



THE

CEMS Reporter

CONTINUOUS EMISSIONS MONITORING SYSTEMS NEWS

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FAST-TRACK LOW-NO_x TURBINE PROJECTS BEAT SUMMER OUTAGES



After successfully starting-up fast-track systems, KVB-Enertec is providing 24/7 turnkey service including maintenance, test assistance, remote system monitoring, DAHS reporting and emergency response. KVB-Enertec Field Support Technician Chris Wasem visits a site.

that brought efficient, simple-cycle gas turbine plants online as quickly as possible. KVB-Enertec supplied a total of 16 continuous emission monitoring systems (CEMS) and data acquisition and handling systems (DAHS) at 9 plants on the east and west coast under these fast

While news of the California power crisis garnered national headlines last year, other regions across the country began to crunch their own energy numbers. Utilities in large metropolitan areas suddenly realized major power shortages were fermenting over their own horizons. Cities on both coasts had to move quickly to avert rolling blackouts projected for the following summer.

KVB-Enertec played a key role in preventing the shortfall by providing systems to innovative projects

track programs. It installed the systems and provided certification services to launch the much-needed power at large groups of plants simultaneously within a short two-to-three month window. Today, KVB-Enertec 24/7 service and emergency response teams continue to help ensure the power remains available.

The emergency plant-building programs were undertaken during the fall of 2000 with the goal of generating enough electricity to meet peak demand that was projected to start around June 2001. The new state-of-the-art systems would allow consumers to stay cool and businesses productive even with expected record-breaking summer heat. The risk was in the timing. There was less than ten months to build, install and certify systems at the 9 plants.

Promised low emission levels also were a major component of the plan. To ease air quality concerns around the plants, permit levels were set as low as possible with NO_x limited to 2.5 parts per million (ppm) for a majority of the systems. The clean-burning turbine technology was augmented with Selective Catalytic Reduction (SCR) scrubbers using ammonia injection to meet the stringent requirements.

General Electric Packaged Power was awarded the contract for most of these turnkey low-turbine plants. GE looked to KVB-Enertec for the continuous emissions monitoring systems and regulatory support to be integrated into the units.

A Winning Start-Up Strategy

"It's challenging to measure emissions at these low levels," said Trey Sims of General Electric Packaged Power. "KVB-Enertec had previous experience successfully integrating monitoring systems with gas turbines equipped with SCRs, which was reassuring to the utilities," he said.

The 16 turnkey CEM systems all were configured with KVB-Enertec NT-DAHS™ software. Besides supplying the

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KVB-ENERTEC TRAINS TXU ENERGY STAFF ON 54 SYSTEMS



Realizing that "one-size" general education would not meet their needs, TXU Energy contracted KVB-Enertec for topic-specific training courses. Bob Wiemuth, senior engineer at TXU Energy, helped organize the program.

With ever-changing regulations and volatile operating conditions, sustaining an effective monitoring program requires alert, knowledgeable employees at all levels in the organization. Not understanding the productivity features built into a system can cost time. Mishandling data can lead to inaccurate emissions reporting, fines or a plant shut down.

With so much riding on precisely defined CEM operations, training has become a vital part of every successful monitoring program. Yet "one-size," general-purpose education rarely fits all. Operators, technicians and managers all work with an emissions monitoring system differently. Recognizing there is a variety of training needs, the professionals in the KVB-Enertec training department have developed courses to help people at every level in a plant's organization quickly come up to speed and get the most from their CEM systems.

This focused approach to CEM training was an essential part of the start-up plan during a major system upgrade at TXU Energy. Helping their employees perform at their personal best is a priority for the power generator. So when it recently installed 54 KVB-Enertec data acquisition and handling systems (DAHS) at plants throughout Texas, it also trained 70 employees who will work with the software in various job functions. KVB-Enertec was contracted to deliver 16 onsite classes over eight days in April through July 2001.

Each KVB-Enertec training session detailed procedures aimed at a specific employee level, including daily operations, environmental reporting and technical support. The classes were designed as either four-hour or full-day seminars and brought together staff from three or four facilities.

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MIND OVER MATTER: MAKING REGULATIONS WORK FOR YOU

For those of us working with continuous emissions monitoring systems, the regulations we deal with every day are as much a part of life as the air we breathe. Ours is an industry driven by constantly changing rules and their technical interpretations. With so much invested in this endeavor, we need to create tangible value from our compliance efforts.

KVB-Enertec is taking the lead in this endeavor. We have recently expanded our regulatory infrastructure by creating two new positions that enhance the existing expertise in our organization. Ed Wentling is now responsible for customer service and field support reporting issues. Compliance issues relating to software now fall in the domain of Len Leschinsky. Building on his twenty-year career at KVB-Enertec, Keith Crabbe continues to ensure proposed system configurations meet customers' regulatory obligations. Renee Guck, a ten-year company veteran, is the



KVB-Enertec regulatory specialists Len Leschinsky (left) and Ed Wentling in the KVB-Enertec East Coast office help customers generate value from their investment in regulatory systems.

expert on QA and monitoring plans. She is also the behind-the-scenes person who compiles and formats test results for customer submittal.

Each of these professionals works with CEM regulations on a daily basis and each has experience interfacing with federal, state and local agencies. Their assignment is to help customers apply monitoring regulations in a way that generates the most value from their CEM systems.

"How well a plant understands compliance issues can affect its monitoring accuracy, its productivity, even its power generation strategies. Our in-house regulatory knowledge is based on working with hundreds of customers over the last 30 years. Now it will be easier for customers to take advantage of this expertise," said Jim McGeoch, KVB-Enertec general manager.

With complex regulations and changing technical interpretations, the intricacies of applying air monitoring rules can be daunting. One of Ed Wentling's important tasks is to work with customers so that electronic data reports (EDRs) are submitted properly. Reports generated by the KVB-Enertec team generally earn the highest EPA ratings. Proprietary data checking software finds errors that are corrected before EDRs go to the agency, saving customers time, labor and frustration.

Customer-generated reports often contain errors as mundane as entering the wrong monitoring ID numbers or as complex as incorrect data substitution. One plant routinely nullified opacity data whenever window dirt values rose above four percent. Len Leschinsky caught the subtle error: In fact, the EPA only requires alarming this condition, not invalidating the data. Changing the configuration reduced monitoring downtime. Leschinsky is well aware of how details can affect regulatory issues. Prior to joining KVB-Enertec, he interpreted EPA monitoring proposals at a major east coast utility, drafted the

official company reply, and served as co-chair of the CEM Ad Hoc Committee for the Pennsylvania Department of Environmental Protection.

This type of hands-on experience has been fertile training ground. The system knowledge Keith Crabbe acquired interfacing with the South Coast Air Quality Management District (SCAQMD) and other regulatory agencies over the years has shaped how he approaches his current job. "Customers often assume they need to duplicate a previous configuration to meet permit requirements, but this isn't always the case," Crabbe said. "For example, less expensive alternatives to stack flow monitoring might apply to the installation."



Keith Crabbe and Renee Guck look out for customers' regulatory interests in the KVB-Enertec West Coast office.

Developing the required monitoring plan that describes how the plant will meet its compliance obligations falls to Renee Guck. A valued resource, Guck routinely fields over a hundred customer questions a month on required procedures. Precise interpretation and experience is key here as well. For example, a downed turbine generator does not necessarily have to create certification headaches. Many customers are unaware that some procedures, such as drift testing, can continue when the system comes back online without invalidating the previous data.

Attentiveness to detail and innovation are essential to moving the industry forward and to bringing value to customers, according to McGeoch. "There's a thin line between simply meeting compliance requirements and adding value. Our vision is to supply systems that meet reporting requirements and also offer customers a productivity return on their compliance investment."

KVB Trains TXU Energy Staff (continued from page 1)

"With the topic-specific classes, we were able to help people integrate the knowledge they need to succeed without overwhelming them with all the complexities of an organization-wide CEM program," said Bob Wiemuth, a senior engineer at TXU Energy. "Through experimentation, we realized that hands-on training is especially important and included an online element in the sessions," he said.

Becki Oeswein, KVB-Enertec training manager, worked closely with the utility to customize the classes. "Becki presented the material in manageable segments, then had everyone work through examples at the end of each chapter. Adding new software is never a seamless process, but everyone walked away from the training feeling reasonably comfortable," Wiemuth said.

A KVB-Enertec regulatory specialist taught the advanced classes on generating reports. To ease the transition to the new software, the utility also used these higher-level classes to train two in-house administrators as the first line to assist staff with questions that arise during the ongoing operations.

Concise, specialized training is important to the industry as a whole and KVB-Enertec has developed standardized courses organized along similar lines. KVB-Enertec basic CEM training covers system fundamentals. Its eight-hour advanced seminar incorporates hands-on DAHS exercises and an administrative course offers instruction on generating electronic data reports (EDRs).

It can take a lifetime to become an expert in continuous emissions monitoring systems. The KVB-Enertec focused approach to system training is improving performance and productivity for its customers, one step at a time.

new systems, KVB-Enertec was responsible for their installation, start-up, troubleshooting and certification.

According to Craig Petrosky, KVB-Enertec director of service, "We had to constantly be aware of all the variables and respond accordingly during start-up. Operation was required in time for the summer peak at most of the plants. The aggressive schedules meant we had to synchronize our teams' efforts with the testing companies, the utilities, the operations companies and GE Packaged Power. We worked closely with each group to resolve technical and logistical issues and to eliminate problems without impacting the overall schedule."

The start-up process involved terminating the sample lines, ensuring all external plant signals were integrated into the DAHS and other procedures. KVB-Enertec also worked out a measurement method to calculate ammonia slip for some of the applications. Testing and certification included Seven Day Drift, Linearity, Response Time and RATAs.

With assistance from KVB-Enertec, the customers accomplished full certification on each group of CEM systems in less than three months. The regions achieved their goals and the extra power went online as scheduled.

Retaining Expert Maintenance

This hands-on experience was one of the reasons the utilities also purchased the KVB-Enertec turnkey maintenance plan. It often takes a utility three to five months to hire a specialist experienced in continuous emissions monitors to handle the required ongoing service. "KVB-Enertec has been doing this for years and our service technicians know the equipment when they walk in the door," Petrosky said.

To keep the systems operational, KVB-Enertec carries out daily and weekly checks, both onsite and remotely through the DAHS software. Its service technicians perform monthly and quarterly preventative maintenance as required in the plants' QA/QC plans and they provide 24-hour software support. KVB-Enertec also generates federal, state and local reports, including electronic data reports (EDRs) for customer submittal to the Environmental Protection Agency.

The service group's track record of providing high levels of system availability under the KVB-Enertec full-maintenance program is good news for the residents and businesses in the regions. Energy consumption continues to rise across the country and concerns about power availability are making new headlines. Providing monitoring systems on the fast track for clean-burning turbines, integrated with complex emissions-reducing technologies such as SCRs, and then maintaining uptime has become an essential part of the strategy to keep the energy flowing.

USERS DIALOG DRIVES PRODUCT ENHANCEMENTS



KVB-Enertec User Group Steering Committee members discuss a list of customer-generated software enhancements and seek additional input from colleagues at their semi-annual meeting held in San Antonio, TX, during November. The meeting provided an opportunity for customers to learn from each other, update their monitoring knowledge and influence future product development.

The steering committee manages an ongoing project of developing product suggestions to improve plant productivity. On the committee panel from left to right are Al Pando of Mirant Mid-Atlantic (substituting for Dolores Lopez), Michael Stewart of Florida Power & Light (FPL), Martin Shankle of TXU Energy, Bill Schmidt of Lansing BWL, Becky Hurst of PacifiCorp, Kevin Thomas of Minnesota Power Cooperative, Steering Committee Chair Doug Braff of Minnesota Power, and Shawn Hussong of Oklahoma Gas & Electric (OG&E). Other steering committee members not shown are Steve Christian of PPL Montana, Don Fleishman of Detroit Edison, Chad Campbell of Public Service of Colorado, and Paul Ostapuk of SRP.

USERS HIT THE BOOKS AT REGULATORY WORKSHOP



Training Manager Becki Oeswein works with Eric Davis of El Paso Electric during a KVB-Enertec Regulatory Workshop held during the November user group meeting in San Antonio. The course provides background for generating electronic data reports (EDRs) and other regulatory issues. For information on course content, email boeswein@kvb-enertec.com or call 215-996-9200 x4136. Upcoming KVB-Enertec Regulatory Workshops are tentatively scheduled for:

- February 19-20, 2002 in Orange County, CA
- May 7-8, 2002 in Fort Washington, PA
- August 13-14, 2002 in Fort Washington, PA

WE'LL BE THERE

LOOK FOR KVB-ENERTEC AT THESE EVENTS

- EUEC (Electric Utilities Environmental Conference), January 22-23, 2002, Tucson, AZ. See KVB-Enertec at Booth #1 and 2. KVB-Enertec Director of Engineering Bill Eberhardt will present a paper co-authored with Marc Horstman of GE Packaged Power and Jay DeMartino of Hamon Research Cottrell on monitoring low NO_x with ammonia.
- ICAC (Institute of Clean Air Companies), February 12-13, 2002, Houston, TX. See KVB-Enertec in Booth #24. Bill Eberhardt will present a co-authored paper "Challenges of Measuring Low NO_x and NH₃ Emissions on Combustion Turbine Applications"
- Western Turbine Users Group, March 10-13, 2002, Tucson, AZ, Tucson Convention Center
- Electric Power Conference, March 19-21, 2002, America's Center, St. Louis, MO. See KVB-Enertec at Booth #515
- KVB-Enertec NT-DAHS User Group Meeting, May 20, 2002, Chicago, The Drake Hotel; held in conjunction with the EPRI CEM conference.
- EPRI CEM User Group Meeting, May 22-24, 2002, Chicago, The Drake Hotel

SELECTED NEW CONTRACT WINS:

**EXELON POWER RENEWS 24/7 PLAN
TVA RELEASES PROSCAN ORDER**

Extending an initial one-year contract, Exelon Power has renewed its KVB-Enertec full-service maintenance program for three additional years. "This partnership has achieved an average availability performance rating exceeding 99% for all sites combined. Our shared efforts are producing notable results," said Steve Toth, manager, Exelon Power Technical Services.

Under the 24/7 plan, KVB-Enertec is responsible for the operation of CEMS at six plants throughout southeast Pennsylvania. Service technicians perform maintenance during scheduled site visits, monitor the system remotely, and assist with required RATAs and other system audits. The program includes both daily services and emergency response.

Other significant contract wins include:

- TVA has released an order for four process monitoring systems consisting of six monitoring points per system as the second stage of a three-year contract with KVB-Enertec. The PROSCAN™ systems will assist in controlling ammonia with Selective Catalytic Reduction (SCR) applications on the coal fired boilers by continuously monitoring NO_x and CO₂ in flue gases at inlet and outlet points.
- KVB-Enertec will supply 11 time-shared CEMS with NT-DAHS software to monitor emissions from 22 gas turbines for PPL Global. The systems will be installed at plants in Sundance, AZ and University Park, IL.
- Austin Energy has ordered a low-NO_x CEM system with NT-DAHS as a new installation for its Sand Hill facility. It also will be replacing existing Monitor Labs data acquisition and handling systems (DAHS) with KVB-Enertec NT-DAHS™ software on two stacks at its Decker plant and on four stacks at its Holly Street plant. A laser-based opacity monitor will be installed at the Decker plant. All the systems are covered under a KVB-Enertec 24/7 software support and maintenance program with ongoing and emergency response service.



Photo by Becki Oeswein

**TO OUR CUSTOMERS AND FRIENDS
FROM OUR FAMILY TO YOURS
HAPPY NEW YEAR!**

**WITH OUR BEST WISHES FOR A YEAR OF JOY
AND PROSPERITY**

A DAZZLING YEAR OF HOPE AND PEACE

ABOUT US

KVB-Enertec has built and designed more regulatory-based continuous emissions monitoring systems than any other supplier. We provide a full range of CEMS life-cycle services, including fabrication, start-up, certification, data acquisition and handling systems, opacity monitoring, maintenance, quarterly reporting and emergency response. At KVB-Enertec, we make air monitoring simple.

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