



Filter Resources, Inc.

# SONIC HORN CASE STUDY



## Municipal Power Plant Midwest, US

### Highlights:

- Savings of Nearly \$200/month in Labor Costs
- Increased Energy Saving
- Reduced Cleaning Cycles
- Achieve 100% Immediate Ash Removal

Build up in baghouse hoppers often requires extended operating cycles for evacuation equipment, wasting energy and manpower. But, if the experience at a midwestern municipal power plant is any indication, these problems may be over.

The station's flyash is produced by two stoker-coal fired boilers. The boilers have steam flow rated of 160,000 and 240,000 lb./hr. The ten compartment baghouse handles a gas flow rate of 264,360 cfm at 370°F (188° C) inlet. In the past, flyash accumulations at the station's hoppers were a common problem. The buildups were handled manually, with three crewmen spending as much a 15 hours a week to keep the 10 hoppers flowing.

After installing a acoustic sonic horn into one hopper, the plant immediately eliminated all the hopper's ash buildups, saving nearly \$200 a month in labor costs. They are also saving energy, because the free flow of ash from the hoppers requires less operating time for the pump and vacuum equipment.

A production superintendent for the facility tried to clean the hopper using a mechanical vibrator, but they were still experiencing plugging. They resigned themselves to manual cleaning to get the job done.

So plant management decided to try an acoustic power horn in one hopper. This horn works because its output is focused at a single frequency rather than spread across a broad spectrum of noise like other horns. Focusing the frequency at roughly 230 Hz proved effective for dislodging dust accumulations in hoppers.

The result? The horn delivers about twice the dislodging power of conventional broad-spectrum horns. The sound waves generated by the horn literally fluidized the accumulated flyash to improve flow; so seconds of operation now completely release flyash buildups.

This is just another example of how partnering with Midwesco® has truly proven that we offer trust, value, quality and service to our customers.

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