Submission of Dynamic Models

Kyle Clifford
System Planning Modeling & Support
Tao Yang
Interconnection Analysis
February 7, 2019
In accordance with NERC recommendation and industry guidance, PJM is seeking to:

- Eliminate the use of dynamic models listed by NERC as Unacceptable
- Reduce the use of User Defined Models (UDM)
- Improve the quality and usability of remaining UDM
Advantages of Generic Models

- Minimize the time spent in debugging UDM
  - UDMs may require tuning
- Avoid UDM conflicts due to
  - Different UDM versions of the same model submitted for queue projects within PJM
  - Different UDMs and versions in the Eastern Interconnection
- Maintain synergy within Planning and with Operations
  - RTEP Baseline Studies
  - Online DSA platform
Disadvantages of using Generic Models

- State-of-Art technology may not be captured by a Generic Model
  - Phasor domain stability study limitations
  - Controller design and performance
- Long Generic Model update cycle
  - New version of a Generic Model is released only with the new version of software
  - New version of UDM can be released upon request
Existing Generators

• For existing generators, Unacceptable or User Defined Models will be phased out via MOD-032, MOD-026, and MOD-027 improved requirements
  – Improved MOD-032 requirements will be presented at the March PC prior to the 2019 MOD-032 compliance window opening
Exceptions

• Exceptions for UDM submissions are allowed when
  – Generic Model accuracy and performance is not satisfactory to represent the dynamics of the device
  – Necessary evidence must be submitted in support of UDM
Future Generators

- Take effect in AF1 Queue
  - AF1 Impact Study **must use** Generic Models
  - Necessary study/re-study requests **are encouraged to submit** Generic Models
- Exceptions allowed with
  - Evidence that available PSS/e Generic Models are not satisfactory
  - Satisfactory supporting documentation and block diagrams provided with UDM