

FlexAssist with extended Automatic Generation Control (AGC)

Unit Modular Coordinator

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Larger AGC capacity range for higher performance

Siemens Energy Unit Modular Coordinator is a series of standard supervisory automation modules that govern the plant's control system. As a part of extending the AGC range, Siemens Energy have standardized a new controls philosophy which will integrate and add the auxiliary load from the Duct Burners in the AGC scheme. This automation solution will enhance the timing of the Duct Burners Startup sequence and govern the plant's auxiliary load needs by equally distributing a flow setpoint to the unlaying flow controller.

This in part, is done by varying the duct burner load to keep the combustion turbine's away from their upper and lower limits. The AGC range consists of the CT load range for AGC, plus a major portion of the duct burner operating range. The role of the CT is to maintain fast and immediate response to the dispatched load demand throughout the AGC range.

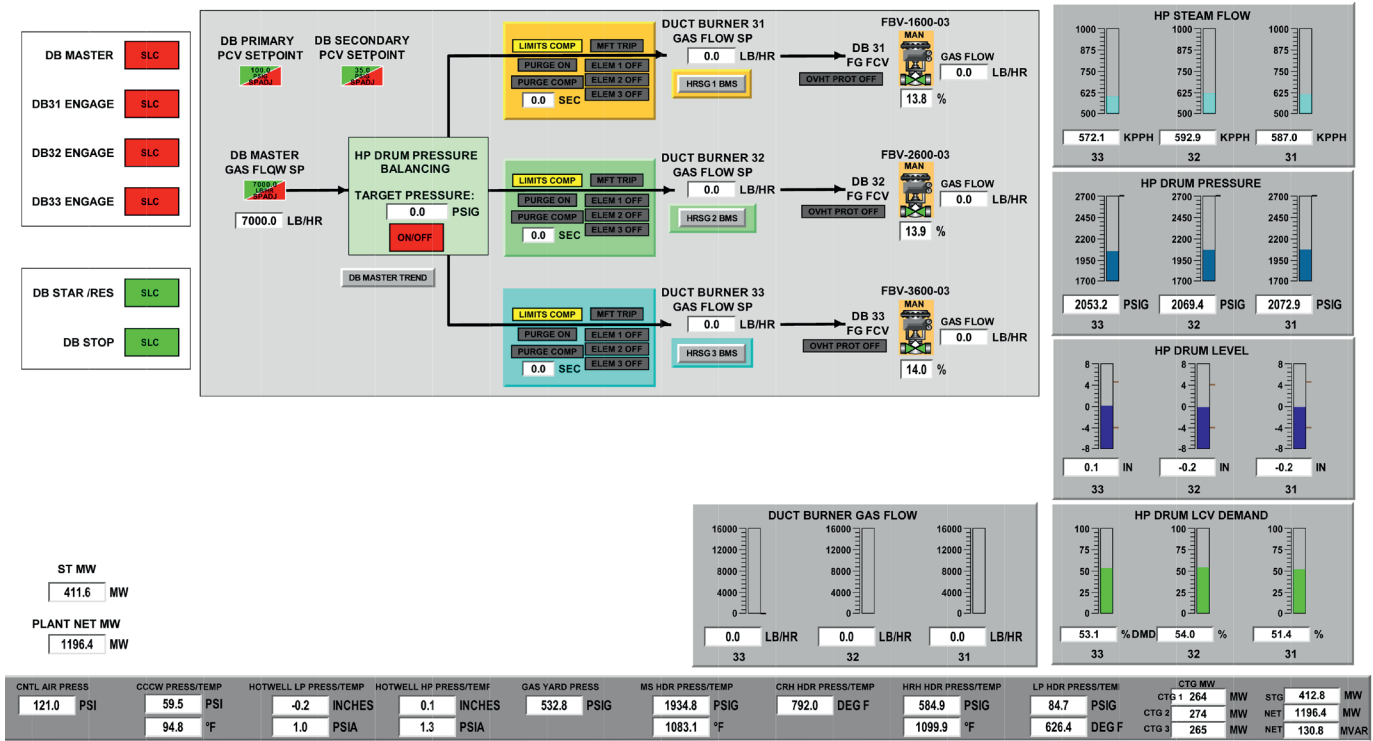
This approach will reduce manual operator action, ensure startup consistency and reduce operator loading. As dispatch and market demands have changed, Siemens Energy are seeing that the Duct Burners are being utilized to maintain the CTs operating point at a load level to fulfill the AGC across the complete range.

Improvements

- Increased potential for higher ancillary services (AGC) revenue.
- Larger AGC Capacity range
- Higher performance factor potential despite relatively slow duct burner response and steam turbine delays.
- The use of the CTs for fast and immediate response are intended to overcome steam turbine delays, resulting in an improved performance factor.

Technical Benefits

- Potential AGC ancillary services enhancement. Approximately \$15k per year per additional mega watt AGC capacity.
- Potential performance factor improvements from 60% range to 100% range.



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