

ENHANCE AND UPGRADE EXISTING SCR UNIT OPERATION WITH RILEY POWER'S PROVEN DELTA WING® TECHNOLOGY



Babcock Power
ENVIRONMENTAL

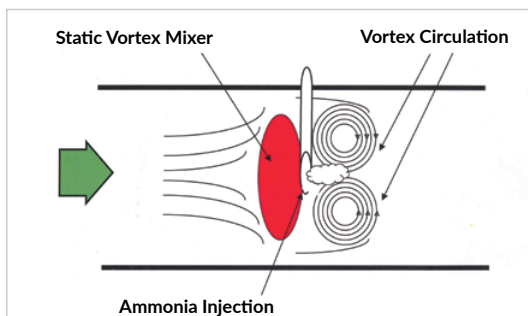
a Babcock Power Inc. company

Riley Power Inc. and its sister company, Babcock Power Environmental Inc., both Babcock Power Inc.® companies, have been successfully providing environmental solutions to utility power plants, waste-to-energy facilities, and large industrial applications for more than 40 years. We are the leading designer of new Selective Catalytic Reduction (SCR)* systems for fossil fuel fired boilers in North America, maintaining over one-third of market share. Our proprietary static Delta Wing® mixing system enhances catalyst performance, achieves uniform NH_3/NO_x stoichiometry, and reduces ammonia slip. This technology can be applied to any existing OEM's SCR system to improve overall operations and increase efficiency.

In most conventional SCRs, a grid of many pipes and nozzles is utilized in the ductwork to spray ammonia into the stream of gas leaving the boiler. This setup is complicated and inefficient. This large number of nozzles causes tuning of ammonia flow to match lengthy and complicated boiler conditions. In addition, the small orifice nozzles can become plugged with salts. Riley Power's direct ammonia injection equipment consists of manifold pipes with integral nozzles configured with its proprietary static mixing system, Delta Wing®. A Delta Wing® system typically requires six to eight large NH_3 nozzles with fixed static mixing devices. Tuning and balancing of SCR systems is relatively easy, resulting in quicker startup and better load following characteristics across the full operating range.

Improve the efficiency and environmental-impact of your SCR. Contact Riley Power to discuss our industry-leading SCR upgrades today.

Improve operation and increase efficiency of your SCR with industry-leading upgrades. Contact Babcock Power Environmental Inc. today.



BENEFITS

Experience

- Nearly 40,000 MWs of new SCRs in operation, under construction or in review in the U.S.
- Access to over 90 years of boiler operating experience within the Babcock Power Inc. family
- Installations utilizing Bituminous, Lignite & PRB coals, as well as petroleum coke blends, oil & gas
- Unsurpassed flow and dust modeling capability

Delta Wing® Technology

- Can be applied to any OEM's existing SCR installation
- Creates homogeneous NO_x/NH_3 mixture, consistent temperature, and uniform flow distribution at the catalyst face
- Reduces commissioning time to as little as 2 weeks
- A typical system requires only 6-8 large ammonia injection points, eliminating nozzle plugging
- Direct injection can often reduce ammonia slip to less than 1 ppm
- Maintains consistent effective mixing even at low load operation
- Eliminates requirement for balancing with different mill and burner operations
- Maximizes mass transfer via injection of sorbents for mercury and SO_3 control
- Enhances performance of ESPs

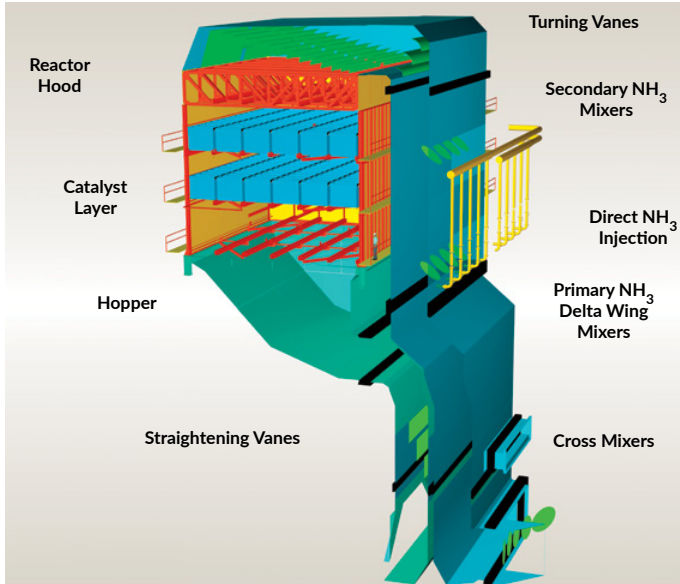
Ammonia/Urea Experience

- Sources include anhydrous, aqueous, and urea to ammonia conversion

Consistent Control of Mixing and Minimizing Ammonia Slip

- Minimizes risk of forming ammonia bisulfate and air heater pluggage





SUCCESSFUL SCRs AND DELTA WING® TECHNOLOGY

Successful SCR systems require a homogeneous NO_x/NH₃ mixture, consistent temperature, and uniform flow distribution. Riley Power consistently achieves all of these criteria along with reducing ammonia/urea consumption (slip) and eliminating air heater plugging. Our extensive in-house design capabilities result in selection of the optimum SCR system for each specific application, ensuring compliance with performance guarantees at both maximum design load and low load operation. In many instances, the ability to consistently operate over a wide range of loads has enabled our customers to increase NO_x reduction and maximize the generation of NO_x allowances.

Our Delta Wing® Technology is a proprietary mixing technology utilized on more than 60 SCRs and is consistently among the top performing SCRs in the U.S. (EPA Database). Coupled with unmatched modeling results, the Delta Wing® Technology provides homogeneous gas mixing and reagent injection in one application with no moving parts in the gas stream. This mixing technology requires minimum tuning during startup and commissioning and little, if any, annual “tuning” of operating SCR systems. The usual duration of initial commissioning from cold start of operation to consistent full load operation is less than two weeks. This process enables our customers to quickly reach guaranteed NO_x reductions, often greater than 90%, and to operate consistently over the full load range.

SAFETY³ PEOPLE. POWER. PROJECTS.
We're giving safety the third degree.

Babcock Power Inc. and its subsidiaries place the safety, health and security of our people at the core of our company values. Our team is our most valuable resource, generating solutions everyday to deliver safe, clean, reliable energy globally. With a keen focus on safety, Babcock Power Inc. conducts business in a manner that protects our people, our customers and the environment. From innovation to generation, we are proud of our award-winning safety record and are committed to operating with integrity and excellence.

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