

APPLICATION INFORMATION SHEET

ClO₂ Generator Continuous Level Application

Since the mid-80's, the paper industry has undergone a change in the way they bleach their paper. The EPA has reduced the allowable limit of dioxins and furans that the paper industry can release into the environment. These dioxins and furans are commonly found in Chlorine and released in reject water.

The problem has been solved by the development of chlorine dioxide generator systems. Through this process, ClO₂ is used as a bleaching agent instead of Cl. ClO₂ reduces the amount of dioxins and furans in the bleach chemical thus reducing the amount released into the environment.

This system consists of a generator, a tube, and shell heat exchanger. Within the generator the ClO₂ product is produced. This is done by vacuuming out dissolved gas from the mother liquor. This ClO₂ gas along with water vapor is mixed with water and used to bleach the paper.

The mother liquor enters the main generator on a tangent to induce a centrifugal type of flow. This is done to increase the mixing of the liquor and allow more ClO₂ to be extracted by the introduction of steam.

Continuous level in the generator is critical because the chemical material balance in and out of the generator is very important. Manufacturers of these generators have stated that the system operates at an efficiency level of 95% and that any variability in level reduces this efficiency drastically. The circular motion of the liquor makes the level reading difficult for other technologies.

A normal span for this system is from the top of the inlet pipe to several feet below the support ring. The installation will include our continuous level rod source and scintillation detector and we will transmit a radiation beam through the center of the tank. Accuracies of the system will continue at our standard 1 to 2% of range with high repeatability.

A number of paper mills have installed these ClO₂ generators for their plant sites because ClO₂ is very expensive. Therefore, all pulp and paper mills will be needing a reliable continuous level measurement on their generators.