

ENERGY COMPLIANCE, INC. | *Field Reference for Large Loads and Data Centers*



LARGE LOAD & DATA CENTER SERIES • EC-WP-1000

Large Loads on the Bulk Power System

*Reliability, Interconnection, and the New Federal
Framework for Data Centers*

An analysis of how the rapid growth of data centers and other large computational loads is reshaping bulk-power-system reliability, federal interconnection policy, and the regulatory frameworks of the ERCOT and FERC-jurisdictional markets.

Book One of the Energy Compliance Large Load & Data Center Series

The Grid Layer

energycomplianceinc.com

OCTOBER 2026

Disclaimer & Legal Notice

This publication is the work product of Energy Compliance, Inc. and is provided for general information and educational purposes only. It does not constitute legal advice, regulatory guidance, or formal interpretation of any NERC Reliability Standard, FERC order, Department of Energy directive, or state commission rule.

This publication may not be used or cited as authority in any audit, enforcement, regulatory, or legal proceeding. Large-load integration is a domain of active rulemaking, accelerated standard development, and ongoing state and federal proceedings. Every factual assertion here was drawn from primary regulatory sources or public filings current as of the date of writing; confirm the current status of every authority cited before acting on it. Compliance with NERC Reliability Standards and applicable state and federal rules depends on facts unique to each registered entity, and the reader should consult qualified counsel and subject-matter experts when making compliance decisions.

This book was first published in June 2026. This edition updates it to October 17, 2026. Where a matter is proposed but not yet final, such as registry criteria awaiting FERC approval, a standard awaiting Board adoption, or a show-cause proceeding still in progress, it is described as such. Energy Compliance, Inc. does not represent that any proposed rule or pending order will be adopted in the form described, or at all.

NERC, FERC, the United States Department of Energy, the Public Utility Commission of Texas, ERCOT, PJM, and the names of Regional Entities are referenced for descriptive purposes only. Energy Compliance, Inc. is not affiliated with, sponsored by, or endorsed by any of them. Energy Compliance, Inc. assumes no responsibility or liability for errors, omissions, or outcomes resulting from the use of this publication. Citations to regulatory text are summarized and paraphrased; readers requiring the operative language should consult the source document directly.

Foreword

This reference is one of a series Energy Compliance, Inc. publishes for registered entities and the people who run their compliance programs. I have spent more than thirty years on every side of the bulk electric system. I have operated control centers as a Reliability Coordinator, Transmission Operator, and Power System Operator. I have audited grid facilities and signed off on findings as a senior compliance auditor. I have worked enforcement matters from inside the regulator's process. For the last several years I have advised registered entities directly through the firm I founded.

The entities that handle reliability well share a common habit. They take the standards seriously without confusing them with reliability itself. They know that a NERC Reliability Standard is a floor, not a ceiling.

The arrival of gigawatt-scale computational load on the bulk power system is the most significant load-side reliability event of my career. The 1965 Northeast Blackout taught the industry that voluntary coordination would not survive contact with an interconnected grid. The 2003 cascade taught it that voluntary reliability standards would not survive a deregulated market. We are now learning, in real time, that an interconnection framework built for slow, population-driven load growth will not survive the speed and scale at which AI training facilities, hyperscale data centers, and other large computational loads are attaching themselves to the system. This first book in the Energy Compliance Large Load and Data Center Series covers the grid layer: the

system-level reliability problem and the interconnection frameworks being assembled in response.

These references are written for the compliance manager who wants to understand the system, not just memorize requirements. For the legal counsel who has to brief a board honestly about what the next eighteen months of large-load regulation will require. For the senior planner or operator whose old planning assumptions no longer hold. And for the data center owner or engineering partner who has been told their facility may now be a registered entity, and wants to know what that actually means.

These references are not marketing material dressed as content. They come out of three decades of doing this work and watching it succeed and fail. I have written them in the same voice I use in a control room or in front of a Regional Entity audit team: direct, grounded in evidence, and honest about what the standards do and do not require.

Energy Compliance, Inc. exists because most of the consulting offered to registered entities today is structured for billable hours rather than for outcomes. A senior practitioner oversees every engagement. We automate what should be automated and apply senior judgment to the rest. If that approach matches what you are looking for in a compliance partner, the back of this reference tells you how to reach us.

If not, the reference still belongs to you. Take what is useful. Apply it well. And remember the only test that ultimately matters: when the system needs to perform, does it?

Rob Smith

Founder and Principal, Energy Compliance, Inc.

Bloomington, Minnesota

How to Use This Reference

This whitepaper is the first book in the Energy Compliance Large Load and Data Center Series. The series is organized layer by layer. Each book stands on its own and points forward to the next. The sixth, EC-WP-1005, is the October 2026 update on registration and the new CLO standards, and it controls wherever the earlier books describe the registration framework differently.

The grid layer (EC-WP-1000)

What the demand shock is, why the existing planning and interconnection frameworks cannot absorb it, and how the federal and state interconnection regimes are being rebuilt in response.

The standards layer (EC-WP-1001)

NERC's Large Loads Action Plan, the Level 2 and Level 3 Alerts, the technical white papers, the reliability guideline, and the mandatory standards that followed.

The entity layer (EC-WP-1002)

What becoming a NERC-registered functional entity requires. EC-WP-1002 was written around the Computational Load Entity proposal of April 2026, which NERC has since replaced. Read it together with EC-WP-1005.

The owner layer (EC-WP-1003)

The data center owner's playbook under Texas Senate Bill 6: the interconnection trigger, the study-fee and site-control regime, the curtailment bargain, and the standalone-versus-co-located choice.

The operating layer (EC-WP-1004)

The compliance operating model for a registered computational load: internal controls, governance, evidence infrastructure, and the day-to-day disciplines that convert obligations into demonstrable compliance.

The 2026 update (EC-WP-1005)

The Computational Load Owner and Computational Load Operator registration approved by the NERC Board on October 8, 2026, the 50 MW and 100 kV site test, and what CLO-001-1, CLO-002-1 and CLO-003-1 require.

Every factual assertion in this reference is grounded in a primary source identified in the Sources and Authorities appendix. Where a regulatory matter was proposed or pending at the time of writing, it is described as such. Energy regulation in this area moves on monthly timescales, and the status of a docket or a NERC project when you read this may differ from its status on October 17, 2026.

Executive Summary

The defining reliability story of this decade is not a new generation technology or a new market design. It is the speed and scale at which one new class of demand is attaching itself to the bulk power system: large computational load, dominated by data centers built for artificial intelligence, cloud services, and cryptocurrency. The numbers are not incremental. They describe a structural change in what the grid is being asked to serve, and the regulatory machinery built for slow, population-driven load growth is being rebuilt in real time to keep pace.

The demand signal is unambiguous. U.S. data center electricity consumption rose from 58 terawatt-hours in 2014 to about 176 terawatt-hours in 2023, about 4.4 percent of national use, and a Department of Energy-sponsored report projects 325 to 580 terawatt-hours by 2028, or about 6.7 to 12 percent. NERC's 2025 Long-Term Reliability Assessment forecasts aggregate summer peak demand growth of more than 224 gigawatts over ten years, 69 percent above the prior year's ten-year projection of 132 gigawatts. In ERCOT, planners were tracking about 226 gigawatts of large loads seeking interconnection as of November 18, 2025, about 73 percent of it data centers, up from 63 gigawatts in December 2024.

This whitepaper, the first in the Energy Compliance Large Load and Data Center Series, addresses the grid layer: the system-level reliability problem these loads create, and the federal and regional interconnection frameworks being built in response. It does not cover the mechanics of NERC registration, the obligations of a registered entity, or the day-to-day compliance program. The books that follow do that. Here the focus is the system and the regimes forming around it.

Five findings frame the analysis

Large computational loads behave electrically unlike traditional load. They are voltage-sensitive, power-electronic facilities that can drop consumption within milliseconds of a voltage sag and disconnect from the system during disturbances. NERC has analyzed multiple events, most in 2024 or 2025, in which more than 1,000 megawatts of large load reduced unexpectedly. Traditional planning models were never built to anticipate that.

NERC still has no mandatory Reliability Standard governing large-load ride-through. The CLO standards that passed final ballot in October 2026 cover interconnection, data, communications, protection coordination and disturbance recording, not ride-through. A separate Standard Authorization Request on ride-through was moving through NERC's committees in October 2026. ERCOT got there first: its ride-through requirements for Large Computational Loads took effect August 1, 2026.

The federal government has asserted itself directly. In October 2025 the Secretary of Energy used Section 403 of the Department of Energy Organization Act to direct FERC to open a rulemaking on large-load interconnection. In December 2025 FERC found PJM's tariff unjust and unreasonable for failing to address co-located load and ordered new transmission services. On June 18, 2026, FERC answered the Secretary not with a rule but with six Section 206 show-cause orders, one to each FERC-jurisdictional RTO and ISO.

Texas has taken its own path. Senate Bill 6, signed June 20, 2025, imposes an interconnection, cost-allocation and curtailment regime on large loads in ERCOT, a market that sits largely outside FERC's transmission jurisdiction. The PUCT adopted the interconnection standards as new 16 TAC §25.194 in an order filed September 18, 2026. The result is two regulatory models developing side by side: state law and the PUCT in ERCOT, federal orders and tariffs in the FERC-jurisdictional RTOs.

Above both models sits the NERC reliability layer, which does not depend on market jurisdiction. On October 8, 2026, the NERC Board approved Rules of Procedure revisions creating two new functional entities, the Computational Load Owner and the Computational Load Operator, for sites of 50 megawatts or more supplied at 100 kV or above. FERC has directed NERC to file the standards and registry criteria by December 31, 2026. Those obligations will apply in the Eastern Interconnection, the Western Interconnection, and ERCOT alike. That is the convergence point, and the rest of this series concentrates there.

The practical conclusion for owners, generators, and the entities that serve them: the era of treating a large load as a passive interconnection customer is over. Large loads are being pulled into the reliability framework as participants with obligations for modeling, studies, curtailment, data and communications, and registration. The grid layer explains why those obligations exist at all.

Chapter 1. The Demand Shock

Load growth used to be predictable. For most of the history of the North American grid, demand rose with population and economic activity along a gentle, forecastable curve. Planners built transmission and generation against decades of trend data, and the system absorbed new load the way a large body of water absorbs a steady inflow. That world is gone. The current wave of demand is investment-driven and concentrated, and it is arriving faster than planning and interconnection processes designed for the old world can absorb it.

1.1 The numbers describe a structural break

Start with data center electricity use. In 2014, U.S. data centers consumed 58 terawatt-hours. By 2023 the figure was about 176 terawatt-hours, about 4.4 percent of total national consumption. The Lawrence Berkeley National Laboratory report released by the Department of Energy in December 2024 projects 325 to 580 terawatt-hours by 2028, which would put data centers at about 6.7 to 12 percent of all U.S. electricity use. A modest line item ten years ago is on a path to rival entire economic sectors.

The aggregate picture is just as stark. NERC's 2025 Long-Term Reliability Assessment, published in January 2026, forecasts that aggregate summer peak demand across its assessment areas will rise by more than 224 gigawatts over the next ten years. That is 69 percent higher than the prior year's ten-year projection of 132 gigawatts. A revision that large in one annual cycle is itself a signal. The planning community keeps getting surprised to the upside, and that is exactly the condition under which reliability margins erode.

Nowhere is the concentration clearer than in ERCOT. ERCOT's system planning update to its December 8–9, 2025 board meeting reported about 226 gigawatts of large loads seeking interconnection as of November 18, 2025, with about 73 percent of it data centers. The comparable figure in December 2024 was 63 gigawatts. For scale, ERCOT's all-time peak demand record is 91,089 megawatts, set July 22, 2026 and still unofficial pending settlement. The large-load request volume alone is about two and a half times the highest demand the system has ever served.

Put the 224-gigawatt forecast in operating terms. At an assumed 1,000 megawatts per large nuclear unit, serving that increment of summer peak would take the equivalent of more than two hundred new units, spread across the continent in a decade, while coal and aging gas units retire. My view is that capacity additions on that scale cannot be delivered on the schedule the forecast implies. That is a reliability finding in its own right: the demand curve and the buildable-capacity curve are diverging, and the gap is widening fastest where computational load is concentrating.

1.2 Why the load is concentrated, and why that matters

NERC's 2025 Long-Term Reliability Assessment attributes most of the projected ten-year increase in North American electricity demand to new data centers for artificial intelligence and the digital economy, with electrification and manufacturing load behind them. AI training clusters pack enormous computational density into single sites, and they get built where land, fiber, water and power are available together. Power is increasingly the binding constraint. That siting logic produces clustering. Large loads do not spread evenly across a balancing authority. They pile up at specific nodes, often faster than the local transmission system can be reinforced.

Concentration changes the reliability calculus in a way raw megawatts do not capture. A gigawatt of new residential and commercial demand spread across a region is a planning problem with decades of precedent. A gigawatt arriving at a single substation, behaving as a single controllable block, able to connect or disconnect as a unit, is a different kind of object. It looks less like load and more like a very large machine attached to the grid. On the generation side, machines of that size have always carried reliability obligations. That asymmetry is the heart of the problem this series examines.

Concentration also breaks the assumptions bulk transmission was planned on. Bulk transmission was historically built to carry power from remote generation to distant load centers, and those load centers were metropolitan areas served at distribution voltages. Computational load inverts the picture. A single facility at transmission voltage can present a load comparable to a small city, sited in a county whose distribution system was never sized for it and whose local transmission was planned around export rather than import. The transmission work needed to serve such a facility can rival a new generator interconnection in scope, and the queue math comes out the same way: a multi-year wait for studies, cost allocation and construction, set against a technology cycle that moves much faster.

1.3 The generation queue is also transformed

The demand surge does not arrive alone. The resource mix racing to serve it is shifting too. As of October 31, 2025, ERCOT reported 1,999 active generation interconnection requests totaling 432 gigawatts: 176 gigawatts of storage, 158 of solar, 48 of gas and 46 of wind. Solar and storage together were 77 percent of the total. Texas is also building its first 765-kV transmission. In April 2025 the PUCT approved the first 765-kV projects in the state as part of the Permian Basin Reliability Plan, aimed at load growth driven by oil and gas production in West Texas. The grid is being asked to integrate an inverter-based, weather-dependent resource fleet and a volatile, power-electronic load fleet at the same time. Either transition alone would stress the planning process.

This matters at the grid layer because reliability is a system property, not a property of any one resource or load. The characteristics that make inverter-based resources sensitive to disturbances, such as fast controls, power-electronic interfaces, and ride-through settings that can trip a fleet in milliseconds, increasingly describe the load side as well. The system is acquiring fast, controllable, electronically coupled elements at both ends of the power flow. Their disturbance behavior is the subject of Chapter 2.

1.4 The planning process is the bottleneck

The deepest implication of the demand shock is about time, not megawatts. Interconnection queues, transmission build-out and resource-adequacy planning all run on multi-year cycles calibrated to the gradual load growth of the past. In my experience, large computational loads arrive on the timescale of a construction project, and the developers building them move at the speed of the technology sector, not the deliberate pace of utility planning. That mismatch between the speed of demand and the speed of planning is the friction behind nearly every regulatory action in this book.

It also explains the pull of co-location. A developer who can attach a data center directly to an existing power plant skips years of queue position and transmission build-out. That is why co-location became the flashpoint examined in Chapter 4, and why both FERC and the Texas legislature moved to bring it under explicit rules instead of letting it proceed as a patchwork of private deals. The common cause is pressure to connect faster than the system can safely absorb. The interconnection, co-location and curtailment regimes are competing attempts to channel that pressure without compromising reliability.

1.5 What the demand shock means for this series

The demand shock is the why behind everything that follows. It is why the Department of Energy reached for Section 403 to push FERC toward a large-load interconnection rule. It is why FERC found a major grid operator's tariff unjust and unreasonable for failing to address co-located load, and then put every RTO and ISO on notice. It is why Texas passed a comprehensive large-load statute in a single legislative session. And it is why NERC, on an accelerated timeline, created two new categories of registered entity for computational load. None of this would have happened at this pace without a demand signal large and fast enough to overwhelm the existing framework.

Chapter 2. The Reliability Problem

Megawatts are only part of the story. Large computational loads command the attention of reliability regulators because of how they behave electrically, not just how big they are. They respond in ways the bulk power system was not designed to absorb, and in ways traditional planning and operating practices do not capture. A data center is a dense assembly of power-electronic equipment with its own protection logic, and that logic can take more than a thousand megawatts off the system in a few seconds.

2.1 The electrical character of computational load

Large computational facilities house enormous quantities of sensitive electronics: servers, network equipment, and the uninterruptible power supply and cooling systems that protect them. NERC's technical work describes these as voltage-sensitive, power-electronic loads. Its January 2026 incident review of cryptocurrency mining load-loss events in ERCOT found that those facilities drop load within milliseconds of a voltage sag. The same instinct that makes a data center reliable for its operator, which is to isolate from a disturbance, ride on internal power and protect the servers, makes it a hazard for the system. A synchronized disconnection of many such facilities removes load faster than generation and controls can respond.

These loads connect to the system through power electronics rather than the direct electromechanical coupling of older industrial equipment. That gives them fast, programmable responses to voltage and frequency, and the settings are chosen by equipment manufacturers and facility designers to protect the load, not to stabilize the bulk power system. When a fault sags the voltage, large loads can trip or transfer to backup power instead of riding through, and they can do it together if many facilities share similar protection settings.

2.2 The events that triggered regulatory action

This is not a theoretical concern. NERC's September 2025 Level 2 Alert cites multiple disturbances, most in 2024 or 2025, in which more than 1,000 megawatts of large load reduced unexpectedly. The reliability significance runs opposite to the familiar problem of losing a large generator. When generation is lost, frequency falls and the system deploys reserves or sheds load to recover. When a very large block of load is lost suddenly, frequency rises, voltage rises, and the system must absorb a surplus it did not plan for. That contingency is less rehearsed, and as the amount of load at risk grows, it can drive voltage and frequency excursions and, in the worst case, the conditions for uncontrolled separation and cascading.

NERC documented the pattern in an incident review published January 8, 2025. On July 10, 2024, a lightning arrestor failure on a 230 kV line in the Eastern Interconnection produced six successive faults in 82 seconds. Protection cleared every one correctly. About 1,500 megawatts of data center load disconnected anyway, on the customer side, through customer protection and controls. The Western Electricity Coordinating Council released a large-load

interconnection risk assessment in February 2025, prepared for it by Elevate Energy Consulting. The report states the principle plainly: large loads should be designed and operated in alignment with the performance obligations of the bulk power system, and given their size and aggregate effect, they should meet bulk-power-system performance requirements including disturbance ride-through. In the report's words, significant loss of load can cause instability, uncontrolled separation, and cascading.

2.3 Why traditional models miss it

The industry's planning and operating tools were calibrated for a different kind of load. Long-term planning and resource-adequacy models historically treated load as a smooth, aggregate quantity that follows weather and the economy, not as a fast, controllable, electronically coupled block with its own protection settings. The sub-second behavior that decides whether a data center stays connected during a fault, the response of its UPS systems and power electronics, lives in the electromagnetic transient domain. That domain has not been part of routine interconnection or planning studies for load. The very characteristic that makes these loads dangerous, their fast disconnection behavior, has been largely invisible to the models used to plan the system that serves them.

NERC's March 2026 white paper on gaps in existing practices, requirements and Reliability Standards for emerging large loads says so directly. It finds that the existing Reliability Standards, and the existing processes and requirements for planning, operations, security and other areas, are inadequate to address the risks posed by emerging large loads. That is an unusually direct statement from a reliability organization. That finding is the technical predicate for the standards and registration work in the later books of this series.

2.4 The regulatory escalation

NERC escalated in deliberate steps. On September 9, 2025, it issued a Level 2 Alert, an industry recommendation, on large load interconnection, study, commissioning and operations. It went to Transmission Owners, Resource Planners, Transmission Operators, Transmission Planners, Balancing Authorities, Planning Coordinators, Distribution Providers and Reliability Coordinators, with acknowledgment due September 16, 2025 and reporting due January 28, 2026. NERC published the aggregated results in March 2026 and found that entities generally lacked sufficient processes, procedures or methods for computational load risk. On May 4, 2026, NERC issued a Level 3 Essential Action Alert, its highest alert level, which under the Rules of Procedure requires Board approval before issuance. It identified seven essential actions for Transmission Planners, Planning Coordinators, Transmission Owners, Balancing Authorities, Reliability Coordinators and Transmission Operators, with acknowledgment due May 11 and status reports due August 3, 2026. Going from a Level 2 recommendation to a Level 3 essential action in eight months tells you how seriously the reliability community now treats the problem.

2.5 What the system needs to see: three modeling timescales

The reliability response has converged on one diagnosis. The system cannot manage what it cannot model, and large computational loads have been largely invisible across the three

timescales on which reliability is assessed. Organizing the problem by timescale explains why the obligations in the later books take the shape they do.

At the sub-second timescale, electromagnetic transient models capture the fast switching behavior of power electronics and UPS systems, the behavior that decides whether a facility rides through a voltage disturbance or trips offline. NERC's technical work pressed for these models to be more detailed, validated against the equipment actually installed, and shared among large loads, transmission owners and planners. A model that does not reflect how the equipment truly behaves gives planners false confidence. At the seconds-to-minutes timescale, dynamic stability studies examine frequency response, voltage recovery and oscillation behavior after a disturbance, and the reliability community now expects those studies to include explicit large-load-loss contingencies instead of treating load as a passive backdrop. At the hours-to-years timescale, capacity-expansion and production-cost models decide whether the system will have enough resources, in the right places, with the right flexibility. Chapter 6 returns to that resource-adequacy question.

The seven essential actions in the May 2026 Level 3 Alert map onto these needs. In order, they call for:

1. A detailed list of the modeling data, settings and parameters planners need from computational loads, reflected in Transmission Owners' facility interconnection requirements, using the PERC1 model or an equivalent as the baseline.
2. System studies with additional considerations for computational loads.
3. A revised Planning Coordinator definition of the "qualified change" that triggers a new review.
4. A Transmission Owner commissioning process for computational loads.
5. Studies and corrective actions on the system side so that normally cleared non-bus faults do not cause non-consequential loss of firm computational load.
6. Dynamic fault recording to capture facility performance during disturbances.
7. Interpersonal Communication capability between Transmission Operators, Reliability Coordinators and Balancing Authorities and the computational loads in their areas.

The Alert is explicit that it is not a Reliability Standard and creates no penalty for failing to implement the actions. Reporting is a different matter. Rule 810 of the NERC Rules of Procedure requires every entity covered by an Essential Action to report the actions it took. The full mechanics of the action plan belong to the next book. What matters at the grid layer is the shift underneath it: the load side of the system now has to be modeled, studied, instrumented and coordinated with the rigor long demanded of generation.

Each action answers a specific operating deficit the disturbance record exposed. The modeling list closes the visibility gap. Commissioning addresses the lack of as-built validation. The qualified-change definition stops a facility from changing its behavior without anyone re-studying it. Corrective actions and fault recording go after the after-the-fact problem of telling one cause of load loss from another. And the communications action reflects a hard lesson: an event involving load disconnection needs near-real-time coordination among entities that may have no prior operating relationship. Read it as a list of operating capabilities the system has to acquire.

The Alert is also the bridge to the rest of this series. Several of its actions became requirements in the CLO standards that passed final ballot in October 2026: the qualified-change definition,

modeling data, fault and disturbance recording, and Interpersonal Communication. EC-WP-1005 maps those requirements. The federal interconnection actions in Chapters 3 and 4 and the Texas regime in Chapter 5 are different institutional answers to the same technical question. How does a system stay reliable when the largest, fastest and most controllable objects attached to it sit on the load side, with no settled obligation to behave?

Chapter 3. The Federal Jurisdiction Question

Before anyone writes rules for large-load interconnection, there is a prior question: whose rules? The interconnection of retail load to a distribution system has traditionally been a state matter, while interstate transmission falls within FERC's authority under the Federal Power Act. Large loads sit uncomfortably across that line. A gigawatt-scale data center connecting at transmission voltage, or co-locating directly with a generator, does not fit neatly into the retail-load box. In late 2025 the federal government moved to pull at least part of the question onto the federal side.

3.1 The DOE directive

On October 23, 2025, the Secretary of Energy, acting under Section 403 of the Department of Energy Organization Act, 42 U.S.C. § 7173(a), directed FERC to initiate rulemaking procedures on the interconnection of large loads to the transmission system. Section 403 authorizes the Secretary to propose rules, regulations and statements of policy of general applicability on any function within FERC's jurisdiction. The directive came with a proposed advance notice of proposed rulemaking and asked FERC to take final action no later than April 30, 2026.

The directive's jurisdictional posture is notable. The cover letter states that interconnecting large loads to the interstate transmission system falls squarely within FERC's jurisdiction. That is a more assertive federal position than FERC itself had historically taken toward retail load, and it sits at the center of the debate the rulemaking opened.

3.2 Docket RM26-4 and the 20-megawatt question

FERC moved quickly. On October 27, 2025, it issued a Notice Inviting Comments on the proposed ANOPR in a new docket, RM26-4-000, Interconnection of Large Loads to the Interstate Transmission System. The proposed ANOPR defines large loads as greater than 20 megawatts, consistent with how FERC defines large generating facilities, and it identifies data centers as the leading source of load growth.

The 20-megawatt threshold immediately became a focal point. A floor that low reaches commercial and industrial customers the rule was never designed to target. In the comment record FERC later relied on, commenters proposed load thresholds from 50 to 100 megawatts and voltage floors from 60 to 100 kV. Where the line is drawn decides how many facilities fall inside a federal interconnection regime. The same line-drawing problem shows up in NERC registration. NERC's first proposal in April 2026 also started at 20 megawatts. After comments, NERC raised its threshold to 50 megawatts at 100 kV and above, and FERC's June 2026 show-cause orders floated a 50-megawatt, above-69-kV definition of their own.

3.3 From ANOPR to show-cause orders

An advance notice of proposed rulemaking is the earliest formal stage of a rulemaking. It normally precedes a notice of proposed rulemaking, which precedes a final rule. FERC did not follow that path. On April 16, 2026, it issued an Order Regarding Intent to Act, 195 FERC ¶ 61,045, stating it would act in the docket by the end of June. On June 18, 2026, it issued six orders under Section 206 of the Federal Power Act, one to each RTO and ISO and its transmission owners: PJM, MISO, SPP, CAISO, ISO New England and NYISO, in Dockets EL26-67-000 through EL26-72-000. FERC described the orders as advancing the Secretary's ANOPR. They draw on the comment record in RM26-4.

The PJM order, 195 FERC ¶ 61,211, shows the shape of all six. FERC preliminarily found that the tariffs may be unjust and unreasonable because they lack sufficiently clear and consistent provisions for large loads. It proposed a working definition of a large load as a new commercial or industrial customer at a single site with peak load of 50 megawatts or more, interconnecting above 69 kV, and not part of a co-location arrangement. Each region had 30 days to file an informational report on how it will ensure adequate generation for large loads, 45 days to request abeyance, and 60 days to show cause or propose tariff changes. FERC's fact sheet lists five reform areas: faster application and study processes, protection against cost shifting, co-location and behind-the-meter generation, new services for flexible large loads, and studies of generation serving nearby or co-located loads. The regional responses were due in August 2026. Track each docket separately, because the six regions will not move in lockstep.

The comment period itself showed how unsettled the field was. FERC's November 7, 2025 notice extended the initial comment deadline one week, from November 14 to November 21, 2025, after the Organization of MISO States asked for two weeks. PJM, the New England States Committee on Electricity and the Organization of PJM States supported the request. NERC filed in the docket in November 2025 and supplemented that filing on March 20, 2026 with its accelerated large load action plan.

3.4 Why the jurisdictional question shapes everything downstream

The federal jurisdiction question matters at the grid layer for a structural reason. If interconnecting large loads to interstate transmission is firmly within FERC's authority, a federal framework can standardize how these loads connect in every FERC-jurisdictional market. If that authority is contested or limited, the field fragments into state-by-state and RTO-by-RTO regimes, with the federal role confined to transmission-facing issues. So far FERC has taken the narrower path. The PJM co-location order in Chapter 4 declined to comprehensively address jurisdiction over interconnecting co-located retail load. The June 2026 show-cause orders rest on FERC's jurisdiction over interstate transmission service and expressly leave retail service to the states. The result is a federal framework built through tariffs, region by region, rather than a single national rule.

For ERCOT, which sits largely outside FERC's transmission jurisdiction, the federal question plays out differently. None of the six show-cause orders went to ERCOT, and the federal tariff reforms will not govern ERCOT interconnections. That is why Texas legislated its own regime, as Chapter 5 describes. The one framework that does reach across the jurisdictional divide is the NERC reliability layer, and that is the thread the later books pick up.

3.5 The jurisdictional foundation, and its limits

The case for federal authority rests on the architecture of the Federal Power Act, which gives FERC jurisdiction over transmission in interstate commerce and wholesale sales while leaving retail sales and local distribution to the states. In the June 2026 show-cause orders, FERC framed its authority in exactly those terms. It claimed exclusive jurisdiction over the rates, terms and conditions of interstate transmission service taken on behalf of large loads, and it said nothing in the orders is intended to intrude on state authority over retail service to large loads. FERC's fact sheet adds that the orders do not reach the states' authority to select, site and permit generation. The Secretary's proposed ANOPR itself uses Order No. 2003, FERC's generator interconnection framework, as the reference point, down to the 20-megawatt threshold borrowed from the pro forma interconnection procedures.

The limits are real, and FERC has shown that it feels them. The December 2025 PJM order declined to comprehensively address jurisdiction over the interconnection of retail loads served through co-location. It resolved the case on FERC's authority over generator interconnection and over transmission service used to serve the co-located load. The June 2026 orders went no further. They said FERC need not comprehensively address its jurisdiction over other aspects of adding large loads. The broad question the Secretary raised remains unanswered.

For the practitioner, the lesson is to stop treating "federal" and "state" as clean, mutually exclusive boxes for large loads. A single facility can sit astride the line: a retail customer for some purposes and a transmission-service customer for others. The answer to "whose rules?" can differ for the interconnection itself, the transmission service, the reliability obligation and the retail rate. Only one element of that matrix does not fragment along jurisdictional lines. NERC's authority over the bulk power system does not turn on the wholesale-versus-retail distinction. That is the foundation the rest of this series builds on.

The Order No. 2003 analogy is instructive but imperfect. FERC built the generator interconnection framework over decades, through pro forma agreements, queue procedures and study protocols refined in repeated rulemakings. A load-side counterpart would start from a much thinner base. FERC has chosen, for now, to build it through Section 206 proceedings in each region rather than a national pro forma rule. My read is that the federal framework for large loads will mature first where FERC's authority is most secure, meaning co-location, behind-the-meter generation and transmission service, and that a true Order No. 2003 counterpart for load is still some distance off.

Chapter 4. The PJM Co-Location Order

If the DOE directive opened the general federal question, the PJM co-location order answered a specific and urgent one. Through 2024 and 2025, the fastest route to power for a large data center was to co-locate directly with an existing generator rather than wait years in an interconnection queue. That arrangement collided with a tariff that had never been written for it, and the disputes pulled FERC into the most consequential co-location proceeding to date.

4.1 How the proceeding arose

The catalyst was concrete. On November 1, 2024, in Docket No. ER24-2172, FERC rejected an amended interconnection service agreement for the Susquehanna nuclear plant in PJM that supported Talen Energy's co-location arrangement with Amazon. Talen later announced that the arrangement would move to a front-of-the-meter structure. On February 20, 2025, FERC instituted a show-cause proceeding under Section 206 of the Federal Power Act, PJM Interconnection, L.L.C., 190 FERC ¶ 61,115, Docket No. EL25-49-000. It directed PJM and its transmission owners to show why the tariff remained just and reasonable without provisions addressing co-location arrangements with sufficient clarity or consistency, or to explain what changes would fix it. The proceeding drew on the record of FERC's November 2024 technical conference on large loads co-located at generating facilities and was consolidated with Constellation Energy Generation, LLC's complaint against PJM in Docket No. EL25-20.

PJM responded in March 2025. After building a record across the consolidated proceedings, FERC issued its decision on December 18, 2025.

4.2 What FERC decided

FERC found PJM's tariff unjust and unreasonable because it does not address, with sufficient clarity or consistency, the rates, terms and conditions of service that apply to generators serving co-located load and to the customers taking transmission service on behalf of that load. It directed PJM to revise the tariff to set out how a co-location arrangement is put in place. PJM serves more than 67 million people across 13 states and the District of Columbia. The order landed the day after PJM's 2027/2028 Base Residual Auction results showed committed supply 6,623 megawatts short of the reliability requirement.

The centerpiece of the order is three new transmission services available to a customer serving co-located load as alternatives to Network Integration Transmission Service:

- An interim, non-firm transmission service, available until all the Network Upgrades needed to provide Network Integration Transmission Service are complete.
- A Firm Contract Demand transmission service, which provides firm service up to a contracted megawatt quantity.

- A Non-Firm Contract Demand transmission service, which provides as-available service up to a contracted quantity.

The unifying idea is that service is priced and provided against the load's use of the transmission system and its willingness to limit that use under defined conditions, not against the facility's full demand. For a load that sits behind a generator and draws from the grid only intermittently, that can be a materially different and less costly basis for service than traditional network service.

4.3 Behind-the-meter generation

The order did not stop at transmission service. FERC also found PJM's behind-the-meter generation rules no longer just and reasonable, because loads with behind-the-meter generation are not fully accounted for in resource-adequacy planning and shift costs to other transmission customers. It directed PJM to set a new megawatt materiality threshold for behind-the-meter netting, with a three-year transition period and grandfathering for certain entities with existing contracts. This thread matters for co-location because behind-the-meter generation is one of the main ways a data center reduces its measured draw from the system, and with it, its cost and its resource-adequacy footprint.

4.4 The compliance timetable and the June 2026 order

FERC set a compressed schedule. Within 30 days, PJM was to file tariff changes clarifying how interconnection customers serving co-located load can use provisional interconnection service, request service below nameplate capacity, accelerate interconnection in certain circumstances, and use surplus interconnection service. Within 60 days, PJM was to file the tariff revisions for the new transmission services and the revised behind-the-meter rules. FERC also set a paper hearing on the rates, terms and conditions of the new services, and directed PJM to file, within 30 days, an informational report on its Critical Issue Fast Path stakeholder process and its integration of new generation to serve forecasted large loads. PJM filed its second compliance filing and its initial paper-hearing brief on February 23, 2026.

On June 18, 2026, FERC issued its order on rehearing, clarification, compliance filing and paper hearing, 195 FERC ¶ 61,209. It sustained the finding that PJM's tariff is unjust and unreasonable. It set aside parts of the December order, extending the new transmission services to customers serving load with behind-the-meter generation and allowing certain cogeneration qualifying facilities to net without the materiality threshold. It accepted PJM's February compliance filing in part, established certain rates, terms and conditions for the new services as just and reasonable, and directed further compliance filings within 60 days.

4.5 Why PJM became the template

The December order was formally limited to PJM. Its significance was never limited to PJM, and six months later FERC proved the point. The June 2026 show-cause orders to all six RTOs and ISOs name co-location and behind-the-meter generation as one of five reform areas and call for new services for flexible large loads. The vocabulary PJM was ordered to adopt, which is service defined by the load's actual use of the system, graduated firm and non-firm options, and reworked behind-the-meter netting, is now the starting point for every FERC-jurisdictional

market. For the grid layer, the PJM proceeding shows the federal mechanism at work: a Section 206 finding driving a tariff redesign, then the same template pushed out to every region.

4.6 Resource adequacy and the capacity backdrop

The co-location order cannot be read apart from the resource-adequacy pressure around it. PJM's 2027/2028 auction fell 6,623 megawatts short of the reliability requirement, and the 2028/2029 auction, with results released July 14, 2026, fell 6,831 megawatts short. Every megawatt of generation a co-located data center draws behind the meter is a megawatt no longer available to the rest of the system. That is the reliability logic beneath FERC's finding on behind-the-meter generation. The tariff did not fully account for that load in resource-adequacy planning, which left the planning process partly blind to a fast-growing category of demand and the generation backing it.

The new transmission services attack the same problem from the demand side. Contract demand services let a co-located load take less firm service than its full demand would imply, but only to the extent it genuinely limits its use of the system. The design tries to let co-location proceed at the speed developers want without quietly eroding the resource adequacy of the broader system. The paper hearing was convened to test whether the rates strike that balance, and the June 2026 order set the first of them.

Alongside the order, FERC directed PJM to report on its Critical Issue Fast Path stakeholder process on large-load additions. The pairing is deliberate. The order resolves the immediate co-location disputes. The stakeholder process is meant to produce the durable, system-wide answer to integrating large loads without compromising the reserve margin. Two federal instruments are working in tandem: an adjudicated order for the urgent disputes and a stakeholder process for the structural fix.

Read the capacity shortfall as a leading indicator, not a one-time event. A shortfall can be transient, driven by one auction's rules or a one-off withdrawal. Two consecutive auctions short of the reliability requirement, alongside a NERC forecast revision that adds 69 percent to the ten-year peak growth projection, make the structural reading the more sensible one. The co-location reforms attack one dimension of that problem. NERC's May 2026 Reliability Guideline on risk mitigation for emerging large loads attacks another. Whether the combination restores an adequate reserve margin in any given PJM zone five years out is, as of this update, an open question.

Chapter 5. The ERCOT Model

Texas did not wait for FERC. ERCOT operates largely outside FERC's transmission jurisdiction, so the federal framework taking shape through RM26-4, the PJM order and the June 2026 show-cause orders does not govern how large loads connect in Texas. The state filled that space itself, through legislation. The result is the most comprehensive large-load statute in the country and a regulatory model on an entirely separate track: state law implemented by the Public Utility Commission of Texas and ERCOT rather than federal orders implemented through tariffs.

5.1 Senate Bill 6

Texas Senate Bill 6 passed the Senate on March 19, 2025 and the House, with amendments, on May 27, 2025, and the Senate concurred on May 29. The Governor signed it on June 20, 2025, and it took effect immediately. It directs the PUCT and ERCOT to change how large loads in the ERCOT region are planned for, interconnected, operated and charged. I read the statute as going after two problems. The first is cost: large-load customers must contribute to the cost of interconnecting and serving them. The second is reliability, and it has two parts: the removal of generation from the market through co-location with existing generators, and ERCOT's historical inability to curtail large loads during emergencies.

5.2 The interconnection regime

SB 6 adds Section 37.0561 to the Public Utility Regulatory Act. It directs the PUCT to adopt interconnection standards for large loads at a single site above a demand threshold of 75 megawatts, unless the Commission finds a lower threshold necessary. The standards must include a flat study fee of at least \$100,000 for initial transmission screening studies, a way to demonstrate site control, uniform financial commitment requirements for the transmission infrastructure needed to serve the load, and disclosure of whether the customer is pursuing a substantially similar request for service elsewhere in Texas. A separate provision requires large-load customers to contribute to the interconnecting utility's costs. The disclosure requirement targets a specific distortion: speculative load that shows up in several queues at once and inflates the planning picture without representing committed demand.

The PUCT implemented these directives in Project No. 58481. Its order adopting new 16 TAC §25.194, Large Load Interconnection Standards, was filed September 18, 2026, and the Texas Register acknowledgment filed the same day shows an effective date of October 8, 2026. The rule applies to large loads not yet energized that seek a new interconnection of 75 megawatts or more at a single site, an expansion that reaches 75 megawatts for the first time, an expansion of 75 megawatts or more at a site already above 75 megawatts, or co-location with a generation resource. Before a large load can be included in an ERCOT interconnection study, it must execute an intermediate agreement, make the required disclosures, pay the \$100,000 study fee and post financial security of \$50,000 per megawatt. Later it must execute a standard large load

interconnection agreement and pay contribution in aid of construction for direct interconnection costs. EC-WP-1003 covers the rule in depth.

The financial-commitment and disclosure provisions are aimed squarely at the queue inflation described in Chapter 1. When one planning organization is tracking 226 gigawatts of large-load requests, telling committed load from speculative placeholders is itself a reliability tool. Transmission and resource planning built on inflated requests misallocates investment.

5.3 Curtailment and load flexibility

The reliability core of SB 6 is curtailment. New Section 39.170 requires ERCOT to ensure that each electric cooperative, transmission and distribution utility, and municipally owned utility serving a transmission-voltage customer develops a protocol, including any equipment or technology installed before interconnection, that allows the load to be curtailed during firm load shed. It applies to loads interconnected after December 31, 2025, other than critical load industrial customers and designated critical natural gas facilities. Large-load customers must also disclose their on-site backup generating facilities, defined as non-exporting generation that can serve at least 50 percent of on-site demand. Before or during an energy emergency alert, ERCOT may give reasonable notice that customers with such facilities may be directed to deploy that generation or curtail load.

SB 6 pairs the mandatory regime with a voluntary one. ERCOT must develop a reliability service that competitively procures demand reductions from large loads of at least 75 megawatts, deployed ahead of an anticipated emergency. Together the two programs turn large loads from passive, must-serve demand into a controllable reliability resource. That is exactly the posture the analysis in Chapter 2 says these loads must adopt.

5.4 Cost allocation and the co-location question

SB 6 also reaches the question of who pays for the system. It directs the PUCT to evaluate whether the four-coincident-peak method used to allocate wholesale transmission costs still ensures that all loads contribute appropriately, and which portion of transmission costs should be non-bypassable. The evaluation had to begin within 90 days of the act's effective date, and the Commission must amend its rules by December 31, 2026. On co-location, new Section 39.169 requires notice to ERCOT before a net metering arrangement between a new large load and a generation resource registered as stand-alone as of September 1, 2025. ERCOT studies the arrangement, and the PUCT approves it, denies it, or imposes conditions. The legislative concern mirrors the one behind the PJM proceeding: a large load that hides behind an existing generator can pull that generation out of the market and avoid the shared costs and reliability obligations of the system.

5.5 ERCOT's modeling and interconnection implementation

ERCOT has been building out the statutory direction through its own rules. NPRR1234 and PGRR115 set interconnection and modeling requirements for large loads, including modeling standards for loads of 25 megawatts or greater. ERCOT's Market Notice M-A052125-02 of November 25, 2025 announced partial implementation on December 15, 2025, with the fee schedule and certain Planning Guide sections to follow later. The 25-megawatt modeling

threshold matters. It pulls a much larger population of loads into ERCOT's planning models than the 75-megawatt interconnection threshold, because reliability modeling needs visibility into loads well below the size where the full interconnection and curtailment regime attaches.

ERCOT has also moved on ride-through, which NERC has not yet reached. NOGRR282, Large Computational Load Ride-Through Requirements, and NPRR1308, which defines Large Computational Load, were approved by the PUCT on July 9, 2026 and took effect August 1, 2026.

ERCOT therefore runs two tracks at once: a statutory interconnection and curtailment regime anchored at 75 megawatts, and a modeling and visibility regime anchored at 25 megawatts. Keep that structure in mind when the later books lay the NERC reliability layer, with its own 50-megawatt threshold, on top of it.

5.6 The interim process and the road to a standing regime

Texas did not have the luxury of finishing its rules before the loads arrived. In March 2022, ERCOT's Market Notice W-A032522-01 created an Interim Large Load Interconnection Process for loads seeking to connect within two years. It used a 75-megawatt threshold for stand-alone loads and 20 megawatts for loads co-located with generation. PGRR115 formalized the process, and its requirements took effect December 15, 2025. Customers already in the process complete the remaining PGRR115 steps and, as a rule, do not repeat the earlier ones. The sequencing matters to owners. A facility that entered under the interim process can face a different, still-evolving set of obligations than one entering under the full PGRR115 and §25.194 regime.

Look again at the two-program demand-management structure, because it changes what a large load is to the system. The mandatory regime makes curtailability a condition of interconnecting after 2025. The voluntary service makes demand reduction something ERCOT can buy ahead of anticipated stress. Together they turn the largest, fastest loads on the system from a must-serve liability into a dispatchable resource. That is the same transformation the reliability community is pursuing through standards, achieved here through state law and market design. A data center that can be paid to reduce, and required to reduce when reliability demands it, is a different object from one that must be served at all costs.

The cost-allocation reforms close the loop. By directing the PUCT to revisit four-coincident-peak and weigh non-bypassable charges, SB 6 confronts the risk that a large load structured to minimize its measured peak, through behind-the-meter generation, co-location or operational shaping, avoids paying for the transmission system it still relies on. The same instinct drives PUCT review of net metering with existing stand-alone generation. Across interconnection, curtailment and cost allocation, the throughline holds: a large load may not use its size and flexibility to shift its costs or its reliability obligations onto everyone else.

Chapter 6. RTO/ISO Divergence and the Reliability-Standard Layer

Step back from the individual proceedings and a pattern emerges. The markets are diverging on the commercial and interconnection side of large loads: ERCOT through state statute, the FERC-jurisdictional RTOs through Section 206 proceedings and their own stakeholder processes. On the reliability side they are converging, because one authority sits above all of them. That split is the key to reading the whole picture. It tells an owner or registered entity which obligations are local and negotiable and which are universal and fixed.

6.1 Where the markets diverge

On rates, interconnection priority, cost allocation and curtailment design, the markets are on genuinely different paths. ERCOT's regime comes from a state legislature and is implemented through PUCT rules and ERCOT protocols. It is anchored at a 75-megawatt interconnection threshold with a 25-megawatt modeling threshold, and it builds curtailment and demand management into the terms of large-load service. PJM's regime comes from a FERC Section 206 order and is implemented through tariff revisions and a paper hearing. It is organized around new co-location transmission services and reworked behind-the-meter rules. The other FERC-jurisdictional markets are now under their own June 2026 show-cause orders, each free to define large loads and set region-specific requirements within FERC's five reform areas.

These differences are not cosmetic. How a large load is charged for transmission, the priority it gets in a queue, the conditions under which it can be curtailed, and the treatment of on-site generation all turn on which market a facility sits in and which proceeding governs it. For a developer choosing among sites, these are first-order economic variables, and they will not be uniform across the country for the foreseeable future.

6.2 Where the markets converge

The convergence point is reliability. NERC's authority under Section 215 of the Federal Power Act reaches the bulk power system in the Eastern Interconnection, the Western Interconnection and ERCOT alike. It does not depend on whether a market is FERC-jurisdictional for transmission rates. Whatever ERCOT decides about curtailment or PJM decides about transmission service, the reliability obligations NERC is building for large loads apply on the same technical basis everywhere. WECC's 2025 risk assessment, NERC's alerts to registered entities across all three interconnections, and a single set of registry criteria and standards all point the same direction.

This is the structural insight that organizes the rest of the series. The commercial and interconnection rules are local. The reliability rules are universal. An owner can negotiate, site-shop and structure around the first. The second, which covers modeling data, studies,

Operating Instructions, communications, protection coordination, disturbance recording and registration itself, follows the facility wherever it connects. It attaches to the electrical reality of the load, not to the commercial terms of its service.

6.3 The reliability layer is being built now

The reliability layer is no longer hypothetical. NERC has published a white paper concluding that existing standards are inadequate for emerging large loads. It has issued a Level 2 Alert, then a Level 3 Essential Action Alert, and published a reliability guideline. On July 16, 2026, FERC directed NERC, in Docket No. RD26-7-000, to file new or modified Reliability Standards for computational loads, and the Rules of Procedure revisions including registry criteria, by December 31, 2026.

NERC's first registration proposal, posted April 1, 2026, would have created a single Computational Load Entity captured at 20 megawatts and 60 kV. That proposal is history. On October 8, 2026, the NERC Board approved Rules of Procedure revisions creating two functional entities, the Computational Load Owner and the Computational Load Operator, with registry criteria posted in August 2026 that capture a Computational Load Site with total connected load of 50 megawatts or more supplied at 100 kV or above. On the standards track, Project 2026-02 produced CLO-001-1, CLO-002-1 and CLO-003-1 with conforming revisions to FAC-001 and FAC-002, and NERC reported on October 15, 2026 that they passed final ballot. NERC plans Board adoption in December 2026 and filing with FERC by December 31. The implementation plans expect registration to begin in 2027, pending FERC approval. EC-WP-1005 covers all of it. For the grid layer, the point is that the universal obligations are arriving on an accelerated schedule and will overlay every one of the divergent market regimes described above.

An owner or registered entity should therefore track two clocks. The first is local: PUCT rules and ERCOT protocol revisions in Texas; the PJM compliance filings and the regional show-cause proceedings in the FERC world. The second is the NERC reliability program, which runs independently of all of them. The books that follow are organized around that second clock.

6.4 Resource adequacy: the concern that crosses every line

One concern refuses to stay inside any one jurisdiction's box. That concern is resource adequacy. Whether it shows up as a PJM capacity shortfall, an ERCOT load-forecasting problem, or a NERC assessment adding 224 gigawatts to ten-year peak growth, the question is the same: will there be enough firm capacity, in the right places, to serve a demand curve bending sharply upward? NERC's May 2026 Reliability Guideline, Risk Mitigation for Emerging Large Loads, is explicit at the longest timescale. It calls for resource-adequacy models that separate firm from flexible load components, account for behind-the-meter generation and storage, and represent time-varying operating patterns such as AI training. That guidance applies whether a load sits in ERCOT or a FERC-jurisdictional market.

The distinction between firm and flexible load is the conceptual key. A load that can be curtailed or shifted, such as an AI training run that can pause or a facility with on-site generation it can deploy, affects adequacy very differently from one that must be served continuously. The Texas demand-management programs and the FERC co-location services are, at bottom, ways of

recognizing and pricing that flexibility. The reliability layer is pushing planners to actually represent it in their models. Again the convergence is on the reliability side. The markets will price flexibility on their own terms, but every one of them will be expected to see it in its planning models, and to plan as though the largest loads on the system can, and sometimes must, bend.

Resource adequacy here is more than a number in an assessment. The methods have to change too. Traditional loss-of-load expectation calculations, anchored on a one-day-in-ten-years standard and built from generator forced-outage and load-forecast distributions, were designed for a system whose largest stochastic elements were generators. With large, fast, controllable loads now matching generators in size and behavior, planning models must represent load-side risk on the same footing. A facility that contractually commits to curtail under defined conditions can be modeled as conditionally firm. A facility whose disturbance response is governed only by its internal protection settings cannot. Telling the two apart is where the next generation of resource-adequacy assessment splits from the last, and it is why the guideline's call to separate firm from flexible load is a change in method, not a documentation request.

Chapter 7. Implications for Owners, Generators, and Registered Entities

The grid layer produces obligations. The reliability problem and the regulatory responses in this book translate into concrete consequences for three audiences: the owners and developers building large loads, the generators deciding whether to serve them through co-location, and the registered entities already inside the NERC framework whose obligations are expanding because of these loads. This chapter draws out those implications and sets up the rest of the series.

7.1 For large-load owners and developers

The central message for owners is that the era of the passive interconnection customer is ending. A facility large enough to move the bulk power system when it connects or disconnects is being treated like any other large object on the grid: a participant with reliability obligations, not just a customer with a meter. In ERCOT that already means curtailment protocols with equipment installed before interconnection, financial-security and disclosure requirements under §25.194, ride-through requirements for Large Computational Loads, and modeling obligations that start at 25 megawatts. In the FERC world it means new service constructs, behind-the-meter limits, and six regional show-cause proceedings. Across both, NERC's CLO standards will bring interconnection, modeling-data, communications and recording obligations to sites of 50 megawatts or more at 100 kV or above, along with registration as a Computational Load Owner or Operator.

The practical takeaways for owners:

Site selection now carries regulatory weight. The interconnection threshold, curtailment regime, cost-allocation method and co-location treatment differ materially between ERCOT and the FERC-jurisdictional markets. Those are first-order economic variables, not back-office details.

Curtailability is becoming a condition of service. The Texas regime already assumes a large load can be told to reduce or disconnect during system stress, and the federal reforms are built around loads willing to limit their use of the grid. Design the facility, and the business model, around that assumption.

On-site and behind-the-meter generation is regulated, not a workaround. PJM's revised behind-the-meter rules and the Texas net metering review both say the same thing: regulators will address co-location and self-supply rather than let them be used to escape system obligations.

Visibility obligations start below the headline thresholds. ERCOT models loads from 25 megawatts. FERC's working definition starts at 50 megawatts above 69 kV, and NERC's

registry criteria at 50 megawatts and 100 kV. Facilities well under the marquee numbers will owe data and modeling information to planners.

7.2 For generators considering co-location

For generators, co-location with a large load is both an opportunity and a regulatory event. The PJM order shows that FERC will scrutinize the terms on which a generator serves co-located load, require them to be transparent and not unduly discriminatory, and rework the transmission-service and behind-the-meter constructs that make co-location attractive. The June 2026 show-cause orders carry that scrutiny to every RTO and ISO. On the state side, SB 6's net metering review and its concern with generation leaving the market show the same instinct. The NERC package adds a reliability layer of its own. A Generator Owner whose Facility carries a Computational Load Site interconnection takes on obligations under CLO-001-1, and one that owns the main power transformer serving a site carries the CLO-003-1 recording obligations. A generator that treats co-location as a private commercial deal, insulated from system obligations, is misreading where regulation is going. The arrangement is becoming a regulated service with reliability and cost-allocation strings attached.

7.3 For existing registered entities

The audience most immediately affected is the one already inside the NERC framework. Transmission Planners, Planning Coordinators, Transmission Owners, Transmission Operators, Balancing Authorities and Reliability Coordinators were the recipients of the May 2026 Level 3 Alert. They are the entities expected to tighten interconnection requirements, studies, commissioning, fault recording and communications for computational loads. The status reports were due August 3, 2026. Under Rule 810, NERC must report the results to FERC within 30 days after that reporting date. For these entities the large-load problem is not a future compliance project. It is a present one, and the CLO standards will turn much of the Alert into enforceable requirements on a phased schedule.

Be precise about what the Alerts do and do not require. The Level 3 Alert states that it is not a Reliability Standard and that entities face no penalty for failing to implement its Essential Actions. Rule 810 does require acknowledgment and status reporting, and the Alert does not excuse any violation of an existing standard. My advice: treat the Alert record as the first chapter of your evidence for the CLO standards, because it will be. The work runs on parallel tracks. Modeling is coordinated with planning and operations, instrumentation with IT, protection and control reviews with engineering, and communications with neighboring entities and the large-load customers themselves. None of that fits neatly inside one existing compliance program. Assign a named cross-functional lead and stand up a dedicated workstream instead of treating the Alerts as routine paperwork.

7.4 The bridge to the rest of the series

This book has deliberately stayed at the grid layer: the system reliability problem and the federal and regional interconnection frameworks responding to it. It has not covered how NERC's standards program works, what registration as a Computational Load Owner or Operator requires, what a data center owner's decision map looks like under Texas law, or how a

registered computational load builds and defends a compliance program. The books that follow do:

- **The standards layer (EC-WP-1001):** NERC's Large Loads Action Plan, its alerts and guideline, and the path from voluntary recommendation to mandatory standard.
- **The entity layer (EC-WP-1002):** what becoming a registered entity obligates. It was written around the superseded Computational Load Entity proposal, so read it with EC-WP-1005.
- **The owner layer (EC-WP-1003):** the data center owner's playbook under Texas Senate Bill 6 and the co-location decision.
- **The operating layer (EC-WP-1004):** building, evidencing and defending the compliance program of a registered computational load.
- **The 2026 update (EC-WP-1005):** the Board-approved Computational Load Owner and Operator criteria and what CLO-001-1, CLO-002-1 and CLO-003-1 require.

Read together, the series moves from the system-level forces examined here to the specific obligations that fall on individual entities. The grid layer explains why those obligations exist. The rest of the series explains what to do about them.

Counsel and the energy bar deserve their own mention. The same period that is producing a new registration category, six regional Section 206 proceedings and a state large-load rule will produce a wave of intervention, compliance and settlement work. Comments in RM26-4, the PJM compliance filings, the regional show-cause dockets and the PUCT rulemakings all build records with sophisticated technical content. Counsel who come to this work without grounding in the technical findings, the standards sequence and the operating realities behind them start at a structural disadvantage. Chapters 3, 4 and 5 give counsel the dockets and procedural posture. The later books supply the technical and operational vocabulary the record assumes.

One more implication runs across every audience: disciplined record-keeping during a period of regulatory motion. Every interconnection request submitted, comment filed, Alert acknowledgment sent and modeling case shared with a planner becomes part of a record the same entity may have to reconstruct two or three years from now, in front of a regulator asking how a decision was made. The discipline is not new. Generator owners have lived with it since Order No. 2003 made interconnection studies durable artifacts. What is new is applying it on the load side. The program disciplines in the operating-layer book (EC-WP-1004) need to be in place now, before the events the rest of the series describes test them.

The reliability community uses three modeling timescales, sub-second, seconds-to-minutes and hours-to-years, to organize its diagnosis of the large-load problem. The same three organize the operating response. Protection-and-control engineers and equipment vendors own the sub-second timescale, and most of that work is done once a facility is built and commissioned. What remains is documentation, validation and the willingness to share model data with planners. System operators and balancing authorities own the seconds-to-minutes timescale, and that work never stops: every shift is a chance for coordinated response, and every event exposes new gaps in coordination. Planners and senior leadership own the hours-to-years timescale, and that work is cumulative. Each planning cycle either absorbs the lessons of the last one or repeats its mistakes. No level can solve the problem alone, so practitioners at each level should expect their counterparts at the other two to be in the room.

Glossary of Terms

The following terms are used throughout this whitepaper. Definitions are summarized rather than quoted; the operative definitions are those in the governing statutes, tariffs, rules and NERC documents.

Term	Meaning in this paper
Advance Notice of Proposed Rulemaking (ANOPR)	The earliest formal stage of a federal rulemaking, used to gather input before a Notice of Proposed Rulemaking and a final rule. FERC Docket No. RM26-4-000 opened with the Secretary of Energy's proposed ANOPR on large-load interconnection.
Behind-the-Meter Generation (BTMG)	Generation that serves load without using the transmission system, reducing the load's measured draw from the grid. PJM's BTMG rules were a central subject of the FERC co-location orders.
Bulk-Power System (BPS)	Per the NERC Glossary, the facilities and control systems necessary for operating an interconnected electric energy transmission network, and the electric energy from generation facilities needed to maintain transmission system reliability. It excludes facilities used in local distribution.
Co-Location	An arrangement in which a large load is physically connected to the facilities of an existing or planned generating facility on the generator's side of the point of interconnection, and draws power from it in whole or in part.
Computational Load Entity	The single registered function NERC proposed on April 1, 2026, at 20 MW and 60 kV. Superseded by the Computational Load Owner and Computational Load Operator; see EC-WP-1005.
Computational Load Owner / Computational Load Operator	The two NERC functional entities created by Rules of Procedure revisions the NERC Board approved on October 8, 2026, pending FERC approval. They own and operate, respectively, a Computational Load Site with total connected load of 50 MW or more supplied at 100 kV or above.
Curtailment	A reduction or interruption of a load's consumption, directed to maintain reliability. Under Texas Senate Bill 6, transmission-voltage loads interconnected after December 31, 2025 must be curtailable during firm load shed, with limited exceptions.
ERCOT	The Electric Reliability Council of Texas, the independent system operator for most of Texas. ERCOT operates largely outside FERC's transmission jurisdiction but remains within NERC's reliability footprint.
FERC	The Federal Energy Regulatory Commission, the federal agency with jurisdiction over interstate transmission and wholesale electricity sales under the Federal Power Act.

Term	Meaning in this paper
Firm Contract Demand Transmission Service	One of three new transmission services FERC directed PJM to create in December 2025, providing firm service to co-located load up to a contracted megawatt quantity.
Four Coincident Peak (4CP)	The ERCOT method that sets wholesale transmission charges from each distribution service provider's demand in the four intervals coincident with the ERCOT system peak in June, July, August and September. Senate Bill 6 directed the PUCT to evaluate whether it still allocates costs appropriately.
Large Computational Load (LCL)	An ERCOT term defined by NPRR1308 and subject to ERCOT's ride-through requirements under NOGRR282, effective August 1, 2026.
Large Load	A high-capacity electrical load. Thresholds vary by regime: 75 MW for Texas interconnection standards under SB 6 and 16 TAC §25.194, with a 25 MW ERCOT modeling threshold; greater than 20 MW in the Secretary of Energy's proposed ANOPR; 50 MW above 69 kV in FERC's June 2026 show-cause orders; and 50 MW at 100 kV or above in NERC's Board-approved registry criteria.
Level 2 / Level 3 Alert	NERC alerts under Rule 810 of the Rules of Procedure. A Level 2 Alert is a Recommendation of specific actions for entities to consider. A Level 3 Alert identifies Essential Actions and requires NERC Board approval before issuance. Recipients of either must report to NERC on the actions they took. Neither is a Reliability Standard.
NERC	The North American Electric Reliability Corporation, the Electric Reliability Organization that develops and enforces Reliability Standards under Section 215 of the Federal Power Act.
Network Integration Transmission Service (NITS)	Firm transmission service that integrates a customer's load with its network resources. FERC's PJM order created alternatives to NITS for co-located loads.
PUCT	The Public Utility Commission of Texas, the state agency that oversees ERCOT and implements Texas electric statutes, including Senate Bill 6.
Reliability Guideline	A NERC document setting out voluntary best practices. NERC's Reliability Guideline: Risk Mitigation for Emerging Large Loads was published in May 2026.
Reliability Standard	A mandatory, enforceable requirement developed by NERC and approved by the applicable governmental authority, applicable to registered entities performing defined functions on the bulk power system.
Ride-Through	The ability of a connected element to stay in service through a defined envelope of voltage and frequency disturbances. Generators carry ride-through requirements. As of October 17, 2026, no NERC standard sets ride-through for large loads; a NERC SAR on the subject was pending, and ERCOT's NOGRR282 applies in Texas.
RTO / ISO	Regional Transmission Organization or Independent System Operator: an entity that operates the transmission grid and wholesale markets across a region. Examples include PJM, MISO and SPP. ERCOT functions as an ISO for most of Texas.

Term	Meaning in this paper
Section 206 (Federal Power Act)	The provision under which FERC may find an existing rate, term or condition of jurisdictional service unjust and unreasonable and set a replacement. FERC used it in the PJM co-location proceeding and the June 2026 show-cause orders.
Section 403 (DOE Organization Act)	42 U.S.C. § 7173(a), which authorizes the Secretary of Energy to propose rules, regulations and statements of policy of general applicability on functions within FERC's jurisdiction. The Secretary used it on October 23, 2025 to direct FERC toward a large-load interconnection rulemaking.
Senate Bill 6 (SB 6)	The 2025 Texas statute on the planning, interconnection, operation and cost allocation of large loads in ERCOT. Signed and effective June 20, 2025.
Show-Cause Proceeding	A proceeding in which FERC directs a regulated entity to justify why an existing tariff or practice remains just and reasonable, or to propose changes. FERC opened the PJM co-location matter this way in February 2025 and used the same tool for all six RTOs and ISOs in June 2026.
WECC	The Western Electricity Coordinating Council, the NERC Regional Entity for the Western Interconnection. It released a large-load interconnection risk assessment, prepared for it by Elevate Energy Consulting, in February 2025.

How Energy Compliance Can Help

This book describes a framework that is still being built, and the obligations it creates land on different entities at different times. Here is where we can help.

Registration and applicability analysis. Whether a site meets NERC's 50 MW and 100 kV test, which entity registers as Computational Load Owner and which as Operator, and where a co-located Generator Owner picks up CLO-001-1 or CLO-003-1 duties. Those calls get made in contracts and one-lines long before registration, and they are hard to unwind afterward.

Compliance program design. For transmission and planning entities working through the Level 3 Alert, and for data center owners standing up a program for the first time: who owns modeling data, qualified changes, Operating Instructions and recorder data, and what evidence proves it.

Audit defense and evidence strategy. The Alert responses, interconnection records and modeling submissions you produce now are the evidence an auditor will ask for once the CLO standards are enforceable. We build that record so it holds up.

WattOps Compliance is EC's NERC compliance evidence platform (wattopscompliance.com). We will run one standard at one facility through WattOps at no cost, CIP standards excluded, so you can see what your evidence looks like before an auditor does.

RenewOps is EC's renewable operations monitoring and analytics platform, and it includes a Data Center module. If your operations data has to answer to a grid operator, start there.

If any of this applies to a facility you own, serve or operate, call me. We will tell you plainly where you stand.

Website: energycomplianceinc.com · Email: rsmith@complianceforenergy.com ·
Phone: 763.438.4427

About the Author

Rob Smith is the Founder and Principal of Energy Compliance, Inc., with more than thirty years in the industry on every side of the system. He began in control-room operations as a Reliability Coordinator, Transmission Operator, and Power System Operator across RTO/ISO and utility control centers. On the regulator side, he was a senior compliance auditor and subject matter expert for NERC Reliability Standards. He audited grid facilities, evaluated mitigation adequacy, participated in risk-based oversight of utility mitigation activities, and supported the development of violation notifications and settlements in FERC-directed enforcement actions. He conducted a regulatory audit in the Sultanate of Oman against the Sultanate's Sector Law and Grid Code.

He founded Energy Compliance, Inc. to deliver senior regulator-side compliance authority without the layered staffing and billable-hour overhead of larger firms.

Education:

- MBA, Energy Management, University of Mary
- MSL, Compliance Law, Fordham Law University
- BAS, Energy Management, Bismarck State College
- BAS, Mechanical Engineering, Metallurgy minor, University of Florida
- BAS, Criminology, St. Petersburg College (State Law Enforcement Certification)
- AAS, Power Plant Technology, Bismarck State College
- AAS, Electrical Transmission System Technology, Bismarck State College

Certifications: NERC Lead Auditor training; previously NERC-certified at the Reliability Coordinator level; 1st Class A Boiler Engineer License, Minnesota.

The views expressed in this publication do not represent the views of NERC, FERC, or any Regional Entity.

About Energy Compliance, Inc.

Energy Compliance, Inc. is a regulatory compliance consultancy serving the energy sector, with a focus on NERC, FERC, and RTO/ISO compliance and a particular concentration in the Texas PUCT and RTO/ISO markets. The firm helps registered entities and prospective registrants through the full compliance lifecycle, from registration and program design through evidence development, RSAW production, mitigation and audit defense.

The firm's approach is built on a research-analyst-first discipline. Every conclusion is tied to an authoritative source, every narrative is backed by evidence, and every deliverable is built to stand up to regulator scrutiny. That discipline extends to the firm's two platforms: WattOps Compliance, EC's NERC compliance evidence platform, and RenewOps, EC's renewable operations monitoring and analytics platform, which includes a Data Center module.

This whitepaper is the first in the Energy Compliance Large Load and Data Center Series, a multi-volume analysis of how data centers and other large computational loads are reshaping bulk-power-system reliability and the compliance obligations of the entities that build, serve and operate them.

To learn more, or to discuss how the obligations in this series apply to a specific facility or registered entity, visit energycomplianceinc.com.

Website: energycomplianceinc.com · Email: rsmith@complianceforenergy.com ·

Phone: 763.438.4427

Sources and Authorities

Every factual assertion in this whitepaper is drawn from the primary sources below, checked on October 17, 2026. Where a matter was proposed or pending, the text says so. Readers should confirm the current status of each authority before relying on it.

Federal: Department of Energy, FERC and PJM

- Secretary of Energy, letter to FERC directing action under Section 403 of the Department of Energy Organization Act, with proposed Advance Notice of Proposed Rulemaking, Ensuring the Timely and Orderly Interconnection of Large Loads (Oct. 23, 2025). <https://www.energy.gov/sites/default/files/2025-10/403%20Large%20Loads%20Letter.pdf>
- FERC, Interconnection of Large Loads to the Interstate Transmission System, Notice Inviting Comments, Docket No. RM26-4-000 (Oct. 27, 2025). https://elibrary.ferc.gov/eLibrary/docketsheet?docket_number=rm26-4-000
- FERC, Notice Granting Extension of Time, Docket No. RM26-4-000 (Nov. 7, 2025). <https://ferc.gov/sites/default/files/2025-11/20251107-3060.PDF>
- FERC, Order Regarding Intent to Act, 195 FERC ¶ 61,045, Docket No. RM26-4-000 (Apr. 16, 2026), as cited in 195 FERC ¶ 61,211.
- FERC, PJM Interconnection, L.L.C., Order Instituting Proceeding Under Section 206 of the Federal Power Act, 195 FERC ¶ 61,211, Docket No. EL26-67-000 (June 18, 2026). <https://www.pjm.com/-/media/DotCom/documents/ferc/orders/2026/20260618-el26-67-000.pdf>
- FERC, Fact Sheet on the RTO/ISO large load show-cause orders, Dockets EL26-67-000 through EL26-72-000 (June 18, 2026). <https://www.ferc.gov/news-events/news/fact-sheet-ferc-takes-action-supercharge-americas-grid-efficiency-reliability-and>
- FERC, PJM Interconnection, L.L.C., Order Directing Show Cause, 190 FERC ¶ 61,115, Docket No. EL25-49-000 (Feb. 20, 2025), and news release. <https://www.ferc.gov/news-events/news/ferc-orders-action-co-location-issues-related-data-centers-running-ai>
- FERC, PJM Interconnection, L.L.C., order on show-cause proceeding (co-location), 193 FERC ¶ 61,217, Docket No. EL25-49-000 et al. (Dec. 18, 2025), consolidated with Docket No. EL25-20-000 (Constellation complaint). <https://www.ferc.gov/sites/default/files/2025-12/E-1%20EL25-49-000.pdf>
- FERC, PJM Interconnection, L.L.C., Order on Rehearing, Clarification, Compliance Filing, and Paper Hearing, 195 FERC ¶ 61,209, Docket No. EL25-49-002 et al. (June 18, 2026). https://www.ferc.gov/sites/default/files/2026-06/EL25-49-002_0.pdf

- FERC, Order Directing NERC to File Reliability Standard(s) Pertaining to Computational Load Integration, 196 FERC ¶ 61,031, Docket No. RD26-7-000 (July 16, 2026). <https://www.ferc.gov/sites/default/files/2026-07/RD26-7-000.pdf>
- U.S. Department of Energy, DOE Releases New Report Evaluating Increase in Electricity Demand from Data Centers (Dec. 20, 2024), summarizing the Lawrence Berkeley National Laboratory United States Data Center Energy Usage Report. <https://www.energy.gov/articles/doe-releases-new-report-evaluating-increase-electricity-demand-data-centers>
- PJM, 2027/2028 Base Residual Auction results (Dec. 17, 2025). <https://insidelines.pjm.com/pjm-auction-procures-134479-mw-of-generation-resources/>
- PJM, 2028/2029 Base Residual Auction results (July 14, 2026). <https://www.pjm.com/-/media/DotCom/about-pjm/newsroom/2026-releases/20260714-pjm-capacity-auction-procures-138318-mw-of-generation-resources.pdf>

State: Texas

- Texas Senate Bill 6, 89th Legislature, Regular Session (2025), enrolled text, adding PURA §§37.0561, 39.169 and 39.170 and amending §35.004. <https://capitol.texas.gov/tlodocs/89R/billtext/html/SB00006F.htm>
- Texas Legislature Online, SB 6 (89R) bill history: signed by the Governor and effective June 20, 2025. <https://capitol.texas.gov/BillLookup/History.aspx?LegSess=89R&Bill=SB6>
- PUCT, Order Adopting New 16 TAC §25.194, Large Load Interconnection Standards, Project No. 58481, Item 218 (filed Sept. 18, 2026), and Texas Register acknowledgment, Item 219 (effective Oct. 8, 2026). <https://interchange.puc.texas.gov/search/filings/?UtilityType=A&ControlNumber=58481&ItemMatch=Equal&DocumentType=ALL>
- PUCT, Project No. 58317, SB 6 Implementation. <https://interchange.puc.texas.gov/search/filings/?UtilityType=A&ControlNumber=58317&ItemMatch=Equal&DocumentType=ALL>
- 16 TAC §25.192, Transmission Service Rates (4CP billing determinants). <https://www.law.cornell.edu/regulations/texas/16-Tex-Admin-Code-SS-25-192>
- ERCOT, Market Notice M-A052125-02, implementation of NPRR1234 and PGRR115, Interconnection Requirements for Large Loads and Modeling Standards for Loads 25 MW or Greater (Nov. 25, 2025). https://www.ercot.com/services/comm/mkt_notices/M-A052125-02
- ERCOT, Large Load Interconnection Process Q&A (Dec. 2025). <https://www.ercot.com/files/docs/2025/12/24/Large-Load-Interconnection-Process-Q-A.pdf>
- ERCOT, NOGRR282, Large Computational Load Ride-Through Requirements (PUCT approval July 9, 2026; effective Aug. 1, 2026). <https://www.ercot.com/mktrules/issues/NOGRR282>
- ERCOT, Item 16.2, System Planning and Weatherization Update, Board of Directors meeting, Dec. 8–9, 2025. <https://www.ercot.com/files/docs/2025/12/01/16.2-System-Planning-and-Weatherization-Update.pdf>

- ERCOT, Yearly Peak Demand Records (accessed Oct. 17, 2026). <https://www.ercot.com/static-assets/data/news/content/a-peak-demand/all-time-records.htm>
- Texas Reliability Entity, Transmission Expansion for the Texas Interconnection (newsletter, May 2025), on PUCT approval of the first 765-kV projects in the Permian Basin Reliability Plan. <https://texasre.org/pages/newsletters/may2025/article3>

NERC and Regional Entities

- NERC, Rules of Procedure, Section 810, Information Exchange and Issuance of NERC Advisories, Recommendations and Essential Actions (effective Nov. 28, 2023). <https://www.nerc.com/globalassets/who-we-are/rules-of-procedure/nerc-rop.pdf>
- NERC, Incident Review: Considering Simultaneous Voltage-Sensitive Load Reductions (Jan. 8, 2025). https://www.nerc.com/globalassets/our-work/reports/event-reports/incident_review_large_load_loss.pdf
- NERC, Incident Review: Voltage-Sensitive Crypto Load Reductions (Jan. 9, 2026). https://www.nerc.com/globalassets/our-work/reports/event-reports/incident_review_considering_voltage-sensitive_crypto_load_reductions.pdf
- NERC Large Loads Task Force, Characteristics and Risks of Emerging Large Loads (July 2025). <https://www.nerc.com/globalassets/who-we-are/standing-committees/rstc/whitepaper-characteristics-and-risks-of-emerging-large-loads.pdf>
- NERC Large Loads Working Group, Assessment of Gaps in Existing Practices, Requirements, and Reliability Standards for Emerging Large Loads (March 2026). <https://www.nerc.com/globalassets/our-work/guidelines/reliability/white-paper---assessment-of-gaps.pdf>
- NERC, Level 2 Alert, Industry Recommendation: Large Load Interconnection, Study, Commissioning, and Operations (Sept. 9, 2025). <https://www.nerc.com/globalassets/programs/bpsa/alerts/2025/nerc-alert-level-2--large-loads.pdf>
- NERC, Aggregated Report on NERC Level 2 Industry Recommendation: Large Load Interconnection, Study, Commissioning, and Operations (March 2026). <https://www.nerc.com/globalassets/programs/bpsa/alerts/2025/aggregated-report-level-2-large-load-interconnection-study-commissioning-and-operations.pdf>
- NERC, Level 3 Essential Action Alert, Computational Load Modeling, Studies, Instrumentation, Commissioning, Operations, Protection, and Control (May 4, 2026). <https://www.nerc.com/globalassets/programs/bpsa/alerts/level-3-computational-load-alert.pdf>
- NERC, Reliability Guideline: Risk Mitigation for Emerging Large Loads (May 2026). https://www.nerc.com/globalassets/our-work/guidelines/reliability/RG_Risk-Mitigation-For-Emerging-Large-Loads.pdf
- NERC, 2025 Long-Term Reliability Assessment (January 2026). https://www.nerc.com/globalassets/our-work/assessments/nerc_ltra_2025.pdf
- NERC, supplemental filing with accelerated large load action plan, Docket No. RM26-4-000 (Mar. 20, 2026). <https://www.nerc.com/globalassets/who-we-are/legal-->

regulatory/filings--orders/nerc-filings-to-ferc/2026/nerc_accelerated-II-action-plan_rm26-4_signed.pdf

- NERC, Large Loads Action Plan Q3 2026 Update (Board approval of Computational Load Owner and Operator Rules of Procedure revisions, Oct. 8, 2026). <https://www.nerc.com/globalassets/initiatives/large-loads-action-plan/llap-quarterly-update-q3-2026.pdf>
- NERC, Computational Loads proposed Rules of Procedure revisions, Appendices 2, 5A and 5B (Aug. 19, 2026 posting). <https://www.nerc.com/globalassets/who-we-are/rules-of-procedure/proposed/computational-load-owner-or-operator-summary-of-changes-august-2026-posting.pdf>
- NERC, Project 2026-02 Computational Loads, standards and final ballot materials (October 2026). <https://www.nerc.com/standards/reliability-standards-under-development/2026-02-computational-loads>
- Energy Compliance, Inc., EC-WP-1005, Computational Load Owners and Operators: NERC's Registry Criteria and the CLO Standards (October 2026), for the registration framework and CLO requirements.
- Elevate Energy Consulting for the Western Electricity Coordinating Council, An Assessment of Large Load Interconnection Risks in the Western Interconnection (Feb. 2025; released by WECC Feb. 27, 2025). https://www.wecc.org/sites/default/files/documents/products/2025/Report_WECC%20Large%20Loads%20Risk%20Assessment%204.pdf

© Energy Compliance, Inc. · EC-WP-1000 · Status as of October 17, 2026