

PolySpray

A large coal fired power plant in north central Pennsylvania required repair to a steel bypass piping that redirected cooling water from the cooling cells directly to the basin. This line consisted of 42 feet of 42" diameter carbon steel pipe that had severe erosion and corrosion. Of particular concern to client were two 90 degree elbows situated within the pipe that had severe wall loss and required immediate attention. The project to rehabilitate the piping was urgent and only a 5 day work window for the rehabilitation could be accommodated within the start up schedule.

The first option considered by the station was to replace the piping and fittings. The replacement would ensure long term life of the system however; removal of the piping would also include removal of concrete support structures. Removal and cure time would have delayed the schedule for start up.

The second option was to install a steel pipe as a slip liner system that could be inserted and welded at each end. Patches of the elbow could then be welded. Outsourcing of the piping and pipe diameter restrictions were some of the challenges of this option.

The third option was to use the PolySpray SS100 system. This spray on system not only is economical and maintains flow parameters, but also could be completed in one to two days of work.

The client chose the third option of PolySpray SS100. Once agreed project required working window of only 5 days. This included the manufacturing of material, mobilization and installation. To reduce installation time the pipe was grit blasted to SSPC 6/NACE 3 commercial blast parameters, surface profile to 3-4 mils. To maintain the 75 psig rating of the system, engineering calculations specified a thickness of greater than 3 mm to line and prevent leakage within the system. Any through wall holes greater than .25 inches per weld, were welded.

Safety training and orientation at the station were performed as well as a walk through inspection of the pipe interior. Preferred engineering controls are to force air through the pipe; however this was not feasible due to the pipe configuration. Therefore proper selection of PPE and supplied respirators were used since exothermal (curing) of the material can reach temperatures of 200°F.

A HydraTech manufactured Epoxy filler (HydraLine) was used to address severe pitting on the internal radius of the lower 90 degree bend of the pipe fitting. The butterfly valve was masked off to prevent overspray and debris from accumulating on the valve disk and seat. Once the pipe was clean of all debris and personal were clear of the piping the piping was lined. The process took less than a day to complete. Some touch up work was performed the following day and the piping went back in service without any leaks and its operational life was extended.

