SBS Injection™ Technology: SO$_3$ Control for the Power Industry
Generating Benefits Beyond Opacity Control
SBS Injection™ Technology: The solution to your problems

Things are getting tighter
Coal-fired boilers supply nearly 40% of the U.S. electricity demand. With U.S. coal reserves exceeding a 200-year supply, coal will continue to be a fuel of choice for low-cost power generation. However, current and proposed regulations will require that the power industry meet tighter environmental emission limits in the future. With installation of SCR and wet scrubbers, sulfuric acid mist (SAM) emissions increase and can become a visible issue to surrounding communities and regulators. Add ever increasing economic pressures and the threat of New Source Review (NSR) litigation, and the challenges multiply. You need a solution that not only controls opacity, but will also meet the most stringent SAM limits—and help your plant run more efficiently. Consider the SBS Injection technology, a patented process developed by Codan Development LLC and offered exclusively by AECOM.

Simple means better
The SBS Injection process is simple compared to the use of other sorbent injection technologies. Although the reagent, soda ash, is received dry to minimize delivered cost, it is immediately dissolved in warm water for ease of storage and handling. And because you're injecting a clear solution, you don't have to deal with slurries or solids that can plug your injection system, causing poor performance, downtime, and extra maintenance. Computer-based flow modeling helps ensure that our proprietary injection lances, utilizing ultra-fine atomization technology, are properly designed and located to achieve uniform distribution and intimate contacting of the reagent and flue gas. This ensures maximum $SO_3$ removal with minimal reagent usage, and avoids downstream deposition. Simple means better.

A solution that generates benefits beyond opacity control:
- Improves heat rate
- Enhances mercury capture
- Eliminates air heater fouling
- Prevents “back-end” corrosion
- Enhances SCR performance
- Reduces $CO_2$ emissions
- Captures HCl and Se
Sampling of AECOM’s SBS Injection™ Installations

<table>
<thead>
<tr>
<th>Utility</th>
<th>Plant</th>
<th>MW</th>
<th>Injection Location</th>
<th>Startup Date</th>
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<tr>
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Benefits that exceed costs

SBS Injection is not an environmental burden on your plant operating budget—it actually generates economic benefits. SO₂ presents unique challenges and opportunities in that it adversely affects plant reliability and efficiency, as well as performance of other pollution control systems.

With typical operating costs of $600-$800/ton of SO₂ removed, the SBS Injection process is competitive with alternatives. But also consider the numerous co-benefits of efficient SO₂ removal, including:

- Up to 3% improvement in unit efficiency via APH
- Enhanced mercury capture—reducing or eliminating need for carbon or halogen injection
- Significant reduction in “back-end” corrosion and maintenance outage costs
- Improved SCR NOₓ removal performance or extended SCR catalyst life
- Reduced outages and costs for cleaning fouled air heaters
- Reduced CO₂ emissions achieved with unit efficiency gains
- Capture of selenium and HCl in fly ash
- Enhanced low-load capability of SCR

You quickly see how the benefits can well exceed the operating costs, making it the control technology of choice. However, these benefits are only achievable when SO₂ is efficiently removed upstream of the air heater; a unique feature of the SBS Injection process.

Because the process is relatively simple, installed capital costs are typically $10-20/kW, making it significantly cheaper than Wet-ESPs and competitive with other sorbent injection technologies. Imagine meeting your environmental requirements and reducing your plant operating costs—SO₂ control that more than pays for itself.

Experience that counts

The SBS Injection process has been successfully applied on 30 boilers, totaling over 17,000 MW. With the majority of that experience injecting upstream of the air heater or SCR, the process has consistently demonstrated SO₂ removal levels of 95-99% at low reagent usage rates. With over a decade of operating experience, the SBS process is the only commercially demonstrated technology that can reliably remove SO₂ prior to the air heater, guarantee the elimination of sulfuric acid opacity, and provide significant plant operational benefits. You can be confident that SBS will meet your current SO₂ control needs, as well as more stringent future BACT requirements.

AECOM offers the technology in a variety of ways to suit your plants’ specific needs—ranging from a core Process Technology Package to a fully engineered turn-key system including all balance of plant components.

Effective Hg Removal without PAC

Stack SO₂ Emissions and Removal Summary

*Confidential client
About AECOM

AECOM is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries. As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges. From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. A Fortune 500 firm, AECOM companies have annual revenue of approximately US$19 billion.

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