

Monroe Units 1, 2, 3 and 4 Wet Flue Gas Desulfurization System

Project Case History

Detroit Edison
Monroe, Michigan

Contract Order

Units 3 & 4: 2006
Units 1 & 2: 2010

Commercial Operation

Units 3 & 4: 2009
Unit 1: 2013
Unit 2: 2014

Overview

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 spray headers to reduce absorber height, pump power requirements, and internal support costs; forced oxidation system; and advanced mist eliminators.

Boiler/Plant Information

- 4 x 825 MW (3,300 MW total)
- Boiler type: Pulverized coal
- Design fuel: Powder River Basin (PRB)/bituminous coal blend

Project Summary

B&W provided engineering, procurement and construction of the wet FGD system. The system is designed to remove 97% of the entering sulfur dioxide (SO₂) without organic acid addition, at an optimal combination of reduced



absorber liquor recirculation (L/G) versus tray pressure drop. The system utilizes limestone reagent with forced oxidation to a gypsum byproduct. There is one absorber per unit.

B&W Scope

- Four (4) wet FGD absorbers (1 per boiler), concrete tower with Stebbins tile construction and 2205 internals

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- Three (3) limestone milling systems (2 operating, 1 spare)
- Gypsum dewatering system that includes three (3) horizontal table filters (2 operating, 1 spare)
- Six (6) oxidation air blowers (2 operating, 1 spare for each set of 2 absorbers)
- Construction of B&W-supplied equipment by Babcock & Wilcox Construction Co., Inc. (BWCC), a subsidiary of B&W

Schedule

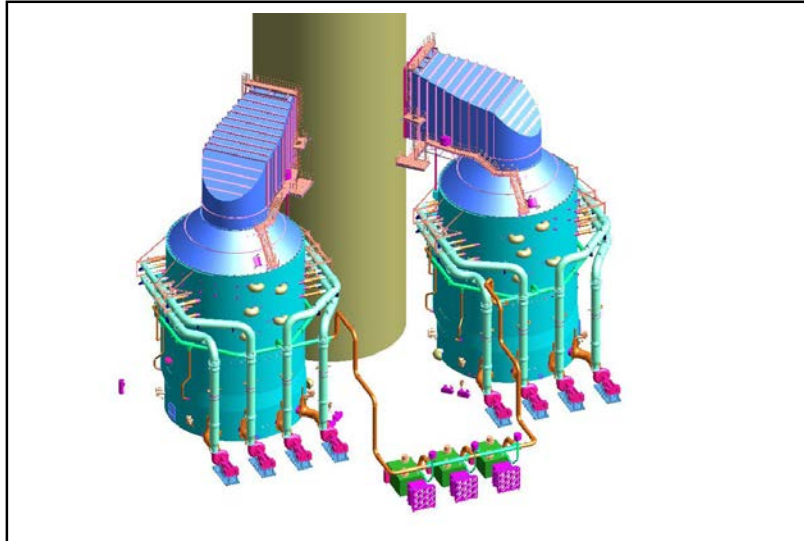
- Units 3 & 4 – The contract for units 3 & 4 was released in April 2006 with startup in June 2009 (Unit 4) and November 2009 (Unit 3)
- Units 1 & 2 – Units 1 & 2 were awarded in March 2010 with operation scheduled for December 2013 (Unit 1) and May 2014 (Unit 2)

Results

- Both commissioned units (Units 3 and 4) have met performance guarantees
- Achieved mechanical and substantial completion on schedule



BWCC provided construction services for all B&W-supplied wet FGD system equipment at the Monroe power plant.



Computer generated three-dimensional projection of absorber modules at Monroe.

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