

Emerson Edge Control Technology Eliminates Downtime During Critical Sugar Harvest

RESULTS

- Achieved zero downtime during critical harvest period
- Enhanced throughput and reduced downtime increased revenue
- Reduced cost of wiring because controller could be installed near the machine
- Saved time and money and avoided human error by deploying configuration changes across the factory floor from a single location
- Reduced engineering costs through rapid upgrade and ability to scale



APPLICATION

Edge control installation in a sugar processing facility.

CUSTOMER

Raceland Sugar, Raceland, LA, USA.

CHALLENGE

Sugar cane processing occurs periodically over 12 months, usually once per year. The raw material is perishable, and the harvested cane sits in open air piles, so any downtime causes loss of throughput and increased disposal costs, which both have a negative impact on revenue.

The margins on refined sugar are thin, so any technology upgrades prior to equipment failure are scrutinized carefully before implementation to ensure they are cost-effective and will provide a strong ROI. After evaluation, Raceland Sugar realized, in preparation for the 2021 campaign, that their current automation solution was obsolete. Replacing I/O cards and configuring a new controller would cause extensive and expensive downtime. Its current product was also a single-failure system, so if the controller failed, the whole system shuts down. The HMI technology was obsolete, such that any updates would have to be deployed individually at each station, requiring excessive time that was not value added.

“I have fallen in love with these processors. The power and features that are offered with this unit make anything you think up possible.”

Steven Foret

Instrumentation supervisor/control engineer
Raceland Sugar

SOLUTION

Raceland solved that problem by replacing the existing solution with the innovative Emerson PACSystems CPL 410 edge controller, PAC8000 I/O and Emerson HMI prior to the processing campaign. A key factor in the decision to select the PACSystems RX3i CPL410 controller was the fact that it could integrate directly with the PAC8000 I/O, which Raceland had used trouble free for a number of years. The fact that there were very few changes made to the I/O meant there was minimal risk during the upgrade process, allowing Raceland Sugar to focus on other aspects of the project.

Since the PACSystems RX3i CPL410 edge controller was easy to configure for a redundant installation, and allowed transfer to a backup unit within 300 milliseconds in the event of a problem, the redundancy assured no downtime due to controller issues.

The upgrade occurred in three individual installations. The first area required immediate modernization and its success then prompted Raceland to select the PACSystems RX3i CPL410 controller to expand their mill floor system, which was needed. On the centrifugal floor, Raceland employed both the edge controller and the RSTi-EP slice I/O on PROFINET drops. This expanded Raceland's capabilities in that now they do not have to run field wire back to a single area, which greatly reduces the cost of wire and allows for further expansion of automation.

Emerson HMI technology now allows engineers to deploy screen/configuration changes across the factory floor from one location, enabling easy scalability if changes are needed during the campaign.

RESOURCES

PACSystems

<https://www.Emerson.com/PACSystems>

Industrial I/O

<https://www.Emerson.com/en-us/automation/control-and-safety-systems/programmable-automation-control-systems/industrial-io>

RX3i CPL410

<https://www.Emerson.com/en-us/catalog/automation-solutions/control-safety-systems/programmable-automation-control-systems-plc-pac/emerson-ic695cpl410>

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For more information:
www.emerson.com/PACSystems

“The PACSystems RX3i standalone controllers with built-in PROFINET were the perfect solution to upgrading from the obsolete system. With very little changes made to the I/O, there was minimal risk during the upgrade process which left Raceland Raw Sugar at ease throughout the entire process.”

Steven Foret

Instrumentation supervisor/control engineer
Raceland Sugar