IPR Industrial Services: Pulp & Paper Plant Cooling Line Renewal

Case Study

The Situation

The Problem: Leaking Raw Water Cooling Line

At a pulp & paper mill, a 320 linear foot, 54" diameter raw water cooling line was leaking into a 13,500 kV power supply room. The deteriorated line needed to be repaired quickly to avert a potentially dangerous situation, and to avoid a plant-wide shutdown. Plant officials established a 7-day cold outage to complete the rehabilitation of the raw water line pipe. Two IPR Industrial Services' crews worked around the clock and were able to clean, prep, restore the 320 linear foot line in just 3 days.

IPR Industrial Services was awarded the project based on three critical criteria: method of repair, speed of installation, and cost.

Method of Repair:

• EcoCast is an advanced geopolymer lining system. It is a non-cementitious material and is formulated to provide both corrosion protection and structural reinforcement.

Speed of Installation:

• EcoCast was developed to be quickly applied with exceptionally fast cure time. Depending on the shape of the structure, the versatility of this product allows it to be applied in a variety of ways. It can be centrifugally cast, sprayed on or trowel applied.

Cost:

• EcoCast is typically 25-40% less expensive than alternative replacement methods. The solution reduces the need for excavation, labor and time costs.

A 54" cooling line, lying beneath IPR Industrial Services EcoCast crew, was leaking into a 13,500 kV room shown on the right side of this photo.

The EcoCast system was lowered into the deteriorated 320 ft. line from a man-way and relined with a structural and corrosion resistant geopolymer.

The Solution

From start to finish, the IPR Industrial Services' crews quickly and efficiently restored the old raw water line. The ground was excavated to access the top of the pipe. A temporary manhole was cut into the pipe's upstream end and the EcoCast sled gained entry. IPR's industrial safety certified crews cleaned the aged pipe with a high-pressure washer before application.

The EcoCast sled entered and sprayed roughly 1 ft per minute, with the spinning head rotation at 5,000 rpm. The Ecocast geopolymer applied a 1/2 inch max thickness per pass. Three Ecocast coats were applied. After the final pass, the liner became leak-free and structurally restored. CCTV/ Inspection shows no defects and a proper cure. The IPR crews repaired the manhole with a bolt-on blind flange and pressure tested the line before reopening the services.

A 30" man-way was cut into the cooling line to gain access.