Labadie Energy Center, Union Electric Ameren

226 Labadie Power Plant Rd.
Labadie, MO 63055

Ameren

Challenge:

Design a solution that minimizes cost by upgrading and augmenting an existing air pollution control system to meet the EPA MATS standard for a coal fired EGU. This particular system fires a high resistivity PRB making the application uniquely challenging for common electrostatic precipitators.

Southern Environmental's Solution:

Southern Environmental, Inc. designed and supplied a system that included retiring four electrostatic precipitators, upgrading two electrostatic precipitators with Switch Mode Power Supplies, and adding two new four chamber precipitators that utilized SEI's [S] Synergy design.

Detailed Engineering in the following disciplines:

- Structural
- Mechanical
- Electrical
- Physical Model Study

Project Duration:

- Less than 34 months from release to commissioning in 2014

Fabrication and Erection Services:

SEI manufactured many of the ESP components and provided procurement services for those components that it did not manufacture internally. SEI provided construction technical advisory personnel as well as start-up, commissioning and training services.

Corporate Headquarters
6690 West Nine Mile Road
Pensacola, FL 32526
P: 850-944-4475 F: 850-944-8270

Fabric Filter Engineering Office
921 Eastwind Drive, Suite 115
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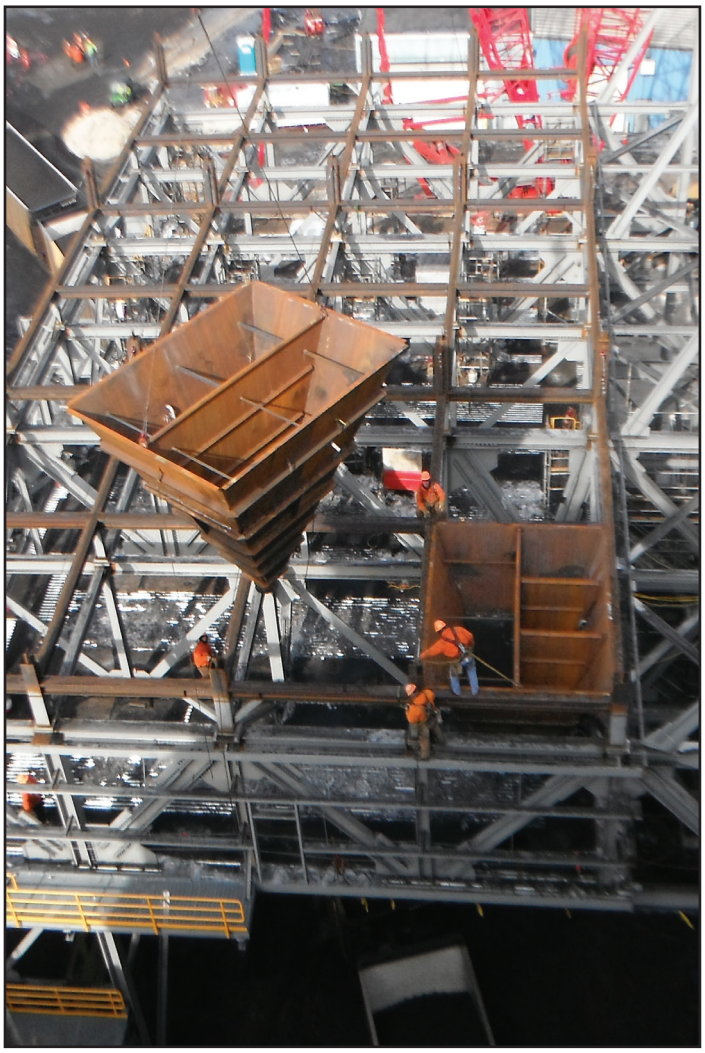

Scope of Work:

Units 1 and 2 involved SEI supplying two new four chamber ESPs with four mechanical fields in the direction of gas flow. These mechanical fields were split electrically resulting in a total of eight electrical fields in the direction of gas flow. The scope boundaries for this project included ductwork from the outlet of the air preheater through the ESPs to the stack. SEI retained responsibility for all structural steel supporting the new and modified equipment.

All of the major systems necessitated by the upgrade were supplied by SEI which included, power supplies, PCAMS communication system, ESP internals, casing, gas distribution media, structure, access and duct.

Application / Operating Conditions for Unit 1

Heat Input to Boiler	6,300 MMBtu/hr IE on
Volumetric Flue Gas Flow	2,503,000 ACFM at ESP Inlet
Air Heater Outlet/ESP Inlet Temperature	316.5°F Average
ESP Inlet Flyash Loading (from coal only)	3.6 lbs/MMBtu
Measured Outlet Filterable Particulate	0.00904 lbs/MMBtu
Outlet Opacity 8.11%	

Performance Guarantee:

With the boilers operating at or below the levels noted above, and using the fuel also noted above, SEI will guarantee particulate emissions performance as follows:
0.015 lbs/MMBtu at 10% Opacity

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