

PT Indonesia Power UBP Saguling

Innovative solution ensures reliability and easy data access to large power producer



Indonesia Power UBP Saguling, West Java

The Saguling Hydro Electric Power Plant is one of the most important power producers in Indonesia. Located in West Java, it uses hydro power as its prime energy supply. The development of a hydro power plant (PLTA) is one of the government's efforts to maintain diversification in power generation and conserve fuel oil.

UBP Saguling oversees eight hydro power plants. Besides handling peak loads, Saguling also functions as the Java-Bali transmission system. At Saguling PLTA, there are large capacity generators producing 175 Megawatts each. They are equipped with a LFC (Load Frequency Control) with a 500 kV system, which provides a 500 kV stable frequency (smooth ripple). The system is also equipped with a 500 kV Line Charging Mode for first voltage filling in the event of downtime.

The Challenge

UBP Saguling made the decision to re-engineer the existing control system and replace the aging Automatic Control Equipment (ASCE) and Supervisory Control Equipment (SCE) with a new CitectSCADA Windows-based control system. The previous system had become difficult to maintain and problems were occurring in the command and display of both the accessing ladder program (sequence and controlling) and the Human Machine Interface (HMI) system.

To prevent a faulty controller from shutting down the unit for extended periods, the management at UBP decided to replace the control system. Saguling needed a new control system with components that were easily procurable and more reliable. The old configuration, electrical single line diagram and plant operation had to be identified before beginning the design of the new system.



The Challenge

To replace a legacy control system that had been operating for almost 20 years, and whose components were not readily available when a faulty controller needed to be replaced. It would typically take more than six months to troubleshoot a problem. Continuous operation and procurement costs were major issues.

The Solution

CitectSCADA was selected for the HMI and data reporting systems, eliminating the dependency on the existing vendor for outdated components, it significantly minimized lost operating time and revenue caused by shutdowns.

The Benefits

By replacing its antiquated legacy system with the CitectSCADA solution, the Saguling Hydro Electric Power Plant was able to lower overhead, lower manual intervention and system failure, as well as gather real-time, quality information for improved plant performance.

Open architecture allows ease of integration with multiple platforms

Specific design procedures had to be considered for the control equipment. Other key considerations included:

- The environmental impact
- The basic reliability and availability of both the process being controlled and the control system, itself
- The availability of a protective function to ensure the process is shut down before specific variables exceed critical values
- Sufficient recording equipment to determine the variables that deviated from norm

The Solution

The Saguling Hydro Electric Power Plant selected CitectSCADA for its open connectivity which allows the system to connect to various network and hardware platforms. This was very important to Saguling who had previously been locked into a proprietary and antiquated system that made upgrades extremely time consuming and expensive.

While the old system used a console desk for operations and a graphic panel for display, the CitectSCADA system uses just a single PC for both command and display. CitectSCADA also permits operators to access information and configure the system from any workstation at the plant. It is very easy to configure and offers outstanding reliability.

CitectSCADA also offers a display history of alarms, trends and events to give operators all the information they need to operate the power plant, as well as to analyze historical operations.

The Benefits

In addition to the display history of alarms, trends and events, CitectSCADA enables Saguling to reap many benefits, including:

- Real-time display of state of process
- Access to plant documentation
- Open and easy connection to other systems in the plant, including maintenance management (CMMS)

By replacing its antiquated legacy system with the CitectSCADA solution, the Saguling Hydro Electric Power Plant was able to lower overhead, lower manual intervention and system failure, as well as gather real-time, quality information for improved plant performance and ensure smooth future growth through its open architecture.



“We are very happy with the success of the overall implementation of CitectSCADA in modernizing the Saguling Power Plant. The speed of adoption by the customer in operating the modern CitectSCADA-controlled plant is very pleasing to us. We are all very proud to have been associated with this project, and particularly with the proven data access and reliability of the system since commissioning.”

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