

## Filter Media Upgrade in Coal-Fired Power Facility in Western USA Significantly Improves Baghouse Performance

### CHALLENGE

The Micronics Engineered Filtration Group was contracted to provide 6,480 filter bags, hanging accessories, and Refurbishment Services for the ten (10) compartment Carborundum/Flakt (OEM) Reverse-Air Baghouse (RABH) that is filtering fly ash laden flue gas from the bituminous Coal-fired Boiler.

The end user's desire to refurbish their RABH was motivated by increased opacity excursions and reduced reliability of the Station due to baghouse-related issues such as increasing filter bag fatigue and pressure drop.

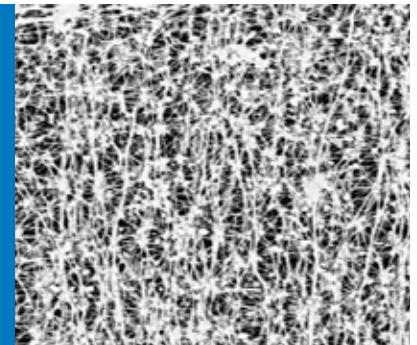
After a careful analysis of the baghouse issues, Micronics presented the end user with a filter bag media upgrade from their current conventional woven fiberglass fabric that required a dust cake present to promote maximum efficiencies (depth filtration).

### SOLUTION

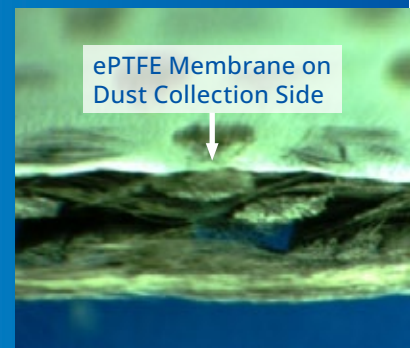
Micronics presented a woven fiberglass fabric laminated with ePTFE membrane (surface filtration) as the filter media upgrade solution for this Coal-fired Power facility in the Western USA.

This filter media upgrade provides maximum dust collection efficiencies (PM2.5 standards), enhanced dust cake release, and lower filter drag (pressure drop) across the baghouse system.

The Micronics team fully and successfully executed the project during the early Spring of 2023. All of Micronics' Filtration Products and Baghouse Services performed on-time, on-budget, and most importantly safely.



Microscopic Image of ePTFE Membrane's Pore Structure



Microphotograph Cross-Section of ePTFE Membrane on Woven Fiberglass



## SOLUTION

We received Station data before and after the project's completion. As a result of Micronics' advanced filtration solution, there were numerous quantifiable benefits of our filter media upgrade work:

- 62% increase in average power production from 122 MW (before) to 198 MW (after). This can be attributed to the filter media upgrade and the on-call reliability of the Station's RABH. This increase further improves both availability to the grid and supports the Station's commitment to maintaining full compliance with all environmental permitting requirements.
- During the evaluation period, the RABH system's differential pressure (DP) was maintained at a historical average of 5.3" WC, with increased flow provided by the ePTFE membrane filter bags. With our solution, the baghouse achieved more power output with similar DP across the system.
- Opacity incidents were reduced from 22 during the year leading up to the renovation to zero (0) currently.
- During the evaluation period, the RABH system's ID fans - or induced draft fans - maintained their historical consumption amperage with the increased flow provided. The facility achieved more power output with no increase in amperage consumption.



Finished Installation. Filter Bags at Tension



Finished Filter Bags at Tension in our QA/QC Test Rig

With Micronics' partnership, the client's Reverse-Air Baghouse is now a productive and reliable asset for the Power Station.

You can rely on the Micronics Engineered Filtration Group to be your proven single source for solving complex baghouse challenges globally.