

## Micro-hydro Capabilities

*Gardner Energy has been designing and installing micro-hydro systems for the past 18 years and has installed 20 micro hydro systems in the intermountain west. Micro hydro power, just like solar power, can be designed for grid-tie with net metering, off-grid and grid-tie with battery backup. Micro hydro systems are typically designed to meet the customer's needs even though at times the potential exists to generate far more power than is needed. Because hydropower operates 24 hours a day a small system can provide enough energy for residential or small commercial customers.*

### Case Study:

Chris Anderson, Mountain Green, Utah

- 1.4 kW off-grid hydroelectric system
- 75 feet of net head
- 200 gpm

The micro-hydro system was designed to supplement an existing off-grid battery based solar electric system. Excess hydro energy generated when the batteries are full is shunted to radiant wall heaters to supplement propane heaters used in a school class room during the winter months as well as preheat domestic water. Wild unregulated AC power is transmitted 900 feet from the generator to the battery room. The wild AC power is transformed to 48 volt DC power through the power system controls. The inverter system converts the 48 volt solar and hydro power to useable 240 volt AC power.

