Background...
Seattle Power and Light sought a highly reliable method for cooling high power underground cables between power stations in order to realize the additional energy throughput available by managing heat.

Solution...
ArcticChill designed and built a 100% redundant chiller system including dual pumps and auto-failover controls.

Results...
Power utility company was able to increase power throughput and eliminated a multi-million dollar substation.

Solution Success...
- The chiller consumes only 10kW, but provides substantial gains in power throughput. A 115kV line went from 477 to 812 amps. Another went from 310 to 510 amps.

- Cooling pipes are encased in thermally conductive concrete. Thermisters are installed to monitor temperatures along the line.

- Cable temperatures fluctuate only a small amount although the cable heat load varies by a factor of 3 or more. This is attributed to the effectiveness of the chiller to quickly remove heat.