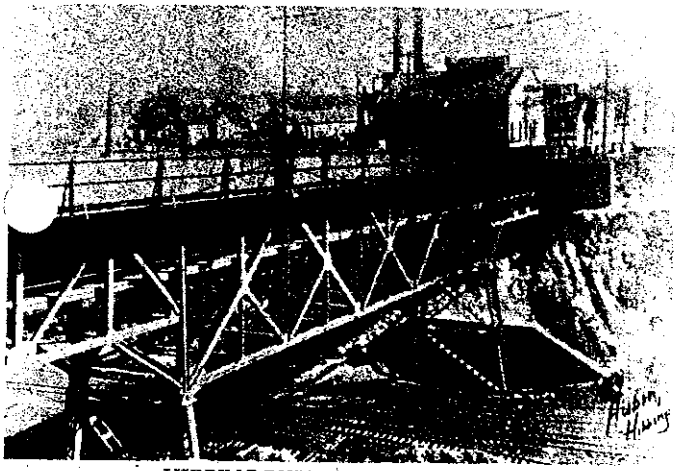
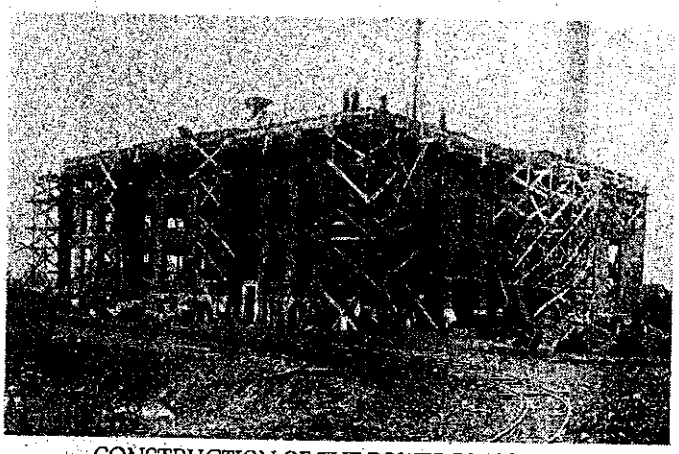
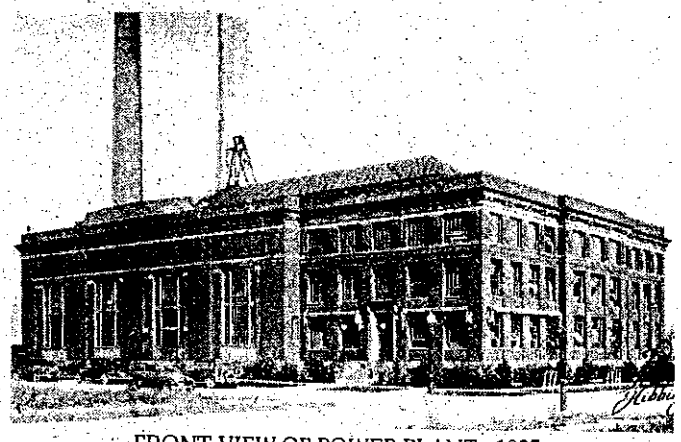
HPU History



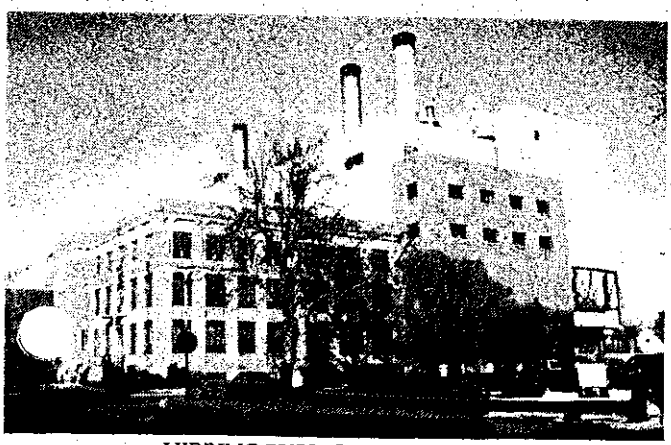
HIBBING PUBLIC UTILITIES. 1900
LOCATED IN NORTH HIBBING



CONSTRUCTION OF THE POWER PLANT - 1919



FRONT VIEW OF POWER PLANT - 1925



HIBBING PUBLIC UTILITIES - 1995

PUBLIC UTILITIES
HIBBING, MINN.
1895 100 YEARS 1995

The Hibbing Public Utilities celebrated its 100th anniversary in 1995. The HPUC owns and operates a cogeneration power plant for the citizens of Hibbing, which provides both steam and electricity for distribution to its service area.

The Utility also furnishes water and natural gas services to the City of Hibbing proper, Kitzville, and Kelly Lake.

HPUC's main concern is to provide steady, reliable, utility service at competitive rates to the people and businesses of Hibbing.

The following is a history of Hibbing Public Utilities.

1894: The Hibbing Light and Water Company was incorporated in 1894, one year after the incorporation of Hibbing under the village form of government, by Hibbing-and Trimble of Duluth, prominent mining operators.

An ordinance that year provided it the right to construct water works and lay water mains on the streets of Hibbing along with building a water supply tank

Fairbanks, Morse & Co. was hired to erect a water tank at the west end of Center Street and lay water mains on portions of Pine Street and Third Avenue.

1895: During this year, bonds were issued for the purchase of the water works and property, in June, by the Village of Hibbing. Since that time all extensions and operations have been carried on by the municipality.

The village well and power plant was located in block seven of the original townsite of North Hibbing at the corner of North Street and First Avenue.

At that time, a small dynamo and steam engine was installed to furnish electric lighting for streets and domestic use.

1898: An attempt was made to create the Light and Water Board by passing an ordinance, which the Minnesota Legislature failed to pass, legalizing such a board. The ordinance was repealed.

1899: The power house was rebuilt and enlarged during this year to include a boiler room, power house, well room, shop, storehouse, and offices.

Before these renovations, the only things at the site were two small boilers and generating equipment.

1900: At the turn of the century, coal was first burned. Prior to this year, wood was used under the boilers. Coal use would later be discontinued due to public opinon, but the following year coal was purchased and burned, and in 1904 a coal spur was built to the plant.

In 1900 the Utility consisted of 1208 sixteen candle-power lamps, 346 water customers, 19 fire hydrants, and 16 street lights serving the population of 2,318.

The revenue from water and light was about $1,000 per month and value for the entire department was $32,270 compared to $14.2million in 1995.

1902: A new boiler, a 400 h.p. Corliss engine and a 150 KW, two phase, generator were installed with an additional 250 H.P. engine and dynamo purchased the next year.

By 1906, three more boilers were in operation.

1904: The 40,000 gallon wood water tank was removed from the property at Center Street and First Avenue and was moved to the power plant at an elevation "sufficient to produce water pressure to force water to the second story of any building in town."

1907: The legislature passed an act providing for the creation of Water, Light, Power, and Building Commissions in cities and villages of less than 10,000 population.

During this year a new shaft for water was sunk to a depth of 200 feet and a tunnel was created to connect this shaft to another 60

HIBBING PUBLIC UTILITIES BUILT ON 100 YEARS OF HISTORY

"Providing Quality Utility Services At Competitive Rates"

feet away.

1909: The "Water and Light Commission" was created consisting of W.J. West, William Werne, and R.A. Angst.

1910: The Oliver location, west of First Avenue, was supplied with water. In 1912, the Brooklyn water and electric lines were purchased from Mr. A.P. Sillman and an 8" water main was built from the east end of McKinley Street to connect with this section.

All the pumps were replaced in 1910 with a Prescott, triple expansion steam pump, which pumped water directly into the mains or the elevated tank.

The average daily consumption of water at this time was approximately 1 million gallons, three-forths of which was supplied by the village well. In 1995, the average consumption was 2.4 million gallons.

1914: The inadequacy of both water and light systems was so apparent in 1913 that Earle D. Jackson, consulting engineer from St. Paul, was hired to make a report on the situation.

Burns and McDonald, consulting engineers, Kansas City, MO., were brought in in 1914 to do further reports. It was discovered that a sand and gravel formation lying about three miles south of the present city hall would be the best source of a permanent water supply.

To furnish a water supply of three million gallons per day, seven wells were sunk. These wells, equiped with Layne and Bowler pumps, directly connected by vertical shaft to motors at ground surface. Each well was connected by a 12" low-pressure pipe line discharged into a 1 million gallon reinforced concrete reservoir and main pump station.

1916: Plans for a new plant prepared by Charles Pillsbury and Company were rejected because of an injunction suit brought by the Oliver Mining Company.

1918: Charles Foster, a representative of Pillsbury, was retained as general superintendent and engineer and was authorized to prepare plans for a new power plant.

1919: Contract for a new plant was given to National Electric Construction Company of St. Paul. This was the first unit of the present plant. Operations commenced in August 1920 and expansion occurred again in 1925 and 1927.

A steam heating system was installed in 1919-20 and served buildings on both sides of Howard Street from Sixth Avenue to Josephine Street, by bleeding exhaust steam from new turbines at the power plant.

1923: A new carbureted water gas plant was built. It consisted of one generating set and boiler with the second installed in 1924. The distribution system of 8.5 miles laid in 1918 expanded to 23.6 miles by 1928.

1924: The Kitzville water system, built in 1921 and 1922 by that village, was added to the Hibbing system.

1928: Appliances were sold by the Utility on a time-payment plan "to stimulate greater consumption." Experiments in house heating were conducted with results indicating that with 20 customers, the consumption would justify an inducement rate low enough to attract customers.

1933: An act passed by the State Legislature placed utilities on a self-sustaining basis.

1934: Five additional compression tanks were added to the gas plant along with a tar burner which burns by-product tar in the two steam boilers.

1935: Population served at this time was 16,601, including North and South Hibbing, Brooklyn, Kitzville, Morris, Nelson, French, First Pool and Second Pool, Penobscot, Penobscot Hill, Webb, Nassau, Lavinia and Well Lines locations.

In 1995 the population served was 18,000.

1936: Gas manufactured, metered at the plant, was 69,717, 168 cubic feet as compared to 664,773,000, cubic feet sold in 1995.

1937: A 90,000 pounds per hour, four drum steam generator with water walls, air pre-heater, induced draft fan, and automatic combustion control was installed.

1940: The boiler room equipment consisted of eight boilers with capacity of 4,184 horsepower, nominal rating.

1946: The manufacture of carbureted water gas was discontinued and a new propane gas plant was put into service. The carbureted plant was in bad physical condition and after a cost analysis of various methods and plant, a propane plant was chosen.

During this year, the gas distribution system consisted of 28.6 miles of steel mains.

In 1950 that distance was 28.9 miles and by 1995 it spans 63 miles.

1948: Many problems arose during this time in connection with operation of the utilities. This was a period marked by rising costs of production because of post war inflation.

During the war, maintenance and repairs were kept to a minimum because of the scarcity of materials and labor. In 1948, despite high cost, work had to be done.

1949: Anticipated decreases in cost during 1949 did not materialize, but repairs and maintenance had to continue. In spite of the high costs, the Commission, because of economical and efficient operation, lowered utility rates.

1949 also marked the year that the **Water, Light, Power and Building Commission** of the Village of Hibbing became the **Public Utilities Commission** of the Village of Hibbing.

Major projects during this year included the replacement of incandescent street lights with the new type mercury vapor lamps.

1954: Two Wickes high pressure steam boilers were put into operation, greatly increasing output and efficiency.

1955: Plans were formulated and test drilling began to find new sources of water.

Demand for electricity increased at a steady rate during this year

1959: Several major problems faced the Commission in 1959, the most pressing being the advisability of increasing generating capacity of the present plant through the installation of another large size turbine together with additional boiler capacity and the neccessary auxiliary equipment.

1960: The Electric Department was carrying the financial load for all departments.

A program to modernize the electric distribution system neared completion.

1963: A new switchgear was installed to give the plant a solid tie with Minnesota Power. This made it possible for the Utility to take advantage of the new Economy Energy offered for the first time in the spring of 1963.

1964: The Public Utilities Commission was faced with some expanded costs of operation, higher costs of needed equipment repairs, replacements and supplies, together with increased demands of the public for better and expanded service.

In spite of increased costs, rates for residential and commercial areas were reduced and the utilities for Hibbing were still low cost.

1965: Improvements were made in street lighting on Howard Street and in residential areas at no cost to the village.

Progress was made to convert the boilers to burn natural gas, a feat that was completed in 1966.

1966: Engineering was completed on the first two stages of a 13.8 kV electrical distribution system which was expected to greatly improve electrical service to the community.

1967: The gas distribution system was extended in 1967 with the construction of a six inch, 50 pound loop, the replacement of the old system in Brooklyn, Home Acres, and Rosemount Additions, and the installation of gas lines in the Courthouse Addition.

1971: The Propane Peaking Air Plant was placed into service and utilized when natural gas was in short supply, providing gas customers with reliable service.

The Commission signed a three-year contract which guaranteed a firm coal price of $2.35 per ton plus freight.

The legislature passed a bill making plant expansion possible for the utilities.

1972: Pfeifer & Shultz, Inc. were hired for engineering services for coal handling system improvements. A contract was awarded in 1973 for new handling systems as well as installation of two coal scales.

1973: Wells #7 and #12 were tested, cleaned and redeveloped and Boilers #7, #8, and #9 and the concrete chimney were demolished. A 150,000 pounds per hour steam generator and auxiliaries were installed.

1974: The Abe Mattews Company of Hibbing was awarded the 'dition to the Water Treatment Plant building at the Power Plant.

1976: With natural gas in short supply, the Commission determined that during off-peak heating season a small amount of natural gas was available for sale to customers equipped to use it on a seasonal basis.

1977: Plans were drawn up by Abe Mattews Engineering of Hibbing for the Scranton Water Supply improvements. The project, completed in 1979, replaced the old well pump with a booster pump, new pipeline, and metering station.

The improvements allowed the well to pump 1,800,000 gallons of water per day. This well presently supplies Hibbing with 65 percent of its water.

1978: At this time, most of Hibbing's electricity was produced by three coal-fired boilers which produced 415,000 pounds of steam per hour.

An additional 5,000 kilowatts of electricity was purchased from Minnesota Power.

For water distribution, there were 13 wells, two elevated tanks with the capacity to hold 600,000 gallons and ground storage areas with capacity of 4,000,000 gallons. Water distribution mains covered over 70 miles.

1979: A $500,000 project was completed during this year to make power outages less frequent.

1980: The Gas Department now consisted of 48 miles of gas lines and 369 million cubic feet of gas was sold. The Gas Department installed 168 new gas services during the year.

Over 92.4 million gallons of water were delivered to the city from 12 wells through 69 miles of water lines. The Water Department's biggest project in 1980 was design and land procure-nt for a water filtration plant.

The steam distribution system delivered more than 340 million pounds of steam to consumers over seventeen miles of steam lines.

The Public Utilities Commission delivered 105 million kilowatt hours to its customers over 84 miles of electric line.

1981: The steam heat and electrical systems were upgraded within the plant in 1981 to more efficiently distribute steam during the peak hours.

1982: The HPUC and Hibbing's Independent School District 701 signed an agreement where the Utility would replace, renovate, and assume ownership of the school district's existing steam distribution system and provide steam heat to four of its buildings.

1983: Construction of the new Water Treatment plant was 98 percent complete in 1983. The four greensand filters, each measuring 30' in length by 8' in diameter, were installed in April.

The HPUC embarked on its largest capital improvement project: the replacement of Turbine Generators No. 1 and No. 2. Funding for the project was provided by an $8.2 million bond issue.

1985: A new 20 megawatt turbine/generator was operational. This turbine provided a means to purchase electrical power at a cheaper rate. This replaced the two aging turbines.

1986: A district steam line was constructed to the Community College and St. Louis County Garage.

A district heating study was completed for a long range master plan.

The gas system was expanded with 100 new customers.

1987: The Bennett Park Water Tower, initially built in 1915, was totally restored. The 300,000 gallon tank plays a key role in Hibbing's water distribution system.

Work was completed on a $2.5 million life extension renovation of Boilers 1A and 2A. This year also saw the renovation of two wells, the addition of 130 new gas users, and replacement of 2000 feet of steam lines.

1988: 576 million gallons of water were distributed in 1988 along with 337 million pounds of steam, 101 million kWh of electricity, and 407 million cubic feet of natural gas.

1991: The HPUC provided $200,000 in funds for the renovation of the Hibbing Memorial Building. The funds helped make the building more energy efficient.

1993: Major renovation work was done in the replacement of the original 18" water main along First Ave. The Turbine 5 Governor control was upgraded to a "fault tolerant" system.

1994: As of 1995, the HPUC was serving 3,004 natural gas; 5,651 water; 7,001 electric; and 1,411 steam customers. Also, during this year the HPUC commenced the renovation of the former CWDC building into a Service Center to house its Line Crew, Heating Department, Water Crew, and Meter Shop.

1995: The Hibbing Public Utilities Commission celebrated its 100th anniversary. The HPUC has served Hibbing from its present location since 1919.

Currently, the Hibbing Public Utilities Commission owns and operates the power plant. The Commission is made up of three citizens appointed by the Hibbing City Council, each for one three-year term.

The Commission is the decision making body of the Utility, overseeing all projects and programs, reviewing and approving budget, and determining Utility projects.

Over the past 100 years, the commissioners and employees have steadily increased the productivity and stability of the Utility.