

This Report is summarised on Pages 3 through 4.

The balance of the Report is in the Appendix
from Page 5 through Page 18.

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A REPORT ON THE
MIAMI GAS COMPANY

The Miami Gas Company's franchise has expired. The Company has submitted a new preliminary franchise to the City Manager's Office for review before submitting it to the City Commission.

The Company serves approximately one-fourth of the area lying within the corporate limits of Miami. It has made no real effort to expand the area it serves.

The Miami Gas Company is owned by the Florida Power and Light Company. If the Miami Gas Company expanded its area of service it would only compete against itself.

Would it be of value to the inhabitants of Miami to expand the area of gas service? This is one of the questions the Department of Engineering has been asked to answer.

The customers of the Miami Gas Company evidently prefer to use gas rather than electricity.

The customers of the People's Water and Gas Company pay more per unit of heat for gas than those of the Miami Gas Company. They too, evidently prefer to use gas rather than electricity.

There are many users of bottled gas in the metropolitan Miami area. They pay still more per unit of heat for gas. They also evidently prefer to use gas rather than electricity.

Therefore, it seems obvious that there are potential users of gas in areas not now served by either the Miami Gas Company or the People's Water and Gas Company. Thus, it would appear that new users could be found provided the cost per unit of heat is not greater than that now paid by customers of the Miami Gas Company; they can probably be found if the cost does not exceed the cost per unit of heat for bottled gas.

The Florida Power and Light Company recently completed negotiations for the sale of its gas and liquid petroleum properties at Palatka, Florida. There is every indication that its chief interest is in producing and selling electricity, and not gas.

It is recommended that the City of Miami pursue the following courses:

1. Study completely all the aspects of the newly proposed 30-year gas franchise.
2. Open negotiations with the Company to encourage the expansion of the area served.
3. If such negotiations fail, then encourage the purchase of the facilities of the Company by new owners whose primary interest will be gas rather than electricity. Such owners, by means of an aggressive promotional campaign, should be able to increase the use of gas and to serve new customers.
4. If that fails, then open negotiations with the People's Water and Gas Company to encourage it to expand its services into at least parts of Miami.

If all of the above alternatives fail, it will probably be for one or more of the following reasons:

1. The physical expansion of gas distribution facilities, at today's costs, into areas already improved with pavements, curb and sidewalks, may be too costly to bring a suitable return on the investment.
2. A decision to wait until the present confused conditions in the natural gas industry are stabilized. It may then be desirable to pipe natural gas into South Florida.
3. A decision to make no heavy investments in expanding gas facilities because atomic power now looms as a potential rival to other fuels in the manufacture of electricity.

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APPENDIX

MIAMI GAS COMPANY HISTORY

The Miami Gas Company was founded by H. M. VanCourt, director of the Fidelity Mutual Insurance Company, in 1906. On July 27, 1906, the Miami Gas Company was incorporated and started producing gas in October of 1907. Sixty-eight meters were in service in November of the same year. By the end of 1908, a 6-inch gas main had been installed from the plant to what is now S. E. 2nd Avenue. Gas was manufactured twice a week, on Mondays and Thursdays, with a four-foot diameter water gas machine. The Gas Company changed ownership in 1910 and capital was added to increase plant production. Although the plant and operations expanded, the company experienced financial difficulties, and by 1918 the Gas Company went into receivership.

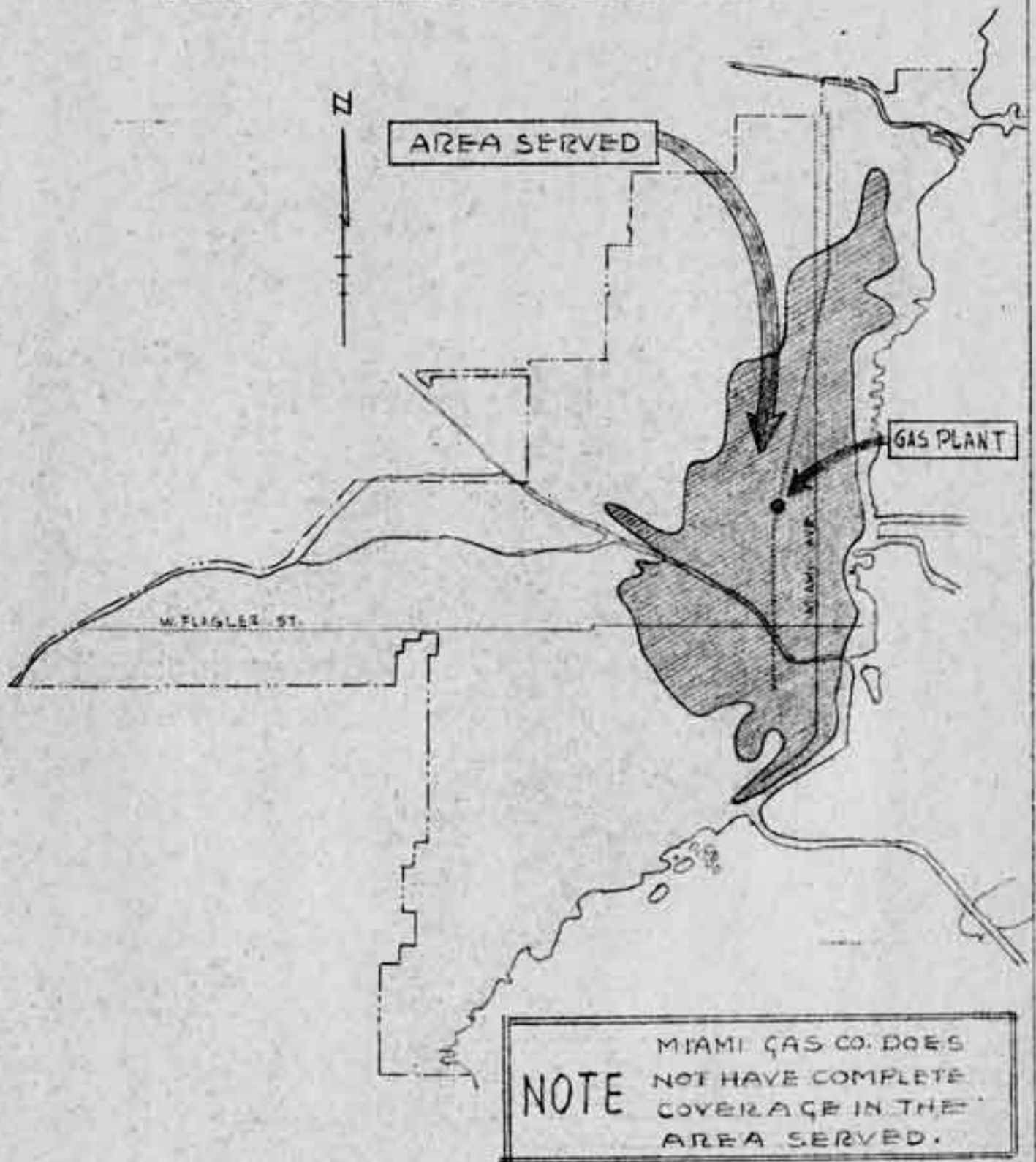
S. R. Inch, representing the Electric Bond and Share Company, made an offer for the purchase of the company which was accepted by the Courts in 1924. Control of the Miami Gas Company was placed under the Florida Power and Light Company which was formed under the Electric Bond and Share Company.

Although the franchise to the Florida Power and Light Company to operate the gas plant was adopted on the 4th of November, 1924 by the Commission of the City of Miami, the franchise did not take effect until it had been voted upon by the public. At that election, held on January 6, 1925, six hundred and seventy-five votes were cast, six hundred and fifteen voting "yes", sixty voting "no". The cost of the election was four hundred dollars. On January 20, 1925, the Florida Power and Light Company acknowledged receipt of the franchise papers from the City of Miami. This has been taken as the effective date for the 30-year grant.

Through the years that followed, the Gas Company experienced limited growth. As populated areas came into being, they were separated by a sufficiently unoccupied area to make the transmission service impractical at that time. The Gas Company presently serves approximately 19,500 customers.

Gas production has reached 6,000,000 cubic feet per day with a maximum plant capacity of 8,000,000 cubic feet. The plant equipment in general, as well as the bulk of the distribution system, is twenty to thirty years old. Reference is made to Plate #1.

MIAMI GAS COMPANY
APPROXIMATE AREA SERVED
MAP OF THE CITY OF MIAMI



DEPARTMENT OF ENGINEERING
PLATE NO. 1

JUNE 1955

CUSTOMER SALES, REVENUES, AND
OPERATIONAL EXPENDITURES

The Miami Gas Company in 1954 served gas to 19,500 customers; 18,300 of these were residential, 1,090 commercial, 50 industrial, and 60 governmental and municipal. The Gas Company has acquired new customers at a moderate rate and, in general, they are all residential customers. Total gas sales in 1954 amounted to seven hundred and eighty-five million cu. ft., and it is obvious from the table below that the principal consumers are residential and commercial.

GAS SALES

RESIDENTIAL	360 million cubic feet
COMMERCIAL	373 million cubic feet
INDUSTRIAL	9 million cubic feet
GOVERNMENT AND MUNICIPAL	40 million cubic feet

Gas sales have increased some 4 $\frac{1}{2}$ % from 1949 to 1954 and the bulk of the increased gas production has gone to the new residential customers for the same period.

Revenues and expenditures from 1949 to 1954 indicate that revenues have increased. However, the rate of increase is much less than the increase in operational expenses. Therefore, the margin for profit and depreciation for this same period has grown smaller. The gas operational expenses are divided into two general categories:

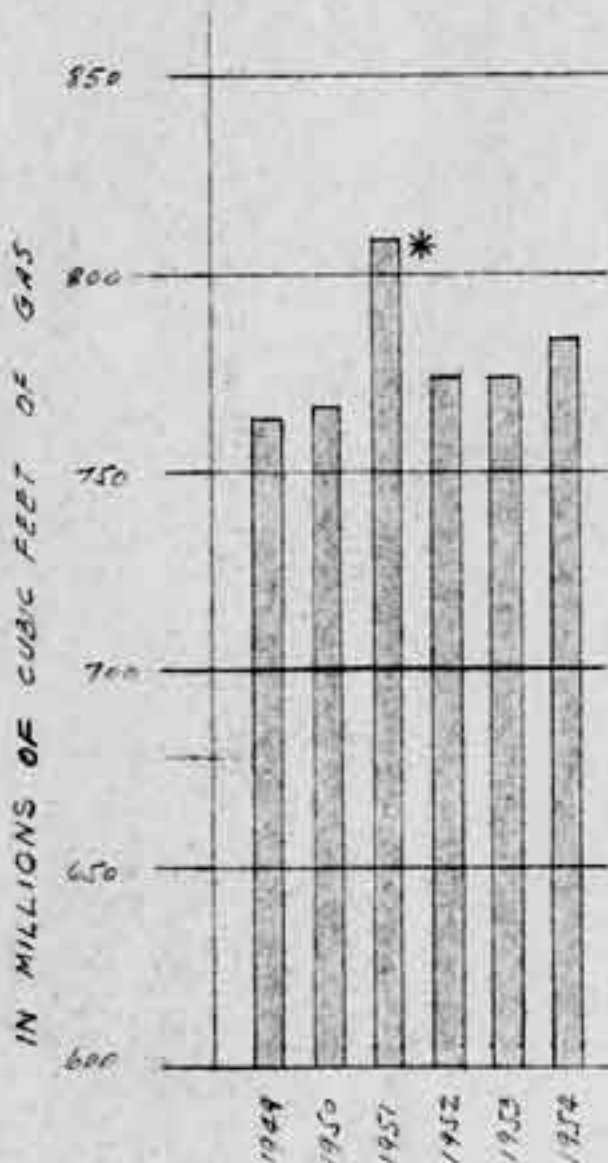
- A. Plant operational expenses - increased 31% from 1949 to 1954
- B. Distribution expenses - increased 75% from 1949 to 1954

The high distribution system expenses have been due, in part, to the age of the piping in the system. Primarily, it has been due to increased activity in relocating and replacing gas mains. These particular gas mains interfered with the recently constructed interceptor sewer and other sewer construction being carried on in Miami. This is especially true of 1953 and 1954.

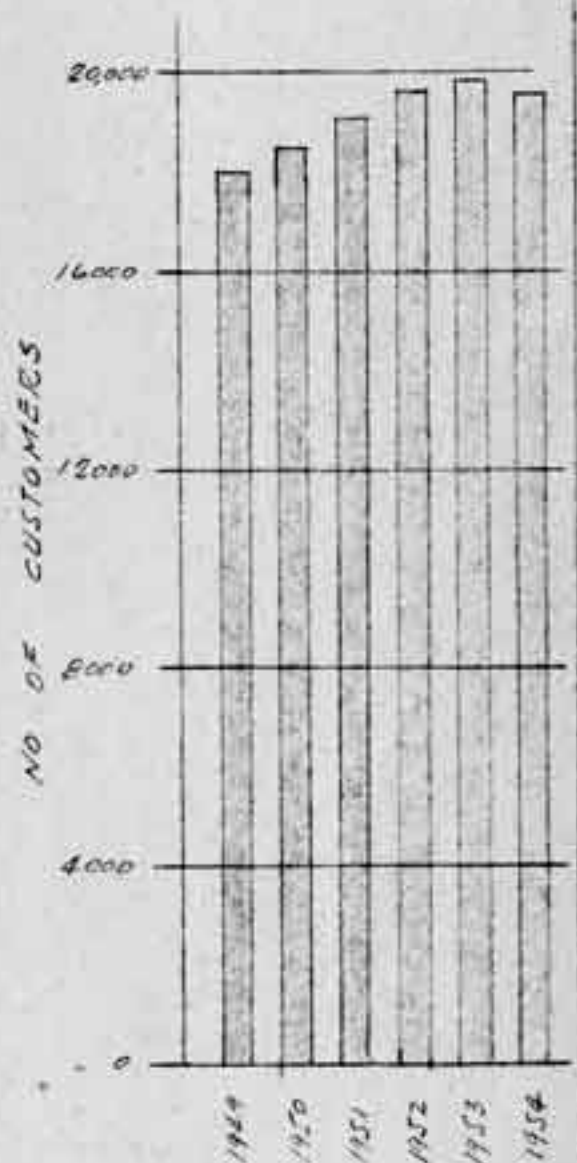
The years from 1949 to 1952 represent a more normal operation. During this period approximately \$250,000 to \$300,000 was available for plant depreciation, Federal income taxes and profit. Applying a reasonable three per cent depreciation on \$6,118,000 (a value the Florida Power & Light Co. has placed on Gas Company facilities) would indicate that \$180,000 is required to cover the cost of plant depreciation. No realistic figures are available to actually determine how much is being placed in reserve for depreciation. The Federal Social Security, State and County taxes amount to \$66,000 a year. In addition to this, the City of Miami receives \$32,000 a year for Real Estate, Personal Property, and Occupational taxes. The Utility Tax is merely collected by the Gas Company for the City of Miami, and is not included in the above figures.

MIAMI GAS COMPANY

GAS SENDOUT TO CUSTOMERS



GAS CUSTOMERS



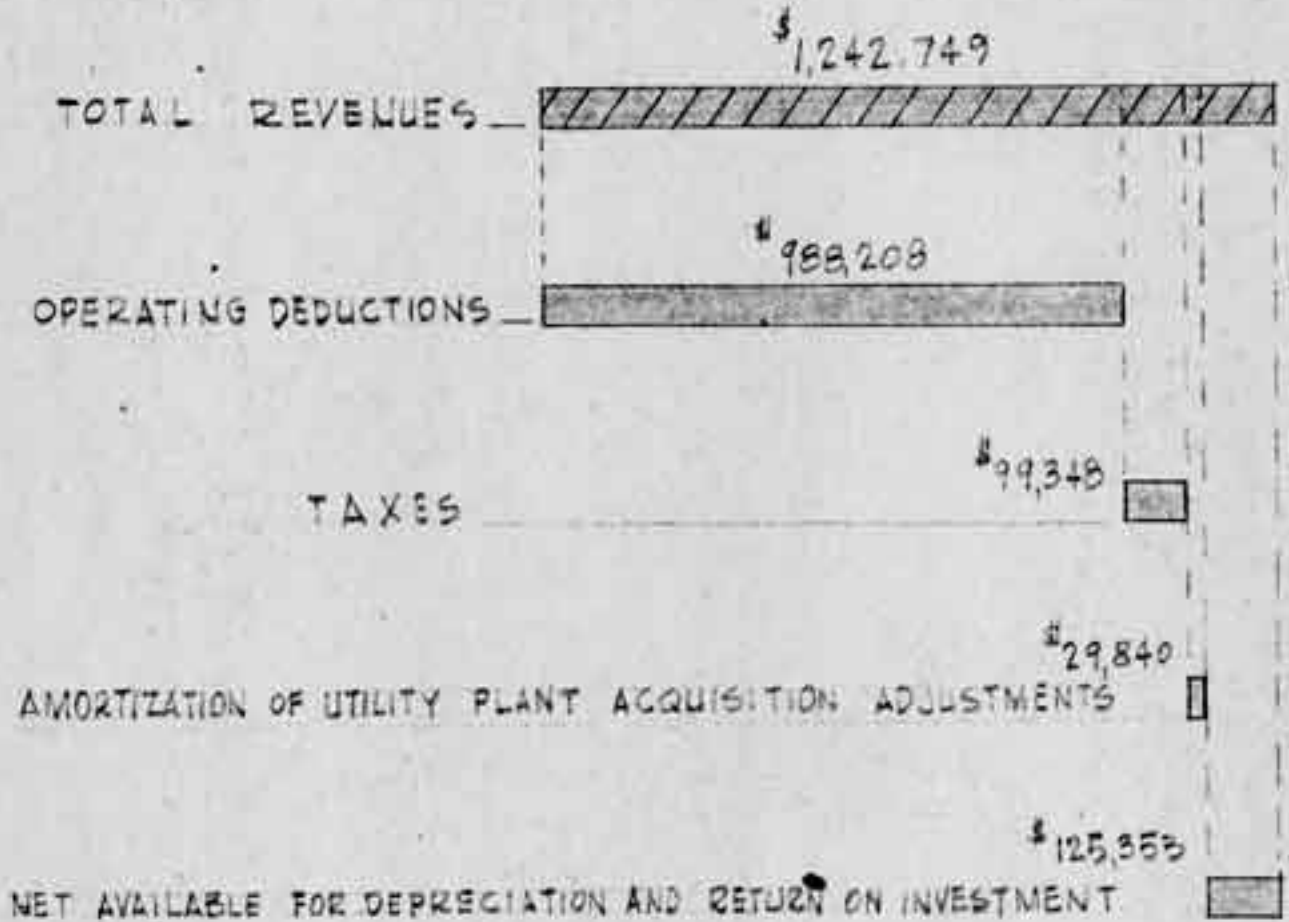
DEPARTMENT OF ENGINEERING

PLATE NO. 2

APRIL 1955

* Partly due to extremely cold weather Jan. & Feb. 1951 June 1955

MIAMI GAS OPERATIONS
TWELVE MONTHS ENDING SEPTEMBER 30, 1954



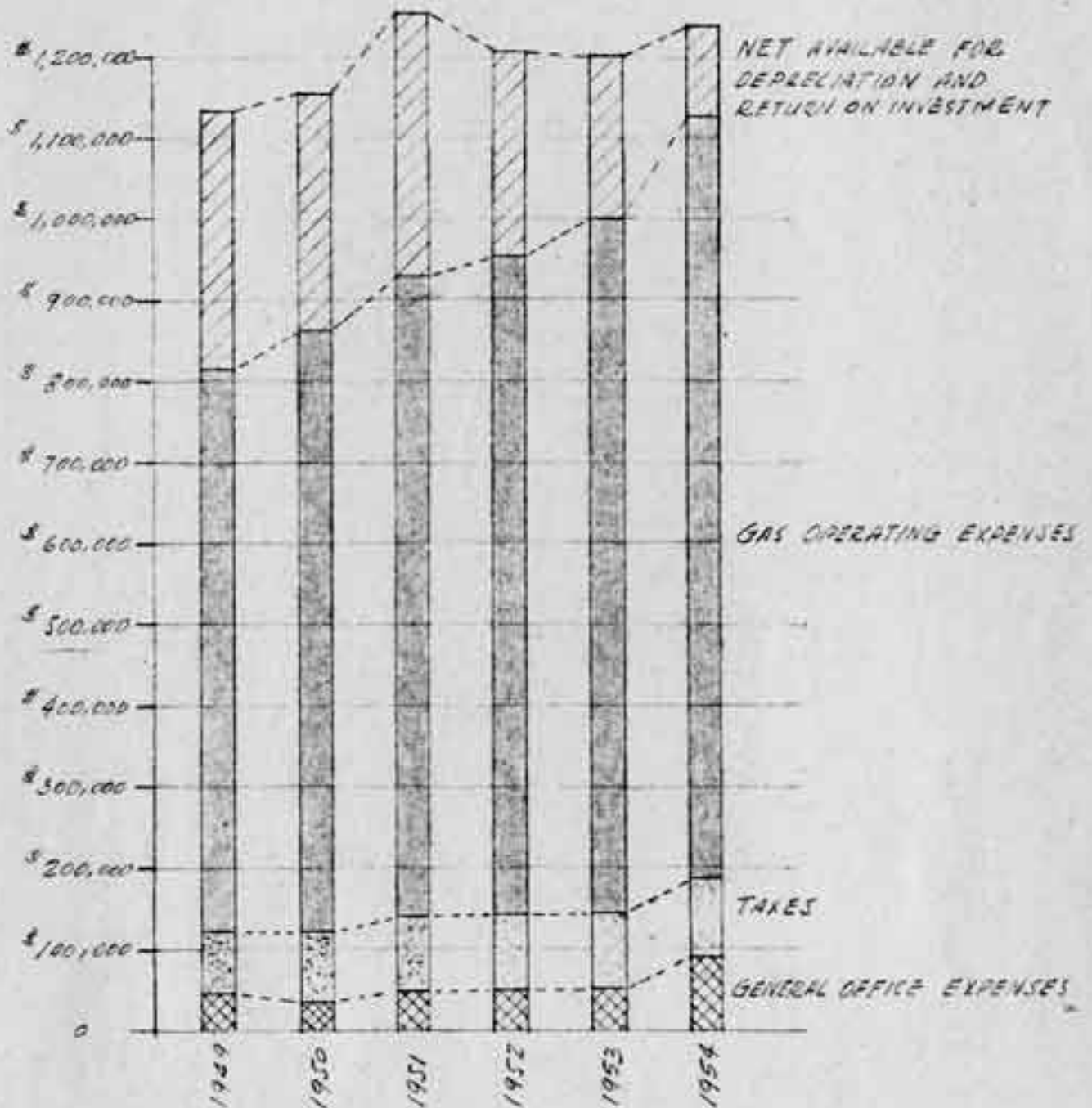
VALUE OF GAS PLANT & OPERATIONS AS
STATED BY F. P. & L. CO. \$6,117,889

DEPARTMENT OF ENGINEERING

PLATE 3

JUNE 1955

MIAMI GAS COMPANY REVENUES AND EXPENDITURES



DEPARTMENT OF ENGINEERING
PLATE NO 4

JUNE 1955

GAS PLANT AND DISTRIBUTION SYSTEM

Gas at the Miami Gas Plant is produced by the Carbureted Water Gas method. Very briefly described, the gas is manufactured by burning coal in a brick-lined oven through which air, then steam, is blown to produce a crude inflammable gas. The gas is enriched by the addition of oil sprayed over a heated brick chamber. The enriched gas passes through a super heater containing heated checker brick for cracking and fixing vapors derived from the oil. The gas is further cooled, purified and sent to storage holders and on into the distribution system.

The gas plant is capable of producing a maximum continuous supply of 7,300,000 cubic feet of gas per day. There is an additional storage capacity of 3,000,000 cubic feet which gives the plant a maximum three-day supply of 8,300,000 cubic feet. The gas plant is operating at approximately eighty per cent of its overall capacity.

Plant equipment in general is twenty to thirty years old, with some new equipment having been added. More recently, a gas machine has been added which uses oil as its basic fuel and has a higher overall efficiency as compared to the machine using coal. The new machine was installed for two reasons: (a) to keep abreast of the new equipment being used in the gas manufacturing business; and (b) the new machine is used when the plant is producing at its peak load. The Miami Gas Company could replace all of its old coal burning machines with oil machines. However, it would then be necessary to readjust the customers' burners for the new gas. The People's Water and Gas Company has taken these steps and the changeover has been most satisfactory.

The piping and valves of the distribution system are, in general, twenty-five years old. The system had one hundred and forty-three miles of cast iron and galvanized pipe in 1949. Since that time it has been increased to one hundred and fifty-two miles, an expansion of about six per cent. A great portion of the system is ball and spigot piping with jute joint sealer which depends on the moist manufactured gas to prevent these seals from leaking.

Recent operating and maintenance expenses have increased in part as a result of the sewer projects in the City and the necessity of altering gas mains.

There are several reasons why the Miami Gas Company cannot or does not expand. Probably the principal reason is a lack of interest on the part of the Florida Power and Light Company in expanding the gas facilities. The Florida Power and Light Company has planned its electrical production to meet future needs and the day is at hand when they will be encouraging their customers to use electricity where gas is now being used.

Plant capacity is a measure of the plant's ability to meet peak load conditions. In general, the greatest demand for gas will occur two months out of the year. The balance of the year the plant is operating at fifty per cent capacity. However, this ten month period represents the major portion of the Company's business. The Gas Plant, with its existing gas machines is operating near maximum capacity at peak load conditions. Plant capacity could be increased by installing gas machines using oil, the addi-

tion of storage holders at or near the Plant site, or the addition of storage holders in the distribution system. Expansion of the distribution system depends on the ability of the Plant to meet the new loads.

The Miami Gas Company, at present, does not have any "interruptable" gas customers. An "interruptable" customer is one to whom the gas company can stop serving gas when peak loads are exceeded. The customer is equipped to switch over to standby equipment when his gas service is interrupted. This type of customer is sought after by gas companies because he fills in or rounds out the gas production to where the plant operates near its maximum capacity throughout the year. It is interesting to note that the Miami Gas Company could increase its gas sales by acquiring this type of customer without any additional plant expansion. To accomplish this an intensive sales campaign would be required.

GAS RATES

Florida, in 1951, joined most of the other states in the regulation of all forms of public utilities. All privately owned gas and electric companies were brought under the regulation of the Florida Railroad and Public Utilities Commission.

Control was established to bring uniformity to the rates and practices of private companies selling electricity and gas. The Utilities Commission establishes rates for each individual utility producer on the basis of service and current property value. Rates are established to yield reasonable compensation for services rendered.

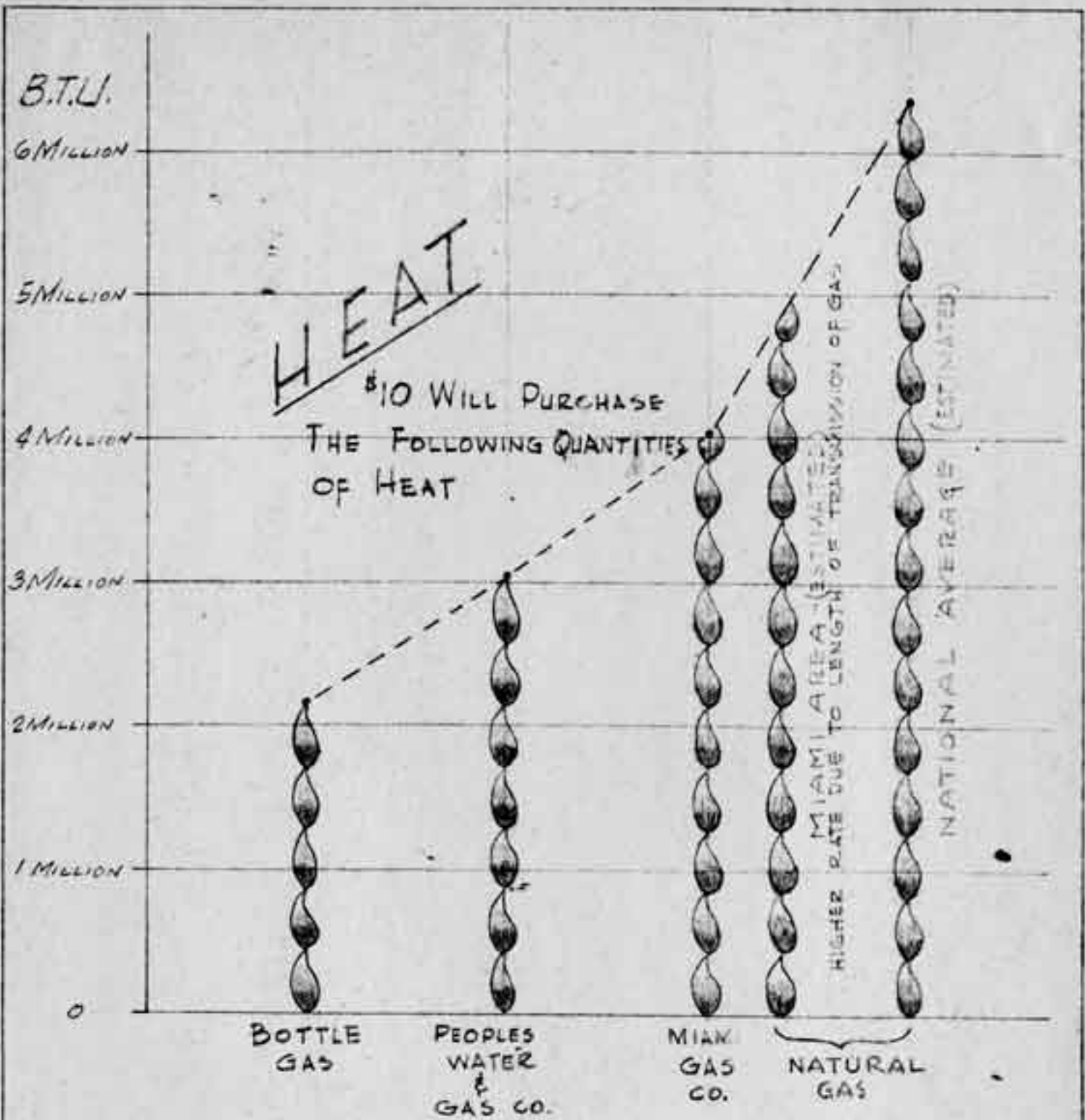
Gas rates are established for General Service, Residential Combination Service, and Commercial and Industrial Service. As a basis of comparison, a ten dollar purchase of one hundred pounds of bottled gas shall represent one hundred per cent worth of heat value.

Rates for natural gas are established from average purchases throughout the country. The natural gas rates are also based on an amortization of the monies required to make the changeover from manufactured gas to natural gas.

\$10 Bottle Gas	100% = 2 million units of heat
\$10 Peoples Water and Gas Co. Manufactured Gas	140% = 3 million units of heat
\$10 Miami Gas Company Manufactured Gas	184% = 4 million units of heat
* \$10 Natural Gas (Miami Area)	220% = 4.8 million units of heat
\$10 Natural Gas (National Average)	290% = 6.0 million units of heat

The Chart on the next page clearly illustrates the quantities of heat that can be purchased for ten dollars from various producers.

- * Rates for Natural Gas in the Miami area are estimated to be higher than the national average due to the length of transmission and certain special construction features of the pipeline.



**RESIDENTIAL GAS SERVICE
BASED ON \$10 PURCHASE OF GAS**

DEPARTMENT OF ENGINEERING
PLATE 5

JUNE 1955

NATURAL GAS FOR FLORIDA

Ground breaking ceremonies have taken place on a four hundred and two mile gas pipe line starting at Albany, Georgia, that will serve fifteen communities in South Georgia and North Florida. The pipe line is small and could never be extended to South Florida. The Houston, Texas Gas and Oil Company has submitted a report to the Federal Power Commission to obtain a permit to serve the State of Florida with natural gas. The Houston company is making every effort to find the necessary gas reserves to furnish this area with gas for future years. They have signed producer contracts based on letters of intention from proposed consumers. Letters of intention to use natural gas have not definitely established that natural gas will come to Florida. As an example, the Texas company has made no reference to a letter of intent from the Florida Power and Light Company who are capable of absorbing all of the natural gas presently planned for Florida.

The gas companies are concerned about natural gas prices; transmission companies tend to include "escalator clauses". These clauses, widely found in producer pipeline contracts, sometimes provide for automatic, periodic rate increases. Other escalation clauses, known as "favored nation clauses", allow a producer to raise prices whenever another producer in the same gas field gets a higher price, or his pipeline customer starts paying more to another producer. These existing clauses are not subject to Federal Power Commission control so F.P.C. would have to let the pipelines pass on the increased costs.

In conflict are the producers, the interstate pipeline companies that ship the fuel from producing to consuming States, and the local distributing firms that make the final sale to home users. Their failure to get together is hindering a major Congressional effort to relieve the F.P.C. of unwanted power to regulate the producers' rates. The conflict in the gas industry and the quandry of Congressmen are largely concerned with how to free producers from Federal regulation and still safeguard consumers. At the other end of the line, producers support escalation clauses. They assert that since they sell under long-term contracts, they need this assurance that their prices will stay abreast of the market price. If the increases are continued, it has been stated, there can be a serious breakdown in utility rates and service. A spokesman for Consolidated Edison Co. of New York and fifteen other gas distributors in the northeastern States has said: "Indications are that unless this trend of disorderly and unpredictable rate increases is halted, there is serious danger that natural gas may be priced out of the market in the Northeastern United States."

With this state of confusion, gas companies are reluctant to commit themselves. If the gas companies and large consumers can be given firm contracts with reasonable rate increases, then natural gas may come to Florida within the next few years.

MIAMI GAS COMPANY AND NATURAL GAS

When natural gas does come to Miami it will be available to all large consumers including the Miami Gas Company. It can be assumed that if natural gas is used, it will have replaced the manufactured gas because it is a cheaper fuel.

A series of problems arises in the substitution of natural gas for manufactured gas. Unless there are increases in use or increases in rates, a decline in revenue can be expected because the heat value of natural gas is much higher than manufactured gas. The higher the heat value of gas, the less the cubic footage required to perform a given task. The community, upon the introduction of natural gas, expects immediate decreases in the older cubic footage rates. The problems associated with converting the distribution system mean that an immediate reduction of rates cannot be possible. Another problem is the adjustment or adaptation of domestic and industrial equipment built to burn manufactured gas.

If natural gas were substituted, several questions arise as to the disposal of the old equipment. Should it be junked or should it remain to serve as a standby? The answer to these questions depends on the reliability of the service and the life of the supply of natural gas. The company can either bear the loss of its equipment or amortize it over a period of years; or if kept in good condition, it can be carried as an asset. All of these problems have been successfully dealt with in the many instances where natural gas has replaced manufactured gas, provided the cost of natural gas has remained lower than the cost of manufactured gas.

ATOMIC ENERGY

1. Nuclear energy is the factor which promises to overcome one of the greatest deficiencies that Florida has had to face in its industrial development. Nuclear fuels promise the availability of a weightless fuel which would give Florida the same potential resources insofar as energy is concerned as would be available to any other part of this nation.

2. It is the definite belief of many persons that within a decade or so the impact of atomic energy will be far greater than is at present realized. The impact that the automobile industry and the electronics industry have made on our industrial life is well known. Florida can perhaps avail itself at this time of the opportunity of being in the vanguard of developments in this field so that it may become the center of one of the great industries of the future.

Designs and actual construction of atomic power plants are under way. The day is in sight when electrical energy, as a result of cheap fuel supply, will have no competition in the field of power transmission and availability to the consumer. Gas companies certainly will have to reckon with this condition.

Note: Nos. 1 and 2 above (excerpt from "Atomic Energy - Its Role in Florida's Future" - by Dean Joseph Weil, Univ. of Florida).

REVIEW

It is evident from the facts presented that the Miami Gas Company is rendering an important service to the people of Miami. This is especially true when the gas rates of the Miami Gas Company are compared with its competitors. The Miami Gas Company is in a position to further benefit the community by extending its service.

A review of the important features of this report is presented as an aid to fixing certain data relative to the Miami Gas Company:

1. The Miami Gas Company is forty-five years old and in general, its plant equipment and distribution system are twenty-five to thirty years old.
2. The Plant is operating near maximum capacity.
3. Operational costs in recent years have increased excessively because of moving gas mains due to the sewer program being carried on in Miami.
4. The company serves approximately 19,500 customers and receives gross revenues amounting to \$1,200,000.
5. The Gas Company is selling gas to its customers at a cheaper rate than gas could be purchased from other gas companies.
6. The Gas Company could increase its plant and distribution capacity.
7. An active sales promotion campaign would produce more gas customers.
8. The City of Miami receives \$32,000 a year in tax revenues from the Gas Company.
9. The natural gas business at present is in a high state of confusion.
10. Natural gas can be adapted to the gas plant and distribution system.
11. If natural gas is used, a reduction in rates can be expected only after plant and distribution system adjustments are amortized.