KVB-Enertec

THE CEMS Reporter

CONTINUOUS EMISSIONS MONITORING SYSTEMS NEWS

SPRING 2001

MIND OVER MATTER:

FROM THE CUSTOMERS' LINE OF SIGHT

Insight. When we say someone has insight it generally indicates an understanding beyond factual knowledge. It defines a perception sharpened through experience, awareness and asking the right questions.

Insight. It's what can be achieved when a vendor partners with customers and listens to their needs. It's the merger of different but equally important talents and perspectives.

Doug Braff, KVB-Enertec steering committee chair and a project leader at Minnesota Power, has worked to keep the customer product development on track. As a result, the customer-charted inSight2001 suite of applications will be available in June.

inSight2001. It's CEMS software entirely based on the needs and requests of customers. It is an endeavor that has come to fruition with the first release of a new product line demonstrated at the KVB-Enertec East Coast User Group Meeting that was held in conjunction with the EPRI Conference mid-May 2001.

For the past 12 months, Doug Braff, KVB-Enertec steering committee chair and a project leader at Minnesota Power, has been working behind the scenes to keep the customer side of the shared inSight product development moving steadily forward. A veteran with over 22 years experience in emissions monitoring software, Braff's leadership has served to elicit the best from his fellow steering committee members and other users as they generated a wish list of software enhancements at the request of KVB-Enertec.

"In our business, software upgrades generally come about as a result of changes in EPA regulations or recommendations from field engineers who spot a problem. The KVB-Enertec approach with inSight was to add a third dimension to the equation by focusing on the experience of their customers," Braff explained.

It started in September 2000 at the KVB-Enertec Western User Group Meeting where eleven utilities were appointed to the company's newly-formed steering committee and asked to drive the development of a list of new software features to improve their operations. KVB-Enertec presented the new committee with a timeline and the other support they needed to get started.

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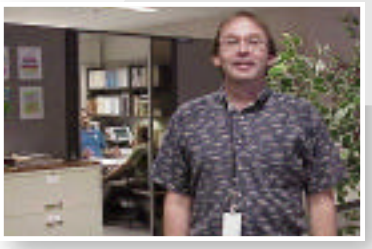
WORKING WITH A&Es

In mountain climbing, team members often progress up the slope tied together so that each climber is responsible for maintaining the group's balance. At other times, the climbers travel independently.

With continuous emissions monitoring systems, projects often are part of a larger, integrated plan involving a team bound together in a timeline developed by an A&E (Architect and Engineering) or an EPC (Engineering, Purchasing and Construction) company. CEMS vendors also are being called on to work with third-party providers, such as manufacturers of low-NO_x turbine generators, to ensure that emissions monitoring is efficiently integrated into the overall system design. As with mountain climbing, skill, timing and teamwork are essential to maintaining the forward momentum of the group.



Black & Veatch control electrical project design engineer Ivan Engeman says that competitive pricing, low monitoring capabilities and the system quality are important criteria for a CEM system.

"If a CEMS isn't designed right and doesn't pass the certification RATA, the plant doesn't run," said Rudy Amaya, a control systems engineering manager at Duke Fluor Daniel who has been working with KVB-Enertec for over 12 years. "Monitoring systems need to be designed with an understanding of how the specific boiler manufacturer, the stack design and the site plan for the shelter can affect the results. It becomes disruptive, and can add significantly to the cost, if these elements aren't coordinated," he said.

In partnering with a CEMS vendor on a project, Amaya considers several factors. "The software package is critical," he said. "A good reputation in the market and the stability of having been around for a while is also important. Proximity to the project is helpful, especially in terms of staying on track since there are large penalties if we are late. Good field support is essential for the plant's long-term operations and maintenance."

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Working with A&Es (continued from page 1)

Duke Fluor Daniel is in final tests for a plant it has built in Odessa, Texas, with KVB-Enertec CEM systems. A Florida Power & Light plant near Austin, Texas it developed also is expected to go online in June 2001 with KVB-Enertec NTDAHS software.

Amaya added, "In today's world, if a plant doesn't have an emissions monitoring system, it doesn't operate. Permit levels are more stringent and detailed reports must be sent to both the state agency and the EPA. Older plants are upgrading to meet the new requirements and new plants want their CEMS tied into the rest of their operations. Our job is building plants and we partner with vendors like KVB-Enertec to integrate these systems and ensure on-time delivery and long-term efficiencies."

Black & Veatch, another well-known A&E, agrees that newer technology and lower emissions are generating a closely-integrated approach to monitoring. "Emissions reduction technology is improving and therefore, a CEMS capable of monitoring the lower emissions levels is required," said Ivan Engeman, a Black & Veatch control electrical project design engineer.

"We maintain a staff of permit professionals with extensive knowledge of the new and changing regulations in different states. We also have an Air Quality Control System group that studies new monitoring and pollution control technologies and can advise on the latest advances while the plant is still in the design phase," he said.

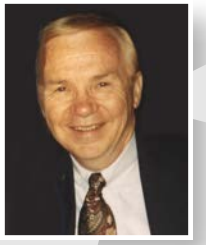
In selecting a CEMS vendor, Engeman looks at competitive pricing, the ability to monitor the low emission levels required by the facility's permit and the quality of the system. He is working with KVB-Enertec on a simple-cycle combustion turbine at the Sunrise power plant near Bakersfield, Calif.

"In this case, a key concern was the ability of the CEMS to meet very low emissions monitoring requirements. We needed a high-quality system because any noise or drift could generate erroneous readings and possibly cause us to miss our emissions guarantee. The CEMS also is being used to make sure the turbines are precisely tuned, so accuracy is especially critical," Engeman said.

It is not uncommon for the monitoring system to be closely tied into the turbine operation. This was the case with a recent installation where low-NO_X turbine generator vendor General Electric was responsible for recommending the CEM system.

A consultant to GE who works on the low-NO_X projects, Frank Bailey said the company provides the CEM system as part of an integrated design in about 10 percent of its installations. On these jobs, it requests bids for the monitoring system from a select list of approved vendors.

A recent project for the Calpine Westbrook Energy Center was a GE 207FA Combined-Cycle Gas Turbine project that used ammonia injected SCR (Selective Catalytic Reduction) to provide very low NO_X emissions. "After KVB-Enertec successfully passed our vendor evaluation and selection criteria, it was chosen to provide the CEMS for this project. KVB-Enertec was a good fit for this project and by delivering a complete and well-designed system to the site right on schedule contributed significantly to the project's success," Bailey said.



GE provides the CEM system as part of an integrated design of its low-NO_X generators in about 10 percent of its sites, according to Frank Bailey, a consultant who works with the company.

KVB-Enertec has earned the respect of third-party vendors through its reputation for quality, technical expertise, commitment to on-time delivery and field results. It understands that even a short delay at the wrong time, a slight tug in the rope, can throw everyone off balance.

inSight2001

Mind Over Matter: The Customers' Line of Sight (continued from page 1)

In response, each of the steering committee members suggested five software enhancements that would help them monitor their emissions more efficiently. Additional recommendations were solicited at open forums held at the subsequent KVB-Enertec Western and Eastern Users Groups.

The list was debated and refined during committee conference calls and through email dialogues. "The steering committee combined duplicate ideas and eliminated requests that were fixes rather than true enhancements," Braff explained. "Then we discussed the scope and development timeframe of the remaining list with the KVB-Enertec software team. We didn't want to prioritize a feature that would take years to complete and stall the next three suggestions. We tried to balance our requests by looking at the feasibility, time to develop and value to our operations."

"The steering committee turned out to be a diverse group, comprised of both large and small utilities using different technologies and representing different parts of the country. Sitting down and talking with this group was always a learning experience and truly enjoyable in itself," he said.

KVB-Enertec has an open door policy and encourages customers to work closely with its employees, providing direct access to its internal knowledge-base on regulatory and technical issues. With inSight, the tables were turned and the company tapped into the expertise of its users. The new product line is planned as an ongoing series of software enhancements based on the specific input of its customers.

The first release is scheduled for June and will feature more than 10 new components. The inSight2001 applications either improve operations or lower maintenance and labor costs. They are not maintenance upgrades or fixes to the existing KVB-Enertec data acquisition and handling system.

"Ultimately, we expect to broaden the process with brainstorming and conversations among users carried out over the Web", Braff said. Currently, customers can email their suggestions for future products to the steering committee at NTDahsSteer@kvb-enertec.com,

"We're listening," he added.

So the steering committee still has its work cut out for it. Even with the release of inSight2001, there's the next list to consider as the dialogue continues.

For more information on inSight2001, contact:
Mike Hammond at mhammond@kvb-enertec.com
or Katie Lindblom at klindblom@kvb-enertec.com

HOW LOW CAN IT GO?

LOW NO_X MONITORING WITH AN AMMONIA INJECTION SCR

Emissions reduction technology today is driving the development of extremely accurate, low-level continuous emissions monitoring systems. Low-NO_X gas turbine generators are cutting emissions almost in half, from an average of permitted levels of 15 ppm a few years ago to 9 ppm or lower. Selective Catalytic Reduction (SCR) systems using ammonia injection techniques are reducing this even further, to the point of 2.5 ppm.

The true test of a monitoring system is how accurately it can measure these extremely low-level components in the presence of a corrosive chemical like ammonia. Add extreme weather conditions to the mix, and you have the situation at the Calpine plant in Westbrook, Maine. The heated sample line at this ammonia injection, combined-cycle gas turbine installation is certified for temperatures ranging from -40º to 120º.

The Calpine Westbrook Energy Center went commercial in February 2001 with two GE 7FA gas turbines and Heat Recovery Steam Generators (HRSG), and integrated KVB-Enertec CEM systems. The combined generating operation involves natural gas turbines that use dry low NO_X combustion technology which can emit reduced NO_X at levels as low as 9 ppm. A SCR scrubber was installed to bring the emissions down to the 2.5 ppm permit levels.

Originally designed by GE, the generators came in on time and on budget. A KVB-Enertec CEMSCAN™ is used for both regulatory monitoring and process control, according to Doug Kriebel, KVB-Enertec project engineer,

Both units have been certified for NO_X and the system also monitors oxygen, carbon monoxide and ammonia. An 8'X12' shelter which houses the sample handling and analysis system is mounted at the base of each stack and the probe extracts the sample with a close coupled ammonia converter. The converted and unconverted measurements are used to determine the ammonia slip at the stack and assist in controlling the scrubber process.

"The full NO_X, CO and O_2 systems passed the EPA RATA, and wet chemistry tests specified by the state verified the accuracy of the ammonia measurement," Kriebel said. KVB-Enertec designed, built, installed and certified the turnkey continuous emissions monitoring systems.

"We have standardized the CEMSCAN system in a configuration that meets the growing demand for low-NO_X and ammonia monitoring. The standardized system allows us to provide customers an economical and effective monitoring solution to this difficult application with a timely delivery."

JUST KEEPS HUMMING ALONG AT PEAK PERFORMANCE

Gas turbine generators are efficient to operate and produce electricity with lower emissions and less labor. These sites often function with minimal staffs and, at times, even have no permanent on-site personnel.

Yet, preventive maintenance and access to emergency services remains a critical concern, as with any continuous emissions monitoring system. Neglecting routine procedures is generally a violation of state and EPA requirements, and an improperly maintained system can lead to unplanned downtime, erroneously high readings, fines and plant closures.

To address this need, KVB-Enertec has developed a variety of maintenance programs for low NOx, scrubber and ammonia injection CEM applications that offer plants the highest caliber service without hiring additional support staff or time-consuming and costly training.

Maintenance and emergency response programs have been designed to meet your plant's needs, from annual and quarterly testing to daily remote dial-ups that check on the health of the system. For more information, contact George Marshall, KVB-Enertec service manager, at gmarshall@kvb-enertec.com or your KVB-Enertec regional sales manager.

NEWS BRIEFS:

HAPPENINGS AT KVB-ENERTEC

- Look for a new and enhanced KVB-Enertec Web site with more product information and direct access to technical data in June. The new site can be accessed at the existing address, www.kvb-enertec.com. It will be easier to navigate and provides more opportunities for interfacing with technical and marketing staff.
- The next EDR training program for Focus 2.1 will be held June 7 and 8 in Hatfield, Pa. The program includes hands-on instruction in developing EPA reports and a regulatory overview. Details are available at: www.kvb-enertec.com or by calling (215) 996-4064.

CONTINUED KVB-ENERTEC GROWTH PROMPTS NEW HIRES AND PROMOTIONS

As a turnkey, life-cycle CEM vendor, KVB-Enertec offers a depth of knowledge and service to our customers not available anywhere else in the industry. We realize that maintaining and expanding the knowledge-base of our employees is extremely important. To maintain our high standards and continued growth, we are pleased to announce the following promotions and additions to our staff:

- **Jim McGeoch** has been appointed chief operating officer with responsibilities for operations at KVB-Enertec. He has been with the company for over six years and is well known to our customers. McGeoch's understanding of the industry and commitment to meeting the needs of monitoring users is a valued asset to both our customers and staff.
- The new KVB-Enertec vice president of sales and marketing, **Mike Hammond,** is a transplanted Brit who brings over 30 years experience in the industrial instrumentation and control industry to our company. Much of his career has focused on process control and environmental monitoring systems in management positions with the Taylor Instrument Company, Fisher Controls, Servomex, Fluid Data, Anarad and Forney. Hammond is working with KVB-Enertec regional sales managers and representatives to apply the company's expertise to simplifying customers' air monitoring solutions.
- **Craig Petrosky** has joined our organization as the director of service to ensure that we always respond to your needs with quality work. We also have formed a new training department. **Becki Oswein,** training manager, comes to us through our acquisition last year of EC Systems and will be working with the KVB-Enertec staff to offer expanded classroom style and on-site courses.

NEW CONTRACTS:

SELECTED NEW CONTRACT WINS

- **TVA** has ordered 30 process monitoring systems for $1.8 million as the first stage of a three-year, $8 million contract for 120 systems awarded to KVB-Enertec. The KVB-Enertec PROSCAN™ systems will assist TVA in controlling ammonia use in Selective Catalytic Reduction (SCR) applications by providing continuous monitoring of NO_x and CO_2 in the flue gases at inlet and outlet points.
- KVB-Enertec recently won a $560,000 contract to replace 15 data acquisition and monitoring systems (DAHS) at **Northern Indiana Public Service (NIPSCO)**. The utility provides electricity and natural gas in the northern third of Indiana. The software change was prompted by their concerns over the viability of future support of the previous systems. KVB-Enertec NTDAHS™ was selected for its flexibility, the ability to meet NIPSCO's needs and price.
- Prompted by the need for EDR 2.1 upgrades, **TXU Business Services Company** has ordered KVB-Enertec data acquisition and handling systems for 24 plants. The $1.7 million order is for 54 KVB-Enertec NTDAHS units and four trailer RATA testing systems. The contract also includes 24/7 software maintenance and an interface to the plant's historian system over an internal LAN/WAN.

CORPORATE OFFICE
2849 Sterling Drive, Hatfield, PA 19440
Tel: (215) 996-9200 Fax: (215) 996-9201

WEST COAST OFFICE
30191 Avenida de las Banderas, Suite B
Rancho Santa Margarita, CA 92688-2144
Tel: (949) 766-4200 Fax: (949) 766-4000

www.kvb-enertec.com
info@kvb-enertec.com

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KVB-ENERTEC
30191 Avenida de las Banderas, Suite B
Rancho Santa Margarita, CA 92688-2144

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