

WECC MVS Updates

Jan 26, 2024

Presented by Fred Howell

Powertech Labs Inc.

<http://www.powertechlabs.com>

<http://www.dsatools.com>

Model Quality Testing (MQT) Tool

<Public>



- Command-line tool under development – for performing standard ‘model quality tests’ on dynamic models, with site-specific powerflow
- Similar to DMVIEW developed by ERCOT for PSS/E MQT, allows automatic/semi-automatic testing of IBR models
- Intended as free add-on for TSAT, PSAT users
- Uses PSAT for powerflow preparation, builds (and automatically runs if desired) TSAT simulation
- Tests supported:

FLAT - Flat run

VOLT - Voltage variation (for LVRT and HVRT tests)

FREQ - Frequency variation (for freq-up / freq-down tests)

SCR - Variable SCR tests

```
[Test.A_Flat]
Test Type = "FLAT"

[Test.B_VOLTDOWN]
Test Type = "VOLT"
Config File = "..\..\VOLTDOWN.xlsx"
Expected POI Bus Voltage = 0.99

[Test.C_VOLTUP]
Test Type = "VOLT"
Config File = "..\..\VOLTUP.xlsx"
Expected POI Bus Voltage = 1.0

[Test.D_FRQDOWN]
Test Type = "FREQ"
Config File = "..\..\FRQDOWN.xlsx"
Powerflow File = "..\powerflow\CanyonWin
Expected POI Bus Voltage = 1.0
POI Bus Equals INF Bus = Y
```

Model Quality Testing (MQT) Tool^{<Public>}

- Automatic features (can also manually specify in each data category)
 - TSAT case generation (and archive output)
 - Powerflow adjustments for POI injection
 - Monitor data generation
 - SCR adjustment
- Support for library or user-defined models (including compiled/DLL)
- Equipment name / bus number test support (name option specified in each category)
- If interested in testing, send email to dsainfo@powertechlabs.com