



Pittsburgh Chemical Solutions LLC

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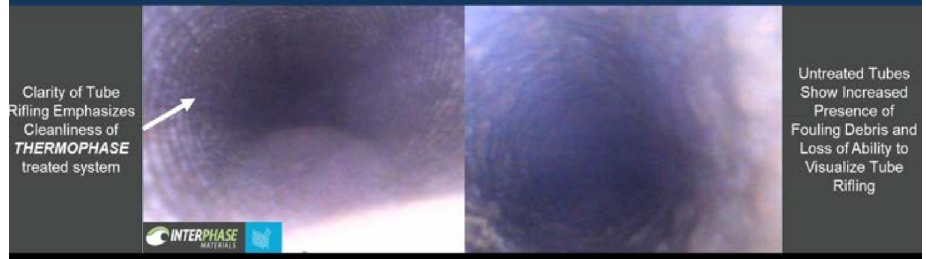


THERMOPHASE

- Treatment for Heat Exchangers, Condensers & Cooling Towers
- Heat Transfer Improvement
- Prevents Fouling
- Non-biocide & Non-hazardous
- Easy to apply, low usage rate
- Infrequent application required
- Quick payback of product

Fouling Reduction in Operating Tube Heat Exchanger with THERMOPHASE

Fouling Reduction in Operating Tube Heat Exchanger Onboard the USTS Kennedy using Interphase Materials Proprietary THERMOPHASE Product



Industry utilized on chillers, heat exchangers, cooling towers and condensers

Fouling prevention reduces maintenance, cleaning and improves operations

Proven to improve Condenser Backpressure/Unit Heat Rate

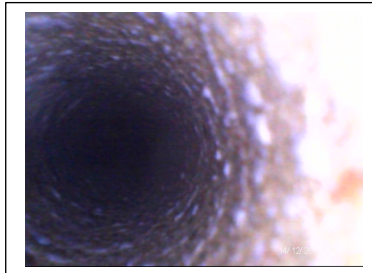
Improves heat transfer coefficient and heat transfer effectiveness

Cooling tower efficiency gains

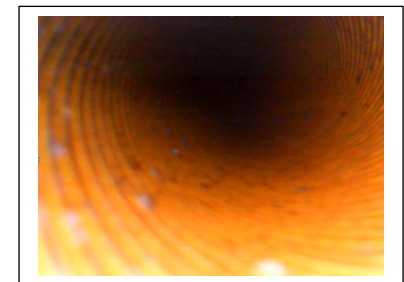
Reduces plant water usage

Reduced emissions CO₂, NO_x, SO_x and Hg and their consumables (lime, ammonia, activated carbon) from heat rate improvements

Borescope Image Fouled Chiller Tube 1 Year after Operation - Untreated



Borescope Image of Chiller Tube 1 Year after THERMOPHASE application Without Cleaning



Product data includes:

- ***Full-scale Power Plant, industrial and commercial data from years of operation***
- ***Validation from Department of Energy (DOE)/National Energy Technology Labs (NETL) Sponsored Project (Report on OSTI.gov website)***
- ***Electric Power Research Institute (EPRI) testing validating heat transfer improvement***
- ***Department of Transportation - Maritime Administration (MARAD) product validation***

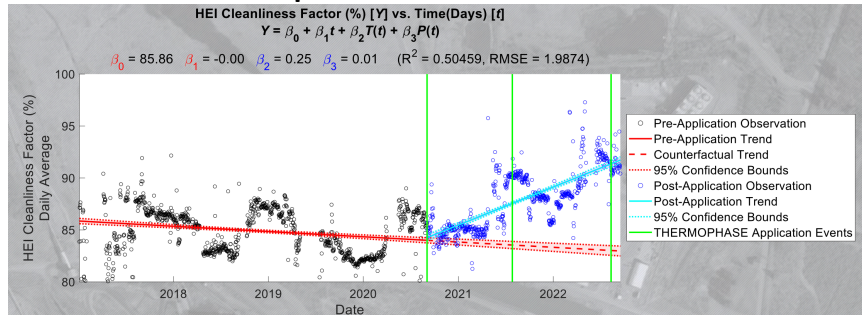


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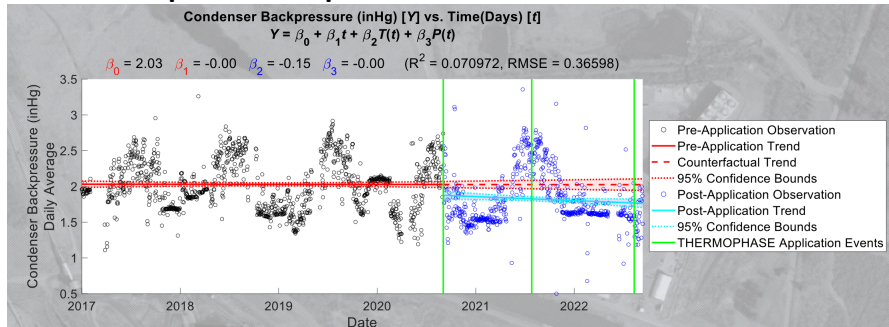


Partial Data from 770MW Power Plant (Vertical Green Lines are THERMOPHASE Applications)

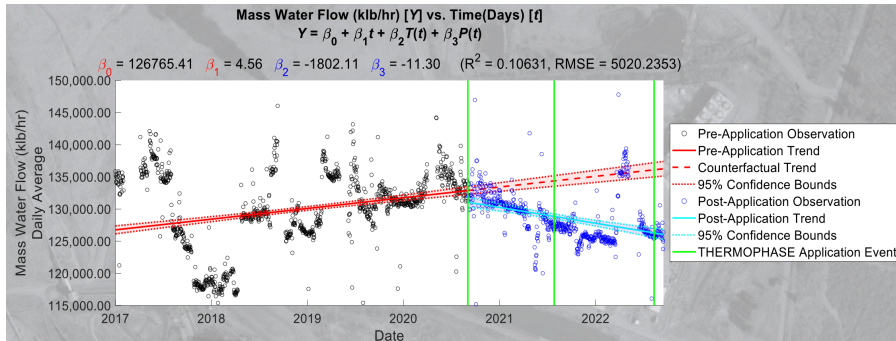
HEI Cleanliness Factor Improvement with THERMOPHASE – 770MW Unit



Condenser Backpressure Improvement with THERMOPHASE – 770MW Unit



Mass Water Flow Reduction with THERMOPHASE – 770MW Unit



Summary - 24 Month Savings at 770MW Power Plant

Savings Type	770MW Power Plant
Water Withdrawal	1,287 ± 750.8 Mgal
CO ₂ Emissions	136 ± 79.3 Mlbs
Fuel Cost (in Millions)	\$3.35 ± 1.68

Savings shown in Summary that include 1.3 billion gallons of water, 136 million lbs of CO₂ and \$3.35 million does not include other savings such as SO_x reductions and lime usage reductions, NO_x reductions and ammonia/urea usage reductions, Hg reductions and activated carbon usage reductions, reduced ash treatment/disposal costs, reduced water chemical/discharge costs, maintenance cost savings, etc.