The purpose of this document is to record what was done to enable HVDC in PST to use the structured global variable g and other 'clean up' actions taken.

Each paragraph describes the required changes to the PST file.

Initial globals:

```
%% HVDC link variables
global  dcsp_con  dcl_con  dcc_con
global  r_idx  i_idx n_dcl  n_conv  ac_bus rec_ac_bus  inv_ac_bus
global  inv_ac_line  rec_ac_line ac_line dcli_idx
global  tap tapr tapi tmax tmin tstep tmaxr tmaxi tminr tmini tstepr tstepi
global  Vdc  i_dc P_dc i_dcinj dc_pot alpha gamma
global  VHT dc_sig  cur_ord dcr_dsig dci_dsig
global  ric_idx  rpc_idx Vdc_ref dcc_pot
global  no_cap_idx  cap_idx  no_ind_idx  l_no_cap  l_cap
global  ndcr_ud ndci_ud dcrud_idx dciud_idx dcrd_sig dcid_sig

% States
%line
global i_dcr i_dci  v_dcc
global di_dcr  di_dci  dv_dcc
global dc_dsig % added 07/13/20 -thad
%rectifier
global v_conr dv_conr
%inverter
global v_coni dv_coni

% added to global dc
global xdcr_dc dxdcr_dc xdci_dc dxdci_dc angdcr angdci t_dc
global dcr_dc dci_dc % damping control
global  ldc_idx
```

Modified globals:

```
global g
```

Non-Linear files ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

handleNewGlobals

- Addition of `dcsp_con`, `dcl_con`, and `dcc_con` to global `g.dc`

dc_cont

- Alterations to use global `g.dc` structure
- Updated internal function documentation

dc_cur

- Alterations to use global `g.dc` structure
- Updated internal function documentation

dc_indx

- Alterations to use global `g.dc` structure

- Updated internal function documentation

dc_lf

- Alterations to use global `g.dc` structure

- Updated internal function documentation

- Has inputs for user damping controls, but not used or implemented.

dc_line

- Alterations to use global `g.dc` structure

- Updated internal function documentation

dc_load

- Alterations to use global `g.dc` structure

- Updated internal function documentation

- Contains usage of local variable Vdc (shared name of previous global)

dc_sim

- Alterations to use global `g.dc` structure

- Created internal function documentation

- Has a possible indexing error using 'j'

dc_vidc

- Alterations to use global `g.dc` structure

- Updated internal function documentation

inv_lf

- Alterations to use global `g.dc` structure

- Updated internal function documentation

- suppressed output from calculations

- local variable gamma not the global g.dc.gamma

inv_lf

- Alterations to use global `g.dc` structure

- Updated internal function documentation

- local variable gamma is not the same as g.dc.gamma

i_simu

- Alterations to use global `g.dc` structure

- Updated internal function documentation

lfdcs

- Alterations to use global `g.dc` structure

- Updated internal function documentation

nc_load

- Alterations to use global `g.dc` structure

- Updated internal function documentation

rec_lf

- Alterations to use global `g.dc` structure

- Updated internal function documentation

red_ybus

- Alterations to use global `g.dc` structure

s_simu_Batch

- Alterations to use global `g.dc` structure

- Updated internal function documentation

Linear Specific files

Alteration of system globals to use `g.dc` structure:

- svm_mgen_Batch

- ns_file (ran as a script)

- p_m_file (ran as a script)

- p_file (ran as a script)

- p_cont (ran as a script)