

DATA CENTERS & THE GRID

NAVIGATING THE NEW INTERCONNECTION REQUIREMENTS

Data center and other large “computational” loads (AI training, cloud, crypto mining) are now a named reliability concern.

THE NEW REALITY



July 2026: ERCOT approved NOGRR282 that mandates Voltage and Frequency ride through requirements for Large Loads.

May 2026: NERC escalated its guidance to a Level 3 Alert on Computational Load Modeling, Studies, Instrumentation, Commissioning, Operations, Protection, and Control. NERC found that most entities lacked adequate processes for these loads.



NERC is registering a new “Computational Load Entity” category: loads ≥ 20 MW, connected at ≥ 60 kV, with more than 1 MW of IT load.



NERC's Dynamic Modeling Recommendations now spell out exactly which model types (library, user-defined, EMT) are expected for a project.



Utilities have translated this into detailed intake paperwork. ERCOT's Dynamics Working Group Large Load Data Survey (v2, Dec 2025) alone runs to 69 data points across 8 categories - and similar large-load frameworks are emerging across other interconnections.



WHERE NERC'S LEVEL 3 ALERT ADDS FURTHER OBLIGATIONS

NERC's Essential Actions place ongoing obligations on Transmission Planners, Planning Coordinators, and Transmission Owners - which flow directly back to the computational load facility as documentation and testing requests:



Model IT load separately from non-IT (cooling) load



Study system operating limits and identify areas vulnerable to instability from aggregate computational load loss.



Establish a commissioning process: as-built model verification, full load/no-load testing, and a pre-energization checklist covering switching, protection, SCADA, and RAS.



Install dynamic fault recording at the facility to capture performance during system disturbances.



Maintain real-time communication capability with the Transmission Operator, Reliability Coordinator, and Balancing Authority.

Where Projects Get Stuck



Relying on an unvalidated library model when the utility actually needs a user-defined model (UDM) or EMT model for the facility's inverter-based or UPS-heavy load.



Protection and ride-through data that's inconsistent across the UPS, generator, and cooling system or missing entirely.



No benchmarking or validation report tying the submitted model back to actual equipment performance.



Commissioning checklists assembled reactively instead of built into the interconnection timeline from day one.



Subsynchronous oscillation (SSO) studies scoped too late, after network model submission is already underway.



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How Enerzinx Helps at Every Stage



01

INTERCONNECTION STRATEGY

Point-of-connection screening, load flow, Phased deployment, back up power, behind the meter/islanded operation, capacity and deliverability studies.



02

INTERCONNECTION STUDIES

Connection Point Study (CPS) development, network congestion analysis, technical documentation packages.



03

MODEL DEVELOPMENT & BENCHMARKING

PSSE/PSCAD, UDM, and EMT model builds for load, UPS, generation, and FACTS devices; benchmarking and validation reports.



04

PROTECTION & RIDE-THROUGH DESIGN

Voltage/frequency ride-through curves, relay settings, reconnection ramp schemes, coordination studies.



05

UTILITY & REGULATORY COMPLIANCE SUBMISSION

Completion of utility large-load data surveys, NERC MOD-032 coordination, Commissioning Test planning, as-built model verification, checklist coordination with TO/TOP/BA/RC.



WHY GET THIS RIGHT EARLY?



Interconnection timelines increasingly hinge on documentation quality, not just study queue position.



A complete, correctly modeled submission avoids repeat data requests, re-studies, and commissioning delays - all of which cost more than getting it right the first time.



Enerzinx brings one team across the full lifecycle - Site selection through capacity/deliverability studies, model, protection design, submission, commissioning and compliance with active experience across all major utilities (Example - NYISO, GTC, XCEL Energy and ERCOT).



+1 214-302-2463



contact@enerzinx.com



www.enerzinx.com