

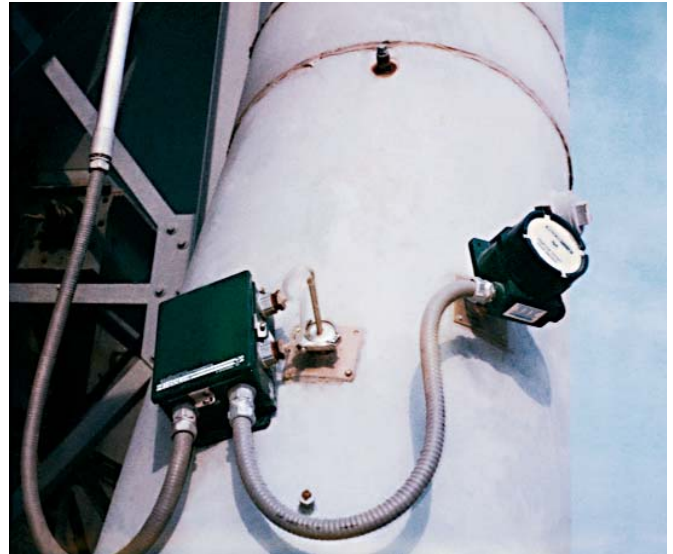
SUMMARY

To solve process problems and address compliance issues, this ceramics fiber plant installed the Tribo.*link* Network System. The company and the state's Environmental Protection Division were pleased with the results.

Company Background

Auburn's Tribo.*link* Network Systems were installed in all production areas at this Georgia ceramics fiber plant. The production areas include the following:

1. The IFB/Grinding area includes grinding, calcining, drying, storage, and handling of non-metallic minerals such as kaolin clay, as well as Kaowool scrubbers and tunnel kilns. The eight (8) shaker baghouses in this area have three multi-compartment units.
2. The Kaowool area in which the non-metallic minerals are mixed with other components to produce insulation materials. This area also includes four (4) Torit high efficiency cartridge collectors and five (5) pulse jet baghouses to collect blown fibers and spun fibers.
3. The Converted Fibers area where ceramic fibers are produced in bulk form. In this area, there are five (5) Torit and Farr cartridge collectors and three (3) pulse jet baghouses.
4. The Specialities area which has eight (8) shaker baghouses on various grinding, crushing, pulverizing and bagging operations.



The Problem

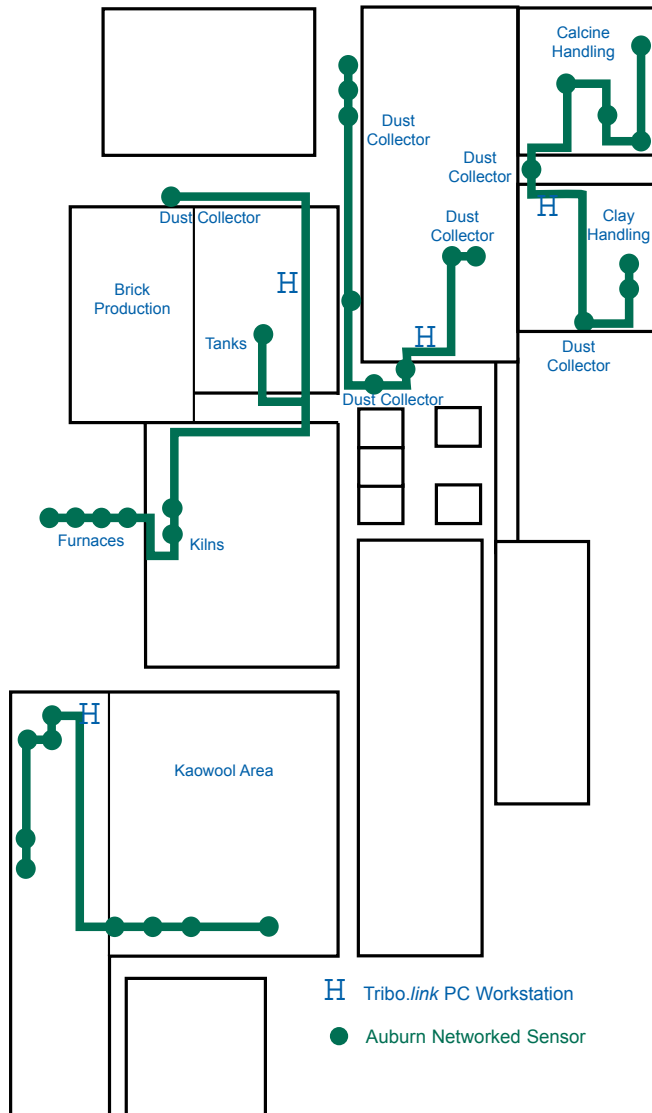
The company is required by operating permit conditions to have differential pressure gauges on all baghouses. Although they met the permit conditions, they suffered instances of large dust emissions that resulted in fines, Notices of Violation (NOV), and close scrutiny of the state's Environmental Protection Division (EPD). Standard monitoring required maintenance personnel to walk around the plant, record differential pressure readings, and check visually for emissions.

The Search for a Solution

The EPD required a proposal from the company, suggesting a solution for the elimination or reduction of emissions. More than 30 dust collectors on the site left few economical choices for close surveillance of emissions. Adding chart recorders was considered; however, the high cost was compounded by maintenance and evaluation of large quantities of paper. An investigation into triboelectric bag leak detectors began and Auburn's single channel bag leak detector was evaluated with another vendor's unit. The plant determined Auburn's unit to be the most reliable and easy to use. The facility saw a dual purpose in the triboelectric devices: satisfy the EPD and maintain compliance; and reduce maintenance labor costs while providing a more reliable method of detecting and locating bag leaks.

Our Solution

After selecting Auburn's technology, an evaluation report and recommendation was submitted to the state's EPD for satisfying the NOV. The EPD sent it back approved.



The above diagram shows an aerial view of the ceramics fiber plant and the locations of numerous Auburn sensors throughout the four production areas.

The Results

The facility installed four systems with a centrally-located PC workstation in the control room of each production area, utilizing existing personnel to monitor the status of all dust collectors via the Status Board displayed at the workstation. All sensors are remotely setup and adjusted without walking all over the plant. The automatic datalogging of continuous data, signal magnitude, alarm occurrences, and parameter changes are quickly recalled, graphed and printed in a variety of formats. This has reduced the time spent by the company's environmental department in the preparation of compliance reporting while providing proof and monitoring protocol for Title V CAM Rule compliance. By interfacing each Tribo.link Network System with the facility's internal network system, upper management views status and alarm conditions of all four production areas from their own computers in their offices.

After installation, the US EPA conducted exhaustive studies of the emissions levels at this facility and the behavior of the Tribo.link Network System. They staged a bag break condition by tearing a hole in one of the bags. The results demonstrated that the triboelectric technology effectively detected bag leaks as soon as they occur and well in advance of visible emissions. The US EPA confirmed the triboelectric results with a fluorescent leak test and expressed satisfaction with the capacity of the system. The facility plans to expand the Tribo.link Network System by adding differential pressure and flow meter data from new wet scrubbers in the kaowool area and additional bag leak detectors for several new dust collectors. The system can handle 4-20 mA signals from any instrumentation to include differential pressure, temperature, fan current, etc. and may be expanded at any time.