

Featured Project

City of Portland Swan Island CSO Pump Station

Portland, Oregon

As part of the \$2 billion program to address combined sewer overflows, ArcSine Engineering designed the power and instrumentation for this 14,000-hp medium-voltage pumping station with a flow range of 2 to 220 mgd. The pump station is over 150 feet deep and 130 feet in diameter with five levels. The station is fed by two 14-foot-diameter stormwater tunnels. The West Side Tunnel was put into operation in 2006, while the East Side will be completed in 2011.

ArcSine's design work included:

- Design of a redundant power distribution system which is capable of meeting stringent load flow and power quality requirements even with equipment failure during a peak flow event.
- Design of 5kV substation and seven 5KV variable-frequency drives.
- Design of on-site ductbanks and lighting.
- Design of power, controls, and lighting within the pump station.
- Design of electrical and controls equipment and layout in the adjacent operations and maintenance (O&M) building.
- Design of cable tray system within the O&M building, the pump station, and interconnecting utility tunnel.

ArcSine's Services During Construction included:

- Responding to RFI's.
- Submittal reviews.
- On-site coordination; assistance with startup and testing.
- Coordination and review of the dual-feed 115kV substation being designed to serve the pump station 5kV substation.
- Construction observation.



Electrical
Lighting
Power Distribution
Construction Services
Water/Wastewater
Instrumentation/Controls
Startup/Acceptance

