

Exciter REEC_A and REECA1

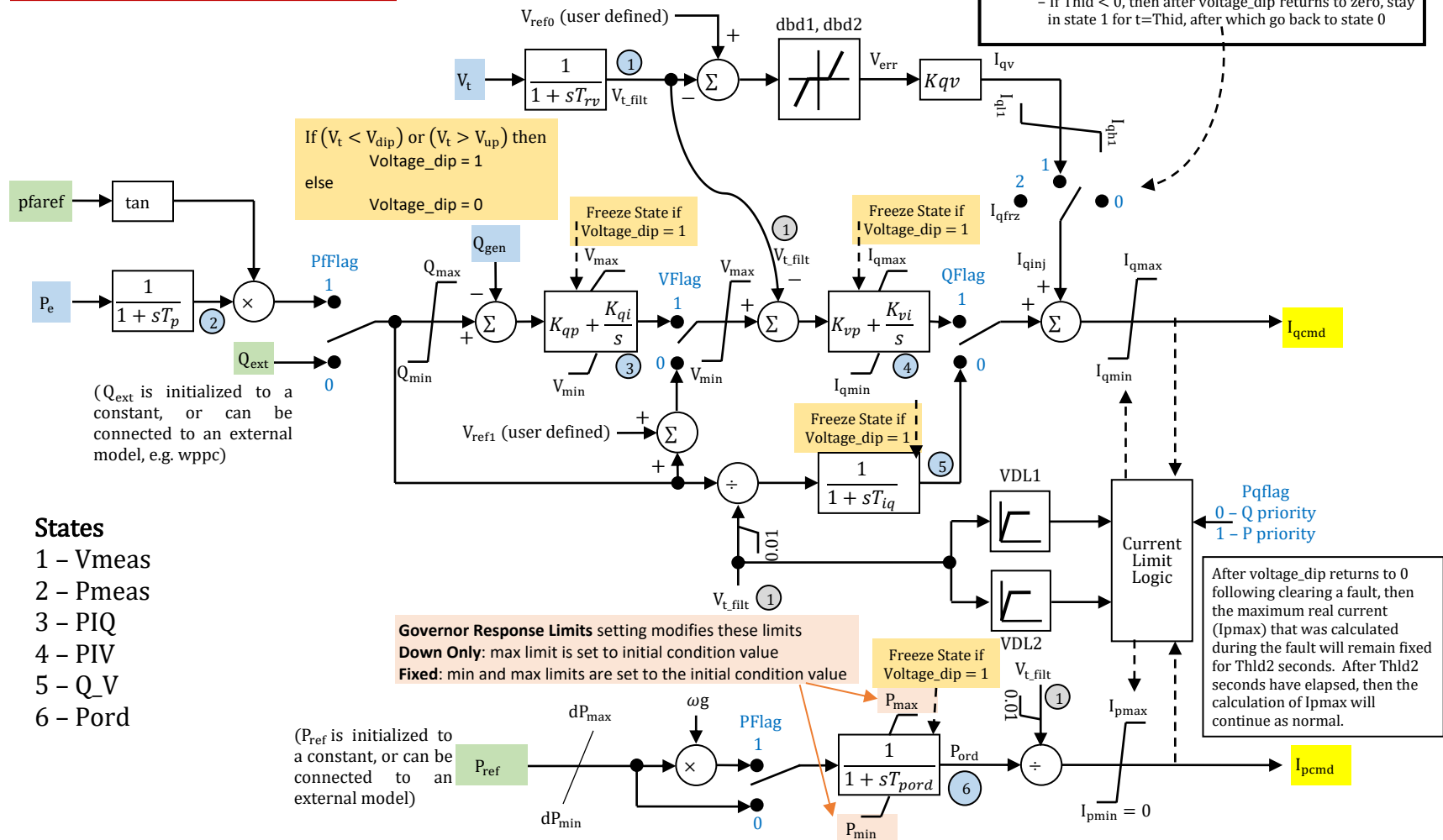
Renewable Energy Electrical Control Model REEC_A and REECA1

Warning!!

Extreme care should be taken in coordinating the parameters dbd1, dbd2 and V_{dip} , V_{up} so as not to have an unintentional response from the reactive power injection control loop.

State Transition - switch position

State 0 - If Voltage_dip = 0; normal operation ($I_{qinj} = 0$)
 State 1 - If Voltage_dip = 1; I_{qinj} goes to position 1
 State 2 - If $Thid > 0$, then after voltage_dip goes back to zero, set value to I_{qfrz} for $t=Thid$, after which go back to state 0
 - If $Thid < 0$, then after voltage_dip returns to zero, stay in state 1 for $t=Thid$, after which go back to state 0



Current Limit Logic Psuedo Code

The following pseudo-code describes how the values for **Ipmax**, **Ipmin**, **Iqmax**, and **Iqmin** are updated.

```
Voltage_Thld2TimerActive = special boolean related to timer
local_V = StateVtfilter // Vt State 1

if VDL1 table is empty then Iqmax = 1E10
else Iqmax = lookup from VL1 table using local_V

if not Voltage_Thld2TimerActive then begin
    if VDL2 table is empty then Ipmax = 1E10
    else Ipmax = lookup from VDL2 table using local_V
end

if PQFlag = 0 then begin // Q priority [default]
    If IMax < Iqmax Then Iqmax = IMax
    Iqmin = -Iqmax
    if not Voltage_Thld2TimerActive then begin
        local_I = Sqr(IMax) - Sqr(Iqcmd)
        if local_I < 0 then local_I = 0
        else local_I = sqrt( local_I )
        if local_I < Ipmax Then Ipmax = local_I
    end
    Ipmin = 0
end
else Begin // P priority
    if not Voltage_Thld2TimerActive then begin
        if IMax < Ipmax Then Ipmax = IMax
    end
    Ipmin = 0
    local_I = Sqr(IMax) - Sqr(Ipcmd)
    if local_I < 0 then local_I = 0
    else local_I = sqrt( local_I )
    if local_I < Iqmax Then Iqmax = local_I
    Iqmin = -Iqmax
end
```