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district heating

NDHA 59th Annual Meeting

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The Beech Street Steam Plant went into operation in October, 1927 with two boilers. The third steam boiler was added in 1929, another in 1931 and two more in 1948. In 1967, 344 customers were served some 682,628,000 pounds of steam through 13.7 miles of steam lines.

Ohio Edison Company is one of the more than 50 utilities belonging to the National District Heating Association, the steam-heating trade association organized in 1909. The Association holds meetings for discussion of common problems and it compiles data and statistics useful to its members in better serving their customers.

Although the NDHA members had more than \$104 million in steam sales in 1967, one of the greatest problems faced by suppliers of steam is the high cost involved.

In the operation of a steam distribution system, steam losses, extensive corrosion causing heavy maintenance, the cost of laying steam distribution line (from \$70 to \$90 per foot), and difficult metering are problems peculiar to the steam business.

The most common metering practice is to measure the weight of condensate after a customer has used the steam, since a pound of water is the same weight as a pound of steam. But this type of metering is not adequate for all types of customers, such as those who use the steam in some manner which lets much of it escape into the air. For these customers Ohio Edison uses a flow meter, which measures the steam at the point of delivery.

The biggest problem of all in the profitable distribution of steam is the weather. Constantly varying weather conditions call for widely varying steam heat demands, by far the largest single use for steam.

There is, however, a growing list of steam uses during the non-heating season. A hydronic system like that in the Company's Engineering Building in Akron allows steam to heat in winter and cool in summer. And structures like the Engineering Building at Youngstown University are heated

by steam in the winter and cooled in summer by a steam absorption system.

Some customers, like tire retreading plants, rubber testing laboratories and laundries and dry cleaners, have fairly uniform steam demands throughout the year. But space heating remains the principal load.

Even with these problems, it looks like the use of steam in Akron, Springfield and Youngstown will continue for some years. In all three cities, new buildings are going up with new requirements for steam. In Akron, a steam line is being extended by more than 2,000 feet to serve an addition that will about double the size of the Akron General Hospital. In Springfield, the beautiful, new Lagonda National Bank is the Company's newest steam customer. And, in Youngstown, steam use at the University is continuing in its buildings now under construction.



New buildings like the Lagonda National Bank in Springfield, rely on Ohio Edison steam for space heating. And others, like the Youngstown University buildings, are also cooled in summer by steam.

Steam is still in demand for heat, for processing and for a variety of other uses. So, Ohio Edison will be in the steam business for a long time.†

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... HAVE YOU HEARD! ...

That, according to published literature, the first district heating installation in Europe was in Manchester, England in 1911; but it is known that installations were in operation at Dresden, Germany in 1900, and in Warsaw, Poland in 1901.

That, Europe has a district heating handbook entitled *District Heating, A Survey of Practice in Europe and America*. It was prepared by The Heating and Ventilating Research Association on behalf of the Design and Heating Study Group (solid fuel).

That, in Poland, about 80 per cent of public buildings and all industrial buildings are provided with central heating.

That, the main theme of the Japan World Exposition in 1970 will be "Progress and Harmony for Mankind." The

Exposition will be in Osaka, and the Expo '70 authority sent a study team to the United States in the spring of 1968 to visit district cooling facilities because it intends to construct one of the largest of this type of installation in the world to serve the buildings at the exposition.

That, the first steam heating plants in the United States used a direct steam heating system, or live steam, instead of exhaust steam from a power plant; and probably the first electric company to become interested to any extent in central station heating was the Brush Swan Electric Light Company of Auburn, New York which installed, in 1885, a direct steam heating plant. The fact that as far back as 1878, direct steam heating systems were installed in Auburn, New York, Springfield, Massachusetts, and Detroit, Michigan, shows that it was fully ten years after the first general knowledge of district heating that exhaust steam systems were adopted.†