



Colgate Hydro Plant

L&S Electric Wins Contract to Modernize the Colgate Hydro Plant

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L&S Electric, Inc. has been awarded a contract by The Yuba County Water Agency to upgrade the turbine and generator control systems of the Colgate hydroelectric plant.

The contract requires the supply of the excitation system and the governor system for each of the two 170 megawatt units at the plant, including their integration, engineering, installation supervision, and commissioning. One unit will be upgraded in 2008, and the second one in 2009.

The Colgate plant, located on the Yuba river, is the main plant in California providing 'peaking' power to Pacific Gas and Electric, one of the largest combination natural gas and electric utilities in the United States. The turbines at the plant are physically the largest impulse turbines in the world (18.5 feet and 28 tons). Water, carried nearly five miles from the New Bullards Bar Reservoir, travels through a 26 foot diameter tunnel, then plunges down a 15 foot diameter penstock to drive the two turbines, which produce a total of 315 megawatts of electricity. That is enough electricity for a city of 350,000 people.

The existing mechanical governor systems at the plant cannot provide stable power for load conditions below 25 megawatts. The goal of The Yuba County Water Agency is to achieve three to five megawatts as the minimum stable load. The



upgraded governor system by L&S Electric will optimize the unit availability and system response, using needle sequencing control and a new LS-7500 main distributing valve. The new governors will also be capable of black start, automatic synchronization, power control, and isolation operation. Additionally, the upgraded governors will be able to operate in spinning reserve and be able to interface with existing SCADA system.

During the budgeting phase, The Yuba County Water Agency planned for several systems to be upgraded, including the excitation and governor systems. "When I asked Pacific Gas and Electric to suggest a company that could modernize governor systems, the L&S Electric name came highly recommended," said Steve Onken, Plant Manager.

According to Mr. Onken, after

evaluating the proposals, L&S Electric was chosen because of its demonstrated technical competence and because of the value of their proposal.

With systems successfully furnished for nearly 500 units, the L&S Electric name has become synonymous with recognized leaders in modernizing hydroelectric controls, with the best value in digital governors, automation systems, excitation systems, and digital relay protection systems.

L&S Electric has 13 locations throughout the upper Great Lakes and Canada. One of the largest rotating apparatus service providers in the United States, L&S also distributes a wide variety of motors and electrical products and provides complete reliability and power services.