

INTELLIGENCE UPDATE

Near miss highlights need for new grid codes



Max Smolaks 3 Aug 2026

On July 22, 2026, an issue with a single power transmission line threatened to destabilize the largest grid region in the US.

The initial fault was not serious, but it prompted dozens of data centers in Northern Virginia (US), representing more than 3 GW of data center capacity or around 3% of the region's total grid demand, to switch to backup generation. This caused voltage spikes across the network and complicated recovery. An event that is usually resolved in milliseconds took more than 10 minutes to address, affecting power quality across multiple states.

The incident reinforces a warning that Uptime Intelligence has made repeatedly: as data centers become larger and consume more power, they have an increasingly outsized impact on grid stability, particularly when multiple facilities connect or disconnect simultaneously.

This does not require a grid outage — a relatively minor disruption to power quality can trigger sensitive UPS systems to take a data center off the grid. When multiple facilities respond in this way in quick succession, they can inadvertently destabilize the grid for other power consumers. Once the fault has been cleared, a secondary problem can occur: as data centers return to grid power and recharge their batteries, they can cause a sharp increase in overall electricity demand.

The incident in Northern Virginia follows similar close calls elsewhere and is driving the introduction of new grid rules governing when and how data centers can switch to backup power, and how they should reconnect to the grid.

However, drafting these rules is taking time (2-3 years or more), and implementing their requirements is likely to be equally lengthy and complex.

Work in progress

The most direct solution is to require data center operators to ride through certain grid fluctuations instead of switching to UPS systems and generators, while also moderating the speed at which a facility ramps up its demand for grid power once a fault has been cleared.

Transmission system operators (TSOs) and their industry associations in several regions, including the US, Europe and Australia, are working on new rules governing data center connections and disconnections. So far, however, few of these have come into force (see [Power](#)

[*companies act to stop data center-induced blackouts*](#)).

The North American Electric Reliability Corporation (NERC) has convened a drafting team comprising representatives from TSOs, data center operators, electrical equipment manufacturers and industry experts to publish a series of standards that will impose new rules on data centers with demand of 50 MW or more. A final draft will be released for public comment in September, with final standards expected by the end of 2026 (see [*Draft grid rules position data centers as active grid participants*](#)). Implementation of these standards, together with the development of technical guidance and mandated transmission system level operations and procedures, is expected to take an additional 2-3 years.

In July 2026, the Electric Reliability Council of Texas (ERCOT) adopted rules that require data centers and cryptocurrency miners to remain connected to the grid during voltage and frequency disturbances. The rules are due to come into force in August 2026 and will apply to new facilities over 75 MW. Some data center operators have opposed the initiative, contending that ERCOT is moving too quickly and lacks the authority to enact the rules.

In Europe, new grid codes addressing the challenges posed by large loads were expected to be drafted by the European Commission but have been repeatedly delayed. In their absence, the European Network of TSOs for Electricity (ENTSO-E) has urged its members to take individual action, including the introduction of a minimum set of connection requirements for data centers (see [*EU power providers urged to protect grids from data centers*](#)).

Earlier this year, the Irish government became the first in Europe to publish new rules for large energy users, with implementation phased in over the next 5 years (see [*Ireland's new grid rules signal shift in data center roles*](#)). Finland, Denmark and France are expected to follow soon.

The Australian Energy Market Operator (AEMO) proposed new grid standards for data center connections in March 2026, introducing ride-through requirements for facilities consuming at least 30 MW. Final rules are expected before the end of the year.

Solutions have also been proposed on the facility side, such as installing oversized UPS systems to cover the entire data center rather than just the IT equipment. When a data center is riding through voltage and frequency oscillations, it can expose control systems for mechanical and electrical equipment to risk of damage. Extending UPS protection to these systems eliminates that risk.

The role that large data centers play in maintaining grid stability is becoming increasingly important. As a result, operators will have to take on responsibilities traditionally associated with energy producers rather than consumers.

The challenge for regulators is that the data center buildout is happening faster than the development of the rules intended to govern it, increasing the risk that a sudden load drop in a major data center hub will trigger a blackout. If that happens, and data centers are blamed, the current wave of opposition to data center development will seem mild by comparison.

However, the new rules are unlikely to affect operators of smaller enterprise and retail colocation facilities. It is hyperscale operators and their wholesale colocation partners that will

bear the brunt of regulatory attention.

The new regulatory regimes that are taking shape around the world are broadly similar in their intent and requirements and are likely to eventually become commonplace. Operators can start preparing now by looking to Texas (US) or Ireland as examples and assessing whether they will need to redesign or reconfigure their power systems, add equipment or revise operating procedures to comply with upcoming changes.

Note: The regulatory analysis provided in this Update is the opinion of Uptime Intelligence. Data center operators should validate the interpretations with their legal staff and any relevant regulatory authorities.

*The following Uptime Institute expert was consulted for this report:
Jay Dietrich, Research Director of Sustainability, Uptime Institute*

ABOUT THE AUTHOR



Max Smolaks

3 Aug 2026

Max is a Research Analyst at Uptime Institute Intelligence. Mr Smolaks' expertise spans digital infrastructure management software, power and cooling equipment, and regulations and standards. He has 10 years' experience as a technology journalist, reporting on innovation in IT and data center infrastructure.

msmolaks@uptimeinstitute.com

About Uptime Institute

Uptime Institute is the Global Digital Infrastructure Authority. With over 4,000 awards issued in over 122 countries around the globe, and over 1,100 currently active projects in 80+ countries, Uptime has helped tens of thousands of companies optimize critical IT assets while managing costs, resources, and efficiency. For over 30 years, the company has established industry-leading benchmarks for data center performance, resilience, sustainability, and efficiency, which provide customers assurance that their digital infrastructure can perform across a wide array of operating conditions at a level consistent with their individual business needs. Uptime's Tier Standard is the IT industry's most trusted and adopted global standard for the design, construction, and operation of data centers.

Offerings include the organization's Tier Standard and Certifications, Management & Operations reviews and assessments including SCIRA-FSI financial sector risk assessment, the Sustainability Assessment, and a broad range of additional risk management, performance, availability, and related offerings.

Uptime Education training programs have been successfully completed by over 100,000 data center professionals, such as the much-valued ATD (Accredited Tier Designer) and AOS (Accredited Operations Specialist). The Uptime Education curriculum has been expanded by the acquisition of CNet Training Ltd. In 2023.

Uptime Institute is headquartered in New York, NY, with offices in London, Sao Paulo, Dubai, Riyadh, and Singapore, and full-time Uptime professionals based in over thirty-four countries around the world.

For more information, visit www.uptimeinstitute.com