xylem
Let's Solve Water

Power Generation Case Study
Sump Dewatering

# Xylem's Flygt Concertor Saves $20,000 Per Year in Maintenance Costs at Coal Fired Power Plant

## A WORLD-FIRST COAL FIRED POWER PLANT APPLICATION FOR FLYGT CONCERTOR

**Challenge**

Operators of one of the largest coal fired power plants in the US based in Michigan, were looking for an efficient, robust and reliable pumping solution to move sludge water from each of the plant's four sumps.

"Reliable and energy efficient infrastructure is critical since catastrophic pump failure can result in power plant flooding and significant safety issues."

The 'bottom ash oily waste' in each sump - a combination of ash, oil, water, foreign objects and various run off liquids - created an abrasive sludge that frequently clogged, seized and caused seal failures in the original submersible pumps used at the plant. Reliable and energy efficient infrastructure is critical since catastrophic pump failure can result in power plant flooding and significant safety issues. The customer tried to resolve the issue by fitting an integral agitator mounted onto each pump's impeller, however the pumps continued to clog and fail. The customer challenged Kennedy Industries, a distributor partner of Xylem, to eliminate these frequent failures, increase safety at the plant and free up maintenance resources for more critical areas, such as turbine and generator work.



Kennedy Industries, a distributor partner of Xylem, deployed a Flygt Concertor intelligent pumping solution that could handle corrosive sludge without clogging while adapting to conditions and conserving energy.

**Project Highlights:**

- Flygt Concertor intelligent pumping solution handled corrosive sludge without clogging while adapting to conditions and conserving energy use as a result
- $20,000 saved in maintenance costs annually, allowing manpower to be focused on other critical areas at the plant
- The world's first installation of Flygt Concertor at a power plant

**Solution:**

Flygt Concertor pumping system with integrated intelligence

**Solution**

The Kennedy team developed and engineered a solution using Flygt Concertor, a fully integrated, total pumping system that reduces total cost of ownership while delivering the highest quality and reliability. Flygt Concertor senses the operating conditions and adapts its performance in real time, delivering maximum energy savings and reducing maintenance and service call-outs. Inventory can be reduced by up to 80 percent due to Concertor's performance field, while clog free operation reduces vacuum cleaning call-outs by up to 80 percent. Energy savings can be reduced by up to 70 percent compared to conventional wastewater pumps and controls.

## "The first Concertor was installed in October 2017 and has been running trouble free ever since."

Doug Weil, Repair Sales Manager, Kennedy Industries said, "Flygt Concertor was chosen because of its inherent ability to take care of itself. Some of the key features that make it a perfect fit for this challenging application include - hard iron wet end, non-clog N-hydraulics, clog detection, automatic cleaning function, torque sensing, adaptive impeller, leak and temperature detection and variable speed. The first Concertor was installed in October 2017 and has been running trouble free ever since. The customer's experience was so positive that three more Flygt Concertors were subsequently installed. This is the first time Flygt Concertor has been used in a coal fired power plant and it is a great success – it has exceeded expectations."

**Result**

As the original pumps used to move the bottom ash oily waste clogged so frequently, maintenance costs at the plant were significant. However, since the Flygt Concertor pumping systems have been installed, related maintenance costs have been reduced by approximately $20,000 annually. This has also had the benefit of increasing available labor to support the critical operations of power generation.

Doug Weil added, "Intelligent pumping systems, like Flygt Concertor deliver multiple benefits for power plant operators by supporting maximum production and increasing the reliability of critical infrastructure. Concertor also boosts sustainability on site by ensuring assets are operating as efficiently as possible. Furthermore, employee safety is enhanced by minimizing the need for personnel to pull pumps out of sumps for inspection or maintenance."



The original 7.5 HP submersible pumps (left) were replaced with the smaller yet more powerful 10 HP Flygt Concertor.



Intelligent pumping systems, like Flygt Concertor deliver multiple benefits for power plant operators by supporting maximum production and increasing the reliability of critical infrastructure.



© 2020 Xylem