

FOMIS Case Study The Stanton Energy Center



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— Anthony J. Engelmeyer, Sr. Engineer, Orlando Utilities Commission

Organization: Florida's Stanton Energy Center is a technologically advanced power generation plant with a diverse portfolio of environmentally friendly fuel sources. The forward-leaning nature of Stanton's mission keeps the utility abreast of scientific and regulatory advances.

Challenge: Mitigate performance issues with a key condensate pump, comply with new mercury control standards under tight deadline, and develop a hands-on training curriculum for a new generation of workers.

Solution: An open exchange of industry expertise through the FOMIS knowledge base, conference, and benchmarking forums plays a central role in the evolution of a safe, efficient, and ecologically sensitive operation.

Results: FOMIS has helped the Stanton Energy Center maintain a high environmental compliance posture and boost its reputation as an increasingly green provider of energy for nine million Florida citizens.

The Curtis H. Stanton Energy Center stands squarely in the middle of 3,200 acres of pristine nature in east Orange County, Florida. Stanton's Unit 1 came online in 1987 at 460 Megawatts, with Unit 2 tagging along some nine years later at 480 Megawatts. These two coal-fired plants leverage state-of-the-art environmental controls and technology to continually exceed state and federal operating requirements.

In the years since these two units went online, Stanton's energy portfolio has diversified. Today, the aptly named “energy center” serves nine million customers with an array of eco-laudable fuel sources that contribute to a sizable reduction in Stanton's original planned use of coal. The utility's third and fourth units are two natural gas combined cycle units, along with three newer solar farms, and a landfill gas facility whose captured methane alone reduces emissions by thousands of megawatt hours. Participating in this dynamic operation is Tony Engelmeyer, Senior Plant

Engineer with Orlando Utilities Commission, which manages the Stanton plant. “For a small municipal utility, we're forward-thinking and very involved in leading-edge power generation,” he reports. “Our motto ‘The Reliable One has evolved to also include ‘The Sustainable One, too,’ as we strive to become the greenest utility in the Southeast.”

Given the breadth and depth of information at their command, Stanton just might make it. Augmenting the Stanton Energy Center's extensive in-house expertise is a comprehensive knowledge base and information exchange known as the Fossil Operations and Maintenance Information Service (FOMIS), a deep repository of information for power industry professionals. Decades of Operation & Maintenance issues have accrued to the FOMIS knowledge base, as have the innumerable hard-won solutions to these issues. The result is a wellspring of power plant knowledge, logged and tagged in a readily accessible database to FOMIS members.

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“A lot of our employees use the FOMIS database to do research or post queries,” Engelmeyer says. “The knowledge database is a huge resource. Being a smaller utility, we have a small fleet and a small staff compared to larger independent investor-owned utilities. But our access to the FOMIS database, to all of the historical records that it contains, and our ability to post a query on whatever emergent situation we’re facing; it’s incredible.”

MAINTAINING PLANT PERFORMANCE AND COMPLYING WITH POLLUTION CONTROL STANDARDS

FOMIS’ 2,400 contributing members hail from 100 plants spread across 40 utilities, and include the energy sector’s full complement of professional roles, including Operations & Maintenance, Engineering, Environmental, HR, Plant Management, Safety, Turbines, and other disciplines. This incomparable resource is leveraged by power plant professionals in the United States, Australia, Ireland, Saudi Arabia, Portugal, Israel, Mexico, and Spain.

Engelmeyer cites a recent example of FOMIS at work. “We saw the performance fall off for one of our condensate pumps—something we hadn’t experienced before. We consulted the FOMIS database to see what types of

multistage issues have affected other large vertical pumps. We wanted to know what have other people seen and how they dealt with the issues. After delving into the database we basically confirmed our own suspicions – we were looking at a 30-year-old wear issue, and it was not an unreasonable action to pull the pump and send it out for remedial work.”

In another instance, FOMIS helped the Stanton team negotiate a tight tech turnaround when the Environmental Protection Agency (EPA) issued more stringent mercury control standards for coal- and oil-fired power plants. Stanton engineers were heavily involved in Stanton’s move to comply.

“We wanted to install a continuous emissions monitoring system in both our coal unit stacks, but the new mercury monitoring for units with scrubbing technology posed a lot of difficulties involving trying to measure something in very trace amounts in the flue gas stream.”

Mercury, in trace quantities, is a notoriously difficult particulate to monitor and remove in the coal-fired setting, and the new rules required fairly rapid compliance. FOMIS helped Stanton and other coal-firing plants to convene around evolving practices. “Like us, a

lot of plants were trying to comply with the regulations in a tight time frame,” Engelmeyer recalls. “It became extremely important for us to be able to compare notes, to see specifically how other plants were managing this technologically. We were all learning on the fly against a deadline. FOMIS was an invaluable resource during that period.”

THE FOMIS CONFERENCE, BENCHMARKING, AND PLANT SAFETY

Another important component of the FOMIS experience is an annual three-day conference that has been underway for more than three decades. Engelmeyer sees the conference as an opportunity for utilities to do in person what the knowledge base facilitates via query and correspondence. Safety is always a big topic at the event, and during one recent conference, the Stanton team came away with fresh insights about arc flash protection. “We’re big proponents of getting up there and talking about what we’re up against and what we’re doing to improve safety.” In this case, the discussion involved implementing improved safety protection equipment—and Stanton came home with new strategies that reflect industry best practices.

Engelmeyer sees the conference as an opportunity to “put faces to the names”

“We have a small staff, some of whom are retiring, and as we train a new generation of workers, FOMIS will undoubtedly become even more important in the future.”

he deals with throughout the year on the FOMIS forums, queries, and dialogues. “We look forward to the FOMIS conference,” he continues. “These personal meetings open the door to better communications throughout the year—not just in the formal presentations, but also in the informal exchanges during breaks. It’s a very efficient way of exchanging important information.”

The Stanton team also appreciates FOMIS for the benchmarking it facilitates. Members can visit each other’s plants, compare notes, and mutually see where improvements can be made. For example, Stanton’s operations manager and other key employees traveled to an Oregon station to study a new type of training program. Other Stanton employees visited an Eastern Kentucky Power Co-Op to see how computerized tablet technology can streamline routine operator rounds. “Benchmarking allows us to compare innovative ideas to see if they are sensible to implement,” he explains, adding that the Stanton Energy Center has also hosted benchmarking events. “We’re a small outfit, and our staff is sited at the plant, so visitors from other utilities have ready access to the equipment and the operators here.”

PASSING THE ENERGY TORCH TO FUTURE GENERATIONS

As the Stanton Energy Center continues its mission of parlaying diverse, ecologically sensitive fuel sources into light and life for its service area, FOMIS provides the collective insight of thousands of power industry experts, who have signed on to the knowledge base and its real-time information exchange model. As Stanton and other plants train a new generation of professionals, the collective wisdom of the growing FOMIS membership is an immense aid in carrying forward the knowledge, wisdom, and best practices from one generation to the next.

“We can get new people up to speed with our procedures, and compare notes with other plants to see what kind of training programs they have,” Engelmeyer notes. “In order for new workers to gain proficiency in the real world, you need to take them around with you as you work out problems. By showing them how to use FOMIS, we demonstrate an important tool in the box. We have a small staff, which will only make FOMIS even more important in the future.”



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