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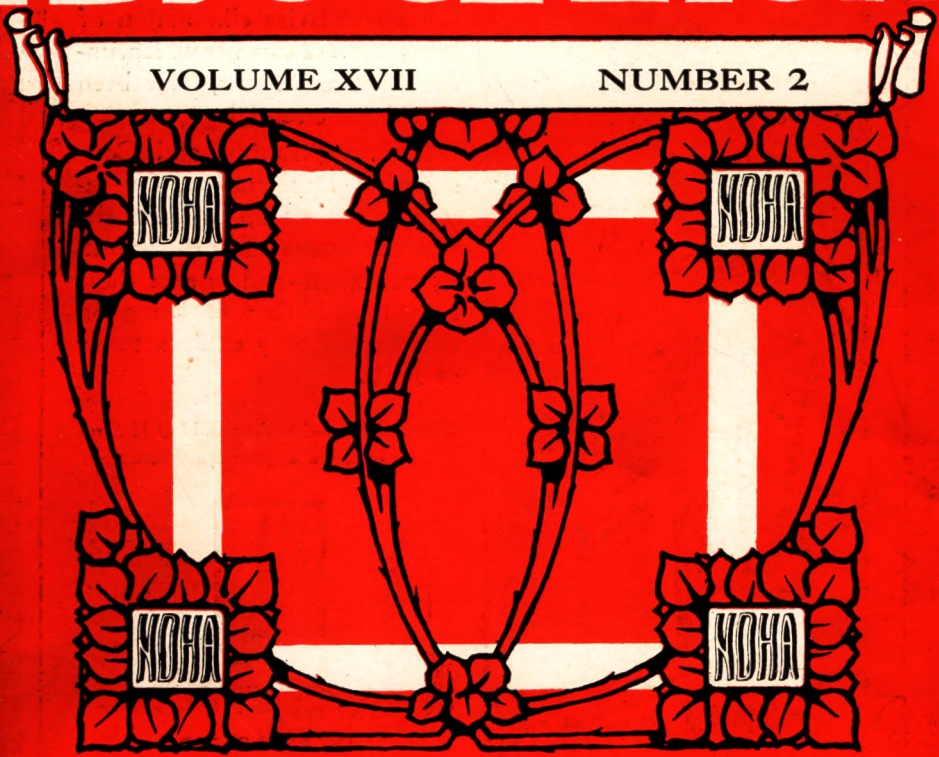

JANUARY 15, 1932

District Heating in St. Louis, Mo.

By J. E. HILLEMEYER, Vice-President, N. D. H. A.

During the year 1931 the Steam Heating Department of the Union Electric Light & Power Company of St. Louis, Missouri, increased the capacity of its system by installing a second large high pressure feeder main out of its Ashley Street Steam-Electric Generating Station on the Mississippi River.

The first feeder main out of Ashley Street Station (a 20"—200 pound line) was installed during the summer of 1924, and supplied the eastern section of the downtown business district from the northeast corner of the system network.

The new main consists of 1322 lineal feet of 24"—200 pound line interconnected with the old 20" line and extending 4610 lineal feet farther as a 20" line west and south, connecting into the center of the system network from the north. An additional 600 lineal feet of 20" line was installed across the Illinois Terminal subway at Franklin Avenue.

A small number of shore extensions of smaller size were also installed during the year.

All of this work was installed, under contract, by the Northeastern Piping & Construction Corporation, under the direction of S. E. Dockstader and the supervision of "Jim" Charroin; L. D. Gray being the engineer for the Steam Company. Contract was signed May 14th, work started June 1st, and was completed October 30th. (6532 feet of conduit, including 43 manholes, in 130 working days.) The high class of workmanship on this job amply justified the Company's judgment in its selection of the Northeastern Company to do this work.

The new business for the year 1931 included twenty-eight added accounts and twenty-two successor contracts, comprising thirty-seven building heating jobs and fourteen process steam customers with 156,-415 square feet of radiation—heating nearly 12,000,000 cubic feet of building volume, estimated annual steam requirements being above 63,500,000 pounds, nearly 11,000,000 pounds of which is for process requirements.

To supply the buildings now under construction and for the business prospects for the year 1932 now contemplated, additional 400,000 M. to 500,000 M. pounds of steam per annum will be required from its

district system. Further extensions of its system will be required to supply some of this new business if and when contracts are entered into.

The weather in St. Louis (as elsewhere in the United States during 1931) was much warmer than normal, in fact, 1931 was a record warm year according to a report of the government meteorologist. The accumulated excess of temperature was 1340 degrees, or an average of 3.7 degrees above normal every day of the year. The degree day deficiency below 70° F. for the heating season was 4998, normal for St. Louis being 5705. This naturally had its effect on the annual steam sales for the past year and proportionately on the heating steam revenue, as the greatest difference occurred in January, February, November and December—the months of heaviest heating requirements of the St. Louis season.

Orifices for Steam Radiators

As a part of its program to assist customers in the economical utilization of steam, The Detroit Edison Company has encouraged the use of the orifice system and has conducted a series of tests to determine the proper size of orifice for a given radiator so that any building engineer of average intelligence can install orifices in his building. The results of these tests were given in a paper by Messrs. S. S. Sanford and C. B. Sprenger of The Detroit Edison Company, before the American Society of Heating & Ventilating Engineers. An article along the same line was published in Domestic Engineering for October 31, 1931, of which the following is an abstract.

Steam heating systems must be designed to keep buildings comfortable on the coldest winter day. The size of the radiators is determined by this one condition which exists for but a few days out of the year. Radiators which are just the right size for the extremely cold days are too large for the more moderate weather which makes up the greater part of the heating season. In such weather buildings equipped with ordinary heating systems are overheated if the radiators are filled with steam all of the time. If the size of the radiators could be changed as the weather changes, we would not have to turn off steam to prevent overheating. We would enlarge the radiators as the weather grew colder and make them smaller for warmer weather, and we would always have just the right amount of heat being delivered