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CPS ENERGY MODERNIZES SCADA TO TRANSFORM GAS DISTRIBUTION

By Len Vermillion

As the nation's largest municipal utilities provider based in San Antonio, Texas, CPS Energy can't afford downtime. A lapse in operations can mean no power or gas for residents around the region, and in South Texas, no one wants to endure the heat without power. Keeping old systems updated is of vital importance.

So, when it came time to modernize its 10-year-old SCADA system, the company had a lot of considerations to address. Alex Solis, senior manager of SCADA technical support at CPS Energy, presented at last week's Emerson Exchange Immerse 2023 in Anaheim, Calif., where he outlined the company's SCADA modernization project, which took multiple years to complete.

CPS Energy started the project in 2019, right before the COVID-19 pandemic crippled the world. With some perseverance and the help of experts at Emerson and AspenTech, the new SCADA system went live in 2022.

CPS Energy utilizes multiple SCADA systems for its electric and gas distribution operations. The modernization project focused on its gas SCADA system, which manages gas pipelines to ensure proper flow and pressure. The system monitors 49 remote automation devices, which are a combination of RTUs and Emerson's Remote Operations Controllers (ROC 800s) and FloBoss 107s, according to Solis. A mix of communication devices and infrastructure (point-to-point radios, mashed wireless networks, fiber-optic multiplexers, microwave transport and cellular devices) connect remote stations to two control centers.

The old SCADA had a hard time keeping up. Its hardware was no longer supported and ready to be replaced.

CPS Energy had more than a few goals in mind when it began planning its RFP for the project. It wanted NIST-based cyber security protocols, a control room management (CRM) platform that could be integrated, consolidated applications for improved situation awareness, a common platform with appropriate network segregation, and an operator training simulator.



Alex Solis of CPS Energy discussed how the nation's largest municipal utility boosted the performance and reliability of its gas distribution system.

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Solis said growing cybersecurity risk necessitated the call for best-in-class industry standards to meet compliance.

Pandemic and regulatory obstacles

CPS Energy faced quite a few challenges to get the project completed, not the least of which was the sudden onset of the pandemic and new regulations that were dropped in their laps in the middle of the project.

The company was also limited by an aging workforce, so it hired consultants to assist with the RFP and implementation. The extensive RFP was won by Emerson and AspenTech and the project took off from there, according to Solis.

He said the executive leadership was active in the entire process, resulting in cross-functional governance and

support for IT, OT, SCADA support, controllers, compliance and security, to name a few.

In the end, improvements incorporated into the new gas SCADA system include modern visualization tools and alarm management, situational awareness displays, pipeline topology, dynamic coloring, inventory and linepack calculations, cybersecurity controls, synchronized disaster recovery, and an operator training simulator.

Solis said the biggest improvements include advanced display capabilities and an open architecture that allows for PI and GIS integration.

These days, CPS Energy is well equipped to handle any situation that may occur in its gas distribution system, and residents of the region can count on their utilities being available.