

Machine Model GENCC (special version of GENTPF)

Same input parameters as the GENTPF model, but with the additional parameters Pfac and Qfac. This has special treatment when it is read from the DYD file format. When read the DYD file format, PowerWorld will look for the following situation

1. Exactly one generator exists at a particular bus (N)
2. Two GENCC records are found in the DYD file which refer to the bus from step one (bus N)

If this situation is encountered, PowerWorld Simulator will split the generator found in the power flow case into two generator records. All parameters of the two generators will be equal to the original record parameters except

- $MW1 = MW_{\text{Original}} * (P_{\text{fac1}}) / (P_{\text{fac1}} + P_{\text{fac2}})$
- $Mvar1 = Mvar_{\text{Original}} * (Q_{\text{fac1}}) / (Q_{\text{fac1}} + Q_{\text{fac2}})$
- ID1 = ID given with the first GENCC record
- $MW2 = MW_{\text{Original}} * (P_{\text{fac2}}) / (P_{\text{fac1}} + P_{\text{fac2}})$
- $Mvar2 = Mvar_{\text{Original}} * (Q_{\text{fac2}}) / (Q_{\text{fac1}} + Q_{\text{fac2}})$
- ID2 = ID given with the second GENCC record

Typically, the GENCC models will then be coupled with an IEEEG1 model or similar which has two mechanical power outputs. These are meant to represent the situation where one source of steam controls the mechanical power on 2 synchronous generators. The following is an example set of DYD records which has

- 2 GENCC machine models
- 2 EXST1 exciter models
- 2 IEEEEST stabilizer models
- 1 IEEEG1 model

```
gencc 12345 "MyGen " 22.0 "H " : #9 mva=445 5.5 0.034 0.47 0.06 1.44 0 1.65 1.59 0.26 /
      0.46 0.205 0.205 0.15 0.117 0.33 0.0043 0 -0.06 0.3 0.54 0.54
gencc 12345 "MyGen " 22.0 "L " : #9 mva=375 6.4 0.036 0.41 0.07 9.03 0 1.48 1.45 0.28 /
      0.44 0.18 0.18 0.14 0.17 0.260 0.0045 0 -0.06 0.3 0.46 0.46
exst1 12345 "MyGen " 22.0 "H " : #9 0.01 99 -99 1.25 5 110 0 99 -99 0 0 0 0 0 3.7 -3.7 0 99 0
exst1 12345 "MyGen " 22.0 "L " : #9 0.01 99 -99 1.25 5 110 0 99 -99 0 0 0 0 0 3.7 -3.7 0 99 0
ieeeg1 12345 "MyGen " 22.0 "H " 12345 "MyGen " 22.0 "L " 1 : #9 mwcap=702 20 0 0 0.5 1 -10 1 0 0.5 0.28 /
      0 2 0.26 0 3 0 0.46 0 0 0 0.0833 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
ieeest 12345 "MyGen " 22.0 "H " : #9 1 0 0 0 0 0 0 0 0.390 0.390 0.050 0.520 10 10 1 0.0790 -0.0790 0 0 0
ieeest 12345 "MyGen " 22.0 "L " : #9 1 0 0 0 0 0 0 0 0.320 0.490 0.320 0.490 10 10 1 0.0960 -0.0960 0 0 0
```

Model supported by PSLF