HYDRO POWER LIBRARY

► Modeling and simulation of hydro power plants for performance analysis, optimization, and the development and verification of plant concepts and control strategies.

The Hydro Power Library provides a framework for modeling and simulation of hydro power plant operation. Multiple plant designs and their respective dynamic behaviors can be studied in the early concept design phase.
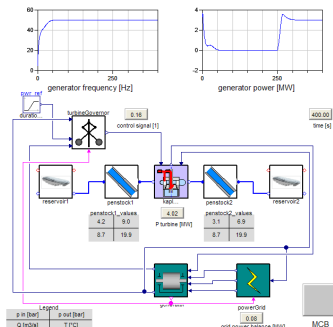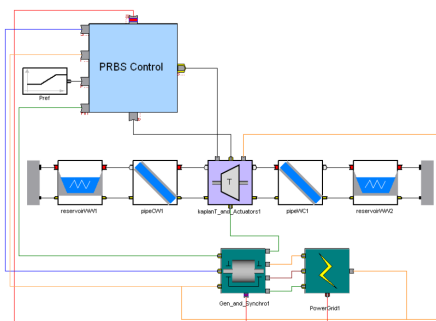
Hydro Power Library offers a complete environment for the testing and tuning of plant controllers in order to attain optimal performance. Hydro Power Library is also ideal for simulation of transient operation, such as start-up and load rejection, to verify that the control system handles these scenarios. A particular advantage is the ability to simulate dynamic as well as steady-state behavior using a single model.

Hydro Power Library is used in many engineering tasks concerning hydro power plant design and analysis including waterway dynamics and multiple turbines connected to a common penstock. Planning and commissioning tests and procedures can be simulated to reduce the risk of unexpected events and to minimize costly tests done on the actual plant

KEY FEATURES

- Complete environment for verification of plant concepts and control strategies
- Enables dynamic as well as steady-state simulation in the same model
- Integration of hydraulic or electrical models
- Estimation and understanding of the waterway dynamics
- Planning of commissioning tests and procedures
- Estimation of possible/necessary start and stop rates of the guide vanes
- Identification of objectives for the water level control
- Analysis of extreme working conditions of the plant, such as load rejection