

NO_xOUT SCR[®], is a cost-effective, safer and simpler alternative to NH₃ SCR for industrial generators.

TECHNICAL BENEFITS

- Up to 85% NO_x reductions
- Eliminates anhydrous ammonia and aqueous ammonia handling and storage requirements
- Safer reagents require less support equipment
- No fouling
- Eliminates RMP hassle

Selective catalytic reduction (SCR) has long been a common means to reduce NO_x emissions from industrial power generation equipment. However, concerns over the safety and potential liability of anhydrous ammonia used as a SCR reagent are growing. Likewise, the costs associated with aqueous ammonia have driven many power generators to look for additional alternate means of reducing NO_x.

The Fuel Tech NO_xOUT SCR process delivers a safer and simpler method of operation.

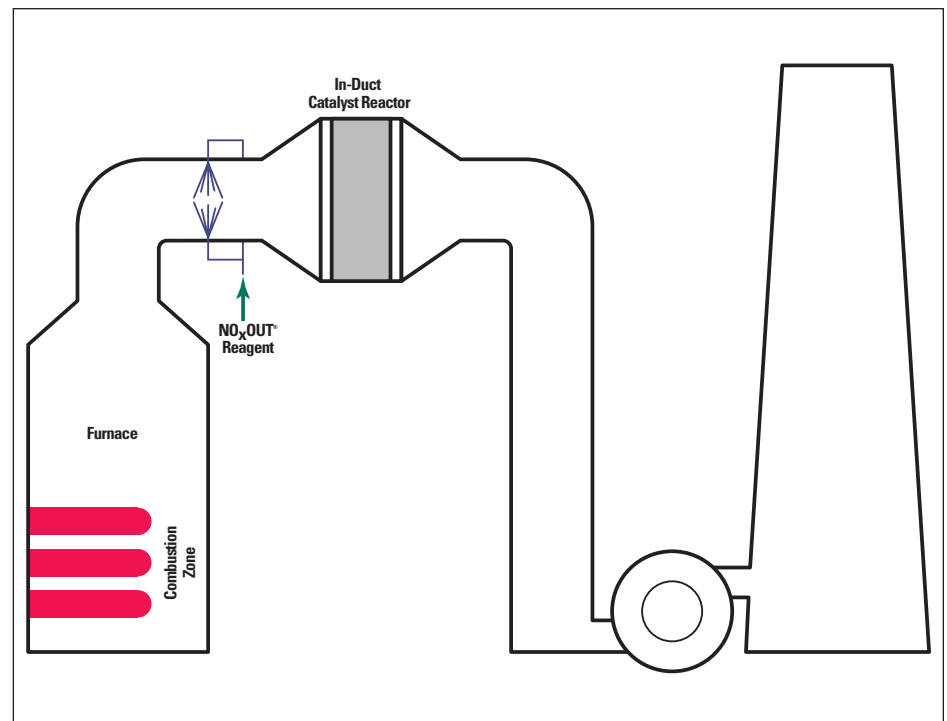
The Problem with Ammonia

Both anhydrous and aqueous ammonia present operational and handling problems when used as an

SCR reagent. Anhydrous NH₃ typically requires substantial tankage, relief valves, heated vaporizer, and other features. Aqueous ammonia typically requires heating to evaporate the water. Many systems are equipped with a fan and ammonia injection grid (AIG) to distribute dilute ammonia to the catalyst surface.

Transportation of ammonia on public highways is generally considered a safety hazard. Storage vessels are often required to be fitted with special containment and safety features. Fire and safety concerns require evacuation procedures and emergency training. Evacuation plans, public notification, and special permits may be required by government authorities.

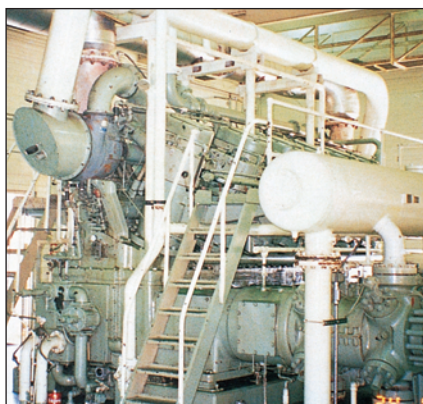
Figure 1: The NO_xOUT SCR Process



The NO_xOUT SCR Solution

NO_xOUT SCR is an advanced form of selective catalytic reduction (SCR) system. Unlike the conventional SCR, NO_xOUT SCR incorporates a safe, easy-to-use reagent. The safe alternative reagent liberates ammonia which reacts with NO_x on the catalyst surface. A simple injection system is designed to ensure "clean" injection with high conversion to NH₃. NO_xOUT SCR provides high levels of NO_x control, similar to the conventional SCR.

Figure 3-4: A large capacity turbo-diesel with a retrofit twin bed catalyst system.



No Fouling

Typical operation of the NO_xOUT SCR process yields no buildup or fouling of catalyst surfaces. Injectors stay clean, and there is often no increase in generator back pressure or decrease in generator performance or efficiency.

In all respects, NO_xOUT SCR offers the same NO_x reduction performance of an SCR system using anhydrous or aqueous ammonia, without the downside risks and catalyst build-up.

Figure 6: Transportation classification data NO_xOUT Reagent vs. NH₃

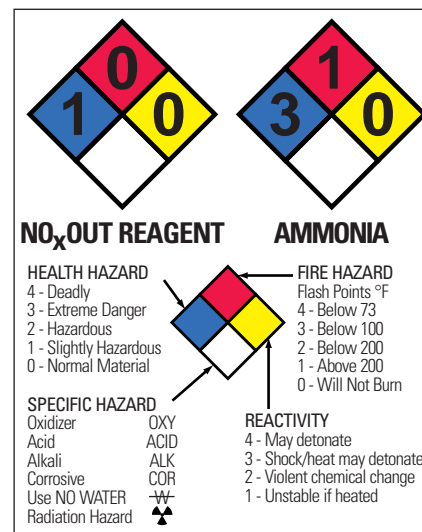
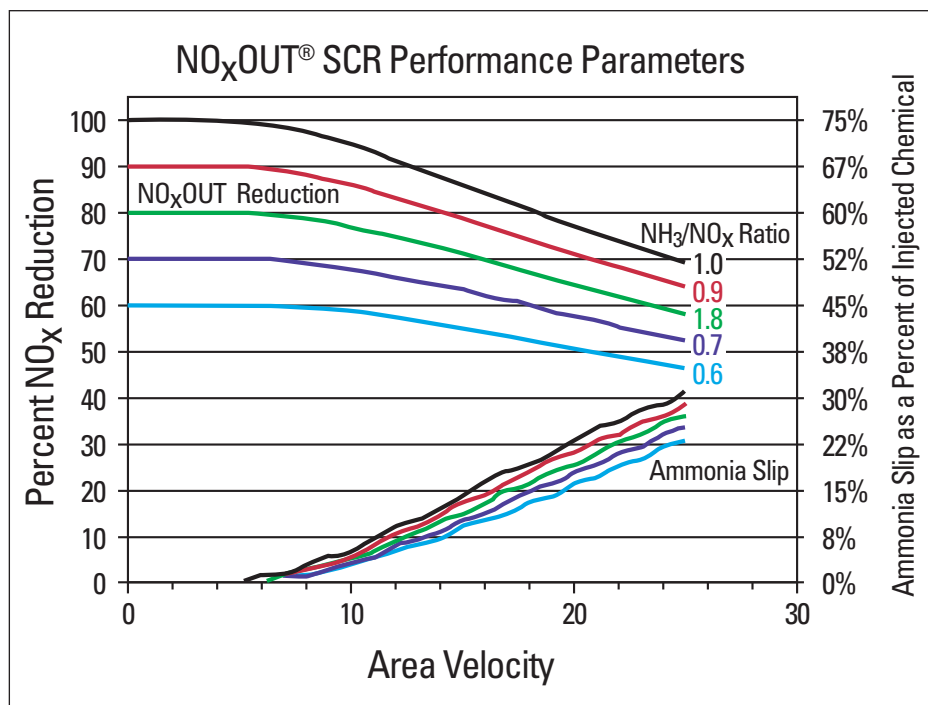


Figure 5: NO_xOUT SCR provides flexible performance with a safe reagent



For more information on NO_x reduction programs available from Fuel Tech, call, fax, or write us at:

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