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On the road to greater water savings with smart technology

INSIGHT

When it comes to water management, Ford Motor Company has pulled ahead. The company has reduced water use by more than 10 billion gallons since 2000 and is aiming for an additional 30 percent reduction per vehicle from 2015 to 2020. Its long-term ambition: zero freshwater use in manufacturing.

To enhance efficiency and cut water consumption at its Chicago assembly plant, Ford worked with Nalco Water.

INNOVATION

The partnership focused on two areas that are heavily dependent on water:

- Cooling towers, which consume large quantities of water and have operational challenges such as scaling, corrosion, fouling and biological growth — all of which impact water usage, performance and costs.
- Pre-treatment baths, where metal is treated before it is painted — a process that also consumes a significant amount of water. To improve efficiency, Ford wanted to continuously monitor water overflow when the baths were refilled.

Nalco Water implemented two projects to help the plant use water more efficiently:

- 3D TRASAR™ Water Saver Technology, a digital “connected chemistries” solution, was installed to optimize cooling tower performance and reduce water use. The system is continuously monitored by the Ecolab System Assurance Center, which provides real-time resolution of problems — preventing significant water loss.
- Nalco Water’s Wireless Meters were set up in the pre-treatment baths to constantly track the programmed water flow rate. If there is a change, paint process engineers and on-site representatives receive an instant alert. Previously, problem identification and resolution could take days or even months.

Circular water strategies (reuse and recycling of water) also are playing an important role in the plant’s future water management strategy. Nalco Water is working with Ford to implement technology that will potentially lead to a significant reduction in water use by recycling phosphate rinse water. The plant is developing processes to enable reuse of a portion of the pre-treatment process water, which will greatly reduce the need to tap into the municipal water supply.

TECHNOLOGY

- 3D TRASAR™ Water Saver Technology
- Wireless Water Meters

eROISM

ANNUAL SAVINGS

WATER

Reduced freshwater use by **23 million** gallons in four months — equivalent to the annual drinking water needs of more than **79,000 people**

Potential to save an additional **55 million** gallons per year through recycling phosphate rinse water

COSTS

Savings from reduced water use — equivalent to more than **\$186,000** per year

Potential to save an additional **\$481,000** through recycling phosphate rinse water

TOTAL COST SAVINGS

\$186 THOUSAND ANNUALLY