



PRAXAIR PRESS RELEASE

PRAXAIR AND VALERO SUCCESSFULLY IMPLEMENT PATENTED CONOx TECHNOLOGY IN ARDMORE REFINERY FCC UNIT

Low capital CONOx technology reduces Carbon Monoxide (CO) and reduces NOx emissions up to 60% while increasing operational flexibility

DANBURY, Conn., April 19, 2013 – Praxair, Inc. (NYSE: PX) and Valero have successfully implemented Praxair's new CONOx emissions control technology at Valero's refinery in Ardmore, Oklahoma. This technology has helped the refinery meet its fluid catalytic cracking (FCC) unit nitrogen oxide reduction target without requiring a shutdown for installation. FCC units convert petroleum crude oil feedstocks into more valuable products like gasoline.

Praxair's proprietary CONOx system is a practical, low-capital cost technology for refiners searching for a way to reduce emissions. It also allows refiners more flexibility to modify the operation of the FCC unit as needed while ensuring FCC limits are always being met. After eight months of operation at the Ardmore facility, the CONOx system continues to meet Valero's needs and provide necessary NOx reduction.

"Praxair refining specialists have collaborated with refiners for decades and have extensive knowledge of FCC units," said Subodh Ganguly, director of refinery and hydrogen applications for Praxair. "As one of the world's leading industrial gas companies, we have many successful oxygen enrichment installations in refineries. Our experience enabled us to implement FCC improvements with minimal downtime and an ever-present focus on safety," he added.

The CONOx lance installed in the FCC operated reliably over a wide range of conditions and met the refinery's NOx reduction requirements. The CONOx lance is a unique approach to NOx reduction. Praxair offered Valero this innovative, low-capital NOx solution that did not involve reduced charge rate or more expensive feedstock. Timing was critical and the simplicity of the system allowed for faster installation to meet Valero's requirement.



Continued

“Valero and Praxair plan to continue to work together to assess additional applications for CONOx technology and evaluate other opportunities to improve the performance and reliability of refinery operations,” said Mike Jordan, vice-president of U.S. Hydrogen at Praxair.

> ABOUT PRAXAIR

Praxair, Inc. (NYSE: PX), is the largest industrial gases company in North and South America, and one of the largest worldwide, with 2012 sales of \$11 billion. The company produces, sells and distributes atmospheric, process and specialty gases, and high-performance surface coatings. Praxair products, services and technologies are making our planet more productive by bringing efficiency and environmental benefits to a wide variety of industries, including aerospace, chemicals, food and beverage, electronics, energy, healthcare, manufacturing, metals and others. More information on Praxair, Inc. is available on the Internet at www.praxair.com.

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