



Project: **Cernech Reservoir and Pump Station**  
Location: **Kansas City, Kan.**  
Client: **Kansas City Board of Public Utilities**

## Reliability, On Tap

Burns & McDonnell is helping the Kansas City Board of Public Utilities continue to reliably meet water demands. A new 6-million-gallon-per-day (MGD) reservoir and 30-MGD pump station will help maintain customers' water pressure and provide adequate fire protection. Burns & McDonnell performed complicated siting and routing to fit hydraulics of the existing delivery system, assisted in public meetings and provided design and construction-phase services. The design package for the \$19 million project included the reservoir, pump station with back-up power generation, and 34,000 feet of 36-inch and 48-inch transmission main. "We helped address residents' concerns by offering an aesthetically pleasing exterior design," says project manager Mike O'Connell. "We're building to match the artist's rendering as closely as possible."

*For more information, contact Mike O'Connell, (816) 822-3218.*



Project: **Dell Children's Medical Center**  
Location: **Austin, Texas**  
Client: **Austin Energy**

## System Achieves Environmental Goals

Austin Energy's \$11 million integrated energy system (IES) for the new Dell Children's Medical Center in Austin, Texas, is online and providing chilled water and power. Installed using a package developed by Burns & McDonnell, the IES will make the medical center one of the first grid-independent hospitals in the nation. The on-site energy system is also the first use of combined heat and power technology to earn Leadership in Energy and Environmental Design (LEED) EA1 efficiency credits, helping Dell Children's Medical Center toward its goal of becoming the first hospital in the world to achieve LEED platinum status. The energy system package achieves 70 percent fuel efficiency, compared to only 30 percent for standard generation plants, greatly reduces nitrogen oxide emissions and reduces installation and operating costs.

*For more information, contact Ed Mardiat, (816) 822-3344.*

## Massive Water Supply Project Nearly Done

Burns & McDonnell is in the final stages of work on the largest earthen dam project currently under construction in the United States. The Lake Fort Smith Dam and Reservoir Enlargement Project increased water supply storage capacity for Fort Smith, Ark., from 26,500 acre-feet to 84,000 acre-feet by making one reservoir out of its two existing reservoirs. The new lake can accommodate growth in Fort Smith and surrounding communities until at least 2050. Burns & McDonnell has been engineer on the project since 1998. Other features of the \$200 million project include:

- 190-foot-high dam embankment: The new embankment required placement of over 5,000,000 cubic yards of material excavated from hills surrounding the lake.
- Four-cell intake tower: At 225 feet tall and 65 feet wide, the tower controls the flow of raw water into Fort Smith's municipal water treatment system.
- Principal spillway: This will pass flows up to a 100-year flood.
- Auxiliary spillway: Designed to discharge flows generated in a greater than 100-year flood, the spillway is 3,300 feet long.

For more information, contact Russ Titus, (816) 822-3216.

## Replacing Dated Transmission Structures

Burns & McDonnell helped JEA replace nearly 200 transmission line structures in less than three years. The 230-kV Northside-Normandy line in Jacksonville, Fla., originally built in 1972, is supported by 194 galvanized steel double pole structures. Many of the poles exhibited corrosion, and JEA needed a quick, cost-effective solution to replace the aging structures. JEA and Burns & McDonnell worked together as a DMAIC (Six Sigma) team to reduce the outage periods needed for the project. As a result, the DMAIC reduced the outage period and cost of the project by keeping the existing foundations, saving \$1.4 million. Burns & McDonnell engineers incorporated a light detecting and ranging (LIDAR) survey into a CADD model of the line, developed criteria for the structure design, specified, bid and purchased new steel poles, managed engineering, purchasing and delivery around JEA's outage requirements, and worked in close coordination with the client and vendors, even while a critical vendor of the new equipment was taken out by Hurricane Katrina.

For more information, contact Alan Sowell, (770) 587-4776.



Project: **Lake Fort Smith Dam and Reservoir Enlargement**

Location: **Mountainburg, Ark.**

Client: **Fort Smith, Ark.**



Project: **Northside-Normandy**

Location: **Jacksonville, Fla.**

Client: **JEA**