

ANGELINA NECHES RIVER AUTHORITY WASTEWATER FACILITY COLLECTION SYSTEM EXPANSION & IMPROVEMENTS

Blanchard, LA

Services Provided

Electrical Engineering

BLOC Contact

Chase Frazier, Principal-in-Charge /
Project Manager

Owner

Angelina Neches River Authority

Design

Start: June 2016

End: July 2017

Construction

Cost: \$378,000

Start: September 2017

End: December 2017

Project Size

11 pump control panels,
SCADA integration for entire wastewater facility



BLOC
DESIGN BUILD



To dramatically improve the wastewater collection capabilities of the Angelina Neches River Authority (ANRA), BLOC was hired to custom-design 11, duplex or triplex pump control panels for lift stations and integrate SCADA functionality throughout the facility. Each lift station has two or three pumps that moderate the level of water in the tank and pump wastewater to the treatment plant. The updates BLOC was hired to implement will give the ANRA the power to monitor, control, and collect data from each lift station remotely. New radio communication towers, also in the project scope, will be used to send all the captured data to the treatment plant operators through radio frequency. If any alarm conditions exist, such as a pump failure, the SCADA system will send a text message to the operator to inform them of the problem. This data can then be recorded to identify trends like high demand cycles and to schedule preventative maintenance.

In-House, UL Panel Shop

Before design began, BLOC's design team had several meetings with the ANRA to discuss the desired functionality of the panels. BLOC also conducted a path study to determine how high the new radio communication towers needed to be to facilitate optimal reception. Each panel was assembled, programmed, and tested in our in-house Underwriters Laboratories, Inc. (UL) panel shop. All BLOC panels are developed in strict compliance with UL standards. UL is a global independent safety science company that is the primary certification agency for electrical components used in industrial control panel equipment. It certifies, validates, tests, inspects, and audits products for ongoing compliance. Prior to installation, each unit is inspected for quality. Our licensed electricians install our control panels, terminate and test all field wiring, and perform start-up procedures with the pump manufacturer.

Overcoming Challenges

Lift stations are classified as class 1, division 2, hazardous locations (c1div2) and conduit seals are required on all conduits leaving the wet well. Because conduit seals make it difficult to access equipment located inside the wet well, the ANRA did not want to use them. Although these seals are required by the National Electrical Code, we were able to work around this issue by installing a wire path below the control panel using a new, easy-to-remove, expansion foam sealant acceptable for c1div2 locations. This is a safe and reliable solution because all field wiring is terminated inside the wire way, and permanent seals are installed between the wire way and the control panel. Using the expansion foam sealant satisfies the code requirement, while allowing the ANRA easy access to replace components, as needed, in the future.

Conclusion

With safety, cost-effectiveness, reliability, and functionality top-of-mind, this project is a huge success for both BLOC and the ANRA. The new system will replace 600 residential septic systems and allow for that wastewater to be cleaned and treated before it is released back into the environment. BLOC's engineering expertise, coupled with their use of economical, yet dependable products provided a system that exceeds the expectations of the ANRA, and reduces their overall costs.