
     Choose 1 or 2
1
Please Wait for Data Processing!
 PROCESSING THE NO.  1 OF  35 YEAR DATA
 PROCESSING THE NO.  2 OF  35 YEAR DATA
 PROCESSING THE NO.  3 OF  35 YEAR DATA
 PROCESSING THE NO.  4 OF  35 YEAR DATA
 PROCESSING THE NO.  5 OF  35 YEAR DATA
 PROCESSING THE NO.  6 OF  35 YEAR DATA
 PROCESSING THE NO.  7 OF  35 YEAR DATA
 PROCESSING THE NO.  8 OF  35 YEAR DATA
 PROCESSING THE NO.  9 OF  35 YEAR DATA
 PROCESSING THE NO. 10 OF  35 YEAR DATA
 PROCESSING THE NO. 11 OF  35 YEAR DATA
 PROCESSING THE NO. 12 OF  35 YEAR DATA
 PROCESSING THE NO. 13 OF  35 YEAR DATA
 PROCESSING THE NO. 14 OF  35 YEAR DATA
 PROCESSING THE NO. 15 OF  35 YEAR DATA
 PROCESSING THE NO. 16 OF  35 YEAR DATA
 PROCESSING THE NO. 17 OF  35 YEAR DATA
 PROCESSING THE NO. 18 OF  35 YEAR DATA
 PROCESSING THE NO. 19 OF  35 YEAR DATA
 PROCESSING THE NO. 20 OF  35 YEAR DATA
 PROCESSING THE NO. 21 OF  35 YEAR DATA
 PROCESSING THE NO. 22 OF  35 YEAR DATA
 PROCESSING THE NO. 23 OF  35 YEAR DATA
 PROCESSING THE NO. 24 OF  35 YEAR DATA
 PROCESSING THE NO. 25 OF  35 YEAR DATA
 PROCESSING THE NO. 26 OF  35 YEAR DATA
 PROCESSING THE NO. 27 OF  35 YEAR DATA
 PROCESSING THE NO. 28 OF  35 YEAR DATA
 PROCESSING THE NO. 29 OF  35 YEAR DATA
 PROCESSING THE NO. 30 OF  35 YEAR DATA
 PROCESSING THE NO. 31 OF  35 YEAR DATA
 PROCESSING THE NO. 32 OF  35 YEAR DATA
 PROCESSING THE NO. 33 OF  35 YEAR DATA
 PROCESSING THE NO. 34 OF  35 YEAR DATA
 PROCESSING THE NO. 35 OF  35 YEAR DATA
Stop - Program terminated
```

```
      OR

C:\>DROPS
*********       PROGRAM DROPS       **********
*      Program of Reservoir Operation        *
* for Pumped Storage Scheme with 2 Reservoir *
*        (C) Dinny Suryakencana-2000         *
*********************************************
File Name for Input Data of Inflow to A & B Res.
Your Output file name will be :
ROAINTx.OUT, ROBINTx.OUT, ENGINTx.OUT, SROINTx.OUT
Do you want use File Data SCHEDULE.DAT?
  1) Yes !
  2) No !
     Choose 1 or 2
1
Do you want use File Data SCHEME.DAT?
  1) Yes !
  2) No !
     Choose 1 or 2
2
 INPUT EFFICIENCY FACTOR OF M/C & TURBINE =
.85
 INPUT FRICTION LOSSES FACTOR             =
.02
 INPUT LENGTH OF POWER TUNNEL (M)         =
1100
 INPUT DIAMETER OF POWER TUNNEL (M)       =
8.5
 INPUT NUMBER OF POWER TUNNEL             =
2
 INPUT MDDL AT RESERVOIR A (M)            =
740.0
 INPUT MDDL AT RESERVOIR B (M)            =
598.5
 INPUT DISCHARGE MAX. FOR RELEASE (CUMEC) =
1235.42
 INPUT DISCHARGE MAX. FOR PUMPING (CUMEC) =
595.96
 INPUT DISCHARGE MAX. FOR D/S POWERHOUSE  =
639.60
 INPUT INITIAL EL. AT RESERVOIR A (M)     =
830
 INPUT INITIAL EL. AT RESERVOIR B (M)     =
598.5
 INPUT NETT HEAD OF D/S POWERHOUSE (M)    =
75
Please Wait for Data Processing!
 PROCESSING THE NO.  1 OF  35 YEAR DATA
 PROCESSING THE NO.  2 OF  35 YEAR DATA
 PROCESSING THE NO.  3 OF  35 YEAR DATA
 PROCESSING THE NO.  4 OF  35 YEAR DATA
 PROCESSING THE NO.  5 OF  35 YEAR DATA
 PROCESSING THE NO.  6 OF  35 YEAR DATA
 PROCESSING THE NO.  7 OF  35 YEAR DATA
 PROCESSING THE NO.  8 OF  35 YEAR DATA
```

```
 PROCESSING THE NO.  9 OF  35 YEAR DATA
 PROCESSING THE NO. 10 OF  35 YEAR DATA
 PROCESSING THE NO. 11 OF  35 YEAR DATA
 PROCESSING THE NO. 12 OF  35 YEAR DATA
 PROCESSING THE NO. 13 OF  35 YEAR DATA
 PROCESSING THE NO. 14 OF  35 YEAR DATA
 PROCESSING THE NO. 15 OF  35 YEAR DATA
 PROCESSING THE NO. 16 OF  35 YEAR DATA
 PROCESSING THE NO. 17 OF  35 YEAR DATA
 PROCESSING THE NO. 18 OF  35 YEAR DATA
 PROCESSING THE NO. 19 OF  35 YEAR DATA
 PROCESSING THE NO. 20 OF  35 YEAR DATA
 PROCESSING THE NO. 21 OF  35 YEAR DATA
 PROCESSING THE NO. 22 OF  35 YEAR DATA
 PROCESSING THE NO. 23 OF  35 YEAR DATA
 PROCESSING THE NO. 24 OF  35 YEAR DATA
 PROCESSING THE NO. 25 OF  35 YEAR DATA
 PROCESSING THE NO. 26 OF  35 YEAR DATA
 PROCESSING THE NO. 27 OF  35 YEAR DATA
 PROCESSING THE NO. 28 OF  35 YEAR DATA
 PROCESSING THE NO. 29 OF  35 YEAR DATA
 PROCESSING THE NO. 30 OF  35 YEAR DATA
 PROCESSING THE NO. 31 OF  35 YEAR DATA
 PROCESSING THE NO. 32 OF  35 YEAR DATA
 PROCESSING THE NO. 33 OF  35 YEAR DATA
 PROCESSING THE NO. 34 OF  35 YEAR DATA
 PROCESSING THE NO. 35 OF  35 YEAR DATA
Stop - Program terminated.
```

Output files:
The program will be automatically divide the output file in every 8 years data,

ROAXXXx : ROA = Reservoir Operation at A,
XXX = Three initial first letter from input of Inflow data file
x = Number of file automatically given by program, start from 0

ROBXXXx : ROB = Reservoir Operation at B,
XXX = Three initial first letter from input of Inflow data file
x = Number of file automatically given by program, start from 0

ENGXXXx : ENG = Total Energy Generated,
XXX = Three initial first letter from input of Inflow data file
x = Number of file automatically given by program, start from 0

SROXXXx : SRO = Summary of Reservoir Operation,
XXX = Three initial first letter from input of Inflow data file
x = Number of file automatically given by program, 0 and 1

COMMENTS AND INQUIRIES:
If you have any comments or questions about this software, please direct them to the author at the address below:

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□

APPENDIX IIIA

Input of Program

Input to computer program (DROPS program) of reservoir operation model consist of the storage-elevation curve and the area-elevation curve for each reservoir (File name "RACAP.DAT" and "RBCAP.DAT"), value of FRL, MDDL of each reservoir, and data of physical construction (File name "SCHEME.DAT") are read in. This program also facilitated with interactive input of physical construction data if needed. The following input data has been computerized:

1. Inflow into. (File name is "INTEHRI.DAT")
2. Evaporation losses. (File name "EVAP.DAT")
3. Irrigation demand. (File name "IRRDM.DAT")

FILE NAME : **RACAP.DAT** (=Reservoir A CAPacity DATa)

```
      12
830.0000000    43800000.00000    3540000000.0000
820.0000000    40000000.00000    3150000000.0000
810.0000000    36500000.00000    2780000000.0000
800.0000000    33000000.00000    2420000000.0000
790.0000000    30300000.00000    2110000000.0000
780.0000000    27600000.00000    1820000000.0000
770.0000000    25000000.00000    1550000000.0000
760.0000000    22400000.00000    1315000000.0000
750.0000000    19850000.00000    1100000000.0000
740.0000000    17300000.00000     925000000.0000
730.0000000    15550000.00000     735000000.0000
720.0000000    13800000.00000     590000000.0000
```

- Here we wrote first line the number of data we have for Reservoir
- First column are Elevation in Meter
- Second column are Surface Area in M^2 and
- Third column are Capacity in M^3

FILE NAME : **RBCAP.DAT** (=Reservoir B CAPacity DATa)

```
     6
612.000    2550000.00    85520000.0
610.000    2400000.00    80200000.0
600.000    2040000.00    58000000.0
590.000    1650000.00    38900000.0
580.000    1290000.00    20800000.0
570.000     900000.00    11400000.0
```

Here wrote same as in RACAP.DAT

FILE NAME : **SCHEME.DAT** (data of physical construction)

```
.85 .02 1100:8.5 2 740.00 598.50 1235.42 595.96 639.60 830 598.50 75
```

Here we wrote respectively:
Efficiency factor of M/C and turbine, Friction losses factor, Length of power tunnel in M, Diameter of power tunnel in M, Number of power tunnel, MDDL at reservoir A in M, MDDL at reservoir B in M, Maximum discharge for release from A in M^3/Sec., Maximum discharge for pumping from B in M^3/Sec., Maximum discharge for D/S powerhouse in M^3/Sec., Initial elevation at reservoir A in M, Initial elevation at reservoir B in M, and Net head of D/S powerhouse.

FILE NAME : **EVAP.DAT** (=EVAPoration losses DATa)

```
12 Monthly Evaporation mm/day
1.258  JAN
2.036  FEB
3.290  MAR
5.733  APR
6.774  MAY
6.433  JUN
4.000  JUL
3.484  AUG
3.600  SEP
3.258  OCT
2.267  NOV
1.355  DEC
```

FILE NAME : **IRRDM.DAT** (=IRRigation DeMand DATa)

```
12 Monthly Irrigation Demand (M3)
653200000 JAN
639400000 FEB
607400000 MAR
559000000 APR
684200000 MAY
479500000 JUN
0.0       JUL
0.0       AUG
0.0       SEP
176200000 OCT
341200000 NOV
465800000 DEC
```

FILE NAME : **SCHEDULE.DAT** (=reservoir operation SCHEDULE DATa)

```
JANUARY
3   13300000 6 0 4 17790000 8   10130000
3.5 15150000 6 0 4 17510000 8   10710000
3.8 16350000 6 0 4 17280000 8   11170000
FEBRUARY
4   17050000 6 0 4 17050000 8   10250000
3.5 14630000 6 0 4 16820000 8   12100000
4   16470000 6 0 4 16470000 8   12290000
MARCH
4   16240000 6 0 4 16240000 7.1 11660000
4   15900000 6 0 4 15900000 8   10890000
4   15650000 6 0 4 15650000 6.8 12090000
APRIL
4   15320000 6 0 4 15320000 7.4 13360000
4   15090000 6 0 4 15090000 6.7 12300000
4   14860000 6 0 4 14860000 4.8 9070000
MAY
4   14510000 6 0 4 14510000 2.7 5260000
4   14170000 6 0 4 14170000 3.4 6740000
4   14050000 6 0 4 14050000 2.5 5030000
JUNE
4   13710000 6 0 4 13710000 1.8 3830000
4   13360000 6 0 4 13360000 1.1 2360000
4   13360000 6 0 4 13360000 5.5 11790000
JULY
4   13590000 6 0 4 13590000 5.9 12320000
4   14170000 6 0 4 14170000 7.4 14520000
2.6 10380000 6 0 4 15670000 8   13820000
AUGUST
1.2 5160000  6 0 4 17280000 8   11290000
0.5 1960000  6 0 4 17390000 8   9330000
4   16930000 1.1 4760000 4 16930000 0 0
SEPTEMBER
4   16620000 6 0 4 16820000 0   0
3.8 15920000 6 0 4 16820000 8   8640000
2.4 10050000 6 0 4 16820000 8   8640000
(to be continued)
```

```
OCTOBER
2.1 9010000  6 0 4 16820000 8    8640000
2.2 9160000  6 0 4 16930000 8    8640000
1   4290000  6 0 4 17050000 8    8640000
NOVEMBER
0.6 2650000  6 0 4 17050000 8    8640000
0.7 3020000  6 0 4 17050000 8    8750000
0.8 3300000  6 0 4 17160000 8    8750000
DECEMBER
2.3 10920000 6 0 4 17160000 8    8990000
2.7 11730000 6 0 4 17390000 8    9330000
2.02 9000000 6 0 4 17720000 4.6  5610000
```

- Here we wrote first line the name of month
- First column are first peak hour duration
- Second column are volume of water release in M^3
- Third column are first non-peak hour duration
- Fourth column are volume of water pumping in M^3
- Fifth column are second peak hour duration
- Sixth column are volume of water release in M^3
- Seventh column are second non-peak hour duration
- Eighth column are volume of water pumping in M^3

FILE NAME : **INTEHRI.DAT** (=Inflow to reservoir DATa)

```
    35
    1963  3  Monthly inflow of A, B (M3)
  431000000          0.0  OCTOBER
  263000000          0.0  NOVEMBER
  207000000          0.0  DECEMBER
    1964  12
  174000000          0.0  JANUARY
  175000000          0.0  FEBRUARY
  178000000          0.0  MARCH
  185000000          0.0  APRIL
  254000000          0.0  MAY
  877000000          0.0  JUNE
 1329000000          0.0  JULY
 1241000000          0.0  AUGUST
  567000000          0.0  SEPTEMBER
  267000000          0.0  OCTOBER
  207000000          0.0  NOVEMBER
  189000000          0.0  DECEMBER
(to be continued)
```

- Here we wrote first line the number of year we have for inflow to Reservoir
- Second line name of year and number of month in that year
- First column are monthly inflow to reservoir A in M^3
- Second column are monthly inflow to reservoir B in M^3
- Third column are name of month

APPENDIX IIIB

Output of Program

Outputs of the program are in form of tables and the program will be automatically divide the output file in every 8 years data,

ROAXXXx : ROA = Reservoir Operation at A (upper reservoir),

XXX = Three initial first letter from input of Inflow data file

x = Number of file automatically given by program, start from 0

In ROA file, there are the name of month, year of operation and 11 columns, the value of flow is +ve if into the reservoir and –ve if out from reservoir

Column 1, DATE: Date of operation
Column 2, PERIOD: Condition of period (Peak or non-peak hours)
Column 3, DURATION: Duration of period in hours
Column 4, INFLA: Natural inflow to the reservoir A in M^3
Column 5, QPUMP: Volume of water pumping from lower reservoir in M^3
Column 6, EVAPLA: Evaporation Losses of reservoir A in M^3
Column 7, QA: Volume of water releases from reservoir A, through power tunnel in M^3
Column 8, SPILLA: Volume of water spills from reservoir A in M^3
Column 9, STOREA: Volume of water stores in reservoir A in M^3
Column 10, AREA: Area of water surfaces in reservoir A in M^3
Column 11, EL.A: Elevation of water surface in reservoir A in M

ROBXXXx : ROB = Reservoir Operation at B (lower reservoir),

XXX = Three initial first letter from input of Inflow data file

x = Number of file automatically given by program, start from 0

In ROB file, there are the name of month, year of operation and 12 columns, the value of flow is +ve if into the reservoir and –ve if out from reservoir

Column 1, DATE: Date of operation
Column 2, PERIOD: Condition of period (Peak or non-peak hours)
Column 3, DURATION: Duration of period in hours
Column 4, INFLB: Natural inflow + Spill from reservoir A to the reservoir B in M^3
Column 5, QA: Volume of water release from reservoir A to reservoir B, through power tunnel in M^3

Column 6, IRRS: Volume of water release from B to meet irrigation demand in M^3
Column 7, EVAPLB: Evaporation Losses of reservoir B in M^3
Column 8, QPUMP: Volume of water pumping to upper reservoir in M^3
Column 9, SPILLB: Volume of water spills from reservoir B in M^3
Column 10, STOREB: Volume of water stores in reservoir B in M^3
Column 11, BREA: Area of water surfaces in reservoir B in M^3
Column 12, EL.B: Elevation of water surface in reservoir B in M

After end of month, there is summation of spilling water from reservoir B in M^3

ENGXXXx : ENG = Total Energy Generated,

XXX = Three initial first letter from input of Inflow data file

x = Number of file automatically given by program, start from 0

In ENG file, there are the name of month, year of operation and 13 columns.

Column 1, DATE: Date of operation
Column 2, PERIOD: Condition of period (Peak or non-peak hours)
Column 3, DURATION: Duration of period in hours
Column 4, GROSSH: Gross Head in M
Column 5, NETTH: Net Head = Gross Head – Friction head loss in M
Column 6, Q: Discharge through power tunnel of U/S powerhouse in M^3/sec
Column 7, STARTP: Power Generated at start period in MW
Column 8, ENDP: Power Generated at end period in MW
Column 9, AV.ENERGY: Average Energy Generated at U/S powerhouse in MWh
Column 10, QD: Discharge through D/S powerhouse in M^3/sec
Column 11, ENERGY: Energy Generated at D/S powerhouse in MWh
Column 12, TOT.ENERGY: Total Energy Generated at U/S and D/S powerhouse in MWh
Column 13, IRR.: Percentage Irrigation Supply in each period

SROXXXx : SRO = Summary of Reservoir Operation,

XXX = Three initial first letter from input of Inflow data file

x = Number of file automatically given by program, 0 and 1

SROXXX0 = File Summary of Reservoir Operation in Every Year (monthly basis)

In SROXXX0 file, there are the year of operation and 12 columns

Column 1, MONTH: Month of operation
Column 2, RUNOFF A: Summary of Inflow to Reservoir A in M^3
Column 3, RUNOFF B: Summary of Inflow to Reservoir B in M^3

Column 4, TOTAL: RUNOFF A + RUNOFF B in M^3
Column 5, IRRIG.DEMAND: Total Irrigation Demand in M^3
Column 6,EVAP.LOSS: Evaporation Losses of reservoir in mm/day
Column 7, IRRIG.SUPPLY: Total Irrigation Supply in M^3
Column 8, IRRIG.DEMAND STATUS: Status of Percentage Meeting Irrigation Demand. Succeed = 100%
Column 9, AV.POWER START: Average Power Generated at start period in MW
Column 10, AV.POWER END: Average Power Generated at end period in MW
Column 11, AV.ENERGY GENERATED: Total Average Energy Generated in MWh at U/S powerhouse
Column 12, SPILL AT B: Total Volume of water spills from reservoir B in M^3

After end of year, there is summation of all parameters, and the minimum elevation occur in reservoir A and reservoir B

SROXXX1 = File Summary of Reservoir Operation in 35 Years (yearly basis)

In SROXXX1 file, there are 2 tables with 10 and 4 columns respectively

In first table, it is Summary of Reservoir Operation in 35 Years (yearly basis)

Column 1, YEAR: Year of operation
Column 2, TOTAL INFLOW: TOTAL RUNOFF on this year in M^3
Column 3, IRRIG.DEMAND: Total Irrigation Demand on this year in M^3
Column 4, IRRIG.SUPPLY: Total Irrigation Supply on this year in M^3
Column 5, IRRIG.DEMAND STATUS: Status of Percentage Meeting Irrigation Demand.
Column 6, AV.ENERGY GENERATED: Total Average Energy Generated in MWh at U/S powerhouse on this year
Column 7 SPILL AT B: Total Volume of water spills from reservoir B on this year in M^3
Column 8, HA MIN: Minimum Elevation Occurs in reservoir A in M
Column 9, HB MIN: Minimum Elevation Occurs in reservoir B in M
Column 10, TOT. SYSTEM EN. GENERATE: Total System Energy Generated in MWh on this year

After end of 35 years operation, there are Average Percentage Meeting Irrigation Demand, Average Annual of Energy Generated, and the minimum elevation occur in reservoir A and reservoir B

Second table is Summary of ten daily Average Percentage Meeting Irrigation Demand;

Column 1, MONTH: Name of month
Column 2: Average Percentage Meeting Irrigation Demand in first 10 daily for all 35 years operation on this month.
Column 3: Average Percentage Meeting Irrigation Demand in second 10 daily for all 35 years operation on this month
Column 4: Average Percentage Meeting Irrigation Demand in third 10 daily for all 35 years operation on this month

OUTPUT INDEX

	Page
Result of DROPS Program with Project Operation Schedule	IIIB-7 to IIIB-41
• Summary of Reservoir Operation of Year 1963 (Monthly basis)	IIIB-7
• Reservoir Operation at A for 1963	IIIB-8 to IIIB-17
• Month of October	IIIB-8 to IIIB-9
• Month of November	IIIB-10 to IIIB-13
• Month of December	IIIB-14 to IIIB-17
• Reservoir Operation at B for 1963	IIIB-18 to IIIB-29
• Month of October	IIIB-18 to IIIB-21
• Month of November	IIIB-22 to IIIB-25
• Month of December	IIIB-26 to IIIB-29
• Energy Generation in U/S, D/S Powerhouse and % Meeting Irrigation Demand	IIIB-30 to IIIB-41
• Month of October	IIIB-30 to IIIB-33
• Month of November	IIIB-34 to IIIB-37
• Month of December	IIIB-38 to IIIB-41
Result of DROPS Program with Proposed Operation Schedule	IIIB-42to IIIB-78
• Summary of Reservoir Operation of Year 1963 (Monthly basis)	IIIB-42
• Reservoir Operation at A for 1963	IIIB-43 to IIIB-54
• Month of October	IIIB-43 to IIIB-46
• Month of November	IIIB-47 to IIIB-50
• Month of December	IIIB-50 to IIIB-54
• Reservoir Operation at B for 1963	IIIB-55 to IIIB-66
• Month of October	IIIB-55 to IIIB-58

- Month of November IIIB-59 to IIIB-62
- Month of December IIIB-63 to IIIB-66

- Energy Generation in U/S, D/S Powerhouse and % Meeting Irrigation Demand IIIB-67 to IIIB-78
  - Month of October IIIB-67 to IIIB-70
  - Month of November IIIB-71 to IIIB-74
  - Month of December IIIB-75 to IIIB-78

File name: SROINT0.OUT for year 1963 with project operation schedule

SUMMARY OF RESERVOIR OPERATION 1963

MONTH OF	RUNOFF A (M3)	RUNOFF B (M3)	TOTAL (M3)	IRRIG. DEMAND (M3)	EVAP. LOSS (MM/D)	IRRIG. SUPPLY (M3)	IRRIG. DEMAND STATUS	AV.POWER START (MW)	AV.POWER END (MW)	AV.ENERGY GENERATED (MWh)	SPILL AT B (M3)
OCTOBER	.4310E+09	.0000E+00	.4310E+09	.1762E+09	3.26	.1762E+09	SUCCEED	1486.82	1473.58	225566.	.220E+09
NOVEMBER	.2630E+09	.0000E+00	.2630E+09	.3412E+09	2.27	.2879E+09	84.38%	1213.14	1206.29	80266.	.237E+07
DECEMBER	.2070E+09	.0000E+00	.2070E+09	.4658E+09	1.36	.4658E+09	SUCCEED	1731.21	1698.09	314673.	.000E+00
	.9010E+09	.0000E+00	.9010E+09	.9832E+09		.9299E+09	94.58%			620505.	.222E+09

FRL. AT A = 830.00 M
MDDL. AT A = 740.00 M
MIN.ELEVATION AT A = 823.08 M

FRL. AT B = 612.00 M
MDDL. AT B = 598.50 M
MIN.ELEVATION AT B = 598.50 M

File name: ROAINT0.OUT for year 1963 with project operation schedule

MONTH OF : OCTOBER YEAR : 1963 OPERATION AT RESERVOIR A

DATE	PERIOD	DURATION (HR)	INFLA (M3)	QPUMP (M3)	EVAPLA (M3)	QA (M3)	SPILLA (M3)	STOREA (M3)	AREA (M2)	EL.A (M)
								.354E+10	.438E+08	830.00
1	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-3416304.	0.	.353E+10	.437E+08	829.86
	NON-PEAK	8.00	4634409.	773431.	-47509.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107904.	.354E+10	.438E+08	830.00
2	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9339775.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	8.00	4634409.	6696769.	-47446.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107648.	.354E+10	.438E+08	830.00
3	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9339775.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	8.00	4634409.	6696580.	-47446.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107392.	.354E+10	.438E+08	830.00
4	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9339775.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	8.00	4634409.	6696580.	-47446.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107392.	.354E+10	.438E+08	830.00
5	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9339775.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	8.00	4634409.	6696580.	-47446.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107392.	.354E+10	.438E+08	830.00
6	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9339775.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	8.00	4634409.	6696580.	-47446.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107392.	.354E+10	.438E+08	830.00
7	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9339775.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	8.00	4634409.	6696580.	-47446.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107392.	.354E+10	.438E+08	830.00

8	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9339775.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	8.00	4634409.	6696580.	-47446.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107392.	.354E+10	.438E+08	830.00
9	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9339775.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	8.00	4634409.	6696580.	-47446.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107392.	.354E+10	.438E+08	830.00
10	PEAK	2.10	1216532.	0.	-12486.	-9010000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35613.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9339775.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	8.00	4634409.	6696580.	-47446.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.90	2259274.	0.	-23188.	0.	-2107392.	.354E+10	.438E+08	830.00
11	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00
12	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00
13	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00
14	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00
15	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00

16	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00
17	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00
18	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00
19	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00
20	PEAK	2.20	1274462.	0.	-13081.	-9160000.	0.	.353E+10	.437E+08	829.80
	NON-PEAK	6.00	3475807.	0.	-35612.	0.	0.	.354E+10	.438E+08	829.89
	PEAK	4.00	2317204.	0.	-23760.	-9784527.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	8.00	4634409.	7257606.	-47440.	0.	0.	.354E+10	.438E+08	830.00
	NON-PEAK	3.80	2201344.	0.	-22594.	0.	-2073856.	.354E+10	.438E+08	830.00
21	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00
22	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00
23	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00

24	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00
25	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00
26	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00
27	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00
28	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00
29	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00
30	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00
31	PEAK	1.00	579301.	0.	-5946.	-4290000.	0.	.354E+10	.438E+08	829.90
	NON-PEAK	6.00	3475807.	0.	-35646.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	2317204.	0.	-23782.	-4447512.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	8.00	4634409.	0.	-47541.	0.	-2156288.	.354E+10	.438E+08	830.00
	NON-PEAK	5.00	2896506.	0.	-29729.	0.	-2866688.	.354E+10	.438E+08	830.00

MONTH OF : NOVEMBER YEAR : 1963 OPERATION AT RESERVOIR A

DATE	PERIOD	DURATION (HR)	INFLA (M3)	QPUMP (M3)	EVAPLA (M3)	QA (M3)	SPILLA (M3)	STOREA (M3)	AREA (M2)	EL.A (M)
								.354E+10	.438E+08	830.00
1	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2668508.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1398784.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00
2	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2668508.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1398784.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00
3	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2668508.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1398784.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00
4	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2668508.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1398784.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00
5	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2668508.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1398784.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00
6	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2668508.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1398784.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00
7	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2150172.	0.	.354E+10	.438E+08	829.98
	NON-PEAK	8.00	2922222.	0.	-33091.	0.	-1917184.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00

8	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2150172.	0.	.354E+10	.438E+08	829.98
	NON-PEAK	8.00	2922222.	0.	-33091.	0.	-1917184.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00
9	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2150172.	0.	.354E+10	.438E+08	829.98
	NON-PEAK	8.00	2922222.	0.	-33091.	0.	-1917184.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00
10	PEAK	.60	219167.	0.	-2482.	-2650000.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	6.00	2191667.	0.	-24810.	0.	0.	.354E+10	.438E+08	829.99
	PEAK	4.00	1461111.	0.	-16548.	-2150172.	0.	.354E+10	.438E+08	829.98
	NON-PEAK	8.00	2922222.	0.	-33091.	0.	-1917184.	.354E+10	.438E+08	830.00
	NON-PEAK	5.40	1972500.	0.	-22341.	0.	-1950208.	.354E+10	.438E+08	830.00
11	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00
12	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00
13	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00
14	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00
15	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00

16	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00
17	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00
18	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00
19	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00
20	PEAK	.70	255694.	0.	-2896.	-3020000.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	6.00	2191667.	0.	-24808.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16547.	-2150173.	0.	.354E+10	.438E+08	829.97
	NON-PEAK	8.00	2922222.	0.	-33089.	0.	-1583360.	.354E+10	.438E+08	830.00
	NON-PEAK	5.30	1935972.	0.	-21928.	0.	-1914112.	.354E+10	.438E+08	830.00
21	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00
22	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00
23	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00

24	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00
25	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00
26	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00
27	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00
28	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00
29	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00
30	PEAK	.80	292222.	0.	-3310.	-3300000.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	6.00	2191667.	0.	-24807.	0.	0.	.354E+10	.438E+08	829.98
	PEAK	4.00	1461111.	0.	-16546.	-2150174.	0.	.354E+10	.438E+08	829.96
	NON-PEAK	8.00	2922222.	0.	-33087.	0.	-1339392.	.354E+10	.438E+08	830.00
	NON-PEAK	5.20	1899445.	0.	-21514.	0.	-1878016.	.354E+10	.438E+08	830.00

MONTH OF : DECEMBER YEAR : 1963 OPERATION AT RESERVOIR A

DATE	PERIOD	DURATION (HR)	INFLA (M3)	QPUMP (M3)	EVAPLA (M3)	QA (M3)	SPILLA (M3)	STOREA (M3)	AREA (M2)	EL.A (M)
								.354E+10	.438E+08	830.00
1	PEAK	2.30	639919.	0.	-5688.	-10229280.	0.	.353E+10	.437E+08	829.75
	NON-PEAK	6.00	1669355.	0.	-14806.	0.	0.	.353E+10	.437E+08	829.80
	PEAK	4.00	1112903.	0.	-9874.	-10229280.	0.	.352E+10	.436E+08	829.56
	NON-PEAK	8.00	2225807.	422679.	-19708.	0.	0.	.353E+10	.437E+08	829.63
	NON-PEAK	3.70	1029436.	0.	-9120.	0.	0.	.353E+10	.437E+08	829.66
2	PEAK	2.30	639919.	0.	-5671.	-10229280.	0.	.352E+10	.436E+08	829.41
	NON-PEAK	6.00	1669355.	0.	-14761.	0.	0.	.352E+10	.436E+08	829.45
	PEAK	4.00	1112903.	0.	-9845.	-10229280.	0.	.351E+10	.435E+08	829.22
	NON-PEAK	8.00	2225807.	5429771.	-19649.	0.	0.	.352E+10	.436E+08	829.41
	NON-PEAK	3.70	1029436.	0.	-9103.	0.	0.	.352E+10	.436E+08	829.44
3	PEAK	2.30	639919.	0.	-5660.	-10229280.	0.	.351E+10	.435E+08	829.19
	NON-PEAK	6.00	1669355.	0.	-14734.	0.	0.	.351E+10	.435E+08	829.24
	PEAK	4.00	1112903.	0.	-9826.	-10229280.	0.	.350E+10	.434E+08	829.00
	NON-PEAK	8.00	2225807.	5429770.	-19612.	0.	0.	.351E+10	.435E+08	829.20
	NON-PEAK	3.70	1029436.	0.	-9086.	0.	0.	.351E+10	.435E+08	829.22
4	PEAK	2.30	639919.	0.	-5649.	-10229280.	0.	.350E+10	.434E+08	828.98
	NON-PEAK	6.00	1669355.	0.	-14706.	0.	0.	.350E+10	.434E+08	829.02
	PEAK	4.00	1112903.	0.	-9807.	-10229280.	0.	.349E+10	.433E+08	828.79
	NON-PEAK	8.00	2225807.	5429771.	-19575.	0.	0.	.350E+10	.434E+08	828.98
	NON-PEAK	3.70	1029436.	0.	-9069.	0.	0.	.350E+10	.434E+08	829.01
5	PEAK	2.30	639919.	0.	-5639.	-10229280.	0.	.349E+10	.433E+08	828.76
	NON-PEAK	6.00	1669355.	0.	-14678.	0.	0.	.349E+10	.433E+08	828.81
	PEAK	4.00	1112903.	0.	-9789.	-10229280.	0.	.348E+10	.433E+08	828.57
	NON-PEAK	8.00	2225807.	5429770.	-19538.	0.	0.	.349E+10	.433E+08	828.77
	NON-PEAK	3.70	1029436.	0.	-9052.	0.	0.	.349E+10	.433E+08	828.79
6	PEAK	2.30	639919.	0.	-5628.	-10229280.	0.	.348E+10	.432E+08	828.55
	NON-PEAK	6.00	1669355.	0.	-14650.	0.	0.	.349E+10	.433E+08	828.59
	PEAK	4.00	1112903.	0.	-9770.	-10229280.	0.	.348E+10	.432E+08	828.36
	NON-PEAK	8.00	2225807.	5429771.	-19501.	0.	0.	.348E+10	.432E+08	828.55
	NON-PEAK	3.70	1029436.	0.	-9035.	0.	0.	.348E+10	.433E+08	828.58
7	PEAK	2.30	639919.	0.	-5617.	-10229280.	0.	.347E+10	.432E+08	828.33
	NON-PEAK	6.00	1669355.	0.	-14623.	0.	0.	.348E+10	.432E+08	828.37
	PEAK	4.00	1112903.	0.	-9752.	-10229280.	0.	.347E+10	.431E+08	828.14
	NON-PEAK	8.00	2225807.	5429771.	-19464.	0.	0.	.348E+10	.432E+08	828.34
	NON-PEAK	3.70	1029436.	0.	-9018.	0.	0.	.348E+10	.432E+08	828.36

8	PEAK	2.30	639919.	0.	-5607.	-10229280.	0.	.347E+10	.431E+08	828.12
	NON-PEAK	6.00	1669355.	0.	-14595.	0.	0.	.347E+10	.431E+08	828.16
	PEAK	4.00	1112903.	0.	-9733.	-10229280.	0.	.346E+10	.430E+08	827.92
	NON-PEAK	8.00	2225807.	5429770.	-19427.	0.	0.	.347E+10	.431E+08	828.12
	NON-PEAK	3.70	1029436.	0.	-9000.	0.	0.	.347E+10	.431E+08	828.15
9	PEAK	2.30	639919.	0.	-5596.	-10229280.	0.	.346E+10	.430E+08	827.90
	NON-PEAK	6.00	1669355.	0.	-14567.	0.	0.	.346E+10	.430E+08	827.94
	PEAK	4.00	1112903.	0.	-9715.	-10229280.	0.	.345E+10	.429E+08	827.71
	NON-PEAK	8.00	2225807.	5429771.	-19390.	0.	0.	.346E+10	.430E+08	827.90
	NON-PEAK	3.70	1029436.	0.	-8983.	0.	0.	.346E+10	.430E+08	827.93
10	PEAK	2.30	639919.	0.	-5586.	-10229280.	0.	.345E+10	.429E+08	827.68
	NON-PEAK	6.00	1669355.	0.	-14539.	0.	0.	.345E+10	.429E+08	827.73
	PEAK	4.00	1112903.	0.	-9696.	-10229280.	0.	.344E+10	.428E+08	827.49
	NON-PEAK	8.00	2225807.	5429770.	-19353.	0.	0.	.345E+10	.429E+08	827.69
	NON-PEAK	3.70	1029436.	0.	-8966.	0.	0.	.345E+10	.429E+08	827.72
11	PEAK	2.70	751210.	0.	-6544.	-11730000.	0.	.344E+10	.428E+08	827.43
	NON-PEAK	6.00	1669355.	0.	-14507.	0.	0.	.344E+10	.428E+08	827.48
	PEAK	4.00	1112903.	0.	-9675.	-12008280.	0.	.343E+10	.427E+08	827.20
	NON-PEAK	8.00	2225807.	8709418.	-19302.	0.	0.	.344E+10	.428E+08	827.48
	NON-PEAK	3.30	918145.	0.	-7982.	0.	0.	.344E+10	.428E+08	827.50
12	PEAK	2.70	751210.	0.	-6532.	-11730000.	0.	.343E+10	.427E+08	827.22
	NON-PEAK	6.00	1669355.	0.	-14479.	0.	0.	.343E+10	.428E+08	827.26
	PEAK	4.00	1112903.	0.	-9656.	-12008280.	0.	.342E+10	.427E+08	826.98
	NON-PEAK	8.00	2225807.	8709467.	-19265.	0.	0.	.343E+10	.428E+08	827.26
	NON-PEAK	3.30	918145.	0.	-7967.	0.	0.	.343E+10	.428E+08	827.28
13	PEAK	2.70	751210.	0.	-6519.	-11730000.	0.	.342E+10	.427E+08	827.00
	NON-PEAK	6.00	1669355.	0.	-14451.	0.	0.	.342E+10	.427E+08	827.04
	PEAK	4.00	1112903.	0.	-9638.	-12008280.	0.	.341E+10	.426E+08	826.77
	NON-PEAK	8.00	2225807.	8709467.	-19228.	0.	0.	.342E+10	.427E+08	827.04
	NON-PEAK	3.30	918145.	0.	-7951.	0.	0.	.343E+10	.427E+08	827.07
14	PEAK	2.70	751210.	0.	-6507.	-11730000.	0.	.341E+10	.426E+08	826.79
	NON-PEAK	6.00	1669355.	0.	-14424.	0.	0.	.342E+10	.426E+08	826.83
	PEAK	4.00	1112903.	0.	-9619.	-12008280.	0.	.341E+10	.425E+08	826.55
	NON-PEAK	8.00	2225807.	8709467.	-19191.	0.	0.	.342E+10	.426E+08	826.83
	NON-PEAK	3.30	918145.	0.	-7936.	0.	0.	.342E+10	.426E+08	826.85
15	PEAK	2.70	751210.	0.	-6494.	-11730000.	0.	.341E+10	.425E+08	826.57
	NON-PEAK	6.00	1669355.	0.	-14396.	0.	0.	.341E+10	.425E+08	826.61
	PEAK	4.00	1112903.	0.	-9601.	-12008280.	0.	.340E+10	.424E+08	826.33
	NON-PEAK	8.00	2225807.	8709468.	-19154.	0.	0.	.341E+10	.425E+08	826.61
	NON-PEAK	3.30	918145.	0.	-7921.	0.	0.	.341E+10	.425E+08	826.64

16	PEAK	2.70	751210.	0.	-6482.	-11730000.	0.	.340E+10	.424E+08	826.36
	NON-PEAK	6.00	1669355.	0.	-14368.	0.	0.	.340E+10	.424E+08	826.40
	PEAK	4.00	1112903.	0.	-9582.	-12008280.	0.	.339E+10	.423E+08	826.12
	NON-PEAK	8.00	2225807.	8709467.	-19117.	0.	0.	.340E+10	.424E+08	826.40
	NON-PEAK	3.30	918145.	0.	-7905.	0.	0.	.340E+10	.424E+08	826.42
17	PEAK	2.70	751210.	0.	-6469.	-11730000.	0.	.339E+10	.423E+08	826.14
	NON-PEAK	6.00	1669355.	0.	-14340.	0.	0.	.339E+10	.423E+08	826.18
	PEAK	4.00	1112903.	0.	-9564.	-12008280.	0.	.338E+10	.422E+08	825.90
	NON-PEAK	8.00	2225807.	8709467.	-19080.	0.	0.	.339E+10	.423E+08	826.18
	NON-PEAK	3.30	918145.	0.	-7890.	0.	0.	.339E+10	.424E+08	826.21
18	PEAK	2.70	751210.	0.	-6457.	-11730000.	0.	.338E+10	.423E+08	825.92
	NON-PEAK	6.00	1669355.	0.	-14313.	0.	0.	.338E+10	.423E+08	825.97
	PEAK	4.00	1112903.	0.	-9545.	-12008280.	0.	.337E+10	.422E+08	825.69
	NON-PEAK	8.00	2225807.	8709467.	-19043.	0.	0.	.338E+10	.423E+08	825.97
	NON-PEAK	3.30	918145.	0.	-7875.	0.	0.	.338E+10	.423E+08	825.99
19	PEAK	2.70	751210.	0.	-6444.	-11730000.	0.	.337E+10	.422E+08	825.71
	NON-PEAK	6.00	1669355.	0.	-14285.	0.	0.	.337E+10	.422E+08	825.75
	PEAK	4.00	1112903.	0.	-9527.	-12008280.	0.	.336E+10	.421E+08	825.47
	NON-PEAK	8.00	2225807.	8709467.	-19006.	0.	0.	.337E+10	.422E+08	825.75
	NON-PEAK	3.30	918145.	0.	-7860.	0.	0.	.338E+10	.422E+08	825.77
20	PEAK	2.70	751210.	0.	-6432.	-11730000.	0.	.336E+10	.421E+08	825.49
	NON-PEAK	6.00	1669355.	0.	-14257.	0.	0.	.337E+10	.421E+08	825.54
	PEAK	4.00	1112903.	0.	-9508.	-12008280.	0.	.335E+10	.420E+08	825.26
	NON-PEAK	8.00	2225807.	8709467.	-18969.	0.	0.	.337E+10	.421E+08	825.54
	NON-PEAK	3.30	918145.	0.	-7844.	0.	0.	.337E+10	.421E+08	825.56
21	PEAK	2.02	562016.	0.	-4803.	-8983975.	0.	.336E+10	.420E+08	825.34
	NON-PEAK	6.00	1669355.	0.	-14238.	0.	0.	.336E+10	.420E+08	825.39
	PEAK	4.00	1112903.	0.	-9495.	-8983974.	0.	.335E+10	.420E+08	825.18
	NON-PEAK	4.60	1279839.	5068359.	-10900.	0.	0.	.336E+10	.420E+08	825.35
	NON-PEAK	7.38	2053306.	0.	-17513.	0.	0.	.336E+10	.421E+08	825.40
22	PEAK	2.02	562016.	0.	-4796.	-8983975.	0.	.335E+10	.420E+08	825.18
	NON-PEAK	6.00	1669355.	0.	-14217.	0.	0.	.335E+10	.420E+08	825.22
	PEAK	4.00	1112903.	0.	-9482.	-8983974.	0.	.335E+10	.419E+08	825.02
	NON-PEAK	4.60	1279839.	2939247.	-10884.	0.	0.	.335E+10	.419E+08	825.13
	NON-PEAK	7.38	2053306.	0.	-17479.	0.	0.	.335E+10	.420E+08	825.18
23	PEAK	2.02	562016.	0.	-4786.	-8983975.	0.	.334E+10	.419E+08	824.97
	NON-PEAK	6.00	1669355.	0.	-14189.	0.	0.	.335E+10	.419E+08	825.01
	PEAK	4.00	1112903.	0.	-9463.	-8983974.	0.	.334E+10	.418E+08	824.81
	NON-PEAK	4.60	1279839.	2939247.	-10863.	0.	0.	.334E+10	.419E+08	824.91
	NON-PEAK	7.38	2053306.	0.	-17445.	0.	0.	.334E+10	.419E+08	824.97

24	PEAK	2.02	562016.	0.	-4777.	-8983975.	0.	.334E+10	.418E+08	824.75
	NON-PEAK	6.00	1669355.	0.	-14162.	0.	0.	.334E+10	.418E+08	824.79
	PEAK	4.00	1112903.	0.	-9445.	-8983974.	0.	.333E+10	.417E+08	824.59
	NON-PEAK	4.60	1279839.	2939247.	-10841.	0.	0.	.333E+10	.418E+08	824.70
	NON-PEAK	7.38	2053306.	0.	-17411.	0.	0.	.334E+10	.418E+08	824.75
25	PEAK	2.02	562016.	0.	-4768.	-8983975.	0.	.333E+10	.417E+08	824.54
	NON-PEAK	6.00	1669355.	0.	-14134.	0.	0.	.333E+10	.417E+08	824.58
	PEAK	4.00	1112903.	0.	-9426.	-8983974.	0.	.332E+10	.417E+08	824.38
	NON-PEAK	4.60	1279839.	2939247.	-10820.	0.	0.	.332E+10	.417E+08	824.48
	NON-PEAK	7.38	2053306.	0.	-17376.	0.	0.	.333E+10	.417E+08	824.54
26	PEAK	2.02	562016.	0.	-4758.	-8983975.	0.	.332E+10	.416E+08	824.32
	NON-PEAK	6.00	1669355.	0.	-14106.	0.	0.	.332E+10	.417E+08	824.36
	PEAK	4.00	1112903.	0.	-9408.	-8983974.	0.	.331E+10	.416E+08	824.16
	NON-PEAK	4.60	1279839.	2939247.	-10799.	0.	0.	.332E+10	.416E+08	824.27
	NON-PEAK	7.38	2053306.	0.	-17342.	0.	0.	.332E+10	.416E+08	824.32
27	PEAK	2.02	562016.	0.	-4749.	-8983975.	0.	.331E+10	.416E+08	824.10
	NON-PEAK	6.00	1669355.	0.	-14078.	0.	0.	.331E+10	.416E+08	824.15
	PEAK	4.00	1112903.	0.	-9389.	-8983974.	0.	.330E+10	.415E+08	823.94
	NON-PEAK	4.60	1279839.	2939248.	-10778.	0.	0.	.331E+10	.415E+08	824.05
	NON-PEAK	7.38	2053306.	0.	-17308.	0.	0.	.331E+10	.416E+08	824.10
28	PEAK	2.02	562016.	0.	-4740.	-8983975.	0.	.330E+10	.415E+08	823.89
	NON-PEAK	6.00	1669355.	0.	-14051.	0.	0.	.330E+10	.415E+08	823.93
	PEAK	4.00	1112903.	0.	-9371.	-8983974.	0.	.330E+10	.414E+08	823.73
	NON-PEAK	4.60	1279839.	2939247.	-10756.	0.	0.	.330E+10	.415E+08	823.84
	NON-PEAK	7.38	2053306.	0.	-17274.	0.	0.	.330E+10	.415E+08	823.89
29	PEAK	2.02	562016.	0.	-4730.	-8983975.	0.	.329E+10	.414E+08	823.67
	NON-PEAK	6.00	1669355.	0.	-14023.	0.	0.	.329E+10	.414E+08	823.72
	PEAK	4.00	1112903.	0.	-9352.	-8983974.	0.	.329E+10	.413E+08	823.51
	NON-PEAK	4.60	1279839.	2939247.	-10735.	0.	0.	.329E+10	.414E+08	823.62
	NON-PEAK	7.38	2053306.	0.	-17240.	0.	0.	.329E+10	.414E+08	823.67
30	PEAK	2.02	562016.	0.	-4721.	-8983975.	0.	.328E+10	.413E+08	823.46
	NON-PEAK	6.00	1669355.	0.	-13995.	0.	0.	.329E+10	.413E+08	823.50
	PEAK	4.00	1112903.	0.	-9334.	-8983974.	0.	.328E+10	.413E+08	823.30
	NON-PEAK	4.60	1279839.	2939247.	-10714.	0.	0.	.328E+10	.413E+08	823.41
	NON-PEAK	7.38	2053306.	0.	-17206.	0.	0.	.328E+10	.413E+08	823.46
31	PEAK	2.02	562016.	0.	-4712.	-8983975.	0.	.328E+10	.412E+08	823.24
	NON-PEAK	6.00	1669355.	0.	-13967.	0.	0.	.328E+10	.412E+08	823.28
	PEAK	4.00	1112903.	0.	-9315.	-8983974.	0.	.327E+10	.412E+08	823.08
	NON-PEAK	4.60	1279839.	2939247.	-10693.	0.	0.	.327E+10	.412E+08	823.19
	NON-PEAK	7.38	2053306.	0.	-17172.	0.	0.	.328E+10	.412E+08	823.24

File name: ROBINT0.OUT for year 1963 with project operation schedule

MONTH OF : OCTOBER YEAR : 1963 OPERATION AT RESERVOIR B

DATE	PERIOD	DURATION (HR)	INFLB (M3)	QA (M3)	IRRS (M3)	EVAPLB (M3)	QPUMP (M3)	SPILLB (M3)	STOREB (M3)	BREA (M2)	EL.B (M)
									.551E+08	.198E+07	598.50
1	PEAK	2.10	0.	9010000.	-497339.	-565.	0.	0.	.636E+08	.213E+07	602.54
	NON-PEAK	6.00	0.	0.	-1420968.	-1736.	0.	0.	.622E+08	.211E+07	601.90
	PEAK	4.00	0.	3416304.	-947312.	-1145.	0.	0.	.647E+08	.215E+07	603.01
	NON-PEAK	8.00	0.	0.	-1894624.	-2333.	-773431.	0.	.620E+08	.211E+07	601.81
	NON-PEAK	3.90	2107904.	0.	-923629.	-1115.	0.	0.	.632E+08	.212E+07	602.34
2	PEAK	2.10	0.	9010000.	-497339.	-606.	0.	0.	.717E+08	.226E+07	606.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1843.	0.	0.	.703E+08	.224E+07	605.54
	PEAK	4.00	0.	9339775.	-947312.	-1216.	0.	0.	.787E+08	.238E+07	609.32
	NON-PEAK	8.00	0.	0.	-1894624.	-2580.	-6696769.	0.	.701E+08	.224E+07	605.45
	NON-PEAK	3.90	2107648.	0.	-923629.	-1184.	0.	0.	.713E+08	.226E+07	605.98
3	PEAK	2.10	0.	9010000.	-497339.	-643.	0.	0.	.798E+08	.239E+07	609.81
	NON-PEAK	6.00	0.	0.	-1420968.	-1949.	0.	0.	.784E+08	.237E+07	609.17
	PEAK	4.00	0.	9339775.	-947312.	-1287.	0.	-1234645.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-6696580.	0.	.769E+08	.235E+07	608.53
	NON-PEAK	3.90	2107392.	0.	-923629.	-1243.	0.	0.	.781E+08	.237E+07	609.06
4	PEAK	2.10	0.	9010000.	-497339.	-675.	0.	-1100535.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9339775.	-947312.	-1363.	0.	-6968056.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-6696580.	0.	.769E+08	.235E+07	608.53
	NON-PEAK	3.90	2107392.	0.	-923629.	-1243.	0.	0.	.781E+08	.237E+07	609.06
5	PEAK	2.10	0.	9010000.	-497339.	-675.	0.	-1100535.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9339775.	-947312.	-1363.	0.	-6968056.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-6696580.	0.	.769E+08	.235E+07	608.53
	NON-PEAK	3.90	2107392.	0.	-923629.	-1243.	0.	0.	.781E+08	.237E+07	609.06
6	PEAK	2.10	0.	9010000.	-497339.	-675.	0.	-1100535.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9339775.	-947312.	-1363.	0.	-6968056.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-6696580.	0.	.769E+08	.235E+07	608.53
	NON-PEAK	3.90	2107392.	0.	-923629.	-1243.	0.	0.	.781E+08	.237E+07	609.06
7	PEAK	2.10	0.	9010000.	-497339.	-675.	0.	-1100535.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9339775.	-947312.	-1363.	0.	-6968056.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-6696580.	0.	.769E+08	.235E+07	608.53
	NON-PEAK	3.90	2107392.	0.	-923629.	-1243.	0.	0.	.781E+08	.237E+07	609.06

8	PEAK	2.10	0.	9010000.	-497339.	-675.	0.	-1100535.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9339775.	-947312.	-1363.	0.	-6968056.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-6696580.	0.	.769E+08	.235E+07	608.53
	NON-PEAK	3.90	2107392.	0.	-923629.	-1243.	0.	0.	.781E+08	.237E+07	609.06
9	PEAK	2.10	0.	9010000.	-497339.	-675.	0.	-1100535.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9339775.	-947312.	-1363.	0.	-6968056.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-6696580.	0.	.769E+08	.235E+07	608.53
	NON-PEAK	3.90	2107392.	0.	-923629.	-1243.	0.	0.	.781E+08	.237E+07	609.06
10	PEAK	2.10	0.	9010000.	-497339.	-675.	0.	-1100535.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9339775.	-947312.	-1363.	0.	-6968056.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-6696580.	0.	.769E+08	.235E+07	608.53
	NON-PEAK	3.90	2107392.	0.	-923629.	-1243.	0.	0.	.781E+08	.237E+07	609.06
11	PEAK	2.20	0.	9160000.	-521022.	-707.	0.	-1226820.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80
12	PEAK	2.20	0.	9160000.	-521022.	-704.	0.	-655980.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80
13	PEAK	2.20	0.	9160000.	-521022.	-704.	0.	-655980.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80
14	PEAK	2.20	0.	9160000.	-521022.	-704.	0.	-655980.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80
15	PEAK	2.20	0.	9160000.	-521022.	-704.	0.	-655980.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80

16	PEAK	2.20	0.	9160000.	-521022.	-704.	0.	-655980.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80
17	PEAK	2.20	0.	9160000.	-521022.	-704.	0.	-655980.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80
18	PEAK	2.20	0.	9160000.	-521022.	-704.	0.	-655980.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80
19	PEAK	2.20	0.	9160000.	-521022.	-704.	0.	-655980.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80
20	PEAK	2.20	0.	9160000.	-521022.	-704.	0.	-655980.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	9784527.	-947312.	-1363.	0.	-7412808.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-7257606.	0.	.764E+08	.234E+07	608.27
	NON-PEAK	3.80	2073856.	0.	-899946.	-1206.	0.	0.	.775E+08	.236E+07	608.80
21	PEAK	1.00	0.	4290000.	-236828.	-320.	0.	0.	.816E+08	.244E+07	610.52
	NON-PEAK	6.00	0.	0.	-1420968.	-1987.	0.	0.	.802E+08	.240E+07	609.99
	PEAK	4.00	0.	4447512.	-947312.	-1303.	0.	0.	.837E+08	.250E+07	611.30
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2713.	0.	0.	.839E+08	.251E+07	611.40
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1700.	0.	-86300.	.855E+08	.255E+07	612.00
22	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00
23	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00

24	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00
25	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00
26	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00
27	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00
28	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00
29	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00
30	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00
31	PEAK	1.00	0.	4290000.	-236828.	-346.	0.	-4052826.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	4447512.	-947312.	-1363.	0.	-2075793.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	2156288.	0.	-1894624.	-2769.	0.	-258895.	.855E+08	.255E+07	612.00
	NON-PEAK	5.00	2866688.	0.	-1184140.	-1731.	0.	-1680818.	.855E+08	.255E+07	612.00

-.220E+09

MONTH OF : NOVEMBER YEAR : 1963 OPERATION AT RESERVOIR B

DATE	PERIOD	DURATION (HR)	INFLB (M3)	QA (M3)	IRRS (M3)	EVAPLB (M3)	QPUMP (M3)	SPILLB (M3)	STOREB (M3)	BREA (M2)	EL.B (M)
									.855E+08	.255E+07	612.00
1	PEAK	.60	0.	2650000.	-284333.	-145.	0.	-2365522.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-2843333.	-1445.	0.	0.	.827E+08	.247E+07	610.93
	PEAK	4.00	0.	2668508.	-1895556.	-933.	0.	0.	.834E+08	.249E+07	611.22
	NON-PEAK	8.00	1398784.	0.	-3791111.	-1883.	0.	0.	.811E+08	.242E+07	610.32
	NON-PEAK	5.40	1950208.	0.	-2559000.	-1236.	0.	0.	.804E+08	.241E+07	610.09
2	PEAK	.60	0.	2650000.	-284333.	-136.	0.	0.	.828E+08	.247E+07	610.98
	NON-PEAK	6.00	0.	0.	-2843333.	-1402.	0.	0.	.800E+08	.240E+07	609.89
	PEAK	4.00	0.	2668508.	-1895556.	-905.	0.	0.	.807E+08	.242E+07	610.20
	NON-PEAK	8.00	1398784.	0.	-3791111.	-1825.	0.	0.	.783E+08	.237E+07	609.16
	NON-PEAK	5.40	1950208.	0.	-2559000.	-1209.	0.	0.	.777E+08	.236E+07	608.89
3	PEAK	.60	0.	2650000.	-284333.	-134.	0.	0.	.801E+08	.240E+07	609.95
	NON-PEAK	6.00	0.	0.	-2843333.	-1359.	0.	0.	.773E+08	.235E+07	608.67
	PEAK	4.00	0.	2668508.	-1895556.	-889.	0.	0.	.780E+08	.236E+07	609.02
	NON-PEAK	8.00	1398784.	0.	-3791111.	-1787.	0.	0.	.756E+08	.233E+07	607.94
	NON-PEAK	5.40	1950208.	0.	-2559000.	-1186.	0.	0.	.750E+08	.232E+07	607.67
4	PEAK	.60	0.	2650000.	-284333.	-131.	0.	0.	.774E+08	.235E+07	608.73
	NON-PEAK	6.00	0.	0.	-2843333.	-1334.	0.	0.	.745E+08	.231E+07	607.45
	PEAK	4.00	0.	2668508.	-1895556.	-872.	0.	0.	.753E+08	.232E+07	607.80
	NON-PEAK	8.00	1398784.	0.	-3791111.	-1754.	0.	0.	.729E+08	.228E+07	606.72
	NON-PEAK	5.40	1950208.	0.	-2559000.	-1164.	0.	0.	.723E+08	.227E+07	606.45
5	PEAK	.60	0.	2650000.	-284333.	-129.	0.	0.	.747E+08	.231E+07	607.51
	NON-PEAK	6.00	0.	0.	-2843333.	-1309.	0.	0.	.718E+08	.226E+07	606.23
	PEAK	4.00	0.	2668508.	-1895556.	-856.	0.	0.	.726E+08	.228E+07	606.58
	NON-PEAK	8.00	1398784.	0.	-3791111.	-1720.	0.	0.	.702E+08	.224E+07	605.50
	NON-PEAK	5.40	1950208.	0.	-2559000.	-1142.	0.	0.	.696E+08	.223E+07	605.22
6	PEAK	.60	0.	2650000.	-284333.	-126.	0.	0.	.720E+08	.227E+07	606.29
	NON-PEAK	6.00	0.	0.	-2843333.	-1285.	0.	0.	.691E+08	.222E+07	605.01
	PEAK	4.00	0.	2668508.	-1895556.	-839.	0.	0.	.699E+08	.223E+07	605.36
	NON-PEAK	8.00	1398784.	0.	-3791111.	-1687.	0.	0.	.675E+08	.219E+07	604.28
	NON-PEAK	5.40	1950208.	0.	-2559000.	-1119.	0.	0.	.669E+08	.218E+07	604.00
7	PEAK	.60	0.	2650000.	-284333.	-124.	0.	0.	.693E+08	.222E+07	605.07
	NON-PEAK	6.00	0.	0.	-2843333.	-1260.	0.	0.	.664E+08	.218E+07	603.79
	PEAK	4.00	0.	2150172.	-1895556.	-822.	0.	0.	.667E+08	.218E+07	603.90
	NON-PEAK	8.00	1917184.	0.	-3791111.	-1648.	0.	0.	.648E+08	.215E+07	603.06
	NON-PEAK	5.40	1950208.	0.	-2559000.	-1097.	0.	0.	.642E+08	.214E+07	602.78

8 PEAK	.60	0.	2650000.	-284333.	-121.	0.	0.	.665E+08	.218E+07	603.85
NON-PEAK	6.00	0.	0.	-2843333.	-1235.	0.	0.	.637E+08	.213E+07	602.57
PEAK	4.00	0.	2150172.	-1895556.	-806.	0.	0.	.640E+08	.214E+07	602.68
NON-PEAK	8.00	1917184.	0.	-3791111.	-1614.	0.	0.	.621E+08	.211E+07	601.84
NON-PEAK	5.40	1950208.	0.	-2559000.	-1074.	0.	0.	.615E+08	.210E+07	601.56
9 PEAK	.60	0.	2650000.	-284333.	-119.	0.	0.	.638E+08	.213E+07	602.63
NON-PEAK	6.00	0.	0.	-2843333.	-1210.	0.	0.	.610E+08	.209E+07	601.35
PEAK	4.00	0.	2150172.	-1895556.	-789.	0.	0.	.612E+08	.209E+07	601.46
NON-PEAK	8.00	1917184.	0.	-3791111.	-1581.	0.	0.	.594E+08	.206E+07	600.62
NON-PEAK	5.40	1950208.	0.	-2559000.	-1052.	0.	0.	.588E+08	.205E+07	600.34
10 PEAK	.60	0.	2650000.	-284333.	-116.	0.	0.	.611E+08	.209E+07	601.41
NON-PEAK	6.00	0.	0.	-2843333.	-1185.	0.	0.	.583E+08	.204E+07	600.12
PEAK	4.00	0.	2150172.	-1895556.	-772.	0.	0.	.585E+08	.205E+07	600.24
NON-PEAK	8.00	1917184.	0.	-3791111.	-1548.	0.	0.	.567E+08	.201E+07	599.30
NON-PEAK	5.40	1950208.	0.	-2559000.	-1027.	0.	0.	.560E+08	.200E+07	598.98
11 PEAK	.70	0.	3020000.	-331722.	-132.	0.	0.	.587E+08	.205E+07	600.33
NON-PEAK	6.00	0.	0.	-2843333.	-1163.	0.	0.	.559E+08	.200E+07	598.89
PEAK	4.00	0.	2150173.	-1895556.	-754.	0.	0.	.561E+08	.200E+07	599.03
NON-PEAK	8.00	1583360.	0.	-2588107.	-1513.	0.	0.	.551E+08	.198E+07	598.50
NON-PEAK	5.30	1914112.	0.	-1913640.	-992.	0.	0.	.551E+08	.198E+07	598.50
12 PEAK	.70	0.	3020000.	-331722.	-131.	0.	0.	.578E+08	.204E+07	599.91
NON-PEAK	6.00	0.	0.	-2686834.	-1154.	0.	0.	.551E+08	.198E+07	598.50
PEAK	4.00	0.	2150173.	-1895556.	-749.	0.	0.	.554E+08	.199E+07	598.63
NON-PEAK	8.00	1583360.	0.	-1835379.	-1501.	0.	0.	.551E+08	.198E+07	598.50
NON-PEAK	5.30	1914112.	0.	-1913628.	-992.	0.	0.	.551E+08	.198E+07	598.50
13 PEAK	.70	0.	3020000.	-331722.	-131.	0.	0.	.578E+08	.204E+07	599.91
NON-PEAK	6.00	0.	0.	-2686830.	-1154.	0.	0.	.551E+08	.198E+07	598.50
PEAK	4.00	0.	2150173.	-1895556.	-749.	0.	0.	.554E+08	.199E+07	598.63
NON-PEAK	8.00	1583360.	0.	-1835383.	-1501.	0.	0.	.551E+08	.198E+07	598.50
NON-PEAK	5.30	1914112.	0.	-1913628.	-992.	0.	0.	.551E+08	.198E+07	598.50
14 PEAK	.70	0.	3020000.	-331722.	-131.	0.	0.	.578E+08	.204E+07	599.91
NON-PEAK	6.00	0.	0.	-2686830.	-1154.	0.	0.	.551E+08	.198E+07	598.50
PEAK	4.00	0.	2150173.	-1895556.	-749.	0.	0.	.554E+08	.199E+07	598.63
NON-PEAK	8.00	1583360.	0.	-1835383.	-1501.	0.	0.	.551E+08	.198E+07	598.50
NON-PEAK	5.30	1914112.	0.	-1913628.	-992.	0.	0.	.551E+08	.198E+07	598.50
15 PEAK	.70	0.	3020000.	-331722.	-131.	0.	0.	.578E+08	.204E+07	599.91
NON-PEAK	6.00	0.	0.	-2686830.	-1154.	0.	0.	.551E+08	.198E+07	598.50
PEAK	4.00	0.	2150173.	-1895556.	-749.	0.	0.	.554E+08	.199E+07	598.63
NON-PEAK	8.00	1583360.	0.	-1835383.	-1501.	0.	0.	.551E+08	.198E+07	598.50
NON-PEAK	5.30	1914112.	0.	-1913628.	-992.	0.	0.	.551E+08	.198E+07	598.50

16	PEAK	.70	0.	3020000.	-331722.	-131.	0.	0.	.578E+08	.204E+07	599.91
	NON-PEAK	6.00	0.	0.	-2686830.	-1154.	0.	0.	.551E+08	.198E+07	598.50
	PEAK	4.00	0.	2150173.	-1895556.	-749.	0.	0.	.554E+08	.199E+07	598.63
	NON-PEAK	8.00	1583360.	0.	-1835383.	-1501.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.30	1914112.	0.	-1913628.	-992.	0.	0.	.551E+08	.198E+07	598.50
17	PEAK	.70	0.	3020000.	-331722.	-131.	0.	0.	.578E+08	.204E+07	599.91
	NON-PEAK	6.00	0.	0.	-2686830.	-1154.	0.	0.	.551E+08	.198E+07	598.50
	PEAK	4.00	0.	2150173.	-1895556.	-749.	0.	0.	.554E+08	.199E+07	598.63
	NON-PEAK	8.00	1583360.	0.	-1835383.	-1501.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.30	1914112.	0.	-1913628.	-992.	0.	0.	.551E+08	.198E+07	598.50
18	PEAK	.70	0.	3020000.	-331722.	-131.	0.	0.	.578E+08	.204E+07	599.91
	NON-PEAK	6.00	0.	0.	-2686830.	-1154.	0.	0.	.551E+08	.198E+07	598.50
	PEAK	4.00	0.	2150173.	-1895556.	-749.	0.	0.	.554E+08	.199E+07	598.63
	NON-PEAK	8.00	1583360.	0.	-1835379.	-1501.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.30	1914112.	0.	-1913632.	-992.	0.	0.	.551E+08	.198E+07	598.50
19	PEAK	.70	0.	3020000.	-331722.	-131.	0.	0.	.578E+08	.204E+07	599.91
	NON-PEAK	6.00	0.	0.	-2686830.	-1154.	0.	0.	.551E+08	.198E+07	598.50
	PEAK	4.00	0.	2150173.	-1895556.	-749.	0.	0.	.554E+08	.199E+07	598.63
	NON-PEAK	8.00	1583360.	0.	-1835379.	-1501.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.30	1914112.	0.	-1913632.	-992.	0.	0.	.551E+08	.198E+07	598.50
20	PEAK	.70	0.	3020000.	-331722.	-131.	0.	0.	.578E+08	.204E+07	599.91
	NON-PEAK	6.00	0.	0.	-2686830.	-1154.	0.	0.	.551E+08	.198E+07	598.50
	PEAK	4.00	0.	2150173.	-1895556.	-749.	0.	0.	.554E+08	.199E+07	598.63
	NON-PEAK	8.00	1583360.	0.	-1835379.	-1501.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.30	1914112.	0.	-1913632.	-992.	0.	0.	.551E+08	.198E+07	598.50
21	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667498.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877571.	-973.	0.	0.	.551E+08	.198E+07	598.50
22	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667478.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877571.	-973.	0.	0.	.551E+08	.198E+07	598.50
23	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667482.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877571.	-973.	0.	0.	.551E+08	.198E+07	598.50

24	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667478.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877575.	-973.	0.	0.	.551E+08	.198E+07	598.50
25	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667478.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877571.	-973.	0.	0.	.551E+08	.198E+07	598.50
26	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667482.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877571.	-973.	0.	0.	.551E+08	.198E+07	598.50
27	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667478.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877571.	-973.	0.	0.	.551E+08	.198E+07	598.50
28	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667482.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877571.	-973.	0.	0.	.551E+08	.198E+07	598.50
29	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667478.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877575.	-973.	0.	0.	.551E+08	.198E+07	598.50
30	PEAK	.80	0.	3300000.	-379111.	-150.	0.	0.	.581E+08	.204E+07	600.03
	NON-PEAK	6.00	0.	0.	-2843333.	-1157.	0.	0.	.552E+08	.198E+07	598.54
	PEAK	4.00	0.	2150174.	-1895556.	-749.	0.	0.	.555E+08	.199E+07	598.67
	NON-PEAK	8.00	1339392.	0.	-1667478.	-1502.	0.	0.	.551E+08	.198E+07	598.50
	NON-PEAK	5.20	1878016.	0.	-1877571.	-973.	0.	0.	.551E+08	.198E+07	598.50

-.237E+07

MONTH OF : DECEMBER YEAR : 1963 OPERATION AT RESERVOIR B

DATE	PERIOD	DURATION (HR)	INFLB (M3)	QA (M3)	IRRS (M3)	EVAPLB (M3)	QPUMP (M3)	SPILLB (M3)	STOREB (M3)	BREA (M2)	EL.B (M)
									.551E+08	.198E+07	598.50
1	PEAK	2.30	0.	10229280.	-1439973.	-257.	0.	0.	.639E+08	.214E+07	602.67
	NON-PEAK	6.00	0.	0.	-3756452.	-724.	0.	0.	.602E+08	.208E+07	600.98
	PEAK	4.00	0.	10229280.	-2504301.	-469.	0.	0.	.679E+08	.220E+07	604.46
	NON-PEAK	8.00	0.	0.	-5008602.	-994.	-422679.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97
2	PEAK	2.30	0.	10229280.	-1439973.	-269.	0.	0.	.689E+08	.222E+07	604.92
	NON-PEAK	6.00	0.	0.	-3756452.	-751.	0.	0.	.652E+08	.216E+07	603.23
	PEAK	4.00	0.	10229280.	-2504301.	-487.	0.	0.	.729E+08	.228E+07	606.71
	NON-PEAK	8.00	0.	0.	-5008602.	-1031.	-5429771.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97
3	PEAK	2.30	0.	10229280.	-1439973.	-269.	0.	0.	.689E+08	.222E+07	604.92
	NON-PEAK	6.00	0.	0.	-3756452.	-751.	0.	0.	.652E+08	.216E+07	603.23
	PEAK	4.00	0.	10229280.	-2504301.	-487.	0.	0.	.729E+08	.228E+07	606.71
	NON-PEAK	8.00	0.	0.	-5008602.	-1031.	-5429770.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97
4	PEAK	2.30	0.	10229280.	-1439973.	-269.	0.	0.	.689E+08	.222E+07	604.92
	NON-PEAK	6.00	0.	0.	-3756452.	-751.	0.	0.	.652E+08	.216E+07	603.23
	PEAK	4.00	0.	10229280.	-2504301.	-487.	0.	0.	.729E+08	.228E+07	606.71
	NON-PEAK	8.00	0.	0.	-5008602.	-1031.	-5429771.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97
5	PEAK	2.30	0.	10229280.	-1439973.	-269.	0.	0.	.689E+08	.222E+07	604.92
	NON-PEAK	6.00	0.	0.	-3756452.	-751.	0.	0.	.652E+08	.216E+07	603.23
	PEAK	4.00	0.	10229280.	-2504301.	-487.	0.	0.	.729E+08	.228E+07	606.71
	NON-PEAK	8.00	0.	0.	-5008602.	-1031.	-5429770.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97
6	PEAK	2.30	0.	10229280.	-1439973.	-269.	0.	0.	.689E+08	.222E+07	604.92
	NON-PEAK	6.00	0.	0.	-3756452.	-751.	0.	0.	.652E+08	.216E+07	603.23
	PEAK	4.00	0.	10229280.	-2504301.	-487.	0.	0.	.729E+08	.228E+07	606.71
	NON-PEAK	8.00	0.	0.	-5008602.	-1031.	-5429771.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97
7	PEAK	2.30	0.	10229280.	-1439973.	-269.	0.	0.	.689E+08	.222E+07	604.92
	NON-PEAK	6.00	0.	0.	-3756452.	-751.	0.	0.	.652E+08	.216E+07	603.23
	PEAK	4.00	0.	10229280.	-2504301.	-487.	0.	0.	.729E+08	.228E+07	606.71
	NON-PEAK	8.00	0.	0.	-5008602.	-1031.	-5429771.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97

8	PEAK	2.30	0.	10229280.	-1439973.	-269.	0.	0.	.689E+08	.222E+07	604.92
	NON-PEAK	6.00	0.	0.	-3756452.	-751.	0.	0.	.652E+08	.216E+07	603.23
	PEAK	4.00	0.	10229280.	-2504301.	-487.	0.	0.	.729E+08	.228E+07	606.71
	NON-PEAK	8.00	0.	0.	-5008602.	-1031.	-5429770.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97
9	PEAK	2.30	0.	10229280.	-1439973.	-269.	0.	0.	.689E+08	.222E+07	604.92
	NON-PEAK	6.00	0.	0.	-3756452.	-751.	0.	0.	.652E+08	.216E+07	603.23
	PEAK	4.00	0.	10229280.	-2504301.	-487.	0.	0.	.729E+08	.228E+07	606.71
	NON-PEAK	8.00	0.	0.	-5008602.	-1031.	-5429771.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97
10	PEAK	2.30	0.	10229280.	-1439973.	-269.	0.	0.	.689E+08	.222E+07	604.92
	NON-PEAK	6.00	0.	0.	-3756452.	-751.	0.	0.	.652E+08	.216E+07	603.23
	PEAK	4.00	0.	10229280.	-2504301.	-487.	0.	0.	.729E+08	.228E+07	606.71
	NON-PEAK	8.00	0.	0.	-5008602.	-1031.	-5429770.	0.	.625E+08	.211E+07	602.01
	NON-PEAK	3.70	0.	0.	-2316479.	-441.	0.	0.	.601E+08	.207E+07	600.97
11	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709418.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97
12	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709467.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97
13	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709467.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97
14	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709467.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97
15	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709468.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97

16	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709467.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97
17	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709467.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97
18	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709467.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97
19	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709467.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97
20	PEAK	2.70	0.	11730000.	-1690403.	-316.	0.	0.	.702E+08	.224E+07	605.49
	NON-PEAK	6.00	0.	0.	-3756452.	-758.	0.	0.	.664E+08	.218E+07	603.80
	PEAK	4.00	0.	12008280.	-2504301.	-492.	0.	0.	.759E+08	.233E+07	608.08
	NON-PEAK	8.00	0.	0.	-5008602.	-1053.	-8709467.	0.	.622E+08	.211E+07	601.90
	NON-PEAK	3.30	0.	0.	-2066048.	-393.	0.	0.	.601E+08	.207E+07	600.97
21	PEAK	2.02	0.	8983975.	-1264672.	-237.	0.	0.	.679E+08	.220E+07	604.44
	NON-PEAK	6.00	0.	0.	-3756452.	-745.	0.	0.	.641E+08	.214E+07	602.75
	PEAK	4.00	0.	8983974.	-2504301.	-483.	0.	0.	.706E+08	.224E+07	605.67
	NON-PEAK	4.60	0.	0.	-2879946.	-583.	-5068359.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01
22	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939247.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01
23	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939247.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01

24	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939247.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01
25	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939247.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01
26	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939247.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01
27	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939248.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01
28	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939247.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01
29	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939247.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01
30	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939247.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01
31	PEAK	2.02	0.	8983975.	-1264672.	-233.	0.	0.	.657E+08	.217E+07	603.48
	NON-PEAK	6.00	0.	0.	-3756452.	-734.	0.	0.	.620E+08	.210E+07	601.79
	PEAK	4.00	0.	8983974.	-2504301.	-475.	0.	0.	.685E+08	.221E+07	604.71
	NON-PEAK	4.60	0.	0.	-2879946.	-574.	-2939247.	0.	.626E+08	.212E+07	602.09
	NON-PEAK	7.38	0.	0.	-4620435.	-881.	0.	0.	.580E+08	.204E+07	600.01

.000E+00
.222E+09

File name: ENGINT0.OUT for year 1963 with project operation schedule

MONTH OF : OCTOBER YEAR : 1963 ENERGY GENERATION IN U/S, D/S POWER HOUSE AND % MEETING IRR.DEMAND

DATE	PERIOD	DURATION (HR)	GROSSH (M)	NETTH (M)	Q (M3/S)	STARTP (MW)	ENDP (MW)	AV.ENERGY (MWh)	QD (M3/S)	ENERGY (MWh)	TOT.ENERGY (MWh)	IRR. (%)
1	PEAK	2.10	227.	213.	1192.	2156.	2114.	4483.	66.	86.	4570.	100.
	NON-PEAK	6.00	228.	228.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	227.	226.	237.	450.	448.	1795.	66.	165.	1960.	100.
	NON-PEAK	8.00	228.	228.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	228.	228.	0.	0.	0.	0.	66.	160.	160.	100.
2	PEAK	2.10	224.	209.	1192.	2118.	2078.	4405.	66.	86.	4492.	100.
	NON-PEAK	6.00	224.	224.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	220.	216.	649.	1190.	1169.	4717.	66.	165.	4882.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	224.	224.	0.	0.	0.	0.	66.	160.	160.	100.
3	PEAK	2.10	220.	205.	1192.	2082.	2042.	4329.	66.	86.	4416.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	649.	1170.	1154.	4649.	66.	165.	4814.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	221.	221.	0.	0.	0.	0.	66.	160.	160.	100.
4	PEAK	2.10	218.	203.	1192.	2051.	2020.	4275.	66.	86.	4361.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	649.	1158.	1154.	4624.	66.	165.	4789.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	221.	221.	0.	0.	0.	0.	66.	160.	160.	100.
5	PEAK	2.10	218.	203.	1192.	2051.	2020.	4275.	66.	86.	4361.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	649.	1158.	1154.	4624.	66.	165.	4789.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	221.	221.	0.	0.	0.	0.	66.	160.	160.	100.
6	PEAK	2.10	218.	203.	1192.	2051.	2020.	4275.	66.	86.	4361.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	649.	1158.	1154.	4624.	66.	165.	4789.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	221.	221.	0.	0.	0.	0.	66.	160.	160.	100.
7	PEAK	2.10	218.	203.	1192.	2051.	2020.	4275.	66.	86.	4361.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	649.	1158.	1154.	4624.	66.	165.	4789.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	221.	221.	0.	0.	0.	0.	66.	160.	160.	100.

8	PEAK	2.10	218.	203.	1192.	2051.	2020.	4275.	66.	86.	4361.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	649.	1158.	1154.	4624.	66.	165.	4789.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	221.	221.	0.	0.	0.	0.	66.	160.	160.	100.
9	PEAK	2.10	218.	203.	1192.	2051.	2020.	4275.	66.	86.	4361.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	649.	1158.	1154.	4624.	66.	165.	4789.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	221.	221.	0.	0.	0.	0.	66.	160.	160.	100.
10	PEAK	2.10	218.	203.	1192.	2051.	2020.	4275.	66.	86.	4361.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	649.	1158.	1154.	4624.	66.	165.	4789.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.90	221.	221.	0.	0.	0.	0.	66.	160.	160.	100.
11	PEAK	2.20	218.	204.	1157.	1999.	1968.	4364.	66.	91.	4454.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.
12	PEAK	2.20	218.	204.	1157.	2001.	1968.	4366.	66.	91.	4457.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.
13	PEAK	2.20	218.	204.	1157.	2001.	1968.	4366.	66.	91.	4457.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.
14	PEAK	2.20	218.	204.	1157.	2001.	1968.	4366.	66.	91.	4457.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.
15	PEAK	2.20	218.	204.	1157.	2001.	1968.	4366.	66.	91.	4457.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.

16	PEAK	2.20	218.	204.	1157.	2001.	1968.	4366.	66.	91.	4457.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.
17	PEAK	2.20	218.	204.	1157.	2001.	1968.	4366.	66.	91.	4457.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.
18	PEAK	2.20	218.	204.	1157.	2001.	1968.	4366.	66.	91.	4457.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.
19	PEAK	2.20	218.	204.	1157.	2001.	1968.	4366.	66.	91.	4457.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.
20	PEAK	2.20	218.	204.	1157.	2001.	1968.	4366.	66.	91.	4457.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	213.	679.	1211.	1207.	4835.	66.	165.	4999.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.80	221.	221.	0.	0.	0.	0.	66.	156.	156.	100.
21	PEAK	1.00	219.	205.	1192.	2053.	2035.	2044.	66.	41.	2086.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	219.	218.	309.	564.	561.	2249.	66.	165.	2414.	100.
	NON-PEAK	8.00	219.	219.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
22	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
23	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.

24	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
25	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
26	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
27	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
28	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
29	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
30	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
31	PEAK	1.00	218.	203.	1192.	2022.	2021.	2021.	66.	41.	2062.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	217.	309.	560.	559.	2238.	66.	165.	2403.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	5.00	218.	218.	0.	0.	0.	0.	66.	206.	206.	100.
T O T A L =								225566.			256175.	
AVERAGE % 10 DAILY IRR.SUPPLY =										100.00	100.00	100.00

MONTH OF : NOVEMBER YEAR : 1963 ENERGY GENERATION IN U/S, D/S POWER HOUSE AND % MEETING IRR.DEMAND

DATE	PERIOD	DURATION (HR)	GROSSH (M)	NETTH (M)	Q (M3/S)	STARTP (MW)	ENDP (MW)	AV.ENERGY (MWh)	QD (M3/S)	ENERGY (MWh)	TOT.ENERGY (MWh)	IRR. (%)
1	PEAK	.60	218.	203.	1227.	2072.	2072.	1243.	132.	49.	1293.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	219.	218.	185.	338.	337.	1351.	132.	329.	1680.	100.
	NON-PEAK	8.00	220.	220.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	220.	220.	0.	0.	0.	0.	132.	445.	445.	100.
2	PEAK	.60	219.	204.	1227.	2092.	2082.	1252.	132.	49.	1302.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	220.	219.	185.	340.	339.	1357.	132.	329.	1686.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	221.	221.	0.	0.	0.	0.	132.	445.	445.	100.
3	PEAK	.60	220.	205.	1227.	2104.	2093.	1259.	132.	49.	1309.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	221.	221.	185.	341.	341.	1365.	132.	329.	1694.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	222.	222.	0.	0.	0.	0.	132.	445.	445.	100.
4	PEAK	.60	221.	206.	1227.	2117.	2105.	1267.	132.	49.	1316.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	222.	222.	185.	343.	343.	1372.	132.	329.	1701.	100.
	NON-PEAK	8.00	223.	223.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	224.	224.	0.	0.	0.	0.	132.	445.	445.	100.
5	PEAK	.60	222.	207.	1227.	2129.	2118.	1274.	132.	49.	1323.	100.
	NON-PEAK	6.00	224.	224.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	223.	223.	185.	345.	345.	1380.	132.	329.	1709.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	225.	225.	0.	0.	0.	0.	132.	445.	445.	100.
6	PEAK	.60	224.	208.	1227.	2142.	2130.	1282.	132.	49.	1331.	100.
	NON-PEAK	6.00	225.	225.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	225.	224.	185.	347.	347.	1387.	132.	329.	1717.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	226.	226.	0.	0.	0.	0.	132.	445.	445.	100.
7	PEAK	.60	225.	209.	1227.	2154.	2143.	1289.	132.	49.	1338.	100.
	NON-PEAK	6.00	226.	226.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	226.	226.	149.	281.	281.	1125.	132.	329.	1454.	100.
	NON-PEAK	8.00	227.	227.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	227.	227.	0.	0.	0.	0.	132.	445.	445.	100.

8	PEAK	.60	226.	211.	1227.	2167.	2155.	1297.	132.	49.	1346.	100.
	NON-PEAK	6.00	227.	227.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	227.	227.	149.	283.	283.	1131.	132.	329.	1460.	100.
	NON-PEAK	8.00	228.	228.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	228.	228.	0.	0.	0.	0.	132.	445.	445.	100.
9	PEAK	.60	227.	212.	1227.	2179.	2168.	1304.	132.	49.	1353.	100.
	NON-PEAK	6.00	229.	229.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	229.	228.	149.	284.	284.	1137.	132.	329.	1467.	100.
	NON-PEAK	8.00	229.	229.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	230.	230.	0.	0.	0.	0.	132.	445.	445.	100.
10	PEAK	.60	229.	213.	1227.	2192.	2180.	1312.	132.	49.	1361.	100.
	NON-PEAK	6.00	230.	230.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	230.	230.	149.	286.	286.	1143.	132.	329.	1473.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	5.40	231.	231.	0.	0.	0.	0.	132.	445.	445.	100.
11	PEAK	.70	230.	215.	1198.	2162.	2147.	1508.	132.	58.	1566.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	287.	287.	1149.	132.	329.	1479.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	90.	450.	450.	68.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.
12	PEAK	.70	230.	215.	1198.	2166.	2152.	1511.	132.	58.	1569.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	124.	467.	467.	94.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1481.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	64.	319.	319.	48.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.
13	PEAK	.70	230.	215.	1198.	2166.	2152.	1511.	132.	58.	1569.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	124.	467.	467.	94.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1481.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	64.	319.	319.	48.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.
14	PEAK	.70	230.	215.	1198.	2166.	2152.	1511.	132.	58.	1569.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	124.	467.	467.	94.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1481.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	64.	319.	319.	48.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.
15	PEAK	.70	230.	215.	1198.	2166.	2152.	1511.	132.	58.	1569.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	124.	467.	467.	94.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1481.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	64.	319.	319.	48.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.

16	PEAK	.70	230.	215.	1198.	2166.	2152.	1511.	132.	58.	1569.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	124.	467.	467.	94.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1481.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	64.	319.	319.	48.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.
17	PEAK	.70	230.	215.	1198.	2166.	2152.	1511.	132.	58.	1569.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	124.	467.	467.	94.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1481.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	64.	319.	319.	48.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.
18	PEAK	.70	230.	215.	1198.	2166.	2152.	1511.	132.	58.	1569.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	124.	467.	467.	94.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1481.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	64.	319.	319.	48.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.
19	PEAK	.70	230.	215.	1198.	2166.	2152.	1511.	132.	58.	1569.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	124.	467.	467.	94.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1481.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	64.	319.	319.	48.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.
20	PEAK	.70	230.	215.	1198.	2166.	2152.	1511.	132.	58.	1569.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	124.	467.	467.	94.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1481.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	64.	319.	319.	48.
	NON-PEAK	5.30	231.	231.	0.	0.	0.	0.	100.	332.	332.	76.
21	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.
22	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.
23	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.

24	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.
25	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.
26	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.
27	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.
28	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.
29	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.
30	PEAK	.80	230.	216.	1146.	2083.	2068.	1661.	132.	66.	1726.	100.
	NON-PEAK	6.00	231.	231.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	231.	231.	149.	288.	288.	1151.	132.	329.	1480.	100.
	NON-PEAK	8.00	231.	231.	0.	0.	0.	0.	58.	290.	290.	44.
	NON-PEAK	5.20	231.	231.	0.	0.	0.	0.	100.	326.	326.	76.
T O T A L =								80266.			130280.	
AVERAGE % 10 DAILY IRR.SUPPLY =										100.00	84.33	84.04

MONTH OF : DECEMBER YEAR : 1963 ENERGY GENERATION IN U/S, D/S POWER HOUSE AND % MEETING IRR.DEMAND

DATE	PERIOD	DURATION (HR)	GROSSH (M)	NETTH (M)	Q (M3/S)	STARTP (MW)	ENDP (MW)	AV.ENERGY (MWh)	QD (M3/S)	ENERGY (MWh)	TOT.ENERGY (MWh)	IRR. (%)
1	PEAK	2.30	227.	211.	1235.	2224.	2178.	5062.	174.	250.	5313.	100.
	NON-PEAK	6.00	229.	229.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	225.	220.	710.	1325.	1303.	5255.	174.	435.	5690.	100.
	NON-PEAK	8.00	228.	228.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	229.	229.	0.	0.	0.	0.	174.	402.	402.	100.
2	PEAK	2.30	224.	209.	1235.	2195.	2152.	4998.	174.	250.	5248.	100.
	NON-PEAK	6.00	226.	226.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	223.	217.	710.	1309.	1287.	5194.	174.	435.	5629.	100.
	NON-PEAK	8.00	227.	227.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	228.	228.	0.	0.	0.	0.	174.	402.	402.	100.
3	PEAK	2.30	224.	209.	1235.	2193.	2149.	4993.	174.	250.	5243.	100.
	NON-PEAK	6.00	226.	226.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	222.	217.	710.	1308.	1286.	5188.	174.	435.	5623.	100.
	NON-PEAK	8.00	227.	227.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	228.	228.	0.	0.	0.	0.	174.	402.	402.	100.
4	PEAK	2.30	224.	208.	1235.	2190.	2147.	4988.	174.	250.	5238.	100.
	NON-PEAK	6.00	226.	226.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	222.	217.	710.	1307.	1285.	5183.	174.	435.	5618.	100.
	NON-PEAK	8.00	227.	227.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	228.	228.	0.	0.	0.	0.	174.	402.	402.	100.
5	PEAK	2.30	224.	208.	1235.	2188.	2145.	4983.	174.	250.	5233.	100.
	NON-PEAK	6.00	226.	226.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	222.	217.	710.	1306.	1284.	5178.	174.	435.	5613.	100.
	NON-PEAK	8.00	227.	227.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	228.	228.	0.	0.	0.	0.	174.	402.	402.	100.
6	PEAK	2.30	224.	208.	1235.	2186.	2143.	4978.	174.	250.	5228.	100.
	NON-PEAK	6.00	225.	225.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	222.	216.	710.	1304.	1282.	5173.	174.	435.	5608.	100.
	NON-PEAK	8.00	227.	227.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	228.	228.	0.	0.	0.	0.	174.	402.	402.	100.
7	PEAK	2.30	223.	208.	1235.	2184.	2140.	4973.	174.	250.	5223.	100.
	NON-PEAK	6.00	225.	225.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	221.	216.	710.	1303.	1281.	5168.	174.	435.	5603.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	227.	227.	0.	0.	0.	0.	174.	402.	402.	100.

8	PEAK	2.30	223.	208.	1235.	2182.	2138.	4968.	174.	250.	5218.	100.
	NON-PEAK	6.00	225.	225.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	221.	216.	710.	1302.	1280.	5163.	174.	435.	5598.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	227.	227.	0.	0.	0.	0.	174.	402.	402.	100.
9	PEAK	2.30	223.	207.	1235.	2179.	2136.	4963.	174.	250.	5213.	100.
	NON-PEAK	6.00	225.	225.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	221.	216.	710.	1300.	1278.	5158.	174.	435.	5593.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	227.	227.	0.	0.	0.	0.	174.	402.	402.	100.
10	PEAK	2.30	223.	207.	1235.	2177.	2134.	4957.	174.	250.	5208.	100.
	NON-PEAK	6.00	224.	224.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	221.	216.	710.	1299.	1277.	5153.	174.	435.	5588.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.70	227.	227.	0.	0.	0.	0.	174.	402.	402.	100.
11	PEAK	2.70	222.	207.	1207.	2132.	2083.	5690.	174.	294.	5984.	100.
	NON-PEAK	6.00	224.	224.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	219.	212.	834.	1506.	1474.	5960.	174.	435.	6395.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	227.	227.	0.	0.	0.	0.	174.	359.	359.	100.
12	PEAK	2.70	222.	207.	1207.	2129.	2081.	5684.	174.	294.	5978.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	219.	212.	834.	1504.	1473.	5954.	174.	435.	6389.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	226.	226.	0.	0.	0.	0.	174.	359.	359.	100.
13	PEAK	2.70	222.	207.	1207.	2127.	2079.	5678.	174.	294.	5972.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	219.	212.	834.	1503.	1471.	5948.	174.	435.	6383.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	226.	226.	0.	0.	0.	0.	174.	359.	359.	100.
14	PEAK	2.70	221.	206.	1207.	2125.	2077.	5673.	174.	294.	5966.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	218.	211.	834.	1501.	1470.	5942.	174.	435.	6377.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	226.	226.	0.	0.	0.	0.	174.	359.	359.	100.
15	PEAK	2.70	221.	206.	1207.	2123.	2075.	5667.	174.	294.	5960.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	218.	211.	834.	1500.	1468.	5936.	174.	435.	6371.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	226.	226.	0.	0.	0.	0.	174.	359.	359.	100.

16	PEAK	2.70	221.	206.	1207.	2121.	2072.	5661.	174.	294.	5955.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	218.	211.	834.	1498.	1467.	5930.	174.	435.	6365.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	225.	225.	0.	0.	0.	0.	174.	359.	359.	100.
17	PEAK	2.70	221.	206.	1207.	2119.	2070.	5655.	174.	294.	5949.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	218.	211.	834.	1497.	1465.	5924.	174.	435.	6359.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	225.	225.	0.	0.	0.	0.	174.	359.	359.	100.
18	PEAK	2.70	220.	206.	1207.	2116.	2068.	5649.	174.	294.	5943.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	218.	210.	834.	1495.	1464.	5918.	174.	435.	6353.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	225.	225.	0.	0.	0.	0.	174.	359.	359.	100.
19	PEAK	2.70	220.	205.	1207.	2114.	2066.	5643.	174.	294.	5937.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	217.	210.	834.	1494.	1462.	5912.	174.	435.	6347.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	225.	225.	0.	0.	0.	0.	174.	359.	359.	100.
20	PEAK	2.70	220.	205.	1207.	2112.	2064.	5637.	174.	294.	5931.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	217.	210.	834.	1492.	1461.	5906.	174.	435.	6341.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.30	225.	225.	0.	0.	0.	0.	174.	359.	359.	100.
21	PEAK	2.02	221.	205.	1235.	2153.	2115.	4310.	174.	220.	4530.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	220.	216.	624.	1137.	1121.	4517.	174.	435.	4952.	100.
	NON-PEAK	4.60	223.	223.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	225.	225.	0.	0.	0.	0.	174.	803.	803.	100.
22	PEAK	2.02	222.	206.	1235.	2161.	2123.	4326.	174.	220.	4546.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	220.	216.	624.	1142.	1125.	4534.	174.	435.	4969.	100.
	NON-PEAK	4.60	223.	223.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	225.	225.	0.	0.	0.	0.	174.	803.	803.	100.
23	PEAK	2.02	221.	206.	1235.	2159.	2121.	4322.	174.	220.	4542.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	220.	216.	624.	1141.	1124.	4530.	174.	435.	4965.	100.
	NON-PEAK	4.60	223.	223.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	225.	225.	0.	0.	0.	0.	174.	803.	803.	100.

24	PEAK	2.02	221.	206.	1235.	2156.	2118.	4318.	174.	220.	4537.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	220.	216.	624.	1139.	1123.	4525.	174.	435.	4960.	100.
	NON-PEAK	4.60	223.	223.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	225.	225.	0.	0.	0.	0.	174.	803.	803.	100.
25	PEAK	2.02	221.	205.	1235.	2154.	2116.	4313.	174.	220.	4533.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	220.	216.	624.	1138.	1122.	4521.	174.	435.	4956.	100.
	NON-PEAK	4.60	222.	222.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	225.	225.	0.	0.	0.	0.	174.	803.	803.	100.
26	PEAK	2.02	221.	205.	1235.	2152.	2114.	4309.	174.	220.	4528.	100.
	NON-PEAK	6.00	223.	223.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	219.	215.	624.	1137.	1121.	4516.	174.	435.	4951.	100.
	NON-PEAK	4.60	222.	222.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	224.	224.	0.	0.	0.	0.	174.	803.	803.	100.
27	PEAK	2.02	221.	205.	1235.	2150.	2112.	4304.	174.	220.	4524.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	219.	215.	624.	1136.	1120.	4512.	174.	435.	4947.	100.
	NON-PEAK	4.60	222.	222.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	224.	224.	0.	0.	0.	0.	174.	803.	803.	100.
28	PEAK	2.02	220.	205.	1235.	2148.	2109.	4300.	174.	220.	4519.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	219.	215.	624.	1135.	1119.	4507.	174.	435.	4942.	100.
	NON-PEAK	4.60	222.	222.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	224.	224.	0.	0.	0.	0.	174.	803.	803.	100.
29	PEAK	2.02	220.	205.	1235.	2145.	2107.	4295.	174.	220.	4515.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	219.	215.	624.	1134.	1118.	4503.	174.	435.	4938.	100.
	NON-PEAK	4.60	222.	222.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	224.	224.	0.	0.	0.	0.	174.	803.	803.	100.
30	PEAK	2.02	220.	204.	1235.	2143.	2105.	4291.	174.	220.	4510.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	219.	215.	624.	1133.	1116.	4498.	174.	435.	4933.	100.
	NON-PEAK	4.60	221.	221.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	223.	223.	0.	0.	0.	0.	174.	803.	803.	100.
31	PEAK	2.02	220.	204.	1235.	2141.	2103.	4286.	174.	220.	4506.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	218.	214.	624.	1132.	1115.	4494.	174.	435.	4929.	100.
	NON-PEAK	4.60	221.	221.	0.	0.	0.	0.	174.	500.	500.	100.
	NON-PEAK	7.38	223.	223.	0.	0.	0.	0.	174.	803.	803.	100.
T O T A L =								314673.			395591.	
AVERAGE % 10 DAILY IRR.SUPPLY =										100.00	100.00	100.00
T O T A L A N N U A L =								620505.			782046.	

File name: SROPRF0.OUT for year 1963 with proposed operation schedule

SUMMARY OF RESERVOIR OPERATION 1963

MONTH OF	RUNOFF A (M3)	RUNOFF B (M3)	TOTAL (M3)	IRRIG. DEMAND (M3)	EVAP. LOSS (MM/D)	IRRIG. SUPPLY (M3)	IRRIG. DEMAND STATUS	AV.POWER START (MW)	AV.POWER END (MW)	AV.ENERGY GENERATED (MWh)	SPILL AT B (M3)
OCTOBER	.4310E+09	.0000E+00	.4310E+09	.1762E+09	3.26	.1762E+09	SUCCEED	1875.11	1838.34	394476.	.237E+09
NOVEMBER	.2630E+09	.0000E+00	.2630E+09	.3412E+09	2.27	.3412E+09	SUCCEED	1898.94	1851.35	386132.	.179E+08
DECEMBER	.2070E+09	.0000E+00	.2070E+09	.4658E+09	1.36	.4658E+09	SUCCEED	1864.15	1816.81	391693.	.000E+00
	.9010E+09	.0000E+00	.9010E+09	.9832E+09		.9832E+09	100.00%			1172301.	.255E+09

FRL. AT A = 830.00 M
MDDL. AT A = 740.00 M
MIN.ELEVATION AT A = 820.49 M

FRL. AT B = 612.00 M
MDDL. AT B = 598.50 M
MIN.ELEVATION AT B = 603.16 M

File name: ROAPRF0.OUT for year 1963 with proposed operation schedule

MONTH OF : OCTOBER YEAR : 1963 OPERATION AT RESERVOIR A

DATE	PERIOD	DURATION (HR)	INFLA (M3)	QPUMP (M3)	EVAPLA (M3)	QA (M3)	SPILLA (M3)	STOREA (M3)	AREA (M2)	EL.A (M)
								.354E+10	.438E+08	830.00
1	PEAK	3.00	1737903.	0.	-17838.	-13340000.	0.	.353E+10	.437E+08	829.70
	NON-PEAK	6.00	3475807.	0.	-35583.	0.	0.	.353E+10	.437E+08	829.79
	PEAK	4.00	2317204.	0.	-23740.	-3416324.	0.	.353E+10	.437E+08	829.76
	NON-PEAK	8.00	4634409.	0.	-47468.	0.	0.	.354E+10	.438E+08	829.88
	NON-PEAK	3.00	1737903.	0.	-17819.	0.	0.	.354E+10	.438E+08	829.92
2	PEAK	3.00	1737903.	0.	-17826.	-13340000.	0.	.353E+10	.437E+08	829.63
	NON-PEAK	6.00	3475807.	0.	-35559.	0.	0.	.353E+10	.437E+08	829.71
	PEAK	4.00	2317204.	0.	-23724.	-13340000.	0.	.352E+10	.436E+08	829.43
	NON-PEAK	8.00	4634409.	17160000.	-47332.	0.	0.	.354E+10	.438E+08	829.99
	NON-PEAK	3.00	1737903.	0.	-17836.	0.	-1245696.	.354E+10	.438E+08	830.00
3	PEAK	3.00	1737903.	0.	-17838.	-13340000.	0.	.353E+10	.437E+08	829.70
	NON-PEAK	6.00	3475807.	0.	-35583.	0.	0.	.353E+10	.437E+08	829.79
	PEAK	4.00	2317204.	0.	-23740.	-13340000.	0.	.352E+10	.436E+08	829.51
	NON-PEAK	8.00	4634409.	0.	-47363.	0.	0.	.353E+10	.437E+08	829.62
	NON-PEAK	3.00	1737903.	0.	-17779.	0.	0.	.353E+10	.437E+08	829.67
4	PEAK	3.00	1737903.	0.	-17786.	-13340000.	0.	.352E+10	.436E+08	829.37
	NON-PEAK	6.00	3475807.	0.	-35480.	0.	0.	.352E+10	.436E+08	829.46
	PEAK	4.00	2317204.	0.	-23672.	-13340000.	0.	.351E+10	.435E+08	829.18
	NON-PEAK	8.00	4634409.	17160000.	-47227.	0.	0.	.353E+10	.437E+08	829.73
	NON-PEAK	3.00	1737903.	0.	-17796.	0.	0.	.353E+10	.437E+08	829.78
5	PEAK	3.00	1737903.	0.	-17803.	-13340000.	0.	.352E+10	.436E+08	829.48
	NON-PEAK	6.00	3475807.	0.	-35514.	0.	0.	.352E+10	.436E+08	829.57
	PEAK	4.00	2317204.	0.	-23694.	-13340000.	0.	.351E+10	.435E+08	829.28
	NON-PEAK	8.00	4634409.	17160000.	-47272.	0.	0.	.353E+10	.437E+08	829.84
	NON-PEAK	3.00	1737903.	0.	-17813.	0.	0.	.354E+10	.438E+08	829.89
6	PEAK	3.00	1737903.	0.	-17820.	-13340000.	0.	.352E+10	.436E+08	829.59
	NON-PEAK	6.00	3475807.	0.	-35548.	0.	0.	.353E+10	.437E+08	829.68
	PEAK	4.00	2317204.	0.	-23717.	-13340000.	0.	.352E+10	.436E+08	829.39
	NON-PEAK	8.00	4634409.	17160000.	-47316.	0.	0.	.354E+10	.438E+08	829.95
	NON-PEAK	3.00	1737903.	0.	-17830.	0.	0.	.354E+10	.438E+08	829.99
7	PEAK	3.00	1737903.	0.	-17837.	-13340000.	0.	.353E+10	.437E+08	829.70
	NON-PEAK	6.00	3475807.	0.	-35581.	0.	0.	.353E+10	.437E+08	829.79
	PEAK	4.00	2317204.	0.	-23739.	-13340000.	0.	.352E+10	.436E+08	829.50
	NON-PEAK	8.00	4634409.	0.	-47361.	0.	0.	.353E+10	.437E+08	829.62
	NON-PEAK	3.00	1737903.	0.	-17779.	0.	0.	.353E+10	.437E+08	829.66

8	PEAK	3.00	1737903.	0.	-17786.-13340000.	0.	.352E+10	.436E+08	829.37
	NON-PEAK	6.00	3475807.	0.	-35479. 0.	0.	.352E+10	.436E+08	829.45
	PEAK	4.00	2317204.	0.	-23671.-13340000.	0.	.351E+10	.435E+08	829.17
	NON-PEAK	8.00	4634409.	17160000.	-47225. 0.	0.	.353E+10	.437E+08	829.73
	NON-PEAK	3.00	1737903.	0.	-17796. 0.	0.	.353E+10	.437E+08	829.77
9	PEAK	3.00	1737903.	0.	-17802.-13340000.	0.	.352E+10	.436E+08	829.47
	NON-PEAK	6.00	3475807.	0.	-35512. 0.	0.	.352E+10	.436E+08	829.56
	PEAK	4.00	2317204.	0.	-23693.-13340000.	0.	.351E+10	.435E+08	829.28
	NON-PEAK	8.00	4634409.	17160000.	-47269. 0.	0.	.353E+10	.437E+08	829.84
	NON-PEAK	3.00	1737903.	0.	-17812. 0.	0.	.354E+10	.438E+08	829.88
10	PEAK	3.00	1737903.	0.	-17819.-13340000.	0.	.352E+10	.436E+08	829.58
	NON-PEAK	6.00	3475807.	0.	-35546. 0.	0.	.353E+10	.437E+08	829.67
	PEAK	4.00	2317204.	0.	-23716.-13340000.	0.	.352E+10	.436E+08	829.39
	NON-PEAK	8.00	4634409.	17160000.	-47314. 0.	0.	.354E+10	.438E+08	829.95
	NON-PEAK	3.00	1737903.	0.	-17829. 0.	0.	.354E+10	.438E+08	829.99
11	PEAK	3.00	1737903.	0.	-17836.-13340000.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	6.00	3475807.	0.	-35580. 0.	0.	.353E+10	.437E+08	829.78
	PEAK	4.00	2317204.	0.	-23738.-13340000.	0.	.352E+10	.436E+08	829.50
	NON-PEAK	8.00	4634409.	0.	-47359. 0.	0.	.352E+10	.437E+08	829.61
	NON-PEAK	3.00	1737903.	0.	-17778. 0.	0.	.353E+10	.437E+08	829.66
12	PEAK	3.00	1737903.	0.	-17785.-13340000.	0.	.352E+10	.436E+08	829.36
	NON-PEAK	6.00	3475807.	0.	-35477. 0.	0.	.352E+10	.436E+08	829.45
	PEAK	4.00	2317204.	0.	-23670.-13340000.	0.	.351E+10	.435E+08	829.17
	NON-PEAK	8.00	4634409.	17160000.	-47223. 0.	0.	.353E+10	.437E+08	829.72
	NON-PEAK	3.00	1737903.	0.	-17795. 0.	0.	.353E+10	.437E+08	829.77
13	PEAK	3.00	1737903.	0.	-17802.-13340000.	0.	.352E+10	.436E+08	829.47
	NON-PEAK	6.00	3475807.	0.	-35511. 0.	0.	.352E+10	.436E+08	829.56
	PEAK	4.00	2317204.	0.	-23692.-13340000.	0.	.351E+10	.435E+08	829.27
	NON-PEAK	8.00	4634409.	17160000.	-47267. 0.	0.	.353E+10	.437E+08	829.83
	NON-PEAK	3.00	1737903.	0.	-17812. 0.	0.	.354E+10	.438E+08	829.88
14	PEAK	3.00	1737903.	0.	-17818.-13340000.	0.	.352E+10	.436E+08	829.58
	NON-PEAK	6.00	3475807.	0.	-35545. 0.	0.	.353E+10	.437E+08	829.67
	PEAK	4.00	2317204.	0.	-23715.-13340000.	0.	.352E+10	.436E+08	829.38
	NON-PEAK	8.00	4634409.	17160000.	-47312. 0.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	3.00	1737903.	0.	-17828. 0.	0.	.354E+10	.438E+08	829.98
15	PEAK	3.00	1737903.	0.	-17835.-13340000.	0.	.353E+10	.437E+08	829.69
	NON-PEAK	6.00	3475807.	0.	-35578. 0.	0.	.353E+10	.437E+08	829.78
	PEAK	4.00	2317204.	0.	-23737.-13340000.	0.	.352E+10	.436E+08	829.49
	NON-PEAK	8.00	4634409.	0.	-47357. 0.	0.	.352E+10	.437E+08	829.61
	NON-PEAK	3.00	1737903.	0.	-17777. 0.	0.	.353E+10	.437E+08	829.65

16	PEAK	3.00	1737903.	0.	-17784.	-13340000.	0.	.351E+10	.436E+08	829.36
	NON-PEAK	6.00	3475807.	0.	-35476.	0.	0.	.352E+10	.436E+08	829.44
	PEAK	4.00	2317204.	0.	-23669.	-13340000.	0.	.351E+10	.435E+08	829.16
	NON-PEAK	8.00	4634409.	17160000.	-47220.	0.	0.	.353E+10	.437E+08	829.72
	NON-PEAK	3.00	1737903.	0.	-17794.	0.	0.	.353E+10	.437E+08	829.76
17	PEAK	3.00	1737903.	0.	-17801.	-13340000.	0.	.352E+10	.436E+08	829.46
	NON-PEAK	6.00	3475807.	0.	-35509.	0.	0.	.352E+10	.436E+08	829.55
	PEAK	4.00	2317204.	0.	-23691.	-13340000.	0.	.351E+10	.435E+08	829.27
	NON-PEAK	8.00	4634409.	17160000.	-47265.	0.	0.	.353E+10	.437E+08	829.83
	NON-PEAK	3.00	1737903.	0.	-17811.	0.	0.	.353E+10	.438E+08	829.87
18	PEAK	3.00	1737903.	0.	-17818.	-13340000.	0.	.352E+10	.436E+08	829.57
	NON-PEAK	6.00	3475807.	0.	-35543.	0.	0.	.353E+10	.437E+08	829.66
	PEAK	4.00	2317204.	0.	-23714.	-13340000.	0.	.352E+10	.436E+08	829.38
	NON-PEAK	8.00	4634409.	17160000.	-47310.	0.	0.	.354E+10	.438E+08	829.94
	NON-PEAK	3.00	1737903.	0.	-17828.	0.	0.	.354E+10	.438E+08	829.98
19	PEAK	3.00	1737903.	0.	-17834.	-13340000.	0.	.353E+10	.437E+08	829.68
	NON-PEAK	6.00	3475807.	0.	-35577.	0.	0.	.353E+10	.437E+08	829.77
	PEAK	4.00	2317204.	0.	-23736.	-13340000.	0.	.352E+10	.436E+08	829.49
	NON-PEAK	8.00	4634409.	0.	-47355.	0.	0.	.352E+10	.436E+08	829.60
	NON-PEAK	3.00	1737903.	0.	-17776.	0.	0.	.353E+10	.437E+08	829.65
20	PEAK	3.00	1737903.	0.	-17783.	-13340000.	0.	.351E+10	.436E+08	829.35
	NON-PEAK	6.00	3475807.	0.	-35474.	0.	0.	.352E+10	.436E+08	829.44
	PEAK	4.00	2317204.	0.	-23668.	-13340000.	0.	.351E+10	.435E+08	829.16
	NON-PEAK	8.00	4634409.	17160000.	-47218.	0.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	3.00	1737903.	0.	-17793.	0.	0.	.353E+10	.437E+08	829.76
21	PEAK	3.00	1737903.	0.	-17800.	-13340000.	0.	.352E+10	.436E+08	829.46
	NON-PEAK	6.00	3475807.	0.	-35508.	0.	0.	.352E+10	.436E+08	829.55
	PEAK	4.00	2317204.	0.	-23690.	-13340000.	0.	.351E+10	.435E+08	829.26
	NON-PEAK	8.00	4634409.	17160000.	-47263.	0.	0.	.353E+10	.437E+08	829.82
	NON-PEAK	3.00	1737903.	0.	-17810.	0.	0.	.353E+10	.437E+08	829.87
22	PEAK	3.00	1737903.	0.	-17817.	-13340000.	0.	.352E+10	.436E+08	829.57
	NON-PEAK	6.00	3475807.	0.	-35541.	0.	0.	.353E+10	.437E+08	829.66
	PEAK	4.00	2317204.	0.	-23713.	-13340000.	0.	.352E+10	.436E+08	829.37
	NON-PEAK	8.00	4634409.	17160000.	-47308.	0.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	3.00	1737903.	0.	-17827.	0.	0.	.354E+10	.438E+08	829.97
23	PEAK	3.00	1737903.	0.	-17834.	-13340000.	0.	.353E+10	.437E+08	829.68
	NON-PEAK	6.00	3475807.	0.	-35575.	0.	0.	.353E+10	.437E+08	829.77
	PEAK	4.00	2317204.	0.	-23735.	-13340000.	0.	.352E+10	.436E+08	829.48
	NON-PEAK	8.00	4634409.	0.	-47353.	0.	0.	.352E+10	.436E+08	829.60
	NON-PEAK	3.00	1737903.	0.	-17776.	0.	0.	.353E+10	.437E+08	829.64

24	PEAK	3.00	1737903.	0.	-17782.	-13340000.	0.	.351E+10	.436E+08	829.35
	NON-PEAK	6.00	3475807.	0.	-35473.	0.	0.	.352E+10	.436E+08	829.43
	PEAK	4.00	2317204.	0.	-23667.	-13340000.	0.	.351E+10	.435E+08	829.15
	NON-PEAK	8.00	4634409.	17160000.	-47216.	0.	0.	.353E+10	.437E+08	829.71
	NON-PEAK	3.00	1737903.	0.	-17792.	0.	0.	.353E+10	.437E+08	829.75
25	PEAK	3.00	1737903.	0.	-17799.	-13340000.	0.	.352E+10	.436E+08	829.45
	NON-PEAK	6.00	3475807.	0.	-35506.	0.	0.	.352E+10	.436E+08	829.54
	PEAK	4.00	2317204.	0.	-23689.	-13340000.	0.	.351E+10	.435E+08	829.26
	NON-PEAK	8.00	4634409.	17160000.	-47261.	0.	0.	.353E+10	.437E+08	829.82
	NON-PEAK	3.00	1737903.	0.	-17809.	0.	0.	.353E+10	.437E+08	829.86
26	PEAK	3.00	1737903.	0.	-17816.	-13340000.	0.	.352E+10	.436E+08	829.56
	NON-PEAK	6.00	3475807.	0.	-35540.	0.	0.	.353E+10	.437E+08	829.65
	PEAK	4.00	2317204.	0.	-23711.	-13340000.	0.	.352E+10	.436E+08	829.37
	NON-PEAK	8.00	4634409.	17160000.	-47306.	0.	0.	.354E+10	.438E+08	829.93
	NON-PEAK	3.00	1737903.	0.	-17826.	0.	0.	.354E+10	.438E+08	829.97
27	PEAK	3.00	1737903.	0.	-17833.	-13340000.	0.	.353E+10	.437E+08	829.67
	NON-PEAK	6.00	3475807.	0.	-35574.	0.	0.	.353E+10	.437E+08	829.76
	PEAK	4.00	2317204.	0.	-23734.	-13340000.	0.	.352E+10	.436E+08	829.48
	NON-PEAK	8.00	4634409.	0.	-47351.	0.	0.	.352E+10	.436E+08	829.59
	NON-PEAK	3.00	1737903.	0.	-17775.	0.	0.	.353E+10	.437E+08	829.64
28	PEAK	3.00	1737903.	0.	-17782.	-13340000.	0.	.351E+10	.435E+08	829.34
	NON-PEAK	6.00	3475807.	0.	-35471.	0.	0.	.352E+10	.436E+08	829.43
	PEAK	4.00	2317204.	0.	-23666.	-13340000.	0.	.351E+10	.435E+08	829.15
	NON-PEAK	8.00	4634409.	17160000.	-47214.	0.	0.	.353E+10	.437E+08	829.70
	NON-PEAK	3.00	1737903.	0.	-17792.	0.	0.	.353E+10	.437E+08	829.75
29	PEAK	3.00	1737903.	0.	-17798.	-13340000.	0.	.352E+10	.436E+08	829.45
	NON-PEAK	6.00	3475807.	0.	-35505.	0.	0.	.352E+10	.436E+08	829.54
	PEAK	4.00	2317204.	0.	-23688.	-13340000.	0.	.351E+10	.435E+08	829.25
	NON-PEAK	8.00	4634409.	17160000.	-47259.	0.	0.	.353E+10	.437E+08	829.81
	NON-PEAK	3.00	1737903.	0.	-17808.	0.	0.	.353E+10	.437E+08	829.86
30	PEAK	3.00	1737903.	0.	-17815.	-13340000.	0.	.352E+10	.436E+08	829.56
	NON-PEAK	6.00	3475807.	0.	-35538.	0.	0.	.353E+10	.437E+08	829.65
	PEAK	4.00	2317204.	0.	-23710.	-13340000.	0.	.352E+10	.436E+08	829.36
	NON-PEAK	8.00	4634409.	17160000.	-47304.	0.	0.	.354E+10	.438E+08	829.92
	NON-PEAK	3.00	1737903.	0.	-17825.	0.	0.	.354E+10	.438E+08	829.96
31	PEAK	3.00	1737903.	0.	-17832.	-13340000.	0.	.353E+10	.437E+08	829.67
	NON-PEAK	6.00	3475807.	0.	-35572.	0.	0.	.353E+10	.437E+08	829.76
	PEAK	4.00	2317204.	0.	-23733.	-13340000.	0.	.352E+10	.436E+08	829.47
	NON-PEAK	8.00	4634409.	0.	-47349.	0.	0.	.352E+10	.436E+08	829.59
	NON-PEAK	3.00	1737903.	0.	-17774.	0.	0.	.353E+10	.437E+08	829.63

MONTH OF : NOVEMBER YEAR : 1963 OPERATION AT RESERVOIR A

DATE	PERIOD	DURATION (HR)	INFLA (M3)	QPUMP (M3)	EVAPLA (M3)	QA (M3)	SPILLA (M3)	STOREA (M3)	AREA (M2)	EL.A (M)
								.353E+10	.437E+08	829.63
1	PEAK	3.00	1095833.	0.	-12372.	-13340000.	0.	.351E+10	.435E+08	829.32
	NON-PEAK	6.00	2191667.	0.	-24677.	0.	0.	.352E+10	.436E+08	829.38
	PEAK	4.00	1461111.	0.	-16459.	-13340000.	0.	.350E+10	.434E+08	829.07
	NON-PEAK	8.00	2922222.	15300000.	-32831.	0.	0.	.352E+10	.436E+08	829.54
	NON-PEAK	3.00	1095833.	0.	-12362.	0.	0.	.352E+10	.436E+08	829.56
2	PEAK	3.00	1095833.	0.	-12365.	-13340000.	0.	.351E+10	.435E+08	829.25
	NON-PEAK	6.00	2191667.	0.	-24662.	0.	0.	.351E+10	.435E+08	829.31
	PEAK	4.00	1461111.	0.	-16449.	-13340000.	0.	.350E+10	.434E+08	829.00
	NON-PEAK	8.00	2922222.	15300000.	-32811.	0.	0.	.352E+10	.436E+08	829.47
	NON-PEAK	3.00	1095833.	0.	-12354.	0.	0.	.352E+10	.436E+08	829.49
3	PEAK	3.00	1095833.	0.	-12357.	-13340000.	0.	.351E+10	.435E+08	829.18
	NON-PEAK	6.00	2191667.	0.	-24647.	0.	0.	.351E+10	.435E+08	829.24
	PEAK	4.00	1461111.	0.	-16439.	-13340000.	0.	.350E+10	.434E+08	828.93
	NON-PEAK	8.00	2922222.	15300000.	-32791.	0.	0.	.352E+10	.436E+08	829.40
	NON-PEAK	3.00	1095833.	0.	-12347.	0.	0.	.352E+10	.436E+08	829.43
4	PEAK	3.00	1095833.	0.	-12350.	-13340000.	0.	.351E+10	.435E+08	829.11
	NON-PEAK	6.00	2191667.	0.	-24632.	0.	0.	.351E+10	.435E+08	829.17
	PEAK	4.00	1461111.	0.	-16429.	-13340000.	0.	.350E+10	.434E+08	828.86
	NON-PEAK	8.00	2922222.	15300000.	-32771.	0.	0.	.351E+10	.435E+08	829.33
	NON-PEAK	3.00	1095833.	0.	-12339.	0.	0.	.351E+10	.436E+08	829.36
5	PEAK	3.00	1095833.	0.	-12342.	-13340000.	0.	.350E+10	.434E+08	829.04
	NON-PEAK	6.00	2191667.	0.	-24617.	0.	0.	.350E+10	.435E+08	829.10
	PEAK	4.00	1461111.	0.	-16419.	-13340000.	0.	.349E+10	.433E+08	828.79
	NON-PEAK	8.00	2922222.	15300000.	-32751.	0.	0.	.351E+10	.435E+08	829.26
	NON-PEAK	3.00	1095833.	0.	-12332.	0.	0.	.351E+10	.435E+08	829.29
6	PEAK	3.00	1095833.	0.	-12335.	-13340000.	0.	.350E+10	.434E+08	828.97
	NON-PEAK	6.00	2191667.	0.	-24602.	0.	0.	.350E+10	.434E+08	829.03
	PEAK	4.00	1461111.	0.	-16409.	-13340000.	0.	.349E+10	.433E+08	828.72
	NON-PEAK	8.00	2922222.	15300000.	-32731.	0.	0.	.351E+10	.435E+08	829.19
	NON-PEAK	3.00	1095833.	0.	-12324.	0.	0.	.351E+10	.435E+08	829.22
7	PEAK	3.00	1095833.	0.	-12327.	-13340000.	0.	.350E+10	.434E+08	828.90
	NON-PEAK	6.00	2191667.	0.	-24587.	0.	0.	.350E+10	.434E+08	828.96
	PEAK	4.00	1461111.	0.	-16399.	-13340000.	0.	.349E+10	.433E+08	828.65
	NON-PEAK	8.00	2922222.	15300000.	-32711.	0.	0.	.351E+10	.435E+08	829.12
	NON-PEAK	3.00	1095833.	0.	-12317.	0.	0.	.351E+10	.435E+08	829.15

8	PEAK	3.00	1095833.	0.	-12320.	-13340000.	0.	.349E+10	.434E+08	828.83
	NON-PEAK	6.00	2191667.	0.	-24572.	0.	0.	.350E+10	.434E+08	828.89
	PEAK	4.00	1461111.	0.	-16389.	-13340000.	0.	.348E+10	.433E+08	828.58
	NON-PEAK	8.00	2922222.	15300000.	-32691.	0.	0.	.350E+10	.434E+08	829.05
	NON-PEAK	3.00	1095833.	0.	-12309.	0.	0.	.350E+10	.434E+08	829.08
9	PEAK	3.00	1095833.	0.	-12312.	-13340000.	0.	.349E+10	.433E+08	828.76
	NON-PEAK	6.00	2191667.	0.	-24557.	0.	0.	.349E+10	.434E+08	828.82
	PEAK	4.00	1461111.	0.	-16379.	-13340000.	0.	.348E+10	.432E+08	828.51
	NON-PEAK	8.00	2922222.	15300000.	-32671.	0.	0.	.350E+10	.434E+08	828.98
	NON-PEAK	3.00	1095833.	0.	-12302.	0.	0.	.350E+10	.434E+08	829.01
10	PEAK	3.00	1095833.	0.	-12305.	-13340000.	0.	.349E+10	.433E+08	828.69
	NON-PEAK	6.00	2191667.	0.	-24542.	0.	0.	.349E+10	.433E+08	828.75
	PEAK	4.00	1461111.	0.	-16370.	-13340000.	0.	.348E+10	.432E+08	828.44
	NON-PEAK	8.00	2922222.	15300000.	-32651.	0.	0.	.350E+10	.434E+08	828.91
	NON-PEAK	3.00	1095833.	0.	-12295.	0.	0.	.350E+10	.434E+08	828.94
11	PEAK	3.00	1095833.	0.	-12298.	-13340000.	0.	.349E+10	.433E+08	828.62
	NON-PEAK	6.00	2191667.	0.	-24527.	0.	0.	.349E+10	.433E+08	828.68
	PEAK	4.00	1461111.	0.	-16360.	-13340000.	0.	.348E+10	.432E+08	828.37
	NON-PEAK	8.00	2922222.	15300000.	-32631.	0.	0.	.349E+10	.434E+08	828.84
	NON-PEAK	3.00	1095833.	0.	-12287.	0.	0.	.350E+10	.434E+08	828.87
12	PEAK	3.00	1095833.	0.	-12290.	-13340000.	0.	.348E+10	.433E+08	828.55
	NON-PEAK	6.00	2191667.	0.	-24512.	0.	0.	.349E+10	.433E+08	828.61
	PEAK	4.00	1461111.	0.	-16350.	-13340000.	0.	.347E+10	.432E+08	828.31
	NON-PEAK	8.00	2922222.	15300000.	-32612.	0.	0.	.349E+10	.433E+08	828.77
	NON-PEAK	3.00	1095833.	0.	-12280.	0.	0.	.349E+10	.433E+08	828.80
13	PEAK	3.00	1095833.	0.	-12283.	-13340000.	0.	.348E+10	.432E+08	828.49
	NON-PEAK	6.00	2191667.	0.	-24497.	0.	0.	.348E+10	.432E+08	828.54
	PEAK	4.00	1461111.	0.	-16340.	-13340000.	0.	.347E+10	.431E+08	828.24
	NON-PEAK	8.00	2922222.	15300000.	-32592.	0.	0.	.349E+10	.433E+08	828.70
	NON-PEAK	3.00	1095833.	0.	-12272.	0.	0.	.349E+10	.433E+08	828.73
14	PEAK	3.00	1095833.	0.	-12275.	-13340000.	0.	.348E+10	.432E+08	828.42
	NON-PEAK	6.00	2191667.	0.	-24482.	0.	0.	.348E+10	.432E+08	828.47
	PEAK	4.00	1461111.	0.	-16330.	-13340000.	0.	.347E+10	.431E+08	828.17
	NON-PEAK	8.00	2922222.	15300000.	-32572.	0.	0.	.349E+10	.433E+08	828.63
	NON-PEAK	3.00	1095833.	0.	-12265.	0.	0.	.349E+10	.433E+08	828.66
15	PEAK	3.00	1095833.	0.	-12268.	-13340000.	0.	.348E+10	.432E+08	828.35
	NON-PEAK	6.00	2191667.	0.	-24467.	0.	0.	.348E+10	.432E+08	828.40
	PEAK	4.00	1461111.	0.	-16320.	-13340000.	0.	.347E+10	.431E+08	828.10
	NON-PEAK	8.00	2922222.	15300000.	-32552.	0.	0.	.348E+10	.433E+08	828.56
	NON-PEAK	3.00	1095833.	0.	-12257.	0.	0.	.349E+10	.433E+08	828.59

16	PEAK	3.00	1095833.	0.	-12260.	-13340000.	0.	.347E+10	.431E+08	828.28
	NON-PEAK	6.00	2191667.	0.	-24452.	0.	0.	.347E+10	.432E+08	828.33
	PEAK	4.00	1461111.	0.	-16310.	-13340000.	0.	.346E+10	.431E+08	828.03
	NON-PEAK	8.00	2922222.	15300000.	-32532.	0.	0.	.348E+10	.432E+08	828.49
	NON-PEAK	3.00	1095833.	0.	-12250.	0.	0.	.348E+10	.432E+08	828.52
17	PEAK	3.00	1095833.	0.	-12253.	-13340000.	0.	.347E+10	.431E+08	828.21
	NON-PEAK	6.00	2191667.	0.	-24437.	0.	0.	.347E+10	.431E+08	828.26
	PEAK	4.00	1461111.	0.	-16300.	-13340000.	0.	.346E+10	.430E+08	827.96
	NON-PEAK	8.00	2922222.	15300000.	-32512.	0.	0.	.348E+10	.432E+08	828.42
	NON-PEAK	3.00	1095833.	0.	-12242.	0.	0.	.348E+10	.432E+08	828.45
18	PEAK	3.00	1095833.	0.	-12245.	-13340000.	0.	.347E+10	.431E+08	828.14
	NON-PEAK	6.00	2191667.	0.	-24423.	0.	0.	.347E+10	.431E+08	828.19
	PEAK	4.00	1461111.	0.	-16290.	-13340000.	0.	.346E+10	.430E+08	827.89
	NON-PEAK	8.00	2922222.	15300000.	-32492.	0.	0.	.348E+10	.432E+08	828.35
	NON-PEAK	3.00	1095833.	0.	-12235.	0.	0.	.348E+10	.432E+08	828.38
19	PEAK	3.00	1095833.	0.	-12238.	-13340000.	0.	.346E+10	.431E+08	828.07
	NON-PEAK	6.00	2191667.	0.	-24408.	0.	0.	.347E+10	.431E+08	828.12
	PEAK	4.00	1461111.	0.	-16280.	-13340000.	0.	.345E+10	.430E+08	827.82
	NON-PEAK	8.00	2922222.	15300000.	-32472.	0.	0.	.347E+10	.431E+08	828.28
	NON-PEAK	3.00	1095833.	0.	-12227.	0.	0.	.347E+10	.432E+08	828.31
20	PEAK	3.00	1095833.	0.	-12230.	-13340000.	0.	.346E+10	.430E+08	828.00
	NON-PEAK	6.00	2191667.	0.	-24393.	0.	0.	.346E+10	.431E+08	828.05
	PEAK	4.00	1461111.	0.	-16270.	-13340000.	0.	.345E+10	.429E+08	827.75
	NON-PEAK	8.00	2922222.	15300000.	-32452.	0.	0.	.347E+10	.431E+08	828.22
	NON-PEAK	3.00	1095833.	0.	-12220.	0.	0.	.347E+10	.431E+08	828.24
21	PEAK	3.00	1095833.	0.	-12223.	-13340000.	0.	.346E+10	.430E+08	827.93
	NON-PEAK	6.00	2191667.	0.	-24378.	0.	0.	.346E+10	.430E+08	827.98
	PEAK	4.00	1461111.	0.	-16260.	-13340000.	0.	.345E+10	.429E+08	827.68
	NON-PEAK	8.00	2922222.	15300000.	-32432.	0.	0.	.347E+10	.431E+08	828.15
	NON-PEAK	3.00	1095833.	0.	-12212.	0.	0.	.347E+10	.431E+08	828.17
22	PEAK	3.00	1095833.	0.	-12215.	-13340000.	0.	.346E+10	.430E+08	827.86
	NON-PEAK	6.00	2191667.	0.	-24363.	0.	0.	.346E+10	.430E+08	827.92
	PEAK	4.00	1461111.	0.	-16250.	-13340000.	0.	.345E+10	.429E+08	827.61
	NON-PEAK	8.00	2922222.	15300000.	-32412.	0.	0.	.346E+10	.431E+08	828.08
	NON-PEAK	3.00	1095833.	0.	-12205.	0.	0.	.347E+10	.431E+08	828.10
23	PEAK	3.00	1095833.	0.	-12208.	-13340000.	0.	.345E+10	.430E+08	827.79
	NON-PEAK	6.00	2191667.	0.	-24348.	0.	0.	.346E+10	.430E+08	827.85
	PEAK	4.00	1461111.	0.	-16240.	-13340000.	0.	.344E+10	.429E+08	827.54
	NON-PEAK	8.00	2922222.	15300000.	-32392.	0.	0.	.346E+10	.430E+08	828.01
	NON-PEAK	3.00	1095833.	0.	-12197.	0.	0.	.346E+10	.431E+08	828.03

24	PEAK	3.00	1095833.	0.	-12200.-13340000.	0.	.345E+10	.429E+08	827.72
	NON-PEAK	6.00	2191667.	0.	-24333. 0.	0.	.345E+10	.430E+08	827.78
	PEAK	4.00	1461111.	0.	-16230.-13340000.	0.	.344E+10	.428E+08	827.47
	NON-PEAK	8.00	2922222.	15300000.	-32372. 0.	0.	.346E+10	.430E+08	827.94
	NON-PEAK	3.00	1095833.	0.	-12190. 0.	0.	.346E+10	.430E+08	827.97
25	PEAK	3.00	1095833.	0.	-12193.-13340000.	0.	.345E+10	.429E+08	827.65
	NON-PEAK	6.00	2191667.	0.	-24318. 0.	0.	.345E+10	.429E+08	827.71
	PEAK	4.00	1461111.	0.	-16220.-13340000.	0.	.344E+10	.428E+08	827.40
	NON-PEAK	8.00	2922222.	15300000.	-32352. 0.	0.	.346E+10	.430E+08	827.87
	NON-PEAK	3.00	1095833.	0.	-12182. 0.	0.	.346E+10	.430E+08	827.90
26	PEAK	3.00	1095833.	0.	-12185.-13340000.	0.	.345E+10	.429E+08	827.58
	NON-PEAK	6.00	2191667.	0.	-24303. 0.	0.	.345E+10	.429E+08	827.64
	PEAK	4.00	1461111.	0.	-16210.-13340000.	0.	.344E+10	.428E+08	827.33
	NON-PEAK	8.00	2922222.	15300000.	-32332. 0.	0.	.345E+10	.430E+08	827.80
	NON-PEAK	3.00	1095833.	0.	-12175. 0.	0.	.346E+10	.430E+08	827.83
27	PEAK	3.00	1095833.	0.	-12178.-13340000.	0.	.344E+10	.429E+08	827.51
	NON-PEAK	6.00	2191667.	0.	-24288. 0.	0.	.345E+10	.429E+08	827.57
	PEAK	4.00	1461111.	0.	-16200.-13340000.	0.	.343E+10	.428E+08	827.26
	NON-PEAK	8.00	2922222.	15300000.	-32312. 0.	0.	.345E+10	.429E+08	827.73
	NON-PEAK	3.00	1095833.	0.	-12167. 0.	0.	.345E+10	.429E+08	827.76
28	PEAK	3.00	1095833.	0.	-12170.-13340000.	0.	.344E+10	.428E+08	827.44
	NON-PEAK	6.00	2191667.	0.	-24273. 0.	0.	.344E+10	.428E+08	827.50
	PEAK	4.00	1461111.	0.	-16190.-13340000.	0.	.343E+10	.427E+08	827.19
	NON-PEAK	8.00	2922222.	15300000.	-32292. 0.	0.	.345E+10	.429E+08	827.66
	NON-PEAK	3.00	1095833.	0.	-12160. 0.	0.	.345E+10	.429E+08	827.69
29	PEAK	3.00	1095833.	0.	-12163.-13340000.	0.	.344E+10	.428E+08	827.37
	NON-PEAK	6.00	2191667.	0.	-24258. 0.	0.	.344E+10	.428E+08	827.43
	PEAK	4.00	1461111.	0.	-16180.-13340000.	0.	.343E+10	.427E+08	827.12
	NON-PEAK	8.00	2922222.	15300000.	-32272. 0.	0.	.345E+10	.429E+08	827.59
	NON-PEAK	3.00	1095833.	0.	-12152. 0.	0.	.345E+10	.429E+08	827.62
30	PEAK	3.00	1095833.	0.	-12155.-13340000.	0.	.343E+10	.428E+08	827.30
	NON-PEAK	6.00	2191667.	0.	-24243. 0.	0.	.344E+10	.428E+08	827.36
	PEAK	4.00	1461111.	0.	-16170.-13340000.	0.	.343E+10	.427E+08	827.05
	NON-PEAK	8.00	2922222.	15300000.	-32252. 0.	0.	.344E+10	.429E+08	827.52
	NON-PEAK	3.00	1095833.	0.	-12145. 0.	0.	.344E+10	.429E+08	827.55

MONTH OF : DECEMBER YEAR : 1963 OPERATION AT RESERVOIR A

DATE	PERIOD	DURATION (HR)	INFLA (M3)	QPUMP (M3)	EVAPLA (M3)	QA (M3)	SPILLA (M3)	STOREA (M3)	AREA (M2)	EL.A (M)
								.344E+10	.429E+08	827.55
1	PEAK	3.00	834677.	0.	-7261.	-13340000.	0.	.343E+10	.427E+08	827.23
	NON-PEAK	6.00	1669355.	0.	-14480.	0.	0.	.343E+10	.428E+08	827.27
	PEAK	4.00	1112903.	0.	-9657.	-13340000.	0.	.342E+10	.426E+08	826.96
	NON-PEAK	8.00	2225807.	11650000.	-19261.	0.	0.	.344E+10	.428E+08	827.31
	NON-PEAK	3.00	834677.	0.	-7246.	0.	0.	.344E+10	.428E+08	827.33
2	PEAK	3.00	834677.	0.	-7247.	-13340000.	0.	.342E+10	.427E+08	827.01
	NON-PEAK	6.00	1669355.	0.	-14453.	0.	0.	.343E+10	.427E+08	827.05
	PEAK	4.00	1112903.	0.	-9639.	-13340000.	0.	.341E+10	.426E+08	826.74
	NON-PEAK	8.00	2225807.	11650000.	-19224.	0.	0.	.343E+10	.427E+08	827.10
	NON-PEAK	3.00	834677.	0.	-7232.	0.	0.	.343E+10	.427E+08	827.12
3	PEAK	3.00	834677.	0.	-7233.	-13340000.	0.	.342E+10	.426E+08	826.80
	NON-PEAK	6.00	1669355.	0.	-14425.	0.	0.	.342E+10	.426E+08	826.84
	PEAK	4.00	1112903.	0.	-9620.	-13340000.	0.	.340E+10	.425E+08	826.52
	NON-PEAK	8.00	2225807.	11650000.	-19187.	0.	0.	.342E+10	.426E+08	826.88
	NON-PEAK	3.00	834677.	0.	-7218.	0.	0.	.342E+10	.426E+08	826.90
4	PEAK	3.00	834677.	0.	-7219.	-13340000.	0.	.341E+10	.425E+08	826.58
	NON-PEAK	6.00	1669355.	0.	-14397.	0.	0.	.341E+10	.425E+08	826.62
	PEAK	4.00	1112903.	0.	-9602.	-13340000.	0.	.340E+10	.424E+08	826.31
	NON-PEAK	8.00	2225807.	11650000.	-19150.	0.	0.	.341E+10	.425E+08	826.66
	NON-PEAK	3.00	834677.	0.	-7204.	0.	0.	.341E+10	.425E+08	826.69
5	PEAK	3.00	834677.	0.	-7205.	-13340000.	0.	.340E+10	.424E+08	826.36
	NON-PEAK	6.00	1669355.	0.	-14369.	0.	0.	.340E+10	.424E+08	826.41
	PEAK	4.00	1112903.	0.	-9583.	-13340000.	0.	.339E+10	.423E+08	826.09
	NON-PEAK	8.00	2225807.	11650000.	-19113.	0.	0.	.340E+10	.425E+08	826.45
	NON-PEAK	3.00	834677.	0.	-7190.	0.	0.	.340E+10	.425E+08	826.47
6	PEAK	3.00	834677.	0.	-7191.	-13340000.	0.	.339E+10	.423E+08	826.15
	NON-PEAK	6.00	1669355.	0.	-14342.	0.	0.	.339E+10	.424E+08	826.19
	PEAK	4.00	1112903.	0.	-9565.	-13340000.	0.	.338E+10	.422E+08	825.88
	NON-PEAK	8.00	2225807.	11650000.	-19075.	0.	0.	.339E+10	.424E+08	826.23
	NON-PEAK	3.00	834677.	0.	-7176.	0.	0.	.339E+10	.424E+08	826.25
7	PEAK	3.00	834677.	0.	-7178.	-13340000.	0.	.338E+10	.423E+08	825.93
	NON-PEAK	6.00	1669355.	0.	-14314.	0.	0.	.338E+10	.423E+08	825.98
	PEAK	4.00	1112903.	0.	-9546.	-13340000.	0.	.337E+10	.422E+08	825.66
	NON-PEAK	8.00	2225807.	11650000.	-19038.	0.	0.	.338E+10	.423E+08	826.02
	NON-PEAK	3.00	834677.	0.	-7162.	0.	0.	.339E+10	.423E+08	826.04

8	PEAK	3.00	834677.	0.	-7164.	-13340000.	0.	.337E+10	.422E+08	825.72
	NON-PEAK	6.00	1669355.	0.	-14286.	0.	0.	.337E+10	.422E+08	825.76
	PEAK	4.00	1112903.	0.	-9528.	-13340000.	0.	.336E+10	.421E+08	825.45
	NON-PEAK	8.00	2225807.	11650000.	-19001.	0.	0.	.338E+10	.422E+08	825.80
	NON-PEAK	3.00	834677.	0.	-7148.	0.	0.	.338E+10	.422E+08	825.82
9	PEAK	3.00	834677.	0.	-7150.	-13340000.	0.	.336E+10	.421E+08	825.50
	NON-PEAK	6.00	1669355.	0.	-14258.	0.	0.	.337E+10	.421E+08	825.54
	PEAK	4.00	1112903.	0.	-9509.	-13340000.	0.	.335E+10	.420E+08	825.23
	NON-PEAK	8.00	2225807.	11650000.	-18964.	0.	0.	.337E+10	.421E+08	825.59
	NON-PEAK	3.00	834677.	0.	-7135.	0.	0.	.337E+10	.421E+08	825.61
10	PEAK	3.00	834677.	0.	-7136.	-13340000.	0.	.336E+10	.420E+08	825.29
	NON-PEAK	6.00	1669355.	0.	-14231.	0.	0.	.336E+10	.420E+08	825.33
	PEAK	4.00	1112903.	0.	-9491.	-13340000.	0.	.335E+10	.419E+08	825.02
	NON-PEAK	8.00	2225807.	11650000.	-18927.	0.	0.	.336E+10	.420E+08	825.37
	NON-PEAK	3.00	834677.	0.	-7121.	0.	0.	.336E+10	.420E+08	825.39
11	PEAK	3.00	834677.	0.	-7122.	-13340000.	0.	.335E+10	.419E+08	825.07
	NON-PEAK	6.00	1669355.	0.	-14203.	0.	0.	.335E+10	.419E+08	825.11
	PEAK	4.00	1112903.	0.	-9472.	-13340000.	0.	.334E+10	.418E+08	824.80
	NON-PEAK	8.00	2225807.	11650000.	-18890.	0.	0.	.335E+10	.420E+08	825.15
	NON-PEAK	3.00	834677.	0.	-7107.	0.	0.	.335E+10	.420E+08	825.18
12	PEAK	3.00	834677.	0.	-7108.	-13340000.	0.	.334E+10	.418E+08	824.86
	NON-PEAK	6.00	1669355.	0.	-14175.	0.	0.	.334E+10	.419E+08	824.90
	PEAK	4.00	1112903.	0.	-9454.	-13340000.	0.	.333E+10	.417E+08	824.58
	NON-PEAK	8.00	2225807.	11650000.	-18853.	0.	0.	.334E+10	.419E+08	824.94
	NON-PEAK	3.00	834677.	0.	-7093.	0.	0.	.334E+10	.419E+08	824.96
13	PEAK	3.00	834677.	0.	-7094.	-13340000.	0.	.333E+10	.418E+08	824.64
	NON-PEAK	6.00	1669355.	0.	-14147.	0.	0.	.333E+10	.418E+08	824.68
	PEAK	4.00	1112903.	0.	-9435.	-13340000.	0.	.332E+10	.417E+08	824.37
	NON-PEAK	8.00	2225807.	11650000.	-18816.	0.	0.	.333E+10	.418E+08	824.72
	NON-PEAK	3.00	834677.	0.	-7079.	0.	0.	.334E+10	.418E+08	824.74
14	PEAK	3.00	834677.	0.	-7080.	-13340000.	0.	.332E+10	.417E+08	824.42
	NON-PEAK	6.00	1669355.	0.	-14119.	0.	0.	.332E+10	.417E+08	824.47
	PEAK	4.00	1112903.	0.	-9417.	-13340000.	0.	.331E+10	.416E+08	824.15
	NON-PEAK	8.00	2225807.	11650000.	-18779.	0.	0.	.333E+10	.417E+08	824.51
	NON-PEAK	3.00	834677.	0.	-7065.	0.	0.	.333E+10	.417E+08	824.53
15	PEAK	3.00	834677.	0.	-7067.	-13340000.	0.	.331E+10	.416E+08	824.21
	NON-PEAK	6.00	1669355.	0.	-14092.	0.	0.	.332E+10	.416E+08	824.25
	PEAK	4.00	1112903.	0.	-9398.	-13340000.	0.	.330E+10	.415E+08	823.94
	NON-PEAK	8.00	2225807.	11650000.	-18742.	0.	0.	.332E+10	.416E+08	824.29
	NON-PEAK	3.00	834677.	0.	-7051.	0.	0.	.332E+10	.416E+08	824.31

MONTH OF : DECEMBER YEAR : 1963 OPERATION AT RESERVOIR A

DATE	PERIOD	DURATION (HR)	INFLA (M3)	QPUMP (M3)	EVAPLA (M3)	QA (M3)	SPILLA (M3)	STOREA (M3)	AREA (M2)	EL.A (M)
								.344E+10	.429E+08	827.55
1	PEAK	3.00	834677.	0.	-7261.	-13340000.	0.	.343E+10	.427E+08	827.23
	NON-PEAK	6.00	1669355.	0.	-14480.	0.	0.	.343E+10	.428E+08	827.27
	PEAK	4.00	1112903.	0.	-9657.	-13340000.	0.	.342E+10	.426E+08	826.96
	NON-PEAK	8.00	2225807.	11650000.	-19261.	0.	0.	.344E+10	.428E+08	827.31
	NON-PEAK	3.00	834677.	0.	-7246.	0.	0.	.344E+10	.428E+08	827.33
2	PEAK	3.00	834677.	0.	-7247.	-13340000.	0.	.342E+10	.427E+08	827.01
	NON-PEAK	6.00	1669355.	0.	-14453.	0.	0.	.343E+10	.427E+08	827.05
	PEAK	4.00	1112903.	0.	-9639.	-13340000.	0.	.341E+10	.426E+08	826.74
	NON-PEAK	8.00	2225807.	11650000.	-19224.	0.	0.	.343E+10	.427E+08	827.10
	NON-PEAK	3.00	834677.	0.	-7232.	0.	0.	.343E+10	.427E+08	827.12
3	PEAK	3.00	834677.	0.	-7233.	-13340000.	0.	.342E+10	.426E+08	826.80
	NON-PEAK	6.00	1669355.	0.	-14425.	0.	0.	.342E+10	.426E+08	826.84
	PEAK	4.00	1112903.	0.	-9620.	-13340000.	0.	.340E+10	.425E+08	826.52
	NON-PEAK	8.00	2225807.	11650000.	-19187.	0.	0.	.342E+10	.426E+08	826.88
	NON-PEAK	3.00	834677.	0.	-7218.	0.	0.	.342E+10	.426E+08	826.90
4	PEAK	3.00	834677.	0.	-7219.	-13340000.	0.	.341E+10	.425E+08	826.58
	NON-PEAK	6.00	1669355.	0.	-14397.	0.	0.	.341E+10	.425E+08	826.62
	PEAK	4.00	1112903.	0.	-9602.	-13340000.	0.	.340E+10	.424E+08	826.31
	NON-PEAK	8.00	2225807.	11650000.	-19150.	0.	0.	.341E+10	.425E+08	826.66
	NON-PEAK	3.00	834677.	0.	-7204.	0.	0.	.341E+10	.425E+08	826.69
5	PEAK	3.00	834677.	0.	-7205.	-13340000.	0.	.340E+10	.424E+08	826.36
	NON-PEAK	6.00	1669355.	0.	-14369.	0.	0.	.340E+10	.424E+08	826.41
	PEAK	4.00	1112903.	0.	-9583.	-13340000.	0.	.339E+10	.423E+08	826.09
	NON-PEAK	8.00	2225807.	11650000.	-19113.	0.	0.	.340E+10	.425E+08	826.45
	NON-PEAK	3.00	834677.	0.	-7190.	0.	0.	.340E+10	.425E+08	826.47
6	PEAK	3.00	834677.	0.	-7191.	-13340000.	0.	.339E+10	.423E+08	826.15
	NON-PEAK	6.00	1669355.	0.	-14342.	0.	0.	.339E+10	.424E+08	826.19
	PEAK	4.00	1112903.	0.	-9565.	-13340000.	0.	.338E+10	.422E+08	825.88
	NON-PEAK	8.00	2225807.	11650000.	-19075.	0.	0.	.339E+10	.424E+08	826.23
	NON-PEAK	3.00	834677.	0.	-7176.	0.	0.	.339E+10	.424E+08	826.25
7	PEAK	3.00	834677.	0.	-7178.	-13340000.	0.	.338E+10	.423E+08	825.93
	NON-PEAK	6.00	1669355.	0.	-14314.	0.	0.	.338E+10	.423E+08	825.98
	PEAK	4.00	1112903.	0.	-9546.	-13340000.	0.	.337E+10	.422E+08	825.66
	NON-PEAK	8.00	2225807.	11650000.	-19038.	0.	0.	.338E+10	.423E+08	826.02
	NON-PEAK	3.00	834677.	0.	-7162.	0.	0.	.339E+10	.423E+08	826.04

8	PEAK	3.00	834677.	0.	-7164.	-13340000.	0.	.337E+10	.422E+08	825.72
	NON-PEAK	6.00	1669355.	0.	-14286.	0.	0.	.337E+10	.422E+08	825.76
	PEAK	4.00	1112903.	0.	-9528.	-13340000.	0.	.336E+10	.421E+08	825.45
	NON-PEAK	8.00	2225807.	11650000.	-19001.	0.	0.	.338E+10	.422E+08	825.80
	NON-PEAK	3.00	834677.	0.	-7148.	0.	0.	.338E+10	.422E+08	825.82
9	PEAK	3.00	834677.	0.	-7150.	-13340000.	0.	.336E+10	.421E+08	825.50
	NON-PEAK	6.00	1669355.	0.	-14258.	0.	0.	.337E+10	.421E+08	825.54
	PEAK	4.00	1112903.	0.	-9509.	-13340000.	0.	.335E+10	.420E+08	825.23
	NON-PEAK	8.00	2225807.	11650000.	-18964.	0.	0.	.337E+10	.421E+08	825.59
	NON-PEAK	3.00	834677.	0.	-7135.	0.	0.	.337E+10	.421E+08	825.61
10	PEAK	3.00	834677.	0.	-7136.	-13340000.	0.	.336E+10	.420E+08	825.29
	NON-PEAK	6.00	1669355.	0.	-14231.	0.	0.	.336E+10	.420E+08	825.33
	PEAK	4.00	1112903.	0.	-9491.	-13340000.	0.	.335E+10	.419E+08	825.02
	NON-PEAK	8.00	2225807.	11650000.	-18927.	0.	0.	.336E+10	.420E+08	825.37
	NON-PEAK	3.00	834677.	0.	-7121.	0.	0.	.336E+10	.420E+08	825.39
11	PEAK	3.00	834677.	0.	-7122.	-13340000.	0.	.335E+10	.419E+08	825.07
	NON-PEAK	6.00	1669355.	0.	-14203.	0.	0.	.335E+10	.419E+08	825.11
	PEAK	4.00	1112903.	0.	-9472.	-13340000.	0.	.334E+10	.418E+08	824.80
	NON-PEAK	8.00	2225807.	11650000.	-18890.	0.	0.	.335E+10	.420E+08	825.15
	NON-PEAK	3.00	834677.	0.	-7107.	0.	0.	.335E+10	.420E+08	825.18
12	PEAK	3.00	834677.	0.	-7108.	-13340000.	0.	.334E+10	.418E+08	824.86
	NON-PEAK	6.00	1669355.	0.	-14175.	0.	0.	.334E+10	.419E+08	824.90
	PEAK	4.00	1112903.	0.	-9454.	-13340000.	0.	.333E+10	.417E+08	824.58
	NON-PEAK	8.00	2225807.	11650000.	-18853.	0.	0.	.334E+10	.419E+08	824.94
	NON-PEAK	3.00	834677.	0.	-7093.	0.	0.	.334E+10	.419E+08	824.96
13	PEAK	3.00	834677.	0.	-7094.	-13340000.	0.	.333E+10	.418E+08	824.64
	NON-PEAK	6.00	1669355.	0.	-14147.	0.	0.	.333E+10	.418E+08	824.68
	PEAK	4.00	1112903.	0.	-9435.	-13340000.	0.	.332E+10	.417E+08	824.37
	NON-PEAK	8.00	2225807.	11650000.	-18816.	0.	0.	.333E+10	.418E+08	824.72
	NON-PEAK	3.00	834677.	0.	-7079.	0.	0.	.334E+10	.418E+08	824.74
14	PEAK	3.00	834677.	0.	-7080.	-13340000.	0.	.332E+10	.417E+08	824.42
	NON-PEAK	6.00	1669355.	0.	-14119.	0.	0.	.332E+10	.417E+08	824.47
	PEAK	4.00	1112903.	0.	-9417.	-13340000.	0.	.331E+10	.416E+08	824.15
	NON-PEAK	8.00	2225807.	11650000.	-18779.	0.	0.	.333E+10	.417E+08	824.51
	NON-PEAK	3.00	834677.	0.	-7065.	0.	0.	.333E+10	.417E+08	824.53
15	PEAK	3.00	834677.	0.	-7067.	-13340000.	0.	.331E+10	.416E+08	824.21
	NON-PEAK	6.00	1669355.	0.	-14092.	0.	0.	.332E+10	.416E+08	824.25
	PEAK	4.00	1112903.	0.	-9398.	-13340000.	0.	.330E+10	.415E+08	823.94
	NON-PEAK	8.00	2225807.	11650000.	-18742.	0.	0.	.332E+10	.416E+08	824.29
	NON-PEAK	3.00	834677.	0.	-7051.	0.	0.	.332E+10	.416E+08	824.31

16	PEAK	3.00	834677.	0.	-7053.	-13340000.	0.	.331E+10	.415E+08	823.99
	NON-PEAK	6.00	1669355.	0.	-14064.	0.	0.	.331E+10	.415E+08	824.04
	PEAK	4.00	1112903.	0.	-9380.	-13340000.	0.	.330E+10	.414E+08	823.72
	NON-PEAK	8.00	2225807.	11650000.	-18705.	0.	0.	.331E+10	.415E+08	824.08
	NON-PEAK	3.00	834677.	0.	-7037.	0.	0.	.331E+10	.416E+08	824.10
17	PEAK	3.00	834677.	0.	-7039.	-13340000.	0.	.330E+10	.414E+08	823.78
	NON-PEAK	6.00	1669355.	0.	-14036.	0.	0.	.330E+10	.415E+08	823.82
	PEAK	4.00	1112903.	0.	-9361.	-13340000.	0.	.329E+10	.413E+08	823.51
	NON-PEAK	8.00	2225807.	11650000.	-18668.	0.	0.	.330E+10	.415E+08	823.86
	NON-PEAK	3.00	834677.	0.	-7024.	0.	0.	.330E+10	.415E+08	823.88
18	PEAK	3.00	834677.	0.	-7025.	-13340000.	0.	.329E+10	.414E+08	823.56
	NON-PEAK	6.00	1669355.	0.	-14008.	0.	0.	.329E+10	.414E+08	823.60
	PEAK	4.00	1112903.	0.	-9343.	-13340000.	0.	.328E+10	.413E+08	823.29
	NON-PEAK	8.00	2225807.	11650000.	-18631.	0.	0.	.329E+10	.414E+08	823.65
	NON-PEAK	3.00	834677.	0.	-7010.	0.	0.	.329E+10	.414E+08	823.67
19	PEAK	3.00	834677.	0.	-7011.	-13340000.	0.	.328E+10	.413E+08	823.35
	NON-PEAK	6.00	1669355.	0.	-13981.	0.	0.	.328E+10	.413E+08	823.39
	PEAK	4.00	1112903.	0.	-9324.	-13340000.	0.	.327E+10	.412E+08	823.07
	NON-PEAK	8.00	2225807.	11650000.	-18594.	0.	0.	.328E+10	.413E+08	823.43
	NON-PEAK	3.00	834677.	0.	-6996.	0.	0.	.328E+10	.413E+08	823.45
20	PEAK	3.00	834677.	0.	-6997.	-13340000.	0.	.327E+10	.412E+08	823.13
	NON-PEAK	6.00	1669355.	0.	-13953.	0.	0.	.327E+10	.412E+08	823.17
	PEAK	4.00	1112903.	0.	-9306.	-13340000.	0.	.326E+10	.411E+08	822.86
	NON-PEAK	8.00	2225807.	11650000.	-18557.	0.	0.	.328E+10	.412E+08	823.21
	NON-PEAK	3.00	834677.	0.	-6982.	0.	0.	.328E+10	.412E+08	823.24
21	PEAK	3.00	834677.	0.	-6983.	-13340000.	0.	.326E+10	.411E+08	822.91
	NON-PEAK	6.00	1669355.	0.	-13925.	0.	0.	.327E+10	.411E+08	822.96
	PEAK	4.00	1112903.	0.	-9287.	-13340000.	0.	.325E+10	.410E+08	822.64
	NON-PEAK	8.00	2225807.	11650000.	-18520.	0.	0.	.327E+10	.411E+08	823.00
	NON-PEAK	3.00	834677.	0.	-6968.	0.	0.	.327E+10	.411E+08	823.02
22	PEAK	3.00	834677.	0.	-6969.	-13340000.	0.	.326E+10	.410E+08	822.70
	NON-PEAK	6.00	1669355.	0.	-13897.	0.	0.	.326E+10	.410E+08	822.74
	PEAK	4.00	1112903.	0.	-9269.	-13340000.	0.	.324E+10	.409E+08	822.43
	NON-PEAK	8.00	2225807.	11650000.	-18483.	0.	0.	.326E+10	.411E+08	822.78
	NON-PEAK	3.00	834677.	0.	-6954.	0.	0.	.326E+10	.411E+08	822.80
23	PEAK	3.00	834677.	0.	-6956.	-13340000.	0.	.325E+10	.409E+08	822.48
	NON-PEAK	6.00	1669355.	0.	-13870.	0.	0.	.325E+10	.410E+08	822.53
	PEAK	4.00	1112903.	0.	-9250.	-13340000.	0.	.324E+10	.408E+08	822.21
	NON-PEAK	8.00	2225807.	11650000.	-18446.	0.	0.	.325E+10	.410E+08	822.57
	NON-PEAK	3.00	834677.	0.	-6940.	0.	0.	.325E+10	.410E+08	822.59

24	PEAK	3.00	834677.	0.	-6942.	-13340000.	0.	.324E+10	.409E+08	822.27
	NON-PEAK	6.00	1669355.	0.	-13842.	0.	0.	.324E+10	.409E+08	822.31
	PEAK	4.00	1112903.	0.	-9232.	-13340000.	0.	.323E+10	.408E+08	822.00
	NON-PEAK	8.00	2225807.	11650000.	-18409.	0.	0.	.324E+10	.409E+08	822.35
	NON-PEAK	3.00	834677.	0.	-6926.	0.	0.	.324E+10	.409E+08	822.37
25	PEAK	3.00	834677.	0.	-6928.	-13340000.	0.	.323E+10	.408E+08	822.05
	NON-PEAK	6.00	1669355.	0.	-13814.	0.	0.	.323E+10	.408E+08	822.09
	PEAK	4.00	1112903.	0.	-9213.	-13340000.	0.	.322E+10	.407E+08	821.78
	NON-PEAK	8.00	2225807.	11650000.	-18372.	0.	0.	.323E+10	.408E+08	822.14
	NON-PEAK	3.00	834677.	0.	-6913.	0.	0.	.323E+10	.408E+08	822.16
26	PEAK	3.00	834677.	0.	-6914.	-13340000.	0.	.322E+10	.407E+08	821.84
	NON-PEAK	6.00	1669355.	0.	-13786.	0.	0.	.322E+10	.407E+08	821.88
	PEAK	4.00	1112903.	0.	-9195.	-13340000.	0.	.321E+10	.406E+08	821.57
	NON-PEAK	8.00	2225807.	11650000.	-18335.	0.	0.	.322E+10	.407E+08	821.92
	NON-PEAK	3.00	834677.	0.	-6899.	0.	0.	.323E+10	.407E+08	821.94
27	PEAK	3.00	834677.	0.	-6900.	-13340000.	0.	.321E+10	.406E+08	821.62
	NON-PEAK	6.00	1669355.	0.	-13759.	0.	0.	.321E+10	.406E+08	821.66
	PEAK	4.00	1112903.	0.	-9176.	-13340000.	0.	.320E+10	.405E+08	821.35
	NON-PEAK	8.00	2225807.	11650000.	-18298.	0.	0.	.322E+10	.406E+08	821.71
	NON-PEAK	3.00	834677.	0.	-6885.	0.	0.	.322E+10	.407E+08	821.73
28	PEAK	3.00	834677.	0.	-6886.	-13340000.	0.	.320E+10	.405E+08	821.41
	NON-PEAK	6.00	1669355.	0.	-13731.	0.	0.	.321E+10	.406E+08	821.45
	PEAK	4.00	1112903.	0.	-9158.	-13340000.	0.	.319E+10	.404E+08	821.13
	NON-PEAK	8.00	2225807.	11650000.	-18261.	0.	0.	.321E+10	.406E+08	821.49
	NON-PEAK	3.00	834677.	0.	-6871.	0.	0.	.321E+10	.406E+08	821.51
29	PEAK	3.00	834677.	0.	-6872.	-13340000.	0.	.320E+10	.405E+08	821.19
	NON-PEAK	6.00	1669355.	0.	-13703.	0.	0.	.320E+10	.405E+08	821.23
	PEAK	4.00	1112903.	0.	-9139.	-13340000.	0.	.319E+10	.403E+08	820.92
	NON-PEAK	8.00	2225807.	11650000.	-18224.	0.	0.	.320E+10	.405E+08	821.27
	NON-PEAK	3.00	834677.	0.	-6857.	0.	0.	.320E+10	.405E+08	821.30
30	PEAK	3.00	834677.	0.	-6858.	-13340000.	0.	.319E+10	.404E+08	820.97
	NON-PEAK	6.00	1669355.	0.	-13675.	0.	0.	.319E+10	.404E+08	821.02
	PEAK	4.00	1112903.	0.	-9121.	-13340000.	0.	.318E+10	.403E+08	820.70
	NON-PEAK	8.00	2225807.	11650000.	-18187.	0.	0.	.319E+10	.404E+08	821.06
	NON-PEAK	3.00	834677.	0.	-6843.	0.	0.	.319E+10	.404E+08	821.08
31	PEAK	3.00	834677.	0.	-6844.	-13340000.	0.	.318E+10	.403E+08	820.76
	NON-PEAK	6.00	1669355.	0.	-13648.	0.	0.	.318E+10	.403E+08	820.80
	PEAK	4.00	1112903.	0.	-9102.	-13340000.	0.	.317E+10	.402E+08	820.49
	NON-PEAK	8.00	2225807.	11650000.	-18150.	0.	0.	.318E+10	.403E+08	820.84
	NON-PEAK	3.00	834677.	0.	-6829.	0.	0.	.318E+10	.403E+08	820.86

File name: ROBPRF0.OUT for year 1963 with proposed operation schedule

MONTH OF : OCTOBER YEAR : 1963 OPERATION AT RESERVOIR B

DATE	PERIOD	DURATION (HR)	INFLB (M3)	QA (M3)	IRRS (M3)	EVAPLB (M3)	QPUMP (M3)	SPILLB (M3)	STOREB (M3)	BREA (M2)	EL.B (M)
									.551E+08	.198E+07	598.50
1	PEAK	3.00	0.	13340000.	-710484.	-807.	0.	0.	.678E+08	.220E+07	604.40
	NON-PEAK	6.00	0.	0.	-1420968.	-1791.	0.	0.	.663E+08	.218E+07	603.76
	PEAK	4.00	0.	3416324.	-947312.	-1181.	0.	0.	.688E+08	.222E+07	604.87
	NON-PEAK	8.00	0.	0.	-1894624.	-2406.	0.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-710484.	-890.	0.	0.	.662E+08	.217E+07	603.69
2	PEAK	3.00	0.	13340000.	-710484.	-885.	0.	0.	.788E+08	.238E+07	609.38
	NON-PEAK	6.00	0.	0.	-1420968.	-1937.	0.	0.	.774E+08	.235E+07	608.74
	PEAK	4.00	0.	13340000.	-947312.	-1279.	0.	-4277516.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	1245696.	0.	-710484.	-887.	0.	0.	.670E+08	.219E+07	604.05
3	PEAK	3.00	0.	13340000.	-710484.	-890.	0.	0.	.796E+08	.239E+07	609.74
	NON-PEAK	6.00	0.	0.	-1420968.	-1947.	0.	0.	.782E+08	.237E+07	609.10
	PEAK	4.00	0.	13340000.	-947312.	-1286.	0.	-5074046.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	0.	0.	.836E+08	.250E+07	611.29
	NON-PEAK	3.00	0.	0.	-710484.	-1017.	0.	0.	.829E+08	.248E+07	611.02
4	PEAK	3.00	0.	13340000.	-710484.	-1009.	0.	-10019610.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	13340000.	-947312.	-1363.	0.	-10968280.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
5	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
6	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
7	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	0.	0.	.836E+08	.250E+07	611.29
	NON-PEAK	3.00	0.	0.	-710484.	-1017.	0.	0.	.829E+08	.248E+07	611.02

8	PEAK	3.00	0.	13340000.	-710484.	-1009.	0.	-10019610.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	13340000.	-947312.	-1363.	0.	-10968280.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
9	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
10	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
11	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	0.	0.	.836E+08	.250E+07	611.29
	NON-PEAK	3.00	0.	0.	-710484.	-1017.	0.	0.	.829E+08	.248E+07	611.02
12	PEAK	3.00	0.	13340000.	-710484.	-1009.	0.	-10019610.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	13340000.	-947312.	-1363.	0.	-10968280.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
13	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
14	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
15	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	0.	0.	.836E+08	.250E+07	611.29
	NON-PEAK	3.00	0.	0.	-710484.	-1017.	0.	0.	.829E+08	.248E+07	611.02

16	PEAK	3.00	0.	13340000.	-710484.	-1009.	0.	-10019610.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	13340000.	-947312.	-1363.	0.	-10968280.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
17	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
18	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
19	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	0.	0.	.836E+08	.250E+07	611.29
	NON-PEAK	3.00	0.	0.	-710484.	-1017.	0.	0.	.829E+08	.248E+07	611.02
20	PEAK	3.00	0.	13340000.	-710484.	-1009.	0.	-10019610.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	13340000.	-947312.	-1363.	0.	-10968280.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
21	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
22	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
23	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	0.	0.	.836E+08	.250E+07	611.29
	NON-PEAK	3.00	0.	0.	-710484.	-1017.	0.	0.	.829E+08	.248E+07	611.02

24	PEAK	3.00	0.	13340000.	-710484.	-1009.	0.	-10019610.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	13340000.	-947312.	-1363.	0.	-10968280.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
25	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
26	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
27	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	0.	0.	.836E+08	.250E+07	611.29
	NON-PEAK	3.00	0.	0.	-710484.	-1017.	0.	0.	.829E+08	.248E+07	611.02
28	PEAK	3.00	0.	13340000.	-710484.	-1009.	0.	-10019610.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-1420968.	-2077.	0.	0.	.841E+08	.251E+07	611.47
	PEAK	4.00	0.	13340000.	-947312.	-1363.	0.	-10968280.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
29	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
30	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	-17160000.	0.	.665E+08	.218E+07	603.81
	NON-PEAK	3.00	0.	0.	-710484.	-887.	0.	0.	.658E+08	.217E+07	603.49
31	PEAK	3.00	0.	13340000.	-710484.	-882.	0.	0.	.784E+08	.237E+07	609.18
	NON-PEAK	6.00	0.	0.	-1420968.	-1931.	0.	0.	.770E+08	.235E+07	608.54
	PEAK	4.00	0.	13340000.	-947312.	-1275.	0.	-3828386.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-1894624.	-2769.	0.	0.	.836E+08	.250E+07	611.29
	NON-PEAK	3.00	0.	0.	-710484.	-1017.	0.	0.	.829E+08	.248E+07	611.02

-.237E+09

MONTH OF : NOVEMBER YEAR : 1963 OPERATION AT RESERVOIR B

DATE	PERIOD	DURATION (HR)	INFLB (M3)	QA (M3)	IRRS (M3)	EVAPLB (M3)	QPUMP (M3)	SPILLB (M3)	STOREB (M3)	BREA (M2)	EL.B (M)
									.829E+08	.248E+07	611.02
1	PEAK	3.00	0.	13340000.	-1421667.	-702.	0.	-9308738.	.855E+08	.255E+07	612.00
	NON-PEAK	6.00	0.	0.	-2843333.	-1445.	0.	0.	.827E+08	.247E+07	610.93
	PEAK	4.00	0.	13340000.	-1895556.	-933.	0.	-8598733.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
2	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
3	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
4	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
5	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
6	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
7	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16

8	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
9	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
10	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
11	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
12	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
13	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
14	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
15	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16

16	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
17	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
18	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
19	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
20	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
21	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
22	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
23	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16

24	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
25	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
26	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
27	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
28	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
29	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16
30	PEAK	3.00	0.	13340000.	-1421667.	-610.	0.	0.	.769E+08	.235E+07	608.52
	NON-PEAK	6.00	0.	0.	-2843333.	-1330.	0.	0.	.741E+08	.230E+07	607.24
	PEAK	4.00	0.	13340000.	-1895556.	-869.	0.	-1314.	.855E+08	.255E+07	612.00
	NON-PEAK	8.00	0.	0.	-3791111.	-1927.	-15300000.	0.	.664E+08	.218E+07	603.80
	NON-PEAK	3.00	0.	0.	-1421667.	-617.	0.	0.	.650E+08	.215E+07	603.16

-.179E+08

MONTH OF : DECEMBER YEAR : 1963 OPERATION AT RESERVOIR B

DATE	PERIOD	DURATION (HR)	INFLB (M3)	QA (M3)	IRRS (M3)	EVAPLB (M3)	QPUMP (M3)	SPILLB (M3)	STOREB (M3)	BREA (M2)	EL.B (M)
									.650E+08	.215E+07	603.16
1	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-792.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.835E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.00
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
2	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-792.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.835E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.00
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
3	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-792.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.835E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.00
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
4	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.835E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.00
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
5	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.835E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.00
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
6	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.835E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.00
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
7	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.00
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16

8	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
9	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
10	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
11	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
12	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
13	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
14	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
15	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16

16	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.32
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
17	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
18	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
19	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
20	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
21	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.63
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.26
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.16
22	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17
23	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17

24	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17
25	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.249E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17
26	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.250E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17
27	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.250E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17
28	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.250E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17
29	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.250E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.01
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17
30	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.250E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.02
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17
31	PEAK	3.00	0.	13340000.	-1878226.	-365.	0.	0.	.765E+08	.234E+07	608.33
	NON-PEAK	6.00	0.	0.	-3756452.	-793.	0.	0.	.727E+08	.228E+07	606.64
	PEAK	4.00	0.	13340000.	-2504301.	-515.	0.	0.	.836E+08	.250E+07	611.27
	NON-PEAK	8.00	0.	0.	-5008602.	-1127.	-11650000.	0.	.669E+08	.218E+07	604.02
	NON-PEAK	3.00	0.	0.	-1878226.	-370.	0.	0.	.650E+08	.215E+07	603.17

.000E+00
.255E+09

File name: ENGPRF0.OUT for year 1963 with proposed operation schedule

MONTH OF : OCTOBER YEAR : 1963 ENERGY GENERATION IN U/S, D/S POWER HOUSE AND % MEETING IRR.DEMAND

DATE	PERIOD	DURATION (HR)	GROSSH (M)	NETTH (M)	Q (M3/S)	STARTP (MW)	ENDP (MW)	AV.ENERGY (MWh)	QD (M3/S)	ENERGY (MWh)	TOT.ENERGY (MWh)	IRR. (%)
1.	PEAK	3.00	225.	210.	1235.	2223.	2160.	6575.	66.	123.	6698.	100.
	NON-PEAK	6.00	226.	226.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	225.	224.	237.	446.	444.	1780.	66.	165.	1944.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
2	PEAK	3.00	220.	205.	1235.	2169.	2107.	6415.	66.	123.	6538.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1639.	1612.	6501.	66.	165.	6666.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
3	PEAK	3.00	220.	204.	1235.	2166.	2105.	6406.	66.	123.	6530.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	209.	926.	1637.	1612.	6498.	66.	165.	6663.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	66.	123.	123.	100.
4	PEAK	3.00	217.	202.	1235.	2091.	2078.	6253.	66.	123.	6377.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1616.	1610.	6452.	66.	165.	6616.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
5	PEAK	3.00	220.	205.	1235.	2170.	2108.	6417.	66.	123.	6540.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1639.	1611.	6500.	66.	165.	6665.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
6	PEAK	3.00	220.	205.	1235.	2171.	2109.	6420.	66.	123.	6543.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1640.	1611.	6503.	66.	165.	6668.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	227.	227.	0.	0.	0.	0.	66.	123.	123.	100.
7	PEAK	3.00	221.	205.	1235.	2172.	2110.	6423.	66.	123.	6547.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	218.	209.	926.	1641.	1612.	6507.	66.	165.	6671.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	66.	123.	123.	100.

8	PEAK	3.00	217.	202.	1235.	2091.	2078.	6253.	66.	123.	6377.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1616.	1610.	6451.	66.	165.	6616.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
9	PEAK	3.00	220.	205.	1235.	2170.	2108.	6416.	66.	123.	6540.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1639.	1611.	6500.	66.	165.	6664.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
10	PEAK	3.00	220.	205.	1235.	2171.	2109.	6420.	66.	123.	6543.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1640.	1611.	6503.	66.	165.	6668.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
11	PEAK	3.00	221.	205.	1235.	2172.	2110.	6423.	66.	123.	6547.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1641.	1612.	6507.	66.	165.	6671.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	66.	123.	123.	100.
12	PEAK	3.00	217.	202.	1235.	2091.	2078.	6253.	66.	123.	6377.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1616.	1610.	6451.	66.	165.	6616.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
13	PEAK	3.00	220.	205.	1235.	2170.	2108.	6416.	66.	123.	6540.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1639.	1610.	6500.	66.	165.	6664.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
14	PEAK	3.00	220.	205.	1235.	2171.	2109.	6420.	66.	123.	6543.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1640.	1611.	6503.	66.	165.	6668.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
15	PEAK	3.00	221.	205.	1235.	2172.	2110.	6423.	66.	123.	6546.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1641.	1612.	6506.	66.	165.	6671.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	66.	123.	123.	100.

16	PEAK	3.00	217.	202.	1235.	2091.	2078.	6253.	66.	123.	6376.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1616.	1610.	6451.	66.	165.	6616.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
17	PEAK	3.00	220.	205.	1235.	2170.	2108.	6416.	66.	123.	6540.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1639.	1610.	6500.	66.	165.	6664.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
18	PEAK	3.00	220.	205.	1235.	2171.	2109.	6420.	66.	123.	6543.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1640.	1611.	6503.	66.	165.	6668.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
19	PEAK	3.00	221.	205.	1235.	2172.	2110.	6423.	66.	123.	6546.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1641.	1612.	6506.	66.	165.	6671.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	66.	123.	123.	100.
20	PEAK	3.00	217.	202.	1235.	2091.	2078.	6253.	66.	123.	6376.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1616.	1610.	6451.	66.	165.	6615.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
21	PEAK	3.00	220.	205.	1235.	2170.	2108.	6416.	66.	123.	6539.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1639.	1610.	6499.	66.	165.	6664.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
22	PEAK	3.00	220.	205.	1235.	2171.	2109.	6419.	66.	123.	6543.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1640.	1611.	6503.	66.	165.	6667.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
23	PEAK	3.00	220.	205.	1235.	2172.	2110.	6423.	66.	123.	6546.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1641.	1612.	6506.	66.	165.	6671.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	66.	123.	123.	100.

24	PEAK	3.00	217.	202.	1235.	2091.	2078.	6253.	66.	123.	6376.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1616.	1610.	6451.	66.	165.	6615.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
25	PEAK	3.00	220.	205.	1235.	2169.	2108.	6416.	66.	123.	6539.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1639.	1610.	6499.	66.	165.	6664.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
26	PEAK	3.00	220.	205.	1235.	2171.	2109.	6419.	66.	123.	6543.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1640.	1611.	6503.	66.	165.	6667.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
27	PEAK	3.00	220.	205.	1235.	2172.	2110.	6423.	66.	123.	6546.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1641.	1612.	6506.	66.	165.	6671.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	66.	123.	123.	100.
28	PEAK	3.00	217.	202.	1235.	2091.	2078.	6252.	66.	123.	6376.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1616.	1609.	6451.	66.	165.	6615.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
29	PEAK	3.00	220.	205.	1235.	2169.	2108.	6416.	66.	123.	6539.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	208.	926.	1639.	1610.	6499.	66.	165.	6664.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
30	PEAK	3.00	220.	205.	1235.	2171.	2109.	6419.	66.	123.	6542.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1640.	1611.	6503.	66.	165.	6667.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	66.	123.	123.	100.
31	PEAK	3.00	220.	205.	1235.	2172.	2110.	6422.	66.	123.	6546.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	66.	247.	247.	100.
	PEAK	4.00	217.	209.	926.	1641.	1612.	6506.	66.	165.	6670.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	66.	329.	329.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	66.	123.	123.	100.
T O T A L =								394476.			425085.	
AVERAGE % 10 DAILY IRR.SUPPLY =										100.00	100.00	100.00

MONTH OF : NOVEMBER YEAR : 1963 ENERGY GENERATION IN U/S, D/S POWER HOUSE AND % MEETING IRR.DEMAND

DATE	PERIOD	DURATION (HR)	GROSSH (M)	NETTH (M)	Q (M3/S)	STARTP (MW)	ENDP (MW)	AV.ENERGY (MWh)	QD (M3/S)	ENERGY (MWh)	TOT.ENERGY (MWh)	IRR. (%)
1	PEAK	3.00	217.	202.	1235.	2091.	2077.	6252.	132.	247.	6499.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	217.	208.	926.	1620.	1609.	6457.	132.	329.	6786.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
2	PEAK	3.00	221.	205.	1235.	2171.	2112.	6425.	132.	247.	6672.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	217.	208.	926.	1647.	1608.	6512.	132.	329.	6841.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
3	PEAK	3.00	221.	205.	1235.	2170.	2112.	6423.	132.	247.	6670.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	217.	208.	926.	1647.	1608.	6510.	132.	329.	6839.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
4	PEAK	3.00	221.	205.	1235.	2170.	2111.	6421.	132.	247.	6668.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	217.	208.	926.	1646.	1607.	6507.	132.	329.	6837.	100.
	NON-PEAK	8.00	226.	226.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
5	PEAK	3.00	221.	205.	1235.	2169.	2110.	6419.	132.	247.	6666.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	217.	208.	926.	1646.	1607.	6505.	132.	329.	6835.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
6	PEAK	3.00	220.	205.	1235.	2168.	2110.	6417.	132.	247.	6664.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	217.	208.	926.	1645.	1606.	6503.	132.	329.	6832.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
7	PEAK	3.00	220.	205.	1235.	2167.	2109.	6414.	132.	247.	6661.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	217.	208.	926.	1645.	1606.	6501.	132.	329.	6830.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.

8	PEAK	3.00	220.	205.	1235.	2167.	2108.	6412.	132.	247.	6659.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	217.	208.	926.	1644.	1605.	6499.	132.	329.	6828.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
9	PEAK	3.00	220.	205.	1235.	2166.	2107.	6410.	132.	247.	6657.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	217.	208.	926.	1644.	1605.	6497.	132.	329.	6826.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
10	PEAK	3.00	220.	205.	1235.	2165.	2107.	6408.	132.	247.	6655.	100.
	NON-PEAK	6.00	222.	222.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	208.	926.	1643.	1604.	6494.	132.	329.	6824.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
11	PEAK	3.00	220.	204.	1235.	2165.	2106.	6406.	132.	247.	6653.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	208.	926.	1643.	1604.	6492.	132.	329.	6822.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
12	PEAK	3.00	220.	204.	1235.	2164.	2105.	6404.	132.	247.	6651.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	208.	926.	1642.	1603.	6490.	132.	329.	6819.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
13	PEAK	3.00	220.	204.	1235.	2163.	2105.	6402.	132.	247.	6648.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1642.	1602.	6488.	132.	329.	6817.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
14	PEAK	3.00	220.	204.	1235.	2162.	2104.	6399.	132.	247.	6646.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1641.	1602.	6486.	132.	329.	6815.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	226.	226.	0.	0.	0.	0.	132.	247.	247.	100.
15	PEAK	3.00	220.	204.	1235.	2162.	2103.	6397.	132.	247.	6644.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1640.	1601.	6484.	132.	329.	6813.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.

16	PEAK	3.00	220.	204.	1235.	2161.	2102.	6395.	132.	247.	6642.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1640.	1601.	6482.	132.	329.	6811.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
17	PEAK	3.00	220.	204.	1235.	2160.	2102.	6393.	132.	247.	6640.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1639.	1600.	6479.	132.	329.	6809.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
18	PEAK	3.00	220.	204.	1235.	2160.	2101.	6391.	132.	247.	6638.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1639.	1600.	6477.	132.	329.	6807.	100.
	NON-PEAK	8.00	225.	225.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
19	PEAK	3.00	220.	204.	1235.	2159.	2100.	6389.	132.	247.	6636.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1638.	1599.	6475.	132.	329.	6804.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
20	PEAK	3.00	219.	204.	1235.	2158.	2100.	6386.	132.	247.	6633.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1638.	1599.	6473.	132.	329.	6802.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
21	PEAK	3.00	219.	204.	1235.	2157.	2099.	6384.	132.	247.	6631.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1637.	1598.	6471.	132.	329.	6800.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
22	PEAK	3.00	219.	204.	1235.	2157.	2098.	6382.	132.	247.	6629.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1637.	1598.	6469.	132.	329.	6798.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
23	PEAK	3.00	219.	204.	1235.	2156.	2097.	6380.	132.	247.	6627.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	216.	207.	926.	1636.	1597.	6467.	132.	329.	6796.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.

24	PEAK	3.00	219.	204.	1235.	2155.	2097.	6378.	132.	247.	6625.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	215.	207.	926.	1636.	1597.	6464.	132.	329.	6794.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
25	PEAK	3.00	219.	204.	1235.	2155.	2096.	6376.	132.	247.	6623.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	215.	207.	926.	1635.	1596.	6462.	132.	329.	6792.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
26	PEAK	3.00	219.	203.	1235.	2154.	2095.	6374.	132.	247.	6621.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	215.	207.	926.	1635.	1595.	6460.	132.	329.	6789.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
27	PEAK	3.00	219.	203.	1235.	2153.	2095.	6371.	132.	247.	6618.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	215.	206.	926.	1634.	1595.	6458.	132.	329.	6787.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
28	PEAK	3.00	219.	203.	1235.	2152.	2094.	6369.	132.	247.	6616.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	215.	206.	926.	1634.	1594.	6456.	132.	329.	6785.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	225.	225.	0.	0.	0.	0.	132.	247.	247.	100.
29	PEAK	3.00	219.	203.	1235.	2152.	2093.	6367.	132.	247.	6614.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	215.	206.	926.	1633.	1594.	6454.	132.	329.	6783.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	224.	224.	0.	0.	0.	0.	132.	247.	247.	100.
30	PEAK	3.00	219.	203.	1235.	2151.	2092.	6365.	132.	247.	6612.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	132.	494.	494.	100.
	PEAK	4.00	215.	206.	926.	1632.	1593.	6452.	132.	329.	6781.	100.
	NON-PEAK	8.00	224.	224.	0.	0.	0.	0.	132.	659.	659.	100.
	NON-PEAK	3.00	224.	224.	0.	0.	0.	0.	132.	247.	247.	100.
T O T A L =								386132.			445405.	
AVERAGE % 10 DAILY IRR.SUPPLY =										00.00	100.00	100.00

MONTH OF : DECEMBER YEAR : 1963 ENERGY GENERATION IN U/S, D/S POWER HOUSE AND % MEETING IRR.DEMAND

DATE	PERIOD	DURATION (HR)	GROSSH (M)	NETTH (M)	Q (M3/S)	STARTP (MW)	ENDP (MW)	AV.ENERGY (MWh)	QD (M3/S)	ENERGY (MWh)	TOT.ENERGY (MWh)	IRR. (%)
1	PEAK	3.00	219.	203.	1235.	2150.	2094.	6366.	174.	326.	6692.	100.
	NON-PEAK	6.00	221.	221.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	216.	207.	926.	1637.	1598.	6470.	174.	435.	6905.	100.
	NON-PEAK	8.00	223.	223.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	224.	224.	0.	0.	0.	0.	174.	326.	326.	100.
2	PEAK	3.00	219.	203.	1235.	2148.	2092.	6359.	174.	326.	6686.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	215.	207.	926.	1635.	1597.	6463.	174.	435.	6898.	100.
	NON-PEAK	8.00	223.	223.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	224.	224.	0.	0.	0.	0.	174.	326.	326.	100.
3	PEAK	3.00	218.	203.	1235.	2146.	2089.	6353.	174.	326.	6679.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	215.	206.	926.	1633.	1595.	6456.	174.	435.	6891.	100.
	NON-PEAK	8.00	223.	223.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	224.	224.	0.	0.	0.	0.	174.	326.	326.	100.
4	PEAK	3.00	218.	203.	1235.	2144.	2087.	6346.	174.	326.	6672.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	215.	206.	926.	1632.	1593.	6450.	174.	435.	6885.	100.
	NON-PEAK	8.00	223.	223.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	224.	224.	0.	0.	0.	0.	174.	326.	326.	100.
5	PEAK	3.00	218.	202.	1235.	2141.	2085.	6339.	174.	326.	6665.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	215.	206.	926.	1630.	1592.	6443.	174.	435.	6878.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	223.	223.	0.	0.	0.	0.	174.	326.	326.	100.
6	PEAK	3.00	218.	202.	1235.	2139.	2083.	6333.	174.	326.	6659.	100.
	NON-PEAK	6.00	220.	220.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	215.	206.	926.	1628.	1590.	6436.	174.	435.	6871.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	223.	223.	0.	0.	0.	0.	174.	326.	326.	100.
7	PEAK	3.00	218.	202.	1235.	2137.	2080.	6326.	174.	326.	6652.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	214.	206.	926.	1626.	1588.	6430.	174.	435.	6865.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	223.	223.	0.	0.	0.	0.	174.	326.	326.	100.

8	PEAK	3.00	217.	202.	1235.	2135.	2078.	6319.	174.	326.	6645.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	214.	205.	926.	1625.	1587.	6423.	174.	435.	6858.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	223.	223.	0.	0.	0.	0.	174.	326.	326.	100.
9	PEAK	3.00	217.	202.	1235.	2132.	2076.	6312.	174.	326.	6639.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	214.	205.	926.	1623.	1585.	6416.	174.	435.	6851.	100.
	NON-PEAK	8.00	222.	222.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	222.	222.	0.	0.	0.	0.	174.	326.	326.	100.
10	PEAK	3.00	217.	201.	1235.	2130.	2074.	6306.	174.	326.	6632.	100.
	NON-PEAK	6.00	219.	219.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	214.	205.	926.	1621.	1583.	6410.	174.	435.	6845.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	222.	222.	0.	0.	0.	0.	174.	326.	326.	100.
11	PEAK	3.00	217.	201.	1235.	2128.	2071.	6299.	174.	326.	6625.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	214.	205.	926.	1620.	1582.	6403.	174.	435.	6838.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	222.	222.	0.	0.	0.	0.	174.	326.	326.	100.
12	PEAK	3.00	217.	201.	1235.	2126.	2069.	6292.	174.	326.	6619.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	213.	205.	926.	1618.	1580.	6396.	174.	435.	6831.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	222.	222.	0.	0.	0.	0.	174.	326.	326.	100.
13	PEAK	3.00	216.	201.	1235.	2124.	2067.	6286.	174.	326.	6612.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	213.	204.	926.	1616.	1578.	6390.	174.	435.	6825.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	222.	222.	0.	0.	0.	0.	174.	326.	326.	100.
14	PEAK	3.00	216.	200.	1235.	2121.	2065.	6279.	174.	326.	6605.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	213.	204.	926.	1615.	1577.	6383.	174.	435.	6818.	100.
	NON-PEAK	8.00	221.	221.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	221.	221.	0.	0.	0.	0.	174.	326.	326.	100.
15	PEAK	3.00	216.	200.	1235.	2119.	2063.	6272.	174.	326.	6599.	100.
	NON-PEAK	6.00	218.	218.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	213.	204.	926.	1613.	1575.	6376.	174.	435.	6811.	100.
	NON-PEAK	8.00	220.	220.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	221.	221.	0.	0.	0.	0.	174.	326.	326.	100.

16	PEAK	3.00	216.	200.	1235.	2117.	2060.	6266.	174.	326.	6592.	100.
	NON-PEAK	6.00	217.	217.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	212.	204.	926.	1611.	1573.	6370.	174.	435.	6805.	100.
	NON-PEAK	8.00	220.	220.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	221.	221.	0.	0.	0.	0.	174.	326.	326.	100.
17	PEAK	3.00	215.	200.	1235.	2115.	2058.	6259.	174.	326.	6585.	100.
	NON-PEAK	6.00	217.	217.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	212.	203.	926.	1610.	1572.	6363.	174.	435.	6798.	100.
	NON-PEAK	8.00	220.	220.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	221.	221.	0.	0.	0.	0.	174.	326.	326.	100.
18	PEAK	3.00	215.	200.	1235.	2112.	2056.	6252.	174.	326.	6579.	100.
	NON-PEAK	6.00	217.	217.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	212.	203.	926.	1608.	1570.	6356.	174.	435.	6791.	100.
	NON-PEAK	8.00	220.	220.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	221.	221.	0.	0.	0.	0.	174.	326.	326.	100.
19	PEAK	3.00	215.	199.	1235.	2110.	2054.	6246.	174.	326.	6572.	100.
	NON-PEAK	6.00	217.	217.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	212.	203.	926.	1606.	1568.	6349.	174.	435.	6785.	100.
	NON-PEAK	8.00	219.	219.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	220.	220.	0.	0.	0.	0.	174.	326.	326.	100.
20	PEAK	3.00	215.	199.	1235.	2108.	2051.	6239.	174.	326.	6565.	100.
	NON-PEAK	6.00	217.	217.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	212.	203.	926.	1605.	1567.	6343.	174.	435.	6778.	100.
	NON-PEAK	8.00	219.	219.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	220.	220.	0.	0.	0.	0.	174.	326.	326.	100.
21	PEAK	3.00	215.	199.	1235.	2106.	2049.	6232.	174.	326.	6559.	100.
	NON-PEAK	6.00	216.	216.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	211.	203.	926.	1603.	1565.	6336.	174.	435.	6771.	100.
	NON-PEAK	8.00	219.	219.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	220.	220.	0.	0.	0.	0.	174.	326.	326.	100.
22	PEAK	3.00	214.	199.	1235.	2103.	2047.	6226.	174.	326.	6552.	100.
	NON-PEAK	6.00	216.	216.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	211.	202.	926.	1601.	1563.	6329.	174.	435.	6764.	100.
	NON-PEAK	8.00	219.	219.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	220.	220.	0.	0.	0.	0.	174.	326.	326.	100.
23	PEAK	3.00	214.	199.	1235.	2101.	2045.	6219.	174.	326.	6545.	100.
	NON-PEAK	6.00	216.	216.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	211.	202.	926.	1600.	1562.	6323.	174.	435.	6758.	100.
	NON-PEAK	8.00	219.	219.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	174.	326.	326.	100.

24	PEAK	3.00	214.	198.	1235.	2099.	2043.	6212.	174.	326.	6539.	100.
	NON-PEAK	6.00	216.	216.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	211.	202.	926.	1598.	1560.	6316.	174.	435.	6751.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	174.	326.	326.	100.
25	PEAK	3.00	214.	198.	1235.	2097.	2040.	6206.	174.	326.	6532.	100.
	NON-PEAK	6.00	215.	215.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	211.	202.	926.	1596.	1558.	6309.	174.	435.	6744.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	174.	326.	326.	100.
26	PEAK	3.00	214.	198.	1235.	2095.	2038.	6199.	174.	326.	6525.	100.
	NON-PEAK	6.00	215.	215.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	210.	202.	926.	1595.	1557.	6303.	174.	435.	6738.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	174.	326.	326.	100.
27	PEAK	3.00	213.	198.	1235.	2092.	2036.	6192.	174.	326.	6519.	100.
	NON-PEAK	6.00	215.	215.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	210.	201.	926.	1593.	1555.	6296.	174.	435.	6731.	100.
	NON-PEAK	8.00	218.	218.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	219.	219.	0.	0.	0.	0.	174.	326.	326.	100.
28	PEAK	3.00	213.	197.	1235.	2090.	2034.	6186.	174.	326.	6512.	100.
	NON-PEAK	6.00	215.	215.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	210.	201.	926.	1591.	1553.	6289.	174.	435.	6724.	100.
	NON-PEAK	8.00	217.	217.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	218.	218.	0.	0.	0.	0.	174.	326.	326.	100.
29	PEAK	3.00	213.	197.	1235.	2088.	2031.	6179.	174.	326.	6505.	100.
	NON-PEAK	6.00	215.	215.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	210.	201.	926.	1590.	1552.	6283.	174.	435.	6718.	100.
	NON-PEAK	8.00	217.	217.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	218.	218.	0.	0.	0.	0.	174.	326.	326.	100.
30	PEAK	3.00	213.	197.	1235.	2086.	2029.	6172.	174.	326.	6499.	100.
	NON-PEAK	6.00	214.	214.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	209.	201.	926.	1588.	1550.	6276.	174.	435.	6711.	100.
	NON-PEAK	8.00	217.	217.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	218.	218.	0.	0.	0.	0.	174.	326.	326.	100.
31	PEAK	3.00	212.	197.	1235.	2083.	2027.	6166.	174.	326.	6492.	100.
	NON-PEAK	6.00	214.	214.	0.	0.	0.	0.	174.	653.	653.	100.
	PEAK	4.00	209.	200.	926.	1586.	1548.	6269.	174.	435.	6704.	100.
	NON-PEAK	8.00	217.	217.	0.	0.	0.	0.	174.	870.	870.	100.
	NON-PEAK	3.00	218.	218.	0.	0.	0.	0.	174.	326.	326.	100.
T O T A L =								391693.			472612.	
AVERAGE % 10 DAILY IRR.SUPPLY =										100.00	100.00	100.00
T O T A L A N N U A L =								1172301.			1343101.	