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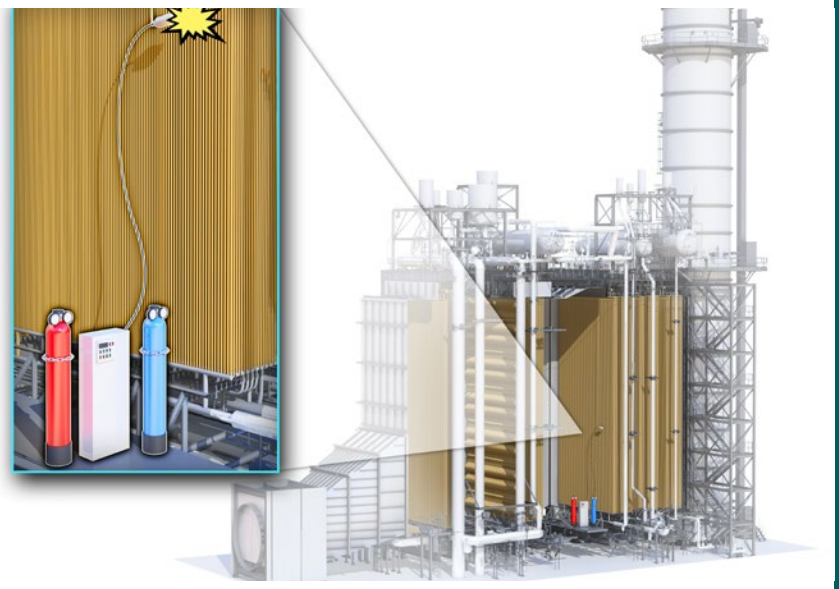
FACT SHEET

WHEN IS AN 84,000-POUND PILE OF RUST A GOOD THING?

When it's removed from your heat recovery steam generator (HRSG)!

GE Vernova's PressureWave Plus* removes more than 42 tons of debris from two HRSGs, resulting in an estimated $1 million in fuel savings and/or increased power generation.



Recently, GE Vernova was called to a combined cycle plant in the southeast US to address a common issue facing HRSGs nationwide: gas-side tube fouling on the unit's cold-end modules. Tube fouling, which can reduce heat transfer efficiency and increase gas turbine back pressure, can considerably lower the power output and efficiency of a combined cycle power plant.

The plant was experiencing significant gas turbine back pressure following an extended outage. An inspection revealed fouling of heat transfer sections downstream of the selective catalytic reduction (SCR) due to oxidation and accumulation of debris in the modules.

CASE STUDY

Initially, an alternative cleaning method was used that removed 3 tons of corrosive debris from each HRSG. After going back online, however, the units continued to experience back pressure that was higher than expected.

To resolve the issue, GE Vernova's PressureWave Plus HRSG cleaning technology was used during a mini-outage in the spring of 2016. Working six shifts over the course of three days, two crews of GE Vernova experts cleaned four modules of one HRSG, removing more than 14 tons of additional debris from the "already cleaned" unit.

When the unit was restarted, the results were immediately noticeable. Gas turbine back pressure dropped by approximately 8 inches, and the stack temperature decreased by 30° F. This resulted in an estimated value of $500,000 in fuel savings and/or increased power generation.[1]

Plant personnel were so satisfied with the process and initial results that they contracted with GE Vernova's Power Services team to clean the second HRSG and an additional module in the first HRSG in the fall of 2016. The results were just as impressive. The crew of GE Vernova technicians cleaned six HRSG modules – removing 28 tons of debris.

The second unit also saw an 8-inch drop in gas turbine back pressure upon restart, resulting in an additional estimated $500,000 in fuel savings and/or increased power generation.[1]

The patented technology[2] of GE Vernova's PressureWave Plus uses a special lance inserted into the access lanes between the tube bundles in an HRSG. A bag at the end of the lance is inflated with a mixture of combustible gases that are ignited remotely. The resulting pressure wave and tube vibrations dislodge the deposits without damaging the boiler tubing. This process requires no scaffolding and entails less work in confined spaces.

Benefits

- Versatile. Applicable to all HRSG types
- Quick and Easy. Can be quickly mobilized and cleans in half the time of other methods
- Cost-Effective. Requires no scaffolding, thus eliminating a major cost associated with other cleaning processes
- Better, Deeper Cleaning. Provides more effective cleaning than traditional CO2 blasting and cleans deeper into the tube bundle, including areas that cannot be reached by other technologies
- Excellent Results. Reduces gas turbine back pressure and improves heat transfer

Before cleaning

After cleaning

Debris after cleaning

Cleaning Method

Steps in the cleaning process:

Lance inserted | Bag placed in cone | Bag inflated | Bursting bag

To learn more about this offering, contact your GE Vernova representative or visit **gevernova.com/gas-power**

1. Estimated value is based on F-class unit running 3,000 hours at full load and 3,000 hours at low load with $3/MMBtu natural gas costs and $40/MWh.
2. Pressure wave technology developed by BANG&CLEAN® Technologies AG

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