



Case History Success Story

Holistic Troubleshooting Approach Helps Utility Resolve Baghouse Cleaning Issues, Return to Full Load

The most obvious solution is not always the best one. That truth was brought home for Neundorfer and one of its customers, a large, Southwestern utility, during a recent baghouse troubleshooting project. The utility needed help resolving fabric filter cleaning issues that were limiting plant megawatt output. Neundorfer's engineers listened, asked questions and partnered with the plant's team to understand root causes of the problem. This approach helped complete a high-profile project with results that exceeded expectations, despite budget constraints.

Here's what happened.

The utility invited Neundorfer engineers to a planning meeting, during which several already-developed remedies were to be evaluated and prioritized. Rather than just rubber-stamping one of the presented options, however, Neundorfer suggested some additional testing to better understand and quantify possible solutions. Results from the tests would then be used to confirm or revise the proposed solutions, taking into account short- and long-term budgetary and operational implications. The goal: achieve maximum reliability at the lowest possible cost, save energy and avoid band-aid fixes.



Measuring sonic horn frequency using sound-pressure profile gauge

Neundorfer proposed a multi-phase approach, with “stop and review” steps built in:

1. Conduct on-site inspection and review existing baghouse operating data
2. Prepare a proposal based on inspection results, review options with customer
3. Try out the most promising options
4. Based on trial results, evaluate the implications of each option, select the best one, write a specification
5. Work with customer to implement the selected option

The utility agreed this approach seemed best, and the project got underway.

Multi-Phase Process Yields Results

The first step—on-site inspection and data review—revealed several specific operation and maintenance concerns related to baghouse cleaning. The most significant discovery was substandard acoustical output from existing, 15-year-old, 125 Hz sonic horns.

Based on Phase 1 results, Neundorfer proposed a trial to investigate the impact of improving sonic horn acoustical output. This involved modifying the horn setup in four baghouse compartments to compare results using refurbished existing horns, new 125 Hz horns, new roof-mounted 60 Hz horns and new internally-mounted CD-70 60 Hz horns.

Following the trial, Neundorfer analyzed the resulting data and prepared a report reviewing the results and outlining recommendations. The data showed internally-mounted CD-70 horns performed the best, with an average single-compartment differential pressure (DP) drop of 2.90."

This meant:

- The plant would be able to run at full load.
- Bag life would be extended by more than eight months due to less frequent cleaning.
- The plan would recoup upgrade costs in one year.



New roof-mounted 60 Hz sonic horns



New 125 Hz sonic horns



*New 125 Hz sonic horns,
mounted under Reverse Air (R/A)
baghouse walkway*

These positive results were achieved thanks to high energy levels produced by the CD-70 horns (exceeding all others on the market), and a unique under-walkway mounting developed by Neundorfer with the horn supplier. The new mounting scheme positions the bells down between the bags for most effective cleaning power. Also, each horn driver/diaphragm is easily accessible from the walkway, enabling regular maintenance to prevent horn performance from deteriorating over time.



Top view of 60 Hz horns mounted under R/A baghouse walkway

Full Loading Restored

When the unit came back online after modifications, the entire baghouse ran at a DP of 6," compared with 10" before retrofit, exceeding Neundorfer's estimate from the trial. That did the trick: the plant was able to ramp back up to full load.

Because of budget constraints, it was only possible to retrofit half of the baghouse compartments. When funding becomes available, the utility plans to install new horns in the remaining compartments of the baghouse, as well as its sister unit at the plant.



Bottom view of 60 Hz horns mounted under R/A baghouse walkway



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