OPF and OpenDSS

From OpenDSSWiki

Question

The software does not have the ability to do OPF now, right?

Answer

There is not a simple yes or no answer to this question. It can solve a power flow and it can optimize some things. Is it in the form traditional OPF implementation? No.

Optimization generally involves minimizing or maximizing one or more variables. There are only a couple of simple optimization algorithms built into the OpenDSS program. They involve Capacitor and Generator siting algorithms. (See the AutoAdd solution mode.) These algorithms involve minimizing losses and maximizing available power delivery capacity. There is a generator dispatcher control for minimizing overload on a line or other branch. Likewise, the StorageController can minimize overloading on the substation.

We recognized early in the conceptual phase of DSS development in 1997 that we wouldn't easily be able to anticipate everything someone might want to do. The key was to provide a means by which users might program their on OPF, or whatever, algorithms with great flexibility. The COM Interface is provided to allow you to write an OPF algorithm in Matlab or some other program and use the OpenDSS to simulate the behavior of the distribution system and return the values of variables you need.

Keep in mind that you can access the system Y matrix and individual primitive Y matrices if you need them to help formulate optimization equations.

Roger

--Rdugan 20:23, 24 August 2010 (UTC)
