

Inhibited Oxidation Wet Flue Gas Desulfurization

Babcock & Wilcox Power Generation Group, Inc. (B&W PGG) is committed to offering a variety of technical environmental solutions which are tailored to each specific application. This includes new technology development as well as mature technologies that have been enhanced and improved.

Predominant technology

Since the mid-1980s, wet flue gas desulfurization (FGD) technology primarily utilized limestone forced oxidation (LSFO) to minimize the potential for absorber plugging (reduced scaling) and to produce a marketable byproduct (gypsum), thus avoiding the cost of landfill. While this approach proved successful in many worldwide installations, in some applications, the market demand for gypsum was significantly reduced, and wastewater treatment has become a concern. Therefore, some customers believe that a dry FGD system is the only option. However, there is an alternative: existing wet FGD technology with inhibited oxidation.



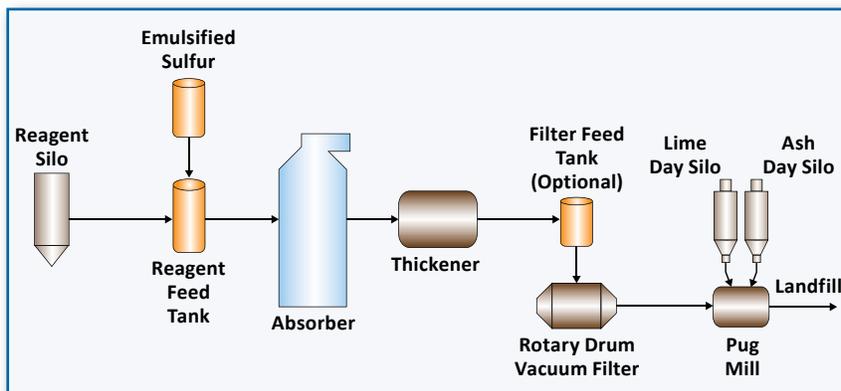
This unit has been operating successfully with inhibited oxidation since 1994.

Inhibited oxidation

B&W PGG provides a proven alternative to limestone forced oxidation systems. In the inhibited oxidation process, emulsified sulfur, or sodium thiosulfate, is added to the reagent feed tank. The addition of emulsified sulfur reduces the oxidation rate to below 15%, thus controlling scale deposits

and plugging in the tower, and allows the use of less expensive materials because the mechanism for corrosion has been removed. This process can be utilized with various reagents—limestone, lime, magnesium-enhanced lime, and sodium.

The byproduct of the inhibited process is fixated and stabilized by adding flyash and lime to produce a non-hazardous waste for landfill. Wastewater is purged from the system through the byproduct's high entrained moisture; therefore, no separate wastewater treatment facilities are needed. In addition to new installations, existing forced oxidation scrubbers can be converted to inhibited oxidation systems by removing the oxidation air and modifying the dewatering system.



Inhibited oxidation limestone system process overview.

(Continued on reverse side)

Benefits of inhibited oxidation

Compared to dry scrubbing technologies, the benefits of wet FGD with inhibited oxidation include:

- Low reagent cost (typically, limestone vs. lime)
- Low reagent usage
- Single, large absorber
- Lower overall life cycle cost

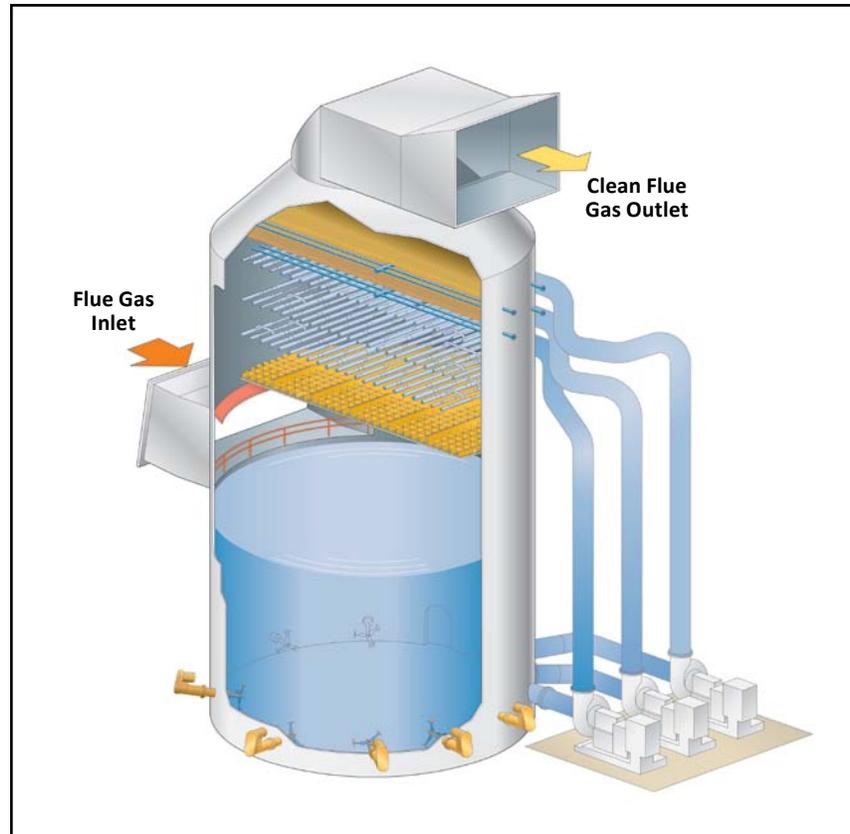
Compared to LSFO, the benefits of wet FGD with inhibited oxidation include:

- Lower capital cost
- Less power consumption
- No wastewater treatment system required
- Lower chloride level
- Reduced oxidation reduction potential
- Byproduct not classified as hazardous waste
- Slightly less water consumption
- Allows for use of less costly alloy materials

Benefits of working with B&W PGG

B&W PGG provides a complete and integrated package of multi-pollutant control solutions. We possess an extensive experience base with proven wet and dry FGD technology, including both LSFO and inhibited oxidation units. Our flexible project arrangements—equipment only, deliver and erect,

engineer-procure-construct—allow us to work with our customers to provide the most effective and cost-efficient solutions for each application. We support our customers after system installation with services such as quality replacement parts and engineered upgrades, all backed by a team of expert environmental engineers and field specialists.



B&W PGG wet scrubber with inhibited oxidation.

delivering
proven results

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