

CONSTRUCTING A CLEANER ENERGY FUTURE



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Southwest Saskatchewan, Canada, soon will be home to a new 350-megawatt natural gas-fired power facility. With a completion set for late 2019, the combined-cycle facility not only will be instrumental in meeting the growing demand for power but also in providing cleaner energy for the surrounding area.

Owned and operated by Saskatchewan's sole energy supplier, SaskPower, the Chinook Power Station will support the electric utility's goal of a 40 percent reduction in greenhouse gas (GHG) emissions by 2030. This exceeds the national target of a 30 percent reduction. In an effort to achieve this goal, SaskPower is adding up to 50 percent renewable power, such as wind and solar, to its grid. Beyond this, the power station's advanced gas turbine will become a critical base supply for the province when the conditions aren't right for renewable power generation.

Building on a long-standing partnership, SaskPower chose Burns & McDonnell to provide comprehensive engineer-procure-construct (EPC) services for the new power facility. Due to the area's rugged winter conditions, large portions of the natural gas facility were built off-site — under a roof, allowing for controlled conditions — before being transferred to the main construction site. Air-cooled condenser modules, pipe racks,





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MIKE MARSH *SaskPower president and CEO*

electrical enclosures and other equipment all have been built off-site.

“Off-site prefabrication, involving the local community, is a key reason for success and added to our ability to maintain control of and advance the project schedule,” says Dave Newkirk, EPC project manager at Burns & McDonnell.

The combined-cycle facility will feature a Siemens SGT6-5000F gas turbine, a heat recovery steam generator (HRSG) and a Siemens SST6-900 steam turbine to boost power output and maximize energy efficiency while reducing the overall emissions footprint.

“Our engineers have been able to work with SaskPower to select the technology and equipment needed to meet its sustainability goals,” says Chris Lehan, vice president for Burns & McDonnell Canada.

There are many ways the configuration of the new plant will work toward providing cleaner energy. The combined-cycle operation will utilize exhaust heat that would otherwise be lost in a simple-cycle configuration. Hot exhaust from the initial cycle will

be captured to boil water, sending steam into the HRSG to spin an additional generator, generating more power. The plant also will apply advanced air cooling, making it more water-efficient than traditional combined-cycle designs.

Upon completion, approximately 800 workers will have touched the project at some point throughout the three-year construction phase. And while they've worked tirelessly to meet time and budget constraints, the Chinook Power Station team has kept safety at the forefront.

“Not only is this EPC project consistently tracking on time and on budget, but we're also celebrating more than 1 million hours of work without a lost-time injury,” announced Mike Marsh, SaskPower president and CEO.

The new power facility will be an integral step in SaskPower's plans to reduce GHG emissions and provide a cleaner energy future for its customers and the province of Saskatchewan. ●

MAKING POWER MOVES

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