

# Mitchell Station Units 1 and 2 Wet Flue Gas Desulfurization Systems

Project Case History

American Electric Power  
Moundsville, West Virginia

The wet flue gas desulfurization (FGD) system from Babcock & Wilcox (B&W) features a combination of design components to provide a high level of reliability and removal efficiencies. These include B&W's signature tray tower design that provides excellent gas to liquid contact and uniform flow distribution through the absorber spray zones; its patented inlet awning; interspatial headers to reduce absorber height, pump power requirements, and internal support costs; forced oxidation system; and advanced mist eliminators.

## Boiler/Plant Information

- 2 x 800 MW
- Boiler type: Pulverized coal fired
- Design fuel: Bituminous
- Additional environmental equipment: Electrostatic precipitator (ESP), selective catalytic reduction (SCR) system, and a trona injection system for SO<sub>3</sub> control.

## Project Summary

- Engineering, procurement and construction of a wet flue gas desulfurization system
- System designed to remove 98% of the entering SO<sub>2</sub> without organic acid addition
- Type: Limestone forced oxidation with gypsum byproduct
- Project awarded: March 2004
- Operation dates: January 2007 (Unit 2) and April 2007 (Unit 1)



(Continued on reverse side)

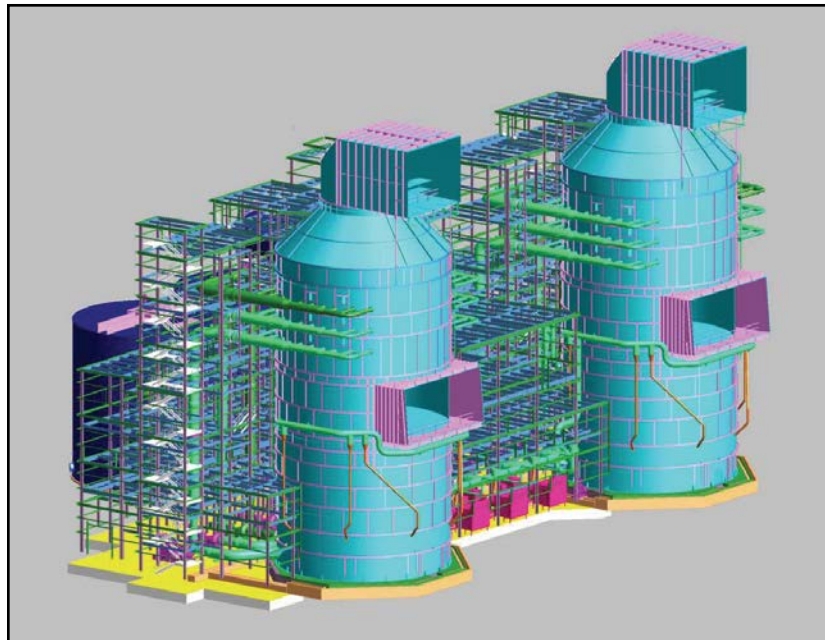
## B&W Scope

- Two (2) wet FGD absorbers (1 per boiler)
- Two (2) limestone milling systems (1 operating, 1 spare)
- Gypsum dewatering system that includes three (3) horizontal table filters (2 operating, 1 spare)
- Buildings and structural steel
- Construction of all B&W supplied equipment and structural steel, through Babcock & Wilcox Construction Co., Inc. (BWCC), a B&W subsidiary

At the time of contract signing, these absorber tower modules, at 68.5 ft (20.9 m) in diameter, were the largest shop-assembled FGD modules B&W has ever designed and built.

## Results

The project met every engineering, fabrication and construction schedule milestone. The commissioned units have met performance guarantees.



*Mitchell 1 and 2 - 800 MW each*

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