Calculating Hartree-Fock SCF potential energy surfaces

1) Pick nuclear coordinates $\vec{R}_m$ of the molecule(s)
2) Guess MO or VB basis functions with coefficients c_m
3) Calculate N Fock operators
4) Solve N 1-electron Schrödinger equations
5) Go back to 3 and iterate until coefficients c_m converge to the lowest variational energy
6) You now have $E_{HF}(\vec{R}_m)$; go back to 1) and pick a different set $\vec{R}_m$
7) Plot the whole potential energy surface $E(\vec{R}_m)$