



Steam Turbine Control Upgrade for Southeastern US Sugar Mill

TYPE OF PLANT

Sugar process mill burning bagasse in three boilers

PRIME MOVERS

Mitsubishi
Single Extraction Steam Turbine

CONTROL TECHNOLOGIES

Woodward Atlas SC

Woodward EG10P
Actuators

Data Capture
Control Assistant Software



PROJECT OVERVIEW

The Sugar Mill power plant incorporates three boilers fueled by bagasse, which supply two single extraction Mitsubishi steam turbines.

The project requirements were to upgrade the original 515 DSTC, replacing the obsolete control technology with the updated Woodward Atlas SC Digital Control System.

The original Woodward EG10P actuators were also replaced with new Woodward EG10P actuators, with additional spares on-site to ensure continuation of operation during actuator service and overhaul.

The benefits of upgrade were to provide increased operating efficiency, improved integration through the extraction process, addition of automatic turning-gear control, better alarm reporting and resolution and most importantly this customer wanted full control of the process and valve positions via their existing DCS system. Overall, these benefits ensured that downtime would be minimized and the prime mover would operate at optimum efficiency.

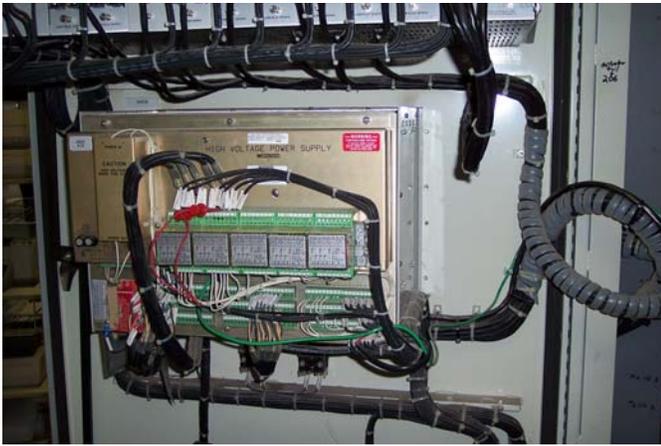


Figure 1 Original Installation of Woodward Digital Control and Mechanical Actuator

SUGAR MILL COMMISSIONING

The equipment was installed by GCS during a scheduled plant outage. During the outage, the outdated Woodward 515 control and wiring was removed, and the upgraded Woodward Atlas SC was installed in the same location. A mounting plate was designed to allow for the smaller space required by the Atlas SC.

The field wiring, once disconnected from the 515 DSTC was removed and replaced with new wiring connected to the Atlas SC. The new design eliminated a lot of the old relay-logic which was therefore removed from the panel.

The new EG10P actuators were installed and operating spares of the EG10P supplied.

The Control Assistant software was installed to facilitate downloadable trend data.

Working to a tight deadline, to ensure the project stayed within the scheduled outage, GCS technicians re-wired and commissioned the equipment, and producing a system that performed above the customer's expectations.

As a result of the professionalism and expertise shown by its technicians and support staff, GCS has continued to serve the sugar mill with its mechanical and digital control and actuation solutions, through field service, parts and support.

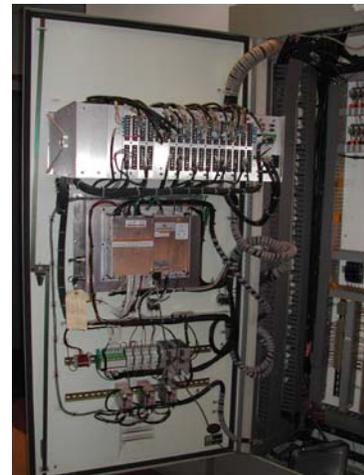


Figure 2 Upgraded Control System

GCS offers comprehensive control and monitoring system service, spares and support for engine and turbine systems. From controls upgrades and integration to turnkey project management, we service a broad range of marine, power generation and industrial projects.

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