



PJM LCL Ride-through Requirements

PJM Interconnection Proposal

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Planning Committee
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Disclaimer: While materials are current at the time of publishing, applicable requirements may change. PJM Governing Documents control.

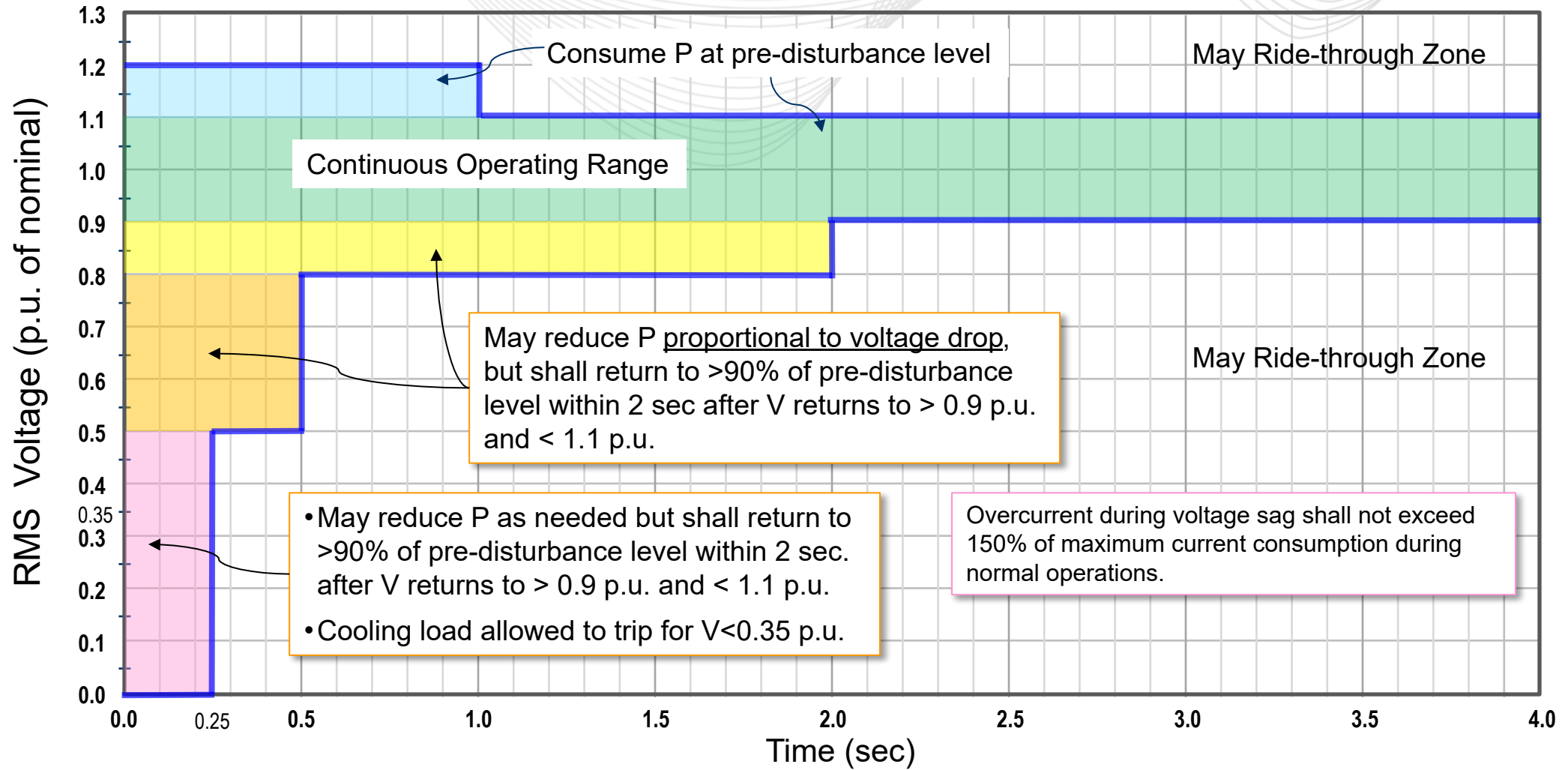
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- On June 18, 2026, FERC issued a Section 206 Show Cause Order to determine whether PJM's tariff adequately addresses large loads integration.
 - Identifies gaps in processes for evaluating reliability impacts and transmission needs of large loads.
 - Among other things, asks whether additional requirements are needed for:
 - Ride-through performance during system disturbances
 - Ramp-rate limitations and load restoration behavior
- PJM plans to propose revisions to address FERC's concerns (target: November 2026).

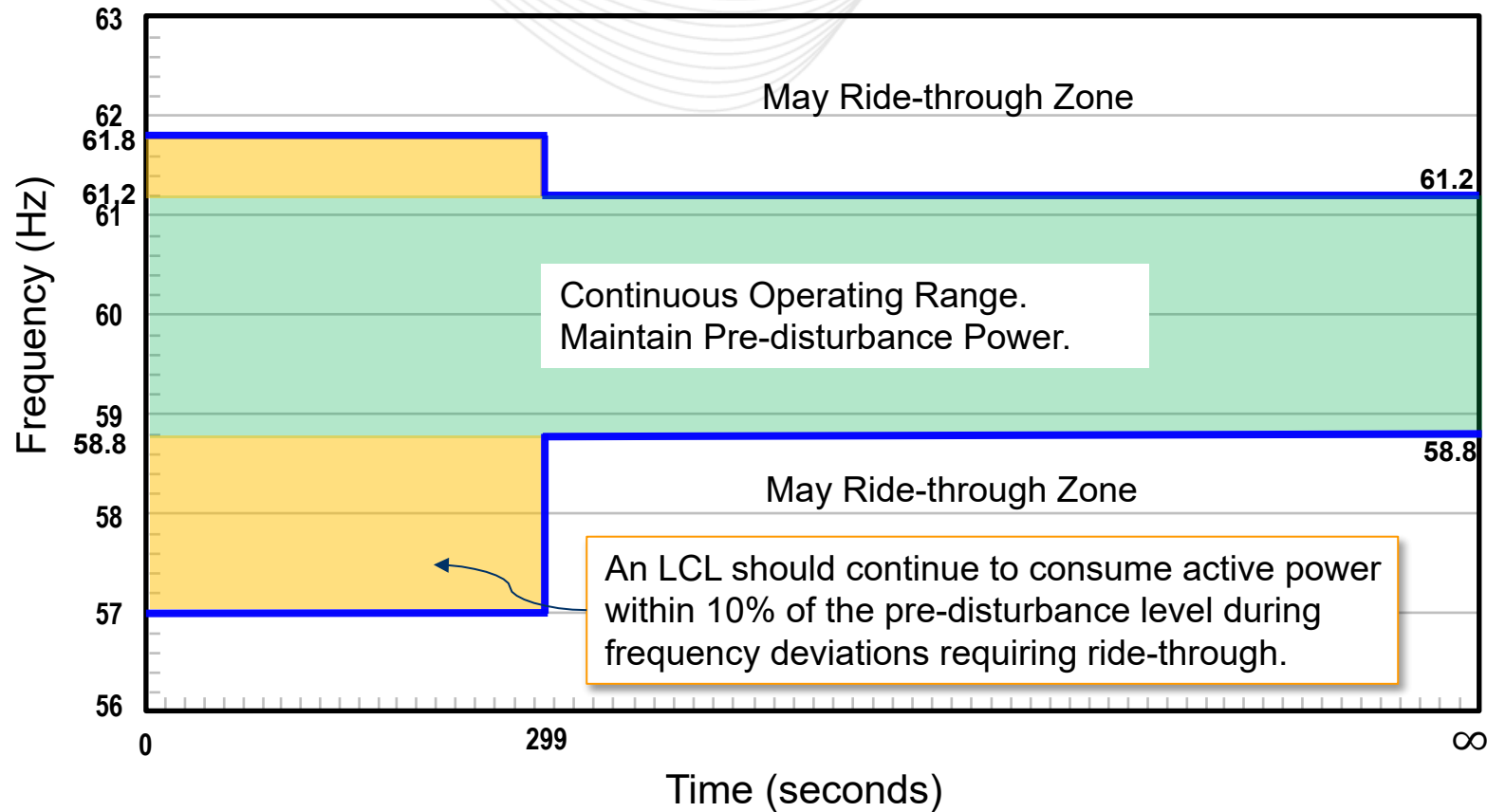
- PJM proposes voltage and frequency ride-through requirements for Large Computational Loads (LCLs)
 - Voltage ride-through envelope, power consumptions during voltage disturbances
 - Post-fault active power recovery (PFAPR) requirements
 - Frequency ride-through envelope and power consumptions requirements during frequency disturbances
 - Ride-through requirements review timeline (as PJM continues to develop/evolve its proposal)

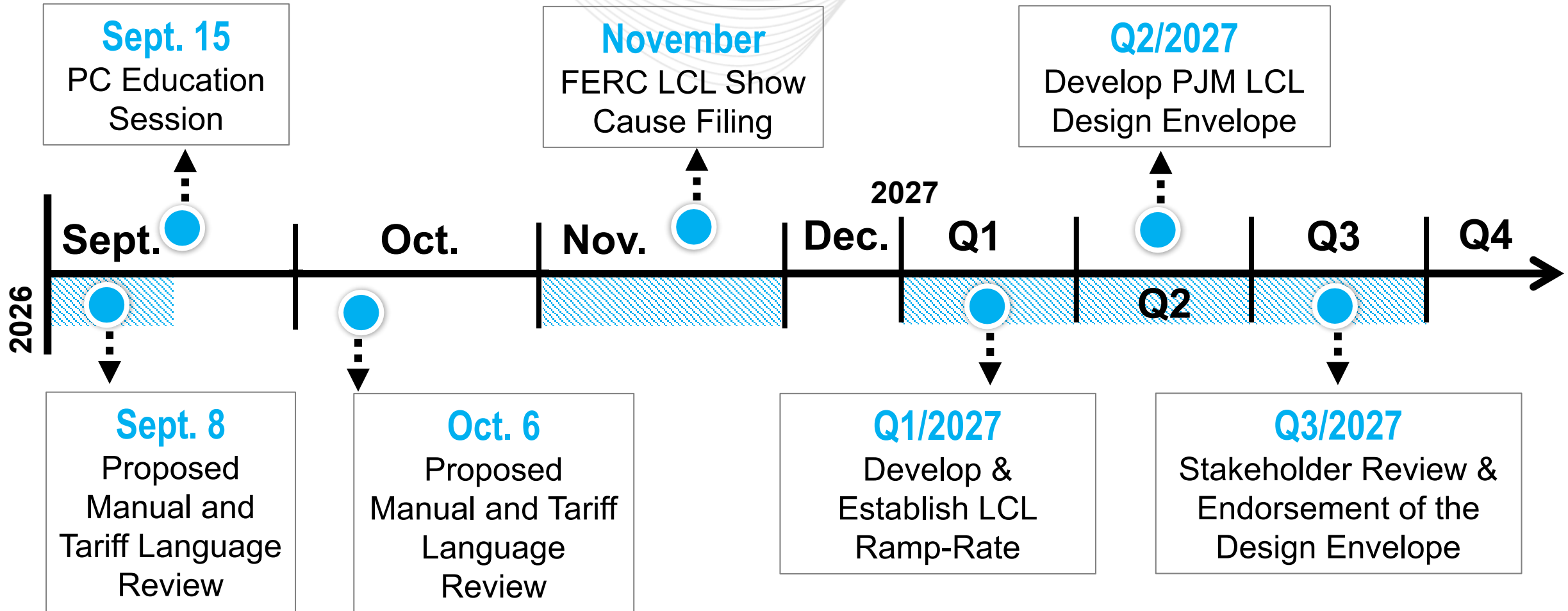
- Recent Large Load (Data Center) load disconnections during and post normal cleared faults
- Multi-GW events raising stakeholder, regulatory and overall system reliability concerns
- NERC initiated activities to develop Standards/Guideline
- Others, established ride-through requirements; MISO, ERCOT and Local TOs (Dominion, AEP in PJM)
- Most recent FERC Show Cause Order requires PJM to establish standards and procedures to connect LCLs

PJM Proposed Voltage Ride-through Envelope



PJM Proposed Frequency Ride-through Envelope

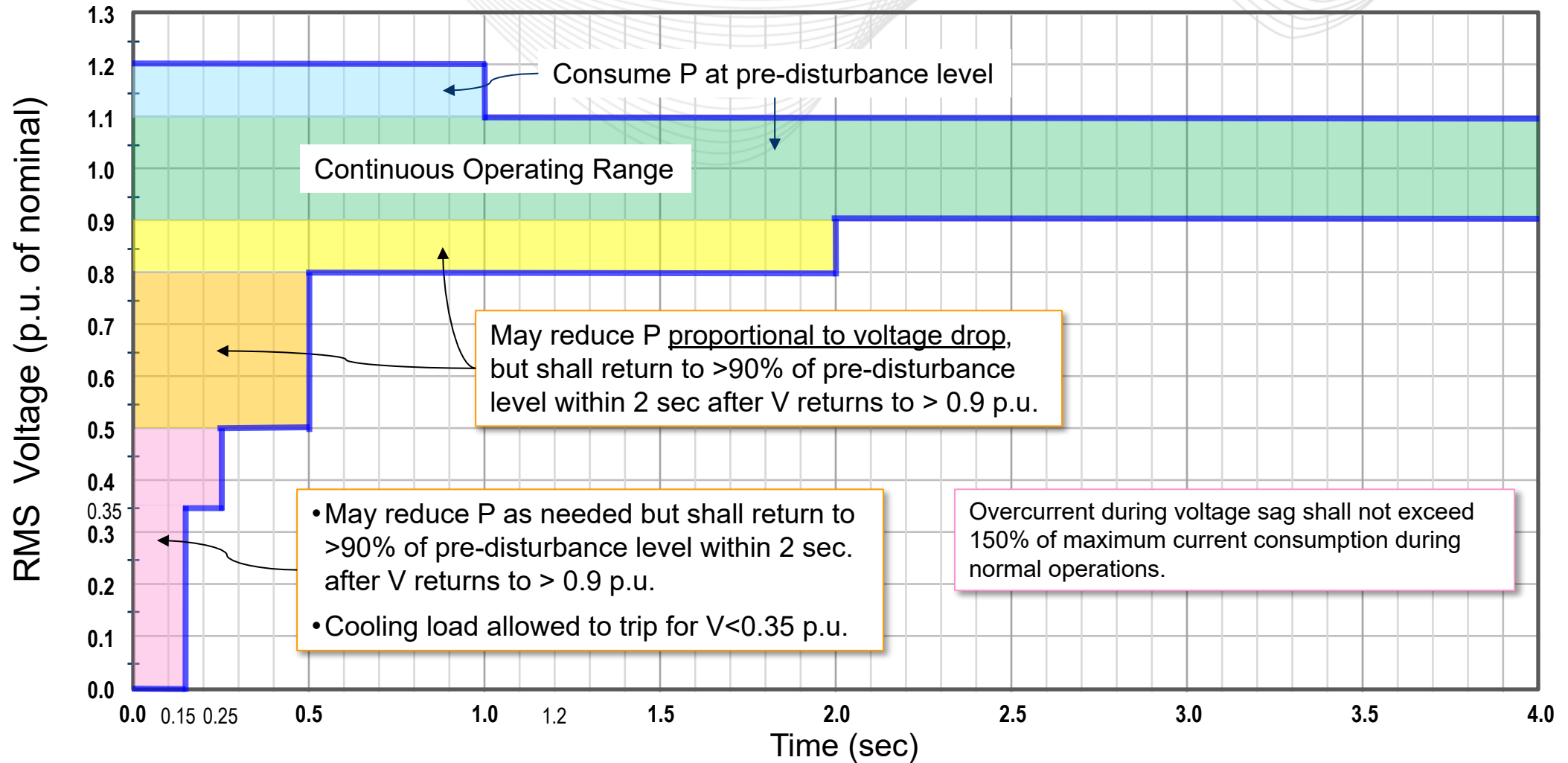






Additional Supporting Slides

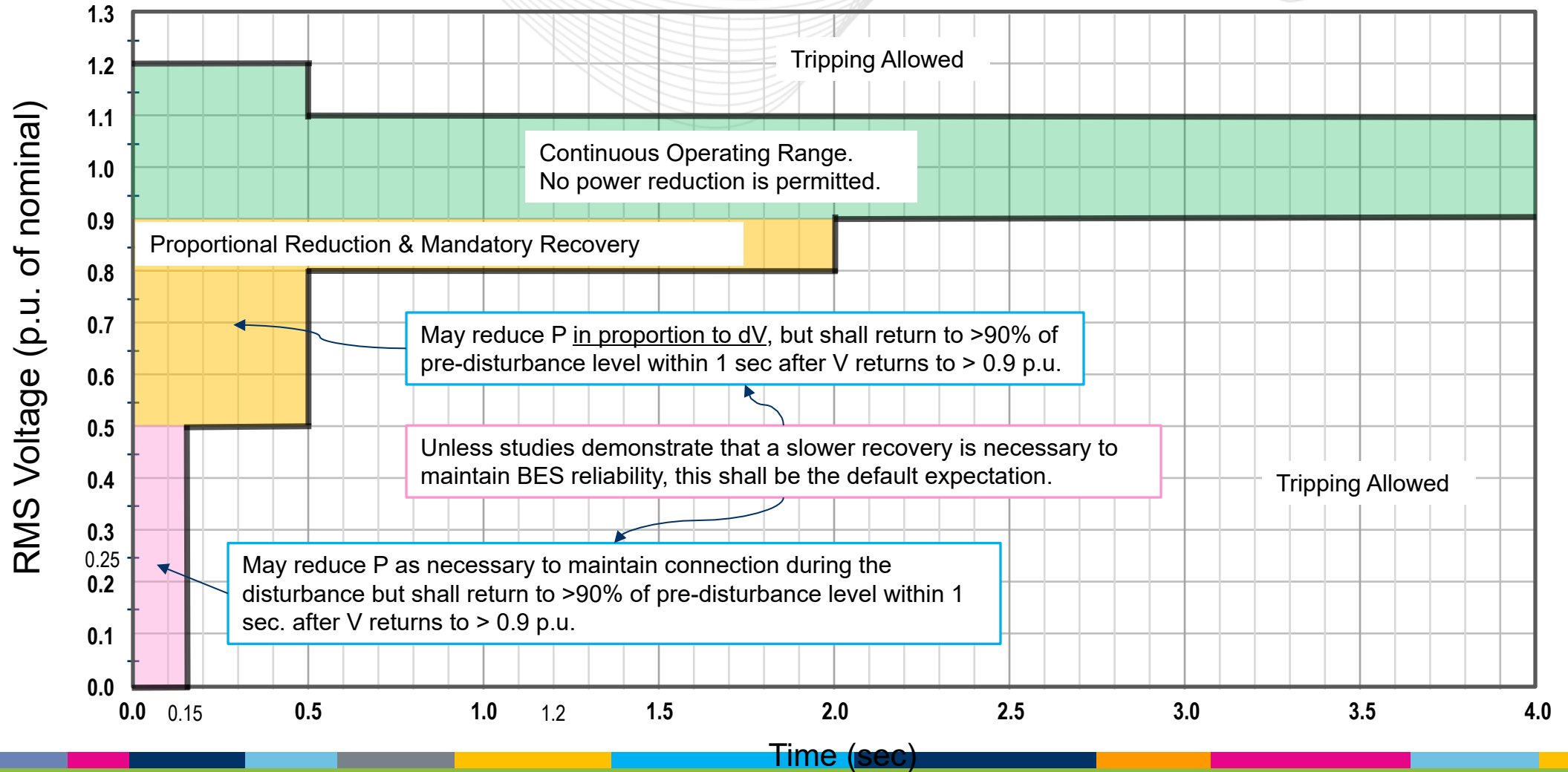
ERCOT Voltage Ride-through Envelop



Source: [ERCOT NOGRR282](#) - final PUCT approved version

- ERCOT LCL VRT requirements do not apply to an LCL that meets certain conditions, for example if the LCL:
 - Was operational or received approval to energize on or before November 14, 2025; or
 - Has signed interconnection agreement with TPS, or Generation Resource if co-located, before November 14, 2025, etc. (refer to [NOGRR282](#) for the detailed exemption conditions)
- Ride-through requirement for the voltage between 0.8 pu and 0.5 pu is fully enforced after January 1, 2028.
- For the voltage between 0.8 pu and 0.5 pu, LCL may reduce active power consumption proportional to voltage drop unless active power can return to at least 90% of its pre-disturbance consumption level within 0.5 second.

MISO Voltage Ride-through Envelop-draft



NERC LLWG SAR Voltage Ride-through Envelope

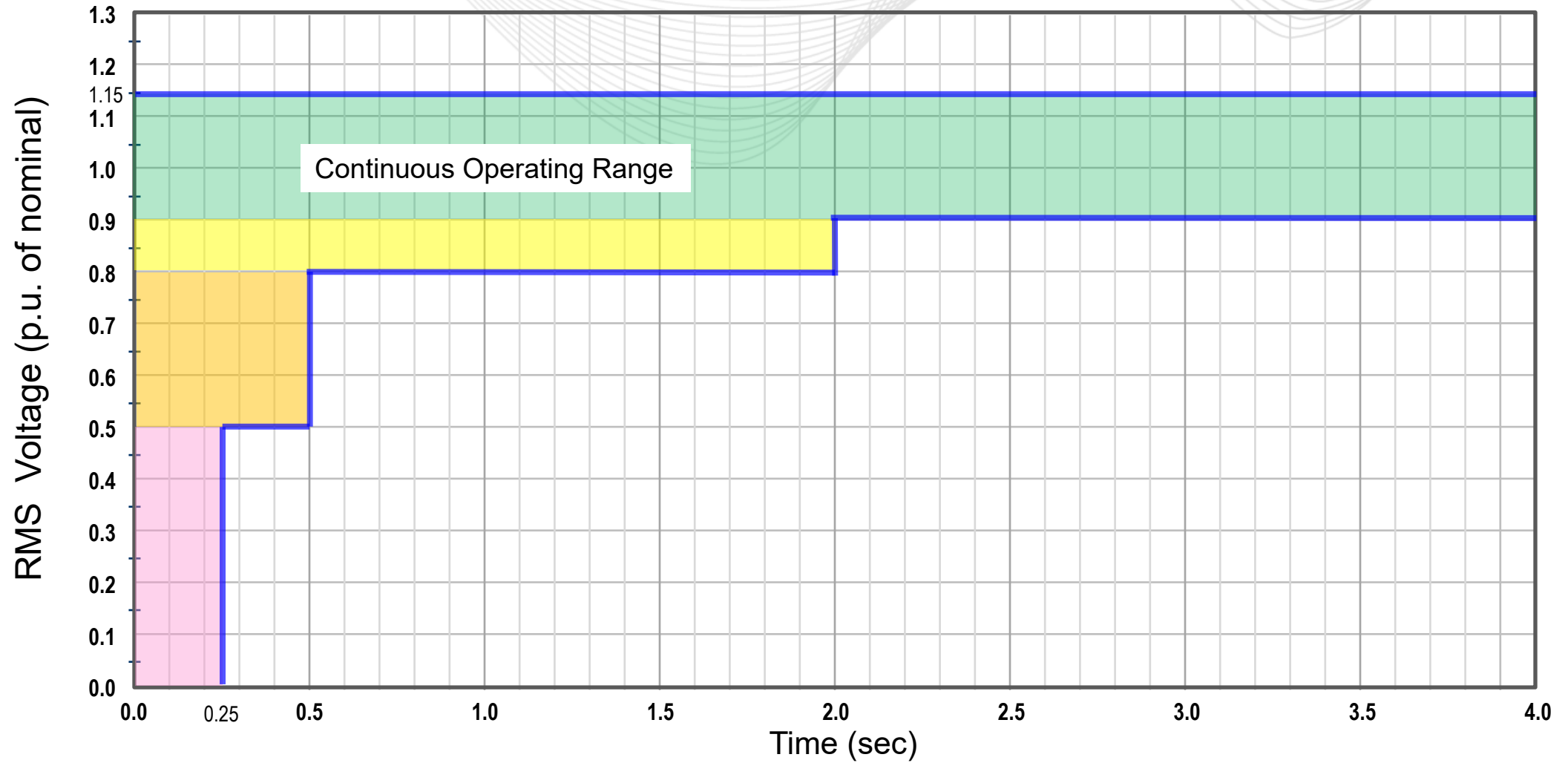
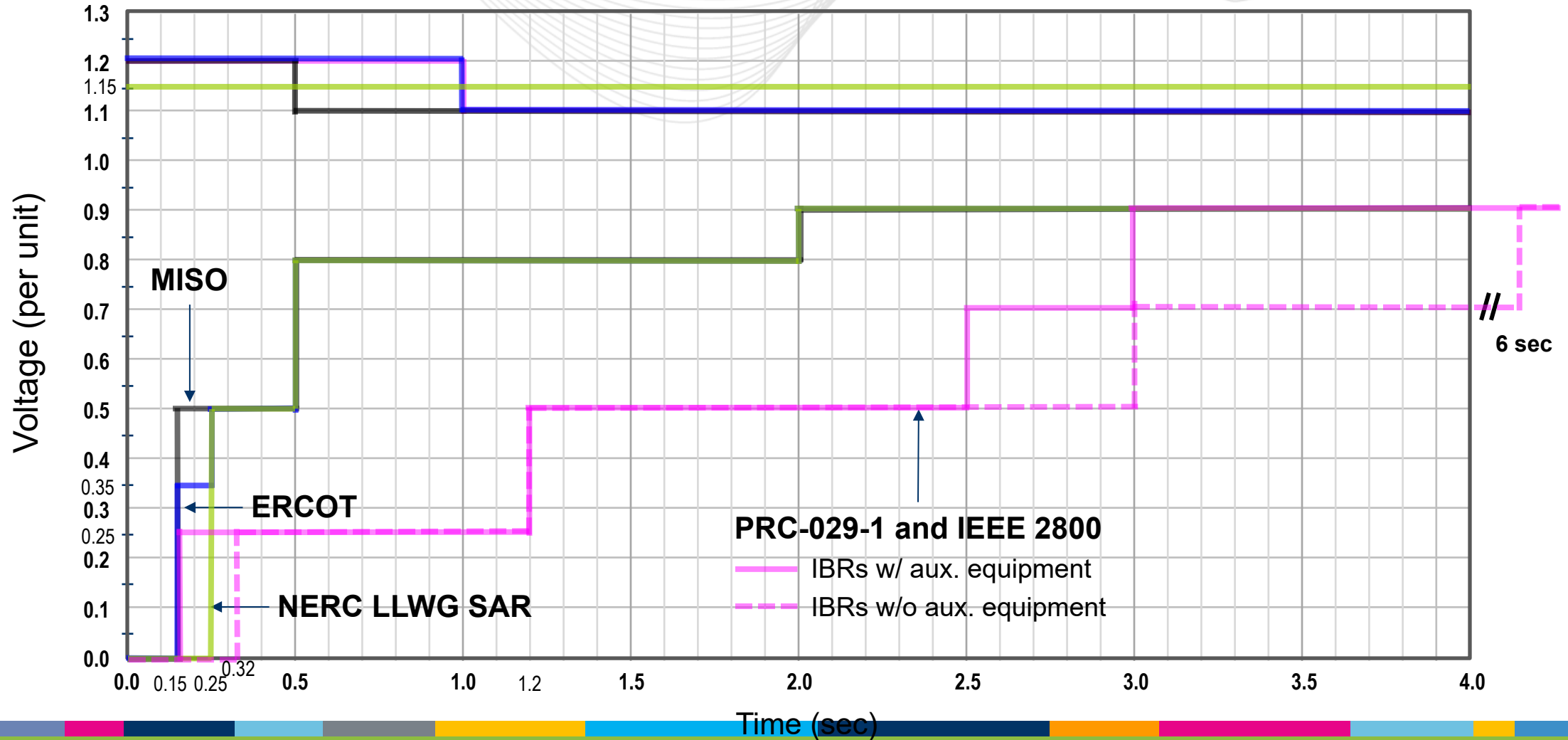


Table 1 – Suggested Voltage Ride-Through Requirements for Computational Loads		
Voltage (per unit)	Operation Region*	Minimum Ride-Through Time (sec)
≥ 1.15	May Ride Through or Trip	N/A
< 1.15 and ≥ 0.90	Continuous operation region	Continuous
$0.80 < V \leq 0.90$	Mandatory operation region	2.00
$0.50 \leq V \leq 0.80$	Mandatory operation region	0.50
$V < 0.50$	Mandatory operation region	0.25

Source: [NERC RSTC SAR on computational loads disturbance performance](#)

ERCOT, MISO, LLWG SAR, PRC-029 VRT Comparison



- Dominion VRT requirements

- The Customer must demonstrate the ability to reliably ride through standard transmission system disturbances without disconnecting from the grid.
- At a minimum, PEILLs must demonstrate the capability to ride through at least six automatic reclosing attempts that last 50-70 milliseconds each, aligned with DEV-ET's typical operational practices.

- AEP VRT requirements

- Large Load Customers must be capable of riding through a minimum of two consecutive voltage excursions outside of transmission system operating limits (.92 Vpu–1.05 Vpu). All exceptions must be approved by AEP's Real Time Reliability organization.

Frequency Ride-through Requirements Comparison

ERCOT requires more stringent over-frequency, but less conservative under-frequency ride-through requirements than MISO, PRC-029-1 and IEEE 2800

An LCL should continue to consume active power within 10% of the pre-disturbance level during frequency deviations requiring ride-through.

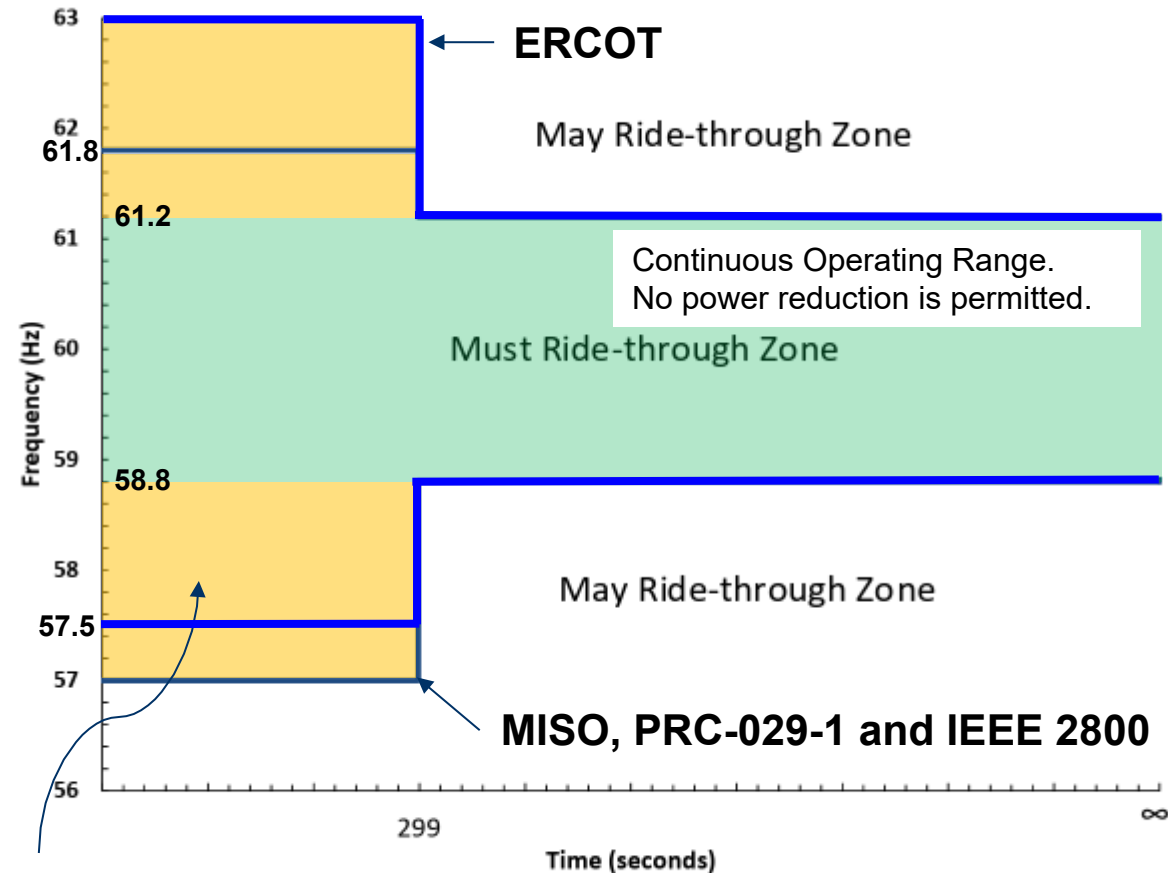


Figure 1: PRC-029 Frequency Ride-through Requirements

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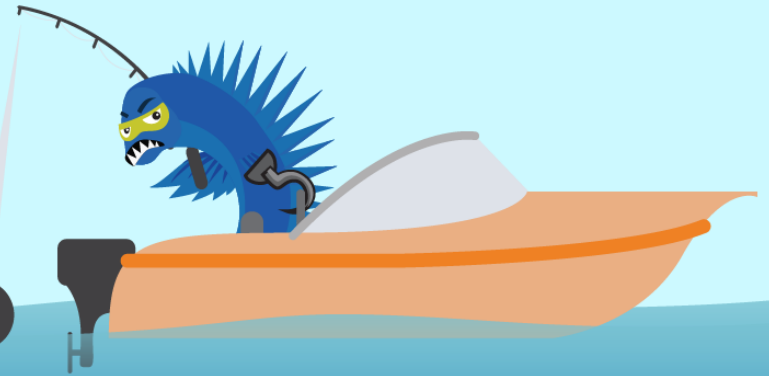
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