



# ANF Energy

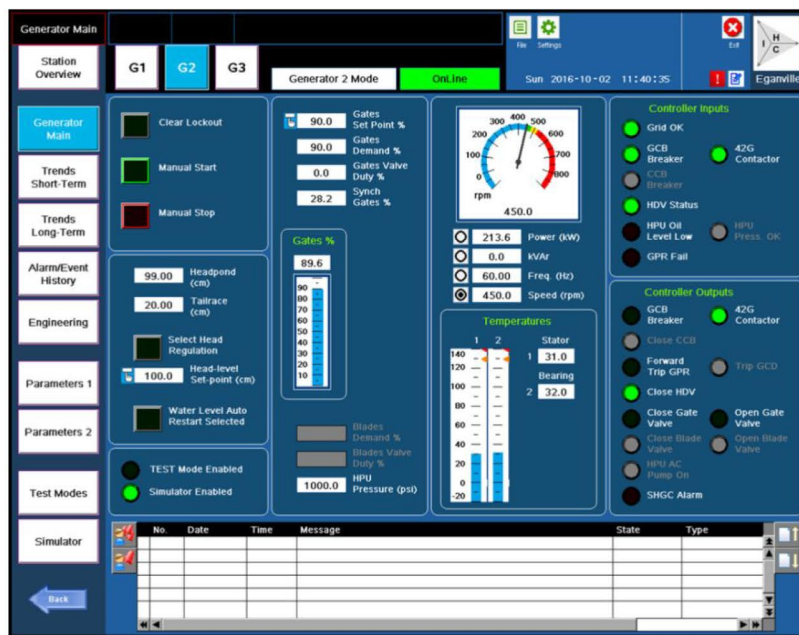
## SHC-1 Small Hydro Generator Control System

*The Small Hydro Generator Control System protects and controls the generators of a Hydro-Electric Generating Facility, and is designed for systems up to 5MW. It has a modular design, and communicates through the Site Local Area Network (LAN).*



### Features

- Automated Start-Stop sequences with comprehensive fault detection and response.
- User configurable for a wide range of options.
- Available for single or double regulated turbines; On-Off or
- Proportional Hydraulic Valves; Induction or synchronous generators.
- Direct wicket gate control, or via head-level or power/speed regulation.
- Allows low-head auto-shutdown with high-head auto-restart.
- Facilitates smooth synchronization based on sustained speed match.
- HMI offers real-time display and control, event logging, data logging and graphing.
- HMI covers up to 6 generators per site.
- Remote access to HMI facilitates unmanned site operation.
- Uses cUL/CSA approved off-the-shelf components.
- Contains an embedded plant simulator allowing operator training and 'what if' studies.
- Available in a cabinet, or custom panel mounted for retrofit applications.



## The main components of the SHC-1 Small Hydro Generator Control System are:

- Small Hydro Generator Controller (SHC-1) containing:
  - PLC programmed with SHC-1 software
  - Ethernet Switch
  - RTD modules
  - Uninterruptible Power Supply (UPS).
- Human-Machine Interface (HMI) hosted on the Station PC.
- Station PLC providing data required by all units such as water levels.
- Generator Protection Relay (GPR) – Utility-grade relay with oscillograph facility.

The various components communicate via the Site Local Area Network (LAN). Remote access and e-mail alerts are facilitated through internet access.

