

ESP to Fabric Filter Conversion at Western Power Plant

For utility installations, the pulse jet fabric filter provided by Babcock & Wilcox Environmental (B&W) offers highly efficient control of submicron particulate, heavy metals, acid mists and condensed metal fumes and organics.

Background

A utility in Arizona needed to reduce flyash particulate on its 260 MW unit.

Scope

The customer chose to convert its ESP to our low-pressure pulse jet fabric filter to collect the particulate and reduce emissions.

The fabric filter consisted of 12 compartments with 960 bags per compartment. Each compartment housed filter bags that are 26'- 3" long, mounted on bag cages and suspended from a tube sheet.

The upper ESP casing was completely removed above the hopper support level and refitted with completely new fabric filter casing material. The existing hoppers and the owner's ash removal system were reused in the new fabric filter system. A Dutchman section was incorporated between the existing hoppers and the new casing. This provided space for a conventional layout of fabric filter compartments and flue gas entry, with one bag bundle per existing hopper. The Dutchman section also provided a location for flow control vaning to control velocity vectors in the lower bag area.

Results

The emissions rate following the conversion was 0.0057 lb/MMBtu, well before the target rate of 0.012 lb/MMBtu.



PROJECT HIGHLIGHTS

PLANT TYPE	Utility
LOCATION	Arizona, USA
APPLICATION	Coal
GAS VOLUME	1,338,000 ACFM
PRIMARY CONSTRUCTION MATERIAL	Carbon Steel
AWARD DATE	2007
RESULTS	Well below target reductions

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