



Large Computational Load (LCL) Power Variation Limit and Monitoring Requirement: Need and Discussion

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Grid Stability Analysis

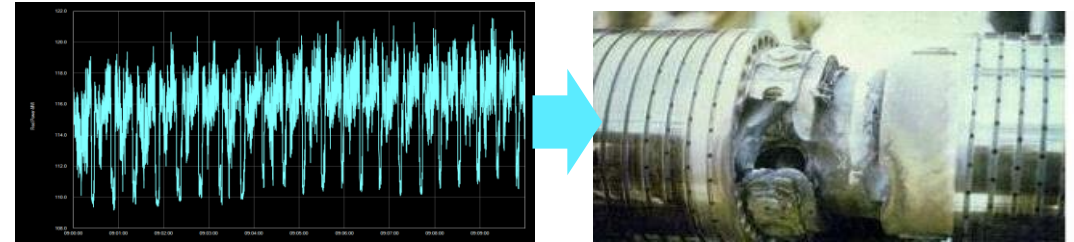
ERCOT Large Load Working Group
April 25, 2026

Recap

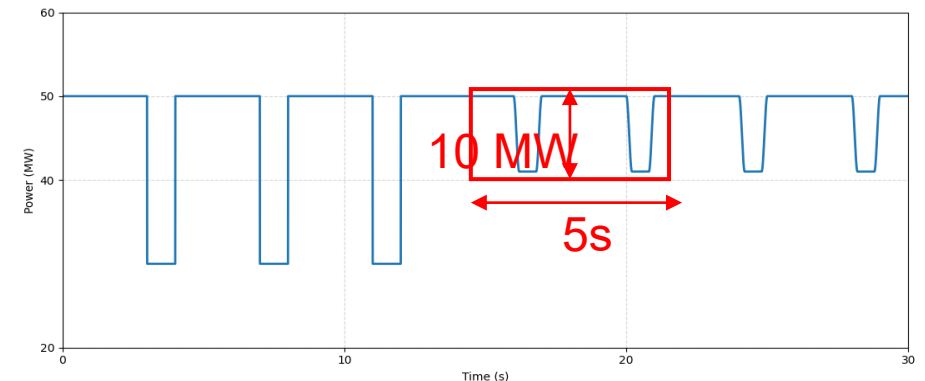
- Since July 2025, ERCOT has presented to LLWG the reliability concerns associated with LCL active power variation impact on nearby synchronous generators, and has shared related study results and assessment findings with industry

Key characteristics of LCL active power variation include:

- Persistent and repetitive active-power variation
- Broad sub-synchronous frequency content
- Load patterns that can change over time
- Potential to excite torsional modes of synchronous generators

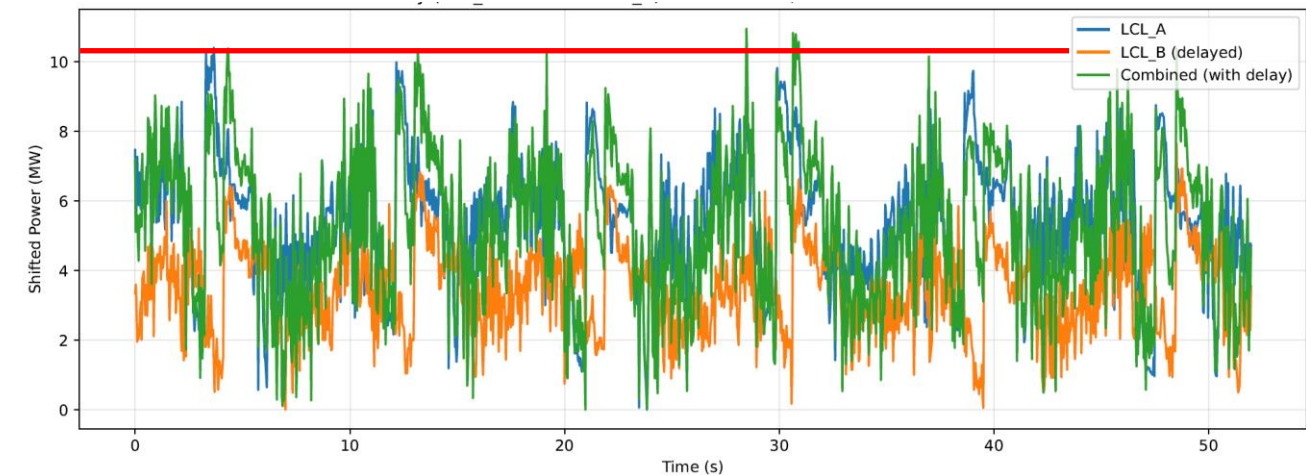
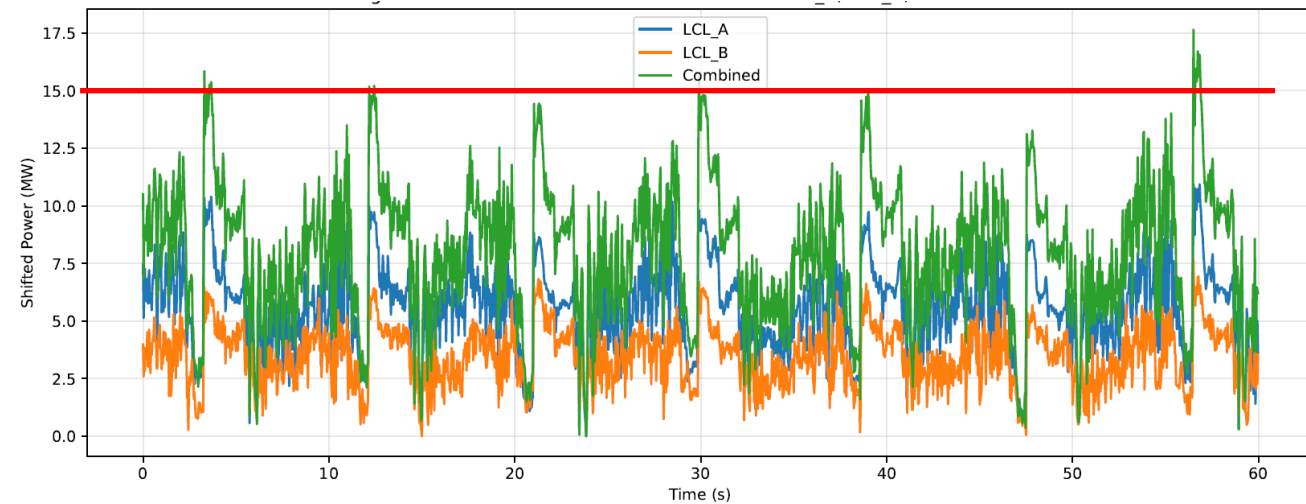


- February 2026: Based on the System Impact Assessment, ERCOT proposed a 10 MW / 5-second power variation limit for LCL to manage reliability risk and support streamline interconnection. [link](#)



Power Variation Limit Consideration

- Proposed: **peak-to-peak active-power variation of 10 MW within any 5-second period.**
 - Limit persistent, repetitive active-power variations from LCLs to avoid unacceptable oscillatory impacts to the synchronous generators on the ERCOT System.
- Multiple LCLs may create correlated power variations across different sites.
- The aggregate impact could cause larger power variation on the system. If identified, mitigation needs to be developed to address the issues.



Monitoring Consideration

- Adequate monitoring equipment, triggers, and process are needed for actual LCL operations.
 - Additional triggers may be needed for the fault recorder to capture LCL's oscillatory behavior.
 - Higher PMU sampling rate (more than 30 samples per second) may be needed to observe sub-synchronous oscillations of interest.
- ERCOT is discussing with TSPs on the required monitoring improvements.

Key Takeaway:

Enhanced monitoring is necessary to monitor and detect LCL oscillatory behavior.

Next Steps

- Submit the revision request in Q2 2026
- Welcome stakeholders' input and suggestions
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