

PROJECT PROFILE STANTON BATTERY ENERGY STORAGE WELLHEAD

Customer Background

In 2020, Wellhead and the direct contract holders and operators in the energy sector sought to build a state-of-the-art energy storage facility in Stanton, CA. The project would be known as the Stanton Energy Storage System (SBES), now one of Southern California's most extensive energy facilities. SBES is a unique, clean energy storage system powered by Samsung Li-Ion batteries, capable of running autonomously, providing power to 65,000 homes, and effectively reducing the region's carbon footprint.

Project Background

Energy Vault, as the primary integrator and contractor overseeing the Energy Management System (EMS) implementation. Wellhead, the project developers aimed to integrate the EMS data into their existing Plant SCADA system for more flexibility in control and to consolidate all data into the Wonderware Historian. Enterprise Automation was brought on to develop this new Plant SCADA system to communicate directly with the EMS for reading

EA Solutions

The SBES Project

Enterprise Automation (EA) was pivotal in designing and implementing a comprehensive Plant SCADA system for SBES. This system controlled over 15,540 battery modules within 28 containers, each with redundant HVAC systems + a fire suppression system. In total, the SCADA system contained 200,000 tags and 120,000 alarms. For such a large-scale project, EA needed to use a publish-subscribe communication protocol, such that data is only transmitted on change, vs constant polling, which can bog down the network. EA used redundant OPCUA clients to communicate to the EMS for all read-only data. 'roject Manage Matt Avila

Project Technical Lead: Bryce Williamson

An Allen Bradley ControlLogix L82 series PLC facilitated robust control logic through Modbus communications with the Energy Vault EMS. The PLC was used for processing commands from SCADA to the EMS but also interfaced with California Independent Systems Operators (CAISO) and Southern California Edison for automated dispatch. This computerized dispatch system is one of the many innovations that Wellhead has used to streamline its operations. Redundant connections to the Wonderware Historian enhance Wellhead's ability to make data-driven decisions.

Collaborating directly with Wellhead and Energy Vault, EA successfully integrated the core EMS functionality into Plant SCADA for a more seamless and consistent workflow for Wellhead operations.

This collaborative effort between Wellhead, Energy Vault, and Enterprise Automation not only contributed to the operational efficiency of the SBES project but also played a pivotal role in advancing Southern California's energy landscape toward cleaner and more innovative solutions.

Key Insights

- EA designed a comprehensive PlantSCADA system for SBES, controlling 15,540 battery modules.
- SBES was a result of innovative technology and collaboration creating an autonomous facility
- Successful collaboration streamlined Wellhead operations, integrating EMS functionality for cleaner energy solutions in Stanton

Key Technology:

- Plant SCADA (formerly Citect)
- Modbus Communications
- AB Control Logix L82 Series PLC
- Wonderware Historian
- EMS (Energy Management System)
 Samsung Lithium Ion Batteries





Contact us:



eaintegrator.com





(949) 769-6000