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| NOGRR Number | [282](https://www.ercot.com/mktrules/issues/NOGRR282) | NOGRR Title | Board Priority - Large Electronic Load Ride-Through Requirements |

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| Date | February 9, 2026 |

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| Market Segment | Industrial Consumer |

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| Comments |

The Data Center Coalition (DCC) is the national membership association[[1]](#footnote-1) for the data center industry, representing leading data center owners and operators who maintain data center infrastructure across the country and globe, as well as companies that lease large amounts of data center capacity. DCC empowers and champions the data center community through public policy advocacy, thought leadership, stakeholder outreach, and community engagement. A vast majority of DCC member companies have teams, operations and infrastructure in the Lone Star State. As such, DCC believes it is essential to weigh in on Nodal Operating Guide Revision Request (NOGRR) 282 and Nodal Protocol Revision Request (NPRR) 1308, Board Priority - Related to NOGRR282, Large Electronic Load Ride-Through Requirements, while also reiterating our members' support of ERCOT's mission to ensure all Texans have access to reliable, affordable energy. Given this mission, DCC believes it is essential to offer a thorough, but realistic picture of the limitations of these voltage ride-through (“VRT”) requirements to meet their intended goal of ensuring grid reliability.

NOGRR282 and NPRR1308 implement requirements on data centers as if the industry is monolithic. It is composed of different companies, company sizes, facilities, business models, computing operations, and energy configurations whether they are connected directly to the grid or sited with co-located generation. Some data centers are built to support advanced large language models while others are multi-tenant facilities that host servers for several other business clients. Therefore, their operational, and legal responsibilities to their clients vary by the type of data center and they also have different designs which offer varying capabilities to ride through events.

Nonetheless, as structured, NOGRR282 applies to all data centers the same and disproportionately impacts two specific industries – data centers and cryptocurrency mining facilities. NPRR1308 defines a Large Electronic Load (LEL) as “a Large Load in which 50% or greater of the Demand at the site consists of power electronic base load, specifically computational load, such as data centers and cryptocurrency mining facilities.” While ERCOT’s language singles out these two specific industries, data centers also traditionally do not perform any differently than other industries as highlighted in ERCOT’s recent presentation on large load reduction events.[[2]](#footnote-2) Yet, no other Large Load business sector is subject to these VRT requirements.

If ERCOT is concerned with the VRT capabilities of Large Loads, it should require it of all Large Loads. If such requirements are not applied equally to all loads of a certain threshold, then there needs to be clear evidence that the targeted industry is the only one impacting the reliability of the grid in that manner. ERCOT has not furnished sufficient information on the performance of data centers in Texas that suggest these VRT requirements are warranted. Ultimately, the VRT requirements are structured in a way that assumes data centers can currently comply with them. As the industry stands, some of the VRT regulations established in NOGRR282 are several years from being achievable. Additionally, NOGRR282 is designed for facilities that are years from being operational, and, therefore, the industry does not have a clear picture of whether it is feasible to meet ride through requirements in NOGRR282. The technology simply has not been developed yet. While DCC members are actively investing in capabilities such as advanced semiconductor chips that should boost operational efficiency and offer flexibility, predicting the timing of capabilities is a moving target. The DCC recommends that any VRT requirements be limited to loads not already through the interconnection process; those sites were designed and investments were made and equipment purchased based on the requirements when the interconnection agreement was executed and load was approved by ERCOT. Requiring a different design now would be extremely detrimental to the industry without demonstrating a need. Additionally, because the industry is so diverse, the DCC recommends ERCOT host a technical workshop with data center operators to review which requirements are realistically achievable using current technology.

Further, in order to meet ride-through and fast post-fault active power recovery times, the large load customer must have back-up energy. ERCOT inaccurately assumes that every data center has 1:1 backup energy coverage. The capabilities vary by the design of a data center's operation. If ERCOT imposes this requirement, the entity is, in effect, requiring every data center to secure backup energy. Currently, not every data center facility has backup energy to cover an entire facility, unfairly imposing a financial and regulatory requirement on the data center industry, but no other Large Loads. Even state-of-the-art data centers typically only have back up energy for a portion of their total load. Therefore, the VRT requirements in paragraph (2) of Section 2.14 should only apply to a fraction of a facility’s total load. (For example, we proposed 50% of total load used in redlines below, but it depends on the facility’s design.) Further, ERCOT should ensure the remaining load is not required to ride-through and exhibit extended post-fault active power recovery timelines. If ERCOT’s VRT requirements remain as proposed, several companies would have to conduct substantial re-designs.

A part of the challenge is that there is a common assumption that all data centers can leverage their uninterrupted power supply (“UPS”) equipment to achieve NOGRR 282’s objectives. While UPS systems provide critical support for data centers, not every facility has the same capabilities. The systems are built to protect equipment in the case of an emergency, not a failsafe for grid operations. While DCC members support efforts to ensure grid reliability, it is essential that we provide a realistic picture of data center capabilities, which may not offer the surety needed during grid sensitivity or meet the specified voltage requirements.

Further, accurate dynamic modeling is essential to grasp future capabilities. While dynamic modeling is conducted now, ERCOT and the regulated community need additional information that will not be available until new technologies are introduced to understand the feasibility of achieving the VRT requirements in NOGRR282. Establishing metrics today before technologies have been formally adopted risks creating an inaccurate or moving target. It is essential that ERCOT establish thresholds that the industry can achieve under current practices. The pathway to feasible VRT requirements should be an iterative one that reflects current technology and information and does not single out one or two types of technology.

Ultimately, placing all of the requirements and risk on data centers and their equipment distracts from the need to continue to modernize and expand the grid to the benefit of all Texans. ERCOT’s focus should be on developing market-based solutions that modernize the grid. Ensuring the market sends proper signals for investments in grid transmission and infrastructure is the best way to ensure long-term reliability. Specifically, ERCOT’s December 2025 update on the large load loss analysis revealed battery storage as capable of addressing the Primary Frequency Response of the grid, and subsequently increased the system cap from 2,600 MW to 3,400 MW.[[3]](#footnote-3) DCC takes the position that ERCOT should focus on grid-based solutions or market-based incentives which maximize the grid’s ability to respond to a variety of interruptions and events.

While DCC recognizes the intent of the VRT requirements, our members believe there are significant details that must be addressed before NOGRR282 is implemented to ensure we fulfill the goal of supporting grid reliability during voltage events. As such, DCC believes the effective date of November 14, 2025 should be amended to a date after NOGRR282 is approved and should not apply to loads that have already completed the interconnection process. DCC remains a resource to ERCOT as it develops these requirements.

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| Revised Cover Page Language |

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| NOGRR Number | [282](https://www.ercot.com/mktrules/issues/NOGRR282) | NOGRR Title | Board Priority - Large Load Ride-Through Requirements |
| Nodal Operating Guide Sections Requiring Revision | | 2.6.4, Frequency Ride-Through Requirements for Large Loads (new)  2.15, Voltage Ride-Through Requirements for Large Loads (new) | |
| Revision Description | | This NOGRR establishes frequency and voltage ride-through requirements for Large Loads. | |
| Justification of Reason for Revision and Market Impacts | | The frequency and voltage ride-through requirements in this NOGRR are necessary to ensure Large Loads do not present a reliability risk to the system by tripping when frequency and voltage excursions within a specified range occur. ERCOT has identified many events since October 2022 that included Load loss from one or more Large Loads during a typical voltage disturbance in which system protection operated as designed. As Large Loads increase on the ERCOT System, similar events would be expected to increase in magnitude and frequency, leading to frequency instability and other reliability problems absent frequency and voltage ride-through requirements. | |

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| Revised Proposed Guide Language |

**2.6.4** **Frequency Ride-Through Requirements for Large Loads**

(1) A Customer that proposes to interconnect of a Large Load with the ERCOT System shall ensure the Large Load complies with the frequency ride-through requirements of this section, unless the Customer can demonstrate that:

(a) The Large Load was operational and consuming power from the ERCOT System or received written approval to energize from ERCOT on or before January 1, 2027; or

(b) If the Large Load is not co-located with a Generation Resource Facility, all required interconnection agreements or equivalent service extension agreements between the Interconnecting Large Load Entity (ILLE) and the applicable TDSP were executed on or before January 1, 2027; or

(c) If the Large Load is co-located with a Generation Resource Facility, all required interconnection agreements and/or equivalent service extension or other agreements with the Resource Entity, Interconnecting Entity, and ILLE were executed on or before January 1, 2027.

(d) For a Large Load meeting the conditions in paragraph (b) or (c) above, the interconnecting TSP received notice to proceed with the construction of all required interconnection Facilities and the interconnecting TSP and, if applicable, directly affected TSP(s) have received the financial security, applicable payments, and/or other agreements required to fund all required interconnection Facilities, and either of the following additional criteria below were met;

(i) Its Large Load Interconnection Study (LLIS), as part of the interim Large Load Interconnection process, has been completed and approved by ERCOT on or before January 1, 2027; or

(ii) Both of the following conditions have been met:

(A) ERCOT received a written attestation from the Authorized Representative of the interconnecting TDSP before December 31, 2027, stating that the Large Load was not required to be in the interim Large Load Interconnection process and that the Large Load is expected to be energized between January 1, 2027, and December 31, 2027, and ERCOT provided written approval of the exemption; and

(B) The Large Load achieved Initial Energization by December 31, 2027.

(2) A Large Load that meets the exemption criteria of paragraph (1) above but makes a modification after January 1, 2027, that meets the criteria in paragraph (1)(b) of Planning Guide Section 9.2.1, Applicability of the Large Load Interconnection Study Process, shall not be exempt from the frequency ride-through requirements.

(3) A Large Load shall ride through frequency disturbances of the magnitude and duration specified in Table A below, as measured at the Large Load’s Service Delivery Point, or if the Large Load is co-located with a Generation Resource or Energy Storage Resource, at the Point of Interconnection Bus (POIB) of that Resource. A Large Load is not required to ride-through if it is either performing in accordance with its interconnecting TDSP’s Under-Frequency Load Shed (UFLS) program or providing an Ancillary Service that would require the Large Load to trip or reduce consumption due to a frequency disturbance.

**Table A**

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| Frequency (f) in (Hz) | Minimum Ride-Through Time  (seconds) |
| f > 61.8 | May ride-through or trip |
| 61.2 < f ≤ 61.8 | 299 |
| 58.8 ≤ f ≤ 61.2 | continuous |
| 57.0 ≤ f < 58.8 | 299 |
| f < 57.0 | May ride-through or trip |

(4) Nothing in paragraph (3) above shall be interpreted to require a Large Load to trip or transfer load to backup generation for frequency conditions beyond those for which ride-through is required.

(5) If a Large Load is consuming electric current from the grid at the time of the frequency disturbance, the Large Load shall continue to consume electric current from the grid during frequency deviations requiring ride-through. In addition, a Large Load should continue to consume active power within 10% of the pre-disturbance level during frequency deviations requiring ride-through.

(6) For frequency deviations outside the continuous operating range specified in Table A of paragraph (3) above, a Large Load may implement an internal load-transfer or control-stabilization scheme such that the Large Load facility returns to at least 90% of its pre-disturbance consumption level within two seconds, as measured from the Large Load’s Service Delivery Point or POIB.

(a) For Large Loads composed of multiple internal devices, one load-transfer or control action per disturbance event per individual device shall be permitted.

(7) If protection systems are installed and activated to trip the Large Load, they shall enable the Large Load to ride-through frequency conditions beyond those defined in paragraph (3) above to the maximum level the equipment allows, unless the protection systems are set to respond to an UFLS event or Ancillary Service obligation.

(8) If frequency protection schemes are installed and activated to trip a Large Load, they shall use filtered quantities or add sufficient time delays to prevent misoperations while providing the desired equipment protection. Protection schemes shall not trip a Large Load based on an instantaneous frequency measurement.

(9) If ERCOT determines that a Large Load has failed to ride through a frequency disturbance in accordance with any requirement in Section 2.6.4:

(a) The interconnecting TDSP shall provide available information to ERCOT to assist with ERCOT’s event analysis;

(b) The Customer representing the Large Load shall:

(i) Investigate and determine the root cause of the frequency ride-through failure and report the results of the investigation to ERCOT within 90 days of ERCOT’s request;

(ii) Develop a plan to ensure the Large Load can meet the applicable ride-through performance requirements and submit the plan to ERCOT within 90 days of completion of (i) above; and

(iii) Implement the plan upon ERCOT approval within 180 days of (ii) above unless ERCOT approves a longer timeline.

(c) Notwithstanding the requirements of paragraph (b) above, if ERCOT determines that the operation of an Large Load following a failure to comply with the requirements of Section 2.6.4 poses an imminent risk to local or system reliability, ERCOT may require the Large Load to disconnect from the ERCOT System and remain disconnected until the Customer representing the Large Load has demonstrated to ERCOT’s satisfaction that the Large Load can comply with the ride-through performance requirements of this Section.

**2.15 Voltage Ride-Through Requirements for Large Loads**

(1) A Customer that proposes to interconnect of a Large Load with the ERCOT System shall ensure the Large Load complies with the voltage ride-through requirements of this section, unless the Customer can demonstrate that:

(a) The Large Load was operational and consuming power from the ERCOT System or received written approval to energize from ERCOT on or before January 1, 2027; or

(b) If the Large Load is not co-located with a Generation Resource Facility, all required interconnection agreements or equivalent service extension agreements between the Interconnecting Large Load Entity (ILLE) and the applicable TDSP were executed on or before January 1, 2027.

(c) If the Large Load is co-located with a Generation Resource Facility, all required interconnection agreements and/or equivalent service extension or other agreements with the Resource Entity, Interconnecting Entity, and ILLE were executed on or before January 1, 2027.

(d) For an Large Load meeting the conditions in paragraph (b) or (c), the interconnecting TSP received notice to proceed with the construction of all required interconnection Facilities and the interconnecting TSP and, if applicable, directly affected TSP(s) have received the financial security, applicable payments, and/or other agreements required to fund all required interconnection Facilities, and either of the following additional criteria below were met;

(i) Its Large Load Interconnection Study, as part of the interim Large Load Interconnection process, has been completed and approved by ERCOT on or before January 1, 2027; or

(ii) Both of the following conditions have been met:

(A) ERCOT received a written attestation from the Authorized Representative of the interconnecting TDSP before December 31, 2027, stating that the Large Load was not required to be in the interim Large Load Interconnection process and the Large Load is expected to be energized between January 1, 2027, and December 31, 2027, and ERCOT provided written approval of the exemption; and

(B) The Large Load achieved Initial Energization by December 31, 2027.

(2) A Large Load that meets the exemption criteria in paragraph (1) above but makes a modification after January 1, 2027, that meets the criteria in Planning Guide Section 9.2.1 paragraph (1)(b), shall not be exempt from the voltage ride-through requirements.

(3) A Large Load interconnecting with the ERCOT System shall be required that at least 50% of its load ride through the root-mean-square positive sequence voltage conditions of the magnitude and duration specified in Table A below, as measured at the Large Load’s Service Delivery Point, or if the Large Load is co-located with a Generation Resource or Energy Storage Resource, at the Point of Interconnection Bus (POIB) of that Resource. A Large Load shall remain connected to the Transmission Grid during voltage conditions requiring ride-through. Additional Large Load performance requirements for voltage conditions requiring ride-through are listed below.

**Table A**

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| Root-Mean-Square Positive Sequence Voltage  (p.u. of nominal) | Minimum Ride-Through Time  (seconds) |
| V > 1.20 | May ride-through or trip |
| 1.10 < V ≤ 1.20 | 2.0 |
| 0.90 ≤ V ≤ 1.10 | Continuous |
| 0.80 ≤ V < 0.90 | 2.0 |
| 0.50 ≤ V < 0.80 | 0.5 |
| 0.20 ≤ V < 0.50 | 0.25 |
| V < 0.20 | 0.15 |

(a) When voltage at the Service Delivery Point or, if the Large Load co-located with a Generation Resource or Energy Storage Resource, at the POIB, remains within the continuous operating range in Table A during a disturbance or exceeds 1.1 per unit and remains below 1.2 per unit for less than 2 seconds for an overvoltage condition, the Large Load shall continue consuming active power from the grid at the pre-disturbance level during the disturbance.

(b) When voltage at the Service Delivery Point or POIB falls below 0.9 per unit but remains above 0.8 per unit and then returns to above 0.9 per unit within 2 seconds, the Large Load shall continue consuming active power from the grid during the low voltage condition. In such cases, the Large Load may reduce its active power consumption proportional to the voltage drop but shall return to 90% of its pre-disturbance consumption level from the grid within two seconds of voltage at the Service Delivery Point or POIB returning to above 0.9 per unit.

(c) For any voltage condition at the Service Delivery Point or POIB that a Large Load is required to ride-through and involves a voltage condition below 0.8 per unit, the Large Load may decrease active power consumption from the grid but shall return to at least 90% of its pre-disturbance consumption level from the grid within two seconds of voltage at the Service Delivery Point or POIB returning to above 0.90 per unit. Additional performance requirements for the allowable reduction of consumption in active power when voltage drops below 0.8 per unit are defined as follows:

(i) For any Large Load that satisfies the requirements in Planning Guide Section 9.5, Interconnection Agreements and Responsibilities, after January 1, 2027 but on or before June 1, 2028, if the Large Load needs to temporarily reduce active power consumption from the grid to allow the facility to ride through the voltage disturbance in accordance with the performance requirements defined in paragraph (c) above, that reduction in active power shall be proportional to the voltage drop for any voltage between 0.8 and 0.5 per unit at the Service Delivery Point or POIB, if capable. The Large Load may reduce active power consumption as much as needed for voltage drops below 0.5 per unit. If the Large Load equipment is not capable of the performance described above, then the Large Load may reduce active power consumption as much as necessary to remain connected to the grid but shall return to pre-disturbance consumption as defined in paragraph (c) above.

(ii) For any Large Load that satisfies the requirements in Planning Guide Section 9.5 after June 1, 2028, the Large Load shall continue consuming active power from the grid when the voltage at the Service Delivery Point or POIB is between 0.8 and 0.5 per unit but may temporarily reduce active power consumption from the grid proportional to the voltage drop. When the voltage at the Service Delivery Point or POIB is below 0.5 per unit, the Large Load may reduce active power consumption as needed to allow the facility to ride through the voltage disturbance in accordance with the performance requirements defined in paragraph (c) above.

(d) When a voltage disturbance causes the voltage at the Service Delivery Point or POIB to drop outside the continuous operating range in Table A of paragraph (3) above, a Large Load shall not consume electric current during the disturbance at a level that exceeds 125% of its maximum electric current consumption during normal operations.

(e) For voltage deviations outside the continuous operating range specified in Table A of paragraph (3) above, a Large Load may implement load-transfer or control stabilization scheme such that the Large Load facility returns to at least 90% of its pre-disturbance consumption level within two seconds, as measured from the Large Load’s Service Delivery Point or POIB.

(i) For Large Loads composed of multiple internal devices, one load-transfer or control action per disturbance event per individual device shall be permitted.

(4) Nothing in paragraph (3) above shall be interpreted to require a Large Load to trip or transfer load to backup generation for voltage conditions beyond those for which ride-through is required.

(5) If installed and activated to trip or transfer the Large Load, all protection systems (including but not limited to protection for over-/under-voltage) shall enable the Large Load to ride-through voltage conditions beyond those defined in paragraph (3) above to the maximum level the equipment allows.

(6) If instantaneous over-current or over-voltage protection systems are installed and activated to trip or transfer the Large Load, they shall use filtered quantities or time delays to prevent misoperation while providing the desired equipment protection. Any alternating current instantaneous over-voltage protection that could disrupt the Large Load power consumption shall use a measurement window of at least one cycle of fundamental frequency.

(7) A Large Load shall not implement a load trip or transfer scheme that disconnects or transfers load to backup generation due solely to a certain number of voltage sags or swells within a certain period of time if the Large Load is required under paragraph (3) above to ride through each such condition.

(8) If ERCOT determines that a Large Load has failed to ride through a voltage disturbance in accordance with any requirement in Section 2.15:

(a) The interconnecting TDSP shall provide available information to ERCOT to assist with ERCOT’s event analysis;

(b) The Customer representing the Large Load shall:

(i) Investigate and determine the root cause of the voltage ride-through failure and report the results of the investigation to ERCOT within 90 days of ERCOT’s request;

(ii) Develop a plan to ensure the Large Load can meet the applicable ride-through performance requirements and submit the plan to ERCOT within 90 days of completion of (i) above; and

(iii) Implement the plan upon ERCOT approval within 180 days of (ii) above unless ERCOT approves a longer timeline.

(c) Notwithstanding the requirements of paragraph (b) above, if ERCOT determines that the operation of a Large Load following a failure to comply with the requirements of Section 2.15 poses an imminent risk to local or system reliability, ERCOT may require the Large Load to disconnect from the ERCOT System and remain disconnected until the Customer representing the Large Load has demonstrated to ERCOT’s satisfaction that the Large Load can comply with the ride-through performance requirements of this Section.

1. The Data Center Coalition is a membership organization of leading data center owners and operators. Public testimony and written comments submitted by DCC do not necessarily reflect the views of each individual DCC member. A list of current DCC Members is accessible at <https://www.datacentercoalition.org/members>. [↑](#footnote-ref-1)
2. ERCOT, *ERCOT Recent Large Load Events*., 10.24.25. <https://www.ercot.com/files/docs/2025/10/22/ERCOT-Recent-Large-Load-Events_LLWG_24Oct2025.pptx>. [↑](#footnote-ref-2)
3. ERCOT, *Large Load Loss Analysis* 12.11.25, <https://www.ercot.com/files/docs/2025/12/10/Large_Load_Loss_Analysis_121125_LLWG.pptx> [↑](#footnote-ref-3)