SBS Injection™ for Enhanced SCR/SNCR Performance

Both SCR and SNCR technology are widely used for effective NO_x control on coal-fired plants. But when applied to plants burning medium or high sulfur coals, their performance is constrained by the presence of SO_3 in the flue gas. The SBS Injection process can effectively control the SO_3 formed in the boiler and across the SCR, allowing for enhanced NO_x removal performance and operational flexibility, as well as lower life cycle NO_x control costs.

Other SBS Injection Co-Benefits

- Mercury Capture
- Heat Rate Improvement
- Corrosion Control
- CO_2 Reduction
- HCl and Se Removal

More Information

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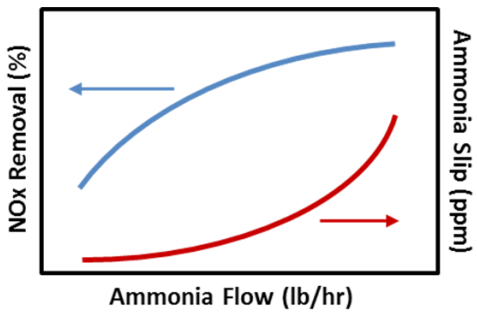
Enhanced NO_x Removal

Unreacted ammonia or "slip" from either SCR or SNCR operation can react with SO_3 causing ammonium bisulfate (ABS) to deposit in the air preheater (APH), leading to fouling, corrosion, and forced outages for cleaning. However, with effective SO_3 removal using the SBS Injection process, ammonia slip can be elevated to achieve higher NO_x removal, without adversely impacting plant performance or reliability.



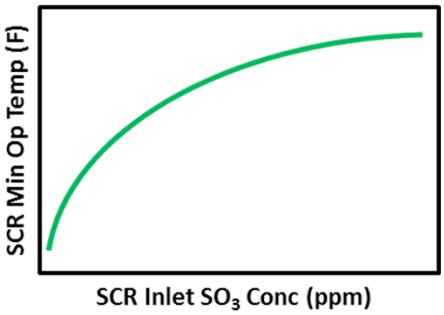
There are several ways the power plant operator can take advantage of this unique capability:

- Increased NO_x removal without need for catalyst replacement or addition
- Reduced catalyst life-cycle costs due to extended life or operation with less catalyst
- Elimination of APH fouling for improved plant reliability and efficiency
- Combination of all of the above

For many plants, NO_x removal can be increased by 5-20% and catalyst life can be increased by 50% or more.

Improved Low-Load Capability

The presence of SO_3 in the flue gas also limits the "turndown" of the SCR, due to ABS fouling of the catalyst at reduced boiler load and flue gas temperatures. With effective SO_3 removal prior to the SCR, the catalyst can be safely operated with ammonia at lower temperatures. For plants that must operate their SCR, this provides much needed low-load operational flexibility for the boiler for periods when power demand and market prices are low.



The benefits of lowering the operating temperature range of the SCR include:

- Improved SCR and boiler turn-down capability to maintain unit profitability
- Ability to maintain NO_x compliance over a wider boiler operating range
- Elimination of need for "economizer bypass" to maintain elevated SCR temperature
- Improved unit efficiency from operation of the boiler and APH at lower temperatures

For many plants, the SCR minimum operating temperature (MOT) can be reduced by up to 80°F.