

## A New Era in Optimization

The May 26<sup>th</sup> announcement that NeuCo acquired Pegasus Technologies marked a significant milestone for the maturing power optimization software market.

It has been almost 20 years since members of Pegasus Technologies first started to explore the use of neural networks and advanced control to streamline the complex, non-linear combustion process in fossil-fired plants, and 10 years since NeuCo introduced CombustionOpt®. Today combustion optimization is widely regarded as a valuable tool to reduce NO<sub>x</sub> and improve efficiency, and is credited with opening the doors to new technologies and applications that are being applied to process solutions beyond the boiler.

NeuCo and Pegasus have joined forces to focus exclusively on delivering a suite of real-time asset optimization solutions that combine both companies' intellectual capital (employee, customer & partner expertise) and intellectual property (technologies, solutions & patents.) We believe that this move will expedite the delivery of advanced emissions, efficiency and availability applications that represent a new standard in optimization software solutions.

The COAL-GEN conference is a perfect opportunity to celebrate the "new NeuCo." We are pleased to once again be the Platinum Sponsor and are excited to be here as the united face dedicated to the new era of power optimization.

Sincerely,  
Curt Lefebvre, *President & CEO*

## NeuCo Marks Milestones at COAL-GEN 2006

In addition to NeuCo's continued Platinum sponsorship of COAL-GEN 2006, this year's conference also holds a number of firsts and milestones for NeuCo.

The 2006 COAL-GEN conference will be the first industry event where we will showcase the newest addition to the NeuCo family: Pegasus Technologies. NeuCo acquired Pegasus Technologies in May 2006, bringing together two companies that have been 100% dedicated to mitigating the emissions and competitive market pressures facing the electric power industry.

Another first for NeuCo is its involvement in the pre-conference workshops. NeuCo is hosting "Utility Asset Management Using Optimization Technology," an all day event on Tuesday, August 15 highlighting real-time asset optimization technologies that are being applied to solve electric power plant performance and emissions challenges. The workshop is designed to discuss the theory and practical uses of "learning" technologies such as neural networks and model predictive control and how they can be combined with first principles and heuristics techniques to address emissions, efficiency and availability goals. Steve Piche, Director, Research & Development, and Willie Roland, Technical Account Manager, will lead the discussions, and Stan Conn, Director of Power Production, Owensboro Municipal Utilities, will present how his facility has been applying these advanced technologies as a means to provide real-time insight into the financial implications of O&M activities and decisions.

NeuCo and Pegasus customers and employees are also delivering a number of presentations this week (See the "2006 COAL-GEN Conference Info" table.)

*For more information, contact us at [info@neuco.net](mailto:info@neuco.net) or come by Booth 301 located directly to the right of the main exhibit hall entrance. ■*



## 2006 COAL-GEN Conference Info

Booth #301

### PRE-CONFERENCE WORKSHOP

#### Tuesday, August 15

8:00 AM – 5:00 PM Room: 203

#### Utility Asset Management Using Optimization Technology

Registration: Contact [hutchings@neuco.net](mailto:hutchings@neuco.net)

### PRESENTATIONS

#### Wednesday, August 16

9:00 – 11:00 AM Room: 208

#### SESSION: Emission Reduction through Combustion Optimization

#### "Minimizing NO<sub>x</sub> While Maintaining Efficiency at Northern Indiana Public Service Company"

*Dan Blue, Project Manager, NIPSCO;  
John James, NeuCo*

1:30 – 3:00 PM Room: 208

#### SESSION: Performance Optimization & Monitoring

#### "Combustion Optimization at Cinergy PSI Gibson Station"

*Ed Kramer, Cinergy PSI; Steve Piche, NeuCo;  
Hardey Beaver, NeuCo*

#### "The Path to Profit Optimization at OMU"

*Stan Conn, Owensboro Municipal Utilities*

#### Thursday, August 17

1:00 – 3:00 PM Room: 208

#### SESSION: Intelligent Sootblowing/DOE CCPI Updates

#### "Clean Coal Power Initiative Status Report: Sootblowing Optimization at Dynegy Inc.'s Baldwin Energy Complex"

*Joe Naberhaus, Director, Midwest Fleet Operations, Dynegy; Peter Spinney, NeuCo*

#### "Mercury Specie and Multi-Pollutant Control"

*David Wroblewski, NeuCo*

## Expert Spotlight



Mario Sanjuan, engineer with CPS Energy since 1989, first fell in love with boilers when he started working at Combustion Engineering in 1972. We asked Mario to share some of his boiler and NO<sub>x</sub> reduction experiences with us.

### How did you become known as the boiler/NO<sub>x</sub> go-to guy?

"I became involved in boiler work at CE, and became so fascinated with these machines and how they work that I spent more and more time talking with operations and actually crawling into the boilers so I could feel the conditions. You've really got to love boilers to do that.

In the mid 80's, while working at a utility start-up project, I was able to work with the operators to reduce high flue gas exit temperature. That was the first time I actually reduced NO<sub>x</sub> and it was what began my study into NO<sub>x</sub> formation that continues today.

When I joined CPS Energy in 1989, NO<sub>x</sub> was not a critical enough issue for CPS to budget for NO<sub>x</sub> control equipment. Instead I worked with operators to bring NO<sub>x</sub> down from 0.38 to 0.2 (lb/mmBtu) just by doing staging, reducing O<sub>2</sub> and fine tuning the control system. After that, we started to get budget dollars for various types of emissions control hardware such as low-NO<sub>x</sub> nozzle tips and low-NO<sub>x</sub> burners."

### What role did combustion optimization play in reducing NO<sub>x</sub> at CPS?

"We initially invested in NeuCo's CombustionOpt system to reduce the NO<sub>x</sub> peaks and valleys. Our NO<sub>x</sub> was on a roller coaster ride and it was important to keep excursions down and improve the consistency of our operations. NeuCo was able to help us straighten that line and further reduce NO<sub>x</sub> emissions."

### Can you offer the industry any advice?

"Two things: Do what you can to reduce NO<sub>x</sub> and streamline your operations up front before putting in a post-combustion system; and spend some time observing boiler operations and learning what a magnificent piece of equipment it really is.

Boilers are perhaps the most misunderstood piece of equipment in a power plant." ■

## News Flash

### NeuCo Acquires Pegasus Technologies



On May 26, NeuCo announced that it had completed the acquisition of Ohio-based Pegasus Technologies, Inc., bringing together two companies that have been 100% dedicated to delivering optimization software solutions to the electric power industry.

This combined organization now represents the new standard in optimization software solutions:

- NeuCo becomes the industry's only dedicated optimization software solutions company, with the most experienced team of optimization experts, the largest worldwide customer base, and the most advanced optimization technology solutions and platform.
- The Company owns 100% of its intellectual property and holds the largest optimization software patent portfolio in the power industry.
- NeuCo will now be designing and demonstrating solutions at two Clean Coal Power Initiative projects: the round 1 technology development initiative to deploy and demonstrate integrated optimization software systems at Dynegy's Baldwin Energy Complex and the round 2 mercury reduction initiative at NRG Texas' Limestone Plant. NeuCo, in partnership with the U.S. Department of Energy, will now be investing approximately \$35 million in the two development & demonstration projects, which will result in the most advanced and comprehensive suite of integrated optimization solutions to address the power industry's most critical asset optimization needs.
- As always, the Company is committed to 100% customer satisfaction.

"I am extremely excited about working with the Pegasus team and customers, many of whom were the early optimization visionaries in electric power," said Curt Lefebvre, President & CEO of NeuCo. "This acquisition expands NeuCo's North American business and provides an entrée into the Asian market through Pegasus' current operations in China. Our combined customer group will now have access to more resources, expertise and solutions than ever before, and will be part of an expanded user community."

Going forward, the Pegasus Technologies Division of NeuCo will be dedicated to supporting the existing and future needs of its customer base. Ray Johnson, formerly Chief Operating Officer at Pegasus Technologies, will serve as President of the division. The Pegasus team will be based in Austin, TX.

*Please see [www.pegasustec.com](http://www.pegasustec.com) and [www.neuco.net](http://www.neuco.net) for more information.* ■

## Product Spotlight

### SootOpt®

SootOpt is an online soot blowing optimization system that works in closed loop with existing soot blowing technology to take actions that factor in heat rate, emissions and reliability impacts, and other unit-specific objectives.

#### What does SootOpt do that's different from Intelligent Soot blowing Systems?

SootOpt's advantage lies in its ability to relate local boiler knowledge, based on whatever instrumentation is in place on a given unit, to broader plant goals by resolving the relationships between those goals and observed soot blowing practices, such as frequency, duration and sequencing design. SootOpt leverages the ProcessLink® platform's inductive, expert system and first principles modeling capabilities to make this possible under a wide variety of boiler designs and conditions, soot-cleaning systems and protocols, and a complex combination of operational and performance related goals.

#### How do SootOpt and CombustionOpt work together?

The integrated Optimizers compartmentalize the leverage that combustion tuning and soot cleaning have on boiler cleanliness as well as operational and performance-oriented

plant objectives. This allows both systems to be synchronized and providing sensitivity information to each other, so that optimization results in the best synergy, maximizing their collective impact on boiler efficiency, steam temperatures, opacity, slagging and NO<sub>x</sub>, while minimizing conflict.

#### What benefits might I expect from the system?

SootOpt minimizes unnecessary cleaning while executing high priority cleaning with maximum efficiency. The system biases soot cleaning activity so that priority is given to cleaning that impacts critical operational and performance goals such as improving heat rate, reducing the likelihood of tube erosion and fouling, controlling opacity, maintaining steam temperatures and minimizing NO<sub>x</sub> emissions.

#### How does SootOpt deal with boiler plugging?

SootOpt addresses boiler plugging by optimizing the sequence design, frequency and location of soot blowing while considering fuel and combustion process impacts. SootOpt also leverages engineering insights into each unit's unique problems. The system observes, models and gains understanding of the soot cleaning actions and objectives that provide sustainable results and then controls toward optimum operations. ■



Saint Louis, MO



## ProcessLink® USERS SUMMIT 2007

**Save the Date!**

ST. LOUIS, MO  
WESTIN ST. LOUIS  
MAY 20 – 23, 2007

The ProcessLink Users Summit is a great place for NeuCo and Pegasus customers to learn about how to get the most from their optimization solutions, help shape tomorrow's optimization applications, and network with the largest ever gathering of real-time asset optimization users, developers, implementers and visionaries.

#### Benefits to attending the 2007 Users Summit:

- Share case studies and best practices with more than 150 Power Industry attendees
- See the ProcessLink Optimizers in action during a tour of Dynegy's Baldwin Energy Complex, site of NeuCo's round 1 CCPI project
- Get hands-on experience with the latest products and software upgrades at the ProcessLink DemoZone
- Provide input into future NeuCo development efforts during customer-led working groups

**Please save the date in May for 3 days of networking and education at the ProcessLink Users Summit 2007!**

Contact [hutchings@neuco.net](mailto:hutchings@neuco.net) for more information.

## Ask NeuCo

**Q:** What are the features and benefits of NeuCo's Customer Support program?

**A:** Customer Satisfaction has been NeuCo's #1 goal since we were founded and it continues to be our #1 goal today.

NeuCo's Customer Support Program gives industry-leading support whenever, wherever and however it's needed. The program's dedicated team continuously monitors for ways to improve system utilization and benefits, provides regular reporting and benchmarking, and quickly resolves questions or solution-related issues through personalized technical support and account management.

Here are some of the features and benefits:

- **Technical Support** – NeuCo provides troubleshooting and remediation for Optimizer features and functionality via telephone, fax, Internet, and email.
- **Remote Monitoring** – NeuCo performs diagnostic system audits, creates performance reports and makes recommendations to better leverage Optimizer benefits.
- **Training and Onsite Checkups** – NeuCo's support staff performs site visits to review features and performance with personnel to train, share knowledge, and identify additional benefit opportunities.
- **Users Group Access** – Customer Support participants receive membership in the ProcessLink Users Group. The group allows ProcessLink users to communicate and share ideas with each other through online forums and the periodic users meetings. Users can also participate in beta programs and provide direction toward future optimization applications.
- **Customization** – The features within NeuCo's Customer Support Program can be further customized to fit the particular needs of individual customers.

The program is designed to make sure that all of NeuCo's customers derive maximum benefit from their optimization system, year after year. To achieve this, the program concentrates on both routine system maintenance and ongoing monitoring to ensure that NeuCo's products thoroughly support the organizational objectives of the plant over time. ■

## Employee Spotlight

Ray Johnson was named President of the Pegasus Technologies Division of NeuCo immediately following the May 2006 acquisition. Ray is responsible for project management and assisting in sales, marketing, and integration of operations with the NeuCo global business.



**Home:** Austin, TX

**First position in the Energy Industry:** "In 1997, Pavilion expanded operations into boiler optimization and control. As VP-Operations, I was responsible for managing those projects for utility customers."

**What do you like most about working in the Energy Industry:**

"The complexity of operations combined with the considerable uncertainty in both capacity and demand. This leads to numerous opportunities to deploy advanced optimization solutions in real-time to improve profitability for the utilities."

**What does this acquisition mean to Pegasus customers?** "While Pegasus was one of the first companies to deploy advanced technology to the optimization of boilers for NO<sub>x</sub> reduction and heat rate improvements, NeuCo has expanded the available solutions to address additional opportunities that exist in many fossil-fired steam generation stations. NeuCo has also developed unit performance applications and Advisors that provide a unique approach to addressing the issues of performance and reliability. Pegasus customers will be very happy with the special program NeuCo is offering which allows them to upgrade to the most modern technology available for combustion optimization and to prepare for the deployment of additional integrated solutions that provide significant benefits."

**What is your favorite part about traveling to Boston?** "Boston's history, culture and ethnic diversity are all some of the reasons the city is such a pleasure to visit. Plus I love riding the Green Line (MBTA) from Park (Street Station) to Copley (Square). Seriously!"

**Family:** Judy (Wife), Katy (Daughter) and Clay (Son) ■

## NeuCo Calendar

NeuCo is scheduled to be at the following conferences:

### 2006 MEGA Symposium Booth #305

August 28 – 31, 2006 | Baltimore Marriott Waterfront, Baltimore, MD

*Highlights:* Paper and presentation on Dynege's Baldwin Energy Complex

### 2006 Power-Gen Conference Booth #TBD

November 28 – 30, 2006 | Orange County Convention Center, Orlando, FL

*Highlights:* Papers and presentations on AMP-Ohio, JEA Northside and Dynege's Baldwin Energy Complex

If you are going to be at any of these conferences, or are interested in working with NeuCo on a conference paper, please contact Jennifer Hutchings at [hutchings@neuco.net](mailto:hutchings@neuco.net) or 617-425-3375 for more information. ■