

SureFOAM fin fan cleaning service improved performance of unit process, minimized downtime

CHALLENGES

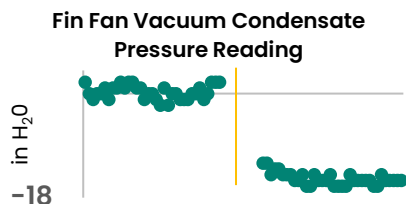
- Severe external fouling limiting steam condensing capacity of fin fans resulting in:
 - Low daytime vacuum pressure of -2 to 2 inches of water
 - Reduced compressor turbine horsepower
 - Reduced hydrogen circulation through the reformer
 - Reduction in catalyst life
- Losing 1/14 of the fans resulted in unit rate cuts and an immediate E-Work maintenance notification, resulting in overtime and parts callouts
- Elevated energy costs due to increased motor temperatures required to run fin fan systems

SOLUTION

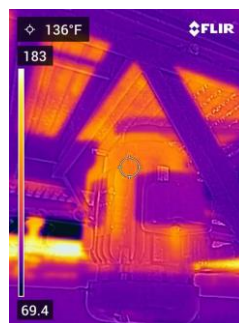
- Fans were shut down two at a time to limit/avoid unit upset in cooling capabilities
- Baker Hughes then utilized the [SureFOAM™ fin fan cleaning service](#) to the tube sheets to:
 - Loosen debris adhered to fins
 - Improve airflow and cooling capacity for optimal thermal efficiency and measurable energy savings
 - Restore original fin fan performance with a non-invasive foam generator
- Pre-and post-cleaning diagnostics were provided to the operator

RESULTS

- Improved condenser vacuum daytime pressure to -15 inches water through the cleaning of 6/7 fin fans
- Reduced temperature across motors by 9%, leading to energy savings in the range of 1-3% efficiency
- Increased compressor turbine horsepower and hydrogen circulation through the reformer
- Eliminated downtime, emergency work, and overtime through increased cooling capability, allowing the refiner to operate with 11/14 fans without running into operational issues
- Extended catalyst run life



Before cleaning – 145°F



After cleaning – 136°F

“In all my time as an operator, I have never seen a dP improvement this large.”

– West Coast Refiner Board Operator