

Comanche's Coal Pile Wind Fence

Pueblo, Colorado



Comanche is Colorado's largest coal-fired, steam-electric generating station producing up to 1,426 megawatts with its three operating units. The addition of the plant's 3rd unit was significant. It is Colorado's first advanced, highly efficient, super-critical coal unit that can generate more electricity with less fuel. Unit 3 also provided the operational flexibility to retire older, less efficient plants in the Xcel system.

Comanche utilizes a low-sulfur coal from the Powder River Basin near Gillette, Wyoming, but would need to increase this raw material inventory in order to maintain maximum output. The additional coal inventory did raise some environmental concerns with trace amounts of coal dust escaping the facility. The Coal Pile Wind Fence, using advanced technology and hot-dip galvanizing (HDG) is a unique solution to this situation by reducing wind velocity and particle movement, thus minimizing dust emissions with consistent reliable results. The fence is made up of

nineteen 100-foot tall, heavy wall, 10", 8" and 6" HDG steel pipes designed to support a durable fabric-mesh for capturing the escaping dust particles.

Corrosion control was most important because once the coal pile was in place, maintenance would be all but impossible in the harsh industrial and sometime bitter cold environment. Life-cycle cost calculations showed galvanizing was the most cost effective when compared to any other type of corrosion protection system. The complexity of the design called for hollow steel structures for strength; only HDG would protect the poles inside and out.

The project was completed while the plant was in operation which limited the available lay down area at the job site. The galvanizer worked with the contractor for customized delivery to reduce any unnecessary down time for erection, and 24-hour turn times were often the case. The galvanizer had to deal with weight issues on the heavy walled 10" pipe as well as insuring each connection was clean for an exact fit, especially at 100 feet in the air. The winds in the Southern Colorado area require a structure of great strength making the HDG Coal Pile Fence an excellent example for market growth in wind reduction applications.

Comanche's Coal Pile Wind Fence will protect the structure for decades in the future. For a Coal-Fired Power Plant like Comanche, dealing with the power demand of a rapidly growing Rocky Mountain population while protecting the environment, every decision must be the right decision. Hot-dip galvanizing was certainly the correct decision for a sustainable investment in the future. ■



Galvanizer

AZZ Galvanizing - Denver

Owner

Xcel Energy

Fabricator

Industrial Constructors/Managers, Inc.