Symphony Plus

A virtual power plant control room built on software innovation

Advanced software makes it possible to telecontrol the operations of unmanned power generation plants of all sizes.

We are accustomed to online networks that help us work remotely from home, pay our bills, transfer cash or visit friends. Remote connections via computer are now a part of our daily lives. But did you know they are also part of the industrial landscape? For industrial sectors like power generation, remote service tools routinely monitor and analyze critical plant equipment/processes, and provide an early warning system of impending trouble.

Now this monitoring and analysis role has now evolved to include full control functions in a web-based platform. Advanced software makes it possible to telecontrol the operations of unmanned power generation plants of all sizes, including hydropower, photovoltaic (PV), wind and geothermal plants.

Based on the Symphony Plus control platform, a new ABB Operations and Maintenance (O&M) remote service tool links isolated, unmanned generation sites to skilled ABB staff in a remote control room, manned 24 hours a day, 365 days a year.

In addition to predictive, preventive and corrective maintenance, process analysis/support and remote diagnostics, the control room can now provide remote operational control, and access a patented energy production forecasting tool based on self-learning algorithms which improve results as data is
accumulated. The ability to analyze, fine-tune and control energy production remotely, no matter what generating technology is involved, or where it is located, is a real service breakthrough.

It is the next best thing to having a control room there, on site. It means now even plant production functions, using data from the plant itself, can be managed by trained staff thousands of miles away, perhaps even on different continents, where they are still able to detect faults or malfunctions, create energy production reports, and manage alerts from security and access control systems.

The remote O&M service tool ties together all the essentials: an effective, remote maintenance program plus a system that remotely manages all variables related to energy production, crucial in unmanned sites. The result is enhanced plant performance, reduced costs and improved uptimes. It is also an open solution that can be implemented in power plants using either ABB or third-party equipment, provided the plant can receive information from the field via common communication standards.

About the author
I have 8 years of experience in the solar and wind energy business at ABB and previously in different multinational IPPs (independent power producers). Currently, I am the business development manager for operations and maintenance of power and water plant at ABB.

All this is offered by ABB as a one-stop-shop vendor independent service to clients, ranging from classical utilities to IPPs, financial and private investors that have access to a hassle free plant management by expert technicians.

The first PV generation plant to install this solution was commissioned in 2011, and since then new photovoltaic and wind power plants having a combined generating capacity of more than 250 megawatts (MW) have signed on – all of them connected to ABB Power Generation’s remote control rooms.

The new solution is proving its effectiveness in the field. PV plant generation performance is on average between 86 and 94 percent of production capacity, significantly above ABB’s contractual guarantee of about 80 percent. And it has consistently exceeded the contractual threshold of 98 – 99 percent plant availability, with spikes of 99.9 percent availability at some plants.

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