

CASE STUDY: QUANEX + HENDERSON SERVICES

Aging electrical system upgrade with ABB Ability™ Energy Manager



Quanex and Henderson services use ABB Ability™ Energy Manager to take advantage of power solutions that help avoid downtime and optimize energy consumption.

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 Quanex Building Products
 100 Mikron Way
 Richmond, KY 40475, USA

Power quality issues

Quanex is a building products manufacturer with a one-hundred-year history of supplying commercial and residential projects in the United States. One of the company's 30 manufacturing locations is its PVC extrusion facility in Richmond, Kentucky that produces window, door, and fence profiles. Like many of the company's plants, the Richmond facility electrical system was aging and had begun to experience power quality issues. But Quanex had a larger problem.

"We did not have any idea where our electricity was being used," recalls Brad Snyder, Senior Facility Engineer. "We could do estimates based on the one-line drawings, but this was not very accurate. We also didn't know when we had a single phasing problem."

Seeking to address both the power quality and monitoring challenges, Quanex turned to Henderson Services, a full-service electrical contractor based in Kentucky with a focus on service, maintenance, and education for industrial facilities. After considering several options, Henderson recommended ABB's Ekip UP multifunction relays that allow plant operators to monitor, protect, and control electrical distribution assets.

Henderson Project Manager Benny Edwards recalls, "Smaller, less capable meters had been vetted by Quanex earlier, but ABB's solution provided access to real-time data via the cloud. That was important because Quanex has other facilities that can access the information."

Energy solution

Quanex agreed to the project, which consisted of installing five Ekip UP relays, each connected to a transformer on one of the incoming power feeds. Each unit sends data – such as voltage, power factor, current, and power usage – to ABB Ability™ Energy Manager, the online data visualization and analysis tool. Henderson completed the installation during a planned maintenance outage over the Christmas holiday.

Quick Results

Right away, the system proved its worth by flagging a voltage issue on one of the transformers connected to a utility feed. It had begun to effect downstream equipment, particularly motors and an air compressor. ABB Ability™ Energy Manager generates automated text messages to warn operators of deviations in operating parameters such as voltage sags and swells. Once these anomalies were



identified, ABB Ability™ Energy Manager notified Quanex and Henderson personnel.

“We wouldn’t have been able to see that issue before,” says Snyder. “Eventually it could have caused an equipment failure, but we replaced the transformer and it’s working fine now. I wish I had ABB’s solution on every distribution panel in the building.”

The communications capability of ABB’s system allows Quanex to do more themselves, but it also ensures that Henderson is alerted to potential problems at the same time. Henderson’s Benny Edwards recalls another instance where he was able to assist the Quanex maintenance manager over the phone, without having to travel to the site.

“On a few occasions, a high current event tripped a breaker. They lost a 400hp motor, and another time a control system error caused motors to bog down,” he recalls. “The customer can often fix these kinds of issues themselves if they know why it happened, but they feel more secure knowing someone is available to support them.”

Now with two years worth of experience with ABB’s solution, Quanex is using the data to better understand where and how energy is being used in their operations.

“We can see which systems are running more loaded than others,” says Snyder. “Initially we thought our

compounding area would be among the biggest users, but in fact it was well down the list.”

Snyder has also set up his corporate maintenance manager with a login to ABB Ability™ Energy Manager with access to the data. The company is now using the data captured in Richmond to plan upgrades in other facilities.

Device-level data

Power metering typically has a payback of 1 to 1.5 years. With advanced solutions like ABB Ability™ Energy Manager, users can also identify and address problems sooner. It’s the best way to leverage device-level data to lower maintenance costs, extend asset life, minimize downtime, and makes for a compelling business case.

With the resurgence in domestic manufacturing, U.S. operators like Quanex are likely to take advantage of power solutions that help avoid downtime and optimize energy consumption. Solutions like ABB Ability™ Energy Manager that can add to, or communicate with, the equipment already in place will allow manufacturers to preserve investments in their existing power distribution systems.

Interested in learning more about how ABB Ability™ Energy Manager can benefit your business? Click to connect with an ABB digital solutions expert.

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