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MAIN STREET WANTS DISTRICT HEATING

NEW YORK STEAM CORPORATION EARNs $32 A SHARE

THE SHAWINIGAN CHEMICALS, Ltd.

NEW PACKLESS EXPANSION JOINT FOR HIGH PRESSURES - HIGH TEMPERATURES
Financing New District Heating Enterprise

Whether financed internally, or by public subscription, the major consideration to everyone in building the monetary structure of a District Heating Utility is naturally one of profit possibilities and safety. Viewed from this standpoint, the Electric Utility-District Heating combination is presented in a particularly attractive light.

Investors, from the capitalist and investment trust to the humblest worker, can see the logic, the economic advantage and natural fitness of the Electric Utility entering this field... and earning profits.

In experience—by years of contact with its customers, the Electric Utility acquires an invaluable insight into public relations. Not alone that... the public has learned to respect its ability to operate successfully. Then, to the more inquiring mind is revealed the ease with which the departmental functions of both utilities can be merged with economy. Engineering, bookkeeping, meter installation and collection divisions can be easily combined. This same plan of double-duty service applies likewise to the utility’s boiler plants, which can be used to develop both electric power and steam.

Throughout any consideration of the Electric Utility’s fitness to successfully operate a District Heating Service, run other similarly important profit-making advantages.

As time goes on, there is an increasing objection to individual heating plants—both by industrial establishments and by the building owners. Mankind, enjoying the convenience and service of electricity and gas is demanding a like service in heating.

The surest proof of the Electric Utility’s ability to operate a Heating Utility for profit is written on the ledgers of those companies which have already added District Heating to their public service.

All these things combine to offer an opportunity that financially-minded utility men are eager to grasp.

The experience and unwavering cooperation of the American District Steam Company is offered to all Electric Utilities interested in the possibilities of adding District Heating to their profitable services.

AMERICAN DISTRICT STEAM COMPANY

NORTH TONAWANDA, N.Y.

FIFTY YEARS IN BUSINESS

MAIN STREET

WANTS DISTRICT HEATING

and it is economically within the reach of most cities under 100,000

Once upon a time, and that not so long ago, a city of under 100,000 population was frequently referred to as a “one-horse town”. The expression was not inappropriate. Now all that has been changed. From coast to coast there are hundreds of cities and towns under a hundred thousand population that are big cities in miniature. New modern stores, hotels, office buildings, well paved streets, progressive Chambers of Commerce, Rotary and Kiwanis Clubs, public service facilities such as water works, sewer systems and electric light and power give these smaller municipalities a big town atmosphere. Not only does the town “look the part”, but the people who live there have metropolitan ideas.

It is not surprising, then, to learn that the citizens of Battle Creek, for example, were not content to see the business sections of Detroit, Grand Rapids, Saginaw, and Kalamazoo enjoying the benefits of District Heating service. They could see no reason why these cities should be getting this kind of a “break”, while Battle Creek was going without the many benefits of this modern service. They said, “Why isn’t the reduction of fire hazard, the abolition of
smoke, and relief of traffic congestion from the elimination of coal deliveries and ash collections just as important to us as it is to these other Michigan cities?" There was only one answer, with the result that the Consumers' Power Company of Battle Creek, which has always been close to the public pulse, is now installing a District Heating system in that city. This move on the part of the Consumers' Power Company is a further indication of the ability and desire of the larger and of public utility companies in general, to justify their name by rendering the fullest possible utility service to the communities that grant them charters for operation.

Battle Creek is right. District Heating belongs in every city in the heating zone, where the standards of the city are sufficiently high, and where local conditions are economically favorable.

Of course, any city can get along without District Heating, just as it can do without a public water service or public lighting. Every building can generate its own heat just as well as every building can provide its own water and supply its own illumination — and some might even argue that it would be "cheaper to make it themselves than to buy it ready-made". But what building owner wants to do that in this modern age? Likewise, if the first cost of raw materials, such as water, kerosene, coal, etc., is the only factor that is given consideration, it might appear that District Heating is more expensive than individual plants. However, when relative service is used as a measuring stick, and the saving of labor, space, depreciation, etc., are evaluated, District Heating as a public service compares favorably with any other utility.

While these facts were first appreciated in larger cities, the saving of every description is sought and paid for, the advantages of District Heating are becoming realized by thousands of people in hundreds of municipalities under one hundred thousand population. Although a great majority of cities are now "heat minded", there are many that have yet to learn that District Heating is something for them as well as for the larger cities. Within recent years, it has been demonstrated that, in many cities of even less than twenty-five thousand population, the entire business district can be profitably heated from one central boiler plant, with steam rates sufficiently reasonable to attract the required volume of business.

Whether or not District Heating would be a practical undertaking will depend on a great many local factors, some of the most important of which are:

(a) The degree of concentration of steam load within a limited area.
(b) The existence of a suitable and well located central boiler plant, or the possibility of one being constructed without excessive investment being required.
(c) The availability of the most economical cost of fuel for the central boiler plant at a considerable spread in price between the cost of fuel commonly used in the individual boilers and furnaces.
(d) An existing utility organization experienced in the conduct of public utility business and sufficiently flexible to adjust itself to the management, operation and maintenance of a District Heating system. By spreading the expense over several services to the overhead of this necessarily seasonable business can be held at a minimum.
(e) Unison, which will not add excessively to the cost of installation of the steam distribution system.
(f) Experienced, capable management that recognizes the special nature of District Heating as a business, and the full of the experience of other District Heating companies in the avoidance of mistakes. Being from the success of others, such management will see to it that a plant is designed and constructed on the three-fold foundation of efficiency, durability, and economy.

When the business section of the city is built around a community center or city square, there is usually quite a heavy concentration of heat load in from eight to twelve square city blocks. Practically all of this load can be reached from a relatively short underground main loop, the installation cost of which is much less than a long line or series of mains required to reach and serve the same load spread over a much larger area. Such a layout is ideal for District Heating. In other cities, there may be found a business center with one or more modern hotels, office buildings, department stores, banks, etc., some blocks removed from this original business district. Although the result is still concentration of heating load, even to a greater degree when the size of modern buildings is considered, there is sometimes a question as to where the ultimate load will be located. When this can not be determined with any reasonable degree of accuracy, and the existing load is relatively small, it is sometimes advisable to defer the investment until the trend of development is sufficiently apparent to admit of intelligent planning.

After studying the physical layout of the town, the next consideration is that of a boiler plant. Here is where the centralization of electric utility financing, operation and management often creates a situation that is favorable to the smaller city that wants to enjoy the many advantages of District Heating. The local utility in many cities has been acquired by one of the utility financing and management organizations. As a result, the local electric requirements are brought in on the high tension lines of these organizations, and the old boiler plant is used either as a standby plant, minor generating station, or is shut down entirely. This puts the utility company under an expense of several thousand dollars every year for the maintenance of a plant that is entirely or almost entirely non-productive of revenue. Such plants, when advantageously located, can be used as a central station for a District Heating system that will give the business section all the advantage of District Heating service and enable the utility company to increase its gross and net income by very attractive figures.

Of course, this condition is not general. There are cities where additional electric energy must be generated by steam. Here, again, a situation is created that is favorable to District Heating. The steam plant can often be used as a central station for District Heating and still provide for the electric requirements. This is a plan worked in some of the largest cities where the District Heating plant is carrying the major load while feeding low cost current to the high line, commensurate with the hourly steam demand.

Both of the examples just cited provided an available boiler plant. How about the city that does not have an available boiler plant? Such a city will require a correspondingly greater steam demand from the business section to justify the installation cost, a
substantial part of which would be the cost of a new boiler plant.

Whether a boiler plant is available or must be specially built is not of much importance if all other factors do not permit of a satisfactory answer to the question "Will District Heating pay in our city?" A complete engineering survey that will give all the facts relative to cost of plant construction, probable annual gross income for a period of years, estimated operating cost, and net operating income, can be made at a nominal cost. Such a survey should not be casually assigned to any member of the utility organization who happens at the time to be able to undertake the study, but should be carried out by an organization that has ample experience in such matters, and is thoroughly familiar with the fundamentals of District Heating in relation to the many local factors involved. When it is considered that conclusions reached from such a report may become the basis for the investment of several hundred thousand dollars, the wisdom of securing the most accurate survey possible is immediately apparent.

Searching out further fields for service, an increasing number of public utility companies in cities of less than one hundred thousand population are instituting surveys of this kind. In many cases, one of the high officials of a big holding company senses the possibilities of District Heating for some of the company's properties, and employs specialists to prepare reports covering the cities under consideration. In other cases the local manager brings credit to himself by instituting such a survey.

Through the electric utility, District Heating gains a foothold in many cities. In other instances, progress is made on the community or the municipality itself start the ball rolling, the first step being an engineering investigation and full report.

Sometimes local industrial plants having excess boiler capacity are the leaders in the movement. When the executives of such plants realize that District Heating offers them an opportunity to reduce their own costs of operation, increase their net income, and render a public service, District Heating appeals to their business judgment as well as their public spirit.

Any of these groups who are now considering District Heating or who may become interested in it in the future can profit from this word of warning: "Do not attempt a District Heating installation in an offhand manner without a thorough study of the probable outcome. If you do, you will probably repeat the same mistakes that were made thirty, forty, and fifty years ago. Others who have tried to ‘do it themselves’ or with the assistance of only ‘half knowledge’ counsel have sacrificed practically all the benefits of modern development in this highly specialized field, and have wasted much of their investment. It pays to bring to a District Heating problem the fullest available knowledge that will insure maximum efficiency, longest life, durability, and the utmost economy in construction."

Who should bring the many advantages of District Heating to your city? Should it be the local utility company, municipality, an independent stock company, organized for the purpose, or an existing industrial plant? Local conditions will usually decide. But, as the two Black Crows might say, "Why talk about that?" when the first step is to arouse sufficient public interest in the desirability of District Heating? What the people want they usually get—and when they want it a champion usually steps forth to give it to them. If this local benefactor is fortified with a carefully prepared engineering survey that discloses the practicability of modern heating service, then it should be a comparatively easy matter to enlist sufficient support to bring District Heating to your city.
To this Line of ADSCO Expansion Devices has been added the ADSCO Variator

A HIGH PRESSURE, HIGH TEMPERATURE PACKLESS JOINT

With the exception of new metals in diaphragm and other parts, the design of the new ADSCO Variator for high pressures (to 400 lbs.) and high temperatures (to 750°Fahrenheit) is substantially the same as the ADSCO Low Pressure Variator, hundreds of which have been installed during the past 20 years, with less than 1/10 of 1% ever having required attention.

Each diaphragm of this new Variator accommodates a full ¾-inch movement, and can be assembled in series to provide for any expansion requirement up to 3 inches per unit. Per inch of traverse, they cost little, if any, more than much less satisfactory equipment. Write for new bulletin which illustrates and describes this new Variator in detail.

AMERICAN DISTRICT STEAM COMPANY
NORTH TONAWANDA, N.Y.
SHAWINIGAN Chemicals, Limited, manufacturers of carbidies and various acids at Shawinigan Falls, Quebec, requires no introduction to the business man who is familiar with the companies that are making rapid strides in the chemical industry. Perhaps one of the reasons why Shawinigan interests are so successful is their policy of delegating important work to outside interests. When it appears that such assignments can be handled better by those who have made a special study of some particular line, Shawinigan is quick to call in outside counsel. Perhaps this is one of the reasons why Shawinigan Chemicals is known as a low cost producer, and why its operating statements are very attractive. By approaching its problems with an open mind, enlisting the services of those who are best fitted to serve them, the Shawinigan Chemical Company has a plant that is a model for efficiency and economical operation. By relieving itself of details that can best be handled for them by others, the management is left free to work out new products, develop new markets, and to devote its time to other major activities.

Both the acid plant and the carbide plants of Shawinigan Chemicals, Limited, are located on the banks of St. Morris river. The two plants are approximately 3000 feet apart, and were originally operated as two independent concerns. Early in 1928, the company decided on an extensive plant expansion program in both the carbide and chemical divisions, appropriating approximately $2,000,000.00 for this work. In this program were included several new lime kilns in connection with their carbide manufacture and waste heat boilers for the utilization of the heat from these kilns. The steam generated by the above at 175 pounds pressure and 100° of super-heat was to be transmitted to the chemical plant for use in their process work.

The steam line installation was to be one of the largest examples of its kind in Canada, with a greater variety of conditions, requiring special design of supporting and anchorage structures than are ordinarily met in work of this type.

Fully realizing this, the Shawinigan Chemicals called in the Canadian District Steam Company, Limited, subsidiary of the American District Steam Company, to report on the steam line project and submit preliminary designs and recommendations. After a careful engineering study of physical layout, and all the factors involved, the Canadian District Steam Company, Limited recommended an 8" extra heavy steel pipe line with all joints welded and the expansion of the line compensated with expansion loops. The insulation throughout was to be of 3", 85% Magnesia Telescopic covering, over which a 1" layer of hair felt was to be applied. The installation was to be water-proofed, with a heavy roofing jacket held in place by means of heavy copper-weld wire.
ties properly spaced, and all joints were to be properly sealed and made water-tight. After carefully reviewing these recommendations, the Shawinigan Company gave ADSCO the "go ahead" on the project and ADSCO engineers went right to work.

Beginning at the boilers, the line was carried through the roof trusses the entire length of the kiln building. From there it was taken on steel bridges and bents to the Carbide Grinding Building, along one wall of this building on steel brackets and trusses, and over the gabled roof of one intervening building and two 35-foot gaps to the roof of the Can Building. From here, the line continued over the Can Building, from where it was carried on three steel bridges across the Canadian Pacific railway tracks. From this point, down to the acid plant, a distance of about 3,000 feet, the line was carried on concrete piers or steel posts provided with cast iron roller chairs. The balance of the line within the acid plant was carried above ground on steel pipe columns and rollers to the various plant buildings where connections to equipment were made. A great deal of special engineering was required in connection with this installation. In fact, this characteristic was so pronounced that the only fabricated materials shipped to the job were the steel bridges crossing the Canadian Pacific track and the straight lengths of pipe. All other steel structures, supports, etc., were produced on the grounds by means of welding, bending, etc. The expansion loops and changes in direction comprising 70, long radius, extra heavy pipe bends of various degrees, were all made on the job to fit the conditions encountered. The Shawinigan Chemicals being large producers of Carbide, the oxy-acetylene method of welding was employed.

The entire installation was carried out in the course of the severest winter weather. Despite this handicap, the installation was completed between October 15 and the middle of January.

After these three months of designing, planning and constructing, the big day arrived when the installation was to be subjected to the extremely severe tests specified before its acceptance by the Shawinigan Chemicals. First the line was subjected to eight hundred pounds hydrostatic pressure and simultaneously the impact test was applied to each weld. Then, with the surrounding temperature in the neighborhood of 40° below zero, the boiler pressure was turned into the line suddenly by opening the valve at the boiler header, just as fast as a man could turn it. The line came through with a perfect score — Shawinigan engineers put their okay on it. The steam was turned on to stay in the ADSCO-installed Shawinigan installation, and it has not been turned off since the line was put into service last January.

As long as the steam lines for District Heating were confined to underground mains designed for a maximum pressure of 50 pounds saturated steam, with a line pressure of between 2 and 10 pounds, the original ADSCO Variator provided for every requirement. With the passing of years came the practice of building an increasing number of installations for high pressure — and with it came the demand for a packless expansion device that would operate successfully in high pressure lines.

Having had such a satisfactory experience with the ADSCO Low Pressure Variator, ADSCO engineers began to experiment with the same general principle of construction to determine whether or not it could be adapted to high pressure work. They knew that the ADSCO Low Pressure Variator would operate indefinitely under pressures and temperatures within the limitations of copper, used for its diaphragms, and set out to find a metal with suitable temperature limitations.

It was no easy job to find the metals that would meet all of the conditions and to perfect the design that would make available the tried and proven Variator principle for users of high pressure steam. It took two years of hard work — laboratory tests — research that covered every applicable scientific development in metallurgy and design. At last ADSCO engineers felt that they had perfected a Variator that would give just as satisfactory service for pressures up to 400 pounds per square inch and temperatures up to 750° Fahrenheit as the original ADSCO Variator is giving on low pressure steam.
limited to six diaphragms, which provide for 3" of traverse. For lines conveying steam, oil, or gas, with pressures up to 250 pounds and 400° Fahrenheit, the Multiple Diaphragm Variator is furnished with cast iron bodies, faced and drilled to the 250 pound A.S.M.E. standard. For higher temperatures and pressures, electric cast steel bodies are furnished, and if desired, with ends beveled for welding to the pipe.

Engineers and public utility companies are heralding the ADSCO Multiple Diaphragm Variator as the greatest forward step in expansion equipment since the ADSCO Duplex Sleeve Guided Expansion Joint solved the problems which were being encountered with slip-type expansion joints on high pressure and high temperature lines.

The World’s Tallest Hotel

THE NEW YORKER, NEW YORK CITY

Needless to say, the towering lines of beauty, the luxury and comfort of the New Yorker, the world’s tallest and largest hotel, are backed by quality materials, including ADSCO Riser Joints, to provide for the expansion in the risers.

For instantaneous heating of water or other liquids by steam, hot water or other mediums, and for equalizing or reducing the temperature in fluids:

Use the New ADSCO U Tube Heater.

Its extremely simple design, ease of cleaning and rugged construction equip it to give a lifetime of low-cost, easy-to-care-for service.

It is so built as to permit free and rapid circulation thru the heater, and lends itself readily to automatic heat control. Seamless drawn U-shaped copper tubes are used. The size and spacing of tubes are carefully determined to provide exceptionally high efficiency in heat transfer.

Schools, hospitals, office buildings, and homes will find lasting satisfaction in the ADSCO U Tube Heater. Comparisons and the test of usage will prove that no other heater built offers greater dependability and efficiency at anywhere near the same cost.

These heaters are particularly adapted to “converter” or “heat-exchanger” service when hot water heating systems are to be served with steam from a District Heating plant.

Write for complete facts on this heater, today!
Edison Electric, 
Boston, calls on Northeastern for fifth time

Again in 1929, the Edison Electric Illuminating Company of Boston, called upon the Northeastern Piping & Construction Corporation to install an addition to their rapidly growing District Heating System. This is the fifth time since 1913 that Northeastern has played a part in the up-building of this great District Heating property.

From this it is apparent
1.—that District Heating is forging ahead in Boston.
2.—that the Edison Electric Illuminating Company benefit from contracting for their steam line installations.

Even under the most adverse installation conditions, construction proceeded as scheduled, and steam was in the lines on the day specified.

With over 50 years specialization on District Heating Systems behind them and a large modern factory devoted entirely to the manufacture of equipment required for the proper installation of efficient underground steam lines, Northeastern is in a strong position to serve those who are interested in initial installations or in extending existing systems.

NORTHEASTERN
PIPING & CONSTRUCTION CORP.
NORTH TONAWANDA, N. Y.

Subsidiary of
AMERICAN DISTRICT STEAM COMPANY
NORTH TONAWANDA, N.Y.

Over 50 Years Experience in the Installation of District Heating Systems

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