MC.zip was created September 5, 2016 to make it easy to download .exe executable files. Download MC.zip http://egpreston.com/MC.zip and drag the files to a working directory using windows file manager.

If you want to duplicate how I edit data and run the .exe programs you will need to purchase the Semware editor http://www.semware.com/ . You will find this is a much more powerful platform than trying to do all your work inside excel and notepad. I also created a DOS window on my desktop I can click on that stays open as I do my Semware editing.

The files in MC.zip are testing sequential Monte Carlo versus a Direct COPT calculation. The Loss Of Load Expectation LOLE is the annual sum of daily LOLPs (the maximum loss of load probability each day).

DC.for (.txt)(.exe) is a direct calculation example convolving ten randomly outaged generators. The 'exact' solution is listed after the program.

VDC.for (.txt)(.exe) is the direct solution plus a full binary tree solution. The direct method is shown to be the same solution as a binary tree.

DCP.txt is the same as **DC.txt** except two of the generators also have derated power states. The 'exact' solution is listed after the program.

DCPi.txt is the same as **DCP.txt** except the convolution is performed shifting the outage states to the right. The 'exact' solution is given.

DCPj.txt is the same as **DCPi.txt** except real*4 instead of real*8 are used. Comparing results shows the real*4 solution is accurate enough.

DCPk.txt uses **DCPj.txt** convolution in a large scale system example about the size of the eastern US grid, 8000 generators ~780,000 MW.

OPMC2.txt uses the 10 generator model Direct Calculation and sequential Monte Carlo methods to calculate reliability indices.

MC2.for (.exe) are the Fortran and executable creating **OPMC2.txt**.

OPMC3.txt repeats the above data 11 times to create a larger system using both Direct and MC solutions for reliability indices.

MC3.for (.exe) are the Fortran and executable creating **OPMC3.txt**.

OPMC3v.txt is the LOLEV version of MC3's LOLE counting occurrences of loss of load continuously rather than daily as LOLE does. For summer peaking we find LOLEV=LOLE. However, MC is 380k times slower than COPT.

MC3v.for (.exe) is the Fortran program and executable for **OPMC3v.txt**.

OPMC3i.txt shows how to reformulate the direct solution for the above system creating a COPT capacity outage probability table.

MC3i.for (.exe) is the Fortran code and executable for **OPMC3i.txt**.

MC4.for (.txt)(.exe) is a Fortran program for simulating a 2 area model using both a direct solution and a frequency and duration MC solution.

OPMC4.txt is the output report of the MC4 two area problem.

MC4i.for (.txt)(.exe) is like MC4 but can handle extremely large systems like the entire US system. Sequential MC is retained in this program for comparison testing purposes and a new output report is also printed.

OPMC4i.txt is the output report of **MC4i.(for)(.exe)** for the same two area larger scale example problem. We are almost there.

MC4F(X).txt shows the F(X) function for the MC4 program.

MC4iF(X).txt shows the F(X) function for the MC4i program.