Status Update: Evaluation of Voltage Ride Through Requirements Proposed by ERCOT

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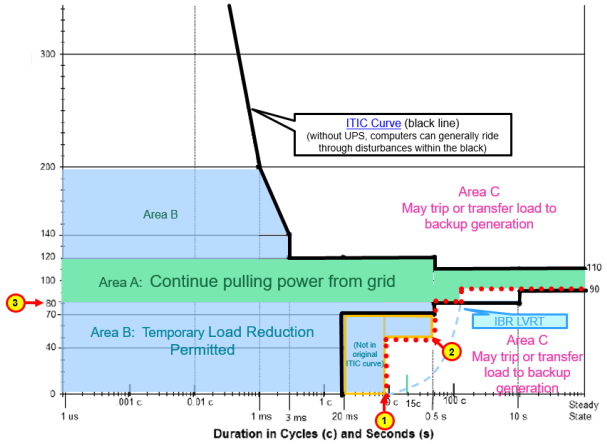
Background and Objectives

- Background
  - Voltage ride-through capability of LELs is uncertain, and potential large load losses could pose challenges to real-time operations
  - ERCOT proposed preliminary LEL Voltage Ride-Through (VRT) Performance Requirements at the July LLWG meeting
  - As introduced at the August LLWG meeting, ERCOT is currently conducting a study for the proposed VRT requirements



- Objectives
  - Assess the proposed VRT requirements in the planning horizon and the potential impact on system response by varying LEL trip and reconnection behavior

Assumption and Methodology

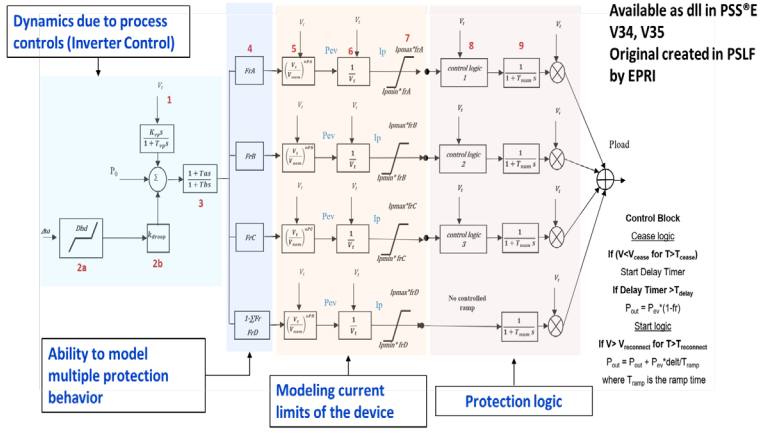
- As presented at this September LLWG meeting, additional planning study is currently in progress to evaluate the effectiveness of transmission upgrades in terms of load loss reduction, assuming the ITIC curve for LELs.

- ERCOT will use the same study case to assess the proposed VRT requirement
  - Original Case
    - 2024/2025 DWG 2028 HRML Case
  - Study Year
    - Year 2030-2031
  - Software: PSS/E (Ver. 35.6.3)
  - Area of interest:
    - West, Far West, and Panhandle and Nearby Panhandle regions in North

Assumptions and Methodology (continued)

- Generation, transmission, and load updates will be consistent with the transmission study scope presented at this September LLWG meeting, unless specific adjustments are needed for the purposes of this VRT study

- Dynamic Model Updates for LELs within the study region
  - ERCOT will replace the LEL dynamic model with the preliminary user-defined model (UDM) developed by EPRI
  - The preliminary UDM, which incorporates trip and reconnection settings with time delay during and after a fault, is considered adequate for assessing the proposed VRT requirements



Source: EPRI presentation at the July LLWG meeting

Assumptions and Methodology (continued)

- ERCOT will perform a sensitivity analysis to assess potential impact of the proposed ride-through requirements. The analysis will focus on scenarios such as:
  - Effectiveness of the proposed VRT requirements in terms of load loss
  - Impact on system response (e.g., voltage, frequency) due to dynamic behavior during the fault (e.g., momentary cessation, load reduction relative to voltage level)
  - Impact on system response under varying reconnection times after fault cleared and voltage recovered

Next Step

- ERCOT will provide status updates at the future LLWG meeting(s)
- Tentative timeline: Q4 2025

Questions?

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