

RECORDED BENEFITS

- Reduced maintenance costs through extended equipment life
- Conservation of plant water through reduced piping
- Reduced plant downtime
- Elimination of ongoing deposition

Cooling Water Program Reduces System Corrosion By Over 70%

Performax™ Cooling Water Treatment

Customer Challenge









A cement plant increased the cooling system volume by 50% keeping the same make-up and bleed-flow. They were treating the cooling water with a zinc and phosphonate program. As a result, the retention time increased from 10 to 20 days creating a highly corrosive situation for steel resulting in severe pitting. The iron deposition in the heat exchangers, piping and equipment led to frequent failures throughout the plant. Consequently, the corrosive water contributed to increased maintenance costs.

Recommended Solution

Solenis experts realized there was a problem and approached the customer suggesting a different corrosion control program. After evaluating the plant, Solenis proposed to change the existing corrosion control program to a phosphate and polyphosphate program using Performax™ MX1202 cooling water treatment. High levels of phosphates and polyphosphates led to the control of anodic and cathodic corrosion on carbon steel as well as pitting. Additionally, Solenis implemented a comprehensive corrosion monitoring program using coupons and OnGuard™ 3H monitoring to validate and optimize the program performance.

Results Achieved

After a few months, carbon steel corrosion coupons showed good reduction in pitting as well as a corrosion rate reduction of over 70%. The new program also resulted in better copper corrosion control thanks to the presence of azole into the treatment program. The plant began to see a reduction in iron fouling, pipe failures, pump replacement and plant downtime. The customer appreciated the timely support and granted Solenis a contract extension for one year.

With Zinc treatment		With Performax MX1202	
<small>Frontside Photo - Before Cleaning</small> 	<small>Frontside Photo - Before Cleaning</small> 	<small>Frontside Photo - After Cleaning</small> 	<small>Frontside Photo - After Cleaning</small> 
Corrosion rate: 3 MPY		Corrosion rate: 0.1 MPY	
With Zinc treatment		With Performax MX1202	
<small>Frontside Photo - Before Cleaning</small> 	<small>Frontside Photo - Before Cleaning</small> 	<small>Frontside Photo - After Cleaning</small> 	<small>Frontside Photo - After Cleaning</small> 
Corrosion rate: 0.08 MPY		Corrosion rate: < 0.04 MPY	

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