



FOMIS Case Study Keeping the Lights On at the John Sherman Cooper Power Plant

“The FOMIS knowledge base is an amazing resource that allows us exchange knowledge and insights about the critical issues we face every day.”

— John Warren, Operations Superintendent, Cooper Power Plant

Organization: The John Sherman Cooper Power Plant near Burnside, Kentucky has two coal-fired power generating units that produce 341 net megawatts and provide electricity to about 1 million Kentuckians.

Challenge: After installing pollution control equipment in 2012, the Cooper Power Plant changed from a base-load plant to a cycling plant that would shut down operations for two and three months at a time. The personnel needed to address information gaps on boiler layup, unit cycling processes, and the effect of the cycling on emissions-related chemistry in the units.

Solution: Cooper turned to Curtiss-Wright’s Fossil Operations and Maintenance Information Service for energy industry expertise.

Results: FOMIS is central to the ongoing upkeep and enhancements of the Cooper plant. Insights gained have helped the company respond quickly to emergencies, maintain aging equipment, avoid expensive de-rates, and comply with increasingly stringent environmental controls.

Kentucky has a long history of providing its citizens with electricity through coal-burning power plants such as the John Sherman Cooper Power Plant near Burnside, Kentucky. “Cooper” has two coal-fired power generating units. Unit No. 1 came online in February 1965, followed by Unit No. 2 in October 1969. When some 40 years later, federal mandates were issued to monitor and control the output of health-threatening particulates from coal-burning plants, the Cooper power plant made the necessary changes. The plant today runs much cleaner than it used to, and produces 341 net megawatts, providing electricity to about 1 million Kentuckians.

“We installed pollution control equipment and started cycling our plant in 2012 when Cooper went from being a base loaded plant running 24 hours a day, 7 days a week, to being a cycled plant with periodic shutdowns,” explains John Warren, Operations Superintendent at Cooper Power Plant. “To make

sure we were making use of best practices for these kinds of protocols we did our research, and FOMIS was a prime resource. We started researching boiler layup recommendations and unit cycling operations. A lot of what we found in FOMIS gave us the foundation to build our layup procedures.”

The Cooper plant is not alone. The FOMIS knowledge base is central to the ongoing upkeep and enhancement of power plants the world over. As power plants face an attrition of institutional knowledge through the retirement of older workers and key operators, FOMIS is there to fill the gaps in expertise as a deep repository of information for power industry professionals. Built on decades of recorded Operation & Maintenance issues and their solutions, the depth and breadth of the FOMIS knowledge base is an assurance that, whether the matter at hand is routine or an emergency, power industry professionals can turn to FOMIS for answers to pressing questions.

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GATHERING INSIGHTS FROM ACKNOWLEDGED EXPERTS

Operations Superintendent Warren describes another benefit of FOMIS membership: establishing strong professional relationships. “I can pick up the phone and call any number of subject matter experts,” he says. “In one instance, ammonium bisulfate was starting to plug up our air heater, which was giving us a high DP. I wanted to know how serious this situation was, and how to alleviate some of what I was seeing.”

Warren called another FOMIS member—one of the top experts in catalysts—for advice on how to mitigate a situation. He learned that ABS often forms when a catalyst is operated at low temperatures. “I followed every one of his recommendations, and within three hours I was up and running again,” he relates. That conversation, effectively brokered by FOMIS, saved the Cooper plant an expensive de-rate. Warren quickly found the information he needed to remedy a potentially serious situation, even as that situation unfolded.

“The FOMIS knowledge base is an amazing resource,” he adds. “But just as important as the FOMIS database is the opportunity to personally network with other professionals and exchange knowledge about some of these issues. And that comes from the FOMIS confer-

ence.”

AN OPEN EXCHANGE OF INFORMATION AND IDEAS

The annual FOMIS conference marries the informational richness of the FOMIS knowledge base to a robustly attended networking opportunity that is all about solutions. Warren was introduced to the conference in 2012, when he was asked to deliver a presentation on lockout/tagout. “We had migrated from punch cards to a more fully electronic system,” he recalls. “I’d built the database and written the policy. Sharing my experience about lockout/tagout at the conference really launched my career.”

The networking that takes place at the yearly FOMIS gathering has a unique character—professional conversations centered on bridging gaps in situational technology know-how. When the plants in a given region collectively experience a sea-change in process, as happened in East Kentucky around lockout-tagout safety protocols, attendees are eager to learn the details.

“Lockout-tagout is one of those unique things that everybody approaches a little bit differently, and the conference provides an opportunity to share best practices from different utilities,” Warren explains. “When I come back from these conferences it generally takes me about

a year to implement everything I’ve learned. I bring back action items that result in efficiency gains and cost-saving measures.”

The FOMIS conference presents real solutions to the ever-present problem of institutional knowledge drain. “About ten years ago, you could look at a plant and know that most of the employees were skill-based,” Warren says. “Today our workers are getting knowledge-based and rule-based training on the job. Fitting that training into the workflow was a challenge. Then at a FOMIS convention I met some guys from a plant with a five-shift rotation. I built our own training program off of that model.”

BENCHMARKING SESSIONS TO EXTEND BEST PRACTICES

In addition to organizing member conferences, FOMIS sponsors benchmarking events where industry personnel gather and formally compare notes on a specific plant process. These events typically flow from themes presented at the conferences. When the Cooper plant offered to host such a benchmarking event, FOMIS did most of the organizational heavy lifting, including setting the agenda and inviting other utilities. “We had about 20 different utilities in attendance,” Warren notes. “Benchmarking is important because you realize that you

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don't have to reinvent the wheel on a lot of this stuff.”

FOMIS is an invaluable source of information, but sometimes members need something much more specific than ideas: fast access to certain parts during in emergency. For this, many members turn to Curtiss-Wright's RAPID service, a virtual warehouse of parts aggregated from FOMIS members and other utilities. Warren explains. “You input your plant information to show exactly what type of equipment you have, and so do the other members. When you submit a parts request or emergency request, that goes out to the membership. The hope is that someone has what you're looking for and it's just sitting on their shelf.”

CLEAN AIR COMPLIANCE AND A NEW PROTOCOL FOR THE FUTURE

As coal-fired plants navigate through a sea of existing and emerging environmental regulations, they are obligated to implement air quality controls never imagined by the designers and builders of the legacy equipment. Operations Superintendent Warren speaks to the forward-looking role of FOMIS as fossil fuel driven plants retrofit their operations and introduce clean energy alternatives into the mix

“When you say FOMIS you're talking about coal, you're talking about

natural gas. It's basically fossil. Before my company heard about activated carbon or controlling mercury, I saw a presentation on these technologies at FOMIS, and I thought, ‘What are they doing?’ And then two years later, we were installing that equipment at our facility. A lot of times at the conference you'll also hear about OSHA regulations in the pipeline, or those that have been passed and haven't yet filtered their way down to the plant. FOMIS gives you an opportunity to get ahead of the curve on those issues.”

“The FOMIS knowledge base is central to the ongoing upkeep and enhancement of the Cooper plant, particularly as older workers retire and new workers work to acquire new skills. Insights gained from the FOMIS database, conference, and benchmarking sessions have helped the company respond quickly to emergencies, maintain aging equipment, avoid expensive de-rates, and comply with increasingly stringent environmental controls”

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