



Project Overview

CARBON FRP STRENGTHENING OF SMOKESTACK

Name: Alabama Power
Type: Industrial Chimney/Smokestack
Location: Bucks, AL
Completion Date: March 2008

PROBLEM

New federal environmental regulations requiring a tighter control of NO_x and SO₂ emissions have created the need for the installation of new Selective Catalytic Reduction (SCR) and/or Gas Desulfurization equipment on smokestacks in coal fueled power plants. Large openings on the smokestack concrete walls of approximately 15 ft x 75 ft are required to install the ductwork for this equipment. As a result, significant amounts of vertical and horizontal steel reinforcement are taken out. Moreover, the presence of the hole significantly changes the stress conditions of the wall around the perimeter of the hole. A smokestack wall reinforcing system that would address these issues and that could be installed during the shutdown maintenance period of the plant was desired.



SOLUTION

QuakeWrap® FRP Smokestack Retrofit System was selected to strengthen the smokestack walls. QuakeWrap, Inc. engineered a solution that considered the installation of composite carbon fabrics around the perimeter of the hole to replace the reinforcing steel taken out during the fabrication of the hole and to resist the stress concentrations generated by the presence of the hole.



Technical Highlights

- FRP retrofit system to reinforce wall opening installed during unit shutdown period.
- Smokestack wall opening required to install SCR ductwork.
- Over 10,900 ft² of QuakeWrap® carbon fabric used.

Credits

Engineering and Materials: QuakeWrap, Inc., Tucson, AZ
General Contractor: International Chimney, Chicago, IL



“The FRP Retrofit Experts”