



EDWARDSPORT IGCC POWER PLANT

Duke Energy's Edwardsport IGCC plant, located in Knox County, Indiana, is one of the cleanest and most efficient coal-fired power generating facilities in the world. Beginning commercial operations in 2013, the 618-megawatt facility replaced an outdated coal-fired facility located on the same site - and at full capacity will generate enough energy to power approximately a half million homes.

Challenge

For the facility, the project's contractor trenched a duct bank approximately two miles long to accommodate thousands of feet of electrical cables. SCH80 PVC conduit was originally specified for the project, requiring the purchase and installation of large, expensive underground concrete vaults in the duct bank every 250 ft. The project's engineers determined this distance between the vaults would be necessary to prevent the cable from becoming damaged during pull-through because of PVC conduit's coefficient of friction. To implement a costs-savings solution, the project's engineers needed a conduit with a lower coefficient of friction than PVC to extend the distance between the vaults. This is where Champion Fiberglass came in.

Solution

Duke project engineers chose Champion Duct® reinforced thermosetting resin conduit for their project. With its extremely low coefficient of friction, the distance between the concrete vaults was extended up to every 750 ft. in the duct bank. And thanks to Champion's underground rated gasket joining connection system - the contractor didn't have to commit any additional labor resources to epoxy together the conduit sections. In addition to the low coefficient of friction benefits, Champion RTRC conduit also provided protection against expensive cable faults being the conduit is "fault resistant." This benefit allowed the design engineers to maintain spare conduit runs for future expansion rather than accommodate for cable faults.

Results

By eliminating approximately multiple concrete vaults at an average cost of \$275,000 each, the project benefited from approximately \$3 million in cost savings. Also, by avoiding the task of bonding conduit together with epoxy adhesive - the contractor realized even greater installation efficiency and reduced labor and material costs.

Ultimately, Champion Duct mitigated potential damage to the cable during pull-through - ensuring against and preventing costly cable fault issues and guaranteeing a cost-effective result for the client.

QUICK FACTS

PROJECT NAME

Edwardsport IGCC Power Plant

APPLICATION

Utilities

CHAMPION FIBERGLASS PRODUCT(S)

Champion Duct Reinforced Thermosetting Resin Conduit (RTRC)

- » Low coefficient of friction, extended the distance between concrete vaults to every 750 ft
- » ~\$3 million saved
- » Greater installation efficiency, reduced labor and material costs by not bonding conduit with epoxy adhesive