

To: D. Davies, WECC  
D. Tucker, WECC  
E. Davies, WECC  
From: J. Undrill  
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Re: Use of Data Checking Programs

**To check data for a single turbine-generator - Use programs 4ia and bb.p**

- a. Make sure that the file *rule.txt* specifies the desired model replacements
- b. Run 4ia with a command line like this

```
c:<path>\4ia 12hs31s.dyd 44144 "07" cj7.dyd error.csv change.txt
```

- c. The result will be a small dynamic data file, named *cj7.dyd*, ready for input to the EPCL program *bb.p*
- d. The small dynamic data file should not require any change before being used in *bb.p*. It may, however, be edited to apply changes suggested by the *error.csv* and *changes.txt* files.
- e. Run *bb.p* from the PSLF main panel and make dialog entries like this:

**Enter dyd file name (do not append .dyd):** *cj7*

**Enter MW Load in per unit of generator MVA base :** *0.85*

**Enter speed/load reference step PU :** *0.005*

- f. The result will be seven quite small *chf* files, one for each of the seven test simulations run by *bb.p*
- g. The plots produced by *bb.p* show the behavior of the selected turbine-generator
  - at bus 1 - as modeled in the original WECC dyd file
  - at bus 2 - as modeled by the new excitation system and other modeling specified by the *rule.txt* file used in steps c and d
- h. For tests 1-5 plots of field voltage, *efd* should show satisfactory behavior
- i. For tests 6-7 plots of generator power, *pg*, and turbine power, *pm*, should show satisfactory behavior
- l. Whether the before and after plots match one another depends on the translation specified by the MCDF files specified in step a. If the objective set up in step a. was to replace old models (e.g. *ex* models) with new ones (e.g. *es* models) with minimal error correction, the old and new trajectories should match closely. If the objective was to replace old models with significantly different ones or to correct data errors, the old and new traces may be quite different

**To check data for a cross-compound turbine-generator - Use programs 4ia and cc.p**

a. Make sure that the file *rule.txt* specifies the desired model replacements

b. Run 4ia with a command line like this

```
c:<path>\4ia 12hs31s.dyd 26030 "CC" h5.dyd error.csv change.txt
```

Note that the machine identifier field is entered as "CC"

c. The result will be a small dynamic data file, named h5.dyd.

This file is not immediately ready for input to the EPCL program cc.p

d. Edit the small dyd file to place the two gencc records for the H and L generators at each bus together. (The normally requires the moving of one record.)

e. Run cc.p from the PSLF main panel and make dialog entries like this:

**Enter dyd file name (do not append .dyd):** h5

**Enter MW Load in per unit of generator MVA base :** 0.85

**Enter speed/load reference step PU :** 0.005

f. The result will be seven quite small chf files, one for each of the seven test simulations run by cc.p

i. The plots produced by cc.p show the behavior of the selected turbine-generator

at bus 1 - as modeled in the original WECC dyd file

at bus 2 - as modeled by the new excitation system and other modeling specified by the rule.txt file used in steps c and d

j. For tests 1-5 plots of field voltage, efd should show satisfactory behavior

k. For tests 6-7 plots of generator power, pg, and turbine power, ph, pl, should show satisfactory behavior

l. Whether the before and after plots match one another depends on the translation specified by the MCDF files specified in step a. If the objective set up in step a. was to replace old models (e.g. ex models) with new ones (e.g. es models) with minimal error correction, the old and new trajectories should match closely. If the objective was to replace old models with significantly different ones or to correct data errors, the old and new traces may be quite different