

Building the Keokuk Dam

The canal had permitted navigation of steamboats past the treacherous Des Moines Rapids; the bridge had linked Iowa and Illinois and provided a pathway over the river for the new mode of transportation — the railroad. A third step was yet to be taken at Keokuk — the harnessing and use of the water power generated by a twenty-two foot fall in the Mississippi over a distance of eleven miles. The great Keokuk Dam, one of the engineering marvels of the second decade of the twentieth century, was to complete the story of transportation and communication at the Gate City of Iowa.

Fire bells rang and the whistles of Keokuk factories added their voices to the din shortly after noon on February 2, 1905. Word had just come from Washington that the Senate had passed the bill authorizing construction of a dam at Keokuk. The House of Representatives had passed the bill on January 27, so that when President Theodore Roosevelt affixed his signature to the measure, February 9, preliminaries had been completed to bring about the culmination of the dream of generations of the people in Keokuk.

Lieutenant Robert E. Lee had first sensed the

hidden energy and had predicted in 1837 that these Rapids would one day become the site of a large power dam. The Nauvoo Mormons were said to have been conversant with the possibilities and had planned to convert the power to their use. In 1842, a small wing dam was erected by a man named Gates, who used the power to operate a gristmill. Other sporadic attempts were made over the years, but it remained for the Keokuk and Hamilton Water Power Company, headed by C. P. Birge of Keokuk, to bring about the fruition of the dream.

Congress had imposed a five year limit for beginning construction of the project. Just thirty days before this limit would expire, fire bells and whistles again were heard, this time acclaiming the arrival of Hugh L. Cooper with a group of engineers and workmen — the latter generally called Bohunks because of their foreign extraction — who began the work on the Illinois side of the river. Cooper, who had harnessed the Niagara River and had built other projects, believed in the Keokuk dam to the extent that he had invested his entire personal fortune in it. Contracts were signed with St. Louis interests to use the power if Cooper could find a way to transmit it. Later, eastern capitalists were attracted to the extent of investing; even foreign cash was attracted. It was at an international convention of the Young Men's Christian Association in Toronto, Canada, that

E. R. Ward, an investment banker and chairman of the religious work committee, confided to C. R. Joy of Keokuk, a member of the same committee, the momentous news that the project would be financed.

Keokuk homes were opened to engineers of all classes during the three long years it took for the building of the dam. The society pages of Keokuk's newspapers announced the weddings of more than a hundred Keokuk young women to these young visitors. "Water power people," as they were termed collectively by the local citizens, entered largely into the social and community life. Keokukians and these "visiting firemen" began to wear dress suits to the theater and to dinner, and new names blossomed regularly in the Keokuk social register.

Between July, 1910, and June, 1913, the dam was thrown across the river, a power house was constructed, and a new lock and dry dock built for the United States government. The last bit of concrete in the dam was poured on May 31, 1913. The old canal was flooded and the new Keokuk lock was commissioned June 12, 1913, when two of the largest boats on the upper Mississippi were locked through simultaneously. Electric current was delivered to St. Louis on the night of June 30 and July 1. Some weeks previously, Keokuk people had turned the switches in their homes and read their evening papers by the light of the new

current, the old power plant on the edge of the canal having that day been buried under the waters of the newly created lake.

August 25, 26, 27, and 28 were days of celebration for Keokuk and the community, with August 26 as the "big day," when Governor George W. Clarke of Iowa, Governor Edward Dunne of Illinois, and Lieutenant Governor Painter of Missouri symbolized the new union of their three states and "dedicated the work to the use of mankind." Congressmen from the tri-state area, as well as from other states up and down the river, came to assist in the speechmaking. There was a three-day regatta on Lake Keokuk with motor boats from all sections of the country there to compete for gold and glory. At night the skies were ablaze with fireworks displays.

Engineers, scientists, and writers from all over the world had come to Keokuk during the days of construction to observe and learn. Dr. G. Walter Barr, head of the public relations department of the power company, was the official guide on these occasions. Later, with megaphone strapped over his head, his hands free to gesture and point out the wonders of the building, the little doctor shepherded thousands of visitors over the two and a half miles of the works, suiting his "spiel" to his audience. Each year since it was built, the dam and power house attract many visitors. With the exception of six years, during the two World War

periods, when for security reasons it was necessary to bar visitors, people have come by automobile, by train, and by boat to see the great dam.

It is estimated that over 900,000 people have visited the plant, which in its entirety, including dam, power house, lock, sea wall, and ice fender, has a total linear measurement of 13,185 feet, or two and a half miles. The length of the dam including the abutments at each end is 4,649 feet, or eighty-eight hundredths of a mile. At the base it is 42 feet in thickness and at the top 29 feet. It is composed of 119 arched spans, so molded together that it is virtually one solid piece of concrete, which extends downward five feet into the bedrock, to which it is securely anchored. It rises 53 feet from its base, and there are enough materials in it to load a train 1,500 miles in length. The power house has a length of 1,718 feet and is 132 feet wide. The weight of any one of the fifteen generators in it is equivalent to twenty-five street cars, and yet, despite their size, the starting or stopping of a street car on the streets of St. Louis affects the speed at which they revolve.

Between the power house and the Iowa shore are the lock and dry dock. Four hundred feet long, 110 feet wide, with a lift of 40 feet, the lock was considered the last word in this type of building and was compared favorably with the Panama Canal construction, yet it is already outmoded by the new type of barge transportation, and efforts

are being made to secure from Congress appropriations to enlarge and rebuild it. A sea wall a quarter of a mile long protects the Chicago, Burlington & Quincy Railroad tracks, which closely border the lake. Some 2,500 men were employed on the construction. Two hundred eighty-nine tons of dynamite were used; 22,000 tons of steel, 8,000,000 feet of lumber, and 3,000,000 sacks of cement went into the completed units.

Dramatic incidents, such as the time that the engineers and laborers fought crashing ice and wind-driven waves to keep the angry river from destroying their work, were highlights in the construction period. During the first two summers ideal conditions for building prevailed, with no periods of high water. But the severely cold winter of 1912 brought the menace of ice to the project. This ice, from twenty-four to thirty inches in depth, broke in the rapids above the partially finished structure on the afternoon of Sunday, March 24, 1912. It came roaring against the cofferdams and newly formed concrete, but broke and crumbled even as it piled to considerable height, so that no damage was done. But early in April, winds of almost tornadic proportion whipped the river, which was at the unprecedented stage of 18.2 feet, into huge hungry waves which lapped and tore at the clay parapets topping the cribbing. Trainloads of sandbags were rushed to every exposed portion, and after an all-night battle in wind, rain squalls,

and darkness, the greedy waters were repulsed.

Two names are linked in the development of Keokuk's water power. Chief Engineer Cooper built the hydraulic installation, the dam, power house substructure, lock, dry dock, and sea wall. The power house proper, and all electrical installation and transmission lines were built by the Stone & Webster Engineering Corporation of Boston. Soon after the work was commenced, the plant was placed under the management of the Stone & Webster Management Association. Beginning July 1, 1913, when the plant known as the Mississippi River Power Company began operation, J. A. Trawlick was manager for the company. On October 1, 1914, he was succeeded by C. W. Kellogg, who later became president of the Edison Electric Institute. C. A. Sears succeeded Kellogg on February 21, 1919, managing the properties until December 1, 1925, when the plant was sold. L. E. Dickinson served as manager from December, 1925, to December, 1948. Paul L. Mercer is the present Works Manager.

Scenic driveways border the lake created by the impounding of water above the dam, on both the Illinois and Iowa shores. On the Iowa side there is a replica of the first schoolhouse in Iowa, built at Galland in 1830, while the highway in Illinois leads into the historic town of Nauvoo. Both roads afford delightful panoramas of the dam.

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