Middle Eastern Aluminum Manufacturer Adopts OSI Industrial Energy Management Solution for Uninterrupted Operations

Industrial Energy Management System for Large-Scale **Manufacturing Facility**

2,249 MW
Installed Capacity

CHALLENGE

Increasing energy demands due to operational growth caused this aluminum manufacturer to boost its installed capacity and expand its legacy power distribution system, prompting a reevaluation of the company's energy management system (EMS) and supervisory control and data acquisition (SCADA) system.

SOLUTION

The aluminum manufacturer partnered with OSI to design and deploy a state-of-the-art **OSI Stratus™** industrial energy management solution capable of scaling with its operations.

VALUE CREATED

- The adoption of OSI's EMS and SCADA technology bolstered the company's forecasting, restoration, training, data archiving, and analysis capabilities.

- The customer can continue to expand operations while enjoying uninterrupted production.

Introduction

This leading aluminum manufacturer operates one of the largest and most modern aluminum smelters, boasting production of more than one million metric tons of premium-grade aluminum annually—around two percent of the world's total production. Its aluminum products, which include ingots, slabs, billets, and liquid metal, have been delivered throughout the globe for nearly 50 years. The company serves as an exemplar for other non-oil industries in the region, employing more than 3,100 people, driving economic and industrial development in the country, and adhering to numerous rigorous quality management standards and guidelines.

Aluminum smelting demands enormous amounts of power due to the electrolysis process. This manufacturer has remained self-sufficient in its energy production by way of its dedicated power plant, but to keep up with increasing energy demands due to growth, a fifth power station was added to boost its installed capacity. This required the expansion of its legacy power distribution system, prompting a reevaluation of the company's operational technology (OT) systems. It was determined its energy management system (EMS) and supervisory control and data acquisition (SCADA) needed to be replaced with a fully modernized solution capable of scaling with its operations.

Regulatory Considerations

This manufacturer has a long history of maintaining international quality management and safety standards throughout their operations. They adhere to a number of ISO and OHSAS standards, including those related to environmental management systems; quality assurance in production, service, and installation; and occupational health and safety. The new EMS/SCADA would need to share their focus on meeting or exceeding international quality standards, and their software would need to facilitate their continued adherance to those standards well into the future.

Energy Management and SCADA

Key functionality afforded by the **OSI Stratus** product suite includes load shed and restoration, an equipment outage scheduler, an operator training simulator, and OSI's **CHRONUS™** Big Data Historian, as well as numerous forecasting, scheduling, analysis, alarm management, and trending capabilities.

The load shed and restoration functionality facilitates the immediate and reliable shedding of loads in response to critical system disturbances. It enables users to independently specify amounts of load to shed or to configure the system to automatically calculate the amount of load to shed based on a pre-defined threshold.

The equipment outage scheduler enables the operator to schedule outages of any power system device, including generators, transmission lines, transformers, breakers and switches, loads, and reactive compensation devices.

Operators can gain firsthand experience with events ranging from system blackouts to component losses to normal and secure operations by using the operator training simulator. It provides simulated real-time system responses to events that let the operators practice and script their actions without risking the operational integrity of the system.

To facilitate data collection and archiving of real-time data sets associated with large-scale real-time data measurement environments, they deployed OSI's **CHRONUS** next-generation data historian application. It's the first historian to leverage the massive throughput of big data technologies frequently seen in large-scale web stores and social media sites that must process and store tens of millions of data points and transactions.

Conclusion

This manufacturer's adoption of OSI's EMS and SCADA technology ensures that it is equipped with the industry's most sophisticated operational technology solution, capable of securely and reliably assessing and managing their power needs. This technology helps the customer maintain a safe and secure workplace, meet clean energy objectives, capitalize on new revenue opportunities, and continue to grow operations by facilitating uninterrupted production.

About Open Systems International

Open Systems International (OSI)—headquartered in Minneapolis, Minnesota— provides open, state-of-the-art and high-performance automation solutions to utilities worldwide. OSI's solutions empower its users to meet their operational challenges, day in and day out, with unsurpassed reliability and a minimal cost of technology ownership and maintenance.

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