ROVISYS®
Automation & Information Solutions

CASE STUDY

UPGRADING WITHOUT DOWNTIME IN AN OPERATIONAL DATACENTER

An outdated temperature control system risks raising the temperature for servers in this colocation data center. The challenge now is to upgrade the outdated automation system without raising them even further.

ROVISYS

An operation like this required the combination of extensive industry experience and the project management expertise necessary to avoid downtime or disruption in the process. RoviSys Building technologies was the clear choice on both of these points.

With its long history working with Rockwell equipment and software combined with decades of experience in central plant and HVAC automation, RoviSys was able to offer the expertise necessary to take on the core PLC installation. It was also able to dedicate an engineering team with deep project management skills that was able to collaborate with Equinix to not only avoid downtime, but also ensure that the new central plant automation system met global reliability standards.

In an industry where even relatively minor fluctuations can damage critical equipment, the outdated control system regulating chillers at Equinix's Chicago data center posed the threat of potentially catastrophic failure for the facility. To avoid this, the company required an entirely new control system, but it needed it installed with zero downtime or disruption in service.

THE PROBLEM

For the datacenter business, temperature control is key. To keep critical systems operating at optimal levels, server rooms must be kept at a consistent, well-regulated temp. Out of range temperatures lead to damage (latent or obvious) to equipment, for which the facility could be financially liable.

> *The new system **increases the meantime between failures from 2-5 years to nearly 20**, and is expected to experience just 26.3 minutes of annual downtime.*

At Equinix's facility near Chicago, a two-part, 1,000-ton chilled water plant using used both traditional air conditioning and coil-cooled water was used to maintain these conditions. However, the Direct Digital Controls (DDC) controls behind this system was far out of date and past its intended life expectancy. Worse, the plant automation system had no functional back-up or manual control option. Together, this meant that the facility was facing a series of potential failures for both its equipment and the data they protected—a clear recipe for catastrophe.

To resolve this, Equinix needed to upgrade its automation system to a more robust and reliable PLC system without introducing any downtime to its equipment or its customers and clients.

THE SOLUTION

The RoviSys team began by transitioning control hardware from DDC to PLC systems, and then writing the critical code and graphics to take over operations, based on the needs of both the facility and the users.

Because downtime for testing or installation was not an option, RoviSys worked with Equinix to first test the new control system in a simulated environment. Stakeholders were able to evaluate its effectiveness and interface and make final adjustments without risking disruption.

Then, RoviSys loaded the code and graphics onto the hardware while the equipment was still live and running. This field commissioning operation provided that final crucial element of the project: switching controls and updating the system while offering no measurable downtime.

THE RESULT

In its service level agreements with each new contract, this company promises to provide an environment that will yield top results. With reliability up to 99.995%, this new system can finally guarantee consistent environment clients expect.

The new system increases the meantime between failures from 2-5 years to nearly 20, and is expected to experience just 26.3 minutes of annual downtime—which is easily mitigated by its 96 hours of power outage uptime protection.

And above all, these improvements mean that Equinix now operates the highest quality data center possible for its customers in this critical region.

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