Exercise #3   **PV Solar Energy Systems**   **SP.76**

Do a first cut design of a stand-alone system for a residence 5 miles off-grid, in a clearing in the woods, in the vicinity of the city you considered in Exercises 1 & 2.

The average, daily load on the system is 10 kilo-watt hours, daily profile unknown, but uniform over every day of the year.

Size the array to system supply the needed energy for the worst month of the year.

Do this using only monthly, average daily values for flux at a tilt angle you choose.

Note: Hourly data does exist on the web at

http://rredc.nrel.gov/solar/old_data/nsrdb/tmy2/   (You have to download and unzip for your site).

So, if you assume a daily load profile, you could do an hourly simulation for a year. But since we are sizing the system for the worst month, do an hourly simulation for that month alone.

EC.S07 Photovoltaic Solar Energy Systems
Fall 2004