

In the matter of the application of DTE Electric Company)
for approval of amendments to Rate D11 and)
related relief)

REBUTTAL TESTIMONY AND EXHIBITS OF JOHN RICHTER

August 25, 2026

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1 **II. QUALIFICATIONS**

2 **Q. Please state your name and business address.**

3 **A.** My name is John Richter, and I have no business address, because I am retired.

4 **Q.** Are you the same John Richter who provided direct testimony in this case on August 4,
5 2026?

6 **A.** Yes.

7 **Q.** Are you sponsoring any additional exhibits?

8 **A.** Yes:

9 Exhibit GLREA-2 Discovery Responses of DTE Electric

10 Exhibit GLREA-3 ERCOT NOGRR-282 Ride-Through Requirements

11 **Q.** Were these exhibits prepared by you or under your supervision?

12 **A.** Exhibit 2 consists solely of DTE Electric responses to GLREA discovery questions.

13 These responses were received on August 4, the date of the deadline for direct testimony.

14 Exhibit 3 is an ERCOT publication, accessed on 8/20/26 at:

15 <https://www.ercot.com/mktrules/issues/NOGRR282#keydocs>. I added yellow highlights
16 to critical passages, but did not otherwise change the report.

17 **Q.** What is the purpose of your rebuttal testimony?

18 **A.** My rebuttal testimony addresses statements made by DTE Electric in their discovery
19 responses to the GLREA and CEO, and also the variations in intervenor
20 recommendations regarding collateral, and annual reporting.

III. UPS RIDE-THROUGH STANDARD

Q. What is an Uninterruptable Power Supply (UPS) ride through standard?

A. When a UPS detects utility power outages, or utility power that has varied in voltage or frequency outside of specified parameters, it disconnects the facility from the grid and switches to backup power. The UPS can be configured to be more sensitive, or less sensitive to brief variations in utility voltage and/or frequency. This is commonly called either Voltage Ride Through, or VRT, or more generally Fault Ride-Through (FRT). I will be using the term FRT.

Q. Why is an FRT standard important for large loads, such as data centers?

A. If a UPS is too sensitive to brief, transient utility voltage variations, it may switch to backup power when it is not necessary to do so, dropping the entire facility load off the grid abruptly. As I wrote in my testimony,¹ and as CEO witness Shaver wrote in his testimony,² there have been recurring issues in multiple other jurisdictions where transient variations in utility power caused multiple data centers to switch to backup power simultaneously. This has resulted in grid instability in both Virginia and Texas. A recent scholarly article published by arXiv explained it this way:

“With data centers becoming increasingly large and critical electrical loads, their impact on the stable operation of the power grid is becoming a major concern. Unlike traditional loads, data center operations are highly sensitive to fluctuations in voltage and frequency. To protect their equipment, uninterruptible power supply (UPS) systems often disconnect data centers from the grid at the first sign of a disturbance, switching instead to local backup energy. While this ensures service continuity for the data center itself, it poses a serious challenge for the grid: when such

¹ Direct testimony of John Richter, p 37 – 44.

² Direct testimony of Lee Shaver, p 5 – 32.

1 massive loads disconnect simultaneously during a fault, they amplify the
2 stress on the system rather than alleviating it. The sudden reduction in
3 power demand can worsen instability and, in extreme cases, contribute to
4 cascading failures. The July 2024 event in the Eastern Interconnection was
5 a stark reminder of the dangers posed by the abrupt disconnection of large
6 data center loads during grid disturbances.

7 To address this issue, power system operators are increasingly requiring
8 data centers to provide fault ride-through (FRT) capabilities, which refers
9 to the ability of grid-connected devices to remain connected and continue
10 operating during a grid disturbance, commonly in the form of voltage or
11 frequency deviations from nominal values. Specifically, voltage ride-
12 through (VRT) refers to a device's ability to remain connected during a
13 deviation in voltage magnitude for a short period of time without tripping
14 offline. Requiring data centers to remain connected will ensure that the
15 post-fault load conditions is similar to pre-fault conditions. Traditionally,
16 VRT is required for bulk generators. However, due to the growing scale of
17 data center loads, more stringent VRT requirements are being proposed
18 for data centers recently.”³

19 **Q. Does DTE Electric have an FRT standard for large loads?**

20 **A.** Apparently not yet. When asked about it in discovery, the Company answered:

21 “The Company *is developing* a framework of Operating Parameters for all
22 Large Load customers which will include ride through requirements for
23 voltage, and frequency conditions. To the extent new rules related to ride
24 through or other conditions are established by an applicable regulatory
25 body, the Company will comply with them.”⁴ (emphasis added)

26 The Company's response to CEO's discovery states that there is a *plan* to
27 develop a generic large load connection requirements document, which suggests
28 that it is not yet under development:

29 “DTE Electric does not yet have a single completed generic Large Load
30 Connection Requirements document, though such a document *is planned*
31 *to be developed*.” (emphasis added).⁵

³ Yiheng Xie, Wenqi Cui, Adam Wierman, “Enhancing Data Center Low-Voltage Ride-Through,” *arXiv*, 2026. Accessed on 8/19/26 at: <https://arxiv.org/html/2510.03867v1>.

⁴ Exhibit 2, GLREADE-1.2a, respondent M. Witkowski.

⁵ Exhibit CEO-5, p 11, COEDE-2.7a, respondent M. Witkowski.

1 **Q. When will the Company complete its framework of operating parameters?**

2 A. I have not seen any projected completion date in any of the Company's discovery
3 responses.

4 **Q. Have any other jurisdictions adopted a FRT standard?**

5 A. Yes. As I described in testimony,⁶ Texas has adopted a UPS ride-through standard called
6 NOGRR 292, "Large Electronic Load Ride-Through Requirements"⁷ which addresses UPS
7 ride through of both voltage and frequency transients. This document is now GLREA
8 exhibit 3.

9 **Q. What justification does ERCOT provide for implementing its FRT standard?**

10 A. The document has a section titled "Justification of Reason for Revision and Market
11 Impacts, which reads:

12 The frequency and voltage *ride-through requirements in this NOGRR are*
13 *necessary to ensure Large Electronic Loads do not present a reliability risk to the*
14 *system by tripping when frequency and voltage excursions within a specified range*
15 *occur. ERCOT has identified many events* since October 2022 that included Load
16 loss from one or more LELs during a typical voltage disturbance in which system
17 protection operated as designed. As LELs increase on the ERCOT System, similar
18 events would be expected to increase in magnitude and frequency, leading to
19 frequency instability and other reliability problems absent frequency and voltage
20 ride-through requirements. ERCOT has also identified ride-through risks
21 associated with other Large Loads and intends to submit a NOGRR to address
22 those risks. ERCOT anticipates that the requirements for those Large Loads could
23 differ from those proposed in this NOGRR based on differences in the technology
24 of the loads, just as ERCOT's ride-through requirements for different generating
25 technologies differ from one technology to another."⁸ (emphasis added)

⁶ Direct testimony of John Richter, p 42-3.

⁷ Exhibit GLREA-3.

⁸ Ibid, p 1-2.

1 Note that these requirements apply only to large *electronic* loads (LELs), not other
2 kinds of industrial customers.

3 **Q. Does the NOGRR 292 standard, adopted in Texas, provide general guidelines, or does**
4 **it provide specific, testable standards of performance and establish penalties for non-**
5 **compliance?**

6 A. NOGRR 292 is very specific about when the customer must ride-through for both
7 frequency (section 2.6.4) and voltage (section 2.14) transients. It provides tables showing
8 how long (in seconds) the UPS must ride-through (remain on grid power) depending on
9 how severe the variation in voltage or frequency in the grid power.⁹ The standard imposes
10 the ultimate penalty for non-compliance: it allows ERCOT to disconnect the customer:

11 “...if ERCOT determines that the operation of an LEL [Large Electric
12 Load] following a failure to comply with the requirements of this Section
13 2.14 poses an imminent risk to local or system reliability, ERCOT may
14 require the LEL to disconnect from the ERCOT System and remain
15 disconnected until the Customer representing the LEL has demonstrated to
16 ERCOT’s satisfaction that the LEL can comply with the ride-through
17 performance requirements of this Section.”¹⁰

18 **Q. How did DTE Electric respond when you cited Texas rules and asked if the**
19 **Company’s “existing rules are adequate to protect grid reliability and power quality**
20 **due to large load customers simultaneously tripping off-grid?**

21 A. The Company objected to the question, stating...

⁹ Ibid, p 3 and p 5, respectively.

¹⁰ Ibid, p 7.

1 “...the question assumes facts regarding “large load customers
2 simultaneously tripping off-grid” which has not occurred on DTE
3 Electric’s system and *assumes facts as relevant to DTE Electric based*
4 *upon operational experience in other jurisdictions described in a trade*
5 *publication*. Subject to and notwithstanding the foregoing objection, the
6 Company responds that current processes protect grid reliability and
7 power quality. Large Load customers introduce new situations which may
8 necessitate additional reliability and operational requirements.”¹¹
9 (emphasis added)

10 Note that this rebuttal testimony does not rely on a trade publication, but
11 on the actual Texas standard itself, which is provided as an exhibit.

12 **Q. Should the Company wait until its electric system experiences the same problems**
13 **seen in Texas and Virginia before establishing FRT rules that protect the grid from**
14 **simultaneous large load UPS trips?**

15 A. No, that would be unreasonable and imprudent. As I described in my testimony, the result
16 could be cascading power outages for the entire region.¹² The Company should benefit
17 from the experience of other electric utilities that already have gigawatt-scale data centers
18 in operation in their service territories and avoid grid instability by implementing standards
19 for large load customer FRT, and also by monitoring customers’ load behavior during
20 voltage and/or frequency transients to ensure the customers’ compliance.

¹¹ Exhibit 2, GLREADE-1.2c.

¹² Direct testimony of John Richter, p 39.

1 Unless the Company provides meaningful evidence as to why its grid would react
2 differently (and better) to gigawatts of load dropping off simultaneously, when compared
3 to the grids in both Virginia and Texas, it is only prudent to make the defensive assumption
4 that DTEE's grid would experience similar instability when subject to the same conditions.
5 We should not wait for an event to prove it.

6 **Q. Should the Commission delay setting rules for FRT until NERC, FERC, or MISO, or**
7 **some other governing body establishes FRT standards?**

8 **A. No. NERC specifically recommends that "Regulators should work with utilities to address**
9 **the risks posed by emerging large loads."**¹³

¹³ Exhibit CEO-4, "2026 State of Reliability," *NERC*, p 15 of 21.

1 **Q. Does the D11 tariff include grid protection from power quality problems induced by**
2 **large industrial customers?**

3 A. Yes, at least one kind of power quality is addressed in the D11 tariff. The Company's rate
4 book specifies charges for customers with a low power factor, and a minimum power
5 factor which it will allow.¹⁴ However, other operating parameters such as FRT are not
6 included in the tariff. Low power factors are often associated with industrial loads such as
7 industrial motors, transformers, and heating furnaces.¹⁵ Obviously, these kinds of industrial
8 loads have been around much longer than giga-watt scale data centers, and the Company
9 has decades of experience dealing with them. Like power factor requirements, FRT
10 requirements should be published so that customers and potential customers can see them
11 and design their systems to meet them without later upgrades.

12 **Q. Why is it urgent that the Company address the FRT issue?**

13 A. I think of three, related reasons why this is urgent. Firstly, these standards need to be in
14 effect prior to a large load with a UPS going into service, to protect grid stability. In U-
15 21900, the Company said that the load from the Oracle data center "...will begin to
16 materialize in January 2027..."¹⁶ We don't have much time. Secondly, large load
17 customers *may* need to make extensive and expensive changes to their power system
18 design to comply with the standard, depending on their initial design. Customers will need
19 significant advanced notice to implement these changes, if changes are necessary.

¹⁴ Ibid, GLREADE-1.3c.

¹⁵ "Low Power Factor?" *Science Direct*, 1999. Accessed on 8/20/26 at:
<https://www.sciencedirect.com/topics/engineering/low-power-factor>.

¹⁶ U-21900 Commission order dated December 18, 2025, p 3.

1 Thirdly, it would be far better for the large load customer to be aware of these
2 requirements before they design their power system, and preferably before they sign a
3 power supply agreement or otherwise commit to the project. Transparency is called for and
4 customers should know the expenses they may incur for compliance before they are
5 committed.

6 **Q. How could compliance with an FRT requirement cause extensive and expensive**
7 **changes to their power system design?**

8 A. Complying with FRT requirement is often not as simple as changing a few settings in the
9 UPS. Data centers very intentionally configure their UPS to be very sensitive to voltage
10 changes in utility power. A data center may be operating tens of billions of dollars of very
11 sensitive electronics; protecting those assets from spikes in voltage is imperative. If the
12 data center is compelled to ride-through very brief voltage spikes, it needs to add
13 additional protection.¹⁷

¹⁷ Dr. Gilles Chaspierre, “THE GRID CODE GAUNTLET: Requirements for Hyperscale Data Center Grid Connections,” *Substack*, April 15, 2026. Accessed on 8/19/26 at: <https://gilleschaspierre.substack.com/p/the-grid-code-gauntlet-requirements>.

1 Some data centers use an “offline UPS,” which powers the load directly with utility
2 power, but switches to battery/inverter power if and when there is a power outage or grid
3 disturbance. These systems have a very limited ability to filter out voltage spikes.¹⁸ Other
4 data centers are designed to rectify utility power to direct current (DC), charge batteries
5 with it, and use an inverter to change the DC back to AC (alternating current). These
6 configurations provide significant protection, and some developers are already deploying
7 them.¹⁹ Interestingly, Verras is one of the data center development companies already
8 deploying UPS systems capable of FRT,²⁰ and Verras is the developer of the proposed
9 “Project Flex” data center in South Lyon Twp, Michigan. I also note that Schneider
10 Electric Company is *advertising* their Galaxy V Series UPS systems as being capable of
11 FRT.²¹ Clearly FRT-compliant technology exists, but it’s a question of getting the data
12 center developers to use it.

¹⁸ “UPS systems face challenges in high-density data centers,” *Cabling Installation & Maintenance*, December 1, 2005. Accessed on 8/17/26 at: <https://www.cablinginstall.com/home/article/16469121/ups-systems-face-challenges-in-high-density-data-centers>.

¹⁹ “Data Center Power Supply: Grid, UPS, & Onsite Generation,” *Bloom Energy*, September 12, 2024. Accessed on 8/19/26 at: <https://www.bloomenergy.com/blog/data-center-power-supply/>.

²⁰ Catherine Boudreau, “As more data centers trip off the grid, ‘ride-through’ rules gain steam,” *Latitude Media*, July 28, 2026. Accessed on 8/19/26 at: <https://www.latitudemedia.com/news/as-more-data-centers-trip-off-the-grid-ride-through-rules-gain-steam/>.

²¹ Anurag Jivanani, “Making data centers grid friendly – Preventing the next blackout by improving the grid’s stability and resilience,” *Schneider Electric*, February 27, 2026. Accessed on 8/19/26 at: <https://blog.se.com/datacenter/2026/02/27/data-centers-grid-friendly-preventing-blackout-grids-stability-resilience/>.

1 **Q. How expensive can compliance with an FRT requirement be?**

2 A. That depends on the data center's original power system design. As discussed above, some
3 data center developers have already deployed systems capable of FRT. However, others
4 have not. Jessie Goostree, the executive director of the Texas Blockchain Council, claims
5 that her members (crypto miners) will be paying \$500,000 - \$1 million per MW of power
6 to comply with the new Texas FRT rules.²²

7 **Q. Have any data centers proposed for construction in Texas been canceled due to the**
8 **FRT requirement?**

9 A. We can't tell; only weeks after the approval of the FRT requirement, the Governor of
10 Texas halted data center interconnections, until audits can be performed on their self-
11 generation abilities, water use, and any cost shifting to other customers that may be
12 occurring.²³

²² Shelby Webb, "Texas approves grid standards to keep data centers online," *E&E News by Politico*, July 10, 2026. Accessed on 8/19/26 at: <https://www.eenews.net/articles/texas-approves-grid-standards-to-keep-data-centers-online-2/>.

²³ Robert Walton, "Facing an estimated 474 GW of interconnection requests, Texas hits pause on data centers," *Utility Dive*, August 5, 2026. Accessed on 8/17/26 at: <https://www.utilitydive.com/news/texas-hits-pause-data-center-interconnections/827046/>.

1 **Q. How can a data center developer know what their on-site power system costs will be,**
2 **if they don't know what FRT, and other operational requirements they must meet?**

3 A. I don't see how they can. This is why it is only fair that minimum standards are set and
4 *published*, so that data center developers can design and plan compliant power systems at
5 the start of their development process, and not have to redesign their system later in the
6 process, when operational parameters are communicated.

7 **Q. Does the Company plan to publish its operating parameter requirements for large**
8 **load customers?**

9 A. No. As CEO testimony explained, the Company plans to make the document available
10 only to ITC and the customer. CEO requested a copy of the draft of these operating
11 parameters, which the Company provided as a *confidential* discovery response; even the
12 draft is kept from the public.²⁴

²⁴ Direct testimony of Lee Shaver, p 25.

1 **Q. What should the Commission do regarding large load operating parameters, such as**
2 **FRT?**

3 A. In its order in the instant case, the Commission should direct the Company, within 60 days
4 of the date of the order, to file in this docket, its planned “generic Large Load Connection
5 Requirements document” which shall contain requirements for FRT and load ramp
6 up/down, with sufficient detail for customers to design their systems to comply with them.
7 It may also state that some sites may require *more* restrictive requirements, and the
8 Commission may wish to require the inclusion of the connection requirements in the large
9 load tariff itself.

10 **IV. THE AMOUNT OF COLLATERAL**

11 **Q. What did the Company propose as the default amount of collateral required from**
12 **customers on the large load tariff?**

13 A. The Company’s application proposes:

14 “COLLATERAL AND CREDIT: The Company shall be entitled to
15 require the customer to provide collateral *equal to the termination fee* as
16 described above. The Company, at its sole discretion, may determine a
17 lower required collateral amount. The required collateral amount may be
18 reduced as the termination fee declines over the term of the contract. The
19 Company, at its sole discretion and determination, may require a letter of
20 credit, cash, parent guarantee, or a combination thereof, as collateral.”²⁵
21 (emphasis added)

²⁵ Company exhibit A-1, page 6.

1 **Q. Did Staff agree that the default termination fee should be equal to the termination**
2 **fee?**

3 A. Yes. Staff said that the terms of the collateral should be aligned with the language
4 approved by the Commission in U-21859. However, in its recommended, amended
5 language, Staff retained the phrase from the Company's proposal, "equal to the
6 termination fee." Staff's recommendation allows a lesser amount of collateral, "subject to
7 Commission review and approval."²⁶

8 **Q. How much collateral did the language approved by the Commission in U-21859**
9 **require as the default?**

10 A. The Commission required an amount equal to half of the exit fee:

11 "As such, the Commission is adopting a set of collateral requirements that can act
12 as a default, while providing for Consumers to apply for approval to seek higher or
13 lower collateral requirements on a case-by-case basis. For this default collateral
14 requirement, the Commission agrees with the alternative proposals made by the
15 Attorney General and the Staff, and finds that the default collateral provision
16 should be 50% of the total minimum monthly charges multiplied by the number of
17 months remaining on the full term of the contract, to be recalculated annually, or, in
18 other words, *half of the exit fee*. Thus, this default collateral provision will evolve
19 over time (like the exit fee) to reflect the milestone framework that several parties
20 supported. While it is not equal to the exit fee, the Commission finds that this
21 calculation can serve as a default amount of security to approximate the specific
22 risk presented by an unknown large load customer."²⁷ (emphasis added)

²⁶ Direct testimony of Mark J. Pung, p 6-7, lines 3 and 16-17.

²⁷ U-21859, Commission order dated November 6, 2025, page 112.

1 **Q. Did Attorney General / Natural Resources Defense Council / Sierra Club**
2 **(AG/NRDC/SC) agree that the default collateral should be equal to the termination**
3 **fee?**

4 A. Yes, with any modifications “subject to Commission review on a case-by-case basis...”²⁸

5 **Q. Did ABATE agree that the default amount of collateral should be equal to the**
6 **termination fee?**

7 A. No. ABATE cited the collateral language approved in U-21859, and recommended that
8 the Commission not allow “DTE to reduce a customer’s collateral requirement to less
9 than 50% of the customer’s termination fee...” unless approved to do so in an “ex parte
10 filing for service to that customer.”²⁹

²⁸ Direct testimony of Ben Havumaki, p 15, lines 18-19.

²⁹ Direct testimony of James R. Dauphinais, p 12, lines 5-7 & 12.

1 **Q. Did ABATE provide reasons why the default collateral amount should be set to 50%**
2 **of the termination fee, even though DTE Electric proposed 100%?**

3 A. Yes, ABATE did, but only by citing the language in U-21859.³⁰ But ABATE also argued
4 that the Minimum Monthly Charge (MMC) may not be enough to protect other customers,
5 recommending that the Company should be required to demonstrate that it is sufficient in
6 ex parte filings for each new large load customer.³¹ Because the collateral amount is tied to
7 the termination fee, and the termination fee is the product of the MMC and the remaining
8 years in the contract (except near the end of the contract), increasing the MMC would have
9 the effect of increasing the termination fee and therefore the default amount of collateral.

10 Additionally, ABATE argued that the minimum contract term of 15 years leaves
11 other customers exposed to recovery of costs of undepreciated assets built to service the
12 customer.³² Addressing this by either increasing the MMC or extending the length of the
13 contract would also have the effect of increasing the termination fee and therefore the
14 default amount of collateral.

15 Therefore, it seems that ABATE is not *opposed to the idea* of increasing the default
16 collateral requirement, but chose 50% of the exit fee to align with the language in U-21859

17 **Q. What did you recommend as the default amount of collateral in your testimony?**

18 A. I proposed three alternatives:³³

³⁰ Ibid, p 5 & 11 & 12

³¹ Ibid, p 20-21

³² Ibid, p 23

³³ Direct testimony of John Richter, p 23-24

- 1 1. Accept the Company's proposal, with all its latitude, and repeat the warning from
2 U-21990, that the Company and its shareholders, not ratepayers, will cover any
3 deficiency if the customer defaults and the collateral is not sufficient.
- 4 2. Follow the language of U-21859, but with a collateral amount of 100% of the
5 termination fee. This matches the recommendation of Staff and the AG/NRDC/SC.
- 6 3. Follow the language of U-21859, including the collateral amount of 50% of the
7 termination fee, but add a "credit rating clause" requiring additional collateral if the
8 Customer's credit rating drops.

9 I stand by those alternatives as reasonable and prudent, but specifically recommend #2,
10 using the specific language recommended by Staff.

11 **V. ANNUAL REPORTING**

12 **Q. What did ABATE testify with regard to annual reporting requirements?**

13 A. ABATE pointed out that in U-21859, the Commission required a specific set of annual
14 reporting requirements, but that DTEE has included no annual reporting in its proposal.
15 ABATE recommended similar requirements for DTEE in the instant case.³⁴

16 **Q. How do you respond to ABATE's reporting recommendations?**

17 A. While I agree with ABATE's recommendation as far as it goes, I would recommend one
18 additional annual reporting requirement; DTEE should report on every detected large
19 load customer violation of their operating parameters.

³⁴ Direct testimony of James R. Dauphinais, p 12-14

1 **Q. Why is reporting of operating parameter violations important?**

2 A. As I discussed in my testimony, and also in this rebuttal testimony, large loads have
3 caused serious grid stability problems in other jurisdictions. The Commission and the
4 public should be aware of any similar issues caused by large load customers connected to
5 DTEE's grid.

6 **VI. CONCLUSIONS AND RECOMMENDATIONS**

7 **Q. What should the Commission order, with regard to operating parameters and the**
8 **default amount of collateral for large load customers?**

9 A. With regard to operating parameters, the Commission's order should direct the Company,
10 within 60 days of the date of the order, to file in this docket, its planned "generic Large
11 Load Connection Requirements document" which shall contain requirements for FRT and
12 load ramp up/down, with sufficient detail for customers to design their systems to comply
13 with them. It may also state that some sites may require *more* restrictive requirements, and
14 the Commission may wish to require the inclusion of the connection requirements in the
15 large load tariff itself.

16 With regard to collateral, the Commission should follow Staff's recommendation,
17 or, if it prefers, one of my two alternative recommendations.

18 With regard to annual reporting, the Commission should order the Company to
19 provide annual reporting in this docket, as recommended by ABATE, but with the
20 additional reporting of all large load customer operating parameter violations.

21 **Q. Does that conclude your rebuttal testimony?**

22 A. Yes.

DTE Electric Company
One Energy Plaza, 1635 WCB
Detroit, MI 48226-1279



John A. Janiszewski
(313) 235-7309
john.janiszewski@dteenergy.com

August 4, 2026

Don L. Keskey
Brian W. Coyer
Public Law Resource Center PLLC
University Office Place
333 Albert Avenue, Suite 425
East Lansing, MI 48823

RE: In the matter of the Application of **DTE ELECTRIC COMPANY** for approval of
amendments to Rate D11 and related relief
MPSC Case No: U-22061

Dear Mr. Keskey:

Attached for electronic filing in the above captioned matter is DTE Electric Company's Response to the Great Lakes Renewable Energy Association's First Discovery Request. The attachment to the response is being provided to the respective parties via the following link listed below:

Public Portal Link: [U-22061 Large Load Provision - Public Discovery](#)

Also attached is the Proof of Service.

Very truly yours,
**John A.
Janiszewski**
Digitally signed by John
A. Janiszewski
Date: 2026.08.04 13:06:09
-04'00'
John A. Janiszewski

JAJ/cdm
Attachments

cc: Service List

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.1

Respondent: A. Willis

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Question: 1. What is the approximate aggregated capacity (GW) of data center proposals about which DTE Electric is currently in discussions with developers?

Answer: DTE Electric objects to the request because it seeks information concerning prospective and potentially confidential customer development discussions that is outside the scope of, and not relevant or proportional to, this proceeding concerning generally applicable large-load tariff provisions. Aggregate load forecasts and the resource-planning implications of projected customer demand are addressed through the Company's integrated resource-planning process. Subject to and without waiving the objection, approximately 5-6 GW of aggregated capacity (GW) of data center proposals are presently in various stages of engagement and development regarding potentially requesting service from DTE Electric.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.2a

Respondent: M. Witkowski

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Question: 2. Data centers in Texas and Virginia have simultaneously tripped off-grid (switched to backup generation) in response to very brief transients on the power grid, causing a sudden and dramatic drop in load. Texas has recently instituted mandatory “ride-through” rules for data centers (see: <https://www.utilitydive.com/news/texas-puc-approves-ride-through-rules-data-centers/825051/>).

a. What service requirements or interconnect standards will apply to future large load customers to address UPS ride-through rules?

Answer: The Company is developing a framework of Operating Parameters for all Large Load customers which will include ride through requirements for voltage, and frequency conditions. To the extent new rules related to ride through or other conditions are established by an applicable regulatory body, the Company will comply with them.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.2b

Respondent: M. Witkowski

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Question: 2. Data centers in Texas and Virginia have simultaneously tripped off-grid (switched to backup generation) in response to very brief transients on the power grid, causing a sudden and dramatic drop in load. Texas as recently instituted mandatory “ride-through” rules for data centers (see: <https://www.utilitydive.com/news/texas-puc-approves-ride-through-rules-data-centers/825051/>).

b. To what degree is DTE Electric engaged with the MISO Large Load Working Group?

Answer: The Company objects to the extent the request seeks information regarding internal deliberations, regulatory advocacy, or participation in external stakeholder processes, which are not relevant to this proceeding and may implicate commercially sensitive or deliberative communications. Subject to and without waiving the foregoing objection, the Company actively participates in the MISO LLWG by attending sessions, reviewing documentation, and providing feedback to MISO.

Attachment: None

Co-respondent: A. Willis

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.2c

Respondent: M. Witkowski

Page: 1 of 1

Question: 2. Data centers in Texas and Virginia have simultaneously tripped off-grid (switched to backup generation) in response to very brief transients on the power grid, causing a sudden and dramatic drop in load. Texas as recently instituted mandatory “ride-through” rules for data centers (see: <https://www.utilitydive.com/news/texas-puc-approves-ride-through-rules-data-centers/825051/>).

c. Does DTE Electric believe that the existing rules are adequate to protect grid reliability and power quality due to large load customers simultaneously tripping off-grid?

Answer: DTE Electric objects to this request on the grounds that the generalized reference to “existing rules” is unduly vague and ambiguous and further that the question assumes facts regarding “large load customers simultaneously tripping off-grid” which has not occurred on DTE Electric’s system and assumes facts as relevant to DTE Electric based upon operational experience in other jurisdictions described in a trade publication. Subject to and notwithstanding the foregoing objection, the Company responds that current processes protect grid reliability and power quality. Large Load customers introduce new situations which may necessitate additional reliability and operational requirements.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.2ci

Respondent: M. Witkowski

Page: 1 of 1

Question: 2. Data centers in Texas and Virginia have simultaneously tripped off-grid (switched to backup generation) in response to very brief transients on the power grid, causing a sudden and dramatic drop in load. Texas as recently instituted mandatory “ride-through” rules for data centers (see: <https://www.utilitydive.com/news/texas-puc-approves-ride-through-rules-data-centers/825051/>).

c. Does DTE Electric believe that the existing rules are adequate to protect grid reliability and power quality due to large load customers simultaneously tripping off-grid?

i. If not, what actions is the Company taking to expand, strengthen, or deepen these requirements?

Answer: See the Company’s response to GLREA 1.2a.

Attachment: *None*

Co-respondent: A. Willis

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.3a

Respondent: A. Willis

Page: 1 of 1

Question: 3. Some data centers have been sources of power quality problems (see: <https://flex.com/resources/power-quality-the-unseen-phenomenon-behind-some-of-the-biggest-data-center-challenges>). These power quality issues may be quite different than harmonics caused by industrial loads.

a. The special contract (Power Supply Agreement) proposed in U-22058 included the development of customer specific operating parameters (section 5.5.2). Is DTE Energy proposing any similar grid protections from future large load customers in the instant case?

Answer: The Company's direct testimony and exhibits characterize its proposal in the instant case. To the extent a regulatory body with applicable jurisdiction establishes rules or requirements related to power quality for large load customers, the Company would comply with those rules. The Company notes that its two executed agreements with large load customers include specific operating parameters.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.3b

Respondent: A. Willis

Page: 1 of 1

Question: 3. Some data centers have been sources of power quality problems (see: <https://flex.com/resources/power-quality-the-unseen-phenomenon-behind-some-of-the-biggest-data-center-challenges>). These power quality issues may be quite different than harmonics caused by industrial loads.

b. Do any contractual agreements that future large load customers must sign to get electric service provide DTE Electric and its customers protection from data center induced power quality issues (including harmonics)? If not, why not? If so, fully describe.

Answer: Refer to the Company's response to GLREADE-1.3a.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.3c

Respondent: A. Willis

Page: 1 of 1

Question: 3. Some data centers have been sources of power quality problems (see: <https://flex.com/resources/power-quality-the-unseen-phenomenon-behind-some-of-the-biggest-data-center-challenges>). These power quality issues may be quite different than harmonics caused by industrial loads.
c. What is the lowest power factor permitted for industrial customers under rate schedule D11?

Answer: 70%. Refer to page D-48.03 of the Company's rate book, which says in part:

"The rates and charges under this tariff are based on the customer maintaining a power factor of not less than 85% lagging. Any power factor less than 70% will not be permitted and the customer will be required to install at his own expense such corrective equipment as may be necessary to improve power factor..."

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.3d

Respondent: M. Witkowski

Page: 1 of 1

Question: 3. Some data centers have been sources of power quality problems (see: <https://flex.com/resources/power-quality-the-unseen-phenomenon-behind-some-of-the-biggest-data-center-challenges>). These power quality issues may be quite different than harmonics caused by industrial loads.
d. How does DTE Electric measure the power factor that an industrial customer causes?

Answer: Power factor is not “caused” by customers, rather it is calculated by the relationship of real and reactive power usage by each customer. DTEE measures these values and calculates power factor at the revenue meters for each point of interconnection (e.g., customer metering point).

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.3e

Respondent: M. Witkowski

Page: 1 of 1

Question: 3. Some data centers have been sources of power quality problems (see: <https://flex.com/resources/power-quality-the-unseen-phenomenon-behind-some-of-the-biggest-data-center-challenges>). These power quality issues may be quite different than harmonics caused by industrial loads.
e. How does DTE Electric conduct on-going monitoring of the power factor of industrial customers, to ensure that equipment changes the customer makes do not change their power factor below the limit?

Answer: DTE Electric records power factor information as part of the standard billing process. Active monitoring processes for Large Load customers will be established to ensure Large Load customers are adhering to the minimum power factor requirements for each of their Operating Parameter agreements.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.3f

Respondent: M. Witkowski

Page: 1 of 1

Question: 3. Some data centers have been sources of power quality problems (see: <https://flex.com/resources/power-quality-the-unseen-phenomenon-behind-some-of-the-biggest-data-center-challenges>). These power quality issues may be quite different than harmonics caused by industrial loads.
f. Is DTE Electric's measurement of a customer's power factor able to detect power factor changes that occur repeatedly, but for very brief durations (milliseconds)?

Answer: The Company objects to the question on the basis that the request to explain DTE Electric's approach to measuring a customer's power factor is not relevant to the Large Load Provision tariff changes presented in the Company's Application, is beyond the scope of the current proceeding, and is not proportional to the needs of the case. Subject to and without waiving the foregoing objection, the Company states that power factor is measured at minimum, at each customer meter or point of interconnection between DTEE and the customer. The meters DTE currently utilizes for primary service customers samples at a rate of 1024 samples per cycle or roughly 61,440 samples per second.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.4a

Respondent: M. Witkowski

Page: 1 of 1

Question: 4. Data centers have demonstrated an ability to ramp load up and down very rapidly (micro-seconds). What ramp rate limits will apply to future large load customers?

a. In what rule, contract, or agreement are these ramp rate rules defined and specified.

Answer: The Company is developing Operating Parameters for each Large Load customer. Within the Operating Parameters are permissible ramp rates for load up/down during start and stop of compute models, as well as ramp rate limitations for load oscillations. While these are calculated and may be site specific, as requirements are established by MISO, the Company will comply as necessary.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.4b - bi

Respondent: M. Witkowski

Page: 1 of 1

Question: 4. Data centers have demonstrated an ability to ramp load up and down very rapidly (micro-seconds). What ramp rate limits will apply to future large load customers?

b. Are there limits to how fast a large load customer may reduce load (vs. increase load)?

i. If so, what are they?

Answer: See GLREADE-1.4a.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.4c

Respondent: M. Witkowski

Page: 1 of 1

Question: 4. Data centers have demonstrated an ability to ramp load up and down very rapidly (micro-seconds). What ramp rate limits will apply to future large load customers?

c. Is DTE Electric confident that the existing ramp rate rules are adequate to protect the grid and other customers from large load customer's rapid ramp rates causing grid instability? If yes, fully explain.

Answer: DTE Electric objects to this request on the grounds that the generalized reference to "existing ramp rate rules" is unduly vague and ambiguous and further that the question assumes facts regarding "large load customers rapid ramp rates causing grid instability" which has not occurred on DTE Electric's system and assumes facts as relevant to DTE Electric. Subject to and without waiving the foregoing objection, see the Company's response to GLREADE 1.4a. In addition to the response for 1.4a, DTE recognizes the potential applicability of additional ramp rate rules based on system conditions and applicable regulatory requirements.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.4ci

Respondent: M. Witkowski

Page: 1 of 1

Question: 4. Data centers have demonstrated an ability to ramp load up and down very rapidly (micro-seconds). What ramp rate limits will apply to future large load customers?

c. Is DTE Electric confident that the existing ramp rate rules are adequate to protect the grid and other customers from large load customer's rapid ramp rates causing grid instability? If yes, fully explain.

i. If not, what actions is the Company taking to expand, strengthen, or deepen these requirements?

Answer: In addition to the response of 1.4c, the Company continues to perform internal studies on allowable ramp rates, coordinates with ITC on their studies of the same and participates with MISO's LLWG covering the same topic. Requiring operating parameters to be finalized prior to energization, monitoring adherence to the parameters and reserving the right for disconnection of service are built into the agreements with each potential Large Load customer.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.5a

Respondent: A. Willis

Page: 1 of 1

Question: 5. When was the last time DTE Electric had to shed load?
a. How long did that condition persist?

Answer: The Company objects to the question on the basis that the request to explain the last time DTE Electric had to shed load and how long did that condition persist is not relevant to the Large Load Provision tariff changes presented in the Company's Application, is beyond the scope of the current proceeding, and is not proportional to the needs of the case. Subject to and without waiving the foregoing objection, the Company states that DTE Electric is not aware of ever having been required to shed firm load. DTE has implemented its demand response assets to reduce demand when requested to do so by MISO.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.6a

Respondent: A. Willis

Page: 1 of 1

Question: 6. In concurrent case U-22059, the Company has proposed changes in its Emergency Electric Procedures in Section C2 of its Rate Book. If approved, what, if any, impact will these changes have in the Company's next (and subsequent) filing in the MISO resource adequacy process?
a. If approved, what, if any, impact will these changes have in the Company's next (and subsequent) Michigan capacity demonstration filings (MCL 460.6w)?

Answer: The Company does not submit resource adequacy filings with MISO. There is no impact on the Company's capacity demonstration filings with the MPSC.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.7

Respondent: A. Willis

Page: 1 of 1

Question: 7. List the most recent three dates on which DTE Electric invoked all available demand response (DR) measures, how many hours DR was invoked, and how much load DR removed or deferred (MW).

Answer:

Date	# of Hours	Peak MW Reduction
7/15/2026	<1	TBD
1/24/2026	4	118
12/23/2022	1	117

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.8

Respondent: A. Willis

Page: 1 of 1

Question: 8. If the Company has, or anticipates a capacity shortfall, but it's total DR portfolio could reduce load by more than the shortfall, how does the Company prioritize or sequence to which customers it will invoke demand response upon?

Answer: Please see the Company's answer to GLREADE 1.5a. If a situation arises where MISO calls upon the Company's DR resources, all interruptible customers are dispatched at the same time.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.9a

Respondent: A. Willis

Page: 1 of 1

Question: 9. How does demand response (DR) affect the Company's capacity in the MISO resource adequacy process?
a. How much DR capacity did the Company include in its most recent resource adequacy filing with MISO?

Answer: Demand response qualifies as a capacity resource within the MISO construct and can be converted into MISO Zonal Resource Credits (ZRCs). ZRCs count towards meeting the Company's Planning Reserve Margin Requirements. The Company does not submit any resource adequacy filings with MISO.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.9b

Respondent: A. Willis

Page: 1 of 1

Question: 9. How does demand response (DR) affect the Company's capacity in the MISO resource adequacy process?

b. How does demand response (DR) affect the Company's capacity in the Michigan capacity demonstration process (MCL 460.6w)?

Answer: See the Company's response to GLREADE-1.9a. Demand response is included as a planning resource in the Company's capacity demonstration filings with the MPSC. It is part of the overall resource mix that demonstrates the Company has sufficient resources to serve its customers.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.10a

Respondent: A. Willis

Page: 1 of 1

Question: 10. In the most recent 12-months of MISO capacity auctions, was DTE Energy a net buyer or a net seller?

a. How much net capacity did the Company buy or sell?

Answer: In the Planning Year 2026-2027 MISO Planning Resource Auction (PRA), the Company purchased 23.6 MW of capacity in the summer season, purchased 315.0 MW of capacity in the fall season, sold 1,536.2 MW of capacity in the winter season, and sold 516.3 MW of capacity in the spring season. The results of the PY 2026-2027 PRA were released for all seasons on April 28, 2026.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.10b

Respondent: A. Willis

Page: 1 of 1

Question: 10. In the most recent 12-months of MISO capacity auctions, was DTE Energy a net buyer or a net seller?
b. What was the net amount of money paid to or received from MISO?

Answer: In the Planning Year 2026-2027 MISO Planning Resource Auction (PRA), the Company purchased \$921,240 of capacity in the summer season, purchased \$972,317 of capacity in the fall season, sold \$4,973,140 of capacity in the winter season, and sold \$361,472 of capacity in the spring season. The results of the PY 2026-2027 PRA were released for all seasons on April 28, 2026.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.10c

Respondent: A. Willis

Page: 1 of 1

Question: 10. In the most recent 12-months of MISO capacity auctions, was DTE Energy a net buyer or a net seller?
c. If the seasonal PRA prices had all been substantially higher during the period, would that have produced upward or downward pressure on DTE Electric customer rates?

Answer: It is not possible to determine the customer cost impact as the auction results would be different (e.g. different resources would potentially clear and net payments would change). DTE does not have the information to make conclusions on the cost impact to customer rates.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.11a

Respondent: A. Willis

Page: 1 of 1

Question: 11. Over any recent 12-month period, was DTE Electric a net buyer or seller in the daily MISO energy auctions.

a. How much net energy did the Company buy or sell over the 12-month period?

Answer: Yes, the Company was a net buyer and a net seller on various days in the most recent 2025 PSCR Reconciliation filing (e.g. calendar year 2025). The net energy position during 2025 was a net sales position of 8,964 GWh as described in case U-21595. The Company can be a net seller or buyer in any hour of the day. This is discussed in the Company's PSCR filings.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.11b

Respondent: A. Willis

Page: 1 of 1

Question: 11. Over any recent 12-month period, was DTE Electric a net buyer or seller in the daily MISO energy auctions.

b. What was the net amount of money paid to or received from MISO?

Answer: See Case No. U-21595 for the Company's 2025 PSCR Reconciliation. The net amount received from MISO was \$304,112,000.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.11c

Respondent: A. Willis

Page: 1 of 1

Question: 11. Over any recent 12-month period, was DTE Electric a net buyer or seller in the daily MISO energy auctions.
c. If LMP had been substantially higher during all hours of the 12-month period, would that have produced upward or downward pressure on DTE Electric customer rates?

Answer: It is not possible to determine the customer cost impact as the market results would be different (e.g. different resources would potentially clear and net payments would change). DTE does not have the information to make conclusions on the cost impact to customer rates.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.12a

Respondent: A. Willis

Page: 1 of 1

Question: 12. Please provide DTE Electric system-wide hourly load data for the months of June, July, August, and September, 2025.

a. What was the Company's peak hour and peak load during the summer of 2025?

Answer: See attachment "U-22061 GLREADE-1.12a-01 System Hourly Load June through September 2025". The Company's peak occurred on the 17th hour of July 24th and was 11,275,783 kW.

Attachment: U-22061 GLREADE-1.12a-01 System Hourly Load June through September 2025

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.13

Respondent: A. Willis

Page: 1 of 1

Question: 13. What is the most recent MISO value for Cost of New Entry (CONE)?

Answer: The most recent MISO CONE value approved by FERC is \$137,510 / MW-year for the 2026/27 Planning Year.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.14a

Respondent: A. Willis

Page: 1 of 1

Question: 14. If a customer that met the criteria for the proposed large load tariff built on-site generation to meet part or all of their load, but still wanted to interconnect to DTE Electric's grid, what tariff, rate sheet, or other rules would apply?. Under what circumstances would such a customer be subject to standby charges, and what stand-by charges would apply?

Answer: The applicable tariff would depend on the size and resource type of any behind the meter resource (either Rider 5, Rider 14, or Rider 18). Rider 3 is the Company's standby rate, which is applicable based on the size and type of the customer sited resource and underlying rate schedule.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.15a

Respondent: A. Willis

Page: 1 of 1

Question: 15. If a customer that met the criteria for the proposed large load tariff wanted to participate in the Company's demand response (DR) program, what tariff and rules would apply?

a. Does the structure of D11 rate allow a customer to participate in DR as well?

Answer: Yes.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.16a

Respondent: A. Willis

Page: 1 of 1

Question: 16. If a commercial or industrial customer currently enrolled in the Company's demand response (DR) program has backup generators and DTE Electric invokes DR, is it permissible for the customer to take their entire load off the grid, by powering their load with their backup generators, as a means of meeting the DR request?

a. Is DTE Electric aware of any commercial or industrial customers that have used backup generators to meet a Company DR request in the past three years?

Answer: The Company is not responsible for how commercial or industrial customers comply with their demand response commitments, nor does it have visibility into how customers comply.

Attachment: None

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.16b

Respondent: A. Willis

Page: 1 of 1

Question: 16. If a commercial or industrial customer currently enrolled in the Company's demand response (DR) program has backup generators and DTE Electric invokes DR, is it permissible for the customer to take their entire load off the grid, by powering their load with their backup generators, as a means of meeting the DR request?

b. If a commercial or industrial customer did use backup generators as a method to meet a Company DR request, does the Company have a way to distinguish that method vs. the customer shutting down operations?

Answer: See GLREADE-1.16a

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.17a

Respondent: A. Willis

Page: 1 of 1

Question: 17. What steps does the Company plan to take to ensure that data centers on the proposed tariff will be billed enough to cover the full costs they impose on the Company?

a. How can the Company ensure that there is no cross subsidy when new large load customers are mixed into the industrial customer class and on the same rate sheet as other industrial customers?

Answer: The Company's rates are cost based and approved by the Commission. The Company notes that its pending Case No. U-22046 includes six alternative cost of service studies, filed at the direction of the Commission, to explore questions of cost of service and rate making with large loads.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.18

Respondent: A. Willis

Page: 1 of 1

Question: 18. How will the Company ensure that it has sufficient capacity to service a new large load customer before providing them service?

Answer: The Company manages capacity on a systemwide, and not customer-specific, basis. The Company's annual capacity demonstrations and periodic integrated resources plans ensure sufficient capacity to serve all customers, including large load customers. The Company studies large load customers to ensure that it can provide service while maintaining sufficient capacity.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.19a

Respondent: A. Willis

Page: 1 of 1

Question: 19. What steps has the Company taken to determine the likely load profile of data center customers?

a. Has Edison Electric Institute (EEI) provided any studies or information on the load profile of data center customers? If so, provide a reference and a link to such studies or information.

Answer: DTE Electric objects to the request as overly broad and outside the scope of, and not relevant or proportional to, this proceeding which concerns generally applicable large load tariff provisions. The Company's proposal in this case does not concern future load profiles of potential large load customers nor depend on the adoption of a generic load profile for potential large load customers. Subject to and without waiving its objection, the Company would respond as follows.

The Company forecasts large loads based on information received from specific customers and known at the time. Although the Company may also evaluate company-specific assumptions concerning potential large loads in planning sensitivities, the Company does not generically estimate large load customer load profiles. The Company has not relied upon any EEI studies.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.19b

Respondent: A. Willis

Page: 1 of 1

Question: 19. What steps has the Company taken to determine the likely load profile of data center customers?

b. Some electric utilities service numerous data center customers. Have any of them published data-center aggregated load figures that would reveal the general load profile of this new technology? If so, provide a reference and a link to such information.

Answer: DTE Electric objects to the request as overly broad and outside the scope of, and not relevant or proportional to, this proceeding, which concerns generally applicable large-load tariff provisions. The Company's proposal in this case does not concern future load profiles of potential large load customers nor depend on the adoption of a generic load profile for potential large load customers. The request also asks the Company to identify and evaluate publications by a vague and undefined universe of other electric utilities, without identifying any particular utility, publication or relevant time period. Subject to and without waiving its objection, the Company would respond as follows.

The Company forecasts large loads based on information received from specific customers and known at the time. Although the Company may also evaluate company-specific assumptions concerning potential large loads in planning sensitivities, the Company does not generically estimate large load customer load profiles.

Attachment: *None*

Co-respondent: Legal

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.20a

Respondent: A. Willis

Page: 1 of 1

Question: 20. In the event that a large load customer defaults, what are the collateral requirements to ensure that the exit fee is paid in full?
a. Who will assess the quality of collateral?

Answer: Refer to my testimony at Q/A 25 for a discussion of collateral requirements. The Company will determine the form of collateral required based on its assessment.

Attachment: *None*

MPSC Case No: U-22061

Requester: GLREA

Question No.: GLREADE-1.21

Respondent: A. Willis

Page: 1 of 1

Question: 21. Is DTE Electric free to report a customer's energy use, load profile, and total payments, or are those figures considered confidential information?

Answer: The Company does not publish individual customer information pursuant to its data privacy tariff (Rate Book Section C14.1).

Attachment: *None*

CAITLIN MYERS

MPSC Case No. U-22061
Service List
Page 1

**ASSOCIATION OF BUSINESSES
ADVOCATING TARIFF EQUITY**

Michael J. Pattwell
Ben Holwerda
Clark Hill PLC
215 South Washington Square, Suite 200
Lansing, MI 48933
mpattwell@clarkhill.com
bholwerda@clarkhill.com

Stephen A. Campbell
Clark Hill PLC
500 Woodward Avenue, Suite 3500
Detroit, MI 48226
scampbell@clarkhill.com

ABATE Consultants:

James Dauphinais
Jessica York
Brian Andrews
jdauphinais@consultbai.com
jyork@consultbai.com
bandrews@consultbai.com

**ENVIRONMENTAL LAW & POLICY
CENTER; ECOLOGY CENTER; UNION
OF CONCERNED SCIENTISTS; VOTE
SOLAR (CEO)**

Daniel Abrams
Katie Duckworth
Environmental Law & Policy Center
35 E. Wacker Drive, Suite 1600
Chicago, IL 60601
dabrams@elpc.org
kdduckworth@elpc.org
mpscdocket@elpc.org

Bradley Klein
Alondra Estrada
Katie Toolan
bklein@elpc.org
astrada@elpc.org
ktoolan@elpc.org

GERDAU MACSTEEL, INC.

Jennifer Utter Heston
Potomac Law Group PLLC
1717 Pennsylvania Avenue NW, Suite 1025
Washington, DC 20006
jheston@potomacclaw.com

**GREAT LAKES RENEWABLE ENERGY
ASSOCIATION INC.**

Don L. Keskey
Brian W. Coyer
University Office Place
333 Albert Avenue, Suite 425
East Lansing, MI 48823
donkeskey@publiclawresourcecenter.com
bwcoyer@publiclawresourcecenter.com

MICHIGAN ATTORNEY GENERAL

Joel King
Lucas Wollenzien
Assistant Attorney General
ENRA Division
525 W. Ottawa Street, 6th Floor
P.O. Box 30755
Lansing, MI 48909
kingj38@michigan.gov
wollenzienl@michigan.gov
ag-enra-spec-lit@michigan.gov

MPSC STAFF

Adam Cozort
Monica M. Stephens
Assistant Attorney General
Public Service Division
7109 West Saginaw Hwy, 3rd Floor
Lansing, MI 48917
cozortal@michigan.gov
stephensm11@michigan.gov

Lori Mayabb
MPSC Staff Case Coordinator
mayabbl@michigan.gov

**NATURAL RESOURCES DEFENSE
COUNCIL; SIERRA CLUB**

Christopher M. Bzdok
Sean C. Clark
Troposphere Legal, PLC
420 East Front Street
Traverse City, MI 49686
chris@tropospherelegal.com
sean@tropospherelegal.com

Natasha Fowles, Legal Assistant
Sue Fruchey, Legal Assistant
natasha@tropospherelegal.com
sue@tropospherelegal.com

MPSC Case No. U-22061
Service List
Page 2

Shannon Fisk
Jacob Elkin
Helen Li
sfisk@earthjustice.org
jelkin@earthjustice.org
hli@earthjustice.org

Nodal Operating Guide Revision Request

NOGRR Number	<u>282</u>	NOGRR Title	Large Electronic Load Ride-Through Requirements
Date Posted	November 14, 2025		

Requested Resolution	Normal
Nodal Operating Guide Sections Requiring Revision	2.6.4, Frequency Ride-Through Requirements for Large Electronic Loads (new) 2.14, Voltage Ride-Through Requirements for Large Electronic Loads (new)
Related Documents Requiring Revision/Related Revision Requests	Nodal Protocol Revision Request (NPRR) 1308, Related to NOGRR282, Large Electronic Load Ride-Through Requirements
Revision Description	This Nodal Operating Guide Revision Request (NOGRR) establishes frequency and voltage ride-through requirements for Large Electronic Loads.
Reason for Revision	☒ Strategic Plan Objective 1 – Be an industry leader for grid reliability and resilience ☐ Strategic Plan Objective 2 - Enhance the ERCOT region’s economic competitiveness with respect to trends in wholesale power rates and retail electricity prices to consumers ☐ Strategic Plan Objective 3 - Advance ERCOT, Inc. as an independent leading industry expert and an employer of choice by fostering innovation, investing in our people, and emphasizing the importance of our mission ☐ General system and/or process improvement(s) ☐ Regulatory requirements ☐ ERCOT Board/PUCT Directive <i>(please select ONLY ONE – if more than one apply, please select the ONE that is most relevant)</i>
Justification of Reason for Revision and Market Impacts	The frequency and voltage ride-through requirements in this NOGRR are necessary to ensure Large Electronic 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 LELs during a typical voltage disturbance in which system

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	protection operated as designed. As LELs 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. ERCOT has also identified ride-through risks associated with other Large Loads and intends to submit a NOGRR to address those risks. ERCOT anticipates that the requirements for those Large Loads could differ from those proposed in this NOGRR based on differences in the technology of the loads, just as ERCOT's ride-through requirements for different generating technologies differ from one technology to another.
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Sponsor	
Name	Patrick Gravois
E-mail Address	patrick.gravois@ercot.com
Company	ERCOT
Phone Number	512-248-4695
Cell Number	
Market Segment	Not applicable

Market Rules Staff Contact	
Name	Cory Phillips
E-Mail Address	cory.phillips@ercot.com
Phone Number	512-248-6464

Proposed Guide Language Revision

2.6.4 Frequency Ride-Through Requirements for Large Electronic Loads

- (1) A Customer that proposes to interconnect or maintains an interconnection of a Large Electronic Load (LEL) with the ERCOT System shall ensure the LEL complies with the frequency ride-through requirements of this section, unless:
 - (a) The LEL received approval to energize from ERCOT on or before November 14, 2025; or
 - (b) The LEL satisfied the following requirements on or before November 14, 2025:

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- (i) Its Large Load Interconnection Study (LLIS) has been completed and results communicated in the manner contemplated by paragraph (6) of Planning Guide Section 9.4, LLIS Report and Follow-up; and
 - (ii) The interconnecting TDSP for the LEL has provided the confirmation or letter contemplated in Planning Guide Section 9.5, Interconnection Agreements and Responsibilities.
- (2) An LEL shall ride through frequency disturbances of the magnitude and duration specified in Table A below, as measured at the LEL's Service Delivery Point, or if the LEL is co-located with a Generation Resource or Energy Storage Resource, at the Point of Interconnection Bus (POIB) of that Resource. An LEL 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 LEL to trip or reduce consumption due to a frequency disturbance.

Table A

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

- (3) Nothing in paragraph (2) above shall be interpreted to require an LEL to trip or transfer load to backup generation for frequency conditions beyond those for which ride-through is required.
- (4) If an LEL is consuming electric current from the grid at the time of the frequency disturbance, the LEL shall continue to consume electric current from the grid during frequency deviations requiring ride-through. In addition, an LEL should continue to consume active power within 10% of the pre-disturbance level during frequency deviations requiring ride-through.
- (5) If protection systems are installed and activated to trip the LEL, they shall enable the LEL to ride-through frequency conditions beyond those defined in paragraph (2) above to the maximum level the equipment allows, unless the protection systems are set to respond to an UFLS event or Ancillary Service obligation.
- (6) If frequency protection schemes are installed and activated to trip an LEL, they shall use filtered quantities or add sufficient time delays to prevent misoperations while providing

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the desired equipment protection. Protection schemes shall not trip an LEL based on an instantaneous frequency measurement.

- (7) If ERCOT determines that an LEL has failed to ride through a frequency disturbance in accordance with any requirement in this 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 LEL 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 LEL 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 LEL following a failure to comply with the requirements of this Section 2.6.4 poses an imminent risk to local or system reliability, ERCOT may require the LEL to disconnect from the ERCOT System and remain disconnected until the Customer representing the LEL has demonstrated to ERCOT's satisfaction that the LEL can comply with the ride-through performance requirements of this Section.

2.14 Voltage Ride-Through Requirements for Large Electronic Loads

- (1) A Customer that proposes to interconnect or maintains an interconnection of a Large Electronic Load (LEL) with the ERCOT System shall ensure the LEL complies with the voltage ride-through requirements of this section, unless:
 - (a) The LEL received approval to energize from ERCOT on or before November 14, 2025; or
 - (b) The LEL satisfied the following requirements on or before November 14, 2025:
 - (i) Its Large Load Interconnection Study (LLIS) has been completed and results communicated in the manner contemplated by paragraph (6) of Planning Guide Section 9.4, LLIS Report and Follow-up; and
 - (ii) The interconnecting TDSP for the LEL has provided the confirmation or letter contemplated in Planning Guide Section 9.5, Interconnection Agreements and Responsibilities.

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

Table A

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

- (a) When voltage at the Service Delivery Point or, if the LEL 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 LEL 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 LEL shall continue consuming active power from the grid during the low voltage condition. In such cases, the LEL 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 one second 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 an LEL is required to ride-through and involves a voltage condition below 0.8 per unit, the LEL 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 one second 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:

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- (i) For any LEL that satisfies the requirements in paragraph (1)(b) above after November 14, 2025 but on or before January 1, 2028, if the LEL 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 LEL may reduce active power consumption as much as needed for voltage drops below 0.5 per unit. If the LEL equipment is not capable of the performance described above, then the LEL 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 LEL that satisfies the requirements in paragraph (1)(b) above after January 1, 2028, the LEL 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 LEL 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 (2) above, an LEL shall not consume electric current during the disturbance at a level that exceeds 125% of its maximum electric current consumption during normal operations.
- (3) Nothing in paragraph (2) above shall be interpreted to require an LEL to trip or transfer load to backup generation for voltage conditions beyond those for which ride-through is required.
- (4) If installed and activated to trip or transfer the LEL, all protection systems (including but not limited to protection for over-/under-voltage) shall enable the LEL to ride-through voltage conditions beyond those defined in paragraph (2) above to the maximum level the equipment allows.
- (5) If instantaneous over-current or over-voltage protection systems are installed and activated to trip or transfer the LEL, 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 LEL power

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consumption shall use a measurement window of at least one cycle of fundamental frequency.

- (6) An LEL 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 LEL is required under paragraph (2) above to ride through each such condition.
- (7) If ERCOT determines that an LEL has failed to ride through a voltage disturbance in accordance with any requirement in this Section 2.14:
 - (a) The interconnecting TDSP shall provide available information to ERCOT to assist with ERCOT's event analysis;
 - (b) The Customer representing the LEL 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 LEL 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 LEL following a failure to comply with the requirements of this Section 2.14 poses an imminent risk to local or system reliability, ERCOT may require the LEL to disconnect from the ERCOT System and remain disconnected until the Customer representing the LEL has demonstrated to ERCOT's satisfaction that the LEL can comply with the ride-through performance requirements of this Section.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of
DTE ELECTRIC COMPANY
for approval of Amendments to Rate D11
and related relief

Case No. **U-22061**

PROOF OF SERVICE

Carol A. Dane says that on August 25, 2026, she served a copy of Rebuttal Testimony and Exhibits of John Richter upon the following parties via email:

Name/Party	E-mail Address
ADMINISTRATIVE LAW JUDGE Honorable Sarah A. Stancati	stancatis@michigan.gov
DTE ELECTRIC COMPANY Andrea E. Hayden John Janiszewski	mpscfilings@dteenergy.com andrea.hayden@dteenergy.com john.janiszewski@dteenergy.com
MICHIGAN PUBLIC SERVICE COMMISSION STAFF Monica M. Stephens Adam M. Cozort Lori Mayabb	Stephensm11@michigan.gov cozortal@michigan.gov mayabbl@michigan.gov
GERDAU MACSTEEL, INC. Jennifer U. Heston	jheston@potomacclaw.com
ATTORNEY GENERAL DANA NESSEL Lucas Wollenzien Joel King	Ag-enra-spec-lit@michigan.gov wollenzienl@michigan.gov kingj38@michigan.gov
NATURAL RESOURCES DEFENSE COUNCIL, SIERRA CLUB Christopher M. Bzdok Sean C. Clark Natasha Fowles Sue Frunchey Helen Li Jacob Elkin Shannon Fisk	chris@tropospherelegal.com sean@tropospherelegal.com natasha@tropospherelegal.com sue@tropospherelegal.com hli@earthjustice.org jelkin@earthjustice.org sfisk@earthjustice.org

ENVIRONMENTAL LAW & POLICY CENTER Katherine S. Duckworth	kduckworth@elpc.org
ASSOCIATION OF BUSINESSES ADVOCATING TARIFF EQUITY (ABATE) Michigan J. Pattwell Stephen A. Campbell	mpattwell@clarkhill.com scampbell@clarkhill.com

The statements above are true to the best of my knowledge, information and belief.

PUBLIC LAW RESOURCE CENTER PLLC

Carol Dane

Carol A. Dane
Public Law Resource Center PLLC
University Office Place
333 Albert Avenue, Suite 425
East Lansing, MI 48823
Telephone: (517) 999-3782
E-mail: adminasst@publiclawresourcecenter.com

Dated: August 25, 2026