

FOR IMMEDIATE RELEASE

Collaboration and Prefabrication: Keys to Completing Synchronous Condenser Ahead of Schedule

APPLETON, Wisconsin — Engineering, procurement and construction (EPC) contractor Burns & McDonnell, along with union self-perform subsidiary AZCO, successfully achieved substantial completion of the Fort Dodge Station Unit 4 Synchronous Condenser project for Sunflower Electric Power Corporation. The project allows Sunflower to operate Unit 4 — a 150-megawatt steam turbine driven by a gas-fired boiler — in both generation and synchronous condenser (SynCon) modes on demand, providing enhanced grid stabilization.

Keys to completing work inside the outage window included AZCO completing steel and pipe fabrication at its 90,000-square-foot prefabrication space ahead of time and shipping to the site for installation. Prefabrication at the off-site facility provided a controlled environment for crucial welds and flexibility in scheduling on-site installation.

“The collaboration and experience of AZCO’s preconstruction team, electrical team, and the Burns & McDonnell engineering team was key to completing the brownfield plant project,” said Tony Sanchez, AZCO project development director.

Working with key subcontractor ElectroMechanical Engineering Associates (EME), which carried out detailed design and modifications to the SynCon system, also played a critical role in the success of this project.

Adaptive Planning Leads to Project Completion Ahead of Time

The project overcame many challenges, including extended lead times on equipment and critical construction sequencing. Among the complex work: Reinstalling the generator rotor, after removing it for transportation and modification off-site. Through adaptive planning and execution, the team completed the project several weeks ahead of schedule.

“This project’s commercial operation date was driven by a preapproved outage window,” says Ken Sabourin, PE, senior generation engineer, Sunflower Electric Power Corporation. “The integrated EPC team provided detailed planning and communication of lockout/tagout, keeping personnel and the facilities safe, yet accessible.”

The project was completed safely, with nearly 30,000 hours worked and zero recordable incidents.

What Is a Synchronous Condenser?

A synchronous condenser is a rotating electrical machine that provides reactive power support to the electric grid. It can either absorb or generate reactive power, helping to regulate voltage levels and maintain grid stability. As more renewable energy sources replace conventional power plants, synchronous condensers are becoming critical for grid stability to offset the loss of system inertia, provide voltage stability and reactive power support, correct poor power factors and support weak grid connections.

Continued Relationship With Sunflower Electric Power Cooperation

“The completion of this project adds another successful chapter to the ongoing story of Sunflower, Burns & McDonnell, and AZCO, working together successfully, specifically on complex projects,” says Travis Fuchich, a vice president in the Power Group at Burns & McDonnell. “I applaud Sunflower for taking on this innovative project that is among the earliest conversions of existing generating resources in the SPP footprint and will help meet the challenges of the rapidly changing grid.

AZCO had previously completed a repair and replacement project for Sunflower at a plant in Kansas that was damaged in a windstorm. The team provided a structural steel system for a new horizontal conveyor, replacing damaged equipment and reinforcing and stabilizing the support apparatus.

About Burns & McDonnell

Working from more than 75 offices around the world, Burns & McDonnell designs and builds critical infrastructure. Our family of companies — driven by engineers, construction professionals, architects, planners, technologists and scientists — delivers projects grounded in safety and a desire to make a difference as we make our clients successful. Founded in 1898, Burns & McDonnell is 100% employee-owned. Learn more at <https://www.burnsmcd.com/>.

About AZCO

AZCO is a heavy industrial construction and prefabrication solutions provider building the critical infrastructure that keeps communities and industries thriving. Part of the Burns & McDonnell family of companies, we work with union craft labor across the country, using an integrated approach to deliver more advanced controls and predictable outcomes. Learn how we are designed to build at azco-inc.com.

About Sunflower

Sunflower Electric Power Corporation is a regional wholesale power supplier operating a system of solar, wind, natural gas, and coal-based electric generating plants and approximately 2,400 miles of electric transmission infrastructure. The focus of Sunflower’s 400+ workforce is supplying reliable energy at the lowest possible cost to its seven members who serve electric consumers living in central and western Kansas. Visit Sunflower’s website at sunflower.net.



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Sunflower's member cooperatives include Lane-Scott Electric Cooperative, Dighton; Pioneer Electric Cooperative, Ulysses; Prairie Land Electric Cooperative, Norton; The Victory Electric Cooperative Association, Dodge City; Western Cooperative Electric Association, WaKeeney; and Wheatland Electric Cooperative, Scott City, Kansas. Southern Pioneer Electric Company is also a member of Sunflower.