Power Converter Housing: Mechanical Design

The bulk of the power converter is to be housed sub-sea in the same housing as the electrical generator. This includes the left four boxes of Figure 6, this allows the potentially electrically noisy components to be kept away from other buoy electronics, and allows the load-dump resistor to be easily cooled by seawater without routing those high-voltage connections outside of the can. With all the components housed together in this manner the system can run without a battery connection and will continue to load the system properly should the batteries become dis-connected. The mechanical design is shown in the included drawings, notable features are an effort to keep the noisy power electronics in a separate compartment from the control electronics. Only a modest amount of EMI shielding between these compartments is planned at the moment, but this could increase if noise issues become an issue.

Documentation Included:

- Solid-models
- Load-dump heat transfer estimates