

The background of the entire page is a complex, repeating mandala pattern in a light blue color. The pattern consists of various geometric and organic shapes, including spirals, floral motifs, and intricate line work, creating a dense and textured visual field.

VOCCSYS

www.voccsys.com

Our Story

Vulcan Industries is an industry leading manufacturer and provider of top-of-the-line Products and Services to enhance and protect the business environment of its clients through creating informed opinions and benchmark setting performance based on Quality, Technology, and Performance.

We believe that all of our clients deserve the highest level of service, and we are committed to providing just that. By keeping a pulse on upcoming trends, a tap on local conditions, and a wide experience pool to draw from, we've gained a competitive edge that has made us the successful company we are today.

Vulcan Industries was established in 2011 as a part of a 30 year old group of companies to primarily manufacture Condenser Cleaning Sponge Balls for the Power Generation Industry. Since then we have grown to have well developed knowledge and experience in the field of Heat Exchangers.

We partnered with one of the leading manufacturers of Online Tube Cleaning Systems in Europe, Cooling Energy Savings Ltd., from 2015 to 2017, during which we marketed and installed multiple units overseas. At the end of our partnership with Cooling Energy Savings Ltd., we purchased the rights to their technology so that we may manufacture our own Online Tube Cleaning System designed just right for the Indian market.

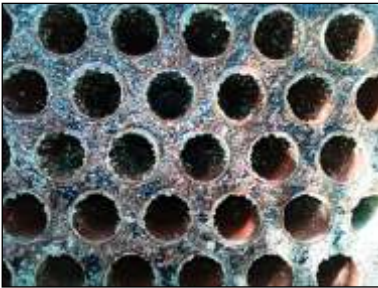
For the first half of 2017 we worked on tweaking and restructuring the purchased designs so that they matched the requirements of our Indian Customers. Following extensive remodeling and trials we currently offer our customers the best Online Condenser Tube Cleaning System in the Indian market.



Micro Fouling is the greatest threat to your Heat Exchanger tubes

But what is Micro Fouling?

Micro Fouling is the accumulation of unwanted material on the inner surface of Heat Exchanger Tubes that are heavily damaging and are severely detrimental to the functioning of your Heat Exchanger. Micro fouling occurs due to continuous heating and cooling of water, accumulation of colloidal particles, growth of corrosion deposits, decomposition of suspended matter, presence of bacteria or algae in the water, or even due to a combination of afore mentioned reasons.



Why is Micro Fouling a threat?

Fouling generates tremendous operational losses. One estimate puts the losses due to fouling of heat exchangers in industrialized nations such as India and China to be about 0.17% of their National GDP (\$3.85 billion USD and \$19.04 billion USD respectively).

The losses initially result from:

- Impaired heat transfer
- Corrosion damage
- Increased pressure drops
- Flow Blockages
- Induced vibrations
- Increased O&M costs

Sustained fouling results in:

- 1% Output losses in Coal fired steam turbines
- 1.54% Output losses in Nuclear power stations
- More than 10% reduction in gained output ratio in Desalination plants
- More than 15-20% extra power consumption in Chillers



Offline Cleaning vs VOCCSYS

- Labor Intensive
- Shutdown losses
- Harsh and unstable chemicals
- Damage to condenser tubes
- Efficiency decreases between cleaning
- Cumbersome, expensive, and inefficient
- Temporary solution
- Completely Automatic
- No shutdown necessary
- Eco-friendly Sponge Rubber
- Zero damage to condenser tubes
- Continuous cleaning ensures maximum output
- Intuitive, short ROI, and very efficient
- Permanent Solution



How does VOCCSYS work?

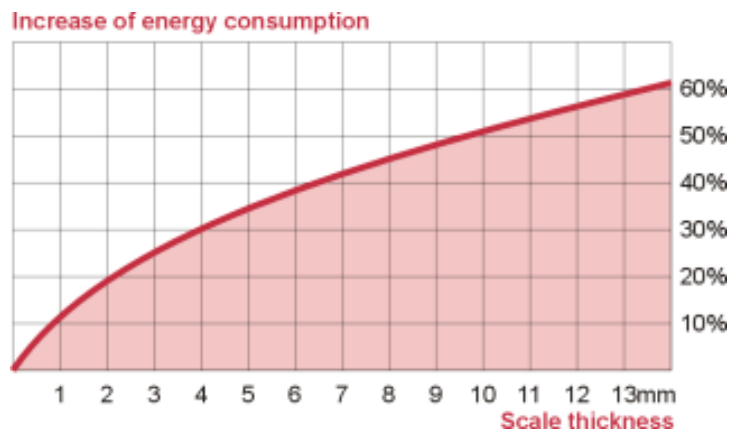
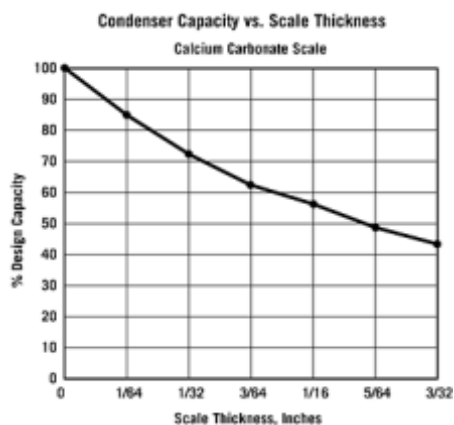
The Vulcan Online Condenser Cleaning System continuously cleans heat exchangers by circulating sponge balls through the heat exchanger tubes at programmed intervals, preventing residue, deposits, and bio-film from accumulating in the tubes. The sponge balls are slightly larger in diameter than the tubes, and wipe the tubes clean as they pass through. The balls are then trapped on the outlet side of the heat exchanger where they are collected, transported, and stored until the next cleaning cycle begins.

VOCCSYS cycles are fully automatic and controlled by a programmable controller.

- In the Injection Cycle the sponge balls are forced into the system main line from the Ball Collector by the re-circulation pump. All the balls are simultaneously injected into the main water flow that then make their way to the heat exchanger tubes.
- During the Cleaning Cycle, all the sponge balls travel through the heat exchanger tubes at system flow velocity where they clean off residue, deposits, and bio-film before they have a chance to take hold.
- The Collection Cycle starts after the balls exit the heat exchanger and are separated from the main line by a Ball trap. The PLC Controller then initiates the collection valves to open that force the balls back into the Ball Collector.
- During Stand-by the balls are held in the Ball Collector where they are rinsed and stored until the next Injection Cycle.

How does VOCCSYS help?

- VOCCSYS can increase the Energy Savings up to 20% in HVAC Chillers
- VOCCSYS can increase power output up to 5% in Power Plants
- VOCCSYS can decrease the excess Steam Consumption in Power Plants
- VOCCSYS can Increase Heat Transfer Coefficient of HVAC Chillers and Condensers
- VOCCSYS can extend the life of your Heat Exchanger tubes
- VOCCSYS can improve the overall life of your Capital Goods
- VOCCSYS can help you avoid expensive shutdowns and downtime
- VOCCSYS can eliminate your need for offline cleaning
- VOCCSYS helps reduce your Carbon footprint



How much savings does VOCCSYS offer?

Energy Savings in Power Plants:

Condenser Capacity (KW/h) x Compressor efficiency (%) x working hours in a year (h) x cost of energy (INR/KW/h) x Estimated Savings (at least 1%)

Water Saving in Power Plants:

Drainage water (cu.m/h) x working hours in a year (h) x Estimated Savings (at least 1%)

Steam Savings in Power Plants:

Excess Steam Consumption (Ton/MWh) x Generation Capacity x working hours in a year (h) x Cost of Steam (INR/Ton) x Estimated Savings (at least 80%)

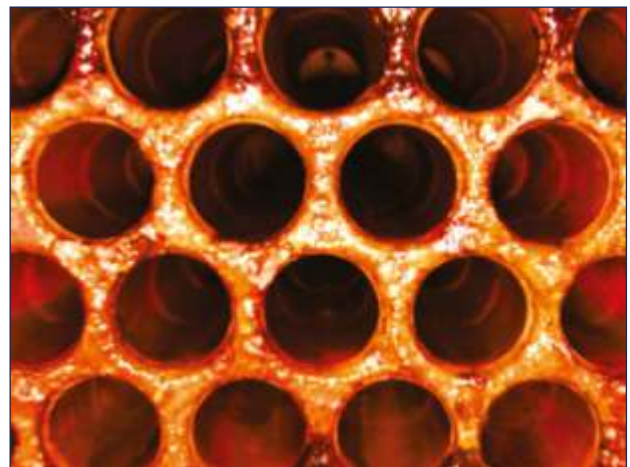
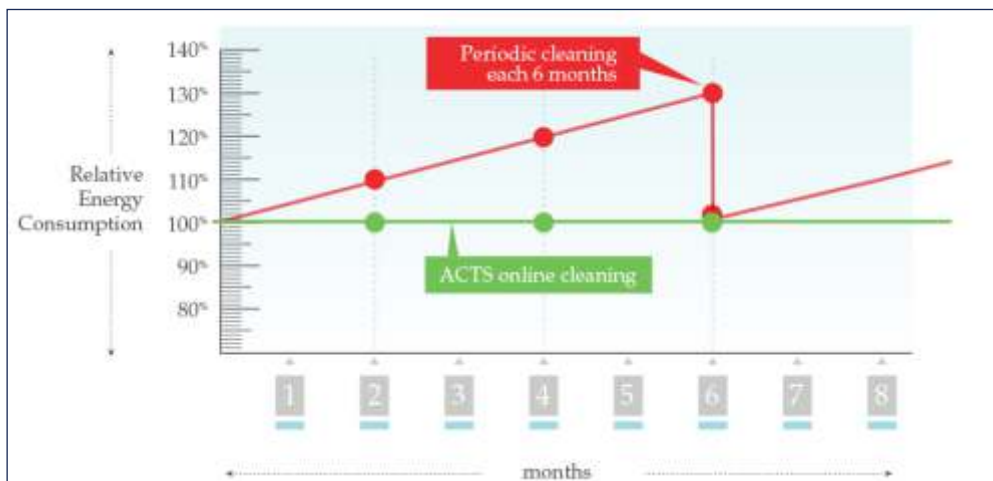
Energy Savings in Chillers:

Chiller Capacity (TR) x Specific Consumption (kW/TR) x Average load (%) x working hours in a year (h) x Cost of energy (INR/KWh) x Estimated Savings (at least 7%)

Why you should choose VOCCSYS?

- One System for Multiple Heat Exchangers
- Zero ball loss system
- Fully automatic, no manual intervention required
- Easy Ball monitoring and replacement
- No mixing of CW Inlet and CW Outlet water
- Intuitive Multicolor Touchscreen HMI
- Continuous online cleaning
- Assurance of 100% clean tubes
- None to minimal pressure drop across Ball Trap
- Customized Operating System for every Customer
- Intelligent Ball replacement notification
- Zero Error motorized Control Valves
- Reliable single pump control
- Negligible power consumption
- Self manufactured Sponge balls for Seamless Operation
- 1 year's supply of sponge balls at no extra cost
- Helps reduce Carbon footprint

VOCCSYS delivers significant savings compared to manual cleaning



Heat Exchanger tubes before VOCCSYS Heat Exchanger tubes after VOCCSYS

Applications



Power Plants



Oil Refineries and Chemical Plants



HVAC Chillers



Pharmaceutical Plants



Cold Storage, Meat Processing, and Dairy



Ships

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