## Steam Turbine Control

CCC's steam turbine control apps regulate turbine speed and ensure safe operating parameters like inlet steam pressure. They support automated start-up/shutdown sequencing, overspeed protection, and critical speed avoidance.

### Overview



Stable and accurate speed control for improved production and uptime.

#### **Overview**

Having high quality control for the steam turbine helps ensure the process remains stable with the highest possible efficiencies as well as increased reliability. As the turbine load continuously fluctuates due to changes in process, slow and poorly designed speed control can lead to process instability as well as turbine overspeed.

#### What Is It

CCC's steam turbine control applications, including speed and extraction controls, run continuously to regulate the rotational speed of a steam turbine while ensuring that other turbine operating parameters, such as inlet steam pressure, do not exceed safe limits. They can be configured to perform automated start-up and shutdown sequencing, overspeed protection, and critical speed avoidance.

#### **How Does It Work?**

CCC speed and extraction controllers provide high quality control accuracy and improved machinery protection through advanced control algorithms. They are designed to control all types of API 612 Special Purpose turbines including single valve and multi-valve turbines, single extraction/admission turbines as well as double extraction/admission turbines.

Some of the key features of the CCC steam turbine control applications include:

- Overspeed Avoidance
- Automatic Start and Stop Sequencing
- Critical Speed Avoidance
- Break Away Control
- Automatic Warm Start-up Sequencing
- Variable Loop Gain

In addition to integrated Speed and Extraction control, our Speed control application has integrated control features for the following applications:

- Generator Control for synchronous generators
- Power Recovery Train Control

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- Increases Uptime: Fast and accurate PID controls combined with loop decoupling and overspeed protection help avoid costly downtime even for a sudden load loss.
- Prevents Damage: By automating the sequences, including critical speed avoidance, it can achieve more safe, reliable, and repeatable start-ups and shutdowns.



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