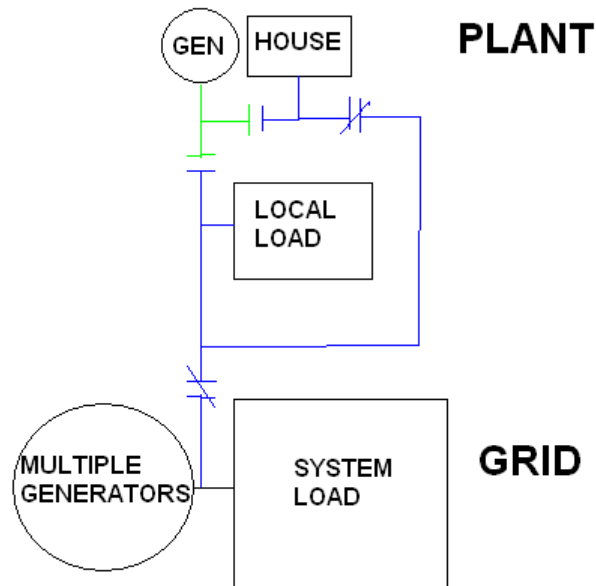
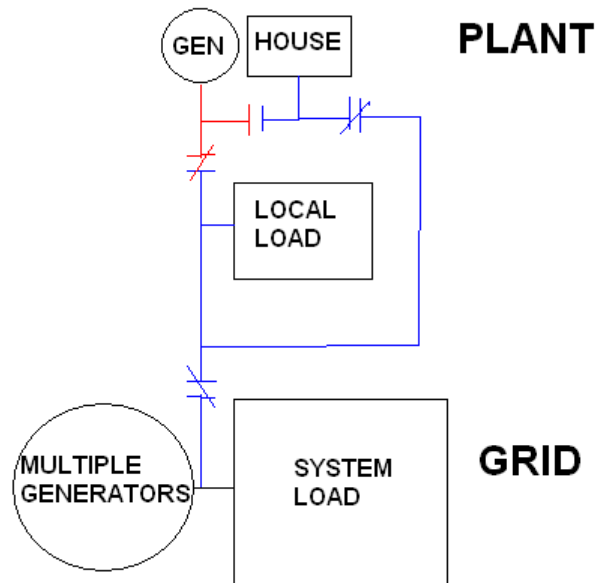


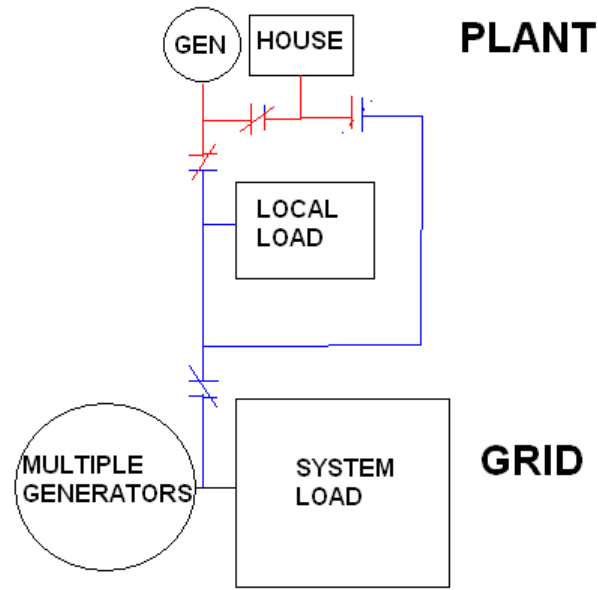
Explanation of HOUSE Power verses ISLAND Operation



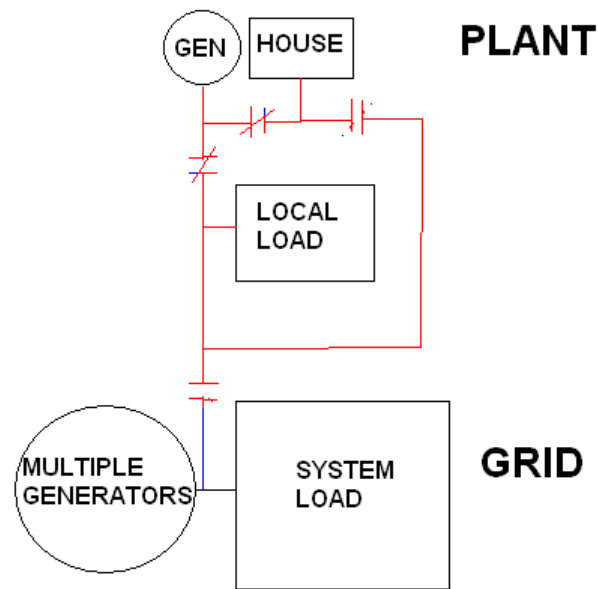
To start the generator at your power plant you will need to buy power from the GRID. The GRID being other generators connected with a system loading. The GRID operates very near rated frequency. The GRID will also be supplying power the local area (this could be your manufacturing plant). When your generator is spinning at the same frequency as the GRID, you may synchronize and provide power to the GRID.



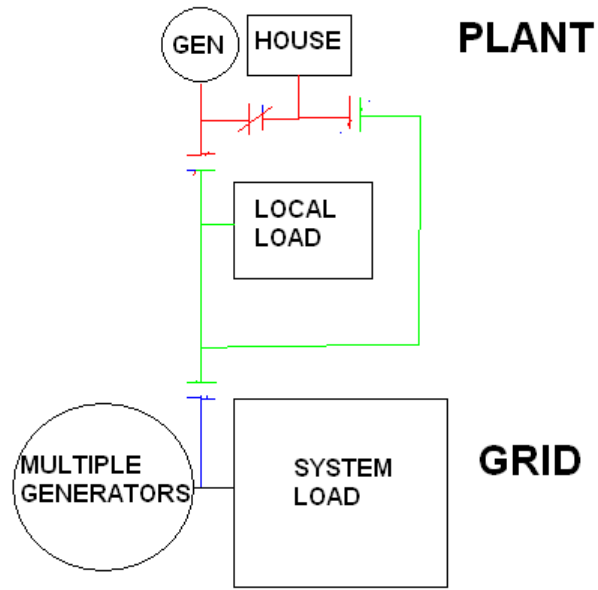
But you are still buying power from the GRID to support your HOUSE load. You transfer from the GRID to your own generator load, which means you now have less power to sell, but at least you don't have to pay for it.



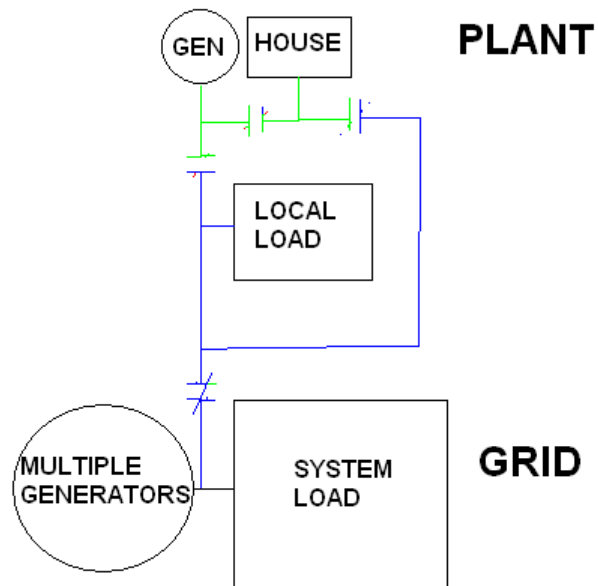
When you are synchronized to the GRID, your contribution to power has little effect on the GRID frequency, thus all you care about is how many MWs you can sell. However, should a remote transmission line separate you from the main GRID, leaving you as the only generator connected to the local load, you become an ISLAND system.



As an ISLAND, your generator must produce EXACTLY the same as the amount of load being used. If not, the ISLAND frequency will change. Your controller now needs to be aware that frequency must be monitored and the generator output adjusted to maintain the average frequency near rated. It is also possible that you lose the transmission connection external to your plant and you become an ISLAND of just your HOUSE load.



Should the controller lose the plant and your generator trip, there will be no HOUSE power and the plant will be black. Most plants do not have "Black Start" capability even if the remote transmission is reestablished since HOUSE power is need to close the breakers.



THE END