

Featured Project

Fairfield-Suisun Sewer District 12kV Substation Replacement Project

Fairfield, California

ArcSine Engineering designed a major upgrade to plant-wide 12kV systems, including complete replacement of the aging main 12kV switchgear. The project included mechanical and electrical evaluation of existing cogeneration systems, review of plant-wide power distribution, an audit of overall electrical operating procedures, and recommended related improvements.

ArcSine's work included District-wide short-circuit and arc flash studies, as well as authoring documents describing 5-year maintenance and testing efforts.

Unique features to the project:

- Redundant, double-ended 12kV electric service, with extensive coordination with the power company on the required arrangement.
- Cutover planning to keep this critical plant online throughout the construction process.
- Extensive field investigation of existing power distribution and SCADA systems.
- Redundant hardwired backup for critical systems.
- Integration with existing SCADA.

ArcSine's work included:

- Preparation of bid documents for the 12kV switchgear replacement.
- Short circuit, protective device coordination and arc flash study of the entire power distribution system, including 12 remote sewage pumping stations and 6 stormwater pump stations.
- Preparation of extensive bid documents detailing comprehensive electrical maintenance and testing required by the District every 5 years.
- Control system programming and testing.
- A comprehensive evaluation of existing spark-ignition engine cogeneration systems, considering operating characteristics including fuel composition and availability, economics of cogeneration alternatives, and associated power distribution.

Design Completion Date
2007

Construction Completion Date
2008

**Electrical
Programming
Power Distribution
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