Monroe Scrubbing System Provides Halide Recovery at a Major Glass Products Plant

**Challenge**

A glass manufacturing plant was having trouble cleaning the emitted gasses, particulate, and odors that resulted from its manufacturing process. Metallic halides such as SnCl\textsubscript{4} and TiCl\textsubscript{4} were being applied to hot glass to impart special properties. The halide and oxide emissions were hazardous, extremely pungent, irritating in odor, and very difficult to scrub.

**Solution**

Monroe designed and manufactured a comprehensive treatment system in which the process gasses were treated successfully with series of scrubbers, while the wastewater was treated separately with a Monroe compact clarifier. The tin sludge was reclaimed and the costly tin oxide was recovered after the clarification process.

The fully automated scrubbing system consisted of a unique combination of a high-energy venturi scrubber with a multiple venturi scrubber for high efficiency and recovery, as well as a Packed Tower Scrubber for the removal of SO\textsubscript{2} from the air stream. The system required minimum maintenance and was controlled by a PLC. The PLC integrated the safety of the combustor and the scrubbing system, which provided fast system reaction.

**Result**

The final outlet efficiency of the system was roughly 99.5%. This allowed the manufacturer to recover and reuse the costly halides, saving time and money associated with purchasing. In addition, the odorous fumes emitted from the system were successfully treated.