



## New Actuation and Speed Protection System for Mid-Atlantic Paper Mill

CS7556

### APPLICATION

Paper Mill

### TURBINES

GE Model DRY turbine rated at 1400HP

### CONTROL TECHNOLOGIES

#### Woodward Peak® 150 Operator & Speed Digital Control

The Woodward Peak® 150 digital control is designed to control a steam turbine driving a mechanical load. It provides tight control of speed (NEMA D) and includes an input for a 4–20 mA remote speed control signal, which can be used for a process-generated input.

#### ProTech®-SX Safety System with Integrated Overspeed Protection

The Woodward ProTech®-SX is a safety programmable logic controller with integrated overspeed protection designed to safely shut down plant process equipment when sensing a safety event.

#### Actuator and Valve Adaptation (Valtek)

The new actuator is a pneumatic piston style Valtek 25, the Valtek moves the steam valve through custom made linkage designed in SolidWorks to the site specific turbine valve. The Valtek gets its command signal from the Peak® 150 Steam turbine control module.

#### Speed Sensing Gear and Housing

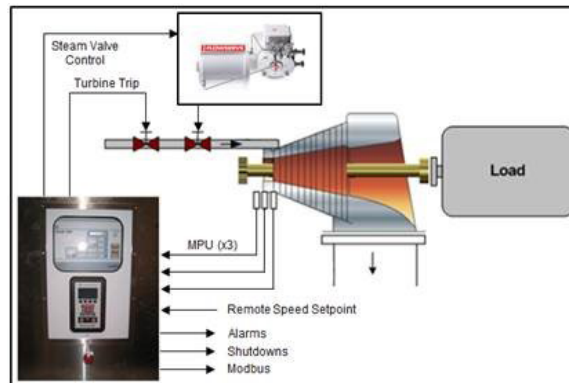
### PROJECT OVERVIEW

GCS was contracted to provide new control systems and pneumatic actuation to replace the existing Woodward PG governor on a fan feed water pump. The new actuator is a pneumatic piston style Valtek 25.

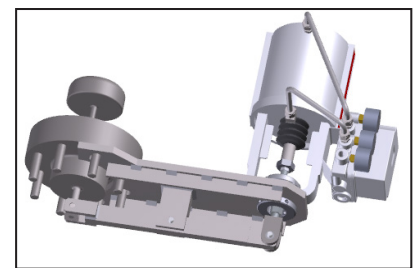
The Woodward Peak 150 digital control is designed to control a steam turbine driving a mechanical load. Overspeed protection is provided by a Woodward Protech SX Overspeed Protection which serves as the master trip device and the only device that will trip the safety relay. All external trips are communicated through the SX including any trip called for by the Woodward Peak 150.

The prime mover is a GE Model DRY turbine rated at 1400HP operating at 5000RPM driving a fan pump. Speed sensing is accomplished by a 30 tooth gear and housing directly driven by the turbine shaft. The control enclosure is mounted close to the turbine where operators can monitor the machine for any abnormalities during the starting procedure. The turbine can be started from either the front face of the Woodward Peak 150 by opening the enclosure or from the remote start switch in the control room. To determine the cause of the last turbine trip, operators reference the trip log in the ProTech SX.

NEW SYSTEM OVERVIEW



ACTUATOR AND VALVE ADAPTATION



GCS offers comprehensive control system support, from engine and turbine systems integration to turnkey project management for a broad range of marine, power generation and industrial projects. GCS is a member of the MSHS Group. Learn more at [www.govconsys.com](http://www.govconsys.com) or email us at [sales@govconsys.com](mailto:sales@govconsys.com)

#### Southeast / Bahamas

3101 SW 3rd Avenue  
Fort Lauderdale, FL 33315  
Phone: 954-462-7404  
Toll Free: 877-659-6328  
Fax: 954-761-8768

#### Mid-Atlantic

3120 Arizona Avenue  
Norfolk, VA 23513  
Phone: 757-852-5808  
Toll Free: 877-659-6328  
Fax: 757-852-5809

#### Gulf Coast

2022 Tamvest Court  
Mandeville, LA 70448  
Phone: 985-626-8707  
Toll Free: 888-427-4853  
Fax: 985-626-8732

#### Pacific Northwest

3425 16th Avenue West  
Seattle, WA 98119  
Phone: 206-297-0300  
Fax: 206-297-0302

