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Avista Microgrid Automatic Generator Controller

Presented by

Caution: Large Load

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Description:

The Avista Microgrid Automatic Generator Controller is a project based around designing a controller to regulate and control two hydro-generator units on the Spokane River in a micro-grid operation. A micro-grid is a power planning contingency that is meant to isolate a system (in this case, the town of Spokane) from the rest of the electrical 'grid,' and to operate on its own independent power production.

A problem arises because determining the response to an applied load of these generators in a small system is critical to their safe operation. For this reason, an AGC (automatic generator controller) must be designed to coordinate the voltage and frequency regulation with each generator with respect to themselves as well as the system loads.

Model:

To the right is a Simulink model of the entire Monroe Street hydro-generating unit on the Spokane River. This model includes the unit's exciter, turbine, governor, and generator. Using this model we will be able to simulate the generator's response to an applied load.

