Project: **Goodman Energy Center**
Location: **Hays, Kan.**
Client: **Midwest Energy Inc.**

No Wind? Not a Problem

Wind is a good, low-cost source of energy. But for those trying to harness it, wind poses one major challenge: it is unpredictable. "Two-thirds of the time, the wind isn't blowing," says Gary Groninger, Burns & McDonnell project manager. "So power companies with wind farms in their portfolios need a reliable way to augment wind power on, literally, a moment's notice." Midwest Energy Inc., an electric and natural gas utility serving parts of central and western Kansas, has found an economical way to do just that. Midwest's new 76 megawatt (MW) Goodman Energy Center near Hays, Kan., is different from other peaking facilities because it takes only about 10 minutes for its nine natural gas-fired Wärtsilä engines to reach full output. Made in Finland, these engines are designed to ramp down just as rapidly and can be used multiple times a day without hurting performance. Burns & McDonnell provided engineering design, procurement and construction services for the $62 million project, which went from concept to finished project in just over two years. The plant was commissioned in June — ahead of schedule — in time to meet summer peak power demand. "Technology like this can improve a utility's overall reliability," says Groninger. "It also makes wind energy a more viable alternative."

For more information, contact Gary Groninger, (816) 822-4377.

Project: **Nuclear Submarine Assembly Platforms**
Location: **Groton, Conn.**
Client: **General Dynamics Electric Boat**

Submarine Construction Made Easier

Of all mankind's inventions, few are more challenging to build than a nuclear-powered submarine. The process can take two years and cost $2 billion. Beginning next January, however, General Dynamics Electric Boat expects to speed up that process when its crews begin working from two new football-field length concrete-and-steel platforms at its nuclear submarine construction facilities in Groton, Conn. Designed and built by Burns & McDonnell, the two-level platforms address a host of issues that have historically complicated submarine construction. "For the past 100 years, crews have worked from the ground level, where they had to navigate a maze of utilities, cables, equipment and materials needed in the fabrication process," explained Jerry Shirley, the project's design manager. "Temporary scaffolding has been needed just to access the sub." Electric Boat's new platforms will more than double the amount of work space available by permanently housing utilities and some equipment on the upper deck. A walkway on the lower level will give crews access to movable gangways that connect to the submarine. "The platforms will make sub construction considerably easier to stage and sequence while producing a safer work environment," says Matt Carpenter, construction manager on the $14 million project. Electric Boat will be able to construct two subs at a time with the platforms.

For more information, contact Jerry Shirley, (816) 822-3460, or Matt Carpenter, (816) 822-3562.

Photo courtesy of Doug Snower

Project: **Central Utility Plant**
Location: **Chicago**
Client: **University of Chicago**

University of Chicago Opts for Transparent Utility Plants

Central utility plants are not designed to be seen. Or are they?

The University of Chicago, known for its distinctive architecture, challenged that notion when it added two central utility plants to its campus this past year.

"The design team's vision was to embrace the utilities, not to hide them," says Rich McKown, engineering manager in Burns & McDonnell's Healthcare & Research Facilities Group, who served as project manager for the $110 million project. The two structures, as a result, are constructed of stainless steel and glass with their inner workings fully visible to the students, employees and passersby.

"On projects like these, we're normally focused only on creating a plant that's functional, reliable and will deliver long-term payback," says Ed Mardiat of Burns & McDonnell, who participated in the project's development. "These plants do all those things. But we also looked at how the equipment would appear from the outside and found some visually interesting arrangements that didn't sacrifice functionality. It makes you look at these buildings in a whole new way."

The new plants supply steam and chilled water to two hospitals, several research buildings and other campus buildings.

For more information, contact Rich McKown, (816) 822-3929, or Ed Mardiat, (816) 822-3344.