Inverter-Based Resource Workshop Follow Up Update

ROS
March 05, 2020

Inverter-Based Resource Workshop Follow Up Status Dashboard

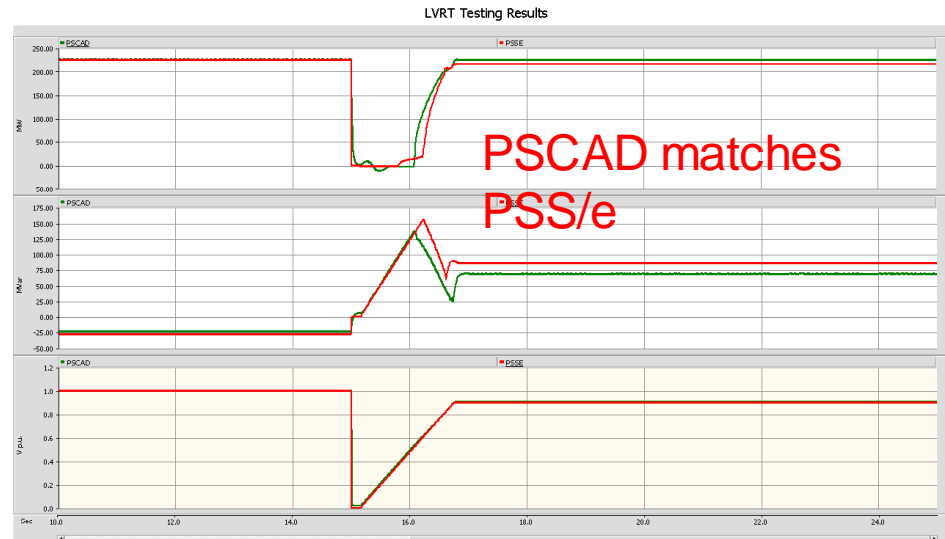| Issues	Status	Workgroups	Schedule
Better Communication of Existing Requirements	Develop a reference document to facilitate the understanding of the existing requirements, procedures, and practices. (TBD) Consider a NPRR on IBR definition. (Included in the draft DGR NPRR posted on webpage of DGR Workshop II in December 2019)	Resource Integration Workshop (RIW)	RIW (March, 2020) Submit NPRR in 1Q, 2020
Voltage Ride Through and Momentary Cessation	Consider a NOGRR to add transient overvoltage ride through requirement (DWG in February, 2020: need to continue the discussion) Identify the need of more detailed FIS stability analysis (like PSCAD study) (DWG in February, 2020: No need to require PSCAD studies for every FIS. Based on the existing language, TSPs can require additional FIS stability analysis if needed.)	Dynamics Working Group (DWG)	DWG (March, 2020)
Dynamic Models	Consider a PGRR to improve dynamic model quality (PGRR075) To strengthen the model validation requirements (DWG in February, 2020: support this effort but need to review the language when available)	DWG, RIW DWG, RIW	 DWG (March, 2020) RIW (March, 2020)
Advanced Features and Others	Continue discussion on this topic. Zero MW reactive support Damping support from IBRs (DWG in February, 2020: need to review the language when available)	DWG, RIW	DWG (March, 2020) RIW (March, 2020)
Impact on Transmission Protection	Existing practice in the high IBR penetration area in ERCOT (Meet with SPWG on March 4, 2020)	SPWG, TSPs	SPWG (March, 2020) ROS (April, 2020)

Dynamic Model Needs and Requirements

- Dynamic stability limits are based on studies using the dynamic models provided by the Resource Entities and developers.

- Planning Guide 6.2.1
    - (1)…The Resource Entity shall provide an **accurate** and **appropriate** model and model **parameters**….
    - (2)…A Resource Entity is responsible for tuning and validating the parameters that go into their models to ensure that the models produce an accurate representation of a device's capability and response.

Examples: Comparison between PSCAD and PSS/e

PSS/e model shows unstable results

PSCAD model provides wrong dynamic Var response
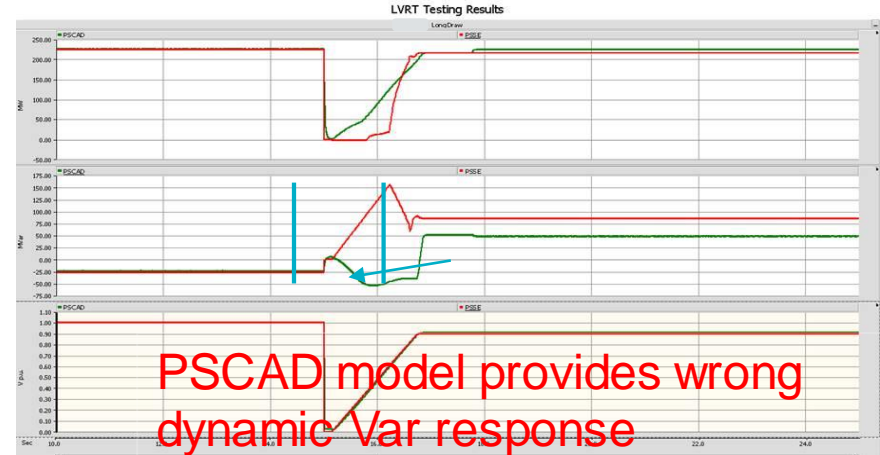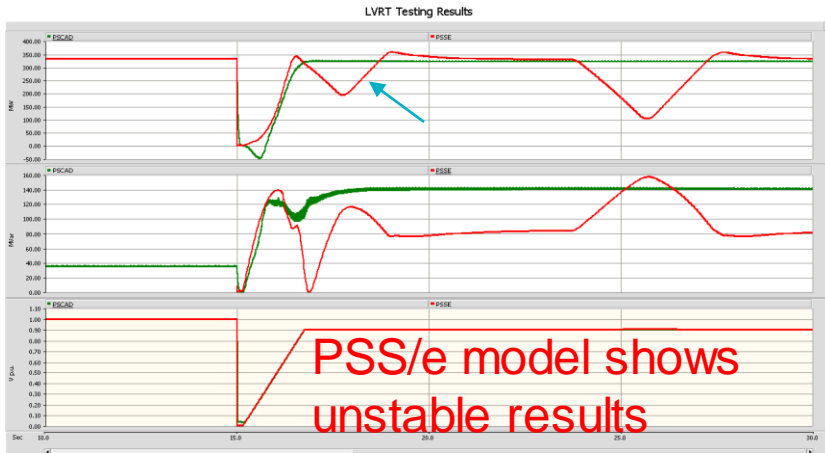
Red: PSS/e
Green: PSCAD

PSCAD matches PSS/e

Next Steps and Tentative Schedule

- IBR dynamic model improvements
  - Present the proposals in the RIW and DWG in March, 2020
  - Draft Protocol/Guides revision request (Q2, 2020)

- IBR damping support
  - Present the proposals in the RIW and DWG in March, 2020
  - Draft Protocol/Guides revision request (Q2, 2020)

Questions

Comments are welcome

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