



Project Overview

Carbon Fiber Repaired and Strengthened 90-year old Steel Penstock

Name: Riveted Steel Penstock in Mormon Flat Dam

Type: Industrial Facility

Location: Central Arizona

June 2017 – One of the strongest fiber reinforcement materials known to engineers was used to make repairs to a hydroelectric dam serving millions of customers in Central Arizona.

Carbon FRP is used to rehabilitate and strengthen large structures of Riveted Steel Penstock in Mormon Flat Dam. It is 10 ft diameter with 90 psi internal pressure and high-velocity water flow.

In addition to strengthening and sealing tunnels and penstocks against further corrosion damage, carbon FRP also has the extraordinary capability of converting standard, older pipes into high pressure pipes. By lining the inside with carbon FRP, it extends the expected service life of pipes and adds pressure ratings that allow them to generate more electricity by increasing the volume of water that can flow through them.

