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Overbrook Steam Heat Company

A SUCCESSFUL RESIDENTIAL HEATING UTILITY

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The Overbrook Steam Heat Company serves a suburban residential community of Philadelphia extending approximately seven-eighths of a mile east and west from the plant. The distance north and south averages about one third mile. In that area approximately 1,700 homes, four apartment houses, four churches and a number of small stores are heated.

In Overbrook winters average about 4,685 degree-days measured from 65 F. The lowest temperature of record is -11 F and temperatures below 0 F are rare.

The homes heated require a distribution system of about 77,000 ft of pipe from 3 in. to 12 in. in diameter and averaging about 4½ in. About 38,000 ft. of service lines from the mains to the houses are in use. These average 1¼ in. in diameter. The distribution system is largely under lawn or unpaved areas except at street crossings. The soil conditions are favorable, depths being generally about 30 in. to 36 in. to the top of the pipe. The pipe is steel, surrounded by insulation and protected by conduit of terra-cotta pipe or of concrete or largely by concrete poured around the roofing jacketed insulation. Expansion joints are of the slip type in manholes and of the corrugated copper type in buried enclosures.

The average annual steam consumption is about 500 lb per square foot of direct radiation and the demand can be calculated as 1/3 lb per sq ft of direct radiation. The line loss is about 20 per cent of the steam delivered to the mains. This loss includes under registration of meters as well as condensation and other direct losses and is considered low for this type of service. Steam sales last year were 311,000 M lb and steam delivered to mains 396,000 M lb.

Steam is distributed at low pressure, 7 to 10 lb being maintained at the end of the system on each side. The outgoing pressure varies from 15 to 60 lb depending on demand. The maximum hourly demand recently experienced was about 170,000 lb. A boiler capacity of 230,000 lb per hour is available.

The plant is operated 8 months yearly and shut down June 1 to October 1 when employees are used for maintenance, extensions, etc.

Under the conditions prevailing, the following force is required to operate the system including administrative personnel.

Boiler House

Chief Engineer
Four Engineers
Four Firemen (8 months only)
One Coal Passer

Outside Force

Foreman
Helper
Four Laborers

Meter and Consumers Service

2 Mechanics
3 Helpers

Office

3 Employees (exclusive of company officials)

This plant is an anthracite coal burning one using a steam size anthracite passing a 3/16 in. and retained on a 3/32 in. screen. The coal has about 12,250 btu as fired, averaging 12.5 per cent ash. It is burned on flat traveling grate stokers. About 13,400 lb of steam are delivered to the mains per ton of coal. The average fuel cost (coal at \$6.39 per ton in 1947-48)* was 47.7 cents per M lb of steam to mains and 60.1 cents per M lb of steam sold.

The operating costs per M lb of steam sold in 1947-48 were:

	cents
Fuel	60.1
Pay Roll	21.3
Administration	3.5
Supplies, Maintenance	8.0
Depreciation	5.3
Total	98.2
lb Federal taxes not included.	
	per M

*Will be \$7.25 for 1948-49.

The Revenue averaged \$1.10 per M lb of steam sold in 1947-48.

Rates have been increased since last season and this increase and the operation of the fuel escalator clause in the company's tariff will result in an estimated average revenue of \$1.235 per M lb for 1948-49. The estimated operating cost will be \$1.08 per M lb for 1948-49 excluding Federal taxes.

The economics of district residential heating require a comparison of investment and income. The Overbrook plant represents an expenditure of \$903,000 but could not be reproduced now under \$1,400,000. Allowing for depreciation and ignoring replacement costs it has a present value of about \$560,000 and requires about \$60,000 working capital, a total of \$620,000. Its rates will yield a return of about 5 per cent on this base. However were the company under the necessity of operating the plant constructed at today's costs the return would be unsatisfactory and higher rates would be necessary.

As residential steam heating companies go, Overbrook is large. However if much smaller it would probably be difficult to operate profitably in this area.

It is felt that scarcity of competitive fuels on the Eastern seaboard points to a condition favorable to the future of this and other heat-

ing companies. Requests for service have been increased of late years and the company has steadily grown. If the home owner can be assured of an ample supply of steam, and he has been in the past in Overbrook, and others without district heating are hard put to keep warm, the competition experienced in the past may be lessened. As a matter of fact over the past fifteen years Overbrook has probably replaced three oil installations for every home that has shifted from district heating to oil. The latter shifts have ceased, the former continue.

Overbrook is in a sound financial position due to the fact of its dating from years of lower construction costs and because in years of lower taxes its stable earning capacity permitted it to retire indebtedness. Like all companies it is confronted with the problem of increased replacement costs in the future which will require added capital. A conservative dividend policy while building up reserves and up to the minute maintenance will be relied upon to meet this situation. It is believed that in this area the customers will back such a policy by paying such reasonable rate increases as are necessary to support a larger capital investment. As a matter of fact, were an increase of 50 per cent necessary in invested capital the rise in selling price of steam would not need to be over 10 per cent of present average rates and this would appear to be an extreme case.

The New Ocean House

Facing the Atlantic Ocean at
SWAMPSCOTT, MASSACHUSETTS
(BOSTON SUBURB)

Has been selected as Headquarters for

The 40th Annual Meeting of NDHA

THE DATES

Tuesday to Friday inclusive

May 24, 25, 26 and 27, 1949