Texas Industrial Energy Management Forum
Thursday, April 3, 2008
Brady’s Landing
8505 Cypress St.
Houston, Texas  77012

Forum Moderator
Sean Diamond, Texas Petrochemicals LP
Chair, Chemical and Refining Advisory Committee, Texas IOF

Presentations

Boiler Case Study: Minimizing NOx without Sacrificing Efficiency
Tim Morrison
Pavillion Technology on behalf of Sterling Chemicals

This presentation describes the application of advanced process control and optimization technology to a Sterling Chemicals boiler with the goals of operating within the carbon monoxide (CO) limits while simultaneously reducing NOx emissions. Controlling to stack CO allowed Sterling to operate as close as possible to the permit limit and automatically minimizes combustion oxygen (O2). This increases efficiency and simultaneously reduces NOx production. Additionally, controlling the O2 content in the mixed combustion air to the minimum allowable limit also reduces NOx emissions. The presentation will describe the project objectives, project team, implementation timeline, technology solution, infrastructure requirements, lessons learned and benefits.

Olefins Cold Ends DMCplus™ Application
Dave Hokanson, Process Control Specialist
ExxonMobil Corporation

Advanced Process Control (APC) technology, implemented using DMCplus™, was applied on the Beaumont Olefins Cold Ends unit in a very short period of time. SmartStep™, an automated testing software package, was used with a methodology called “Rapid Application Development” (RAD) to speed the implementation of this DMCplus™ application. Annualized energy savings were 10% (per unit of feed to Deethanizer tower), equivalent to 98,287 MMBtu, with associated CO₂ emissions reductions of 6,200 tons.
**Process and Energy Optimization at Eastman Texas Operations**
Carroll Greenwaldt, Superintendent, Utilities and Cogen Operations
Eastman Chemical Company

In 2005, the Eastman-Texas Operations Energy Management Team (EMT), in response to rapidly increasing energy prices, initiated a new energy optimization program to reduce the site's energy intensity. This new program utilized a standard process for identifying energy improvement projects. The projects identified and documented during these assessments ranged from energy savings projects to production improvement projects where energy usage was optimized to improve production. In all areas assessed, there were both non-capital (behavioral) projects, as well as capital projects, with paybacks that were normally less than two years. Overall, the site initiative in 2006 resulted in additional annualized energy savings of 4.4%, equivalent to 1,366,498 MMBtu, with associated CO₂ emissions reductions of 79,257 tons.

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**STS AIChE Dinner and Speaker on “Global Energy Demand and Greenhouse Gas Reductions: How much at what cost?”**

Mr. Pedro Haas, Senior Practice Consultant, McKinsey & Company.

Global Energy Demand is set to grow at a higher rate (over 2% p.a.) than historically (1.7% p.a.), unless ways are found to increase energy productivity across the world. Furthermore, consensus is growing among scientists, policy makers, and business leaders that concerted action will be needed to address rising greenhouse gas (GHG) emissions worldwide. The discussion is now turning to the practical challenges of where and how energy productivity can be increased and emissions reductions can best be achieved, at what costs, and over what periods of time. Mr. Haas will be presenting the results of a 2007 McKinsey study of energy demand productivity potential and of 250 options (including efficiency gains, shifts to lower-carbon energy sources, and expanded carbon sinks) to reduce US GHG emissions. In the US case, the study concludes that the United States could reduce GHG emissions in 2030 by 3.0 to 4.5 gigatons of CO₂e using tested approaches and high-potential emerging technologies. These reductions would involve pursuing a wide array of abatement options with marginal costs less than $50 per ton, with the average net cost to the economy being far lower if the nation can capture sizable gains from energy efficiency. Achieving these reductions at the lowest cost to the economy, however, will require strong, coordinated economy-wide action that begins in the near future. View the report and slides at [http://www.mckinsey.com/clientservice/ccsi/greenhousegas.asp](http://www.mckinsey.com/clientservice/ccsi/greenhousegas.asp)