Electric Transmission Milestone

Burns & McDonnell helped South Texas Electric Cooperative (STEC) install its first fiber-optic transmission line — a 100-mile, 345-kV, single-circuit overhead ground wire installation on double-circuit-capable monopole structures. STEC employed fiber-optic control technology to connect to the Electric Transmission Texas (ETT) grid. STEC hired Burns & McDonnell to perform engineering, procurement and construction management for the San Miguel 345-kV substation and its 42-mile portion of the transmission line originating at the San Miguel Power Plant in Atascosa County, Texas, and terminating at ETT’s Lobo Switching Station in Webb County, Texas. Coordinating design between the utilities, Burns & McDonnell designed this installation to handle live-line maintenance and for future expansion, installing only one of the two circuits of bundled, 1590-MCM, Lapwing conductor. Burns & McDonnell placed engineers on site during construction to provide quick responses to any potential issues and facilitated energization ahead of schedule.

For more information, contact Michael Esfeller, 832-214-2871.

Building Power for the Future

The Texas electric market has grown more volatile and, with the addition of intermittent resources, such as wind turbines, Greenville Electric Utility System (GEUS) needed to add stable generating units to the Electric Reliability Council of Texas to continue reliable service. Adding three natural gas Wärtsilä 8.4 megawatt (MW) reciprocating engines fulfilled a longtime goal of Tom Darte, GEUS’ project manager, to increase efficiency and save nearly $7 million annually. The new energy center was named in his honor. “The new units are 30 percent more efficient, reach 25 percent power in 2 minutes and full power within 10 minutes,” says Brian Elwell, Burns & McDonnell project manager. Burns & McDonnell engineered the three natural gas-fired engines and the balance of plant equipment to interface with a 169-kV transmission system. Each engine’s output allows GEUS to use only those needed to meet its demand. Burns & McDonnell provided permitting, equipment procurement, plant design, multiple installation subcontracts, site construction management and safety management services. The Tom Darte Energy Center can accommodate three additional units.

For more information, contact Brian Elwell, 816-822-3841.
Peanut Butter Plant Spreads Out

Unilever had a dual purpose in expanding its warehouse facility at the Skippy peanut butter plant. Separation was needed between raw ingredients and sanitary packaging, and improving operational efficiency. Construction of a new receiving dock away from the raw ingredients unload area eliminated any possible cross contamination with the finished product. A new truck trailer parking area improved safety and allowed better control over the delivery of empty truck trailers thus eliminating truck congestion in front of the shipping dock. "Safety, controlling costs and keeping the project on schedule were a high priority. We dealt with unsuitable soil conditions and a very wet spring, but we managed to keep the project on track," says John Savage, Burns & McDonnell project manager. During construction, raw peanuts arrived twice daily by rail. Precise schedule coordination kept arrivals on track. "That same attention to detail enabled more than 15,000 project hours to be completed with zero accidents," says Michelle O'Neill, construction manager.

For more information, contact Paul Menne, 816-822-3268.

A Sound Approach to Wind Permitting

Horizon Wind Energy LLC developed and built the first two phases of the Twin Groves Wind Farm near Bloomington, Ill. Now it's ready to develop an additional 400 to 500 megawatts, making it one of the largest wind farms in the country. Burns & McDonnell completed a noise evaluation for the new project and created documents for public meetings. "Illinois has stringent noise regulations that require interpretation for project application," says Chris Howell, Burns & McDonnell project manager. "The Illinois Pollution Control Board limits the sound experienced in each of the frequencies in the octave band and also limits prominent discrete tones." Burns & McDonnell established a noise baseline for the area by monitoring ambient sound levels over roughly 3,500 acres. A 3-D noise propagation model assisted Horizon in locating turbines to avoid encroachment on existing landowners. Multiple turbine types, locations and hub heights were analyzed to ensure compliance, and GIS data simulated accurate topography in the models. Horizon received unanimous County Board approval and is moving forward with construction in early 2011.

For more information, please contact Chris Howell, 816-822-4243.