Case Study: FDG Coatings In Coal Fired Power Plant

Michigan Coal Fired Power Plant
The FGD system is a 65 MW coal-fired power plant. It is equipped with an electrostatic precipitator and a wet flue gas desulfurizer (FGD) system for emission controls. The plant consumes approximately 550 tons of coal per day.

Reheater tubes detailing corrosion

Reheater tubes viewed from above after blasting and before lining

Project Description:
The two wet scrubbers were designed and built 30-40 years ago. The FGD system is a 65 MW coal-fired power plant. It is equipped with an electrostatic precipitator and a wet flue gas desulfurization (FGD) system for emission controls. The plant consumes approximately 550 tons of coal per day.

The alloy construction of reheat tubes was being attacked by the flue gas after wet scrubbing. The apparent problem is that the coal being burned is high in chlorides- 0.03% by weight resulting in a huge spike (10X) in slurry chlorides around 12000 ppm. The 316 L outlet reheater tubing is showing pitting from chlorides in the flue gas. Internal water temp is 200F in the tubes with external flue gas at 180 F. Steam at 600 F is sparged into the scrubber column below the reheater tubes at scheduled intervals

These conditions are similar to conditions experienced in the Jet Bubble Reactors, scrubbers and ductwork made of alloy that are being attacked by high chloride coal burning.

IN THE NEWS

Blome International Vitrified Tiling Systems

Ultimate Corrosion is please to announce a new product line serving the Food & Beverage Industry. Blome International is a leader in providing innovative hygienic infrastructure asset management solutions. More...

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Tubes abrasive blasted and primed with Red ChemLine 784-32

Reheater tubes before lining.

Reheater tubes after lining.

Tubes were coated from above and below with specialized spray equipment using ChemLINE 784-32 Gray Top Coat. After Scrubber #1 was coated, the client decided to immediately to line the reheat tubes in Scrubber #2.

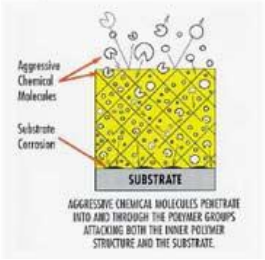
The client was satisfied that the stainless tubes were lined within budget and will extend the life expectancy of the tubes. No significant heat transfer loss has been detected and the scrubber is working at peak performance.

ChemLINE from APC has proved that under the most challenging environments of heat, corrosion and wear, the ***ChemLINE*** polymer will provide long term solutions to coal burning with chloride contamination of the flue gas. We welcome discussions from other clients that find that their alloy construction has had similar corrosive conditions.

Products Overview:

ChemLINE® 784 Technology

Epoxy/Vinylester
Open Screen Structure



ChemLINE® 784
Closed Screen Structure

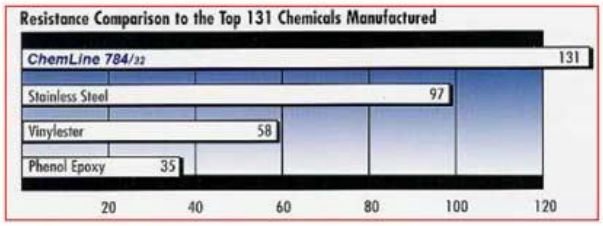
	Epoxy/Vinylester Functionality 2	ChemLINE 784/32 Functionality 28
Number of Crosslinks Same Area	4	784

Because the ***ChemLINE*** linings have a higher cross link density, ***ChemLINE*** will out perform all other polymer formulas and provide

- Superior corrosion resistance performance to over 5,000 chemical reagents
- Resists 98% of all corrosive acids, alkalis, solvents, gasses and various temperatures

- Aggressive Chemical Exposures
- High wear and abrasion resistance
- High Heat resistance to 500F
- Flexible film - Impact resistant
- Repairable lining
- Superior corrosion performance verse stainless steel, baked phenolic, epoxy and vinyl ester
- Not effected by chlorides like stainless steel
- 40X smoother than epoxy / 4X smoother than stainless steel
- Non Permeable – won't absorb or contaminate making it an idea food contact lining
- Thermal shock resistant: - 40F to 400F

The *ChemLINE*® Advantage:



Testing Performance with over 5,000 chemical!

A revolutionary lining for the Flue Gas Desulphurization Process.

- ***ChemLINE*** is specially formulated polymer resin for handling the high temperature and abrasion requirements of FGD systems.
- ***ChemLINE*** is a cross-linked organic-inorganic multifunctional polymer coating that exhibits high flexibility and toughness
- ***ChemLINE LE*** temperature resistance (500°F/260°C)
- Superior resistance to Acids, alkalis, solvents, oxidizing agents
- Thermal shock -40°F (-40°C) to +500°F (+260°C)
- Flex stressing
- Wear and abrasion
- Impact resistant

For more information please contact:

Art Rak

Tel: 248-388-3525
Fax: 248-393-8391
Email: info@ulticor.com

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