BURNS McDONNELL

CASE STUDY

Staffing, Site Constraints Can't Slow Plant's Decommissioning, Removal

PowerSouth Energy Cooperative needed to decommission and demolish its coal-fired plant, while its new natural gas plant was under construction directly north of its former plant. Despite limited space on-site, Burns & McDonnell managed and executed the demolition project ahead of schedule using a novel approach.

Challenge

In 2019, PowerSouth Energy Cooperative in Alabama sought a reliable partner to execute the decommissioning, abatement and demolition of its coal-fired generation plant. Three coal-fired units would be retired in 2020 as PowerSouth Energy Cooperative built a new natural gas plant named Lowman Energy Center.

The first challenge of this decommissioning, abatement and demolition project was the physical distance of the new construction site — which previously served as a coal pile area — in relation to the old coal-fired generation plant. Demolition was occurring in close proximity to the construction site for the natural gas plant, necessitating a strategic approach to remove the retired assets.

Project Stats

Client
PowerSouth Energy Cooperative

Location
Leroy, Alabama

SMOKESTACK
400+
FEET TALL DEMOLISHED

3
POWER GENERATION UNITS DEMOLISHED

The second challenge of this project was adequate staffing. Burns & McDonnell first started as owner's engineer for this project by planning the decommissioning, abatement and demolition of the Lowman coal-fired power plant. PowerSouth Energy Cooperative was working on two major projects in tandem — the demolition project and the new construction project. Lacking enough staff to manage both, PowerSouth Energy Cooperative enlisted Burns & McDonnell to expand its responsibilities and provide engineer-procure-construct (EPC) services for the demolition and decommissioning project. Changing from an owner's engineer approach to an EPC approach meant our team was responsible for project scope, safety, management, schedule and budget.

Solution

The lack of physical space due to the nearby construction and the need for additional support from Burns & McDonnell necessitated a well-planned approach to manage the demolition of the coal-fired generation plant. Burns & McDonnell could not use explosives for the demolition due to the proximity of the new plant, and instead employed a crane with a hydraulic pulverizer to "munch down" the plant's stacks. Both stacks — one 400 feet tall, the other 250 — required this novel approach to avoid disrupting the new construction.

The remainder of the facility was demolished using either high-reach equipment or by pulling sections down over time. Using a crane with a hydraulic pulverizer instead of explosives requires more time, but the project team was able to maintain a reliable schedule and budget despite the added complexity of this project. Additionally, the project team needed to bring down the boilers from the old facility before mid-March 2023, so that the dust generated would not impact construction of the natural gas plant. The Burns & McDonnell team completed this phase of work ahead of schedule.

When the facility was demolished, materials needed to be sorted and processed. Steel, aluminum, copper and more were torched, cut or sheared so the materials could be loaded into trucks and transported off-site to a scrap facility.

As an EPC contractor, Burns & McDonnell not only needed to manage the demolition, but also the overall safety for the project site. The project required coordination among multiple contractors while working on a tight schedule and on a small construction site. In addition to the demolition crew executing the project at the old coal-fired generation plant, more than 100 craft labor professionals worked nearby constructing the new natural gas plant.

Results

By establishing trust with PowerSouth Energy Cooperative and developing an effective strategy, Burns & McDonnell was able to complete the entire project one month early. Specifically, coordination and planning were critical so that the demolition project didn't impact construction of the new natural gas plant. Our team maintained a reliable schedule and demolished the boiler house before mid-March to eliminate dust or any issues that could impact the nearby construction. This type of planning was critical to maintain an efficient and safe construction site.

The project seamlessly transitioned from an owner's engineer approach to an EPC approach, due to the trust between PowerSouth Energy Cooperative and Burns & McDonnell, as well as the strategic planning implemented by the project team. Despite having limited space on the construction site, Burns & McDonnell completed the decommissioning and demolition in July 2023.

About Burns & McDonnell

Burns & McDonnell is a family of companies bringing together an unmatched team of engineers, construction and craft professionals, architects, and more to design and build our critical infrastructure. With an integrated construction and design mindset, we offer full-service capabilities. Founded in 1898 and working from dozens of offices globally, Burns & McDonnell is 100% employee-owned. For more information, visit **burnsmcd.com**.

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