

CONTROL

CONTROL REPORT



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Pictures for Polymers

If a few windows into your process application are good, then more will be better—especially if they're easier to set up and network. You just have to be brave and persistent enough to build displays that focus on the values you truly need. Luckily, a few good tools can help. ● For example, Arkema Inc.'s refrigerant, polymer and hydrochloric acid

plant in Calvert City, Ky., had used Bailey Network90 controls in its Kynar polymer facility since 1988 and has expanded and upgraded them several times since then, including moving from panel boards to a distributed control system (DCS). The facility now has eight process control units (PCUs) and 51 controllers, and its latest upgrade involved going to ABB's 800xA for its Harmony DCS in 2008.

The plant makes several grades of Kynar polymers and a monomer, and these high-grade plastics are used to give elasticity to paints and impart rust-proofing and sun-resistance capabilities to other coatings, according to Michael Smith, Arkema's senior staff plant instrument engineer. Smith presented "Recent 800xA Applications at Arkema Calvert City" on May 20 at ABB Automation and Power World 2010 at the George R. Brown Convention Center in Houston.

"In my Kynar area, we needed added windows into our units, but the previous system only allowed eight windows per server, and this wasn't enough for what we needed to do," says Smith. "We needed 800xA because it wouldn't be limited in the client-server part of the HMI. So we began to move on this project in 2008, and this set the stage for adding ABB's AC800M controllers to our network as well."

Smith adds that Arkema's latest polymer application upgrade consisted of two main components—updating the de-ionized (DI) water system for making polymers and a \$16-million renovation of its sprayer-dryer system for turning the product into powder before shipping.

"Though we had a bottleneck on our Kynar process, we were a little overwhelmed to try to upgrade the whole sprayer-dryer system at once. So while we were in a six-month construction period, we did pre-engineering and graphics for the DI system before taking on the larger project," explains Smith.

"On the DI water system, we replaced old PLCs, learned and implemented AC800M controllers and S800 IO, used the PC device library, tied into the 800xA system and created the graphics."

Likewise, to network its new 800xA system and controls, Smith reports he and his staff decided to use Profibus and Ethernet. "We used Profibus for networking because it can talk to our MCCs, so we didn't need other networking protocols, and we can see all our tabs and parameters on one screen," he says.

Also, he added, the AC800M controllers and S800 I/O slid easily into the existing panels in the field near their DI water units. "The DI water application is fairly simple, but its regeneration phase can get a little complicated," says Smith. "However, once our engineers saw the graphics we were making and began to use them, we got a lot better buy-in from everyone.

"Engineers often feel pretty iffy about doing these kinds of graphics, but 800xA helped with a lot of pre-steps, such as color pallettes, and made it easy to add symbols and devices later on. In fact, it only takes about half a day to make a pretty complex screen, but then you can just copy it over for other process units."

Similarly, because its other two spray dryers were on the Harmony DCS, Arkema needed the same look and feel for the third one using the AC800M controller and S800 remote. "We needed to connect to the downstream process interlocks in our material-handling system and to avoid cramming powder into our downstream system. So we set up a Harmony PCU Gateway (HPG) connection to the AC800M to interlock those downstream signals."

As a result, Smith says Arkema was able to add its third spray dryer without needing any more operators and also saved \$500,000 on its \$16-million budget for the project. Nice view. ■

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