

The Riverside Pumping Station

The Riverside Pumping Station on the city's east side between the Milwaukee River and Humboldt and North Avenues was placed in service in 1924. It was built to alleviate a severe water shortage after World War I when the Milwaukee Water Works had only one major pumping station, the North Point Station at the foot of North Avenue on the Lake Michigan shore.

Drinking water enters the station through a nine-foot diameter reinforced concrete tunnel from the junction structure at the Linnwood Water Treatment Plant. Prior to the completion of the Linnwood plant in 1938, the Riverside Station pumped water directly from Lake Michigan after it received chlorine gas treatment. Today the water is fully treated and filtered at the Linnwood plant and then pumped into the distribution pipes under city streets.

The three original pumps were steam powered and had a capacity of 69 million gallons per day. These pumps evolved from two-cylinder compound engines to triple expansion engines. The later versions were five stories tall, easily accommodated by the 59,000-square-foot building. The engines were called "triple expansion" because they contained three cylinders, each larger than the previous. Steam at high pressure expanded in the smallest cylinder and pushed the piston down. The steam moved to the larger middle cylinder that expanded it further and in the third and largest cylinder, it expanded for the last time before returning to the boiler for reheating. All of this was performed in silence because the steam did not exhaust to the air as it did in locomotive steam engines. Those who saw the triple expansion engines marveled to witness 100 tons of machinery at work while hearing only the clinking of valves -- described as "an impressive sight, indeed."

Pumping Engine Unit One broke the world record for efficiency operation for a vertical triple expansion Corliss engine when it was given its acceptance test in 1924. The previous record had been held by a water pumping engine in Cleveland.

The era of pumping water using steam-powered equipment ended on Aug. 23, 1968 when the fires in boilers #5 and #6 were banked and extinguished. The conversion to electric pumping eliminated the cost of operating and maintaining boilers and steam pumping engines, and eliminated air pollution caused by the coal-burning boilers. Today, the Riverside Station contains nine pumps with a combined capacity of 240 million gallons a day. They are remotely controlled from the Linnwood Water Treatment Plant and the Howard Avenue Water Treatment Plant.

Excerpted from "A Century of Milwaukee Water," by Elmer W. Becker, and files of Jim Meyer, retired accountant

