

Future NOx Compliance

Lessons Learned with the CataStak™ SCR System

Since the 1980's Nationwide Boiler's rental fleet compliance strategy has evolved in parallel with NOx emission regulations. After several decades of utilizing best available control technologies (BACT), Nationwide today relies on selective catalytic reduction (SCR) technology, proven to reduce NOx emissions by as much as 90% or more. The CataStak™ SCR system is Nationwide's ultra low NOx compliance solution, capable of meeting stringent emission requirements, which are predicted to be reduced to <5 ppm by 2015.

"As NOx emissions evolved we were apprehensive of investing in technology that was not well proven and would not meet future compliance. Choosing SCR technology was the best choice we ever made. We no longer have to worry about upgrading our rental equipment and it performs reliably now and will continue to do so in the far future."

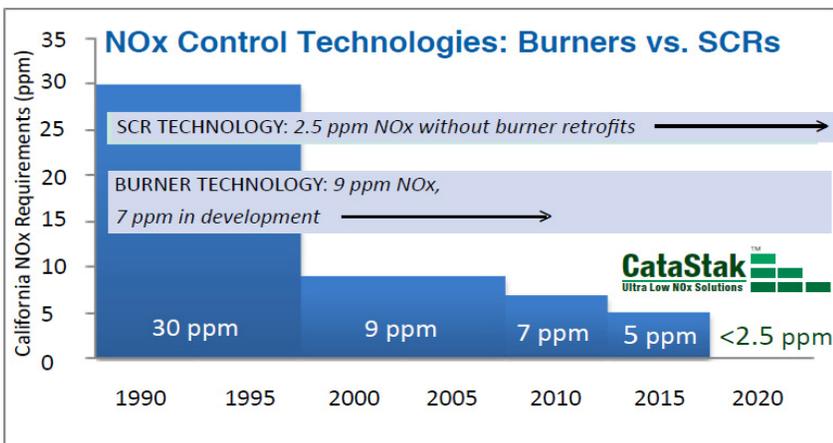
- Larry Day, Vice President, Nationwide Boiler Inc.

Users in California and other regions affected by strict NOx emission limits have upgraded their boiler systems several times over the last twenty years in order to meet NOx limits in their area. They demand equipment that not only provides reliability, ease of maintenance and energy efficiency, but also provides a long-term, compliance solution.

After Clean-Air Act Amendments were passed in the early 1990's Nationwide Boiler utilized combustion control methods to address NOx emission requirements. When NOx levels of 30 ppm were adopted, Nationwide invested in current BACT technology and retrofitted it's boiler rental fleet with burner combustion control technology. When NOx limits were even further reduced to 9 ppm, Nationwide's rental units were no longer capable of meeting new regulations and additional costly burner retrofits were required .

Nationwide concluded that this was just the beginning of a country-wide movement of clean air regulation and the company evaluated post combustion technologies. After several years of field R&D testing on numerous rental projects, Nationwide's engineers selected SCR technology as the answer to NOx compliance. It was the most economical, efficient, reliable and easy to operate solution, capable of exceeding 9 ppm. Also, when packaged with EconoStak economizers it provided energy efficiency gains (the E²Stak). This marked a major shift in control technology solutions for Nationwide and thus the CataStak™ SCR system for ultra low NOx emissions was born.

Nationwide's proactive decision to adopt SCR technology proved to be wise and cost effective. Currently, NOx emission requirements are as low as 5 ppm in some areas, and it is predicted that after 2015 these limits will be decreased even further, once current rules expire. In contrast to users with 9 ppm boiler burner controls, Nationwide's



current boilers equipped with CataStak™ SCR systems easily perform at current NOx levels and will easily meet future levels as low as 2.5 ppm, without additional costly burner upgrades.

When evaluating a low NOx solution call Nationwide Boiler, the largest low NOx solution provider. For complete, worry-free NOx compliance, select the CataStak™ SCR system - the one time compliance investment that will provide proven results year-after-year.