

FACT SHEET

Bagnell Dam, Lake of the Ozarks, Missouri

Background

- MC Industrial was selected by Ameren Missouri as general contractor for the Bagnell Dam Anchoring project, a \$53 million investment in major structural and anchoring upgrades.
- As a significant hydropower project, the scope of work demanded expertise in heavy civil and major dam rehabilitation to ensure a safe and high-quality outcome, as well as the long-term sustainability of the Bagnell Dam to provide clean energy to the surrounding community.
- The last major structural update at Bagnell Dam was completed in the early 1980s, when 277 post-tensioned anchors were installed to hold the dam into the bedrock.

Location and Dam History

- Bagnell Dam and Osage Energy Center, Lake of the Ozarks, Missouri
- The Lake of the Ozarks stretches for more than 54,000 acres in southern Missouri.
- The Bagnell Dam, which created the lake in 1931, holds back 600 billion gallons of water from the Osage River. Bagnell is the largest privately funded dam in the U.S.
- Besides holding water back for the power plant, the dam facilitates a billion-dollar tourism industry for the state of Missouri.

Project Overview

- Project team mobilized on site in March 2017 for the 18-month project, and began construction work in April 2017 with the first of three work phases.
- Project comprised of three parts: new post-tension anchors to help hold the dam to the underlying bedrock; concrete added between the highway piers to add weight to the dam; and a new concrete overlay to replace worn and cracked concrete on the east and west sections.

Construction Features

- 17,000 cubic yards of concrete placement = 66.2 million pounds
- Added a total hold back capacity by 200 million pounds
- 67 post-tensioned anchors - each has a 2 million pound hold back capacity
- 198 foundation drains
- 500' spillway section contains 12 flood gates that spill approx. 200,000 cfs during high water
- Utilized two hydro demolition machines / robots built specifically for this project to climb the wall and remove 3 inches of concrete off the face of the dam using 35,000 psi water over 100,000 square feet of area
- 33 anchors over the spillway that required a large temporary steel work platform
- Overlay - 9 to 12 inches of sloped concrete on the downstream side of the dam; 55,000 square feet of area

Partners

- Engineer: Rizzo (Paul C. Rizzo Associates, Inc., PA)
- Key Subcontractors: Brayman Construction, Rampart Hydro Services

Photo Link

<https://ameren.sharefile.com/share/view/s89230948ee14a0ca/foa3620a-352f-4c49-ab46-d90abc7aed3a>