



# Case Study

## Boiler Blowouts: Renewable energy plant installs hi-temp slurry pumps to eradicate pump failures

### Overview

Covanta Energy is one of North America's largest owners and operators of waste-to-energy plants and other renewable power facilities. Their 60+ facilities produce electricity for about one million homes. The Covanta Dade energy plant in Florida processes 4,200 tons of municipal solid waste and biomass fuel daily. The plant burns that waste to produce electricity, boiling water to turn turbines that generate 77 megawatts of power. During the boiler blowout procedure, 185°F water is pumped from the system to minimize buildup of scale and corrosion.

The plant had struggled with standard dewatering pumps failing due to heat and abrasive materials, in addition to the extremely hot water. The plant upgraded to high temperature dewatering pumps better equipped to handle high temperature water. However, after six months of operation performance began to degrade. Closer examination revealed that the impellers and casings were severely corroded due to windblown sand and abrasive grit in the open sumps. Covanta engineers needed a new pump solution that could stand up to 185°F water, was resistant to corrosion and abrasive sand and grit, and a pump that was available with the high head option needed for the application.

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The plant struggled with multiple pumps because of hot liquids and abrasive materials

### PROBLEM

- Extremely hot water caused pump failure
- Sand and grit corroded pump parts
- High head option required



## Solution

Engineers settled on a dual solution: covering the open sumps to minimize grit and sand intrusion; and replacing the dewatering pumps with heavy-duty abrasion-resistant, high temperature slurry pumps. Covanta installed Industrial Flow Solutions™ BJM® Fahrenheit® KBHF series pumps.

The Fahrenheit pumps can withstand liquids up to 200°F, and the heavy-duty KBHF series pumps feature hardened, abrasion resistant chrome iron components. A built-in agitator ensures sand and grit do not settle at the bottom of the sumps, and are instead processed out. This high head version achieves up to 170' head, ideal for Covanta Dade's application.

Covanta Dade purchased their first KBHF pump in 2008. After a successful test, they purchased a second one, and then two more in 2009, and finally two more in 2010. With the exception of a few minor seal failures, which were mitigated with a monitoring system on the control panel, all six KBHF Fahrenheit pumps have been running smoothly 24/7 since installation.

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Replacing standard dewatering pumps with KBHF pumps resulted in smooth operations 24/7



## FEATURES

- Fahrenheit® high temperature wastewater slurry pump
- High temperature up to 200°F (93°C)
- Abrasive-resistant chrome iron components
- Heads to 170'

## APPLICATIONS

- Power Generation & Utilities
- Construction/Rental
- Industrial
- Mining & Minerals
- Oil & Gas

## RESULTS

- Withstands liquid temperatures up to 200°F
- Abrasion and corrosion resistant with high chrome parts
- High head capability
- 24/7 smooth operation of all six pumps



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