

August 1, 2001

Mr. Jamie Dunn Hydrogeologist, Northern Division WI Department of Natural Resources 810 W Maple Street Spooner, WI 54801

RE: SUPERIOR WATER, LIGHT AND POWER COMPANY – MANUFACTURED GAS PLANT

Dear Mr. Dunn:

Superior Water, Light & Power has been investigating the ownership and operation of a manufactured gas plant formerly located in Superior, WI. To gain an understanding of the company history, this letter is segmented to discuss the ownership of all the company's utilities, the location of these facilities and the operation of the manufactured gas plant. This information is summarized as follows:

Ownership

A filing in a rate case at the Railroad Commission of Wisconsin provided the following history of the manufactured gas plant. Relevant sections from this brief are provided as Attachment 1.

- The Superior Light & Fuel Company was organized August 4th, 1888, for the purpose of manufacturing and selling gas.
- The Superior Light & Fuel Company constructed a plant, one holder, laid eight miles of main, and installed 125 gas lamps for the purpose of street lighting and was ready to begin business November 1st, 1889, but never actually operated the plant as a going concern.
- On October 31, 1889, the Superior Light & Fuel Company sold the facilities to Superior Water, Light & Power Company. The delivery of gas to consumers began when SWL&P assumed ownership of the facility.

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- As of November 1, 1890, the end of the first year of operation, there were 227 gas customers.
- The original gas holder of 30,000 cubic feet capacity, erected in 1889, did not prove adequate for the growing requirements of the Company and another holder of 250,000 cubic feet capacity was constructed in 1891.
- On June 22, 1903, the Company entered into arrangements with the Zenith Furnace Company for the purchase of by-product coke-oven gas for a period of twenty years beginning in 1904. The Company agreed to maintain its own generating plant in order to make up any deficiency in the purchased supply and to maintain holder capacity equal to two-thirds of its maximum daily sendout. After changing from manufacture of gas to the purchased gas, the Company maintained the generating plant for stand-by purposes until the year 1930.
- The water and electric facilities owned by Superior Water, Light and Power Company were located with the gas plant. Under the terms of the franchise with the City of Superior, the source of the water was the Bay of Superior, filtered through sand-filled cribs located in the bay. The intake for the water facility was located near the gas plant, and is visible on Attachment 2, page 2, as a '15" W.P.'

Location

While we are continuing to review our historical documents, we have attached copies of Sanborn maps obtained at the City of Superior Public Library, dated 1892, and updated in 1902 and 1911, as Attachment 2. Page 1 of Attachment 2 shows the location of SWL&P facilities and the surrounding area in the early 1900's. These utility facilities were located near North-Western Fuel company's coal dock, the Edward Scofield & Company Saw Mill, and other similar businesses. The saw mill was located in the present location of the City of Superior Wastewater Treatment Plant, and the fuel company occupied the site of the current Cutler LaLiberte McDougall lime product operation, and the Lafarge Cement Plant. During the operation of the gas plant, the shoreline was much different than is found at the location today. The shoreline was located closer to the former gas plant facilities. The railroad was located on a trestle in approximately its current location, but a "pond" was located between the railroad and the gas plant. (See Attachment 2, page 2. Page 2 of Attachment 2 is a more detailed map of the utility facilities. Page 3 of Attachment 2 shows past and present SWL&P land ownership connected with historical operations of the gas, water and electric plants.

The Sanborn maps show that the gas plant was located on an unplatted parcel of land 200' wide by 81' deep adjacent to Water Street across from Lots 7, 8, 9 and 10 of Block 15 in Roy's Addition to Superior City. The water plant and electric

light plant were also located on this parcel. Superior Water, Light & Power acquired title to this parcel on October 31, 1889, and subsequently sold the parcel and transferred title to CLM Corporation on September 13, 1978.

Two gas storage structures were located on Lots 9, 10, 11 and 12 of Block 16 in Roy's Addition to Superior City. SWL&P acquired title to these lots on October 31, 1889 and is the current owner. SWL&P acquired title to Lots 7 and 8 of Block 16 on December 12, 1893 and is the current owner.

An additional gas storage structure was located on Lots 7, 8, 9, 10, 11 and 12 of Block 15 in Roy's Addition. SWL&P acquired title to these lots on February 28, 1901, and subsequently sold and transferred title to Lots 11, 12 and part of Lot 10 to the State of Wisconsin (State Highway Commission) on January 20, 1961. Lots 7, 8, 9 and the remainder of Lot 10 are still owned by SWL&P.

Lots 4, 5, 6, 7, 8 and 9 of Block 18 in Roy's Addition were acquired by SWL&P in the 1920's. SWL&P is the current owner of these lots.

The final piece of property acquired by SWL&P in this area was an unplatted parcel of land 300' wide by 160' deep adjacent to the original gas, water and electric plant site on Water Street, and across from Lots 11 and 12 of Block 15 and Lots 7, 8 and 9 of Block 14, Roy's Addition. SWL&P acquired title to this parcel on February 14, 1952, and subsequently sold the parcel and transferred title to Cutler LaLiberte McDougall Corporation on August 19, 1959.

Operations

Production

- The manufactured gas plant began operations some time after November 1, 1889 and ceased production in August of 1904.
- Railroad Commission records for the years 1909 to 1930 confirm that no gas was manufactured by Superior Water, Light and Power during this time.
- A production report that indicates 27,805,000 cubic feet of gas was produced by the plant in 1902.
- Accounting records indicate the possibility of gas tar sales during the period from November of 1892 to November of 1896.

Information regarding production volumes for the years 1889 through 1904 is still being investigated.

Equipment

The following description of the equipment in the facility comes from an undated document from the late 1800's:

GAS PLANT

This building is located about midway between the east and west ends of the city on Superior Bay and is a one and a half story building of substantial construction.

The gas is a water gas made by the improved "Springer" process. The apparatus comprises of two No 2 $\frac{1}{2}$ Generators with scrubber and condenser, one nine ft. station meter, one 10 inch Conelly Governor, one five ft meter prover, one No. 3 Roots Exhauster, one 54 inch by 14 ft steam boiler, one Sturtevant engine with blower, together with oil pump, boiler pump and other necessary appliances. In the purifying room are located four 6 ft x 8 ft x 3 ft wrought iron purifying boxes. Adjoining the purifying room is the revivifying room with concrete floor. This room also contains apparatus for distilling water out of tar.

The gas holders are two in number; one of 35,000 cubic feet capacity, built in October 1889, single lift: one double lift holder of 250,000 cubic feet capacity, dimensions of 92 ft x 21 ft x 21 ft, completed in October 1891. From both of these there is connection through the station meter, governor and mains.

Conclusion and Next Steps

This letter contains information that Superior Water, Light and Power has obtained to date, and responds to the request made by the DNR on June 25, 2001. We believe that the information, as well as data provided by the DNR, raises questions about SWL&P's responsibility for contaminated sediments in the bay, as well as other contaminants found in the area.

We have reviewed the documents which you provided, including the "Geotechnical Exploration" for the proposed storage building at the wastewater treatment plant, dated 1998. This report described the material found during borings as having an "oily appearance" and "apparent petroleum odor," but nothing which uniquely associated the material with the manufactured gas plant or ruled out any of the other historical operations in the area. We have also reviewed the DNR memorandum "Preliminary Evaluation of the Sediment Sampling Results from Cores taken from the Superior Harbor Inlet Potentially

Impacted by the Former Operations of the Superior Manufactured Gas Plant", dated January 11, 2001. This report was focused on associating the sediment characteristics with gas plant operations, but failed to find any laboratory data which linked the contaminants in the sediments to the gas plant, or ruled out any of the surrounding historical operations.

We understand, however, that the DNR may feel that further investigation is warranted. While we believe there are a number of valid defenses to any claims that Superior Water, Light and Power is responsible for investigation or clean-up costs associated with the contaminants described in the reports, we have scheduled a meeting to discuss the scope of further investigation. We are in the process of retaining the services of a qualified consultant, and anticipate that the consultant will participate in the discussion.

As we discussed on Tuesday, we have established a tentative date for our next meeting on Friday, August 10th at 10:00 am at SWL&P's office. We anticipate being able to finalize details for this meeting shortly. If you have any questions or would like additional information, please contact me at (715) 395-6288. Thank you.

Sincerely,

William 3 Bombich

William S Bombich General Manager

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RAILROAD COMMISSION OF WISCONSIN

SUPERIOR COMMERCIAL CLUB. ET AL., Complainants

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VJ.

SUPERIOR WATER. LIGHT AND POWER COMPANY,

Respondent

BRIEF OF RESPONDENT

The issues made by the complainant in this proceeding are (1) the water service is inadequate and insufficient and the water unwholesome; (2) that the rates for water, electricity and gas are unjustly discriminatory; (3) that the rates for water, electricity and gas are unreasonable and excessive, and (4) that the water, electricity and gas meters are inaccurate.

In complainant's brief they say that there are but two questions for consideration by this commission: (1) "What rate of income is capital entitled to under the circumstances of these investments;" (2) "Upon what amount is capital entitled to have this rate of income."

They do, however, mention in their brief that "the municipality and the private consumers are entrusting without contention, to the judgment of the commission, the determination of the rates they shall respectively pay" and that "the city and

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the private consumer, and indeed the large consumer and the small consumer are willing to leave to the good judgment of this commission and its staff, the adjustment of the rates between consumers."

As we view it in the light of complainant's brief, the questions for decision by this commission have narrowed after the hearing to (1). Are the rates for water, electricity and gas unreasonable? (2) Are the rates for water, electricity and gas discriminatory?

Our brief will be limited to the discussion of these two issues, believing as we do, that all other issues were settled to the satisfaction of complainants by the testimony taken on the hearing.

HISTORY OF THE WATER PLANT.

The Superior Water Works Company was organized by Chapter 359, private and local laws of Wisconsin for 1866. This company was constituted a body corporate in politic for supplying the Town of Superior and its infiabitants with water. By this act the company was authorized and empowered to "make any agreements, contracts, grants and leases for the sale, use and distribution of water as may be agreed upon between said company and any person or persons, associations and corporations, and with the Town of Superior or neighboring towns." (Ex. 25, p. 67.)

This corporation was dormant until June 10th, 1887, when the directors met and elected officers and the company became a de jure, an active corporation. (Ex. 25, pp. 80-95.)

In 1387 (presumably after June 10th) the Superior Water Works Company built the first and original plant in what is now the City of Superior. It consisted of a temporary pumping station located on Tower Bay Slip and a line of main extending up Tower Avenue a distance of some blocks. This plant was a forced make-shift and only designed to afford fire protection to the wooden buildings of which the ther Village of Superior was composed. (Testimony of Mr. Winslow, p. M. 59.)

Steps were at once taken to extend the system and obtain a good supply of water. To that end a sixteen inch pipe line was laid to and across St. Louis Bay and connected with the mains of the Duluth Gas & Water Company, whose water supply was taken from Lake Superior. The citizens of Duluth obtained an injunction preventing the Duluth Gas & Water Company from furnishing water to the Superior Water Works Company. This of course ended the attempt to get water from this source although the pipes were not removed until 1892. (Testimony of Mr. Winslow, p. M. 59-60.)

On October 15, 1387, the Village of Superior granted a franchise to the Superior Water Works Company to establish, maintain and operate a system of water works in said Village for thirty years. It provided that the source of supply should be the Bay of Superior, the water to be differed through sand dilled cribs located in the Bay, provided that if the Village should procure for the company, and without cost or expense to the Company, a valid and indefeasible right to extend and lay its pipes across the Bay of Superior and Minnesota Point, the Company should extend its pipes to Lake Superior and take its supply from the lake. There was a purchase clause in this ordinance providing the time when, and conditions upon which the village might purchase the plant. (Ex. 26.)

Under this ordinance and in 1888, a site for a pumping station at the foot of Winter Street was purchased by the Superior Water Works Company. An intake was laid out into the Bay of Superior terminating in a crib to afford partial filtration, a brick station built: two one million gallon pumps, two mechanical filters and two boilers installed, and the main laid to Tower Avenue. (Testimony of Mr. Winslow, p. M. 61.)

On October 1st, 1889, the village of Superior amended the ordinance theretofore passed granting a franchise to the Superior Water Works Company, changing the purchase clause and as a consideration therefor the water company released the city from its obligation to obtain a valid and indefeasible right for the water company to lay its pipes across the Bay of Superior and Minnesota Point as provided by the former ordinance, and as a further consideration therefor, the Superior Water Works Company bound "itself and its successors and assigns to obtain at its own expense an adequate supply of good and wholesome water for domestic and public purposes from said Lake Superior and to furnish the same * * * within two years." (Ex. 26.)

On the 22nd day of August, 1889 the Superior Water, Light & Power Company was incorporated and by deed dated November 1st, 1889, and recorded in the office of the Register of Deeds for Douglas County, Wisconsin, on the 2nd day of November. 1889, in Volume 11 of Deeds on page 22, the Superior Water Works Company transferred to the Superior Water. Light and Power Company, its plant and water works and all things belonging to the Superior Water Works Company or appertaining to said works, and all other property, real, personal or mixed, "and all powers, grants, rights, privileges, benefits, contract rights, contracts, advantages, immunities, exemptions, charters and franchises belonging to said (Superior Water Works Company) or appertaining thereto or connected with said works including the corporate rights, privileges and franchises received by said (Superior Water Works Company) under Chapter 359 Special Laws of 1866 • • and also the ordinances under which said company built its works and all amendments thereto and all rights thereunder." (Ex. 25, p. 98.)

The new company found it impossible to purchase any property or even secure an easement on Minnesota Point opposite to, or within reaching distance of, the pumping station erected by the Superior Water Works Company at the foot of Winter Street. This inability was due to a tangle in the title which took years of litigation to clear up. Finally an easement was secured opposite Old Superior. This easement was secured at a point as near opposite Winter Street as it was possible to secure it and not get into the tangled titles. . (Testimony of Mr. Winslow, pp. M. 61-63.)

This new water supply made it necessary to erect a new pumping station at a point on the main shore opposite the property on Minnesota Point where the easement was obtained. This new pumping station was equipped with a high duty Allis pumping engine in addition to the two old pumps which were moved to the new location from Winter Street. An intake was laid across the bay and the point and out into Lake Superior a distance of two thousand feet. This action was based upon the report of Mr. Budolph Hering at that time one of the most eminent hydraulic engineers practising in the United States. Mr. Hering reported to the Superior Water Works Company that it would be impossible to obtain an adequate supply of good water from wells on Minnesota Point and that the only thing to do was to go out into the Lake. (See Ex. 17.)

This intake extending into the lake was entirely satisfactory at first, but after some three years the government began extensive dredging operations in the harbor and dumped the material thus dredged in the lake along the shore of Minnesota Point between the two entries, which contaminated the water with sewage and so rolled it up and discolored it that it was found necessary to abandon the use of it. A filter gallery was then built on Minnesota Point at the suggestion of Major Bement, an experienced water works engineer. This necessitated lowering the intake pipe on the point and the purchase of the property covered by the easement and other additional property on Minnesota Point. (Testimony of Mr. Winslow, pp. M. 64-66.)

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The results from the filter gallery were disappointing. Animal and vegetable growths, sand deas, algae, etc., made the water unattractive if not dangerous. More investigation by hydraulic engineers and sanitary chemists followed, resulting in the sinking of sixty wells in the sand on the lake side of Minnesota Point, and on either side of the intake pipe. This necessitated the purchasing of considerable additional land and the taking up of about thirteen hundred feet of intake pipe theretofore extended into the Lake. This system was adopted on the recommendation of Mr. Allen Hazen. The results thus obtained were not in accordance with experimental showing. The water contained sufficient iron to cause a growth of crenothriz which filled the distribution system and added discoloration to the water. To overcome this difficulty, on the advice of Mr. Allen Hazen and Prof. Russell of the University of Wisconsin. and in compliance with an ordinance of the City of Superior. dated June 13. 1389, slow sand filters were installed to handle the water from the wells on the point. To carry this out. necessitated an enlargement and reconstruction of the pumping station, the installation of an additional pump and the purchase of ground for filters. (Testimony of Mr. Winslow, pp. M. 66-68.)

The original intake pipe across the channel in the Bay of Superior, at the time it was laid, was laid at a sufficient depth to permit boats to pass over it, but on account of the deeper draft of boats, it became necessary later to change the depth of the pipe. (Testimony of Mr. Winslow, pp. M. 69-70.)

It is estimated that the money lost in these experiments amounted to \$65,000. (Testimony of Mr. Winslow, p. M. 69.)

On the advice of Mr. Hazen a new pure water section of the filter plant was installed, a new twenty-four inch main laid on Carlton Avenue on West Seventh Street, a compound fly wheel pump installed in the pumping station. (in addition to pumps installed in 1908 and 1910) and other improvements were made during the year 1911. (Ex. 21, Testimony of Mr. Winslow, p. M. 69, M. 126-128.) On August 11th. 1396, an ordinance was adopted by the city making a 20 per cent. reduction on both hydrant rentals and rates to private consumers. This ordinance the company was forced to accept owing to the holding up of hydrant rentals and threatened litigation. (Ex. 26.)

On June 27, 1399, and amended October 13, 1899, an ordinance was passed compromising certain litigation between the city and the Superior Water, Light & Power Company and amending the ordinances theretofore passed, and providing a reduced schedule of hydrant rentals to be paid by the city and certain reductions in the rates to private consumers. (Charter of the City of Superior, compilation of 1908, p. 123, Ex. L.)

This franchise has never been surrendered by the Superior Water, Light & Power Company and no indeterminate permit covering water supply has been granted to it.

The foregoing is a brief history of the water plant to date. Mr. Hazen estimates that it will be necessary for the Company in the near future to expend upwards of \$200,000 in extensions and improvements. (Ex. 21 Testimony of Mr. Winslow, p. M. 123.)

HISTORY OF THE GAS PLANT.

The Superior Light & Fuel Company was organized August 4th, 1888, for the purpose of manufacturing and selling gas to the village of Superior and the inhabitants thereof, for lighting, heating and mechanical purposes. (Ex. 25, p. 99.)

On August 10th, 1388, the village of Superior granted a franchise to the Superior Light & Fuel Company for fifteen years. This franchise obligated the company to lay eight miles of main and erect and maintain in the first instance, one hundred and twenty-five gas lights for lighting the streets, alleys and public grounds of the village and for which the village agreed to pay two dollars per cubic foot for gas consumed and authorized the company to charge the same amount for gas furnished private consumers. (Charter of the City of Superior compilation of 1896, p. 199.)

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This ordinance was amended on July 27th, 1888, obligating the company to erect a plant sufficient to furnish two hundred and fifty thousand cubic feet of gas per day and to have the plant completed November 1st, 1889, (Ibid.)

The Superior Light & Fuel Company constructed a plant,

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one holder, laid eight miles of main. installed the lights, etc., as provided by the foregoing ordinances and was ready to begin business November 1st. 1889, but never actually operated the plant as a going concern. (Testimony of Mr. Winslow, p. M. 73-74.)

By deed dated October 31st. 1889, and recorded in the office of the Register of Deeds for Douglas County. Wisconsin, on November 2, 1889, in Book 10 of Deeds on page 273, the Superior Light & Fuel Company sold to the Superior Water. Light & Power Company, all the property real, personal and mized. owned or controlled by it "meaning and intending to convey the gas works and plant of the (Superior Light & Fuel Company) including all its buildings, machinery, mains, pipes, lines. poles, rights of way, franchises, incomes, rents and contract rights with the City of Superior, and all other persons or corporations..and....especially hereby sells. assigns. transfers and conveys to the party of the second part. a certain ordinance entitled (the ordinance herein last above described) and also thereby sells, assigns, transfers and conveys unto the (Superior Water, Light & Power Company) all other ordinances. contracts. rights, privileges and immunities the (Superior Light & Fuel Company) have with the City of Superior, and all amendments of such ordinances. (Ez. 25, p. 108.)

The delivery of gas to consumers began when the new company took over the property. (Testimony of Mr. Winslow, p. 74 M.)

In 1991 the gas holder became inadequate and a larger one was built. Prior to 1993 the new company had laid about fourteen miles of main. (Ibid.)

On May 12, 1892, an ordinance was passed by the city, under the terms of which the Superior Water, Light & Power Company discontinued all gas street lamps. (City Charter, compilation of 1908, p. 122.)

The lamp posts representing an investment of several thousand dollars had to be sold for a few hundred dollars. As far as the manufacturing equipment is concerned it is the original equipment except that it has been to some extent. modernized. (Testimony of Mr. Winslow, p. M. S8.)

This plant was used by the company until August 1904, when the source of supply was changed to the Zenith Furnace Company. (Testimony of Mr. Winslow, p. 40, M. 89.)

This involved the laying of a connecting main to West Du-

luth, modification of piping, etc., the gas from the Zenith Furnace Company going through the old meter, governor and holders.

The steam plant has to be run in winter to prevent freezing and all the old plant except the gas making machinery proper, is used more or less. The gas making machinery has to be kept up for use in case of emergency. (Testimony of Mr. Winslow, p. 89.)

On September 24th. 1903, the City of Superior granted a new franchise to the Superior Water. Light & Power Company to manufacture and sell gas in the City of Superior for twenty years, and provided that the net price of gas should not exceed \$1.40 per thousand for illuminating purposes; \$1.00 per thousand for fuel purposes, and 75 ets. per thousand for mechanical purposes. (City Charter, compilation of 1908, p. 128.)

This franchise was surrendered by the company on June 27, 1908, and an indeterminate permit granted.

On December 30th. 1895, the city of Superior passed an ordinance authorizing Charles C. Hoyt and Samuel A. Pardee to construct and operate gas works for the manufacture, distribution and sale of gas for heating, culinary and manufacturing purposes. The ordinance provided that within sixty days after its passage, the grantees should file with the city clerk. their acceptance thereof "and from and after the filing of such acceptance, this ordinance shall have the effect of and be a contract between the city of Superior and said grantees." (Charter of the City of Superior, compilation of 1896, p. 595.)

The terms of this ordinance were never complied with and it is therefore void and has expired by limitation. (Charter of the city of Superior, compilation of 1908, p. 169.)

At the time the testimony was taken it was stated that extensions were contemplated to the East End costing from \$20,000 to \$25,000. (Testimony of Mr. Winslow, p. 129.)

Such an extension is now under construction. Since the testimony was taken a new contract has been entered into between the Superior Water, Light & Power Company and the Zenith Furnace Company for the Supply of gas.

The foregoing is a brief history of the gas plant to date.

HISTORY OF THE ELECTRIC LIGHT PLANT.

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On June 2, 1385, the Superior & Duluth Electric Company was organized for the purpose of the manufacture and use of electricity for lighting, power and other purposes and to engage in the business of furnishing the same in Douglas County. Wisconsin. and St. Louis County. Minnesota. (Ex. 25, p. 111.)

On January 3, 1888, the village of Superior granted a franchise to the Daft Electric Light Company, a New York corporation, to construct and maintain one hundred incandescent lights of twenty candle power each for the purpose of lighting the streets, avenues and public grounds of the village, and when required by the common council, to substitute therefor, are lights of at least "two thousand candle power." It was further provided that the Daft Electric Light Company might charge and collect for electric lights furnished private consumers, such prices as are usually charged in cities of corresponding size. This franchise was granted for a term of thirty years. (City Charter, compilation of 1908, p. 110.)

This transfer was recognized and ratified by the City of Superior on October 12th. 1889. (City Charter, compilation of 1908, pp. 110-116.)

The Superior & Duluth Electric Company sold to Robert C. Elliott, by deed dated on the 25th day of October. 1889. and recorded on the 2nd day of November. 1889. in Book 11 of Deeds on page 19, for the sum of \$72,309.07 "all the plant and works of the Superior & Duluth Electric Company situated in the City of Superior, state of Wisconsin, including all lines. ways. rights. of way, which may have been acquired by the said Superior & Duluth Electric Company.....together with all buildings, structures, houses, machines, tools, appliances. engines, poles, wires and all things whatsoever now belonging to said company and appertaining to said plant and works. and all other property, real, personal or mixed, and all powers, grants. rights, privileges, benefits, contracts, licenses, contract rights, advantages, immnuities, exemptions, charters, ordinances and franchises belonging to said company and appertaining to or connected with said works, and also the ordinance under which said company built its said works and all amendments thereto. (Ex. 25, p. 122.)

Robert C. Elliott sold, at the cost price, to the Superior Water, Light & Power Company by deed dated October 1st, 1889, and recorded on the 2nd day of November, 1889, in book 6 of Deeds on page 277, all property by him purchased from the Superior & Duluth Electric Company.

On July 13, 1889, the city of Superior granted a franchise to the Superior Are Light & Power Company to construct and operate a system of electric are lighting and to provide for the lighting of the streets, public grounds and buildings of the city by said system. (City Charter, compilation of 1908, p. 117.)

• While this franchise was granted for a period of twenty years, it appears that the Superior Arc Light & Power Company never did anything under the franchise except that there was erected for them, a line of poles by the Northwestern Electric Construction & Supply Company, and of which line of poles the last named company became the owner and which was conveyed by it to the Superior Water, Light & Power Company for \$4,500 by Deed dated November 8, 1889 and recorded January 3, 1890 in Book "B" of Agreements on page 169. (Ex. 25, p. 135.)

The Daft Electric Light Company did some work under their franchise before the same was transferred to the Superior & Duluth Electric Company, which latter company in the summer or early fall of 1889, began operations. (Testimony of Mr. Winslow, p. M. 92-93.)

The system installed by the Dart Electric Light Company was what was known as the Dart system, which was a 220 volt system, direct current, and as 220 volt lamps were not then made it was necessary to employ two 110 volt lamps together to take up the voltage, with the result that if for any cause, one broke, the other got twice its rated voltage, flared up and went out. This of course was not a satisfactory system and has wholly gone out of use at the present time.

The first thing the Superior Water, Light & Power Company was forced to do was to practically scrap this old Daft system and substitute, first, the General Electric and afterwards the Westinghouse alternating machines and the General Electric 12.

airect are lighting machines. (Testimony of Mr. Winslow, pp. 93-94.)

The old system was housed at the foot of Winter Street in the same building as the water plant at that time, there being a partition wall that separated the building into two sections, one of which was occupied by the water plant and the other by the electric plant. They both used one boiler room, one boiler equipment and one stack in common.

The city grew very rapidly in 1890-1891 and of course used more current, which necessitated a larger boiler equipment.

To install the new system and enlarge the equipment, it was necessary to abandon the electric part of the plant at the foot of Winter Street and to build a new building. For this purpose part of block 156 was purchased and the present electric lighting plant installed thereon. This was done in 1892 and necessitated the scrapping of considerable material. Testimony of Mr. Winslow, pp. 94-96.

The equipment discarded at that time amounted to \$23,600. (Testimony of Mr. Crumpton, p. M. 171.)

In 1904-1905 the company planned on remodeling the station and installing larger machines, but deferred consummating the plan until it was known whether or not they could utilize the current of the Great Northern Power Company. (Testimony of Mr. Winslow, p. M. 96.)

On November 9, 1907, the company began getting power from the Great Northern Power Company and has used that power since instead of steam power. (Testimony of Mr. Winslow, p. 40.)

In remodeling the station in 1906-7 the company discarded practically everything it had in the station except the steam part of it. The wooden switch-board, eleven or twelve old arc machines, nine or ten alternators and two or three 500 volt direct current power machines, were all scrapped and in their place were installed two motor generator sets and one large direct current machine. In addition to scrapping the equipment in the station it was also necessary to scrap the old street lighting system and to get a complete new equipment of transformers, the frequency of the old system being one hundred and twenty-five cycles and the new system, sixty cycles.

The equipment discarded at this time amounted to \$82.200. The overhead line equipment discarded on these two occasions amounted to \$15,000. The total discarded equipment necessitated by these changes amounted to \$120,300. (Ez. 22-23, Testimony of Mr. Crumpton, p. 162-179.)

Since 1907 the only additions have been such as were necessitated by the expansion of business.

At the time the testimony was taken in this proceeding, the plant had reached a point where the demand had overtaken the capacity and it was doubtful if the company would be able to supply the demand through the winter of 1912-1913 with the present equipment. (Testimony of Mr. Winslow, pp. 98-99.)

The foregoing is a brief history of the electric plant to date.

From estimates made by Messrs. D. C. & William B. Jackson, Electrical Engineers, it is necessary for the company to expend on the electric light plant in the immediate future, \$110,-310 and they recommend that these improvements be made before the winter of 1912-13. The company has already installed a new street lighting transformer and has contracted for new generating equipment which will practically double its present station capacity.

After the Superior Water, Light & Power Company had purchased the water works plant from the Superior Water Works Company, the gas plant from the Superior Light & Fuel Company, and the electric plant from Robert C. Elliott, it passed the following resolution regarding the payment for said property. "Now, therefore, be it resolved, that in payment of the said property, rights and franchises so acquired of the said Superior Light and Fuel Company, the Superior Water Works Company, and Robert C. Elliott, the Superior Water, Light & Power Company hereby assumes and agrees to pay all the indebtedness and obligations of the Superior Light and Fuel Company, and hereby agrees to pay the said Robert C. Elliott the sum of seventy-five thousand dollars and hereby assumes and agrees to pay the sum of two hundred and ten thousand dollars to the Central Trust Company, of New York, on or before November 1st, A. D. 1890, and interest from the first day of November, 1889, at six per cent. per annum, on two hundred thousand dollars of the outstanding bonds of the Superior Water Works Company; said sum of two hundred and ten thousand dollars so to be paid to said Central Trust Company, to be used by said Central Trust Company to pay and redeem the outstanding bonds secured by a mortgage upon the said property, rights and franchises so acquired from the said Superior Water Works Company."

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ATTACHMENT 2 PAGE 1 Source: City of Superior Library Sanborn map dated 1892 with updates in 1902 and 1911.

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