STATE OF MICHIGAN

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

_____/

CROSS-EXAMINATION

VOLUME 2

BEFORE THE HONORABLE SARAH A. STANCATI

Via Microsoft Teams - Wednesday, September 16, 2026

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TABLE OF CONTENTS

WITNESSES:	PAGE
AARON WILLIS	
Direct and Rebuttal Testimony Bound In	20
MICHAEL J. WITKOWSKI	
Rebuttal Testimony Bound In	85
JAMES R. DAUPHINAIS	
Direct and Rebuttal Testimony Bound In	108
JOHN RICHTER	
Direct and Rebuttal Testimony Bound In	163
LEE SHAVER	
Direct Testimony Bound In	275
BEN HAVUMAKI	
Direct Testimony Bound In	311
JOHNATHON L. HIGGINS	
Direct Testimony Bound In	340
MARK J. PUNG	
Direct Testimony Bound In	346

INDEX TO EXHIBITS

EXHIBITS:	OFRD	RECD
Exhibit A-1	18	19
Exhibits AB-1 through AB-4	106	107
Exhibits GLREA-1 through GLREA-6	159	162

Exhibits CEO-1 through CEO-10	272	273
Exhibit CEO-6 (confidential record)	272	273
Exhibits AG-NS-1 through AG-NS-34	309	310

Taken via Microsoft Teams

Wednesday, September 16, 2026

Commencing at 9:18 a.m.

THE COURT: Good morning, everybody. We are on the record in Case Number U-22061, captioned In the matter of the application of DTE Electric Company for approval of amendments to Rate D11 and related relief. Today is September 16, 2026, and the date and time scheduled for cross-examination in this matter. We no longer, I believe, need to take up the motion to strike. This hearing is being held remotely using Microsoft Teams. My name is Sarah Stancati. I'm an administrative law judge with the Michigan Office of Administrative Hearings and Rules, and I have been assigned to be the presiding officer in this matter. I will start with appearances. May I have appearances for the record, please, starting with the company?

MR. JANISZEWSKI: Good morning, Your Honor. John Janiszewski appearing on behalf of DTE Electric Company.

THE COURT: Thank you. Staff?

MS. STEPHENS: -- MPSC staff.

THE COURT: Ms. Stephens, I can barely hear you.

MS. STEPHENS: Okay. Can you hear me now?

THE COURT: That's much better. Thank you. Yes.

MS. STEPHENS: Would you like me to re-enter my appearance?

THE COURT: Yes, please.

MS. STEPHENS: Okay. Thank you. Good morning, Your Honor. Monica Stephens on behalf of MPSC staff.

THE COURT: Thank you. Attorney General.

MR. WOLLENZIEN: Good morning, Your Honor. Lucas Wollenzien appearing on behalf of Michigan Attorney General Dana Nessel.

THE COURT: Thank you. GLREA?

MR. KESKEY: Good morning, Your Honor. Don Keskey appearing on behalf of GLREA.

THE COURT: Thank you. NRDC?

MR. CLARK: Good morning, Your Honor. Sean Clark appearing on behalf of the Natural Resources Defense Council and Sierra Club.

THE COURT: Thank you. Environmental Law & Policy Center?

MS. DUCKWORTH: Good morning, Your Honor. Katie Duckworth on behalf of the Ecology Center, the Environmental Law & Policy Center, Union of

Concerned Scientists, and Vote Solar, collectively the Clean Energy Organizations or CEO.

THE COURT: Thank you, Ms. Duckworth. ABATE?

MR. CAMPBELL: Good morning, Your Honor. Steve Campbell, Clark Hill PLC, on behalf of the Association of Businesses Advocating Tariff Equity.

THE COURT: Thank you. Do we have any other appearances? Hearing none, it is my understanding that the company has entered into stipulations to mutually waive cross-examination with the MPSC staff, Gerdau MacSteel, Incorporated, the Michigan Attorney General, NRDC, Sierra Club, ABATE, CEO, and GLREA, conditioned on the admission of certain DTE discovery responses. Mr. Janiszewski, would you please enter the stipulations into the record?

MR. JANISZEWSKI: Your Honor, I may not be the best individual to go discovery response by discovery response regarding what the intervenors wanted into the record. I don't have that in front of me.

THE COURT: Okay. We'll go by party then. If that works for you.

MR. JANISZEWSKI: Yeah, so typically the

company -- I defer to how you want to proceed, but it may make sense for the company to move for the binding in of its pre-filed testimony and exhibits, and then have staff and intervenors go one by one, indicating their binding in of testimony and dealing with the stipulations, intervenor by intervenor at that time.

THE COURT: Okay. Any other parties object to that plan of action? Hearing nothing. All right. So, with that, Mr. Janiszewski, would you please go ahead and move for the binding in and admission of your testimony? Or the company's testimony.

MR. JANISZEWSKI: Yes. All right. Thank you, Your Honor. At this time, DTE Electric moves to bind into the record the qualifications and direct testimony of Aaron Willis, consisting of a cover sheet and 16 pages of questions and answers. The company also moves for the admission of one direct exhibit sponsored by Mr. Willis, and that is Exhibit A-1. Next, DTE Electric moves to bind into the record the rebuttal testimony of Aaron Willis, consisting of a cover sheet and 46 pages of questions and answers, and Mr. Willis did not sponsor any exhibits with his rebuttal testimony.

That takes care of Mr. Willis, Your Honor. Would you like me to go witness by witness?

THE COURT: Yes. Let's get one witness bound in and then we'll do the next one. Is there anything confidential about Mr. Willis's testimony?

MR. JANISZEWSKI: No, Your Honor.

THE COURT: Fantastic. Are there any objections to the binding in of the pre-filed direct and rebuttal testimony of Mr. Willis? Hearing none, the direct and rebuttal testimony of Mr. Willis is bound into the public record. And are there any objections to the admission of Exhibit A-1? Hearing none, Exhibit A-1 is admitted into evidence. Mr. Janiszewski.

(Exhibit A-1 admitted)

(Testimony bound in)

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	)	Case No. U-22061
related relief	)	

QUALIFICATIONS

AND

DIRECT TESTIMONY

OF

AARON WILLIS

DTE ELECTRIC COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF AARON WILLIS

Line No.

Q1. What is your name, business address and by whom are you employed?

A1. My name is Aaron Willis (he/him/his). My business address is One Energy Plaza, Detroit, Michigan 48226. I am employed by DTE Energy Corporate Services, LLC, a subsidiary of DTE Energy Company (DTE Energy), as Director, Regulatory Affairs.

Q2. On whose behalf are you testifying?

A2. I am testifying on behalf of DTE Electric Company (DTE Electric or Company).

Q3. What is your educational background?

A3. I received a Bachelor of Arts in Political Science from the University of Michigan, a Master's in Environmental Management from the Yale School of Forestry and Environmental Studies, and a Master's in Business Administration from the University of Maryland.

Q4. What is your work experience?

A4. In 2009, I was employed by the US Army Corps of Engineers, Institute for Water Resources as Social Scientist. In this role, I supported enforcement of the Clean Water Act and engagement with domestic and international partners on a variety of water resources issues. In 2015, I was employed by Booz Allen Hamilton in their energy practice, providing support to commercial and federal clients on a variety of energy matters including market strategies, project development, and new energy technologies.

Line
No.

In 2017, I began my employment with DTE Energy as an Associate in Corporate Strategy. In this role, I supported key operational and strategic work across the Company. I was promoted to Senior Associate in 2019 and transitioned to Corporate Development, where I supported the Company's financial strategy. In 2020, I accepted a position in Regulatory Affairs supporting the Company's state regulatory strategy and engagement with the Michigan Public Service Commission (MPSC or Commission), MPSC Staff, and Michigan energy stakeholders. In 2021, I became Manager, Regulatory Economics, with responsibilities including the management of regulatory activities relative to DTE Electric's rate strategy, pricing, and load research. In 2024, I was promoted to Director, Regulatory Affairs.

Q5. What are your current duties and responsibilities?

A5. My responsibilities include the management of regulatory activities relative to DTE Electric's rate strategy, regulatory mechanisms, pricing, revenue requirements, cost of service, and load research.

Q6. Have you previously sponsored testimony before the Michigan Public Service Commission?

A6. Yes. I have sponsored testimony in the following cases:

- U-21163 XL High Load Factor Rate
- U-20836 DTE Electric 2022 General Rate Case
- U-21193 DTE Electric 2022 Integrated Resource Plan
- U-21306 Rider No. 16 Transition
- U-21338 DTE Electric 2023 Securitization
- U-21297 DTE Electric 2023 General Rate Case

Line No.			
1	•	U-18091	DTE Electric 2024 PURPA Case
2	•	U-21534	DTE Electric 2024 General Rate Case
3	•	U-21860	DTE Electric 2025 General Rate Case
4	•	U-21909	DTE Electric Performance Based Ratemaking Mechanism
5	•	U-22058	DTE Electric 2026 Special Contracts for Electric Service

Line No.

Purpose of Testimony

Q7. What is the purpose of your testimony in this proceeding?

A7. The purpose of my testimony is to support the Company's Application for Expedited Approval of a Large Load Provision (Application) under Rate Schedule No. D11 and describe the Company's proposal for a Large Load Provision as directed in the Commission's December 18, 2025 Order in Case No. U-21990 (December 18 Order).

Q8. Are you sponsoring any exhibits in this proceeding?

A8. Yes. I am supporting the following exhibit:

Exhibit	Description
A-1	Proposed Large Load Provision

Q9. Was this exhibit prepared by you or under your direction?

A9. Yes, it was.

Q10. Why is the Company filing the proposed Large Load Provision?

A10. In its December 18 Order, the Commission directed that "DTE Electric Company shall file an application for approval of a generally applicable large load customer tariff that aligns with the findings in the November 6, 2025 order in Case No. U-21859"[1] (November 6 Order). In that case, the Commission approved changes to the standard industrial rate offered by Consumers Energy (a rate similar to the

[1] Case No. U-21859 is a case filed by Consumers Energy "In the Matter of the Application of Consumers Energy Company for Ex Parte Approval of Certain Amendments to Rate GPD."

Line No.

Company's Rate Schedule D11), which were proposed to address the increasing volume of interest by and unique characteristics of large load customers.[2]

The Company has similarly observed that interest from large load customers continues to increase and concurs with the Commission that establishing a common set of requirements applicable to these customers offers a number of benefits. These benefits include (1) protecting DTE Electric's other customers from the risks, including potential cost subsidies, associated with serving large load customers, and (2) providing transparency and certainty to large load customers with regards to the Company's terms and conditions applicable to such customers. The terms and conditions of the proposed tariff discussed further below are broadly aligned with the generally applicable large load customer tariff provisions approved for Consumers Energy in the Commission's November 6 Order.

Further, the Company has negotiated and executed electric service agreements with one large customer to date and is in discussions with others. The large load provision proposed by the Company reflects those experiences.

Q11. Why is the Company requesting expedited approval of the proposed Large Load Provision presented in its Application?

A11. The Company has a number of pending requests for electric service from large load customers at levels of 100 MW or greater that will be subject to the new large load tariff provisions, once authorized. Expedited Commission approval, as requested in the Application, will allow the Company to engage prospective large load

[2] See Consumers Energy's Application in Case No. U-21859, February 7, 2025.

customers using a consistent set of terms, as well as creating a standard set of expectations for these customers while improving efficiency for the Company.

Q12. Under which rate does the Company currently serve large load customers?

A12. The Company's standard rate schedule for large, primary voltage customers is Rate Schedule D11. It is a demand-based rate available to customers with greater than 50 kW of contract capacity on primary, subtransmission, or transmission voltage, and it is required for firm service, non-educational customers with contract capacity greater than 1,000 kW. The Company's special contract filing to serve a large load customer, as approved in Case No. U-21990, explained that the Company will serve the new large load customers on Rate Schedule D11, with additional contractual protections beyond what is available on Rate Schedule D11 today.

Q13. What are the Company's key objectives with the proposed Large Load Provision?

A13. This filing proposes to codify minimum and generally applicable requirements for service to facilitate studying and serving large load customers requesting service from DTE Electric. The proposed tariff language serves two key objectives:

- *Protections for other customers*. As I describe below, the Company's proposed Large Load Provision includes a set of minimum terms that will support long-term protections for other customers. This objective is consistent with the Company's filing in Case No. U-21990, which includes specific contractual protections for other customers.
- *Consistent expectations*. The proposed Large Load Provision establishes generally applicable requirements for a certain group of customers. In

addition to providing guardrails to protect other customers, it establishes minimum commercial expectations for potential large load customers, reducing ambiguity and uncertainty in the contracting process.

Q14. What is the Company's proposed structure for its Large Load Provision?

A14. Consistent with the approach approved in Case No. U-21859, the proposed Large Load Provision incorporates new terms of service and requirements for large load customers requesting service under the existing Rate Schedule D11. As shown in Exhibit A-1, any large load customer requesting service will be required to take service on Rate Schedule D11 and will also be subject to the provisions (see below for a discussion on applicability). The Large Load Provision does not apply to other customers on Rate Schedule D11 who do not otherwise meet the applicability criteria as presented, nor does it apply to existing load contracted for or served before the effective date of the Large Load Provision.

Q15. Upon approval of the Large Load Provision, will customers that are subject to these additional contractual provisions still be required to execute individual Power Supply Agreements with the Company?

A15. Yes. The tariff defines minimum terms applicable to contractual arrangements with large load customers. Specific terms will be negotiated between the Company and customer.

Q16. Can you please summarize the key terms of the Large Load Provision?

A16. Yes. The proposal includes several elements designed to broadly align with the Commission's Order in Case No. U-21859 and the Company's objectives described above. These key terms are summarized in Table 1 below.

Table 1 Summary of Key Terms

Applicability	Customers who have incremental load served within a 5-year period which (1) exceeds 100 MW at a single site, or (2) exceeds 100 MW in the aggregate across multiple sites, with a site average of >20 MW
Contract length	Minimum of 15 years following the ramp period, with 5-year automatic extension and 3 years customer notice prior to extension
Ramp period	Up to three years
Minimum billing demand	80% of contract capacity
Termination fee and notice	Up to 15 years of minimum billing demand (plus applicable ramp), with 2 years notice
Collateral	Full termination fee
Credit	Letter of credit, cash or parent guarantee
CIAC credit	Two times expected distribution revenue based on the customer's committed ramp
Administrative fee	\$100k for customers < 200 MW \$250k for customers ≥ 200 MW

Q17. What is the threshold for applicability of the Large Load Provision?

A17. The intent of the proposed applicability term is to ensure that adequate protections are in place to manage the potential risk associated with serving new, large loads.

Line No.

The Company proposes two thresholds for applicability:

- 100 MW or more of incremental load at a single site, or
- 100 MW or more of incremental load across multiple sites if the average load of those sites is > 20 MW

With regard to the multisite requirement, system planning and cost risks are similar considering a large single site addition or multiple smaller load additions over a short period of time. Thus, the Company proposes that any customer with an aggregate incremental load of >100 MW, or, alternatively, a customer with multiple smaller sites with a site average of >20 MW, and where each site begins service in a five-year period be required to adhere to the terms of the large load tariff. Five years is aligned with the statutory timeline for filing an integrated resource plan, and provides a reasonable period during which 100 MW of load should be considered on a risk and system planning basis.

Q18. Do the proposed provisions apply to existing large load customers?

A18. No. The Company intends for the following requirements to apply to new, incremental large loads that have not contracted for service and not to existing load customers. Existing loads are already served by the Company's system and resources and introduce no specific planning challenge or considerations beyond the normal course of business. The load contemplated in Case No. U-21990 is already governed by contractual protections for other customers which have been approved by the Commission.

Q19. What minimum contract length is proposed for large load customers taking service under the Large Load Provision?

A19. The Company proposes a fifteen-year minimum contract term following the completion of the ramp period. This term is designed to achieve an appropriate balance of risk mitigation and commercial viability. The Company additionally proposes a five-year automatic extension, with the customer able to opt out of an extension with three years' notice.

Q20. What load ramp conditions are proposed to be required for new large load customers?

A20. The Company proposes a load ramp period of no more than three years from the time the contract is fully executed. Three years appropriately balances the time required for a customer to develop their facility, for the Company to advance any required assets, and to efficiently manage large load and other customer interest in connecting to the system. A longer period could result in the Company essentially "holding" capacity without the associated load and potentially impact the Company's ability to expeditiously connect other customers. Three years is the maximum ramp period term, however the negotiated contract between the Company and the customer may include a shorter ramp period.

Q21. Will the Company serve a large load customer beyond their negotiated contract capacity?

A21. Large load customers taking service under these new tariff provisions will be expected to maintain load that does not exceed their negotiated contract capacity, and will be expected to correct excess demand when it occurs. The Company will

make reasonable efforts to serve load beyond the negotiated contract capacity to the extent that the excess load does not persist in more than three of twelve months on a rolling basis and does not exceed the contract capacity by more than 5%. Should the Company be able to serve an overage, the customer will be responsible for all incremental costs of accommodating the overage. Should the overage persist for more than three months or exceed 5%, the Company may, at its discretion, increase the contract capacity to reflect that load. At any time, the Company may decline to serve the overage if it is necessary to protect system integrity.

Q22. What minimum billing demand (MBD) and minimum monthly charge (MMC) is proposed for large load customers taking service under the new provision?

A22. The Company proposes a minimum billing demand of 80% of contract capacity. The minimum will apply to the customer's committed load ramp during the ramp period and to the maximum contracted capacity thereafter. This term obligates the customer to pay the greater of 80% of their maximum potential demand charges, or charges associated with actual use. A customer subject to the large load tariff provisions on an aggregated load basis will be subject to an aggregate requirement of 80% minimum billing demand based upon the sum of actual and contract load across all sites. For example, if the customer has two sites, the 80% MBD would be compared to actual load defined as (Site 1 actual MW + Site 2 actual MW) / (Site 1 contract MW + Site 2 contract MW).

The 80% MBD would be expressed on a customer bill as a Minimum Monthly Charge (MMC) - the product of applicable demand rates contained in Rate Schedule D11 and the minimum billing demand. For example, if the sum of power

Line No.

supply and distribution demand charges on Rate Schedule D11 is $15/kW, the customer MBD is 500,000 kW, and customer consumes no energy in the month, the MMC would be $7.5M plus any applicable fixed charges on the rate. The MMC will be based on prevailing D11 rates set out in the Rate Schedule.

Q23. What termination fee is proposed in the Large Load Provision?

A23. If the customer ceases to take service from the Company prior to the end of the contract term, the Company proposes an initial termination fee of fifteen years of minimum billing demand based on the maximum contracted capacity. The termination fee will be determined as follows:

- *During the ramp period*: the MBD associated with the contracted ramp schedule and fifteen years of MBD based on the full load ramp.
- *After the load ramp:* If the PSA is terminated before the fifteenth anniversary of the customer achieving full load, the customer will be subject to a termination payment based on the MBD multiplied by the greater of 1) the number of months from the early termination date to the fifteenth anniversary of the customer achieving full load or 2) 24 months. For example, a customer wishing to terminate the contract in year five following the ramp period would have a termination fee equivalent to ten years of MBD (15 years – 5 years = 10 years). The fee also applies to contract extension periods if notice of contract termination has not been provided.

This termination fee is subject to negotiation and at the agreement of the Company and customer and may exceed the minimum of fifteen years of MBD.

Q24. What termination notice is proposed in the Large Load Provision?

A24. The Company proposes a required termination notice of two years. At such time that a customer gives notice of termination, it will be responsible for the greater of the termination fees (described above). The Company and the large load customer may agree to a different termination notice period, that, in all cases, shall be no less than two years.

Should the customer decline to renew the contract, the customer must provide the Company with a minimum of three years' notice. No fee would be assessed.

Q25. What collateral and credit terms are proposed in the Large Load Provision?

A25. The Company proposes a default collateral requirement equal to the termination fee. In practice, this means that the customer would be required to post collateral in the amount of the total termination fee, an amount which would reduce annually as the termination fee reduces. This amount ensures that any termination fee is fully collateralized and provides substantial protection to the Company's other customers. However, the Company recognizes that prospective large load customers are not homogenous and may, at its sole discretion, agree to a lower collateral requirement based on the specific risk profile of a given customer.

The Company proposes to hold that collateral in the form of a letter of credit, cash, a parent guarantee, or a combination of the three. The specific form and structure of credit requirements will be based on the customer's creditworthiness and at the Company's discretion and "taking into account the risk level of the individual large load customer, including the credit rating of the customer and/or its parent

Line No.

company."[3] This may, for example, include different forms of collateral at different customer rating levels.

Q26. What contribution in aid of construction (CIAC) allowance is proposed in the Large Load Provision?

A26. Typically, a customer pays, through a CIAC payment, for the cost of the infrastructure needed for grid interconnection less an allowance based on the Customer's load (a "CIAC allowance"). Existing allowances for CIAC are developed based on average commercial and industrial customers and average revenue less fuel cost, depending on the size of the customer and rate schedule. For example, customers greater than 1 MW typically use the standard allowance table on page C-30.00 of the Company's rate book. These allowances are based on the combined net revenues of the respective rate class – for D11, the allowance is based on the revenues of all primary, subtransmission, and transmission voltage customers. However, transmission voltage customers are assessed much lower rates than D11 customers on average (Distribution: $0.93/kW vs $6.32/kW, respectively[4]). When extended to the size of a prospective large load customer, the CIAC allowance can be significant.

Instead, the Company proposes offering an allowance of up to twice the customer's expected annual distribution revenue for any large load customer taking service on the large load tariff provisions. This will ensure that the CIAC allowance is sized to the expected distribution revenue of the customer and that investments initially

[3] November 6, 2025 Order in Case No. U-21859, Pg 113
[4] Approved rates from Case No. U-21534; included for illustration

supported by other customers are reasonably recovered from the large load customer.

Q27. Did the Commission direct the Company to file an administrative fee for data centers and other large load customers?

A27. Yes. In the December 18 Order, the Commission directed that "the Company to file "a proposed administrative fee to be charged to potential additional data centers and other large load customers to ensure the costs associated with any interconnection or other studies performed for these potential customers are not absorbed by existing customers."[5] The Company is including the administrative fee proposal in this proceeding as the fee is a proposed term included in the Large Load Provision that is appropriately included as part of a comprehensive, transparent set of terms and conditions for serving large load customers.

Q28. What is the Company's proposed administrative fee?

A28. The Company is proposing a tiered administrative fee that is designed to ensure that prospective large load customers are paying the cost for any required studies and Company resources required to facilitate prospective Company interest in the significant level of service and infrastructure required to serve large load customers. In addition, the presence of the administrative fee may dissuade speculative customers from seeking one or more studies upon which they do not intend to act. The fee would be assessed per site of >100 MW interest and study, or per 100 MW of aggregated load if the customer has multiple sites aggregating to > 100 MW.

[5] Case No. U-21990 Final Order at 40, 45 (ordering paragraph J).

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Receipt of the administrative fee from the customer will allow the Company to begin initial engineering, execute studies performed by the Company, or submit studies to be performed by other entities (such as the transmission provider).

A customer with a prospective load of more than 100 MW but less than 200 MW would be assessed a fixed fee of $100,000, and a customer with a prospective load of greater than or equal to 200 MW will be assessed a fixed fee of $250,000. The 200 MW distinction is based on the additional engineering and study requirements arising at that threshold – service above ~200 MW typically requires a 230 kV or 345 kV connection and additional engineering and design.

Q29. Does this conclude your testimony?

A29. Yes.

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	)	Case No. U-22061
related relief	)	

REBUTTAL TESTIMONY

OF

AARON WILLIS

DTE ELECTRIC COMPANY
REBUTTAL TESTIMONY OF AARON WILLIS

Line No.

Q1. Please state your full name, title, business address, and by whom you are employed?

A1. My name is Aaron Willis (he/him/his). My business address is One Energy Plaza, Detroit, Michigan 48226. I am employed by DTE Energy Corporate Services, LLC, a subsidiary of DTE Energy Company (DTE Energy), as Director, Regulatory Affairs.

Q2. Did you file direct testimony in this proceeding on behalf of DTE Electric Company (DTE Electric or Company)?

A2. Yes.

Purpose of Testimony

Q3. What is the purpose of your rebuttal testimony?

A3. The purpose of my rebuttal is to respond to positions taken by the Michigan Public Service Commission (MPSC) Staff (Staff), the Attorney General, Natural Resources Defense Council, and the Sierra Club (AG-NS), Association of Businesses Advocating for Tariff Equity (ABATE), the Clean Energy Organizations (CEO), and Great Lakes Renewable Energy Association (GLREA), addressing the Company's proposed Large Load Provision amendments to Rate Schedule D11.

I address the following topics in my rebuttal:

1) The applicability of the proposed tariff and various intervenor proposals to revise the applicability;
2) Changes in contract capacity;

Line No.

3) Appropriate credit and collateral terms;
4) Minimum billing demand;
5) Termination notice and fees;
6) The proposed administrative fee and proposals for reconciliation of the fee;
7) Comments and proposals regarding cost of service and rate design considerations;
8) Proposals for Commission approval of future large load contracts subject to the proposed provisions; and
9) Other intervenor proposals.

Q4. Are you sponsoring any exhibits in support of your rebuttal testimony in this proceeding?

A4. No.

Tariff applicability

Q5. Does any party contest the 100 MW threshold for the applicability of the Large Load Provision tariff amendments proposed by the Company?

A5. No.

Q6. What intervenor positions are you responding to related to the proposed tariff applicability?

A6. I will respond to the following positions related to tariff applicability:

- AG-NS Witness Havumaki's recommendation that the five-year aggregation window for projects which are individually less than 100 MW but aggregate to 100 MW should be extended indefinitely;

- AG-NS Witness Havumaki's recommendation that "co-located" sites be subject to the terms of the tariff regardless of the load of tenant end users;
- ABATE Witness Dauphinais' proposal that the proposed tariff apply to contracts executed before its approval.

Q7. Can you summarize AG-NS Witness Havumaki's recommendation that the aggregation window of projects under 100 MW should extend indefinitely?

A7. Yes. Witness Havumaki's recommendation is that "the Company include sites at different locations in aggregation *irrespective of when the individual sites included in the aggregation have entered service."* (Pg 11) (italics in original). The testimony continues and says:

> "Consider the case of a customer that establishes a first site with a demand exceeding 100 MW. This customer would be subject to the Large Load Provisions based on the contract capacity of the initial site. Now, suppose that this customer adds a second site ten years later, with a peak demand of 15 MW. This site would also be subject to the Large Load Provision, through aggregation with the first site, because the average peak demand of the two sites would be 57.5 MW (which exceeds the Company's proposed 20 MW average requirement). This second site would be subject to its own minimum 15-year contract term, which would commence when the second site had ramped up to full capacity."

Witness Havumaki further suggests uncertainty as to whether the aggregation criteria are intended to apply to contract capacity or actual demand.

Line
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Q8. Does the Company agree with this recommendation?

A8. No. As described in my direct testimony (Pg 9), the Company's proposal explains the purposes of the five-year window as "… aligned with the statutory timeline for filing an integrated resource plan, and provides a reasonable period during which 100 MW of load should be considered on a risk and system planning basis." Witness Havumaki does not respond to this reasoning and instead proposes the hypothetical example cited above without any further explanation. One of the two key objectives of this filing from my direct testimony is "protections for other customers". It is not evident what risk is being generated by a 15 MW load addition ten years from now that needs mitigation, which, on its own, is 15% of the threshold for tariff applicability.

Extending this premise further, the proposal would seem to implicate a customer adding 20 MW every five years. Under Witness Havumaki's proposal, the earlier additions would not initially be subject to the minimum billing demand, termination fee, and collateral requirements because the customer had not yet reached the 100 MW threshold. Once the customer reached that threshold in year 25, however, the proposal would appear to subject the customer's earlier load additions to the Large Load Provision based on an aggregation extending back as much as 20 years. It is not reasonable to look back potentially 10 or 20 years and impose new requirements on those load additions. To the extent Witness Havumaki is suggesting a new 15-year contract length beginning with the 100 MW, the Company does not believe that to be reasonable either as it would effectively require the earliest loads to remain in service for 25 years or more. I recommend that the Commission reject this proposal.

Line No.

Further, the Company confirms that the aggregation criteria apply to contract capacity and not actual demand, as stated in the "Availability of Service" section of the Large Load Provision amendments to D11.

Q9. Can you summarize AG-NS Witness Havumaki's recommendation that "co-located" sites be subject to the terms of the tariff regardless of the load of tenant end users?

A9. Yes. Witness Havumaki says:

> "The Company's applicability criteria appear to exempt co-located data centers (i.e., multiple data centers that are located on the same campus) from being subject to the Large Load Provisions even if the aggregate demand of the data centers at a given site exceeds 100 MW, provided that each entity requesting service has demand under the 100 MW threshold. This potential loophole could allow customers to avoid the Large Load Provisions even when they should in aggregate be subject to the tariff because of their co-location, combined scale, and the potential risks of cost-shifting and stranded assets that they collectively impose on the system". (Pg 12)

He then recommends:

> "These sites should be subject to the same aggregation threshold; if their combined capacity exceeds 100 MW, then the sites should be subject to the Large Load Provisions. Further, they should be subject to the Large Load Provisions even if their average capacity is less than 20 MW, since they are located at the same site rather than dispersed across multiple locations." (Pg 12)

Q10. Does the Company agree with this recommendation?

A10. No. The Company applies the applicability criteria based on the contract capacity of the entity that requests service and executes the applicable power supply agreement. Where a co-location provider requests service for the facility, executes the power supply agreement, is responsible for payment and compliance with that agreement, the co-location provider is the Company's customer. The Company would execute the power supply agreement with the co-locator and the co-locator would be the customer responsible for billing and compliance with the terms of the power supply agreement and the large load provisions.

A different service arrangement would exist if multiple entities at the same location each separately requested service from the Company, executed separate power supply agreements, and were separately billed and metered by the Company. In that circumstance, each entity would be a separate DTE customer, and the applicability criteria would be applied to each customer based on its own contract capacity.

For example, if ten 10 MW loads are being individually served (billed and metered) by the Company and happen to be at one site, the Large Load Provisions would not apply. A series of 10 MW loads with varying ownership and billing responsibility do not introduce risk consistent with new 100 MW loads under single ownership, and therefore there would be no basis to apply the extended contract term and more rigorous collateral requirements, minimum billing demand and other commercial protections of the Large Load Provision to them. Accordingly, the proposed applicability criteria do not create the loophole described by Witness Havumaki.

Q11. Can you summarize ABATE Witness Dauphinais' proposal that the proposed tariff apply to contracts executed before the approval of the tariff?

A11. Yes. Witness Dauphinais begins by saying "the Large Load Provision does not apply to existing load contracted for or served before the effective date of the Large Load Provision…As drafted, any contract DTE executes between now and the effective date of the tariff would fall outside the Large Load Provision entirely. That would leave outside the tariff's protections the very set of prospective customers whose presence DTE offers as the reason for approving the tariff on an expedited basis."

Following, he recommends "the Commission require the Large Load Provision to apply to any large load addition, other than those that are the subject of Case Nos. U-21990 and U-22058, that is not already taking service as of the effective date of the tariff approved in this proceeding." (Pg 24)

Q12. Does the Company agree with this recommendation?

A12. No. First, while not making a specific recommendation, Witness Dauphinais characterizes his proposal in part as based on the Company's request for an expedited case schedule. At the time of filing this testimony, briefing is scheduled for more than six months post-filing and there is no target PFD date. The Company's request for expedited approval was not granted and it should not inform the adjudication of this issue or any other issue in the case.

Second, the Company included similar customer protections in both Case Nos. U-21990 and U-22058, absent a generic large load tariff setting the baseline as to what

those conditions and protections should be. Going forward, whether before or after the eventual approval of the large load provisions, the Company intends to continue requiring customer protections as part of any power supply agreement with a customer who would, by size, qualify for the large load provisions. In the extraordinarily unlikely circumstances that the Company provides new service to a load which would otherwise qualify for the large load provision but for the timing, and which does not have a special contract with the Company, the Company assumes the large load provision would apply. This is consistent with any other customer taking service on a standard Rate Schedule D11 contract and which is subject to periodic changes in the rules and terms of the tariff.

Changes in contract capacity

Q13. What intervenor positions are you responding to related to the proposed changes in contract capacity?

A13. I will respond to the following positions related to changes in contract capacity:

- GLREA Witness Richter's recommendation that demand above the contract capacity be limited to the lower of 5% or 50MW, and none in the MISO summer months
- GLREA Witness Richter's recommendation that large load customers be allowed a one-time reduction of 10% of their contract capacity and AG-NS Witness Havumaki's recommendation that the inability to reduce contract capacity be added to the tariff

Q14. Can you summarize GLREA Witness Richter's recommendation that demand above the contract capacity be limited to the lower of 5% or 50MW, and none in the MISO summer months?

A14. Yes. Witness Richter proposes limitations on demand in excess of the contract capacity, saying

> "It would be reasonable and prudent, for the sake of system reliability, for the Commission to require the Company to remove this provision entirely. Alternatively, if the Commission favors giving large load customers some latitude, the provision should be re-written. The cap should be the lessor [sic] of: 5% of the customer's contracted capacity, or 50 MW, and be restricted to the nine non-summer months, as defined in MISO capacity auctions. If, in the future, due to high levels of solar deployment, the critical time for meeting load is in the winter months (with low solar output), the provision may be changed." (Pg 26)

Q15. Does the Company agree with this recommendation?

A15. No, because it is unnecessary. The Company supports the reasonableness of the current time and capacity limited allowance for serving excess customer demands. The Large Load Provision "Availability of Service" section presented in the Company's Exhibit A-1 (proposed tariff) says in part "The Company will make reasonable efforts to serve load beyond the negotiated contract capacity to the extent that the excess load does not persist in more than three of twelve months on a rolling basis and does not exceed the contract capacity by more than 5%. Should the Company be able to serve an overage, the customer will be responsible for all incremental costs of accommodating the overage. Should the overage persist for

more than three months or exceed 5%, the Company may, in its sole discretion, increase the contract capacity to reflect that load. At any time, the Company may decline to serve the overage if it is necessary to protect system integrity."

Thus, the Company's proposed tariff addresses all of Witness Richter's apparent concerns. It is limited in duration and not perpetual unless the Company has available capacity and agrees to increase the customer's contract capacity, it is up to 5% of the customer's load as proposed by GLREA, and, critically, the Company in its sole discretion may decline to serve any overage if system integrity is at risk. The Company's ability to decline to serve the overage protects against MISO summer capacity concerns and future, and unexplained, concerns regarding solar deployment. The Commission should reject this recommendation.

Q16. Can you summarize the positions of GLREA Witness Richter and AG-NS Witness Havumaki regarding reductions in contract capacity?

A16. Yes. Witness Richter observes what he terms as vague in the existing Rate Schedule D11 language and then proposes either a one-time 10% reduction or that the Commission eliminate the existing D11 language entirely. Witness Richter refers to the following D11 language: "The contract capacity however established shall not be decreased during the term of the contract and subsequent renewal periods as long as service is required unless there is a specific reduction in connected load." (Pg 18)

Witness Havumaki proposes that the tariff explicitly includes language that does not permit a reduction in contract capacity. (Pg 18).

Line
No.

Q17. Does the Company agree with these recommendations?

A17. In part. The Company does not agree with Witness Richter's proposal for a one-time reduction of 10% of contract capacity. The Company will need to ensure available resources and infrastructure to serve the original load and that load should remain the basis of the contract.

The Company believes that Witness Havumaki's proposal is generally reasonable. However, the Company recommends that any additional language be included specifically in the Large Load Provision amendments at issue in this case and that the existing D11 language referenced by Witness Richter remain as-is so as not to alter the characteristics of service for "non-large load provision" customers taking service on D11.

Should the Commission adopt Witness Havumaki's recommendation, the Company proposes the following placement of new language in bold italics below:

"The Company will make reasonable efforts to serve load beyond the negotiated contract capacity to the extent that the excess load does not persist in more than three of twelve months on a rolling basis and does not exceed the contract capacity by more than 5%. Should the Company be able to serve an overage, the customer will be responsible for all incremental costs of accommodating the overage. Should the overage persist for more than three months or exceed 5%, the Company may, in its sole discretion, increase the contract capacity to reflect that load. At any time, the Company may decline to serve the overage if it is necessary to protect system integrity. ***Contract capacity may not be reduced during the term of the contract.***"

Line No.

Credit and collateral

Q18. What Staff and intervenor positions are you responding to related to the proposed changes in credit and collateral terms?

A18. I will respond to the following positions related to credit and collateral terms:

- Recommendation that default collateral options should not include parent guarantees (Staff, AG-NS, ABATE) and adjacent discussion (GLREA).
- Recommendation that the Company bears responsibility for any shortfall in collateral (Staff, AG-NS, GLREA).

Q19. Can you summarize the recommendations of the parties that parent guarantees should not be included in the Large Load Provision as a default collateral option?

A19. Yes. Staff, AG-NS, and ABATE each make similar recommendations on this topic. GLREA remarks on adjacent topics but makes no clear recommendation to the Commission.

Staff Witness Pung recommends that the Commission assert review and approval authority over any collateral less than the applicable termination fee amount and for any use of parent guarantees. He says:

> "Staff recommends that the Company's proposed "sole discretion" language be modified to remove the word "sole" and to include that it is subject to Commission review and approval. Staff also recommends that the forms of acceptable collateral be modified to align with what the Commission approved in U-21859. In its Order dated November 6, 2025, the Commission approved one or both of the following forms of collateral,

Line
No.

1.) a standby irrevocable letter of credit, and 2.) cash. Staff recommends these two forms of collateral also be approved in this case and that the parent guarantee be removed from the tariff language." (Pg 6)

AG-NS Witness Havumaki notes support for the Company's proposal to require collateral equal to the termination fee, and then further recommends any changes to the default collateral or use of parent guarantees be subject to Commission review. He says:

"any modifications to the amount of collateral required should be subject to Commission review on a case-by-case basis" (Pg 15), and

"I recommend that the default forms of collateral be limited to an irrevocable letter of credit and/or cash. I recommend that the Commission exclude parent guarantees from the default set of acceptable collateral forms." (Pg 16)

ABATE Witness Dauphinais describes the Company's proposal as "highly problematic" despite the default requirement for collateral equal to 100% of the termination fee and recommends the Commission:

"Require that DTE's proposed collateral provisions for its Large Load Provision provide the same minimum protections for other customers as it required Consumers to provide in U-21859 by: (i) not allowing DTE to reduce a customer's collateral requirement to less than 50% of the customer's termination fee; and (ii) not permitting the use of parent

guarantees unless DTE seeks and receives approval from the Commission to do so…" (Pg 12)

GLREA Witness Richter describes options the Commission has in his view. The first option he describes is to give the "Company control over the amount and type of collateral accepted and assign the Company full liability if the collateral is insufficient". The second is "require a percentage of the exit fee as collateral in cash or irrevocable letter of credit"…If the Commission chooses this approach, it should increase the collateral amount to 100% of the exit fee. (Pgs 23-24)

Q20. How does the Company respond to these recommendations?

A20. The Company notes that its initial collateral proposal is more stringent than what was approved in Case No. U-21859. That order, and resulting tariff, requires only 50% of the termination fee to be collateralized whereas the Company has proposed, as acknowledged by the parties (with the exception of GLREA), that large load customers be required to provide collateral equal to 100% of the termination fee. The Company had the option to pursue a 50% default collateral requirement and did not as it believes that a default expectation of 100% collateral offers expanded protection to its other customers. Approving Company discretion in determining the amount of the collateral requirement is reasonable.

The Company's proposal for default collateral form is also reasonable and should be approved. The Company's proposal is to assess the appropriate form of collateral, which may include cash or a letter of credit should it be deemed necessary to mitigate credit risk, and not to presuppose a parent guarantee (or any

other form or quantity) as the expected outcome. Whether a parent guarantee is ultimately appropriate, and to what extent, will continue to be determined case-by-case. The Company's proposal should be approved.

Q21. Can you summarize the recommendations of the parties that the Company bears responsibility for any shortfall in collateral?

A21. Yes. Staff and AG-NS address this topic.

Staff Witness Pung recommends an outcome consistent with the Commission's December 18 order in Case No. U-21990. Staff summarizes its position as:

> "Staff recommends for the Large Load Provision that if there is a failure to pay the Minimum Billing Demand, or in the event of a termination, default, or other event whereby DTE Electric is required to draw on the parental guarantee, if the Company determines that the specified collateral is not sufficient to cover the full amount of the remaining financial exposure associated with the customer's contract that the Company bear responsibility for any remaining liability. All risk associated with the sufficiency of the collateral should be borne by the Company" (Pgs 7-8)

AG-NS Witness Havumaki indicates support for the Company being able to determine whether cash or an irrevocable letter of credit is more appropriate (while rejecting parent guarantees as described above). In this context, he proposes a somewhat different perspective than Staff, saying:

> "…in the event of large load customer default where collateral is insufficient and results in the Company incurring stranded asset costs, the

Commission should not permit cost recovery for these stranded assets from other customers" (Pg 16)

Q22. Does the Company agree with these recommendations?

A22. No. The Company does not agree that the foregoing recommendations reflect necessary changes.

The Company acknowledges that Staff's recommendation is contingent on Commission approval of a parent guarantee, however, the Order in Case No. U-21990 and its specific discussion of collateral form, amount, and subsequent assignment of risk is not the correct reference point or basis for a recommendation in this case. When the Commission issued its order in U-21990 (and when the Company made its request in that case) it was in the context of a specific contract with a specific set of terms and considerations – the specific facts and decision do not necessarily apply to a generally applicable tariff. To the extent there is an applicable precedent, it is the Commission's Order in Case No. U-21859. Neither the Commission's order in that case nor the resulting tariff includes any language similar to what Staff proposed on pages 7 and 8 of their direct testimony in this case. The U-21859 order instead says, "If either the default collateral or an approved alternative collateral amount is insufficient in the event of a default and results in Consumers incurring stranded costs, and if Consumers then seeks recovery of the stranded costs, then the Commission will address recovery of those stranded costs at that point in time." (Pg 113).

That approach is appropriate for a generally applicable tariff because it preserves the Commission's ability to evaluate the facts surrounding any future default, including the customer's credit profile, the credit support obtained, the Company's administration of the agreement, mitigation efforts, and the prudence of the Company's decisions. It is both unnecessary and unreasonable for the Commission to preemptively assign the risk of future large customer default in this generic Large Load Provision tariff proceeding—especially considering that the Commission (or a future Commission many years from now) retains its authority to determine the appropriate ratemaking and recovery treatment of any future costs resulting from a customer default, if it occurs. Thus, the Commission should not adopt the recommendations of Staff or AG-NS and should maintain consistency with prior precedent in Case No. U-21859.

Minimum billing demand (MBD) and minimum monthly charges (MMC)

Q23. What intervenor positions are you responding to related to proposed changes in minimum billing demand and minimum monthly charges?

A23. I will respond to the following positions related to MBD and MMC:

- AG-NS Witness Havumaki's recommendation to set the MBD at 90% of contract capacity
- AG-NS Witness Havumaki's recommendations to further modify the MMC to "ensure it recovers sufficient revenue"
- ABATE Witness Dauphinais' recommendation to require the MMC be calculated using full service D11 demand charges in effect at the time

Line
No.

Q24. Can you summarize AG-NS Witness Havumaki's recommendation to set the MBD at 90% of contract capacity?

A24. Yes. Witness Havumaki characterizes his recommendation as a "departure" from the Commission order in Case No. U-21859 and then asserts that "[n]otwithstanding the Commission's decision in the Consumers case, the Company's monthly minimum charge proposal is deficient and risks under-recovering the fixed costs associated with serving large load customers, which could result in cost-shifting." (Pg 17).

The recommendation flows from Witness Havumaki's perspective that "any level under 100% of contract capacity creates some risk of cost shifting" and an observation that two other jurisdictions have set higher minimum billing demands. (Pg 17).

Q25. Does the Company agree with this recommendation?

A25. No. The Company disagrees for two reasons.

- Witness Havumaki acknowledges the prior precedent and while he proposes a change, there is no evidence of how the Commission may have erred in setting MBD at 80% in Case No. U-21859 or what specific risk or exposure a 90% MBD alleviates. In setting the 80% MBD in that case, the Commission said, "Combined with the minimum contract term, the Commission finds that an 80% MBD reasonably balances Consumers' and ratepayers' interests in ensuring sufficient financial support for the necessary investments and large load customers' interests in flexibility and a fair assessment of the risk." The Company notes the subsequent

Commission approval of 80% MBD in Case No. U-21990 as well. Further, the referenced minimum contract term from the U-21859 order is the same one proposed by the Company in this case.

- The Kentucky and Wisconsin decisions are not applicable to Michigan. Witness Havumaki references the MBD decisions from those states but does not discuss why they are applicable to this case or why they should carry greater weight than prior precedent in Michigan. In addition, the Kentucky order appears to have other substantially different requirements, including a collateral requirement of only 24 months of bills, and the Wisconsin decision of 100% MBD only applies to "Transmission Service" and not broadly to all demand charges as Witness Havumaki appears to propose.

The Commission should therefore reject this recommendation.

Q26. Can you summarize AG-NS Witness Havumaki's recommendations to further modify the MMC to "ensure it recovers sufficient revenue"?

A26. Yes. Witness Havumaki broadly proposes to expand the minimum monthly charge to include energy revenues. He says:

> "The Company appears to recover a portion of its fixed costs through energy rates and riders. In separate discovery responses, the Company confirmed that it recovers a portion of its production revenue requirement through energy charges and that it recovers some of its base rate costs through various riders. Yet confusingly, the Company also stated that 'there is no specific assignment of fixed or variable costs to demand or energy charges'

and that "there is no specific assignment of fixed (or variable) costs to these riders." (Pgs 18-19, internal citations omitted).

Witness Havumaki continues with two specific recommendations. First, he says "The Company should clarify the extent to which the costs of production, transmission, and distribution infrastructure are recovered through energy rates and through riders." Then he adds, "It should also modify its minimum monthly charge to ensure that it recovers sufficient revenue from large load customers to fairly defray the costs of serving them and prevent cost-shifting to other customers." (Pg 19).

Q27. How does the Company respond to these recommendations?

A27. The Company assumes Witness Havumaki is referring only to Rate Schedule D11 with the request for clarification as to which costs are recovered through energy rates.[1]

In summary, the Company cannot specifically tie production cost types to recovery method.

In detail, in the cost-of-service process, costs are determined to be either distribution related or production related. All such distribution costs are recovered for Rate Schedule D11 via demand charges or fixed charges. Production costs are split between capacity and non-capacity costs in the cost-of-service process – this split is based on a methodology initially approved in Case No. U-18248 and most recently approved in Case No. U-21860. Broadly speaking, it reflects the implied

[1] Essentially all residential and commercial secondary costs are recovered through energy rates

Line No.

value of the Company's production assets based on relative energy market value. Thus, the split between capacity and non-capacity designations is not directly based on the Company's actual cost structure or underlying assets. In rate design, Rate Schedule D11 capacity costs are recovered via demand charges. Non-capacity costs are recovered through a combination of energy and demand charges. The exact balance of demand and energy charges is determined by the Commission's decision in Case No. U-21297 which prescribes the method for setting the relative share of revenue recovered on a demand basis and on an energy basis.

Notwithstanding the above process, the current base fuel and purchased power expense assumed in rates and calculated on a volumetric basis is 3.368 cents/kWh[2]. The approved Rate Schedule D11 transmission non-capacity energy rates are 3.41 cents/kWh on a weighted basis[3]. Thus, said differently, energy-driven costs are roughly equal to energy-based recovery.

Beyond the lack of any gap between cost causation and cost recovery, Witness Havumaki does not substantiate the concern he raises beyond pointing to a different pending tariff, only saying the MMC should "fairly defray the costs of serving them and prevent cost-shifting to other customers" (Pg 19). Witness Havumaki does not suggest how the Commission should accomplish that beyond generally changing the MMC as described above. The Commission included no energy charges in the minimum monthly charge established in Case No. U-21859 and approved a similar minimum monthly charge, with no energy component, in Case No. U-21990.

[2] See proposed exhibit A-13 Sch C4 in Case No. U-21860 as adjusted for the ordered update to the loss factor

[3] Sales weighted average of U-21860 approved rates, adjusted for transmission discount

The Commission should therefore reject the recommendation to modify the proposed minimum monthly charge.

Q28. Can you summarize ABATE Witness Dauphinais' recommendation to require the MMC be calculated using full service D11 demand charges in effect at the time?

A28. Yes. Witness Dauphinais speculates that a customer could reduce its minimum monthly charge (and therefore the termination fee and collateral requirement) by changing its supply agreement from Rate Schedule D11 to another rate. He explains that a customer may elect to change to retail open access service or decide to take service on another tariff rate. (Pg 21). He therefore recommends:

> "that the Commission require the Large Load Provision to provide that the MMC, the termination fee and the collateral requirement of a Large Load Provision customer shall be calculated using the full service Rate D11 demand charges then in effect, without regard to any subsequent change in the customer's power supply arrangement, unless a change to the calculation for these amounts is explicitly approved by the Commission. In addition, any election by a Large Load Provision customer of an alternative supply arrangement should require the consent of DTE and notice to the Commission."

Q29. How does the Company respond to this recommendation?

A29. The Company shares Witness Dauphinais' interest in ensuring that large load customers are served with appropriate protections for other customers, including maintaining an appropriate MMC. That said, there is no need for the changes

Witness Dauphinais is recommending. The proposed tariff requires customers to take service on D11 and the Large Load Provision. The Availability of Service section of the proposed tariff begins with "The large load customer provisions (LLP) ***are required*** for customers seeking or receiving service for incremental load…" (emphasis added) The Large Load Provisions are within the D11 tariff, and the Provisions effectively require a customer of a certain size to take service on the Provisions, and therefore on Rate Schedule D11. Combined with the minimum contract term of fifteen years, the customer would be tied to their full service Rate Schedule D11 contract for that duration. Any attempt to unilaterally change rates would be considered a termination. Thus, the intent of the recommendation is well founded but the tariff already manages for that concern.

Termination notice and termination fees

Q30. What intervenor positions are you responding to related to termination notices and fees?

A30. I will respond to the following positions related to termination notices and fees:

- AG-NS Witness Havumaki's recommendation that the termination notice for non-renewal and other termination be set at four years
- AG-NS Witness Havumaki's recommendation that the termination fee should be calculated as remaining months multiplied by MMC, inclusive of any extension period

Q31. Can you summarize AG-NS Witness Havumaki's recommendations that the termination notice for non-renewal and other termination be equivalent, and that they be set at four years?

A31. Yes. Witness Havumaki explains that the notice for contract non-renewal (at the end of the term) and the elective early termination notice should be the same and he sees no reason why they should be different. (Pg 20). He recommends they be aligned.

Witness Havumaki then recommends that both should be four years, versus the three years (non-renewal) or two years (elective termination) proposed by the Company. The basis for the four year recommendation is the order in Case No. U-21859.

Q32. Does the Company agree with these recommendations?

A32. In part. The Company has no objection to aligning the two notice terms. However, the three years proposed by the Company is an appropriate length of time for a customer to provide notice. The Company clarifies that regardless of the ultimate notice period and whether or not they are ultimately aligned, the termination fee is separately calculated and is unchanged with changes to the termination notice period.

Q33. Can you summarize AG-NS Witness Havumaki's recommendation that the termination fee should be calculated as remaining months multiplied by MMC, inclusive of any extension period?

A33. Yes. Witness Havumaki describes the Company's proposed termination fee as insufficient and makes this argument in the context of the order in Case No. U-21859. He recommends that the termination fee be calculated as the remaining months multiplied by the minimum monthly charge. Confusingly, he also says "I

support the Company's proposal for a minimum termination fee equal to two years of minimum bills" while characterizing his recommendation. (Pg 21).

Q34. Are there important differences between the Company's proposal and the U-21859 order as it concerns termination fees?

A34. Yes. Noting that Witness Havumaki has proposed adopting the Consumers Energy's termination fee language, the termination fee must be considered in the context of collateral requirements, and not as a wholly standalone matter. Because the collateral requirements are different, changing the termination fee methodology also potentially impacts total collateral.

The Company's proposal, which no party takes issue with, is to require default collateral of 100% of the termination fee. The termination fee itself begins at a minimum of 15 years and gradually decreases to a minimum of two years (unless a more stringent fee is agreed upon by the Company and a customer).

The U-21859 Order requires collateral equal to 50% of the termination fee, and the default termination fee is effectively 15 years given the minimum contract term and the remaining months * MBD construct.

Line
No.

	DTE Proposed	U-21859 Order
Collateral	100%	50%
Termination Fee	Initial 15 years	Remaining months
Minimum Contract Term	15 years	15 years

Assuming a fifteen-year contract for each approach, the termination fee is the same while the Company's default collateral requirements under the Large Load Provision are 100% of the Customer's termination fee. Expanding the termination fee to a remaining months basis would potentially impair the Company's ability to secure contracts longer than 15 years. A hypothetical 20-year DTE contract would require almost three times[4] the collateral of a standard U-21859 contract. This is both unreasonable and, given the total collateral requirements approved in U-21859, unnecessary. The Commission should reject this proposal and adopt the Company's proposed basis for the termination fee.

Administrative Fee

Q35. What Staff and intervenor positions are you responding to related to the Company's proposed administrative fees?

A35. I will respond to the following positions related to the administrative fee:

- Recommendation that the administrative fee be reconciled to actual costs incurred (Staff, AG-NS).

[4] U-21859 collateral basis: 50% of 15 years = 7.5 years of MBD as collateral
DTE collateral with remaining months approach: 100% of 20 years = 20 years MBD as collateral
20/7.5 = 2.7

- ABATE Witness Dauphinais' recommendation that the Company's proposed administrative fee be established as a non-refundable amount with any overage being reconciled to actual study costs that would then be billed to the customer.

Q36. Can you summarize Staff Witness Pung, AG-NS Witness Havumaki, and ABATE Witness Dauphinais' recommendations regarding the administrative fee?

A36. Yes. Staff Witness Pung proposes that Staff has no concern with the amounts and thresholds proposed by the Company but recommends that the fees be reconciled to actual costs. Specifically, he says "Staff recommends that the administrative fee amount charged to the customer be reconciled to actual costs upon completion of all projects associated with serving that customer." (Pg 5)

AG-NS Witness Havumaki similarly proposes a reconciliation of actual incurred costs to the fees paid by the customer. He says "The Company may retain an initial upfront charge, but any amount collected should be trued up to actual cost—with refunds where actual costs are lower and additional payment where they are higher—so that the costs of evaluating prospective large load customers are neither over-recovered from those customers nor shifted to other ratepayers." (Pgs 23-24)

Lastly, ABATE Witness Dauphinais proposes that the fees proposed by the Company become non-refundable while any overage to those fees is reconciled to actual cost. More specifically he "recommend[s] that the Commission require that the administrative fee operate as a non-refundable minimum deposit against the

actual cost of the studies performed, with any cost in excess of the fee billed to the prospective customer." (Pg 23)

Q37. What is the Company's perspective on these proposals?

A37. The purpose of the administrative fee is in part to dissuade highly speculative interest from potential large load customers, as I described in my direct testimony. There, I said "the presence of the administrative fee may dissuade speculative customers from seeking one or more studies upon which they do not intend to act" (Pg 15). The Company appreciates the perspectives of Staff and AG-NS that the Company's other customers are not left with the costs of administering studies or other evaluative work. However, the administrative fee's ability to dissuade speculation is significantly reduced when the costs are subject to downward reconciliation. The Company stands by its initial proposal of a fixed fee approach. However, should the Commission disagree, it should in the alternative adopt ABATE's recommendation to set the proposed fees as non-refundable with any excess costs being the responsibility of the requesting customer.

Cost of Service and Rate Design

Q38. What Staff and intervenor positions are you responding to related to cost of service?

A38. I will respond to the following positions related to cost of service:

- Staff Witness Pung's recommendation that the Company update the six large load cost of service and rate design studies in each subsequent rate case using the projected test year

Line No.

- AG-NS Witness Havumaki's recommendation that incremental costs should be directly assigned to large load customers
- GLREA Witness Richter's recommendation to create a new tariff separate from Rate Schedule D11

Q39. Can you summarize Witness Pung's recommendation that the Company update the six large load cost of service and rate design studies in each subsequent rate case using the projected test year?

A39. Yes. Witness Pung says in summary "Staff is recommending that the Company continue to be required to provide six cost allocation and rate design studies along with all the data necessary to allow recreation of the proposals as ordered by the Commission in Case No. U-21990. However, Staff proposes to modify the six studies to specify that the data used to populate the six studies should be the same data as the Company used to populate its proposed test-year COSS and Rate Design in its currently filed rate case." (Pg 8)

Q40. Does the Company agree with this recommendation?

A40. No, not in this case. The Company understands the purpose of the recommendation but believes this matter is the wrong venue to further explore or modify the six cost of service studies. This is the third active docket in which this topic is now being debated (in addition to DTE Electric's general rate case in Case No. U-22046 and DTE Electric's special contract filing in Case No. U-22058). While no proposals have yet been made in Case No. U-22046, owing to timing of Staff and intervenor testimony, that is where the original studies are filed and where it is most appropriate to debate class cost of service and rate design issues. In the interest of regulatory efficiency, it would be most appropriate to centralize this discussion so

all perspectives and information can be considered, and adding or changing requirements here, without the benefit of resolving the rate case, could potentially confuse the issue later. Moreover, adopting this recommendation would effectively establish additional filing requirements in an otherwise unrelated case.

To the extent the Commission does consider this proposal, the Company has substantial timing concerns with being required to file six alternate cost of service and rate design studies aligned to the rate case projected test year. In the context of developing a rate case, cost of service and rate design are the final items to be completed as they rely on completed capital, O&M costs and revenue requirement. This is one of the reasons the Company did not use the projected test year in development of the six alternative cost of service and rate design studies that the Commission directed the Company to file in the ongoing DTE Electric rate case. However, if the Commission adopts this proposal, the Company strongly recommends the six large load cost of service and rate design studies be filed at least one month after the filing of the subject future rate case.

Q41. Can you summarize AG-NS Witness Havumaki's recommendation that incremental costs should be directly assigned to large load customers?

A41. Yes. Witness Havumaki first describes the six cost of service and rate design studies currently under consideration in Case No. U-22046, saying "DTE presented its evaluation of a set of cost allocation and rate design proposals for large load customers; the specific scenarios evaluated by the Company were established by the Commission in Case No. U-21859. That modeling, if done correctly, should help demonstrate the extent of any cost-shifting from large load customers and identify cost allocation approaches to remedy or prevent cost-shifting." (Pg 24)

He continues, saying "the Commission should directly assign any incremental production, transmission, and distribution costs of serving each new large load customer to that customer, while also requiring large load customers to contribute their fair share of embedded system costs. I anticipate that implementation details for a direct assignment framework will be further developed within DTE's rate case" (Pg 25).

Q42. What is the Company's response to Witness Havumaki?

A42. The Company agrees that the six cost of service and rate design studies are pending in Case No. U-22046 and agrees with Witness Havumaki's apparent acknowledgment that issues of cost allocation and rate design, including the recommendation for direct cost assignment and requirements of "fair share" contributions, are most appropriately dealt with in rate cases. Thus, the Company emphasizes that cost allocation should be handled not in this matter but in a rate case. And large load cost allocation specifically is an active issue in Case No. U-22046 and should remain in that context.

Q43. Can you summarize GLREA Witness Richter's recommendation to create a new tariff separate from D11?

A43. Yes. Witness Richter says "[t]he Commission should order that a new tariff should be created that applies only to enterprise data centers, as defined in MCL 205.54ee(10) (e)(i) through (iii). Terms and conditions added to D11 for large loads in the Company's proposal should instead be applied to the new tariff, which would copy the rates in D11, until they may be changed in a rate case." (Pg 83)

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No.

Q44. Does the Company agree with this recommendation?

A44. No. The Company has two concerns with this recommendation. First, rates and tariffs generally are established on characteristics of electric usage and not on statutory definitions of certain types of end users. Such a determination would be without precedent as far as I know. In addition, the specific statute cited is a tax exemption statute that is not a condition of service with the Company nor required of large loads in Michigan generally. Its applicability in defining electric rates is, at best, limited. The proposed restriction to enterprise data centers is also inconsistent with the end-use neutral structure approved in U-21859. The relevant risks arise from the magnitude, timing, and service characteristics of the load, not solely from the customer's business classification or eligibility for a tax exemption.

Second, to the extent the Commission wishes to consider new or additional tariffs on this topic, a rate case with full information on the various considerations is the correct place to do so. It is outside of the scope of this case, which the Commission defined in its order in Case No. U-21990, saying "DTE Electric Company shall file an application for approval of a generally applicable large load customer tariff that aligns with the findings in the November 6, 2025 order in Case No. U-21859". One of the key elements of the Case No. U-21859 Order is that it applied to Consumers Energy's standard large industrial rate and was not a new or additional rate as suggested by Witness Richter. The Commission should reject this proposal.

Line No.

Future approval of large load contracts

Q45. What intervenor positions are you responding to related to future Commission approval of contracts subject to the proposed tariff?

A45. I will respond to the following positions related to approval of large load contracts by the Commission:

- GLREA Witness Richter's proposal that future power supply agreements should be reviewed by the Commission in a contested case
- ABATE Witness Dauphinais' proposal that all future contracts subject to the terms of the large load provision should be filed for approval with the Commission on an ex parte basis, and AG-NS Witness Havumaki's similar recommendation that the Commission should require the Company to make a filing before each new large load customer commences service

Q46. Can you summarize GLREA Witness Richter's proposal that future power supply agreements should be reviewed by the Commission in a contested case?

A46. Yes. Witness Richter says "…this provision makes no mention of requiring Commission approval of contracts for all new customers. The absence of any such reference could be interpreted as allowing a new large load customer to connect to DTEE's grid without any Commission approval, just as other industrial customers on the D11 tariff may connect without Commission approval." (Pg 27).

He then recommends that all further large load contracts (described by Witness Richter as power supply agreements) should be "…subject to review by the Commission, in a contested case" (Pg 27).

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Q47. Does the Company agree with this recommendation?

A47. No. There is no basis for requiring a contested case each time a customer takes service on an established tariff. Requiring a new contested case for every customer taking service under an approved tariff would substantially diminish the standardization and certainty that the proposed Large Load Provision is intended to establish. This proceeding will determine the generally applicable minimum terms governing qualifying large load customers under Rate Schedule D11. Once those terms are approved, a customer contract that complies with the approved tariff should not require a contested case merely because the customer is subject to the Large Load Provision.

The Commission considered and rejected a similar proposal in Case No. U-21859. Its November 6, 2025 order requires an ex parte filing before each large load customer begins taking service under Consumers' tariff, demonstrating compliance with the approved tariff and that the customer's costs will not be borne by other customers, supported by any relevant modeling or cost-of-service studies. That framework provides customer-specific Commission review without automatically requiring a contested case for every customer taking service under an approved tariff.

Case No. U-21990 further demonstrates that Commission review of large load customer contracts does not inherently require a contested case. There, the Commission conditionally approved customer-specific contracts on an ex parte basis after considering the applicable contracts, customer protections, and supporting information. The Commission should therefore reject Witness Richter's

proposal to require every future large load customer contract to be adjudicated in a contested case.

Q48. Can you summarize the proposals of ABATE Witness Dauphinais and AG-NS Witness Havumaki regarding requirements to file future large contracts for approval with the Commission?

A48. Yes. ABATE Witness Dauphinais broadly summarizes the Commission's November 6, 2025 Order in Case No. U-21859. He then says of the Company's proposed minimum monthly charge and termination fee "they are not based on the actual cost of the incremental production, transmission, and distribution costs DTE will incur to serve Large Load Provision customers" and because of this "they also present a significant cost subsidy risk to the utility's existing customers" (Pg 9). He concludes saying, "Central to these issues is knowing the projected incremental fixed costs that will need to be incurred by the utility to serve each load addition – something that cannot be known for each Large Load Provision customer until DTE actually enters into a proposed contract with that customer" (Pgs 9-10). He continues with two recommendations:

- *Procedural* – "the Commission should require DTE, prior to each new customer subject to the Large Load Provision taking service, to make an ex parte filing in a new docket that demonstrates both compliance with the Large Load Provision tariff requirements approved by the Commission in this proceeding and…", which continues with the substantive commentary.
- *Substantive* – "…that costs caused by the interconnecting customer to be served under the Large Load Provision are not being paid for by other

customers…" and "…DTE should include in its filing any modeling or cost of service studies that support that demonstration." (Pg 10)

Witness Havumaki argues that the proposed large load provisions will not "prevent cost shifting" but that "require[ing] the Company to make a filing before each new large load customer commences service" would "materially reduce the risk to other customers" (Pg 25). Witness Havumaki does not specify whether the recommendation is for a contested filing or an ex parte filing, however, given the references to the order in Case No. U-21859, the Company assumes the recommendation is for an ex parte filing.

Q49. What do you recommend regarding ongoing contract review and approval?

A49. Consistent with the framework established and reaffirmed in Case No. U-21859, the Company does not oppose making an ex parte filing before each customer subject to the Large Load Provision begins taking service. In both of its executed large load contracts, the Company has submitted the proposed large load customer contracts to the Commission for review and approval – Case No. U-21990 was filed on an ex parte basis and the pending request for special contract approval in Case No. U-22058 is a contested matter. Both filings included a presentation from the Company regarding the benefits of the contracts to other customers, the lack of cost imposition on other customers, and the contract protections included for the benefit of the Company's other customers. Therefore, the Company takes no exception to filing future large load contracts (defined by the applicability of this tariff) on an ex parte basis. As a matter of protecting other customers and ensuring no cost shift to other customers, the Company will demonstrate (as it has in its previous large

load filings) the overall benefits of serving the new customer, that the benefits will exceed the costs caused by serving the new customer, and will not be paid by other customers. The Company does not agree that such an ex parte filing should include Witness Dauphinais' proposed requirement for the Company to demonstrate that the "proposed termination fee and collateral amount are sufficient to recover the remaining unrecovered incremental cost". As explained above, the determination of the actual sufficiency or insufficiency of collateral, and any resulting assignment of cost responsibility, is most appropriately addressed at the time of a default, should one occur.

Additional Topics

Q50. What additional Staff and intervenor positions are you responding to?

A50. I will additionally address the following items:

- ABATE Witness Dauphinais' recommendation related to ongoing reporting of customers subject to or potentially subject to the proposed tariff
- AG-NS Witness Havumaki's proposal to eliminate CIAC allowances for large load customers
- GLREA Witness Richter's proposals related to demand response
- ABATE Witness Dauphinais' commentary on the language of the tariff
- Staff Witness Higgins' proposals with respect to the Company's pending emergency procedures docket

Q51. Can you summarize ABATE Witness Dauphinais' recommendation related to ongoing reporting of customers subject to or potentially subject to the proposed tariff?

A51. Yes. Witness Dauphinais recommends the Commission adopt reporting requirements, termed in his testimony as an annual "Large Load Report to the Commission". The recommended requirements are framed in the context of the annual reporting required of Consumers Energy in Case No. U-21859. Witness Dauphinais adds to these proposed requirements "Any instance in which DTE agreed to terms less protective of other customers than the Large Load Provision tariff defaults, and the basis for doing so; Administrative fees assessed as compared to the actual cost of the studies performed" (Pg 14). There is no explanation or support for the additions.

Q52. Does the Company agree with this recommendation?

A52. In part. The Company has no objection to reporting consistent with what was required in Case No. U-21859, subject to any confidentiality considerations that would require the Company to file the report under a protective order or other protection. Similar timing as the Case No. U-21859 Order should apply, with the first such report being filed no more than 12 months from the date the Company enters into a contract with a prospective customer under the Large Load Provision of Rate Schedule D11.

Regarding the proposed reporting provisions added by ABATE:

- The proposed requirement to include deviations from the default terms, particularly those which are "less protective" is moot in light of the Company's willingness to file future large load contracts for Commission approval on an ex parte basis. Any explanation of differences in terms may occur in that proceeding. In addition, the concept of "less protective" is

arguably ambiguous in any event. This proposal therefore should be rejected.

- Administrative fee reconciliation. This is proposed without explanation for its purpose or why it should be further included in annual reporting. It was not included in Case No. U-21859 Order requirements.

Q53. Can you summarize AG-NS Witness Havumaki's proposal to eliminate CIAC allowances for large load customers?

A53. Yes. Witness Havumaki recommends that the Commission approve no CIAC allowances for large load customers. The recommendation is based on an observation that "the record in this proceeding does not support acceptance of the Company's CIAC proposal" and it is "inconsistent with the Consumers case result".

Q54. Does the Company agree with this recommendation?

A54. No. The Commission should reject this recommendation, and adopt the Company's proposal, for two reasons:

- As explained in my direct testimony, the Company's currently approved CIAC policy offers allowances based on the blended revenues of the rate schedule and not on the distribution voltage. The effect of this is that a large customer taking service today, without the Company's proposed change, would be due substantial CIAC allowances. For example, a 500 MW customer on D11 would be offered between $65 million and $285 million in allowances based on their contract duration[5]. The Company's proposal would offer, based on currently approved rates, approximately $11 million

[5] See approved CIAC allowances in Section C6.2(4)(a) of the Company's rate book for Rate Schedule D11

Line No.

of allowances. Thus, the Company's proposal represents a substantial reduction in available allowances while maintaining alignment with the underlying approach to CIAC allowances.

- There is no inconsistency with prior precedent in Case No. U-21859. The record in that case reflects a general debate about what CIAC does and does not cover and where and how customer connection costs are best recovered. There is no discussion of allowances to offset CIAC in the Commission order but for the recitation of the parties' positions. The Company's proposal here is simply to reduce the available allowance – it takes no position on cost allocation and other items addressed under the "CIAC" topic in the Consumers case as those are, as the Commission pointed out, more suitable for a general rate case.

Q55. Can you summarize GLREA Witness Richter's proposals related to "capacity adequacy" and "self power"?

A55. Yes. Witness Richter describes that large load customers (which he refers to as data centers) have the option to build behind the meter generation. He then opines on what large load customers value the most, asserting it is speed to power and on that basis, they should have a preference for behind the meter generation but for its cost. (Pg 64) He then asserts that "when negotiating power supply agreements DTEE has an informational advantage", leading to the following two recommendations. He proposes:

"The Commission should ensure that the customer is aware of their options. This could be done with a directive that Staff hold discussions with prospective data

center customers to ensure the customer is aware of their alternatives. Alternatively, the Commission could have DTEE include language about large load's options for DR, onsite generation with grid standby power (rider 3), or onsite generation with no interconnection to the grid." (Pg 65)

Similarly, Witness Richter also offers a third recommendation:

"The Commission should order that any tariff approved in this case (D11 revisions or a new tariff) include a customer option which specifies that the service is not firm; putting the large load customer into a two-tiered demand response (DR) program".

Q56. Does the Company agree with these recommendations?

A56. No. The first recommendation from Witness Richter is that the Commission, potentially via the Staff, should engage with prospective customers during contract negotiations to "ensure the customer is aware of their alternatives". While the Company's activities related to the provision of electric service are generally regulated, contract negotiations between the Company and a prospective customer are fundamentally a commercial activity. Moreover, Witness Richter describes many examples of large load customers nationally developing their own resource solutions (albeit in states with different regulatory constructs than Michigan) while simultaneously asserting that "data centers much prefer grid power" (Pg 63). It stands to reason, based on Witness Richter's testimony, that prospective large load customers are well aware of their service options and apparently prefer to be served by the utility. The Commission should reject the recommendation that Staff or the

Line No.

Commission itself participate in commercial negotiations between the Company and its customers.

The second recommendation, that the large load provision contain descriptions of DR options or non-interconnected behind the meter generation, is duplicative and unnecessary. The Company's demand response options are both described in its rate book and can be explored during commercial discussions without a tariff describing it. The Company's contract in Case No. U-22058 includes a substantial demand response element, achieved without a tariff requiring its discussion. Rider 3 is available for review by prospective customers and should any part require clarification, the customer may inquire with the Company. And lastly, a customer seeking to develop a site without any grid interconnection is outside of the purview of DTE Electric service and any of its tariffs. Thus, this recommendation should be rejected.

The third recommendation, that customers have an option to take non-firm service, is already available by mutual agreement. In the hours of service on Rate Schedule D11, it says "subject to interruption by agreement" (Sheet No. D-48.01). Customers already have the option to take less than firm service while paying regular rates. Moreover, Witness Richter acknowledges that the proposal is essentially similar to the pending revisions to the Company's emergency procedures in Case No. U-22059. (Pg 69) Given the existing availability of non-firm service, and duplication of the pending emergency procedure revisions, the Commission should reject this recommendation.

Q57. Can you summarize ABATE Witness Dauphinais' commentary on the language of the tariff?

A57. Yes. Witness Dauphinais describes four items he broadly characterizes as "defects and ambiguities" within the tariff Exhibit A-1. The first is described as an incongruity between testimony and Exhibit A-1 with respect to the termination fee and whether 15 years is a minimum or a maximum. He says of the tariff exhibit "If approved as written, it would both bar DTE from negotiating a longer termination fee where the incremental investment warranted one and arguably permit DTE to agree to a termination fee of less than fifteen years of MBD." (Pg 25) He recommends the Commission "require the language in Exhibit A-1 be revised to provide that the applicable termination fee will be not less than fifteen years of MBD plus applicable ramp" (Pg 26).

The second is regarding the definition of the ramp period. Specifically, Witness Dauphinais notes that testimony indicates contract execution as the beginning of the ramp period, while the exhibit indicates initial service as the beginning of the ramp period (Pg 26).

The third is regarding the proposed CIAC terms in the exhibit. Witness Dauphinais identifies that the tariff does not say "annual" ahead of the revenue calculation forming the basis of the proposed CIAC allowance within the tariff.

The fourth is a substantive recommendation and not an "ambiguity". Witness Dauphinais believes the Company's proposed assignment language in the tariff should be expanded because, commenting on the requirement for the Company's

prior written consent to assign the contract capacity, he says "it creates no standard governing that consent". He then recommends the Commission condition consent on the requirement that the assignee assume all contractual obligations of the assignor, and that any assignment be included in the annual report proposed by Witness Dauphinais and described above. (Pg 28)

Q58. What is the Company's response to these observations and recommendations?

A58. Regarding the first recommendation, the Company does not agree with Witness Dauphinais' interpretation that the testimony and the exhibit are inconsistent. While Witness Dauphinais believes the testimony establishes a minimum and the tariff a maximum, the Company interprets them as consistent. The relevant portion of the tariff says "the applicable termination fee will be up to fifteen years of minimum billing demand (plus applicable ramp) as described below…After the ramp period, the termination fee is the greater of the remaining MBD * prevailing demand charges through year fifteen of the post ramp contract term, or two years of MBD * prevailing demand charges". This simply describes the default expectation of a 15-year termination fee basis. However, should the Commission find it appropriate to include clarifying language within the termination fee section of the tariff which says, "The initial termination fee may exceed 15 years of the customer's applicable minimum monthly charges, subject to mutual agreement of the Company and Customer", the Company has no objection.

Regarding the definition of ramp period, the Company clarifies that it begins at the time the contract is fully executed, including any applicable regulatory approvals.

Line No.

Regarding the recommendation to include "annual" ahead of the revenue basis for calculating the CIAC credit, the Company has no objection.

Regarding the assignment language, the Company has no objection to noting any assignments in an annual report, should the Commission order such an annual report. However, the Company does not agree that the assignment provision is deficient or requires additional conditions within the tariff. This recommendation should be rejected.

Q59. Can you summarize Staff Witness Higgins' proposal regarding the pending emergency procedures docket Case No. U-22059?

A59. Yes. Witness Higgins highlights that the Company's pending proposal in Case No. U-22059 includes a reference to the Large Load Provision at issue in this case, and that there is not yet an order in the emergency procedures case. He then makes a contingent recommendation, saying, "If the Commission does not approve the proposed amendment to emergency procedures in MPSC Case No. U-22059, Staff recommends that the Commission require DTE amend the large load provisions of rate D11 to include language to address the Commission's concerns it laid out in the above-referenced U-21990 order." (Pg 4)

Q60. Does the Company agree with this recommendation?

A60. The Company views the emergency procedures docket (Case No. U-22059) as the more appropriate proceeding to discuss these updates, in an effort to keep similar requirements in a similar place. That said, the Company does not have a substantive concern with including similar language in the Large Load Provision in the

alternative if the Commission does not approve the proposed amendments in U-22059.

Q61. Does this conclude your rebuttal testimony?

A61. Yes, it does.

MR. JANISZEWSKI: Thank you, Your Honor. Next, DTE Electric moves to bind into the record the qualifications and rebuttal testimony of Michael J. Witkowski, consisting of a cover sheet followed by 20 pages of questions and answers, and there is no exhibit with Mr. Witkowski's rebuttal testimony, and he did not file any direct testimony.

THE COURT: And nothing confidential?

MR. JANISZEWSKI: Correct.

THE COURT: Great. Okay. Are there any objections to the binding in of the pre-filed rebuttal testimony of Mr. Witkowski? Hearing none, the rebuttal testimony of Mr. Witkowski is bound into the public record and there were no exhibits. Mr. Janiszewski, do you have any additional witness?

(Testimony bound in)

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	)	Case No. U-22061
related relief	)	

REBUTTAL TESTIMONY

OF

MICHAEL J WITKOWSKI

DTE ELECTRIC COMPANY
QUALIFICATIONS AND REBUTTAL TESTIMONY OF MICHAEL J WITKOWSKI

Line No.

Q1. What is your name, business address and by whom you are employed?

A1. My name is Michael J Witkowski. My business address is One Energy Plaza, Detroit, Michigan 48226. I am employed by DTE Electric Company ("DTE Electric" or "Company").

Q2. What is your current position with the Company?

A2. I am the Manager of Large Load Engineering within DTE Electric's Distribution Operations organization.

Q3. On whose behalf are you testifying?

A3. I am testifying on behalf of DTE Electric Company (DTE Electric or Company).

Q4. What is your educational background?

A4. I earned a Bachelor of Science degree in Industrial and Systems Engineering in 2006 and a Master's degree in Business Administration in 2010, both from the University of Michigan, Dearborn.

Q5. What is your work experience?

A5. I began my career with DTE Electric in 2005 as a Distribution Planning and Reliability Engineer, focusing on capacity, voltage, and reliability improvements. In 2013, I became an overhead area leader, supervising daily activities of DTE's overhead linemen at our Ann Arbor Service Center. In 2014, I returned to the Distribution Planning team as an Engineering Supervisor, leading DTE's southwest region. In 2018, I began an assignment as Engineering Supervisor of DTE's Meter Engineering team overseeing equipment calibration, metering and AMI processes.

Line No.

In 2019, I returned to the Planning Engineering leadership role as Manager, and established the Central Distribution Engineering team to oversee the strategic projects for capacity and reliability of the distribution system. This role expanded in 2024 to include the Industrial Power team which supports dedicated substations for DTE's largest customers. In 2025, I transitioned to my current role as Manager of DTE's Large Load Engineering team with a focus on project development for data center (and other large load) customer requests.

Q6. What are your current duties and responsibilities?

A6. In my current position as the Manager of Large Load Engineering, my responsibilities include the oversight of:

1. System reviews of customer requests for large load electric services including analysis of current and future system conditions.
2. Feasibility Study process for large load customers including collaboration with DTE's electric engineering and resource planning teams as well as ITC's engineering team.
3. Development of method of service responses for customer requests along with resulting scope, cost and schedule reviews in partnership with Project Management Organization.
4. Development of operating parameters for large load customers.

Q7. Have you previously sponsored testimony before the Michigan Public Service Commission?

A7. No, I have not.

Line No.

Q8. Did you file direct testimony in this proceeding on behalf of DTE Electric Company (DTE Electric or Company)?

A8. No.

Purpose of Testimony

Q9. What is the purpose of your rebuttal testimony?

A9. The purpose of my rebuttal testimony is to respond to operational and reliability-related recommendations made by Clean Energy Organizations (CEO) Witness Lee Shaver and Great Lakes Renewable Energy Association (GLREA) Witness John Richter. In particular, I address proposals that recommend the Commission expand this Rate D11 tariff proceeding to prescribe detailed technical reliability requirements, require public or case-by-case disclosure of customer-specific studies and operating parameters, mandate application of future reliability standards before the applicability and implementation provisions of those standards are known, or create a separate Commission-administered technical oversight process for future large load interconnections.

I also explain how DTE Electric evaluates and manages customer-specific reliability impacts through technical studies, binding operating parameters, coordination with International Transmission Company (ITC), participation in applicable Midcontinent Independent System Operator, Inc. (MISO) Large Load Working Groups, and compliance with applicable North American Electric Reliability Corporation (NERC), Federal Energy Regulatory Commission (FERC), MISO, and other enforceable requirements as they become effective.

Line No.

Q10. Are you sponsoring any exhibits in this proceeding?

A10. No. However, I am incorporating by reference Confidential Exhibit CEO-6, sponsored by CEO Witness Lee Shaver, which is DTE Electric's response to CEODE-3.1 providing the Company's Confidential Large Load Facility Initial Operating Parameters ("Operating Parameters"). The Company's Operating Parameters document will apply to all new large load customer interconnections that request electric service under the Company's Large Load Provision amendments to Rate Schedule D11, as presented for Commission approval in this proceeding. The Company's Operating Parameters document contains non-public, proprietary, commercially sensitive, and potentially security sensitive information, and was appropriately filed by CEO under seal pursuant to the protective order issued August 4, 2026 in this proceeding.

Scope of Reliability Issues Raised in This Tariff Proceeding

Q11. Do you have any general observations regarding the testimony and recommendations presented in this tariff proceeding regarding DTE Electric's current approach to addressing the reliability characteristics of large load customers?

A11. CEO and GLREA both argue that the reliability risks of serving new data center and other large load customers support the Commission imposing an array of new filing requirements and other reliability-related directives on the Company in this proceeding. Witness Shaver alleges that DTE Electric appears to be taking a "wait and see" approach to planning to reliably interconnect new large load customers because the Company stated that it will revise its operating protocols as needed to remain consistent with applicable NERC or MISO requirements as those

Line
No.

requirements are revised. (CEO Shaver Direct, p. 24). GLREA Witness Richter highlights potential risks to the reliable operation of the grid associated with serving new data center loads and questions whether DTE Electric is appropriately planning for and managing these risks. (GLREA Richter Direct, pp. 27-52, 82-83)

As the Company's Manager of Large Load Engineering who works on these issues daily, I disagree with the assertions by Witness Shaver and Witness Richter that DTE Electric is not being proactive in managing these risks. As I explain further below, DTE Electric has proactively developed a customer-specific Operating Parameters framework and prescribed required operating requirements for two large load customers, and coordinates regularly with ITC on technical studies and operating requirements. DTE Electric is also actively engaging with ITC and MISO regarding how to reliably interconnect and serve these new large load customers.

The Company also disagrees with CEO and GLREA that action by the Commission in this tariff proceeding is needed to oversee the Company's technical reviews and interconnection process for large load customers. The Company does not believe this tariff proceeding is the proper mechanism to prescribe broad bulk power system technical standards, to require public disclosure of customer-specific technical studies, or to anticipate the outcome of ongoing regional and national reliability-standard development.

Line No.

Q12. Why should the Commission distinguish between evaluating the reasonableness of the proposed Large Load Provision for inclusion in the retail D11 tariff and independently prescribing bulk power system technical requirements?

A12. As Company Witness Willis explains, this proceeding concerns DTE Electric's proposed generally applicable Large Load Provision under Rate D11. The Company recognizes that the Commission may consider whether the proposed tariff reasonably protects the reliability of the system for all customers. However, the specific technical and operating requirements that will apply to an individual large-load customer depend on the detailed, customer-specific reliability studies, the service configuration, the point of interconnection, the customer's equipment and operating characteristics, transmission-system conditions, and requirements established through the MISO, NERC and other relevant reliability and transmission processes that are ongoing. Fixed technical values should not be selected in this proceeding without the information and analyses necessary to determine whether those values are appropriate for the facilities to which they would apply.

Accordingly, the Commission should evaluate the proposed Large Load Provision modifications to Rate Schedule D11 without using this record to prescribe fixed technical standards or to impose new reporting requirements or a separate technical compliance process that would duplicate or potentially conflict with customer-specific studies that DTE Electric develops in coordination with ITC as the transmission-owner. Further, the ongoing regional, and federal reliability standard development processes are the appropriate forums to establish new technical and

Line No.

reliability standards that the Company will apply to continue to safely and reliably integrate large load customers. Recommendations that duplicate or would cause the Company to deviate from these processes should be rejected.

CEO Recommendation to Establish Generally Applicable Interconnection Requirements

Q13. CEO Witness Shaver states that his "main concern" regarding how DTE Electric is handling the reliability impacts of large loads is an alleged "lack of generally applicable requirements," which he suggests results in a lack of transparency regarding individual customers' requirements. (CEO Shaver Direct, p. 26) Is this a reasonable concern based on DTE Electric's approach to studying large load interconnections?

A13. No. The Company has developed a customer- and site-specific study process for assessing the impacts of large load customers on the grid. Witness Shaver even acknowledges at page 26 of his testimony that the Company "follow[s] a detailed process for developing requirements for individual customers, based on various studies coordinated with ITC and MISO, and codified in the operating agreements with each customer" seeking to interconnect and take service from the Company.

Q14. Can you describe in more detail the site-specific study process DTE Electric uses today to assess the potential reliability risks associated with large load customers?

A14. Yes. DTE Electric evaluates reliability impacts through site-specific technical reviews and engineering studies that address power factor, load ramping, oscillations, voltage and frequency ride-through, harmonics, load shedding,

telemetry, modeling, and other operating requirements. DTE Electric coordinates with ITC on studies necessary to evaluate reliable interconnection requirements in accordance with applicable planning criteria established by the transmission network system operators such as ITC and MISO. The results of those studies inform the customer-specific Operating Parameters, which must be completed before initial energization of the customer's facility.

Q15. Can you describe the Operating Parameters framework that large load customers will be subject to if they request service under the Large Load provision?

A15. Yes, all transmission voltage-connected large load customers seeking service under the Large Load Provision of Rate Schedule D11 would be subject to the Company's Operating Parameters framework, similar to the framework developed for the customer in Case No. U-22058. Once the technical reviews and reliability studies are completed, the study results are then incorporated into an Operating Parameters document as part of the customer's power supply agreement or line extension agreement, as applicable. These service agreements allow the Company to ensure reliable operations and, if needed, to take appropriate action under Commission rules and the service agreements if a customer's operations deviate from prescribed operating requirements.

These customer-specific Operating Parameters are developed based on the customer's facility design, load characteristics, point of interconnection, system topology, ITC/MISO coordination, applicable IEEE standards, and study results, rather than through one-size-fits-all reliability requirements. The Operating Parameters framework identifies categories such as power factor, load ramping,

Line No.

load block oscillations, ride-through, harmonics, under-frequency load shed, manual load shed, and other operating parameters, with the study scope aligned to those categories. The applicable limits and implementation requirements are then determined through the studies for the individual customer's project proposing to interconnect and take service from the Company.

Q16. Does the Company's current technical review process for performing customer-specific studies and establishing binding Operating Parameters reasonably address Witness Shaver's concerns at page 26 about setting generally applicable reliability standards?

A16. Yes. DTE Electric's Operating Parameters framework provides a common starting point by identifying the technical subjects to be addressed for each applicable large load customer, while the customer-specific studies determine the limits and requirements necessary for the individual large load customer interconnection. A separate process to develop suggested minimum interconnection requirements is therefore unnecessary as an outcome of this proceeding. Further, due to site-specific limitations, customer equipment, loading profiles, and operating characteristics, individual sites must each be studied, which may result in different requirements needed to ensure grid reliability.

Q17. Is DTE Electric waiting for NERC or MISO to act before addressing reliability risks and establishing operating requirements associated with interconnecting new large load customers?

A17. No. CEO Witness Shaver characterizes DTE Electric as appearing to take a "wait and see" approach (Shaver Direct Testimony, page 24). This is not accurate. DTE

Line No.

Electric has already developed a detailed customer-specific Operating Parameters framework and is finalizing the required operating parameters for two large load customers in coordination with ITC on technical studies and operating requirements.

The Company also continues to participate in the MISO Large Load Working Group (LLWG). DTE Electric actively participates in the MISO LLWG by attending sessions, reviewing documentation, and providing feedback to MISO. For example, MISO's proposed reliability requirement categories recently presented to stakeholders on June 29, 2026, identify many of the same subjects as DTE Electric's current Operating Parameters framework, including ramp limits, ride-through, and stability assessments.[1] Establishing an Operating Parameters framework prior to the pending MISO proposals going into effect demonstrates DTE Electric's proactive approach to addressing potential reliability risk rather than postponing action until those proposals are final.

Q18. Witness Shaver points to MISO's proposed implementation timeline for new MISO and federal reliability requirements as a "key shortcoming" as they are not expected to be finalized and become effective until December 2026 creating a "gap" in their implementation. (CEO Shaver Direct, p. 20) Is DTE Electric ignoring or not taking into account developing NERC and MISO requirements because they are not yet final?

[1] MISO, "Large Load Interconnection Reliability Requirements," Slide 6, June 29, 2026, https://cdn.misoenergy.org/20260629%20LLWG%20Item%2007%20Large%20Load%20Interconnection%20Reliability%20Requirements%20(LLWG-2026-3)765705.pdf

Line No.

A18. No. DTE Electric is actively monitoring and participating in relevant NERC, MISO, and industry processes and will comply with applicable requirements once effective. As I mentioned earlier, DTE Electric is actively participating in the MISO LLWG and monitors relevant NERC and industry developments. DTE Electric intends to comply with applicable MISO requirements once effective, and will apply final requirements to new large load customer interconnections to the extent those requirements are applicable.

DTE Electric will revise its operating protocols, operational modeling, forecasting, and related capabilities as needed to comply with applicable NERC or MISO standards as they are revised and approved. Recognizing that MISO's new large load tariff and associated business practice manuals applicable to large load interconnections are anticipated to be completed by December 2026, it would be duplicative and unnecessary for the Commission to initiate a new reliability oversight process or impose additional filing requirements based on proposals that are not yet final in this proceeding.

CEO Recommendation for Reliability Study and Operating Parameter Compliance Filing

Q19. Can you summarize CEO Witness Shaver's recommendations for the Commission to impose reliability-related compliance requirements as part of this tariff proceeding?

A19. Yes. Witness Shaver recommends that the Commission require DTE Electric to provide detailed minimum interconnection requirements, draft operating parameters, and sample study reports to the Commission. He further recommends

Line No.

that DTE Electric file with the Commission customer-specific study results and operating parameters when it seeks to serve new large load customers and that DTE Electric later demonstrate compliance with NERC and MISO requirements, including possible retroactive application of future requirements to existing, planned, or under-construction large loads. (CEO Shaver Direct, pp. 4-5, 31-32).

Q20. Does the Company agree that the Commission should require DTE Electric to file detailed technical standards and sample studies in this tariff docket?

A20. No. The appropriate operating parameters for a large load customer depend on that customer's specific facility design, electrical configuration, point of interconnection, load characteristics, protection settings, ramping characteristics, backup systems, onsite generation, system location, nearby transmission conditions, and study results. A generic tariff provision is not the correct procedural or engineering mechanism to determine those requirements.

The materials relied upon by Witness Shaver recognize that large load risks vary based on both load characteristics and local system conditions. For example, NERC's Large Loads Task Force White Paper presented by Witness Shaver as Exhibit CEO-2 identifies (starting at page 13) a large load's peak demand, ramp rate, voltage sensitivity, load predictability, internal segmentation, power-electronics load, and modeling accuracy as characteristics that affect reliability risks. To the extent the Commission is interested in reviewing generic documents related to the large load technical review process, CEO Witness Shaver has also already submitted the Company's Operating Parameters framework as Confidential Exhibit CEO-6, which provides the Commission with evidence of DTE Electric's

framework for large load customer interconnection requirements to ensure grid reliability.

Q21. Witness Shaver also recommends DTE Electric be required to file finalized operating parameters and study results in future dockets where the Company seeks to serve a new large load customer under the Large Load Provision tariff along with a "detailed explanation of how the chosen parameters adequately address the reliability risks of that customer." (CEO Shaver Direct, p. 31) Should the Commission require filing and disclosure of customer-specific studies and operating parameters?

A21. No. The Company does not believe this recommendation is necessary or appropriate. Witness Shaver recognizes that the materials may be sensitive and recommends that Commission Staff be given the resources to review them confidentially. (CEO Shaver Direct, pp. 31-32.) The Company's concern therefore is not limited to public disclosure. The proposed filing requirement would create a separate Commission review process for customer-specific engineering determinations without identifying a deficiency in the existing technical process or an objective standard the Commission would apply in determining whether each set of parameters "adequately addresses" reliability. The applicable requirements are developed through technical studies and coordination among DTE Electric, the customer, ITC, and, as applicable, MISO, and are made binding through the customer's service arrangements before energization.

Filing customer-specific technical studies and operating parameters (or even providing a "detailed explanation" of such parameters as Witness Shaver

recommends) can also reveal sensitive information about the electric grid, including system constraints, contingency performance, protection and control assumptions, operating limitations, customer facility configuration, and mitigation measures. Public disclosure of such information could undermine grid security, expose commercially sensitive customer information, or disclose information that may constitute Critical Energy Infrastructure Information (CEII) or otherwise warrant confidential treatment. Operating parameters are appropriately established between DTE Electric and the customer, developed in partnership with ITC and with MISO's participation or awareness as applicable.

The absence of a routine filing requirement does not mean that the process lacks accountability. DTE Electric remains responsible for reliable service, must comply with applicable tariffs and enforceable reliability requirements, coordinates with ITC and MISO as applicable, and establishes binding customer-specific requirements before energization. The Commission also retains its existing authority to request information when warranted in a particular matter.

Incorporating Future MISO and NERC Reliability Requirements in Large Load Customer Operating Parameters

Q22. Should the Commission in this proceeding predetermine the application of future reliability requirements to existing, planned, or under-construction facilities, as suggested by Witness Shaver at page 32?

A22. No. Future NERC, FERC, or MISO requirements may establish their own applicability thresholds, effective dates, transition provisions, and compliance schedules and DTE Electric will incorporate these new requirements, as

Line No.

appropriate. DTE Electric will evaluate the final MISO and NERC reliability requirements applicable to the Company and determine what changes, if any, are required or otherwise appropriate for its operating protocols and customer-specific Operating Parameters. It would be premature in this tariff proceeding to prescribe the application of requirements that are not yet final, particularly where the appropriate requirements may depend on a facility's design, construction status, or operating characteristics.

Response to GLREA Reliability-Related Recommendations

Q23. What reliability-related positions of GLREA Witness Richter are you responding to?

A23. Witness Richter raises concerns regarding data center load volatility, simultaneous UPS transfers, harmonics, ramp rates, power-quality monitoring, demand response, onsite generation, and non-firm service. He recommends tariff provisions addressing ramp-rate limits, monitoring equipment, customer options for demand response and onsite generation, and for the Commission to direct a Staff study group regarding UPS ride-through issues. (GLREA Richter Direct, pp. 27-52 and 83-85).

Q24. Does DTE Electric's current study process and Operating Parameters process address the ramp rates, UPS transfers, harmonics, and power quality raised by GLREA Witness Richter as relevant operational considerations for large load customers?

A24. Yes. Those subjects will be evaluated through technical studies and addressed in customer-specific Operating Parameters. Witness Richter recommends tariff

provisions addressing ramp rates and monitoring equipment, including monitoring for harmonic and other power-quality issues. (GLREA Richter Direct, pp. 37, 51-52). DTE Electric agrees that these are appropriate subjects for technical review and customer requirements, but disagrees that those topics should be addressed by generic one-size fits all requirements codified in a Commission-approved retail tariff as proposed by Witness Richter. As introduced above, DTE Electric has developed a framework of Operating Parameters for all large load customers that includes ride-through requirements for voltage and frequency conditions, and the Company will comply with new ride-through or other requirements established by an applicable regulatory body such as MISO or NERC. The Operating Parameters framework also establishes requirements for customer power factor, load ramping, load block oscillations, ride-through, harmonics, under-frequency load shed (UFLS), manual load shed (MLS), and other operating parameters. Including these requirements in the Company's Operating Parameters framework demonstrates that DTE Electric is appropriately addressing these issues.

Q25. How does DTE Electric respond to GLREA Witness Richter's recommendation that the Commission should direct DTE Electric to install power-quality monitoring equipment (at the customer expense) to measure potential power quality issues caused by a data center customer (GLREA Richter Direct pp. 51-52)?

A25. DTE Electric already measures and monitors relevant power-quality information and is developing enhanced active monitoring for large load customers through the Operating-Parameters process that will address power quality issues such as harmonics. DTE Electric records power factor information as part of the standard

billing process and an active monitoring process for large load customers will be established to ensure compliance with the minimum power factor requirements in each customer's final Operating Parameters agreement. In summary, DTE Electric has existing measurement capabilities and is developing large-load-specific monitoring through customer-specific operating parameters, as a result of these steps by the Company, GLREA's power factor and power quality concerns are already being addressed and no further direction from the Commission is needed. DTE Electric also confirms that the cost of installing metering and power quality monitoring equipment is charged to the large load customer.

Q26. Should the Commission direct the Large Load Provision in Rate Schedule D11 to include ramp-rate limits as recommended by Witness Richter at page 37?

A26. No. Appropriate ramp-rate limits should be determined on a site-specific basis, informed by system studies, customer operating characteristics, applicable MISO requirements, and coordination with ITC. Operational load ramp limits for both normal operations and abnormal or post-disturbance operations will be determined on a site-specific basis, with alignment to MISO reliability requirements. To the extent Witness Richter suggests that ramp-rate requirements may be addressed in "other agreements," DTE Electric is developing Operating Parameters for each large load customer, including permissible ramp rates for load up and down during the starting and stopping of computational load, as well as ramp-rate limitations for computational load oscillations. Each new transmission voltage-connected large load customer subject to the Large Load Provision will be required to comply with the customer-specific ramp-rate requirements established through this process.

Line No.

Q27. Should the D11 tariff Large Load Provision be modified to expressly require monitoring equipment for ramp limits and to prescribe power-quality requirements as suggested by Witness Richter at pages 37 and 52 of his testimony?

A27. No, including these detailed technical requirements in a generic retail tariff applicable to all large load customers is not necessary and would inhibit the Company's flexibility to establish appropriate customer-specific requirements. Monitoring and telemetry requirements will be established, as applicable, for a particular customer depending on the project and study results, or as required by applicable final MISO requirements. Real-time and disturbance-recording requirements are under development and may include SCADA, utility meters/recorders, phasor measurement units (PMU), digital fault recorders (DFR) or equivalent high-resolution monitoring, and customer-provided data. Subject to design changes, any recording equipment deemed necessary would be designed on the utility side of the point of interconnection.

Q28. Should the Commission order Staff to create a separate study group regarding UPS ride-through issues in this proceeding, as Witness Richter recommends at pages 44 and 85 of his testimony?

A28. No. While DTE Electric agrees that ride-through behavior is an important technical subject for large computational loads, NERC, MISO, and other industry bodies are already actively addressing large load ride-through, modeling, telemetry, and operating requirements. DTE Electric and ITC are already participating in the MISO process. DTE Electric is also addressing ride-through for large load customers through its large load customer study process and Operating Parameter

framework. The Operating Parameters framework explicitly includes ride-through requirements for voltage and frequency conditions including low/high voltage ride through (LVRT/HVRT) and frequency ride-through curves/tables, with customer protective relay settings required, as applicable, to coordinate with minimum ride-through requirements. The customer will be required under its final Operating Parameters and applicable agreements to provide data and demonstrate capability through design information, relay/protection settings, models, testing, and post-energization validation as applicable. Therefore, directing Staff to establish a new, separate study group to consider this topic is unnecessary and would duplicate existing industry processes and DTE Electric's customer-specific technical review.

Recommended Commission Action in Response to CEO and GLREA Reliability Recommendations

Q29. How do you recommend the Commission address the reliability recommendations offered by CEO Witness Shaver and GLREA Witness Richter?

A29. I recommend that the Commission reject CEO's and GLREA's recommendations that would impose new technical and operational requirements and study processes and convert this Rate Schedule D11 tariff proceeding into a generic reliability standards proceeding. The Commission should evaluate the proposed Large Load Provision without using this record to establish fixed technical standards or to impose new reporting requirements or a separate technical compliance process that would duplicate or potentially conflict with customer-specific studies that DTE Electric develops in coordination with ITC as the transmission-owner. The Company has demonstrated in this proceeding that it uses a common Operating

Line No.

Parameters framework, performs customer- and site-specific engineering studies, coordinates with ITC and MISO as applicable, and establishes binding customer-specific operating requirements before energization.

I recommend that the Commission recognize that DTE Electric's study-driven, customer-specific Operating Parameters process is the appropriate engineering mechanism for identifying and implementing reliability requirements for large load customers. DTE Electric will continue to coordinate with ITC, participate in applicable MISO and industry processes, and comply with applicable NERC, FERC, MISO, and other enforceable requirements as they become effective.

Q30. Does this conclude your rebuttal testimony?

A30. Yes, it does.

MR. JANISZEWSKI: No, Your Honor. The company rests its case.

THE COURT: Thank you. ABATE? Mr. Campbell?

MR. CAMPBELL: Thank you, Your Honor. At this time I move to bind into the record the pre-filed direct and rebuttal testimony of ABATE witness James Dauphinais, and for admission of his associated exhibits. Mr. Dauphinais's pre-filed direct testimony consists of a cover page, a table of contents, 29 pages of questions and answers, and an Exhibit A setting out his qualifications. And along with his pre-filed direct testimony, Mr. Dauphinais has sponsored Exhibits AB-1, AB-2, and AB-3. Mr. Dauphinais's pre-filed rebuttal testimony consists of a cover page, a table of contents, and 13 pages of questions and answers. Also, pursuant to stipulation or non-objection of the parties, I move for admission of Exhibit AB-4, which consists of certain discovery response from DTE and exhibit AB-4 was previously circulated to the parties and uploaded to the SharePoint site for this case.

THE COURT: Thank you, is there anything confidential in Mr. Dauphinais's testimony or exhibits?

MR. CAMPBELL: No, Your Honor.

THE COURT: Are there any objections to the binding in of the pre-filed direct and rebuttal testimony of Mr. Dauphinais? Hearing none, the direct and rebuttal testimony of Mr. Dauphinais is bound into the public record. Are there any objections to the admission of Exhibits AB-1, AB-2, AB-3, or AB-4? Hearing none, Exhibits AB-1 through 4 are admitted into evidence. Anything else for ABATE, Mr. Campbell?

(Exhibits AB-1 through AB-4 admitted)

(Testimony bound in)

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**

Direct Testimony and Exhibits of

James R. Dauphinais

On behalf of

Association of Businesses Advocating Tariff Equity

August 4, 2026

BRUBAKER & ASSOCIATES, INC.

Project 12053

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**

Table of Contents for the Direct Testimony and Exhibits of James R. Dauphinais

I. INTRODUCTION 1

II. COMMISSION REVIEW OF INDIVIDUAL CONTRACTS 7

III. COLLATERAL PROVISIONS 10

IV. ANNUAL REPORTING 12

V. RATE D11 OR SEPARATE TARIFF RATE 14

VI. APPLICABILITY OF LARGE LOAD PROVISION 16

VII. TERMS THAT DO NOT ENSURE COSTS ARE BORNE BY THE CAUSING CUSTOMER 20

VIII. DEFECTS AND AMBIGUITIES IN EXHIBIT A-1 25

Appendix A: Qualifications of James R. Dauphinais

Exhibit AB-1: Referenced DTE Responses to Discovery Requests

Exhibit AB-2: NERC Large Loads Action Plan Q2 2026 Update, July 2026

Exhibit AB-3: Ratepayer Protection Act (Amendment in the Nature of a Substitute to H.R. 9340)

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**

Direct Testimony of James R. Dauphinais

I. INTRODUCTION

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A James R. Dauphinais. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a consultant in the field of public utility regulation and a Managing Principal with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to my testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A I am appearing on behalf of the Association of Businesses Advocating Tariff Equity ("ABATE"). ABATE consists of large usage customers that purchase substantial amounts of electric power and/or delivery service from DTE Electric

Company ("DTE" or the "Company"). They primarily take service under DTE Rate D8, Rate D11, Rider 3 and/or Rider 10.

Q HAVE YOU PRESENTED TESTIMONY IN PRIOR ELECTRIC REGULATORY PROCEEDINGS BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION ("COMMISSION")?

A Yes. Over my 29 years of employment by BAI, I have provided testimony to the Commission on several occasions regarding issues that include electric rate design, class cost of service, Power Supply Cost Recovery ("PSCR"), standby service rates, resource planning, transmission planning and transmission line routing. In recent years this has included providing testimony in the most recent general rate cases of Consumers Energy Company ("Consumers") (Case Nos. U-20963, U-21224, U-21389, U-21585 and U-21870), DTE (Case Nos. U-18014, U-18255, U-20162, U-20561, U-20836, U-21297, U-21534 and U-21860) and Indiana Michigan Power Company (Case Nos. U-18370, U-20359 and U-21461), as well as in the original Section 6w State Reliability Mechanism ("SRM") Capacity Charge proceedings of Consumers (Case No. U-18239) and DTE (Case No. U-18248). I also provided testimony in the 2020 PSCR Reconciliation cases of Consumers (Case No. U-20526) and DTE (Case No. U-20528), as well as the most recent Integrated Resource Plan ("IRP") proceedings of Consumers (Case No. U-21090), DTE (Case No. U-21193) and Indiana Michigan Power Company (Case No. U-21189). Additionally, I provided testimony in the large load addition tariff amendment cases of Consumers (Case No. U-21859) and Indiana Michigan Power Company (Case No. U-21986). Most recently, I provided testimony in the DTE Google data center load special contracts proceeding (Case No. U-22058).

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A I address DTE's March 18, 2026 proposal in this proceeding to amend Rate D11 of its tariff in order to comply with the Commission's December 18, 2025 order in Case No. U-21990 which, in part, required DTE to "file an application for approval of a generally applicable large load tariff that aligns with the findings in the November 6, 2025 order in Case No. U-21859."[1] DTE's proposal would amend DTE Rate D11 to include a new "Large Load Provision" that would be applicable to all incremental load that is either: (i) greater than 100 MW at a single site, or (ii) greater than 100 MW across multiple sites in DTE's service territory, with an average site size of greater than 20 MW, which will begin taking service within five years.[2]

My silence with respect to any position taken by DTE in its application or direct testimony in this proceeding should not be interpreted as an endorsement of that position.

Q PLEASE SUMMARIZE YOUR CONCLUSIONS IN THIS PROCEEDING.

A While DTE's filed proposal provides superior protections for DTE's other customers relative to what the Commission required of Consumers in the Commission's November 6, 2025 order in Case No. U-21859 in several areas,[3] DTE's proposal falls short of what the Commission required of Consumers in Case No. U-21859 with respect

[1] Case No. U-21990, December 18, 2025 order at 45.
[2] Exhibit A-1 at 4.
[3] Examples of superior protections for DTE's other customers include what DTE has proposed with respect to the maximum ramp up length (3 years), requiring a termination fee floor (24 months of minimum billing demand multiplied by prevailing demand charges), not permitting a reduction in Contracted Capacity, and reducing DTE's Contribution in Aid of Construction ("CIAC") allowance for Large Load Provision customers to be no more than two times their annual distribution revenue. Note, however, that while DTE Witness Willis describes this allowance as two times expected annual distribution revenue, Exhibit A-1 omits the word "annual," a discrepancy I address in Section VIII of my testimony. *See* Exhibit A-1 at 4-6 and DTE Response to Data Requests AGDE-1.5h, NRDCSCDE-1.12 and STDE-2.3. A copy of all data request responses cited to in this testimony can be found in Exhibit AB-1 in alphanumeric order.

to: (i) Commission review of individual Large Load Provision customer contracts and (ii) collateral requirements. Furthermore, DTE has not proposed annual reporting on the Large Load Provision comparable to that proposed by Consumers, and ordered by the Commission, in Case No. U-21859.[4]

Also, while DTE, consistent with the Commission's November 6, 2025 order in Case No. U-21859, has structured its proposed Large Load Provision to serve the affected customers under DTE's standard large Commercial and Industrial ("C&I") rate, Rate D11, new facts in DTE's current rate proceeding in Case No. U-22046 may lead to the Commission concluding that the customers subject to the Large Load Provision should be placed in their own separate rate class or rate classes, rather into the D11 rate class. Furthermore, while DTE has proposed an applicability provision comparable to that which the Commission ordered for Consumers in Case No. U-21859, as further experience is gained with respect to large load additions, it will likely become clearer which specific types and sizes of customers should be subject to the Large Load Provision. These types and sizes could potentially just include computational loads or involve different MW applicability thresholds for computational load versus traditional manufacturing load.

Finally, several terms of DTE's proposed Large Load Provision do not ensure that the costs caused by a Large Load Provision customer will be borne by that customer. The minimum monthly charge, the termination fee and the required collateral are each derived from the prevailing Rate D11 demand charges, which are charges based on the average embedded cost to serve DTE's customers as a whole rather than a measure of the incremental cost DTE will incur to serve a new large load addition. The proposed Large Load Provision provided in Exhibit A-1 is also

[4] Case No. U-21859, November 6, 2025 Order at 120-121.

inconsistent with the direct testimony of DTE Witness Aaron Willis in several respects and contains ambiguities that should be corrected before DTE's proposed Large Load Provision is approved. I address these matters in Sections VII and VIII of my testimony.

Q PLEASE SUMMARIZE YOUR RECOMMENDATIONS TO THE COMMISSION.

A As explained in detail in my testimony herein and for the reasons summarized above, I recommend that the Commission:

- Require DTE, prior to each new customer subject to the Large Load Provision taking service, to make an *ex parte* filing in a new docket that demonstrates both compliance with the Large Load Provision tariff requirements approved by the Commission in this proceeding, and that costs caused by the interconnecting customer to be served under the Large Load Provision are not being paid for by other customers. In making the demonstration, DTE should include in its filing any modeling or cost of service studies that support that demonstration.

- Require DTE's proposed collateral provisions for its Large Load Provision to provide the same minimum protections for other customers as it required of Consumers in Case No. U-21859 by: (i) not allowing DTE to reduce the collateral requirement of a customer to less than 50% of the customer's termination fee; and (ii) not permitting the use of parent guarantees unless DTE seeks and receives approval from the Commission to do so.

- Require DTE, to the extent it proposes a collateral amount less than 50% of a new Large Load Provision customer's termination fee and/or proposes to allow the customer to use a parent guarantee, to include this information in its *ex parte* filing for service to that customer and demonstrate the reasonableness and prudence of the alternative collateral provisions.

- Require DTE to file an annual Large Load Report to the Commission identifying:
  - The number of Large Load Provision administrative fees assessed;
  - The number of Large Load Provision executed contract agreements;
  - Aggregate Large Load Provision MWs in service;
  - Aggregate Large Load Provision MWhs in service;
  - Contracted capacity increases and associated MW increases;

- Any instance in which DTE agreed to terms less protective of other customers than the Large Load Provision tariff defaults and the basis for doing so;

- Administrative fees assessed as compared to the actual cost of the studies performed; and

- Notices of termination of contract and termination fees applied.[5]

- Require DTE to demonstrate in its *ex parte* filing for each Large Load Provision customer that the proposed termination fee and collateral amount are sufficient to recover the remaining unrecovered incremental cost of the production, transmission and distribution investment DTE will make to serve that customer, and to identify any residual cost exposure that would remain with other customers.

- Require that any exercise of discretion by DTE under the Large Load Provision that results in terms less protective of other customers than the tariff default be disclosed in DTE's *ex parte* filing for that customer and that DTE demonstrate the reasonableness and prudence of the departure.

- Require that the minimum monthly charge, termination fee and collateral of a Large Load Provision customer be calculated using the full service Rate D11 demand charges then in effect, without regard to any subsequent change in the customer's power supply arrangement unless a change to the calculation for these amounts is explicitly approved by the Commission.

- Require the administrative fee to operate as a non-refundable minimum deposit against the actual cost of the studies performed, with any cost in excess of the fee billed to the prospective customer.

- Require the Large Load Provision to apply to any large load addition, other than those that are the subject of Case Nos. U-21990 and U-22058, that is not already taking service as of the effective date of the tariff approved in this proceeding, and clarify that the Large Load Provision establishes minimum requirements only and does not limit the case-specific conditions the Commission may impose in any pending or future proceeding involving service to an individual large load customer.

- Direct DTE to file a revised Exhibit A-1 correcting the defects and ambiguities identified in Section VIII of my testimony, including conforming the termination fee to a minimum rather than a maximum, conforming the definition of ramp period to start at the time the customer's contract is fully executed, including the word "annual" in the Contribution in Aid of Construction allowance provision, and strengthening the assignment language.

[5] Note these recommended annual reporting requirements do not include reporting on reductions in Contracted Capacity because DTE, under its proposed Large Load Provision, does not permit a reduction in Contracted Capacity by Large Load Provision customers.

In addition, I recommend that the Commission clarify that it is not, in this proceeding, making a final decision with respect to whether Large Load Provision customers shall be served under Rate D11, or instead under a separate dedicated rate class or rate classes. Finally, I recommend that the Commission periodically revisit the type and size of load additions that are subject to the Large Load Provision as better information on the actual entrance of super-scalar data center loads, the principal driver in the electric utility industry of the need for such special provisions, becomes better understood. That better understanding will likely provide much better clarity with respect to the MW size and/or type of new load additions that truly require special provisions to ensure such provisions are not applied more broadly than necessary, such that they unduly inhibit traditional economic development.

II. COMMISSION REVIEW OF INDIVIDUAL CONTRACTS

Q HAS DTE, IN ITS APPLICATION AND DIRECT TESTIMONY IN THIS PROCEEDING, PROPOSED TO FILE EACH LARGE LOAD PROVISION CUSTOMER CONTRACT WITH THE COMMISSION PRIOR TO PROVIDING SERVICE?

A No, it has not done so.

Q IN ITS NOVEMBER 6, 2025 ORDER IN CASE NO. U-21859, DID THE COMMISSION REQUIRE CONSUMERS TO FILE EACH CONSUMERS LARGE LOAD PROVISION CUSTOMER CONTRACT WITH THE COMMISSION PRIOR TO SERVICE BEING PROVIDED TO THE SUBJECT LARGE LOAD PROVISION CUSTOMER?

A Yes. Specifically, the Commission ordered the following:

> Prior to each large load customer taking service under the General Primary Demand Rate -- Rate GPD provisions approved in this order, Consumers Energy Company shall make an *ex parte* filing in a new docket that demonstrates compliance with the tariff requirements

> approved in this order, and that demonstrates that costs caused by the interconnecting large load customer to be served under the tariff are not being paid for by other customers. Consumers Energy Company shall include in the filing any modeling or cost of service studies that support this demonstration. If setting a collateral amount for a large load customer under General Primary Demand Rate—Rate GPD above or below the default provision approved in this order, Consumers Energy Company shall include this information in the application and demonstrate the reasonableness and prudence of the alternative collateral amount.[6]

Q DID THE COMMISSION, IN ITS NOVEMBER 6, 2025 ORDER, EXPLAIN WHY IT WAS IMPOSING THIS REQUIREMENT ON CONSUMERS?

A Yes. Among other things, the Commission noted:

> A core tenet of ratemaking is that customers are responsible for the costs they impose on the system and the costs required to serve them. Residential, commercial, and other industrial customers should not have to pay for investments driven solely by large load additions.
>
> … these costs should not be socialized due to their magnitude and unprecedented character, including the high load factor, 24/7/365 demand profile, and the fact that the vast majority of new generation and transmission investments will be driven by such a small number of discrete loads.
>
> … the Commission notes that much of the evidence presented in terms of the costs of serving these large load customers omitted generation resources, including the costs for these additional resources.
>
> … Without better understanding how these large new loads will be served and the costs involved in doing so, it is impossible for the Commission to understand whether existing customers will end up bearing a portion of such costs.[7]

[6] Case No. U-21859, November 6, 2025 order at 124-125.
[7] Case No. U-21859, November 6, 2025 order at 116-117.

Q ARE SIMILAR FACTS AND CIRCUMSTANCES TO THOSE IN CASE NO. U-21859 PRESENT IN THIS CURRENT PROCEEDING WITH RESPECT TO DTE AND ITS PROPOSED LARGE LOAD PROVISION?

A Yes. DTE's proposed minimum monthly charge and termination fee under its Large Load Provision are based on applying a minimum billing demand of 80% of the customer's contract capacity to the prevailing Rate D11 power supply and distribution demand charges.[8] As such, they are not based on the actual cost of the incremental production, transmission, and distribution costs DTE will incur to serve Large Load Provision customers. Furthermore, in response to discovery, DTE admitted it does not at this time know the incremental production facility costs, transmission upgrade costs, customer facility-interconnection costs, other distribution costs, or Public Act 235 compliance requirement costs that it will incur to serve Large Load Provision customers.[9] These load additions potentially provide the opportunity to collect a significant new contribution toward the utility's average embedded fixed costs to the benefit of the utility's existing customers to the extent the contracted load fully materializes, remains fully materialized, and provides non-fuel revenues greater than the utility's incremental fixed cost to serve that load. However, they also present a significant cost subsidy risk to the utility's existing customers if either: (i) the non-fuel revenues from the fully materialized load are less than the incremental fixed costs incurred by the utility to serve the load; or (ii) the load fails to fully materialize (or fails to remain fully materialized) such that the non-fuel revenues from the load fall far enough below what was projected that they no longer cover the incremental fixed costs the utility incurred to serve that new load. Central to these issues is knowing the projected incremental fixed costs that will need to be incurred by the utility to serve

[8] DTE Witness Willis Direct at AW-11 through AW-12.
[9] DTE Response to Data Request AGDE-1.12 through AGDE-1.16.

each load addition – something that cannot be known for each Large Load Provision customer until DTE actually enters into a proposed contract with that customer.

Q WHAT IS YOUR RECOMMENDATION TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A Consistent with its November 6, 2025 order in Case No. U-21859, the Commission should require DTE, prior to each new customer subject to the Large Load Provision taking service, to make an *ex parte* filing in a new docket that demonstrates both compliance with the Large Load Provision tariff requirements approved by the Commission in this proceeding, and that costs caused by the interconnecting customer to be served under the Large Load Provision are not being paid for by other customers. As in Case No. U-21859 with respect to Consumers, in making the demonstration to the Commission, DTE should include in its filing any modeling or cost of service studies that support that demonstration.

III. COLLATERAL PROVISIONS

Q PLEASE BRIEFLY SUMMARIZE DTE'S PROPOSED COLLATERAL PROVISIONS UNDER ITS PROPOSED LARGE LOAD PROVISION.

A DTE proposes the default collateral amount to be equal to 100% of the customer's termination fee, but also proposes that it be able, at its sole discretion, to lower the collateral amount based on the specific risk profile of a given customer.[10] In addition, DTE proposes, at its sole discretion and determination, to require a letter of credit, cash, parent guarantee, or a combination thereof, as collateral.[11]

[10] DTE Witness Willis at AW-13 through AW-14 and Exhibit A-1 at 6.
[11] *Id.*

Q ARE THESE PROPOSED COLLATERAL PROVISIONS SUBSTANTIVELY DIFFERENT THAN THOSE ORDERED BY THE COMMISSION FOR CONSUMERS IN CASE NO. U-21859?

A Yes. In Case No. U-21859, the default collateral amount was set at 50% of the termination fee and the default acceptable forms of collateral were limited to a standby irrevocable letter of credit or cash.[12] In addition, the Commission indicated that Consumers could not deviate either below or above these default requirements without approval from the Commission on a case-by-case basis.[13] DTE's proposal would allow DTE to lower the required collateral amount for a Large Load Provision customer below 50% of the customer's termination fee without Commission review and/or allow DTE to accept a parent guarantee for all or some of a customer's collateral amount without Commission review. This is highly problematic for DTE's other customers to the extent DTE is not being held responsible for any shortfall in a Large Load Provision customer's collateral from the unpaid amounts owed by that customer to DTE. This could result in DTE's other customers being responsible for some or all of the incremental fixed costs incurred by DTE to serve the Large Load Provision customer in the event the customer fails to pay amounts it owes to DTE under its contract with DTE.

Q HAS DTE PROVIDED ANY EVIDENCE THAT SUPPORTS IT BEING GIVEN DISCRETION WITH RESPECT TO COLLATERAL PROVISIONS THAT CONSUMERS WAS NOT GIVEN IN CASE NO. U-21859?

A No.

[12] Case No. U-21859, November 6, 2025 order at 112-113.
[13] *Id.*

Q WHAT DO YOU RECOMMEND WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission:

- Require that DTE's proposed collateral provisions for its Large Load Provision provide the same minimum protections for other customers as it required Consumers to provide in U-21859 by: (i) not allowing DTE to reduce a customer's collateral requirement to less than 50% of the customer's termination fee; and (ii) not permitting the use of parent guarantees unless DTE seeks and receives approval from the Commission to do so; and

- Require DTE, to the extent it proposes that a new Large Load Provision customer's collateral amount be less than 50% of the customer's termination fee, and/or proposes to allow the customer to use a parent guarantee, include this information in DTE's *ex parte* filing for service to that customer and demonstrate the reasonableness and prudence of the alternative collateral provisions.

IV. ANNUAL REPORTING

Q HAS DTE PROPOSED ANY ANNUAL REPORTING TO THE COMMISSION WITH RESPECT TO ITS PROPOSED LARGE LOAD PROVISION?

A No.

Q WHAT DID THE COMMISSION ORDER WITH REGARD TO ANNUAL REPORTING IN CASE NO. U-21859?

A The Commission, in its November 6, 2025 order in Case No. U-21859, required the following:

> Consumers Energy Company shall provide annual reporting in the instant docket as described in this order, which shall commence no later than 12 months from the date that Consumers Energy Company enters into a contract with a prospective General Primary Demand Rate—Rate GPD customer under the large load provisions, as described in this order.[14]

[14] Case No. U-21859, November 6, 2025 order at 124.

The annual reporting required of Consumers, which its tariff refers to as the Data Center Provision, included:

- The number of administrative fees assessed.
- The number of executed contract agreements.
- Aggregate Data Center Provision MWs in service.
- Aggregate Data Center Provision MWhs in service.
- Notices of reduction to capacity requests and associated MW reduction.
- Contracted capacity increases and associated MW increases.
- Notice of termination of contract and exit fee applied.[15]

Q HAS DTE PROVIDED ANY REASON IN ITS APPLICATION DIRECT TESTIMONY WITH RESPECT TO WHY IT SHOULD BE EXCUSED FROM SIMILAR REPORTING FOR ITS LARGE LOAD PROVISION?

A No.

Q WHAT IS YOUR RECOMMENDATION TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission require DTE to file an annual Large Load Report to the Commission identifying:

- The number of Large Load Provision administrative fees assessed;
- The number of Large Load Provision executed contract agreements;
- Aggregate Large Load Provision MWs in service;
- Aggregate Large Load Provision MWhs in service;
- Contracted capacity increases and associated MW increases;

[15] Case No. U-21859, November 6, 2025 order at 120-121 and 3 Tr. 88.

- Any instance in which DTE agreed to terms less protective of other customers than the Large Load Provision tariff defaults, and the basis for doing so;
- Administrative fees assessed as compared to the actual cost of the studies performed; and
- Notices of termination of contract and termination fees applied.[16]

V. RATE D11 OR SEPARATE TARIFF RATE

Q UNDER ITS PROPOSED LARGE LOAD PROVISION, DOES DTE PROPOSE TO SERVE LARGE LOAD PROVISION CUSTOMERS UNDER ITS STANDARD COMMERCIAL AND INDUSTRIAL PRIMARY SERVICE RATE, RATE D11, OR UNDER A NEW SEPARATE TARIFF RATE?

A It has proposed to serve them under Rate D11.

Q IS THIS CONSISTENT WITH WHAT THE COMMISSION ORDERED IN CASE NO. U-21859 FOR CONSUMERS?

A It is, but it is important to note that, in that proceeding, the Commission also noted that it "acknowledges the concerns expressed by ABATE and MNSC and notes that this decision does not preclude the creation of a separate rate class at a future time in the context of a separate proceeding such as a rate case."[17] In addition, the Commission also required Consumers to file at least six class cost of service and rate design proposals prior to its next rate case proceeding that examined placing the large load addition customers into their own separate rates class and placing each large load addition customer into its own separate rate class.[18] Furthermore, the Commission has

[16] Note these recommended annual reporting requirements do not include reporting on reductions in Contracted Capacity because DTE, under its proposed Large Load Provision, does not permit a reduction in Contracted Capacity by Large Load Provision customers.

[17] Case No. U-21859, November 6, 2025 order at 105.

[18] Case No. U-21859, November 6, 2025 order at 115.

already imposed this filing requirement on DTE in the Commission's order on the Oracle data center load addition special contracts in Case No. U-21990, and DTE has submitted the required class cost of service studies and rate design proposals in its currently pending rate proceeding in Case No. U-22046.

Given this, there is a very high likelihood that the new evidence being presented and reviewed in Case No. U-22046 may lead to the conclusion that the Oracle data center load that was the subject of Case No. U-21990, the Google data center load that is the subject of Case No. U-22058, and customers served under the Large Load Provision proposed by DTE in this current proceeding should either be served together under a new rate, or that they should each be served under their own individual separate rate. Therefore, it is important for the Commission to be clear in its order in this proceeding that any decision it makes in this current proceeding with respect to whether Large Load Provision customers are served under Rate D11, under a separate rate, or each individually under a separate rate is subject to the outcome of future rate proceedings, including Case No. U-22046.

Q WHAT DO YOU RECOMMEND TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission clarify that it is not, in this proceeding, making a final decision with respect to whether Large Load Provision customers shall be served under Rate D11, or instead under a separate dedicated rate class or rate classes. Specifically, any decision it makes with respect to this issue in this proceeding is preliminary and subject to the outcome of future rate proceedings including Case No. U-22046.

VI. APPLICABILITY OF LARGE LOAD PROVISION

Q TO WHAT CUSTOMERS HAS DTE PROPOSED ITS LARGE LOAD PROVISION APPLY?

A DTE has proposed its Large Load Provision be applicable to all incremental load that is either: (i) greater than 100 MW at a single site; or (ii) greater than 100 MW across multiple sites in DTE's service territory, with an average site size of greater than 20 MW, which will begin taking service within five years.[19]

Q IS THIS CONSISTENT WITH WHAT THE COMMISSION ORDERED WITH RESPECT TO CONSUMERS IN CASE NO. U-21859?

A Yes, but it is important to consider that the issue of large load additions continues to evolve and, as a result, the applicability threshold that the Commission ordered in Case No. U-21859, and the one it adopts for DTE in this current proceeding, will likely need to evolve as well. As I have previously testified to the Commission, it is not reasonably deniable that the principal driver of additional tariff protections related to large load additions has been and continues to be the boom in proposed data center load additions, particularly super-scalar data centers.[20] These large load additions are typically extremely large (300 MW or larger)[21] and can involve greater risk of stranded assets for utilities and their existing customers than is typically presented by traditional

[19] Exhibit A-1 at 4.
[20] Case No. U-21986 at 2 Tr. 106.
[21] For my rebuttal testimony in Case No. U21859, I preformed an analysis of Consumers' then current economic development pipeline. That analysis showed that over 93% of the total MWs of proposed large load additions in Consumers' economic development pipeline were 300 MW or larger in size (Case No. U-21859, Tr. At 835). While DTE in discovery objected to providing a similar list of its large load addition inquiries (DTE Response to Data Requests AGDE-1.23a and NRDCSCDE-1.2), both of its large load additions that have come to fruition to date have been 1,000 MW or larger super-scalar data center loads and its statements in its earnings calls to investors have indicated it has other super-scalar data center loads potentially coming (*See* Ethan Howland, "DTE sees up to 8.4 GW data center opportunity," Utility Dive, May 1, 2026, https://www.utilitydive.com/news/dte-energy-data-center-earnings-reliability/819052/ (reporting on DTE Energy Q1 2026 earnings call held April 30, 2026)).

industrial customer load additions.[22] It is both appropriate and necessary to implement new protections for utilities and their existing customers for these large load additions. However, caution is necessary with respect to adding these new provisions, as there is danger with respect to potentially unduly inhibiting traditional economic development if those protections are applied to too low of a MW threshold and/or are more broadly applied than necessary (i.e., to all types of large new load additions even when that is not necessary).

In particular, it is important to consider that, while both data center loads and large industrial manufacturing facilities, such as automobile assembly plants, chemical plants, steel mills, and paper mills, can consume substantial amounts of electricity, they differ fundamentally in how much power they draw at a single location, how continuously they operate, and how electricity fits into their overall energy profile. For example, super-scalar data centers are generally designed around high-end information technology loads, advanced cooling systems and redundant power systems. In contrast, industrial manufacturing facilities are defined by their production processes (e.g., chemical reactions, metal melting and forming, pulping and drying, vehicle assembly, etc.). As a result, electricity is often only one of several energy inputs for the latter, alongside fuels such as natural gas, coal, coke or biomass. Industrial manufacturing facilities also tend to be less concentrated at single locations than super-scalar data centers which, as I have noted, are typically 300 MW or larger at a single site. Finally, super-scalar data center loads tend to operate at high and steady demand, while industrial manufacturing facilities, in most cases, experience cyclical

[22] The greater risk for stranded assets is driven by data center loads not necessarily having the same level of employees as a comparably sized manufacturing load and not having any significant local supply chain needs. This generally makes it easier for data center loads to either reduce their demand or exit a utility service territory than it is for manufacturing loads to do the same. This additional risk is also aggravated by the current boom nature of the data center industry, which may not ultimately be sustained at the level that is currently being projected.

demand tied to production schedules, maintenance outages and market conditions. As a result, while industrial manufacturing facilities generally have a higher load factor than residential or commercial customers, it does not generally approach the extremely high load factor that a super-scalar data center load would have.

Q ARE THERE RECENT DEVELOPMENTS THAT ILLUSTRATE HOW THIS IS EVOLVING?

A Yes. First, the North American Electric Reliability Corporation ("NERC") has decided to focus its reliability requirement efforts with respect to large load additions on computational loads rather than all large load additions. This is in line with the reality that it was a system event related to large data center loads simultaneously unexpectedly tripping offline that led to NERC's reliability concerns, not the behavior of traditional large manufacturing loads.[23] Second, on June 30, 2026, the U.S. House of Representatives Committee on Energy and Commerce ("House Energy and Commerce Committee") issued an amendment in the nature of a substitute for the pending Ratepayer Protection Act (H.R. 9340).[24] This substitute amendment, which was adopted by a 52-0 vote of the House Energy and Commerce Committee on July 21, 2026,[25] modified the Large Load Customer definition in the pending act to only apply to computational loads. Specifically, the definition in the pending act is now as follows:

> (C) LARGE-LOAD CUSTOMER DEFINED.— In this paragraph, the term 'large-load customer' means a non-residential electric consumer that, on or after the date of the enactment of this paragraph, requests to

[23] NERC *Large Load Action Plan Q2 2026 Update*, July 2026. A copy of this document is provided as Exhibit AB-2.

[24] *See* https://docs.house.gov/meetings/IF/IF00/20260720/119490/BILLS-119-HR9340-A000370-Amdt-4.pdf?source=email. A copy of this document is provided as Exhibit AB-3.

[25] *See* https://www.youtube.com/live/LTeimXXjsZo at 1:01 through 1:24.

> enter into, or enters into, a contract or other agreement pertaining to the sale of electric energy for one or more facilities that—
>
> (i) require electric energy primarily to operate information technology infrastructure and related systems pertaining to data storage and computational applications and services; and
>
> (ii) have, in the aggregate, a peak electric demand of 100 megawatts or more at a single site or campus.[26]

Q WHAT DO YOU RECOMMEND TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission, either through generic proceedings or future utility rate case proceedings, periodically review the MW threshold and types of new load additions that are subject to large load provisions such as DTE is proposing in this proceeding, the Commission approves in Case No. U-21986 for Indiana Michigan Power Company, and the Commission approved in Case No. U-21859 for Consumers for its Rate GPD. The actual entrance of new super-scalar data center loads, the principal driver of the need for special tariff provisions for large load additions, will likely become much better understood over the next two to three years. That better understanding will likely provide much better clarity with respect to the MW size and/or load types for load additions that truly require additional tariff provisions to apply to them to ensure such provisions are not being unnecessarily applied in a manner that unduly inhibits traditional economic development.

[26] Exhibit AB-3 at 2-3.

VII. TERMS THAT DO NOT ENSURE COSTS ARE BORNE BY THE CAUSING CUSTOMER

Q DO THE FINANCIAL PROTECTIONS IN DTE'S PROPOSED LARGE LOAD PROVISION MEASURE THE COST DTE WILL INCUR TO SERVE A LARGE LOAD PROVISION CUSTOMER?

A No. The Minimum Monthly Charge ("MMC"), the termination fee and the required collateral amount are each derived from a single formula: 80% of contract capacity multiplied by the prevailing Rate D11 demand charges.[27] The prevailing Rate D11 demand charges are charges developed from the average embedded cost of serving the existing primary, sub-transmission and transmission voltage customer classes as a whole. They are not a measure of the incremental fixed production, transmission and distribution costs DTE will incur to serve a new load addition of 100 MW or more. Consequently, the amount a Large Load Provision customer is obligated to pay under the minimum monthly charge, and the amount it forfeits if it terminates service early, bear no necessary relationship to the investment DTE will have made on that customer's behalf.

Q WHAT DO YOU RECOMMEND TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A This concern reinforces the recommendation I make in Section II of my testimony. Because the tariff's financial terms are not derived from incremental cost, the *ex parte* filing I recommend in Section II is the only mechanism by which the Commission can determine whether the terms actually agreed to with a given customer recover the cost that customer causes. I therefore recommend that, in addition to the demonstration

[27] Exhibit A-1 at 5-6.

described in Section II, the Commission require DTE to demonstrate in that filing that the proposed termination fee and collateral amount are sufficient to recover the remaining unrecovered incremental cost of the production, transmission and distribution investment DTE will make to serve the customer, measured over the depreciable life of that investment, and to identify any unmitigated residual cost exposure that would remain with other customers.

Q DOES THE PROPOSED LARGE LOAD PROVISION PREVENT A CUSTOMER FROM REDUCING ITS MINIMUM OBLIGATIONS BY CHANGING ITS SUPPLY ARRANGEMENT?

A No. The MMC, the termination fee and the collateral requirement are all computed using the "prevailing D11 demand charges," which include the power supply capacity and non-capacity demand charges, as well as the distribution demand charge.[28] Rate D11 contains a separate rate structure applicable to Retail Access Service customers under which the power supply non-capacity demand charge does not apply.[29] The proposed Large Load Provision is silent with respect to what occurs if a Large Load Provision customer, during its term of service, elects retail open access or to change its tariff rate. In these circumstances, the customer's termination exposure and its required collateral could fall substantially, while the production, transmission and distribution investment DTE made on the customer's behalf has not.

[28] Exhibit A-1 at 5.
[29] Exhibit A-1 at 2.

Q WHAT DO YOU RECOMMEND TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission require the Large Load Provision to provide that the MMC, the termination fee and the collateral requirement of a Large Load Provision customer shall be calculated using the full service Rate D11 demand charges then in effect, without regard to any subsequent change in the customer's power supply arrangement, unless a change to the calculation for these amounts is explicitly approved by the Commission. In addition, any election by a Large Load Provision customer of an alternative supply arrangement should require the consent of DTE and notice to the Commission.

Q IS DTE'S PROPOSED ADMINISTRATIVE FEE SUFFICIENT TO SATISFY THE COMMISSION'S DIRECTIVE IN ITS DECEMBER 18, 2025 ORDER?

A No. The Commission directed DTE to propose an administrative fee to ensure that the costs associated with any interconnection or other studies performed for prospective large load customers are not absorbed by existing customers.[30] A fixed fee of $100,000 or $250,000 does not ensure that outcome because the fee is fixed without regard to the actual cost of the studies performed. To the extent the actual cost of studying a multi-hundred megawatt or gigawatt scale request exceeds the fee, the difference is potentially absorbed by other customers, which is the result the Commission directed DTE to avoid.

[30] Case No. U-21990, December 18, 2025 order at 40 and 45 (ordering paragraph J), quoted at DTE Witness Willis Direct at AW-15.

Q WHAT DO YOU RECOMMEND TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission require that the administrative fee operate as a non-refundable minimum deposit against the actual cost of the studies performed, with any cost in excess of the fee billed to the prospective customer.

Q DOES THE PROPOSED FIFTEEN YEAR MINIMUM CONTRACT TERM MATCH THE DEPRECIABLE LIFE OF THE ASSETS THAT WILL BE CONSTRUCTED TO SERVE LARGE LOAD PROVISION CUSTOMERS?

A No. The production, transmission and distribution assets that would be constructed to serve a large load addition would have depreciable lives in excess of the fifteen-year minimum term. Based on my experience, the depreciable life for new production assets is at least 20 years and, depending on resource type, could be decades longer. Similarly, based on my experience, the depreciable life for new transmission and distribution assets is at least 35 years. A Large Load Provision customer that takes service for the full fifteen-year term and then provides three years' notice of non-renewal departs without paying any termination fee at all,[31] leaving whatever investment remains undepreciated to be recovered from DTE's other customers. This is another reason why the Commission should require the incremental cost demonstration I have described above.

[31] Exhibit A-1 at 5.

Q WOULD THE LARGE LOAD PROVISION APPLY TO THE LARGE LOAD ADDITIONS DTE STATES ARE CURRENTLY IN ITS PIPELINE?

A Not necessarily. DTE Witness Willis states that the Large Load Provision does not apply to existing load contracted for or served before the effective date of the Large Load Provision.[32] At the same time, DTE states in its Application that it has a number of requests for electric service from prospective large load customers in its pipeline, and it offers that pipeline as a principal reason for expedited approval.[33] As drafted, any contract DTE executes between now and the effective date of the tariff would fall outside the Large Load Provision entirely. That would leave outside the tariff's protections the very set of prospective customers whose presence DTE offers as the reason for approving the tariff on an expedited basis.

Q WHAT DO YOU RECOMMEND TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission require the Large Load Provision to apply to any large load addition, other than those that are the subject of Case Nos. U-21990 and U-22058, that is not already taking service as of the effective date of the tariff approved in this proceeding. I further recommend that the Commission state in its order that the Large Load Provision establishes minimum requirements only and does not limit the case-specific conditions the Commission may impose in any pending or future proceeding involving service to an individual large load customer.

[32] DTE Witness Willis Direct at AW-6 through AW-7.
[33] DTE Application at 5, paragraph 12.

VIII. DEFECTS AND AMBIGUITIES IN EXHIBIT A-1

Q WHAT IS THE SUBJECT OF THIS SECTION OF YOUR TESTIMONY?

A In this section, I identify a number of respects in which the tariff language DTE has proposed in Exhibit A-1 is either inconsistent with the description of the Large Load Provision in the direct testimony of DTE Witness Willis, or ambiguous in a manner that could operate to the detriment of DTE's other customers. Because the language in Exhibit A-1, rather than the direct testimony, would become the operative tariff, these matters should be corrected before the Large Load Provision is approved. I do not understand any of them to be intentional, and I expect DTE to be generally amenable to addressing them.

Q DOES EXHIBIT A-1 ESTABLISH THE FIFTEEN YEAR TERMINATION FEE AS A MINIMUM OR AS A MAXIMUM?

A As a maximum. Exhibit A-1 provides that the applicable termination fee "will be up to fifteen years of minimum billing demand (plus applicable ramp)."[34] DTE Witness Willis describes the same term in the opposite way, referring to an initial termination fee of fifteen years of MBD and stating that the fee is subject to negotiation and "may exceed the minimum of fifteen years of MBD."[35] The tariff as drafted establishes a maximum and no minimum. If approved as written, it would both bar DTE from negotiating a longer termination fee where the incremental investment warranted one and arguably permit DTE to agree to a termination fee of less than fifteen years of MBD.

[34] Exhibit A-1 at 5.
[35] DTE Witness Willis Direct at AW-12.

Q WHAT DO YOU RECOMMEND TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission require the language in Exhibit A-1 be revised to provide that the applicable termination fee will be not less than fifteen years of MBD plus applicable ramp. That revision conforms the tariff to DTE Witness Willis's testimony and to DTE's characterization of the Large Load Provision as a set of minimum terms.

Q HOW DOES EXHIBIT A-1 DEFINE THE RAMP PERIOD, AND IS THAT DEFINITION CONSISTENT WITH DTE WITNESS WILLIS'S TESTIMONY?

A It is not consistent. Exhibit A-1 provides that the ramp period "is the time between the Company providing initial service and the customer reaching their maximum contracted capacity" and that it "may not exceed three years."[36] DTE Witness Willis instead describes a load ramp period of no more than three years from the time the contract is fully executed.[37] The difference is material. For a large load addition requiring new interconnection facilities, the interval between contract execution and initial service can itself be a period of years, during which DTE may be committing capital, procuring capacity and incurring compliance obligations under 2023 PA 235. Under the tariff definition, the three-year ramp does not begin to run until service commences, so the total period during which the customer is billed below its maximum contracted capacity could substantially exceed three years.

[36] Exhibit A-1 at 4.
[37] DTE Witness Willis Direct at AW-10.

Q DOES THIS UNDERMINE DTE'S STATED RATIONALE FOR THE THREE YEAR LIMIT?

A Yes. DTE Witness Willis explains that a longer ramp period could result in the Company essentially holding capacity without the associated load and could potentially affect the Company's ability to expeditiously connect other customers.[38] That concern is not addressed by a limit that does not begin to run until service has already commenced.

Q WHAT DO YOU RECOMMEND TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission require the language in Exhibit A-1 be revised to define the ramp period as beginning on the date the contract is fully executed, consistent with DTE Witness Willis's testimony.

Q IS THE CONTRIBUTION IN AID OF CONSTRUCTION PROVISION IN EXHIBIT A-1 CONSISTENT WITH DTE WITNESS WILLIS'S TESTIMONY?

A No. DTE Witness Willis describes an allowance of up to twice the customer's expected *annual* distribution revenue.[39] Exhibit A-1 omits the word annual, providing instead for allowances "up to two times their expected distribution revenue based on the contracted demand and prevailing rates."[40] Read literally against a fifteen-year minimum contract term, the tariff language would produce an allowance equal to thirty years of expected distribution revenue. That would be far larger than the standard

[38] DTE Witness Willis Direct at AW-10.
[39] DTE Witness Willis Direct at AW-14 (emphasis added).
[40] Exhibit A-1 at 6.

allowance the provision is intended to replace, and the opposite of the protection DTE describes itself as providing.

Q WHAT DO YOU RECOMMEND TO THE COMMISSION WITH RESPECT TO THIS ISSUE?

A I recommend that the Commission require the language in Exhibit A-1 be revised to refer to two times the customer's expected annual distribution revenue, consistent with DTE Witness Willis's testimony.

Q DOES THE ASSIGNMENT PROVISION IN EXHIBIT A-1 ADEQUATELY PROTECT OTHER CUSTOMERS?

A Not as drafted. Exhibit A-1 provides that the customer "shall not assign, transfer, or otherwise convey any portion of Contract Capacity to another party without prior written consent of the Company."[41] It states no standard governing that consent. It does not require that an assignee assume all of the obligations of the assignor, satisfy the same creditworthiness assessment, or post collateral at least equal to that posted by the assignor. I recommend that the Commission require the tariff to condition consent on each of those requirements, and require any assignment to be reported in the annual Large Load Report I recommend in Section IV of my testimony.

Q ARE THERE FURTHER INCONSISTENCIES AMONG THE APPLICATION, THE DIRECT TESTIMONY AND EXHIBIT A-1?

A Yes. DTE's Application and Exhibit A-1 describe the single-site applicability threshold as incremental load exceeding, or greater than, 100 MW, while DTE Witness Willis

[41] Exhibit A-1 at 4.

describes the same threshold as 100 MW or more.[42] The Application likewise describes the minimum term as fifteen years following a three-year ramp period, while Exhibit A-1 provides that the ramp period may not exceed three years and may be shorter.[43] These discrepancies are not large individually, but taken together with the more significant conflicts described above, they indicate that Exhibit A-1 has not been reconciled against the testimony it is offered to support.

Q WHAT IS YOUR OVERALL RECOMMENDATION WITH RESPECT TO EXHIBIT A-1?

A I recommend that the Commission direct DTE to file a revised Exhibit A-1 that reconciles the proposed tariff language to the record in this proceeding and incorporates the corrections described in this section, and to provide that revised exhibit in redline form so that the parties and the Commission can readily confirm the changes made.

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A Yes, it does.

[42] DTE Application at 3; Exhibit A-1 at 4; DTE Witness Willis Direct at AW-9.
[43] DTE Application at 3; Exhibit A-1 at 4.

Qualifications of James R. Dauphinais

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A James R. Dauphinais. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017, USA.

Q PLEASE STATE YOUR OCCUPATION.

A I am a consultant in the field of public utility regulation and a Managing Principal with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I graduated from Hartford State Technical College in 1983 with an Associate's Degree in Electrical Engineering Technology. Subsequent to graduation, I was employed by the Transmission Planning Department of the Northeast Utilities Service Company[1] as an Engineering Technician.

While employed as an Engineering Technician, I completed undergraduate studies at the University of Hartford. I graduated in 1990 with a Bachelor's Degree in Electrical Engineering. Subsequent to graduation, I was promoted to the position of Associate Engineer. Between 1993 and 1994, I completed graduate level courses in the study of power system analysis, power system transients and power system protection through the Engineering Outreach Program of the University of Idaho. By 1996 I had been promoted to the position of Senior Engineer.

[1] In 2015, Northeast Utilities changed its name to Eversource Energy.

In the employment of the Northeast Utilities Service Company, I was responsible for conducting thermal, voltage and stability analyses of the Northeast Utilities' transmission system to support planning and operating decisions. This involved the use of load flow, power system stability and production cost computer simulations. It also involved examination of potential solutions to operational and planning problems including, but not limited to, transmission line solutions and the routes that might be utilized by such transmission line solutions. Among the most notable achievements I had in this area include the solution of a transient stability problem near Millstone Nuclear Power Station, and the solution of a small signal (or dynamic) stability problem near Seabrook Nuclear Power Station. In 1993 I was awarded the Chairman's Award, Northeast Utilities' highest employee award, for my work involving stability analysis in the vicinity of Millstone Nuclear Power Station.

From 1990 to 1996, I represented Northeast Utilities on the New England Power Pool Stability Task Force. I also represented Northeast Utilities on several other technical working groups within the New England Power Pool ("NEPOOL") and the Northeast Power Coordinating Council ("NPCC"), including the 1992-1996 New York-New England Transmission Working Group, the Southeastern Massachusetts/Rhode Island Transmission Working Group, the NPCC CPSS-2 Working Group on Extreme Disturbances and the NPCC SS-38 Working Group on Interarea Dynamic Analysis. This latter working group also included participation from a number of ECAR, PJM and VACAR utilities.

From 1990 to 1995, I also acted as an internal consultant to the Nuclear Electrical Engineering Department of Northeast Utilities. This included interactions with the electrical engineering personnel of the Connecticut Yankee,

Millstone and Seabrook nuclear generation stations and inspectors from the Nuclear Regulatory Commission (“NRC”).

In addition to my technical responsibilities, from 1995 to 1997, I was also responsible for oversight of the day-to-day administration of Northeast Utilities' Open Access Transmission Tariff. This included the creation of Northeast Utilities' pre-FERC Order No. 889 transmission electronic bulletin board and the coordination of Northeast Utilities' transmission tariff filings prior to and after the issuance of Federal Energy Regulatory Commission (“FERC” or “Commission”) FERC Order No. 888. I was also responsible for spearheading the implementation of Northeast Utilities' Open Access Same-Time Information System and Northeast Utilities’ Standard of Conduct under FERC Order No. 889. During this time, I represented Northeast Utilities on the Federal Energy Regulatory Commission's "What" Working Group on Real-Time Information Networks. Later I served as Vice Chairman of the NEPOOL OASIS Working Group and Co-Chair of the Joint Transmission Services Information Network Functional Process Committee. I also served for a brief time on the Electric Power Research Institute facilitated "How" Working Group on OASIS and the North American Electric Reliability Council facilitated Commercial Practices Working Group.

In 1997 I joined the firm of Brubaker & Associates, Inc. The firm includes consultants with backgrounds in accounting, engineering, economics, mathematics, computer science and business. Since my employment with the firm, I have filed or presented testimony before the Federal Energy Regulatory Commission in Consumers Energy Company, Docket No. OA96-77-000; Midwest Independent Transmission System Operator, Inc., Docket No. ER98-1438-000; Montana Power Company, Docket No. ER98-2382-000; Inquiry Concerning the Commission’s Policy on Independent System Operators, Docket No. PL98-5-003; SkyGen Energy LLC v. Southern

Company Services, Inc., Docket No. EL00-77-000; Alliance Companies, et al., Docket No. EL02-65-000, et al.; Entergy Services, Inc., Docket No. ER01-2201-000; Remedying Undue Discrimination through Open Access Transmission Service, Standard Electricity Market Design, Docket No. RM01-12-000; Midwest Independent Transmission System Operator, Inc., Docket No. ER10-1791-000; NorthWestern Corporation, Docket No. ER10-1138-001, et al.; Illinois Industrial Energy Consumers v. Midcontinent Independent System Operator, Inc., Docket No. EL15-82-000; Midcontinent Independent System Operator, Inc., Docket No. ER16-833-000; Midcontinent Independent System Operator, Inc., Docket No. ER17-284-000; Midcontinent Independent System Operator, Inc. and Ameren Services Company Docket No. ER18-463-000; and PJM Interconnection, L.L.C., Docket No. ER26-1479-000. I have also filed or presented testimony before the Alberta Utilities Commission, the California Public Utilities Commission, the Colorado Public Utilities Commission, the Connecticut Department of Public Utility Control, the Florida Public Service Commission, the Idaho Public Service Commission, the Illinois Commerce Commission, the Indiana Utility Regulatory Commission, the Iowa Utilities Board, the Kentucky Public Service Commission, the Louisiana Public Service Commission, the Michigan Public Service Commission, the Missouri Public Service Commission, the Montana Public Service Commission, the Nevada Public Utilities Commission, the New Mexico Public Regulation Commission, the Council of the City of New Orleans, the New York Public Service Commission, the Oklahoma Corporation Commission, the Public Utility Commission of Texas, the Public Service Commission of Utah, the Virginia State Corporation Commission, the Wisconsin Public Service Commission, the Wyoming Public Service Commission, Federal District Court and various committees of the Illinois, Missouri and South Carolina state legislatures. This testimony has been given

regarding a wide variety of issues including, but not limited to, ancillary service rates, avoided cost calculations, certification of public convenience and necessity, class cost of service, cost allocation, fuel adjustment clauses, fuel costs, generation interconnection, interruptible rates, market power, market structure, off-system sales, prudency, purchased power costs, resource adequacy, resource planning, rate design, retail open access, standby rates, transmission losses, transmission planning, transmission rates and transmission line routing.

I have also participated on behalf of clients in the Southwest Power Pool Congestion Management System Working Group, the Alliance Market Development Advisory Group and several committees and working groups of the Midcontinent Independent System Operator, Inc. ("MISO"), including the Congestion Management Working Group; Economic Planning Users Group; Loss of Load Expectation Working Group; Market Subcommittee; Michigan Transmission Studies Task Force; Planning Subcommittee; Regional Expansion, Criteria and Benefits Working Group; Resource Adequacy Subcommittee (formerly the Supply Adequacy Working Group); and Reliability Subcommittee. I am currently a member of the MISO Advisory Committee in the end-use customer sector on behalf of industrial customer groups in Illinois, Louisiana, Michigan and Texas. I am also the past Chairman of the Issues/Solutions Subgroup of the MISO Revenue Sufficiency Guarantee ("RSG") Task Force.

In 2009, I completed the University of Wisconsin-Madison High Voltage Direct Current ("HVDC") Transmission course for Planners that was sponsored by MISO. I am a member of the Power and Energy Society ("PES") of the Institute of Electrical and Electronics Engineers ("IEEE").

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**

Rebuttal Testimony of

James R. Dauphinais

On behalf of

Association of Businesses Advocating Tariff Equity

August 25, 2026

BRUBAKER & ASSOCIATES, INC.

Project 12053

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**

Table of Contents for the Rebuttal Testimony of James R. Dauphinais

I. INTRODUCTION AND SUMMARY 1

II. RESPONSE TO STAFF WITNESS HIGGINS 3

III. RESPONSE TO AG-NS WITNESS HAVUMAKI 5

IV. RESPONSE TO CEO WITNESS SHAVER 7

V. RESPONSE TO GLREA WITNESS RICHTER 10
A. Priority Load Shedding Assumption 10
B. Reliability-Related Recommendations 10
C. Load Above Contracted Capacity 12

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**

Rebuttal Testimony of James R. Dauphinais

I. INTRODUCTION AND SUMMARY

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A James R. Dauphinais. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q ARE YOU THE SAME JAMES R. DAUPHINAIS WHO PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

A Yes. I filed Direct Testimony on behalf of the Association of Businesses Advocating Tariff Equity ("ABATE") on August 4, 2026.

Q WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A My rebuttal testimony responds to specific positions taken in the direct testimony of: (i) Michigan Public Service Commission ("MPSC" or "Commission") Staff ("Staff") Witness Johnathon L. Higgins; (ii) Michigan Attorney General, Natural Resources Defense Council and Sierra Club (collectively, "AG-NS") Witness Ben Havumaki; (iii) The Ecology Center, the Environmental Law & Policy Center, Union of Concerned Scientists and Vote Solar (collectively, the "Clean Energy Organizations" or "CEO")

Witness Lee Shaver; and (iv) Great Lakes Renewable Energy Association ("GLREA") Witness John Richter. My rebuttal testimony is organized by witness.

My silence in this testimony with regard to any issue raised by these witnesses, or any other witness in this proceeding, in direct testimony should not be construed as an endorsement of their respective positions on that issue.

Q PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY CONCLUSIONS.

A For the reasons detailed in my testimony herein, I recommend that the Commission:

- Reject Staff Witness Higgins' contingent recommendation to add language to the Large Load Provision of Rate D11 that would generically subject Large Load Provision customers to priority firm load shedding.[1] To the extent the Commission were to impose any priority load shedding requirement on a large load addition, it should do so only on a case-by-case basis, when the facts and circumstances associated with a particular large load addition truly warrant it, and any such requirement should sunset once the resources necessary to reliably provide firm service to that load addition are fully in service;

- Reject AG-NS Witness Havumaki's proposals to: (i) aggregate sites toward the 100 MW applicability threshold irrespective of when individual sites enter service; and (ii) aggregate co-located sites of the same or different customers, even where average site capacity is below 20 MW;[2]

- Reject the recommendations of CEO Witness Shaver and GLREA Witness Richter to the extent those recommendations would have the Commission prescribe DTE Electric Company ("DTE" or "the Company") specific, generally applicable technical values for voltage ride-through and load ramp rate limits,[3] reject Witness Richter's proposed generally applicable monitoring requirement and proposed Staff study group,[4] and ensure that, to the extent any reliability-related requirements are adopted in this proceeding or applied retroactively, they are scoped to computational loads and not applied to traditional industrial manufacturing loads;

- Decline to adopt any finding in this proceeding that rests on GLREA Witness Richter's assumption that large load customers would generically remain first in load-shed priority;[5] and

[1] Higgins Direct at 4-5.
[2] Havumaki Direct at 5.
[3] Shaver Direct at 12, 31; Richter Direct at 37 and 85.
[4] Richter Direct at 37, 44, 51-52 and 85.
[5] Richter Direct at 67-72.

- Reject GLREA Witness Richter's recommendation to remove the provision permitting load above contracted capacity,[6] in favor of Commission review of any resulting reset of a customer's contract capacity.

II. RESPONSE TO STAFF WITNESS HIGGINS

Q WHAT POSITION OF STAFF WITNESS HIGGINS ARE YOU RESPONDING TO?

A Staff Witness Higgins observes that DTE's proposed amendments to its Emergency Electrical Procedures in Section C3 of its Rate Book for Electric Service, filed in Case No. U-22059, expressly reference and would directly apply to the Large Load Provision proposed in this proceeding, and that the Commission had not approved those amendments as of the preparation of his testimony.[7] He recommends that, if the Commission does not approve the proposed amendments in Case No. U-22059, the Commission require DTE to amend the Large Load Provision of Rate D11 to include language addressing the concerns the Commission laid out in its December 18, 2025 order in Case No. U-21990.[8]

Q HOW DO YOU RESPOND TO THIS RECOMMENDATION?

A The Commission should reject it. Witness Higgins' recommendation rests on the judgment that the concerns expressed in the Commission's December 18, 2025 order in Case No. U-21990 extend to all Large Load Provision customers. They do not. The load shedding directive in that order was expressly limited to the facility operated by Green Chile Ventures LLC ("GCV", now Oracle America Cloud Services LLC), a 1.383 GW data center load addition for which DTE indicated 1,400 MW of additional

[6] Richter Direct at 25-26 and 84.
[7] Higgins Direct at 3-4.
[8] Higgins Direct at 5.

battery energy storage resources would be necessary to maintain resource adequacy.[9] A load addition of that extraordinary magnitude clearly presented a material risk to the resource adequacy of DTE's other firm customers in the event the necessary resource additions were delayed in entering service. The same cannot be said of a 100 MW load addition. Notably, the Commission's November 6, 2025 order in Case No. U-21859, which approved large load provisions for Consumers Energy Company ("Consumers") at the same 100 MW applicability threshold DTE proposes here, did not address or impose any load shedding requirement at all.[10]

Generically subjecting all Large Load Provision customers to priority firm load shedding would also be unduly discriminatory: it would treat one class of firm customers differently than another group of firm customers even when there are sufficient resources available to reliably serve both. To the extent that the Commission imposes a priority load shedding requirement on a large load addition, it should do so only on a case-by-case basis, when the magnitude of the large load addition, and the magnitude of the resource additions required to reliably provide firm service to it, are both large enough that a delay in the availability or in-service date of the necessary resources would materially affect the loss of load expectation risk of the utility's other firm customers. In addition, any such requirement should sunset once those resources are fully in service. Witness Higgins' contingent recommendation contains neither qualification.

[9] Case No. U-21990, December 18, 2025 order at 4, 8 and 44-45.
[10] Case No. U-21859, November 6, 2025 order at 103-125.

III. RESPONSE TO AG-NS WITNESS HAVUMAKI

Q WHAT PROPOSALS OF AG-NS WITNESS HAVUMAKI ARE YOU RESPONDING TO?

A Witness Havumaki proposes that: (i) the Large Load Provision apply to any aggregation of new load exceeding 100 MW with sites averaging at least 20 MW, irrespective of when the individual sites enter service, rather than being limited to sites that begin taking service within five years as DTE has proposed; and (ii) the Large Load Provision be extended to co-located sites – whether associated with the same or different customers – whose combined capacity exceeds 100 MW, even where average site capacity is below 20 MW.[11]

Q HOW DO YOU RESPOND TO THE PROPOSAL TO AGGREGATE SITES IRRESPECTIVE OF WHEN THEY ENTER SERVICE?

A The Commission should reject it. DTE's five-year aggregation window ties the applicability of the Large Load Provision to a planning horizon. Removing the window entirely would convert the Large Load Provision into a permanent regime applicable to the cumulative growth of any multi-site customer, no matter how gradual. A traditional industrial manufacturer expanding across multiple sites over decades could cross 100 MW in the aggregate and find each incremental addition – however modest – saddled with a fifteen-year minimum term, a minimum billing demand obligation, a termination fee and a collateral requirement. Witness Havumaki's own illustration makes the point: under his proposal, a 15 MW site added ten years after an initial site would itself carry a fresh fifteen-year term.[12] Attaching protections designed for

[11] Havumaki Direct at 11-13.
[12] Havumaki Direct at 11-12.

super-scalar data center additions to a load one-twentieth their typical 300 MW or larger size[13] would unduly inhibit traditional economic development.

Witness Havumaki's proposal also runs directly against the evidence already in the record regarding the direction in which this issue is evolving: the North American Electric Reliability Corporation ("NERC") has focused its large load reliability efforts on computational loads rather than all large load additions,[14] and the substitute amendment to the Ratepayer Protection Act (H.R. 9340), adopted 52-0 by the House Energy and Commerce Committee on July 21, 2026, narrowed the definition of "large-load customer" to computational facilities with aggregate peak demand of 100 MW or more at a single site or campus.[15] Both developments narrow the scope of large load provisions; Witness Havumaki would broaden it. He identifies no development running in the opposite direction.

Q HOW DO YOU RESPOND TO THE PROPOSAL TO AGGREGATE CO-LOCATED SITES OF THE SAME OR DIFFERENT CUSTOMERS?

A The Commission should reject this proposal as well. Aggregating unrelated customers by geographic proximity alone would sever the Large Load Provision from its cost-causation rationale. Separate customers have no common contract, no common creditworthiness and no common termination exposure, so none of the tariff's financial protections – i.e., the minimum monthly charge, the termination fee or the collateral requirement – can operate sensibly across them. The proposal would also reach small tenants of industrial parks, sub-20 MW loads that no party contends present stranded asset risk, and Witness Havumaki does not define what would qualify as "co-located."

[13] Dauphinais Direct at 16.
[14] Exhibit AB-2 (NERC Large Loads Action Plan Q2 2026 Update, July 2026).
[15] Exhibit AB-3.

Finally, to the extent Witness Havumaki's concern is that a single enterprise might structure itself into multiple nominal customers to evade the threshold, his proposal is not tailored to that concern: the construct the Commission approved in Case No. U-21859 already addresses it by aggregating sites that share a common owner where each site is 20 MW or more,[16] without aggregating unaffiliated customers.

IV. RESPONSE TO CEO WITNESS SHAVER

Q WHAT RECOMMENDATIONS OF CEO WITNESS SHAVER ARE YOU RESPONDING TO?

A Witness Shaver recommends, among other things, that DTE be required in this docket to provide its specific, detailed minimum interconnection requirements for large loads, including draft operating parameters showing generally applicable ramp rate and voltage ride-through terms, and that once NERC and Midcontinent Independent System Operator, Inc. ("MISO") standards are implemented, the Commission evaluate whether they should be applied retroactively to existing, planned or under-construction large loads.[17] I respond to the recommendation, insofar as it would lead the Commission to prescribe or require DTE-specific, generally applicable technical requirements in this proceeding, and to the scope of any retroactive application. I do not address, and take no position in this testimony on, Witness Shaver's recommendation for interim per-docket filing of finalized operating parameters and study results.

[16] Case No. U-21859, November 6, 2025 order at 105-106.
[17] Shaver Direct at 4-5, 31-32.

Q YOU RESPONDED TO SIMILAR CEO RECOMMENDATIONS IN CASE NO. U-21986. WHY DO YOU CONTINUE TO OPPOSE COMMISSION-PRESCRIBED, GENERALLY APPLICABLE TECHNICAL REQUIREMENTS?

A In my rebuttal testimony in Case No. U-21986, I recommended the Commission reject CEO's recommendations that Indiana Michigan Power Company be directed to implement voltage ride-through requirements and operational ramp rate limits, because those are transmission system reliability issues properly addressed at the Regional Transmission Organization ("RTO") level, and it was premature to develop utility tariff language before the requirements at the NERC and RTO level were established and known.[18] The developments Witness Shaver himself documents in this proceeding confirm, rather than undermine, that conclusion. As his testimony describes: on June 18, 2026, the Federal Energy Regulatory Commission ("FERC") issued a show cause order to MISO in Docket No. EL26-70-000 concerning the absence of large load operational requirements, including ramp rate and ride-through requirements, in MISO's tariff; on July 16, 2026, in Docket No. RD26-7-000, FERC converted NERC's standards development timeline into a mandated one, with Phase I reliability standards addressing computational load risks to be filed by the end of 2026; and on June 29, 2026, MISO's Large Load Working Group presented draft tariff changes establishing operational ramp rate, telemetry and ride-through requirements targeted for effectiveness in December 2026.[19] The development of these requirements at the NERC and RTO level is therefore no longer prospective; it is mandated, on a defined timeline, and imminent. Commission-prescribed, DTE-specific, generally applicable

[18] Case No. U-21986, Dauphinais Rebuttal at 7.
[19] Shaver Direct at 17-20.

technical values adopted in this docket would be established only weeks or months before the mandatory NERC standards and MISO tariff requirements with which they would then need to be reconciled. Witness Shaver's own evidence thus establishes that the appropriate source of generally applicable technical values is the NERC and MISO processes now underway, not this proceeding. Given all the foregoing, the Commission should reject Witness Shaver's recommendation to the extent that it would require DTE, at this time in this docket, to generically provide its specific, detailed minimum interconnection requirements for large loads, including operating parameters showing generally applicable ramp rate and voltage ride-through terms.

Q HOW DO YOU RESPOND TO WITNESS SHAVER'S RETROACTIVITY RECOMMENDATION?

A Any Commission evaluation of retroactive application of eventual NERC and MISO requirements should be limited in scope to computational loads. The reliability events underlying Witness Shaver's testimony – including the July 2024 and July 2026 Virginia disturbances he describes – were simultaneous, unexpected trips of large data center loads, and NERC has correspondingly focused its large load reliability efforts on computational loads.[20] Nothing in Witness Shaver's testimony supports applying such requirements retroactively to traditional industrial manufacturing loads, which have operated on utility systems for decades under existing interconnection and power quality requirements and whose behavior did not give rise to the reliability events at issue.

[20] Shaver Direct at 10-11; Exhibit AB-2.

V. RESPONSE TO GLREA WITNESS RICHTER

A. Priority Load Shedding Assumption

Q WHAT POSITION OF GLREA WITNESS RICHTER ARE YOU RESPONDING TO FIRST?

A In describing the capacity supply and demand response options he proposes be made available to large load customers, Witness Richter repeatedly assumes that large load customers would remain "first in load-shed priority" whenever drawing power from the grid.[21]

Q HOW DO YOU RESPOND?

A That assumption treats the GCV-specific condition from Case No. U-21990 as an accepted, generally applicable baseline for all large load customers. It is not. As explained in my response to Staff Witness Higgins above, the Case No. U-21990 condition arose from an extraordinary 1.383 GW load addition and the resource adequacy risk it presented, and no order of the Commission has extended it generically to 100 MW load additions. The Commission should not adopt any finding in this proceeding that rests on Witness Richter's assumption.

B. Reliability-Related Recommendations

Q WHAT RELIABILITY-RELATED RECOMMENDATIONS OF WITNESS RICHTER ARE YOU RESPONDING TO?

A Witness Richter recommends: (i) tariff limits on customer up-ramp and down-ramp rates expressed in MW per minute, verified by monitoring equipment installed at customer expense; (ii) power quality monitoring at customer expense directed at

[21] Richter Direct at 71-72.

harmonics; and (iii) that the Commission direct Staff to urgently convene a study group on the simultaneous uninterruptible power supply trip issue.[22]

Q HOW DO YOU RESPOND?

A With respect to prescribed MW-per-minute ramp limits, my response to CEO Witness Shaver above applies equally: the generally applicable technical values should come from the mandated NERC standards and the MISO tariff requirements now in active development, not from utility-specific prescriptions adopted in this docket on the eve of those requirements. With respect to monitoring, Witness Richter's recommendation does not account for the evidence in this record that DTE has confirmed all large loads will be subject to per-customer operating parameters that contemplate load ramping, ride-through and harmonics, among other terms;[23] his proposal for a new generally applicable monitoring requirement is accordingly premature on this record. With respect to the proposed study group, CEO made a similar working group recommendation in Case No. U-21859, and the Commission declined to adopt it.[24] The considerations that supported that outcome apply with greater force now that the underlying issues – including the uninterruptible power supply trip issue Witness Richter describes – are being actively addressed at NERC, FERC and MISO on a mandated timeline.

Finally, to the extent the Commission adopts any of Witness Richter's reliability-related recommendations, they should be scoped to computational loads. I note that Witness Richter relies on NERC's large load white paper discussion that

[22] Richter Direct at 37, 44, 51-52 and 85.

[23] Shaver Direct at 14 and 25 (describing DTE discovery responses and Confidential Exhibit CEO-6).

[24] Case No. U-21859, November 6, 2025 order at 76 and 121.

places data centers alongside electric arc furnaces as sources of voltage fluctuation.[25] That reliance should not be read as support for applying data-center-driven requirements to traditional industrial processes: the reliability events and the NERC, FERC and MISO responses Witness Richter and Witness Shaver describe all concern computational loads, and electric arc furnaces and similar industrial processes have operated on utility systems for decades under existing interconnection and power quality requirements without giving rise to those events.

C. Load Above Contracted Capacity

Q WHAT PROPOSAL OF WITNESS RICHTER ARE YOU RESPONDING TO ON THIS ISSUE?

A DTE's proposed Large Load Provision would permit a customer to exceed its contract capacity by up to 5% for no more than three months in any twelve-month period, with meter readings above contract capacity resetting the customer's contract capacity. Witness Richter recommends the provision be removed or, alternatively, capped at the lesser of 5% or 50 MW and restricted to the nine non-summer months as defined in MISO capacity auctions.[26]

Q HOW DO YOU RESPOND?

A Witness Richter's underlying observation – that for the largest customers, the 5% allowance can itself amount to a load addition of Large Load Provision scale, with the reset of contract capacity occurring without any review – is well taken. His proposed remedy of outright removal, however, goes further than his own evidence supports. His

[25] Richter Direct at 82.
[26] Richter Direct at 25-26, 84.

concern is with the magnitude and the absence of review, not with the existence of modest operational headroom for typical customers. The remedy proportionate to the concern he has identified is Commission review. Specifically, any reset of a Large Load Provision customer's contract capacity resulting from operation above contract capacity should be disclosed to and subject to review by the Commission, rather than occurring automatically. This would directly address the unreviewed-expansion problem Witness Richter identifies while preserving the operational flexibility the provision affords customers whose excursions are small in absolute terms. His alternative of capping the allowance at the lesser of 5% or 50 MW would likewise address the magnitude concern for the largest customers.

Q DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A Yes, it does.

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MR. CAMPBELL: Sorry, Your Honor, no, that's all for ABATE.

THE COURT: Thank you. GLREA?

MR. KESKEY: Your Honor, pursuant to the stipulation of the parties, I move for the admission of the direct testimony of John Richter, which consists of a cover page and 36 pages of testimony, along with that testimony -- excuse me, that was 86 pages of testimony. Along with that direct testimony, witness Richter also sponsors his Exhibit GLREA-1, which consists of two pages, which is his resume. He also sponsors Exhibit GLREA-2, which consists of discovery responses from DTE, which is 43 pages. He also sponsors Exhibit GLREA-3, which consists of seven pages. In addition to that, I move for the admission of witness Richter's rebuttal testimony, which consists of a cover page along with 18 pages of questions and answers. In addition to that, we also move for the admission of exhibits which comprise discovery responses from DTE. The first exhibit of that nature would be Exhibit GLREA-4, which consists of 42 pages. Exhibit GLREA-5, which consists of two pages. Exhibit GLREA-6, which comprises 37 pages. In addition to that, GLREA moves that the Administrative Law Judge and the

Commission take official notice of a proposed rulemaking issued by MISO, which has been entitled Midcontinent Independent System Operator, Inc.'s Interconnection Reliability Requirements for Large Loads. The link to that rulemaking was incorporated in our proposed Exhibit GLREA-7, which we are not proposing for entry into the record, but that document provides links to that rulemaking, which is still in progress and is going to be relevant for briefing purposes for this case. So, that would incorporate all of GLREA's case, Your Honor.

THE COURT: Is there anything confidential in the testimony or exhibits, Mr. Keskey?

MR. KESKEY: No, there's not.

THE COURT: Are there any objections to the binding in of the pre-filed direct and rebuttal testimony of John Richter?

MR. JANISZEWSKI: Your Honor, the company does not object to the binding in of Mr. Richter's pre-filed testimony. As part of the stipulation, the company has withdrawn its motion to strike Mr. Richter's rebuttal testimony. That withdrawal of the motion was for purposes of effectuating this mutual waiver of cross-examination. DTE Electric's agreement should not be reflected as conceding that

GLREA's rebuttal testimony was procedurally proper, and the company does not waive arguments concerning the relevance or weight of Mr. Richter's rebuttal testimony.

THE COURT: Thank you, Mr. Janiszewski. Your comments and arguments are noted for the record. Mr. Keskey, is there any other comment on that?

MR. KESKEY: No, it was simply that we disagree with the suggestion, but we understand that both parties have the right to incorporate arguments in their briefs, Your Honor.

THE COURT: Thank you. Last words, Mr. Janiszewski?

MR. JANISZEWSKI: No, I appreciate it, Your Honor. I would like to briefly speak on the official notice, but I don't want to get ahead of your cadence.

THE COURT: We'll do the bind-in first and then deal with the notice.

MR. JANISZEWSKI: Thank you, Your Honor.

THE COURT: All right. Are there any objections to the binding in of the pre-filed direct and rebuttal testimony of Mr. John Richter? Hearing none, the direct and rebuttal testimony of John

Richter is bound into the public record. Are there any objections to the admission of Exhibits GLREA-1 through GLREA-6? Hearing none, Exhibits GLREA-1 through GLREA-6 are admitted into evidence. As to judicial notice. Mr. Janiszewski?

(Exhibits GLREA-1 through GLREA-6 admitted)

(Testimony bound in)

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

DIRECT TESTIMONY AND EXHIBIT OF JOHN RICHTER

On Behalf of

Great Lakes Renewable Energy Association

August 4, 2026

Table of Contents

I. QUALIFICATIONS 1
II. BACKGROUND 4
A. TSUNAMI OF DATA CENTER PROPOSALS 4
III. PROPOSED TARIFF 15
IV. CONCERNS NOT ADDRESSED IN U-21859 27
A. RISK TO GRID RELIABILITY 27
1. Data Center Load Volatility 28
2. Simultaneous Uninterruptable Power Supply (UPS) Trips 37
3. Data Center Induced Harmonics 45
B. IMPACT ON RESOURCE ADEQUACY 52
1. The PJM Experience 52
2. Special Contracts – Bring Your Own Capacity 57
3. Onsite Generation 57
4. Demand Response 66
5. Shedding Data Center Load First 67
6. Proposal: Two-Tiered Demand Response 69
7. Capacity Adequacy Summary 71
V. DATA CENTER LOADS ARE UNIQUE 72
VI. RECOMMENDATIONS 83

I. QUALIFICATIONS

Q. Please state your name and business address.

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

Q. Who are you representing, and what is your title and role there?

A. I'm representing The Great Lakes Renewable Energy Association (GLREA). I am on the Board of Directors. I am also the Chairman of the Policy Committee.

Q. Who is the GLREA?

A. The GLREA is a 501(c)(3) (non-profit) corporation based in Michigan. Our Mission Statement is to "Promote the Use of Renewable Energy in Michigan and in the Great Lakes Region, By Empowering Our Members and the Public Through Advocacy, Education and Strategic Collaboration." And our Vision Statement is: "We believe that current and emerging clean, renewable energy solutions can provide 100% of the electrical energy demand in the Great Lakes Region. Furthermore, we believe that increasing development and access to clean, renewable energy that is locally produced, operated and utilized supports economic development, creates new good paying jobs and is essential to supporting healthier, more resilient communities that advance climate justice."

Q. Please describe your educational background.

A. I received a Bachelor of Science degree in Computer Engineering, with a minor in Economics, from Oakland University in 1982. I did some graduate work in software engineering at both Oakland University, and University of Detroit, Mercy. I did some alternative energy coursework at Oakland Community College. I received a Master of Science in Renewable Energy from Murdoch University in Perth, Australia in 2009. I've

been through training at Michigan State University's Institute for Public Utilities Regulatory Research and Education's courses on "utility regulation", and "grid school."

Q. Please describe your relevant business experience.

A. At Frontier Communications, I was the Senior Manager of Hardware Integration. In this role, I performed request for proposals (RFPs) and request for quotes, set up the criteria for evaluating the responses, engaged in purchase negotiations, and performed project management for equipment installation, testing, and turn-up. I had a $25M capital budget for equipment purchases. I also created the Company's capacity forecasting model, and did net present value (NPV) analysis to determine which equipment sites should be closed and consolidated. I was promoted to Director, Product Platform Development, where I again did RFPs and equipment selection. As a Sr. Product Development Manager at Global Crossing, I created new business processes in support of new product launches.

During 2002, I consulted on renewable energy policy for the GLREA (among others). In that role, I did a presentation to Michigan legislators and staff on policies to incentivize renewable energy deployments. I was one of three invited presenters to the Northeast and Midwest Caucus meeting on a national RPS at the U.S. Capitol Building. And I was a member of the MPSC Collaborative on Renewable Energy. Under contract with American Council for an Energy Efficient Economy, I wrote a white paper on energy efficiency policy, which was presented to the Governor of Michigan. I was also featured in the PBS documentary film, *Michigan's Green Energy Economy.*

In 2010 and 2011, I was an adjunct instructor at Macomb Community College, teaching a course on solar energy. My resume is provided as **GLREA Exhibit-1**

Q. Have you previously presented testimony before the Michigan Public Service Commission ("MPSC" or the "Commission")?

A. Yes, in the following cases:

- U-18091, DTE Electric PURPA case (remand)
- U-18232, DTE REP (reopened)
- U-20165, Consumers Energy IRP case
- U-20359, Indiana Michigan Power rate case
- U-20471, DTE Electric IRP
- U-20561, DTE Electric Rate case
- U-20713, DTE Electric Renewable Energy Plan
- U-20836, DTE Electric Rate case
- U-21090, Consumers Energy IRP
- U-21172, DTE VGP
- U-21193, DTE Electric IRP
- U-21375 DTE Electric VGP
- U-21534, DTE Electric rate case
- U-21816, Consumers Energy REP
- U-21972 Consumers Energy VGP
- U-22058 DTE Electric special contracts

Q. What is the purpose of your direct testimony?

A. To provide useful background information on data center growth and the unique characteristics of data center load, and to argue for specific changes to the proposed tariff to better ensure grid reliability and capacity adequacy.

Q. Are you sponsoring any exhibits?

A. Yes:

Exhibit GLREA-1 Resume of John Richter

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

A. Yes.

II. BACKGROUND

A. TSUNAMI OF DATA CENTER PROPOSALS

Q. What is a data center?

A. Amazon Web Services (AWS), one of the largest computing service companies defines a data center as:

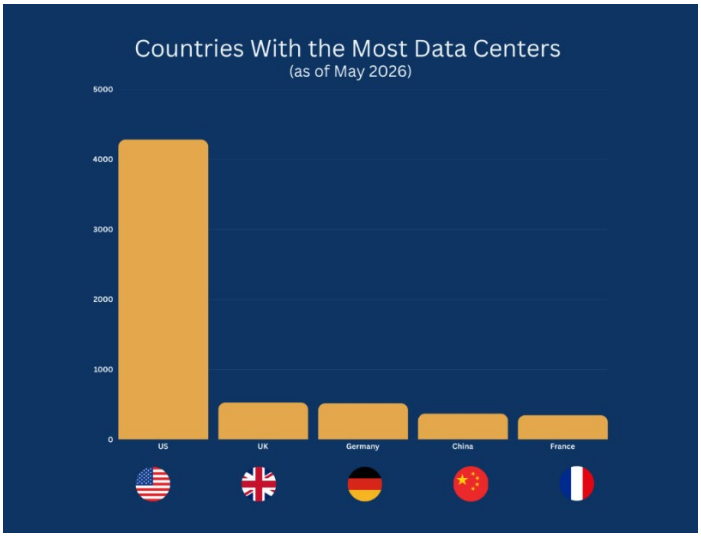
> "A data center is a physical location that stores computing machines and their related hardware equipment. It contains the computing infrastructure that IT systems require, such as servers, data storage drives, and network equipment. It is the physical facility that stores any company's digital data."[1]

[1] Amazon Web Services, "What is a Data Center". Accessed on 5/27/26 at: https://aws.amazon.com/what-is/data-center/

Q. How many data centers there, and where are they?

A. There are more than 11,000 data centers in the world today, and the US has eight times as many as any other country.[2]

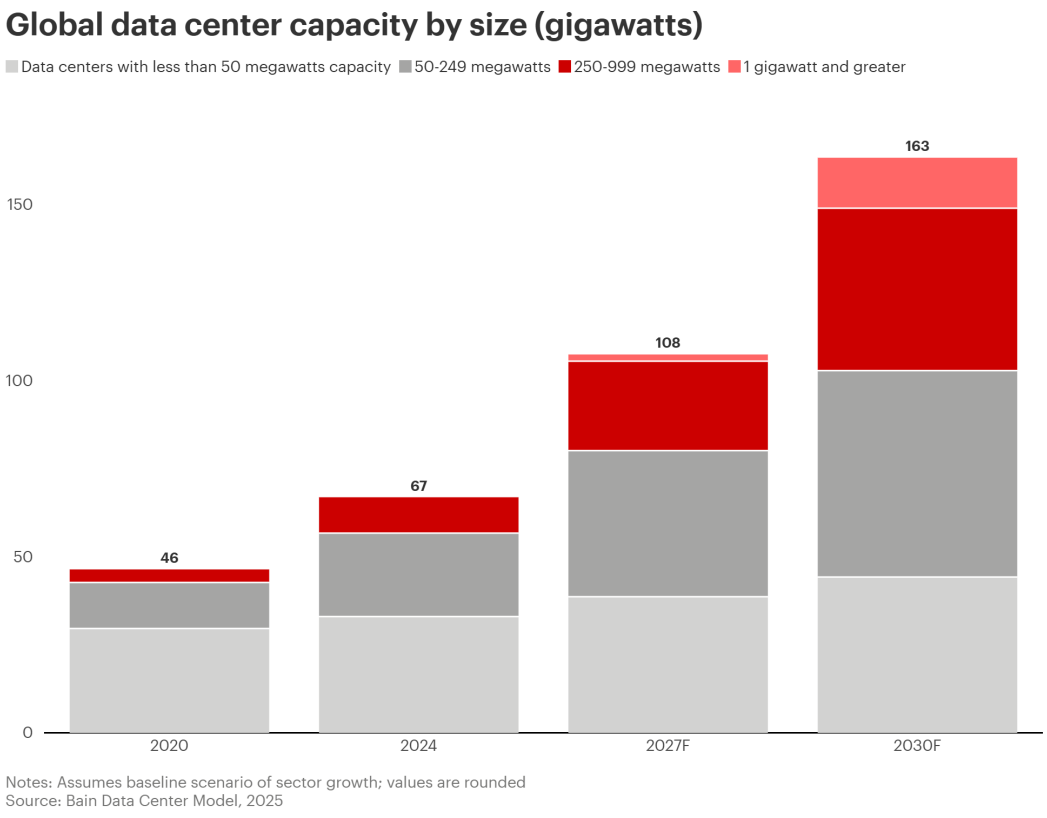




[2] "Measuring the Data Center Boom: Facts and Statistics (2026)," *programs.com*, May 11, 2026. Accessed on 5/27/26 at: https://programs.com/resources/data-center-statistics/ and citing data from: https://www.datacentermap.com/

Q. Data centers have been around for decades, why have they become an issue for the grid only recently?

A. The term "data center" is extremely broad. Many of the older data centers are tiny by today's standards. In 2024, the average data center had a load of only 4 MW.[3] In 2020, there were only 46 data centers in the world larger than 250 MW of load. Today, we're planning data centers more than 38 times that size:[4]



[3] Ibid

[4] Padraic Brick, Tatum Quinn, Peter Hanbury, Aaron Denman, and Alessandro Cannarsi, "AI Data Center Forecast: From Scramble to Strategy," *Bain & Company*, accessed on 5/27/26 at: https://www.bain.com/insights/ai-data-center-forecast-from-scramble-to-strategy-snap-chart/ ; Clearview reports that the Delta Gigasite data center in Millard, UT is expected to draw 9,700 MW. Accessed on 5/28/26 at: https://cleanview.co/data-centers/us

As a result, over time, larger data centers will dominate:[5]

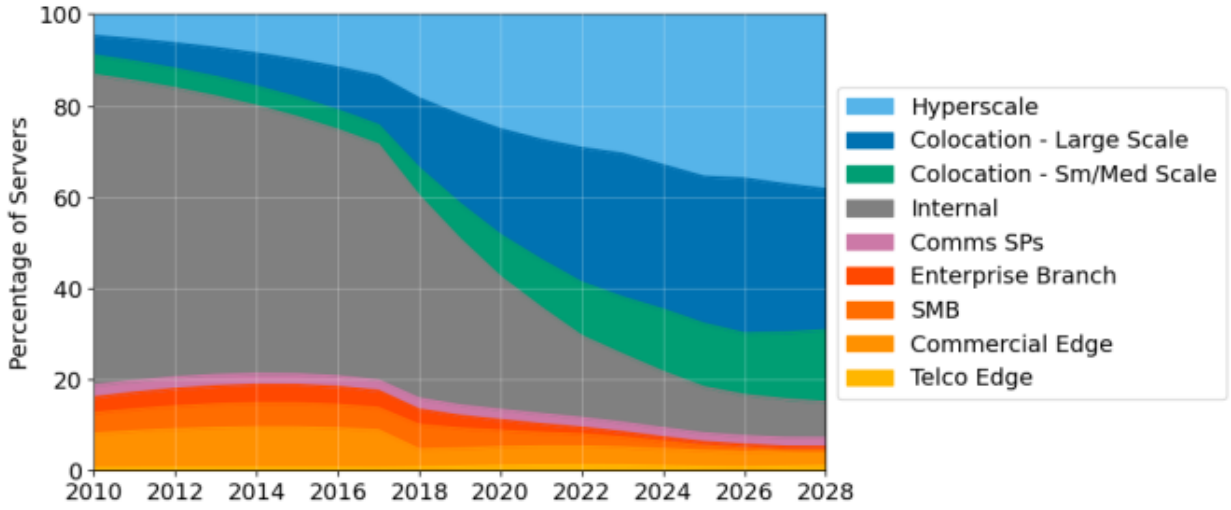


Figure 4.1. Distribution of servers by data center type.

[5]Arman Shehabi et al, "2024 United States Data Center Energy Usage Report," *LBL Publications*, December 2024, p 37. Accessed on 5/27/26 at: https://escholarship.org/uc/item/32d6m0d1

Q. What are these data centers being used for?

A. While many existing data centers are being used for traditional data processing, supporting websites or streaming, most of the new data center proposals are for artificial intelligence (AI). It's estimated that by 2030, 50%[6] to 70%[7] of data center computing will be for AI. There are two distinct AI activities: training a new AI model, or answering queries made to the AI, which is called "inference." The AI industry's focus is moving from training to inference, as it moves from development to sales.[8]

Q. How much energy can it take to train a new AI model?

A. Each new model is more complex and requires more processing and energy. For example, training the AI model ChatGPT-3 consumed 1,300 MWh.[9] It's successor, ChatGPT-4, consumed 50 GWh - 38 times as much energy.[10]

[6] Padraic Brick, Tatum Quinn, Peter Hanbury, Aaron Denman, and Alessandro Cannarsi, "AI Data Center Forecast: From Scramble to Strategy," *Brain & Company*, accessed on 5/26/26 at: https://www.bain.com/insights/ai-data-center-forecast-from-scramble-to-strategy-snap-chart/

[7] McKinsey Quarterly, slide 3 "The AI effect." Accessed on 5/26/26 at: https://www.mckinsey.com/quarterly/the-five-fifty/five-fifty-more-data-more-demand

[8] Digital Ocean, "AI Inference vs Training: Key Differences Explained," February 27, 2026. Accessed on 5/27/26 at: https://www.digitalocean.com/resources/articles/ai-inference-vs-training

[9] James Vincent, "How much electricity does an AI consume?" *The Verge*, February 16, 2024. Accessed on 5/27/26 at: https://www.theverge.com/24066646/ai-electricity-energy-watts-generative-consumption

[10] James O'Donnell and Casey Crownhart, "We did the math on AI's energy footprint. Here's the story you haven't heard," *MIT Technology Review*, May 20, 2025. Accessed on 5/27/26 at: https://www.technologyreview.com/2025/05/20/1116327/ai-energy-usage-climate-footprint-big-tech/

Q. How many new data centers are being proposed in the US and in Michigan?

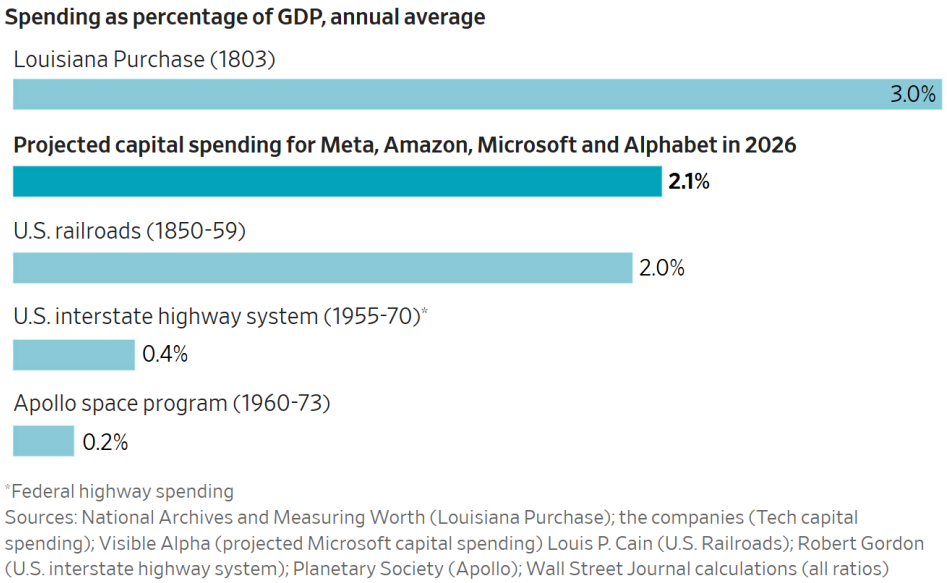
A. In the US, the market intelligence company Clearview is tracking 614 operating data centers with a total load of 18 GW, and 936 planned data centers, with a planned load of an additional 330 GW. In Michigan, Clearview is tracking 2 operating data centers with a load of 3 MW, and 14 planned data centers with a planned load of 2,964 MW[11] Their list did not provide a load estimate for the Flex data center proposed in S. Lyon Twp. I attended the data center informational meeting in S. Lyon on January 22, 2026; the representative from developer Verrus stated that the project's load would start at 200 MW and ramp to 525 MW.

Q. How much money is being invested in data center expansion?

A. It is difficult to comprehend the size of this industry. The Wall Street Journal compared the capital investment of the four largest US tech companies as a percentage of the US Gross Domestic Product (GDP) and found that it exceeded the percentage of GDP spent on the US railway system at its peak development, the US interstate highway system, or the Apollo space program.[12]

[11] Clearview, "Data Centers in the United States", and "Data Centers in Michigan," last updated May 2026. Accessed on 5/27/26 at: https://cleanview.co/data-centers/us and https://cleanview.co/data-centers/michigan, respectively

[12] Meghan Bobrowsky, Drew An-Pham, and Alana Pipe, "Big Tech's AI Push Is Costing a Lot More Than the Moon Landing," *The Wall Street Journal*, February 7, 2026. Accessed on 5/27/26 at: https://www.wsj.com/tech/ai/ai-spending-tech-companies-compared-02b90046?pos=1&page=1 (paywall)



Data center capital investment hit $770 B in 2025.[13] For comparison, the aggregate capital investment for 47 US investor- owned energy utilities was $215B in 2025.[14] In the first half of 2025, data center development and IT accounted for 92% of the growth in US GPD.[15] It's simply astounding.

[13] Rystad Energy, "Putting things in perspective: Data center investments now on par with renewables, oil and gas," March 25, 2026. Accessed on 6/3/26 at: https://www.rystadenergy.com/insights/putting-things-in-perspective-data-center-investments-now-on-par-with-renewables

[14] Jason Lehmann, Heike Doerr, and Dan Lowrey, "US utility capex forecast nudges higher on increased generation spending plans," *S&P Global*, September 23, 2025. Accessed on 5/27/26 at: https://www.spglobal.com/market-intelligence/en/news-insights/research/2025/10/us-utility-capex-forecast-nudges-higher-on-increased-generation-spending-plans

[15] Nick Lichtenberg, "Without data centers, GDP growth was 0.1% in the first half of 2025, Harvard economist says," *Fortune*, October 7, 2025. Accessed on 5/29/26 at: https://fortune.com/2025/10/07/data-centers-gdp-growth-zero-first-half-2025-jason-furman-harvard-economist/

Q. What historical technological development had an impact of the scale of data centers and the artificial intelligence?

A. The comparison made my multiple experts, including a former CEO of Google and the Pope, is the industrial revolution,[16,17, 18] or the invention of the wheel.[19] It is very difficult to predict what our lives will be like in 20 or 30 years.

Q. How much will data centers affect demand for electrical energy in the US?

A. A 2024 study by Lawrence Berkeley National Laboratories (LBNL) estimated that data centers consumed 1.9% of US electrical energy in 2018, and 4.4% in 2023. LBNL projects that by 2028, data centers will consume between 6.7% and 12.0% of US electrical energy (see graph below).[20]

[16] Arcelia Martin, "A New Era of Data Center Development Is Like a Second Industrial Revolution," *Inside Climate News*, 3/14/26. Accessed on 7/26/26 at: https://insideclimatenews.org/news/14032026/data-center-development-energy/

[17] Hannah Devlin, "AI 'could be as transformative as Industrial Revolution'," 5/3/23. Accessed on 7/26/26 at: https://www.theguardian.com/technology/2023/may/03/ai-could-be-as-transformative-as-industrial-revolution-patrick-vallance

[18] Nathan Schneider, "Pope Leo XIV compares AI to the Industrial Revolution – as new alternatives to big AI firms take shape," 5/26/26. Accessed on 7/26/26 at: https://theconversation.com/pope-leo-xiv-compares-ai-to-the-industrial-revolution-as-new-alternatives-to-big-ai-firms-take-shape-283249

[19] Bob Choat, "Unleash the AI Revolution: How Today's Tech Compares to Historic Innovations," *Medium*, 3/26/2023. Accessed on 7/26/26 at: https://medium.com/@bobchoat/unleash-the-ai-revolution-how-todays-tech-compares-to-historic-innovations-28c1be8d223

[20] Arman Shehabi et al, "2024 United States Data Center Energy Usage Report," *LBL Publications*, December 2024, p 5. Accessed on 5/27/26 at: https://escholarship.org/uc/item/32d6m0d1

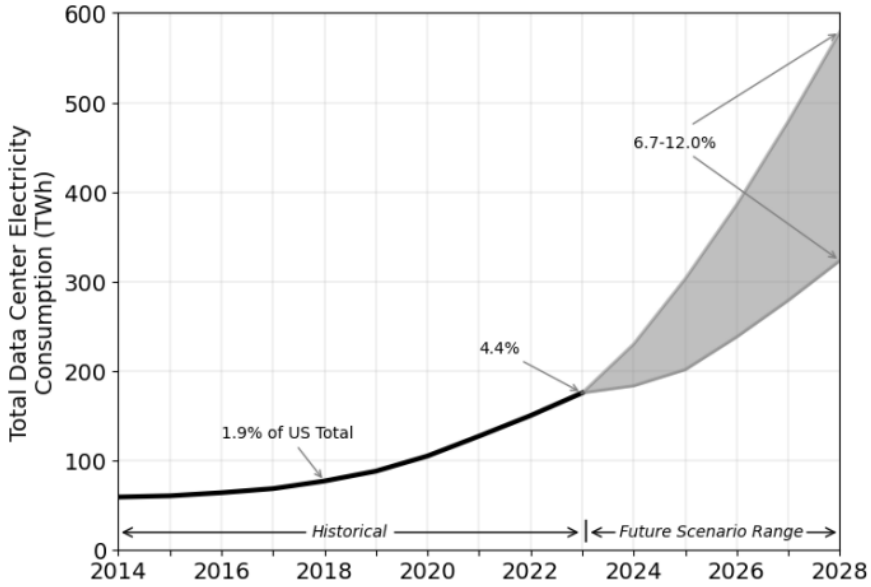
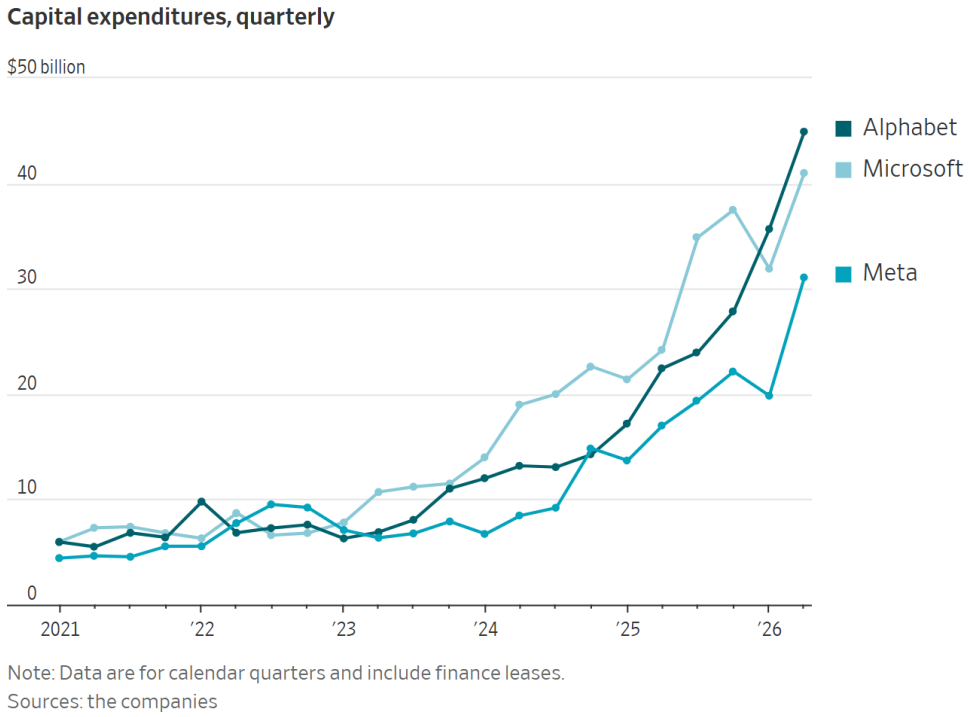


Figure ES-1. Total U.S. data center electricity use from 2014 through 2028.

AI companies have continued to accelerate their build out of data centers; [21] the estimates of power demand have since increased with it. In December of 2025, BloombergNEF forecast that data center demand would reach 106 GW, 36% above its projection in April, 2025. In July, 2026, it increased its estimate another 83%, to 194 GW, about 20% of the nation's electricity.[22]

[21] Meghan Bobrowsky, "Meta Stumbles as Tech Investors Demand Better Answers on AI Spending," Wall Street Journal, July 29, 2026. Accessed on 7/30/26 at: https://www.wsj.com/tech/ai/meta-stumbles-as-tech-investors-demand-better-answers-on-ai-spending-fc731909

[22] Luke James, "Data centers forecast to use 20% of US power by 2035 — analysts estimate usage will rocket to 194 gigawatts, 83% more than forecast seven months ago," tom's Hardware, July 22, 2026. Accessed on 7/27/26 at: https://www.tomshardware.com/tech-industry/data-centers/bnef-nearly-doubles-its-us-data-center-power-forecast-to-194gw



Jim Robb, president and CEO of the North American Electric Reliability Corp., told a House subcommittee that the rate of increase in electricity demand is "staggering." Summer peak demand is projected to rise by 200 GW, with winter demand growing faster. "That's 70% higher than what we projected at this time last year," Robb said.[23]

[23] Robert Walton, "January's Winter Storm Fern was 'classic near-miss' for US grid, says NERC's Robb," *Utility Dive*, March 20, 2026. Accessed on 5/29/26 at: https://www.utilitydive.com/news/januarys-winter-storm-fern-was-classic-near-miss-for-us-grid-says-nerc/815291/

Q. How much will data centers affect demand for electrical energy in Michigan?

A. That's difficult to say with any precision. Some proposals become operating data centers, and some never get built. The 1.4 GW Oracle data center under construction in Saline Twp. is projected to ramp to a load of 10,904 GWh/yr.[24] The proposed Google data center will consume 7,884 GWh/year,[25] for a total data center load of (10,904 GWh/yr. + 7,884 GWh/yr.) 18,788 GWh/yr. For comparison, DTE Electric's current projection of 2026 sales to retail customers is 39,635 GWh.[26] Therefore, the combined load of these two data centers will be approximately (18,788 GW/yr. / 39,635 GWh/yr.) **47%** of DTE Electric's retail sales. DTE Electric (DTEE) has said they are in discussions with an additional 6 GW of potential data center /projects, over and above the two in Saline Twp. and Van Buren Twp.[27]

[24] U-21990, Exhibit A-3, row 4 "Incremental Data Center Load," columns (e) through (i)

[25] Direct testimony of K. L. Bilyeu, p KLB-9, Table 1

[26] U-21990, Exhibit A-3, row 4, column (c).

[27] Robert Walton, "DTE sees up to 8.4 GW data center opportunity," *Utility Dive*, May 1, 2026. Accessed on 5/27/26 at: https://www.utilitydive.com/news/dte-energy-data-center-earnings-reliability/819052/

Consumers Energy has testified that they have inquiries from over 30 different data center leads that total over 15 GW of load.[28] For comparison, as of December 2021, Consumers Energy had a total system generating capacity of 5,300 MW.[29] Intelligence platform Sightline Climate estimates that 30-50% of the US data center pipeline will not be built.[30] If half of the DTE "potential" projects and half of the Consumers Energy "inquiries" were built, it would represent (.5 x 6 GW) + (.5 x 15 GW) = 10.5 GW of additional load.

III. PROPOSED TARIFF

Q. Why did DTE Electric file its application in the instant case?

A. The Commission ordered it, in case U-21990, which approved special contract for a data center in Saline Twp. The Commission order stated:

> "Within 90 days of the date of this order, DTE Electric Company shall file an application for approval of a generally applicable large load customer tariff that aligns with the findings in the November 6, 2025 order in Case No. U-21859."[31]

[28] U-21859, Direct testimony of Laura Connolly, 3 Tr 85

[29] Consumers Energy, "Electric Operation Statistics," December 2021. Accessed on 5/28/26 at: https://www.consumersenergy.com/about-us/electric-generation/electric-operations-statistics

[30] Olivia Wang, "Data center outlook: half of 2026 pipeline may not materialize," *Sightline Climate Outlook*, February 24, 2026. Accessed on 5/28/26 at: https://www.sightlineclimate.com/research/data-center-outlook

[31] U-21990, Commission order dated December 18, 2025, p 45

Q. Why is the Commission's review of the proposed large load tariff provisions critical?

A. Firstly, as I've discussed in the prior section, large load customers (i.e., data centers) could soon become a very large portion of Michigan's total electrical energy consumption. Secondly, review is critical because the Company's financial incentives are not well aligned with the interests of other ratepayers. New large loads will require the Company to either acquire significant amounts of new generating capacity, or to sign large PPA agreements, or both. Either approach to meeting the load growth provides the Company with a massive new profit opportunity. It is therefore reasonable to think that the Company will pursue contract terms and conditions that will encourage data centers to locate in its service territory, enhancing its profit opportunity. Service terms that reduce power quality, grid reliability, or capacity adequacy are essential to protect other customers. The Commission should regard the proposed tariff provisions from the reasonable perspective that the Company has a strong motive to encourage more data centers to locate here, perhaps overriding other considerations.

Q. What were the key provisions of the large load tariff approved in U-21859?

A. I've created a table of key provisions in U-21859, and added a column reflecting the Company's proposal in the instant case. For each provision, I've included the page number in the Commission's order dated November 6, 2025 in case U-21859, and the page number in the Company's filing in the instant case, for traceability.

Provision	U-21859	Page	U-22061 filing	Page
Applicability	>100 MW single-site > 100 MW across sites of > 20 MW Existing customers transfer to the new rate	105-6 115	>100 MW single-site > 100 MW across sites w/avg > 20 MW Only new customers	AW-8, AW-7
Contract length	15 yr after ramp Ramp ≤ 5 yrs 5-yr evergreen 4 -r notice prior	108	15 yr after ramp Ramp ≤ 3 yr 5-yr auto extension 3-yr notice prior to ext.	AW-8
Min bill demand (MBD)	80% of contract capacity	109	80% of contract capacity	AW-8
Exit fee	MBD x remaining contract term, including SAC Utility should mitigate exit fee	109-10	MBD x remaining ramp + 15 yr or remaining contract or 24 months	AW-12
Exit notice	Not mentioned	N/A	3 yrs for non-renewal 2 yrs and pay exit fee	AW-13
Load reduction	One-time reduction of no more than 10%, with 4-yr notice, or ex parte proceeding	111	"The contract capacity however established shall not be decreased during the term of the contract and subsequent renewal periods as long as service is required unless there is a specific reduction in connected load."	A-1 3 of 6
Collateral	Default: half the exit fee Irrevocable letter of credit or cash May apply for other options	112	Default: 100% of the termination fee Less at DTEE's sole discretion Mix of letter of credit, cash, or parent guarantee, at DTEE's discretion	AW-13
CIAC allowance	Should address in a rate case	114-5	Twice expected distribution revenue	AW-14
Admin fee	$100,000 True-up to actual costs	123	< 200 MW $100,000 ≥ 200 MW $200,000 No mention of true-up	AW-13
Load > contracted capacity	Not mentioned	N/A	Up to 5% of load for no more than 3 months out of 12	AW-11 A-1; 1 of 6

			Any reading > contract capacity becomes the new contract capacity	
New customer	Ex parte filing required, demonstrating costs are not being paid by other customers	117	Not filing mentioned Has a number of pending requests for service	AW-5

Q. Are there provisions in which the Company's proposal varies from the order in U-21589, in ways which you object to?

A. Yes, the "load reduction", "collateral", "load > contracted capacity", and "new customer" provisions have problematic terms.

Q. What do you find objectionable in the Company's proposed "load reduction" terms and conditions?

A. In U-21859, the Commission ordered that a specific degree of load reduction is allowed. In the Company's proposal, there is no *new* language (not existing in D11 already) on this issue. Additionally, the existing language is vague and open-ended:

> "The contract capacity however established shall not be decreased during the term of the contract and subsequent renewal periods as long as service is required *unless there is a specific reduction in connected load*."[32] (emphasis added)

[32] Exhibit A-1 of A. Willis, p 3 of 6, under "special terms and conditions:"

I'm guessing that this term was designed for a scenario in which an industrial customer removes some equipment from service, but it's unclear. If a data center customer under this rate sheet shut down or physically removed some racks of computing equipment, can they reduce their contracted capacity? Is there any limit on the amount of "specific reduction in connected load" that is allowed? None is specified, raising the possibility of significant stranded costs if a data center pulls equipment out of service and reduces their contracted capacity.

Q. How should the Commission remedy the load reduction provision?

A. The Commission should order it revised to match the one-time 10% reduction, or submit an ex parte filing per U-21859. Alternatively, the Commission could simply order that the sentence in D11allowing contract reduction be removed entirely, eliminating any option for a reduction in contracted load. This alternative would provide stronger customer protection from stranded assets.

Q. What do you find objectionable in the Company's proposed "collateral" terms and conditions?

A. In U-21859, the Commission recognized the importance of collateral:

> "Finally, even in instances in which exit fees are sufficient to protect against loads that fail to materialize or against customers that cancel or reduce service prior to meeting the minimum term of billing demand, it is also necessary to ensure that sufficient collateral is in place if the contracted large load customer ultimately becomes insolvent and unable to pay the required exit fee. This is particularly important for customers with lower credit ratings, as well as in the case of any potential industry-wide decline that also impacts the financial position of otherwise healthy corporate parents. It is against this backdrop that the Commission reviews the specific elements proposed by the company and the evidence from the intervening parties."[33]

And also:

> "…issues of collateral are more dependent on the specific creditworthiness of an individual Applicant… the Commission is adopting a set of *collateral requirements that can act as a default, while providing for Consumers to apply for approval to seek higher or lower collateral requirements on a case-by-case basis*… Thus, this default collateral provision will evolve over time… The default acceptable forms of collateral include a *standby irrevocable letter of credit or cash* (which earns interest) … Because of the uncertainty regarding the credit quality of an unknown large load customer, the Commission is not approving a parent guarantee as sufficient to meet this default collateral requirement, though the Commission remains open to considering the use of parent guarantees—either on their own or in concert with other collateral—on a case-by-case basis… If Consumers determines that a different amount of collateral (either higher or lower) or a different form of collateral (including a guarantee from a parent company) is appropriate for a given large load customer, Consumers shall include this information in the general application (as discussed below) *that will be required for each large load customer* prior to that customer moving on to Rate GPD. Consumers' application should demonstrate that it is reasonable and prudent to adjust the level(s) or form of collateral. The Commission will review this request, taking into account the risk level of the individual large load customer, including the credit rating of the customer and/or its parent company. If the Commission decides the different level or form of

[33] U-21859, Commission order dated November 6, 2025, p 104

> collateral presented in the filing is commensurate with the risk presented by the customer, it may approve a level different from the default. If either the default collateral or an approved alternative *collateral amount is insufficient in the event of a default and results in Consumers incurring stranded costs, and if Consumers then seeks recovery of the stranded costs, then the Commission will address recovery of those stranded costs at that point in time.* The ex parte application should include a demonstration that the alternative collateral The Commission finds that collateral exemptions are not required, in light of the utility's ability to require an amount lower than the default collateral provision approved by this order."[34]

Thus, the Commission set up default collateral requirements, and reserved the right to make case-by-case exceptions if the utility petitioned it to do so. The Commission did **not** grant the right to make collateral exceptions at the discretion of the utility. It required that letters of credit are "irrevocable," a critical legal term missing from DTEE's proposal. It did not accept a parent guarantee as an acceptable form of default collateral, unlike DTEE's proposal.

Q. Were there any collateral-related provisions ordered in U-21990, which were not present in U-21859?

A. Yes. Significantly, the Commission issued a directive placing liability on the Company in the scenario in which the customer is in default, and the collateral is insufficient to cover the shortfall:

[34] U-21859 Commission order dated November 6, 2025, p 112-4

> "In addition, in the event of a failure to pay the MBD under the PSA, or in the event of a termination, default, or other event whereby DTE Electric is required to draw on the letter of credit or parental guaranty, if the company determines that the specified collateral is not sufficient to cover the full amount of the remaining financial exposure associated with the ESA or the PSA (minus the value to customers), the Commission specifically cautions DTE Electric that any unrecovered costs shall not be borne by ratepayers and that DTE Electric bears responsibility for any remaining liability. All risk associated with the sufficiency of the collateral shall be borne by DTE Electric."

Additionally, in U-22058, the Company accepted liability in the same scenario:

> "…the Company acknowledges that it bears the risk of collateral insufficiency for costs that the Commission ultimately determines in excess of revenues received…"[35]

Note that the Commission orders in U-21589 and U-21990 provided very different statements regarding liability for collateral shortfalls in the event of customer default. In U-21990, the utility negotiated collateral quantity and quality with the customer and presented it to the Commission for approval. The Commission approved the collateral proposed, but (very properly) placed the liability for collateral insufficiency on the utility. In U-21589, the Commission set up default collateral requirements, and deferred any decision on the liability for collateral insufficiency to a future case, should that scenario arise. DTEE wants to have the best of both arrangements; unfettered discretion as to what kind of collateral is required, but no liability for collateral insufficiency.

[35] U-22058, rebuttal testimony of N. T. Foley, 3 TR 135 lines 1-3.

I also note that the Commission discussed the relationship between collateral requirements and the customer's credit worthiness. Over the 15-year (or longer) duration of a large load customer contract, the customer's credit worthiness could decline. DTEE addressed the importance of the customer's credit rating in U-22058, and included a provision that the customer must provide a letter of credit if their credit rating drops below a pre-defined level. This is called a "rating trigger"[36] or a "credit rating clause," [37] and is common in contract law and loan agreements. Such a clause was notably absent from the Commission's default collateral discussion in the order dated November 6 in U-21589.

Q. How should the Commission remedy the Company's proposed collateral provision?

A. First, I observe that regardless of the collateral, ratepayers are exposed to some risk if one or more data centers cancel their agreements. DTEE must build generation and transmission/distribution capacity to supply the full contracted amount of energy. The equipment purchased will have a lifetime significantly in excess of the 15-year term of the contract, and the customer is only required to pay for 80% of the energy they contracted to purchase. The protection provided with a 15-year duration and 80% MBD is not complete protection. With that said, in terms of collateral, I see two approaches:

1. The Commission could grant the Company control over the amount and type of collateral accepted and assign the Company full liability if the collateral is

[36] Konstantin Vasilev, "Rating Trigger," Cbonds, 2/14/24. Accessed on 7/24/26 at: https://cbonds.com/glossary/rating-trigger/

[37] Cobrief, "Credit rating clause: Copy, customize, and use instantly," 3/20/25. Accessed on 7/24/26 at: https://www.cobrief.app/resources/contract-clause-library/credit-rating-clause-copy-customize-and-use-instantly/

insufficient, as it did in U-21990. This approach is valid, but leaves other ratepayers at a slight risk, if one or more customer defaults drive the Company to the brink of bankruptcy. Recall that Consumers Energy was driven to the brink of bankruptcy due to imprudent costs incurred in the construction of the (eventually canceled) Midland nuclear power plant.[38] Despite the liability belonging to the utility, the MPSC approved rate increases to fund a "stabilization fund"[39]

2. The Commission could follow the precedent in U-21859 and require a percentage of the exit fee as collateral in cash or an irrevocable letter of credit. This approach gives the Commission and/or Staff considerable responsibility to assess the creditworthiness of the customer. If the Commission chooses this approach, it should increase the collateral amount to 100% of the exit fee; collateral of only 50% of the exit fee leaves ratepayers highly exposed in the event of customer default. Alternatively (and with higher risk), the Commission could keep the collateral requirement at 50% and include a credit rating clause to demand more collateral, if the customer's credit rating declines. Note that Oracle's credit rating was recently downgraded by both S&P and Moody's, and is now only one step above "speculative grade" status.[40]

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[38] Wikipedia, "Midland Cogeneration Venture." Accessed on 7/24/26 at: https://en.wikipedia.org/wiki/Midland_Cogeneration_Venture

[39] Association of Businesses Advocating Tariff Equity v. Public Service Com'n, 527 N.W.2d 533, 208 Mich.App. 248 (Mich. App. 1994), referencing MPSC case U-7830

[40] Vasundhara Sawalka, "Oracle's Credit Risk Nears an 18-Year High: Can AI Backlog Save Stock?" *Yahoo Finance*, July 21, 2026. Accessed on 7/25/26 at: https://finance.yahoo.com/markets/stocks/articles/oracles-credit-risk-nears-18-151000986.html

Q. What do you find objectionable in the Company's proposed "load > contracted capacity provision?"

A. This provision allows the customer to draw up to 5% more power than its contracted capacity, for up to 3 of 12 months. First, I note that there was no similar provision in the tariff approved in U-21859; this provision is a deviation from that model. Secondly, the provision's limit of 5% is with respect to the customer's contracted capacity and not the impact on the grid. To illustrate: for a customer with a contracted capacity of 2 GW, the increase would be limited to 100 MW (5% of 2 GW). A new 100 MW customer would trigger the large load requirements in and of itself, and this provision will allow an expansion that size without any Commission review. A 2 GW data center is not an unlikely example; a 9 GW data center is under construction in Utah,[41] and there are 10 and 11 GW data centers proposed in Wyoming and Texas (respectively).[42] Bloom Energy projects that by 2035, 32% of data centers will be 1 GW or larger.[43]

Additionally, the load expansion provision does not differentiate between excess load in the peak summer months vs. excess load the rest of the year. About 30-55% of a

[41] Oliver Milman, "'Irresponsible': backlash as Utah approves datacenter twice the size of Manhattan," *The Guardian*, 5/13/26. Accessed on 7/25/26 at: https://www.theguardian.com/us-news/2026/may/13/utah-approves-datacenter-backlash

[42] Aaron Foyer, "The 20 Largest Data Centers Being Developed in North America," *Shift Lab* by Orennia, 2/17/26. Accessed on 7/26/26 at: https://orennia.com/insights/the-20-largest-data-centers-being-developed-in-north-america

[43] "2026 Data Center Power Report," *Bloom Energy*, January, 2026, p 6. Accessed on 7/27/26 at: https://www.bloomenergy.com/wp-content/uploads/2026-power-report.pdf

data center's load is for cooling,[44] with an industry average of 40%.[45] So (absent a load profile), we may reasonably expect that these customer's peak load will occur during the summer months, when the grid is under the most stress. Adding 100 MW of load in the summer months could affect system reliability.

Q. How should the Commission remedy the Company's proposed "load > contracted capacity" provision?

A. It would be reasonable and prudent, for the sake of system reliability, for the Commission to require the Company to remove this provision entirely. Alternatively, if the Commission favors giving large load customers some latitude, the provision should be re-written. The cap should be the lessor of: 5% of the customer's contracted capacity, or 50 MW, and be restricted to the nine non-summer months, as defined in MISO capacity auctions. If, in the future, due to high levels of solar deployment, the critical time for meeting load is in the winter months (with low solar output), the provision may be changed.

[44] "Data Center Cooling Costs," *Data Span*, 8/23/22. Accessed on 7/26/26 at: https://dataspan.com/blog/data-center-cooling-costs/

[45] "Energy consumption in data centers: air versus liquid cooling," *Eaton*, undated. Accessed on 7/26/26 at: https://www.eaton.com/us/en-us/markets/data-centers/data-center-cooling/efficiency/energy-consumption-in-data-centers-air-versus-liquid-cooling.html

Q. What do you find objectionable in the Company's proposed "new customer" provision?

A. Unlike the tariff approved in U-21859, this provision makes no mention of requiring Commission approval of contracts for all new customers. The absence of any such reference could be interpreted as allowing a new large load customer to connect to DTEE's grid without any Commission approval, just as other industrial customers on the D11 tariff may connect without Commission approval.

Q. How should the Commission remedy the Company's proposed "new customer" provision?

A. The Commission should require a clear statement in the tariff that all new large load customers must sign a power supply agreement, subject to review by the Commission, in a contested case.

IV. CONCERNS NOT ADDRESSED IN U-21859

Q What significant risks do data centers create, which the Commission did not address in its November 6, 2025 order in U-21859?

A. Data centers create at least two distinct, significant risks for the grid, which I will address in sequence: risk to grid reliability, and risk to resource adequacy.

A. Risk to Grid Reliability

Q. How do data centers pose a risk to grid reliability?

A. There are three different ways in which data centers have been shown to affect grid reliability: dramatic load volatility, simultaneous UPS trips and brief but powerful harmonics.

1. Data Center Load Volatility

Q. Is data center load volatility a recognized issue?

A. Yes. Former US Secretary of Energy (and former Governor of Michigan) Jennifer Granholm explained the issue on LinkedIn:

> "One of the least understood aspects of the AI-data-center boom is not the size of the load … it's the *volatility of the load*.
>
> Utilities have historically treated data centers as large but relatively flat demand sources — closer to steady industrial load than to highly dynamic systems.
>
> AI changes that. Why?
>
> Because frontier AI clusters may involve tens of thousands of GPUs operating in synchronized computational cycles. Instead of millions of independent computing tasks smoothing each other out, you increasingly get giant clusters behaving almost like a single machine.
>
> That means power demand can ramp sharply — and quickly. And the volatility doesn't stop with the chips.
>
> When GPU utilization spikes, heat spikes, cooling systems ramp, pumps and chillers respond, and power electronics react.
>
> At very large scale, those coupled swings can become significant grid events.
>
> A 1 GW AI campus experiencing a rapid 10% load swing means a 100 MW change in demand.
>
> That is utility-scale generation territory.
>
> And unlike traditional utility planning assumptions, these changes may occur in seconds — or subseconds — rather than over hours.
>
> This matters because the grid was largely designed around gradual load ramps, predictable industrial demand and hourly planning models.
>
> AI infrastructure may require a different architecture: 1) *onsite batteries for power smoothing*; 2) *advanced inverter systems*; 3) sophisticated reactive power management; 4)

> grid-aware workload scheduling and 5) *new interconnection standards*.
>
> Ironically, the future AI campus may look less like a passive customer and more like a miniature grid operator.
>
> The next era of grid planning may not just be about adding more power.
>
> It may be about *managing a fundamentally different kind of load*."[46] (emphasis added)

Granholm identifies several critical points, and I will return to the issues in her post at multiple points further in my testimony.

Q. What does this load volatility look like to the grid?

A. A transmission company in Wisconsin described it this way:

> "This 'new breed' of data centers often have extreme operating variability and need to ramp load up and down by hundreds of megawatts on a second-to-second basis. 'This is equivalent to turning Wisconsin's capital city of Madison on and off, repeatedly,' the firm said, *requiring specialty power electronic devices at mega-scale* to safely integrate the variable load."[47] (emphasis added)

Q. Can you provide a more technical view of data center load volatility?

A. Yes. When training a new AI model, data center load may vary wildly in milliseconds or even *microseconds*:

> "A.I.-related data centers, though, operate differently, with demand profiles that can shift dramatically from second to second. This is especially true for training operations when

[46] Jennifer Granholm, *LinkedIn*, 2026. Accessed on 7/26/26 at: https://www.linkedin.com/posts/jennifergranholm_one-of-the-least-understood-aspects-of-the-activity-7458242574542327808-bZoX/

[47] Mary B. Powers and Debra K. Rubin, "Energy Sector Debates New US Rules to Power Up More 'Large Load' Data Centers," *Energy News-Record*, December 15, 2025. Accessed on 7/26/26 at: https://www.enr.com/articles/62219-energy-sector-debates-new-us-rules-to-power-up-more-large-load-data-centers

> tasks might be spread across many graphics processing unit servers at a time. These power-hungry devices can ramp up in unison in seconds or even microseconds, driving demand spikes. Operations can then power down just as rapidly, which can create a surge on the connected grid. As a result, these facilities can affect grid reliability across a utility's network."[48]

Uptime Institute explains this common AI training phenomenon in more detail:

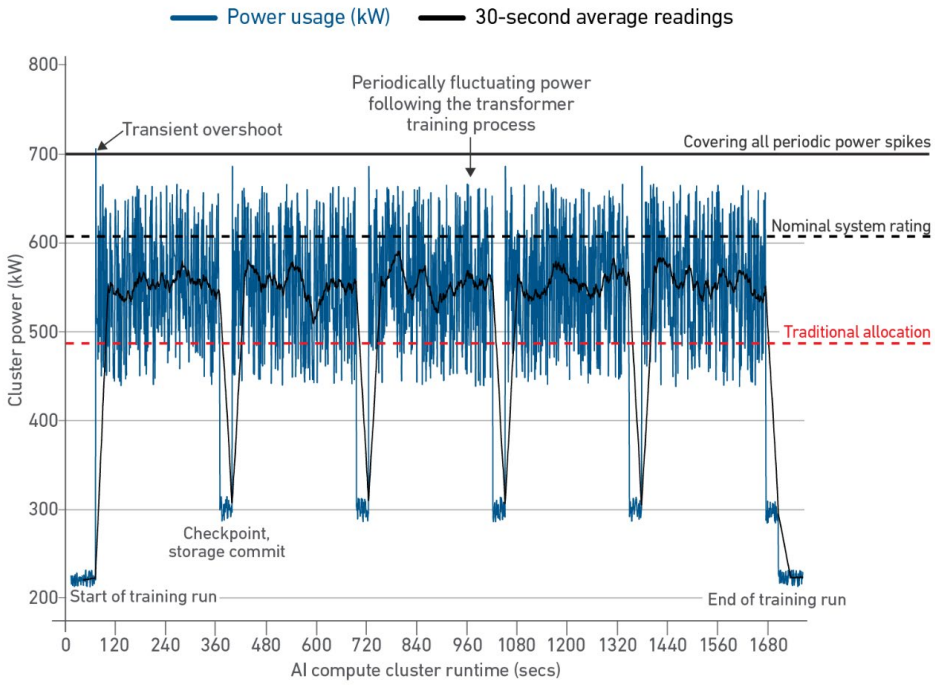
> "Uptime Intelligence estimates that in worst-case scenarios, the difference between the low and high points of power draw during training program execution can exceed 100% on a system level (the load doubles almost instantaneously, within milliseconds) for some configurations.
>
> *These extremes occur every few seconds*, whenever a batch of weights and biases is loaded on GPUs and the training begins. This is often accompanied by a massive spike in current, produced by power excursion events as GPUs overshoot their thermal design power rating (TDP) to opportunistically exploit any extra thermal and power delivery budget following a phase of lower transistor activity. In short, power spikes are made possible by intermittent lulls.
>
> This behavior is common in modern compute silicon, including in personal devices and generic servers. Still, it is only with large AI compute clusters that these fluctuations across dozens or hundreds of servers move almost synchronously."[49] (emphasis added)

[48] Chuck Ross, "It's not just the load: A.I. data center grid impacts," *Electrical Contractor*, January 15, 2026. Accessed on 6/2/26 at: https://www.ecmag.com/magazine/articles/article-detail/it-s-not-just-the-load--a.i.-data-center-grid-impacts

[49] Daniel Bizo, "Electrical considerations with large AI compute," *Uptime Institute*, November 19, 2025. Accessed on 6/2/26 at: https://journal.uptimeinstitute.com/electrical-considerations-with-large-ai-compute/

Uptime Institute goes on to explain that a server cluster can spike *over its rated load*, and provides a graph of a training cluster's load over time, illustrating the spikes over rated load:[50] (emphasis added)

Figure 1 Power profile of a GPU-based training cluster (algorithmic not real-world data)



In electrical terms, no multi-rack workload is perfectly synchronous, while the presence of other loads will help smooth out the edges of fluctuations further. When including non-compute ancillary loads in the cluster — such as storage systems, networks and CDUs (which also require UPS power) — a lower safety margin above the nominal rating (e.g., 10% to 15%) appears sufficient to cover any regular peaks over the nominal system power specifications, even with the latest AI hardware.

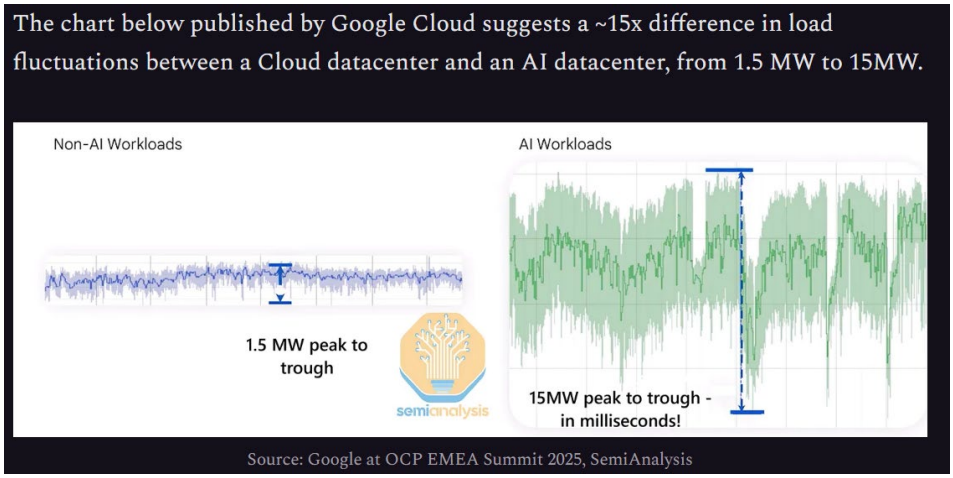
Q. How do these wild swings in power consumption by AI computing clusters affect the grid?

A. Semi Analysis opens with a bleak warning of the consequences of these load swings, before turning to a more technical description:

[50] Ibid

> "Not only is the scale massive, but AI training workloads have a *very unique load profile*, unexpectedly rising and falling from full load to nearly idle in fractions of a second. Our power grids were never designed to handle this pattern. At Gigawatt-scale, the worst-case scenario is *a blackout for millions of Americans*."[51] (emphasis added)

Semi Analysis provides a graph, showing how AI systems load swings wildly, but non-AI computing has much smaller changes in power draw:[52]



Semi Analysis goes on to discuss simulations, showing that AI data centers in Texas could trigger cascading power losses resulting in a blackout. It draws a parallel to the massive blackout in Spain and Portugal that started on April 28, 2005 with 2.2 GW of generation tripping off-line, resulting in cascading breaker trips and total collapse within 27 seconds.[53]

[51] Jeremie Elliahou Ontiveros, Dylan Patel, and Ajey Pandey, "AI Training Load Fluctuations at the Gigawatt-scale – Risk of Power Grid Blackout?," *Semi Analysis*, June 25, 2025. Accessed on 6/2/26 at: https://newsletter.semianalysis.com/p/ai-training-load-fluctuations-at-gigawatt-scale-risk-of-power-grid-blackout

[52] Ibid

[53] Ibid

Q Does data center load volatility have impacts beyond grid reliability?

A. Yes. It's been recently reported that data center load volatility shortens the lifespan of gas-fired turbines, and has even caused the main generator shaft to snap, in at least one example.[54]

Q Load fluctuations are nothing new, why do data centers represent a new risk?

A. The load volatility of load centers is different in both scale and speed. The grid adapts to changing load via two different mechanisms over two different time periods. In the short term (seconds) the grid relies on the kinetic energy stored in its spinning turbine and generator mass to adjust to sudden changes in load, with some assistance from the energy stored in spinning industrial motors. This rotational energy is only sufficient for 5-10 seconds of load variation.[55] The move to inverter-based generation (wind and solar) is reducing the total amount of energy stored in spinning parts. As Jennifer Granholm noted in her LinkedIn post (quoted earlier), this calls for advanced inverter systems.

[54] Harriet Weber, "AI Data Center Turbines, Backlogged For Years, Are Suffering Early Deaths. Here's Why." Investor's Business Daily, July 29, 2026. Accessed on 8/4/26 at: https://www.investors.com/news/turbine-generator-ai-data-center-power-threat/#:~:text=8%2F1%2F2026-,AI%20Data%20Center%20Turbines%2C%20Backlogged%20For%20Years%2C%20Are%20Suffering%20Early,Here's%20Why.&text=AI%20data%20centers'%20thirst%20for,intelligence%20boom%20%E2%80%94%20thermal%20turbine%20generators.

[55] "Inertial Response", Grokipedia, fact-checked 7 months prior. Accessed on 7/26/26 at: https://grokipedia.com/page/inertial_response

Over longer periods of time, utilities adjust the production of their generators. Simple gas-fired turbine generators ("peaker plants") can ramp up to peak output in five minutes.[56] Combined cycle gas-fired plants rely on the production of steam for about a third of their output and can take over 30 minutes to ramp to full power.[57]

Semi Analysis explains that the problem that data centers pose is the ability to ramp generation up or down by hundreds of MW in *seconds*, compared with the ability of fossil-fueled generators ramp rates of 5-50 MW/*minute*.[58] The mismatch in timing is severe.

Q. What solution is there to data center load volatility causing power outages?

A. Both Semi Analysis and Jennifer Granholm recommend battery storage, which can adjust output at the sub-second speeds necessary.

[56] Rob Rapier, "The load following power plant: the new peaker," *GE Vernova,* (c) 2026. Accessed on 7/26/26 at: https://www.gevernova.com/gas-power/resources/articles/2017/load-following-power-plant

[57] Michael Welch and Andrew Pyn, "Improving the Flexibility and Efficiency of Gas Turbine-Based Distributed Power Plants," September 14, 2015. Accessed on 7/26/26 at: https://www.power-eng.com/gas/turbines/improving-the-flexibility-and-efficiency-of-gas-turbine-based-distributed-power-plants/

[58] Jeremie Elliahou Ontiveros, Dylan Patel, and Ajey Pandey, "AI Training Load Fluctuations at the Gigawatt-scale – Risk of Power Grid Blackout?" *Semi Analysis*, June 25, 2025. Accessed on 7/26/26 at: https://newsletter.semianalysis.com/p/ai-training-load-fluctuations-at-gigawatt-scale-risk-of-power-grid-blackout

Q How have other jurisdictions addressed data center load volatility?

A. The Southwest Power Pool (SPP) regional transmission operator (RTO) created a "High Impact Large Load" (HILL) framework, which was approved by FERC in January this year:

> "SPP's High Impact Large Load (HILL) framework provides the first RTO-specific pathway designed from the outset for expedited data center interconnection. The SPP framework took a fundamentally different approach from PJM's. Where PJM focused on the generator side (regulating how existing and new generators can serve co-located load), SPP focused on the load itself… SPP also imposed ongoing operational requirements on HILLs: hourly load forecast data provided in real time, remote disconnect capability for the transmission operator, *ramp rate limitations not exceeding 20 MW per minute, and ride-through requirements.* These operational constraints reflect reliability concerns about sudden large-load changes and may prove challenging for data center operators accustomed to flexible operations, though they may also signal the kind of operational requirements FERC could adopt more broadly." (emphasis added)

I will address the issue of "ride-through" requirements later in my testimony.

SPP's HILL framework offers data centers a simplified, faster interconnect process:

> Most recently, FERC approved Southwest Power Pool's High Impact Large Load (HILL) framework—the most concrete regulatory development to date. The defining feature of the HILL framework is its integrated treatment of load and generation. *Rather than forcing customers to navigate separate transmission service, load interconnection, and generator interconnection processes, the framework combines them into a single expedited study and approval process.* In return for the benefits associated with registering as a HILL, a customer must comply with

enhanced operational requirements, including detailed load forecasting and real-time telemetry, to support system reliability. The framework also establishes distinct tracks for large loads paired with existing or planned generation and for loads that bring new supporting generation as part of the interconnection request. In both cases, network upgrades are directly assigned to the relevant customer, reinforcing traditional cost-causation principles and reducing the risk that upgrade costs are shifted to existing ratepayers. FERC emphasized that this integrated approach preserves reliability while accelerating interconnection timelines. The effort provides greater certainty for data center developers and offers a potential template for addressing large load growth in other regions.

Taken together, these developments reinforce that data center powering and interconnection have become a central federal energy policy issue, not merely a state-level matter. These developments also offer hyperscalers and developers important strategies to consider when selecting data center sites and planning how to supply power to data centers.

Conclusion

The convergence of federal policy initiatives and recent FERC actions reflects a clear shift in federal regulatory posture. *Data centers are no longer viewed as incremental load that can be absorbed through legacy state level interconnection processes.* Instead, they are increasingly recognized as interstate infrastructure with system-level implications for transmission planning, reliability, and wholesale market design. How far that shift extends—and how it is reconciled with state authority—will define the next phase of large load regulation and determine the circumstances in which large loads can connect directly to power generation."[59] (emphasis added)

[59] Stephen J. Humes, Alicia M. McKnight, Andrew H. Jacobs, "The Emerging Regulatory Framework to Power Data Centers," January 27, 2026. Accessed on 7/26/26 at: https://www.pillsburylaw.com/en/news-and-insights/ferc-regulation-data-centers.html

Q What should the Commission do to remedy the risk posed by data center load volatility?

A. The Commission should order that the tariff, or mandatory other agreements include limits to customer load ramp rates, both ramp-up and ramp-down. In U-22058, MEI/CEO witness Shaver proposed an operational ramp limit of 30 MW per minute.[60] Even more importantly, the interconnect with any large load customer should include monitoring equipment (at customer expense) to ensure that the customer adheres to the limit.

2. Simultaneous Uninterruptable Power Supply (UPS) Trips

Q. What is a UPS, and what is a UPS "trip"?

A. A UPS is a system that provides electrical power (often to computer equipment) whether the grid is operating, or in a state of power failure. The key feature for computing equipment is that the switchover from grid power to backup power is nearly instantaneous, so the computers don't crash. These systems usually employ batteries for short-term energy storage, and backup generators to provide lasting power during prolonged outages. UPS systems are a nearly ubiquitous feature of data centers.

In addition to providing power during outages, a UPS can protect electronic equipment from damage due to voltage variations. When a UPS system detects a power failure, or that grid voltage has fallen outside set

[60] U-22058, direct testimony of Lee Shaver, 3 TR 759

parameters, it disconnects the data center from the grid, and provides backup power. This is called a "trip" or "transfer."

Q. Is the risk of simultaneous UPS trips a recognized issue?

A. Yes. As a result of a very brief voltage variation, sixty data centers in Virginia, using 1,500 MW power, dropped off the grid simultaneously, and did not return to the grid for hours on July 10, 2024. According to the National Energy Reliability Council (NERC) incident report:

> " 'A lightning arrestor failed on a 230 kV transmission line in the eastern interconnection, resulting in a permanent fault that eventually 'locked out' the transmission line,' the NERC report said. A lightning arrestor is a piece of equipment designed to protect against power surges.
>
> This led to a series of short supply disturbances, *lasting a matter of milliseconds before the system corrected itself*, but it was enough to cause data centers in the area to automatically switch to their backup UPS systems as a precautionary measure because 'data center loads are sensitive to voltage disturbances,' the report said." (emphasis added) [61]

[61] Matthew Gooding, "Virginia narrowly avoided power cuts when 60 data centers dropped off the grid at once," *Data Center Dynamics*, March 20, 2025. Accessed on 8/1/26 at: https://www.datacenterdynamics.com/en/news/virginia-narrowly-avoided-power-cuts-when-60-data-centers-dropped-off-the-grid-at-once/

Q. Was this event in Virginia an isolated case?

A. No. Reuters reviewed disclosure filings in Texas (ERCOT) and identified "more than 30 near-miss incidents since 2020, triggered by big energy users like data centers and crypto miners switching offline."[62] On July 22, 2026, a transmission line in Virgina faulted. A series of data centers, sensing the instability tripped onto UPS power, dropping 3.1GW of load in 30 seconds. Lights flickered, and voltage dropped across the PJM region from Virginia to Chicago. No serious problems were reported – this time.[63]

Q. Could this kind of event really cause a major power outage?

A. Yes, according to Alison Silverstein, a former senior adviser to the chairman of the US Federal Energy Regulatory Commission, who said: "What it tells us is that the behavior of data centers has the potential to cause cascading power outages for an entire region."[64]

[62] Tim McLaughlin, "Big Tech's data center boom poses new risk to US grid operators," *Reuters*, March 19, 2025. Accessed on 6/2/26 at: https://www.reuters.com/technology/big-techs-data-center-boom-poses-new-risk-us-grid-operators-2025-03-19/

[63] Tim DeChant, "One fallen power line exposed a growing AI data center problem — here's how to fix it," *Tech Crunch*, July 25, 2026. Accessed on 7/27/26 at: https://techcrunch.com/2026/07/25/one-fallen-power-line-exposed-a-growing-ai-data-center-problem-heres-how-to-fix-it/

[64] Ibid

Q. Why would data centers configure their uninterruptable power System (UPS) to trip due to a voltage fluctuation that lasted only milliseconds, and how could the data centers prevent this behavior?

A. Reuters explains that the settings on the UPSs could be changed, but data centers are concerned with protecting their equipment from voltage variations:

> "Many data centers are engineered by their operators to switch to local generators at the smallest hint of a problem on the grid to minimize the risk of an interruption to services like Google search or crypto mining, according to NERC.
>
> Some grid operators have proposed requiring data centers to "ride through" routine voltage dips without disconnecting. But data center operators are opposed because of the risk of damaging electronic equipment and cooling systems.
>
> ERCOT last year withdrew a proposal that would have imposed ride-through restrictions on data centers and crypto miners after facing pushback from an industry group, the Data Center Coalition.
>
> The group, whose members include Amazon, Google, and Meta, cited costs and the risk of damaging computer chips and cooling systems exposed to fluctuating voltage levels.[65]

[65] Ibid

Q. Isn't it better to risk damage to some equipment than to risk a blackout?

A. It is easy to understand the data center operator's concern if you understand the cost of the equipment at risk. Oracle's co-CEO Clay Magouyrk recently visited the construction site for the Oracle data center in Saline Twp., where he announced that the electronics they will install in that data center will cost $30-40 *billion*.[66] Obviously, they want to protect that huge investment.

Q. Is the problem of simultaneous UPS trips similar to the problem of data center load volatility?

A. While the causes are different, the impact on the grid is similar to a rapid load ramp-down; a large amount of load suddenly drops off the grid. But it is different in two ways: data center load volatility goes both directions – increases as well as decreases in load, and simultaneous UPS trips can be far more massive than volatility in the load of a single data center, because it can involve many data centers dropping off the grid simultaneously. In the Virginia example cited earlier, 60 data centers went off-grid simultaneously. In that case, it involved 1,500 MW of load. A handful of hyperscale data centers today drop several times that much load due to UPS trips.

[66] Dustin Blitchok, "Data center news: Altman visits Saline data center, says it's 'huge bet' on AI," *Planet Detroit*, June 1, 2026. Accessed on 6/2/26 at: https://planetdetroit.org/2026/06/michigan-data-center-news-altman-saline/

Q. Do Michigan's current interconnect standards protect the grid from the risk of data center transient load causing cascading breaker trips?

A. I don't know. In U-21859, the Commission cited "Service Quality and Reliability Standards for Electric Distribution Systems, Mich Admin Code, R 460.701 et seq., and the Technical Standards for Electric Service, Mich Admin Code, R 460.3101et seq.," and noted that they were "recently amended" and became effective in April, 2023.[67] Based on my online research, this problem was not widely known at that time; an update may be needed to address the risk of transient loads.

Q. Has any other jurisdiction addressed the problem of AI data center transient loads?

A. Yes. ERCOT (in Texas) has data center proposals totaling 450 GW of load. The board of directors of the Electric Reliability Council of Texas recently approved rules that "would require data centers and crypto-mining facilities to stay online and 'ride through' brief power interruptions on the grid. If a data center were unable to weather those disruptions under the new plan, it would be ordered to disconnect from the grid until it came into compliance with the new rules." Data center supporters have opposed the rules arguing that compliance will be costly and take years to implement.[68] The Texas

[67] U-21589, Commission order dated November 6, 2025, p 122

[68] Shelby Webb, "Texas advances major grid rules for data centers," *E&E News*, June 3, 2026. Accessed on 6/4/26 at: https://www.eenews.net/articles/texas-advances-major-grid-rules-for-data-centers/

PUC approved the proposal and reported that ERCOT "has experienced 28 events involving LCL [large computing load] trips of at least 100 MW due to voltage and frequency excursions since the beginning of 2023. This risk will increase exponentially with the significant growth of LCLs expected in the ERCOT region."[69] The California ISO has proposed rules for large loads, including, "ride-through capability, post-fault power recovery, ramp rates, monitoring and telemetry."[70]

[69] Diana DiGangi, "Texas PUC approves 'ride-through' rules for data centers," *Utility Dive*, July 13, 2026. Accessed on 8/3/26 at: https://www.utilitydive.com/news/texas-puc-approves-ride-through-rules-data-centers/825051/

[70] "Large Loads Initiative: Technical requirements straw proposal posted," *CASIO*, June 16, 2026. Accessed on 7/27/26 at: https://www.caiso.com/notices/large-loads-initiative-technical-requirements-straw-proposal-posted

Q. Have any industry standards been established to address simultaneous UPS trips?

A. Not that I'm aware of. However, the problem is very similar to the problem of inverter-based generation (i.e., wind and solar) tripping off-grid in response to transient variations in grid voltage. In that case, *generation* suddenly drops off the grid rather than load. But the two are operationally similar. IEEE 2800 was designed to address this issue.[71] MISO has *proposed* adoption of IEEE 2800 as well as the related NERC PRC-028 standard.[72]

Q. What do you recommend the Commission do to mitigate the risk of simultaneous UPS trips?

A. I recommend that the Commission direct Staff to set up a study group to look at the ERCOT interconnect requirements, and the proposed MISO requirements, and make a recommendation – urgently! It would be imprudent to allow gigawatt data centers to interconnect to DTEE without protections in place. The stakes are high; no one wants cascading power failures.

[71] "IEEE 2800-2022, IEEE Standard for Interconnection and Interoperability of Inverter-Based Resources (IBRs) Interconnecting with Associated Transmission Electric Power Systems," *IEEE*, April 22, 2022. Accessed on 7/26/26 at: https://standards.ieee.org/ieee/2800/10453/

[72] "Inverter-Based Resource Performance Requirements (IEEE 2800) (PAC-2024-2)," *MISO*, October 16, 2024. Accessed on 7/26/26 at: https://cdn.misoenergy.org/20241016%20PAC%20Item%2006c%20IBR%20Performance%20Requirements%20IEEE%202800%20(PAC-2024-2)653146.pdf

3. Data Center Induced Harmonics

Q. What are harmonics on the electric grid?

A. The grid operates on a 60 Hertz sine wave. That means that the voltage cycle repeats 60 times each second, or every 16.7 milliseconds. Because data center load can vary widely in much less time than a full cycle, it can distort the shape of that sine wave; not just in the data center, but out into the surrounding area through the data center's interconnection. The President of Embedded and Critical Power explains what harmonics are with an illustration:

> "Generally, voltage follows a rolling wave characterized by the smooth, periodic oscillations — a sine wave, as depicted by the green line in Figure 1. International standards for steady state loads established in the mid-1990s governing harmonic currents, voltage flicker and other factors have served data center operators well. Some have even established additional, more stringent standards for their own facilities.
>
> But AI models cause massive, sudden surges in power usage, making "white space" within a data center — the room housing IT equipment such as servers, storage, and networking gear — the source of distortion. Drawing power in rapid, uneven bursts generates harmonics that distort the voltage wave (the blue and yellow lines)."[73]

[73] Christopher Butler, "Power quality: The unseen phenomenon behind some of the biggest data center challenges," *Flex.com*, September 22, 2025. Accessed on 6/2/26 at: https://flex.com/resources/power-quality-the-unseen-phenomenon-behind-some-of-the-biggest-data-center-challenges

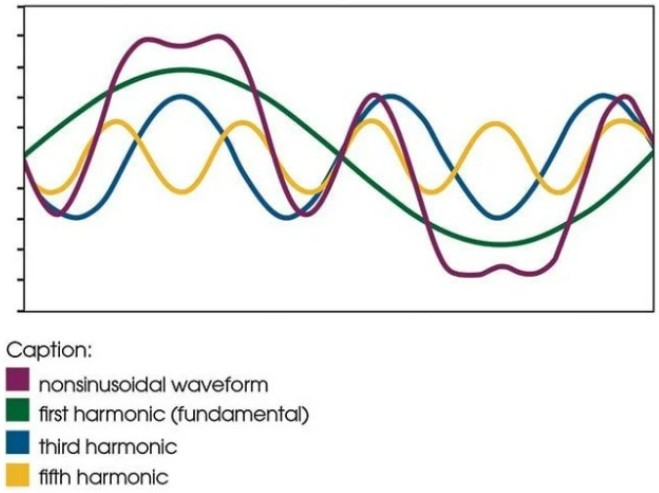


Figure 1. Harmonic distortion.

He recommends, "Adhering to utility interconnection standards such as IEEE 519 (U.S.)."

Q. **Is there any empirical evidence that data centers are commonly pushing harmonics out into the grid today?**

A. Yes. Ting Labs (formerly Whisker Labs) has installed more than a million power quality monitors in American homes, including mine. Bloomberg did a study of the data from about one million Whisker monitors, and found a compelling correlation between homes with dirty power and areas of large-scale data center operation. "The report contends that harmonic issues will likely worsen without *significant investment in grid infrastructure*."[74] (emphasis added)

[74] Zachary Skidmore, "AI data centers causing 'distortions' in US power grid – Bloomberg," *Data Center Dynamics*, January 6, 2025. Accessed on 6/2/26 at:

Q. **Are harmonics fed back into the grid by large energy customers a new problem?**

A. No, this is a common problem with certain industrial equipment, but data centers create more complex, rapidly changing harmonics at a huge power scale.

Q. How are harmonics generated by data centers different than harmonics generated by industrial customers?

A. Harmonics from industrial customers are usually the result of variable-frequency drives (VFDs) on large motors. VFDs create highly predictable harmonics. Data centers also use VFDs on their HVAC systems, but they generate highly irregular harmonics from their switch-mode power supplies on their electronics and (previously discussed) volatile load:

> "Data centers today deal with some pretty tricky harmonic problems because of all the non-linear IT gear they run. Think about those server racks, UPS systems, and those switch mode power supplies everyone loves. What happens is these devices pull electricity in weird little bursts instead of smooth flows, which creates this nasty harmonic distortion. Sometimes it gets really bad too – we've seen cases where total harmonic distortion hits over 15% on important parts of the electrical system according to IEEE standards from 2022."[75]

https://www.datacenterdynamics.com/en/news/ai-data-centers-causing-distortions-in-us-power-grid-bloomberg/

[75] "What Load Types Require Dynamic Harmonic Filters Most Urgently," *Ampersure*, August 6, 2025. Accessed on 7/26/26 at: https://www.ampersure.com/blog/what-load-types-require-dynamic-harmonic-filters-most-urgently

Q. What kinds of problems do harmonics cause?

A. For the electric utility, high levels of harmonics accelerate the degradation of transformers:

> "Power transformers experience accelerated insulation degradation, increased heating, and reduced operational lifespan when subjected to sustained harmonic distortion.
>
> Harmonic-induced circulating currents in parallel windings create hot spots that compromise structural integrity. This thermal stress compounds over time, causing insulation systems to become brittle and fail prematurely.
>
> Transformer oil degrades more rapidly under these conditions, while internal components experience mechanical stress from the abnormal harmonic vibrations that can loosen connections and damage internal structures. Equipment designed to operate reliably for decades now requires premature replacement, driving up maintenance costs and creating unpredictable failure points throughout the system."[76]

But the impacts are not limited to the utility, the harmonics feed through the grid to other customers:

> "When transformers operate beyond their harmonic tolerance limits, they begin delivering distorted voltage waveforms to downstream customers. This distorted power causes sensitive electronic equipment to malfunction, motors to run hot and inefficiently, and lighting systems to flicker or fail prematurely.

[76] "Managing Harmonic Distortion from Data Centers," *Dynamic Ratings*, October 6, 2025. Accessed on 7/26/26 at: https://www.dynamicratings.com/managing-harmonic-distortion-from-data-centers/

> Customers experience unexpected equipment failures, reduced appliance lifespans, and increased energy consumption as their devices struggle to operate efficiently with distorted power supply. These impacts create customer complaints, service reliability issues, and additional maintenance burdens for utility crews already stretched thin by increasing infrastructure demands."[77]

Q. How are harmonics quantified, and is there a standard for how much is too much?

A. Harmonics are quantified by "Total Harmonic Distortion," or THD. This is the same measure used to rate the inaccuracies in sound quality induced in music by amplifiers. For the grid, the standard is IEEE 519.[78] The IEEE 519 standard sets limits for THD that vary, depending on the service voltage. As shown in the table below, higher voltages are restricted to lower THD levels.[79]

[77] Ibid.

[78] "519-2022 - IEEE Standard for Harmonic Control in Electric Power Systems," *IEEE*, 2022. Accessed on 7/26/26 at: https://ieeexplore.ieee.org/document/9848440

[79] "Power Quality – IEEE 519-2022," *Power Quality Blog*, 2026. Accessed on 7/27/26 at: https://powerquality.blog/2023/06/01/power-quality-ieee-519-2022/

Table 1. (IEEE 519-2022, pg.17) voltage distortion limits

Bus voltage V at PCC	Individual harmonic (%)	Total harmonic distortion THD (%)
V ≤ 1.0 kV	5.0	8.0
1 kV < V ≤ 69 kV	3.0	5.0
69 kV < V ≤ 161 kV	1.5	2.5
161 kV < V	1.0	1.5*

Q. Can data centers be designed to avoid inducing harmonic into the grid?

A. Yes, but it involves costly equipment:

> "As with most challenges in today's data center industry, it ultimately comes down to cost. The barrier isn't a lack of technology – it's the balance between upfront investment and long-term payback. While harmonic migration components have become far more affordable and advanced in recent years, the initial expenditure can still deter operators focused on short-term budgets."[80]

Q. Does the IEEE 519 standard specify enforcement measures?

A. No, IEEE 519 is a set of *guidelines*. In practice, the impacts of harmonics are only addressed when other customers are experiencing problems:

> "First thing is that this is a recommended practice. So the intent is that it's supposed to guide you. It's not supposed to be very, very, very strict rules. And you'll notice that if you talk to utility companies, a lot of times they're typically not enforced unless required by neighboring customers and things that cause problems.[81]

[80] Farah Johnson-May, "The hidden disruptor of data center harmony: Vol 1," *Data Center Dynamics*, December 11, 2025. Accessed on 7/26/26 at: https://www.datacenterdynamics.com/en/marketwatch/the-hidden-disruptor-of-data-center-harmony-vol-1/

[81] "IEEE 519 Standard – what do I need to know? Where do I start?" *Eaton Corp*, 2026. Accessed on 7/27/26 at: https://www.eaton.com/us/en-us/products/controls-drives-automation-sensors/harmonics/harmonics-faq-video-library/ieee-519-standard-what-do-i-need-to-know.html

Q. Does the proposed tariff address harmonics?

A. I found nothing in the tariff that addresses harmonics, or any power quality issues other than power factor. The tariff limits the power factor of the customer load. A power factor below 85% triggers a penalty, and a power factor less than 70% is not permitted. The power factor measures the ratio of true power to apparent power. A power factor of less than one indicates that the voltage and current are out of phase. Power factor is different than harmonic waveform distortion, though harmonics will also tend to pull the power factor down; this is called the distortion power factor.[82]

Importantly, a low power factor is often corrected with capacitor banks,[83] which can't be used to correct harmonics; specialized filters are required to manage harmonics.[84]

Q. What do you recommend the Commission do to mitigate the risk of data center induced harmonics?

A. I recommend that the Commission order the Company to install power

[82] Colin, "Capacitor Bank: The Complete Guide To Power Factor Correction," Giantele. Accessed on 8/3/26 at: https://www.giant-electric.com/capacitor-bank-the-complete-guide-to-power-factor-correction.html

[83] "Total Harmonic Distortion (THD) and Power Factor Calculation," YT Electric, October 28, 2024. Accessed on 8/3/2026 at: https://www.ytelect.com/blog/total-harmonic-distortion-thd-and-power-factor-calculation_b279

[84] Colin, "Capacitor Bank: The Complete Guide To Power Factor Correction," Giantele. Accessed on 8/3/26 at: https://www.giant-electric.com/capacitor-bank-the-complete-guide-to-power-factor-correction.html

quality monitoring equipment (at customer expense) to measure power quality issues caused by the data center. The data center should bear the cost of the monitoring equipment. Other neighboring customers should not bear the burden of detecting and reporting power quality issues caused by the data center.

B. Impact on Resource Adequacy

1. The PJM Experience

Q. Have other parts of the US already experienced dramatically higher loads as a result of new data centers?

A. Yes, Northern Virginia has been called "data center alley" due to the high concentration of new data centers there. In 2025, Virginia had 12GW of data centers, consuming 40% of the state's electricity.[85] The entire PJM region has seen explosive growth in power demand. Monitoring Analytics, the independent market monitor for the Eastern grid operator PJM Interconnection reported that "PJM attributed almost all of this increase in the summer peak load forecast to the anticipated additions in data center demand."[86]

[85] "AI Data Center Statistics in US 2026," in table: "US Data Center Energy by State 2026," *Global Statistics*. Accessed on 6/3/26 at: https://www.theglobalstatistics.com/ai-data-center-statistics-in-us/

[86] "Analysis of the 2026/2027 RPM Base Residual Auction Part A," *Monitoring Analytics*, October 1, 2025, p 8. Accessed on 5/29/26 at: https://www.monitoringanalytics.com/reports/Reports/2025/IMM_Analysis_of_the_20262027_RPM_Base_Residual_Auction_Part_A_20251001.pdf

Morning Analytics report shows that peak-hour demand was fairly constant from 2014 – 2023, varying between 138GW and 144 GW, but rose to 149 GW in 2024 (+3.2%) and 156 GW in 2025 (+4.9%), as shown in the table below. These are substantial increases in load for a huge region. PJM's forecasts of peak load are getting revised upwards every year, projecting a peak load of 164 GW in 2027:[87]

Table 1 PJM Peak Load between 2009 and 2025[8]

	Date	Hour Ending (EPT)	PJM Load (MWh)
2009	Mon, August 10	17	123,900
2010	Tue, July 06	17	133,297
2011	Thu, July 21	17	154,095
2012	Tue, July 17	17	150,879
2013	Thu, July 18	17	153,790
2014	Tue, June 17	18	138,448
2015	Tue, July 28	17	140,266
2016	Thu, August 11	16	148,577
2017	Wed, July 19	18	142,387
2018	Tue, August 28	17	147,042
2019	Fri, July 19	18	148,228
2020	Mon, July 20	17	141,449
2021	Tue, August 24	17	145,563
2022	Wed, July 20	18	144,356
2023	Thu, July 27	18	144,215
2024	Tue, July 16	18	148,890
2025	Mon, June 23	18	156,256

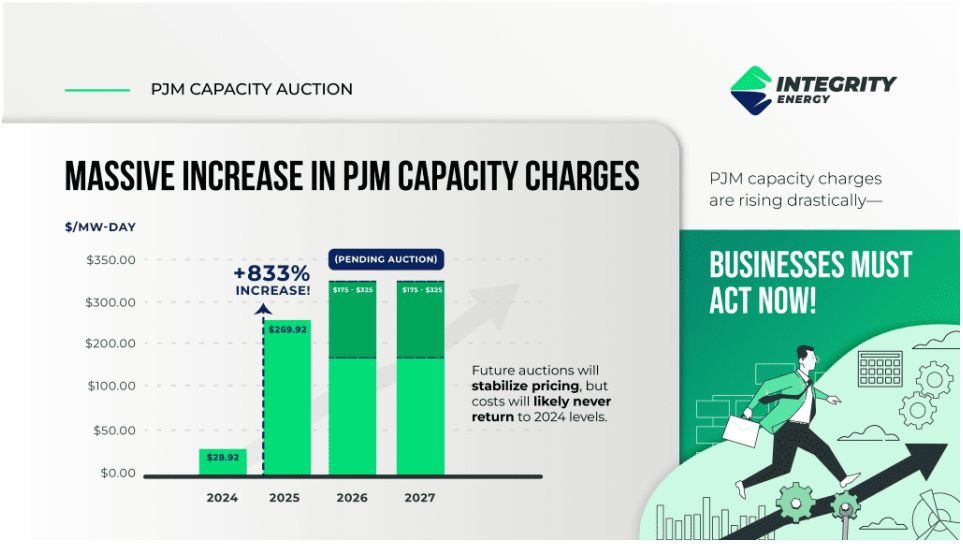
[87] Ibid, p 7, Table 1 & 2

Table 2 Forecasted Summer Peak Load for 2022 through 2026 as reported in the recent load forecast reports[9]

	Forecasted Summer Peak Load (MW)					
Report	2022	2023	2024	2025	2026	2027
2022 Load Forecast	148,938	149,351	150,309	151,165	152,259	152,322
2023 Load Forecast		149,059	149,737	150,924	152,736	154,275
2024 Load Forecast			151,247	153,493	156,803	159,859
2025 Load Forecast				154,144	158,937	164,186

Q. How have PJM capacity auction prices been affected by increasing load?

A. PJM capacity prices have skyrocketed, increasing from $28.92/MW-day in 2024 to $269.92/MW-day in 2025, an 833% increase! The capacity price increased an additional 22% in the 2026/27 auction, but would have gone higher if not for an artificial price cap:[88]



[88] Renee Sanders, "How the Latest PJM Auction Impacts 2026–2027 Energy Costs," *Integrity Energy*, July 24, 2025. Accessed on 5/29/26 at: https://www.integrityenergy.com/resources/about-us/news-media/pjm-announces-expensive-energy-changes-in-2026/

A report from Monitoring Analytics put the responsibility for this increased load squarely on data centers:

> "There are clear warning signs for the capacity market and for PJM reliability. The capacity market was short of reaching its reliability objective in the most recent capacity auctions… PJ was also short of meeting its reliability target as of June 1, 2025… *Data center load growth is the primary reason* for recent and expected capacity market conditions, including total forecast load growth, the tight supply and demand balance, and high prices. *But for data center growth*, both actual and forecast, the capacity market would not have seen the same tight supply demand conditions, the same high prices observed in the 2025/2026 BRA, the 2026/2027 BRA, and the 2027/2028 BRA, and the currently expected tight supply conditions and high prices for subsequent capacity auctions." [89] (emphasis added)

Q. Did the market monitor make any recommendations to address the steep increase in data center load's impact on the PJM capacity market?

A. Yes, Morning Analytics recommended that data centers be required to bring their own new generation, or have their load treated as curtailable:

> "*It is clear that continuing to simply accept the interconnection of large data center loads that cannot be served reliably because there is not adequate dispatchable capacity, is not a reasonable path forward*… There is not enough capacity currently to meet the data center load. The solution is not to create reliability issues and wealth transfer issues by clearing the capacity market at the maximum price and at a quantity less than the reliability requirement by allowing the ongoing interconnection of large data center loads without adequate generation to serve them… The market solution is *to require data centers to bring their own new generation.* This would include an expedited fast track load and

[89] "State of the Market Report for PJM, 2025," *Morning Analytics*, March 12, 2026, p 1. Accessed on 5/29/26 at: https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2025/2025-som-pjm-vol1.pdf

> generation interconnection process for large new data center loads that bring their own new generation with locational and temporal characteristics reasonably matched to their load profile. *The preferred solution would include creating a queue* for the addition of large new data center loads, which would not be interconnected until there is adequate capacity to serve them. Another solution would require data centers that do not bring their own new generation to be *curtailable prior to current demand side customers but without the pretense that the data centers are providing "demand response" for which they should be paid.* Given the level of data center load growth, this curtailability solution would provide a strong incentive to bring new generation, if enforced on a specific data center basis. This broad bring your own new generation solution to the issues created by the addition of unprecedented amounts of large data center load does not require a continued massive wealth transfer."[90] (emphasis added)

Q. Have the high PJM capacity auction prices attracted enough new generation to ensure resource adequacy?

A. No. In the 2028/2029 auction, secured capacity (generation + demand response) fell 6.8GW short of the reserve requirement. The prior auction also fell short, by 6.5 GW.[91] This is reflected in Morning Analytics declaration (above) that continuing to connect large data center loads that can't be served reliably is unreasonable.

Q. Should Michigan follow the PJM model?

A. No. I agree with Morning Analytics, it is unreasonable to connect loads that will compromise resource adequacy and grid reliability. No one wants rolling blackouts. We need to ensure resource adequacy for new large loads.

[90] Ibid, p 2
[91] Paul Gerke, "PJM capacity auction easily hits price cap… Again," *Renewable Energy World*, July 16, 2026. Accessed on 7/26/26 at: https://www.renewableenergyworld.com/news/pjm-capacity-auction-easily-hits-price-cap-again/

2. Special Contracts – Bring Your Own Capacity

Q. How have the MPSC and DTEE managed capacity adequacy for data center customers so far?

A. For both the Oracle data center in Saline Twp. and the Google data center in Van Buren Twp., DTEE has negotiated contracts with the data centers that fund significant amounts of capacity. Oracle funded 1.4 GW of battery capacity, a value equal to its load (whether the accredited capacity will be that high is questionable).[92] Google funded a mix of batteries, renewable generation facilities, Zonal Resource Credits (ZRCs), and demand response to provide sufficient capacity until 2033, at which time DTEE will need to add new capacity of some kind.[93] DTEE will still acquire, own, and operate the capacity assets.

As far as I know, the inclusion of capacity resources in the two data center's contracts was at DTEE's discretion, and not the result of any rule or Commission order. It is critical for resource adequacy that new data centers continue to provide their own capacity in some way. But there are other options besides special contracts.

3. Onsite Generation

Q. Besides special contracts, how else have data centers provided the capacity needed to serve their load, in other States?

[92] U-21990, Commission order dated December 18, 2025, p 17 – citing CEO's motion, p 9

[93] U-22058, ABATE witness James Dauphinais direct, 3 TR 547

A. There have been calls for data centers to build on-site power plants to supply most of all of their needs, and many data center developers are doing so.

Q. Besides Morning Analytics (quoted earlier), have others called for data centers to supply their own generating capacity?

A. Yes. President Trump has said that data centers "would be expected to secure or develop dedicated power supply for their own loads rather than rely solely on the existing grid."[94] Later, Trump announced that he would fast-track requests to build power plants next to data centers, granting approval "in a matter of weeks."[95] FERC issued an order to RTOs and ISOs to "defend or revise" their large load interconnect tariffs. Part of the order was to "accommodate co-location agreements and behind-the-meter generation." Another section called for "providing new transmission services for flexible large loads."[96]

[94] Kevin Clark, "Trump urges tech companies to build their own power plants for data centers," *Power Engineering*, February 25, 2026. Accessed on 7/27/26 at: https://www.power-eng.com/news/trump-urges-tech-companies-to-build-their-own-power-plants-for-data-centers/
[95] Arcelia Martin, "Trump Says He'll Fast-Track Private Gas Plants to Power AI Data Centers," *Mother Jones*, July 8, 2026. Accessed on 7/27/26 at: https://www.motherjones.com/politics/2026/07/donald-trump-epa-lee-zeldin-fast-track-private-gas-fired-power-plants-ai-data-centers/
[96] Paul Gerke, "FERC takes historic action, orders US grid operators to 'defend or revise' large load interconnection tariffs," *Renewable Energy World*, June 18, 2026. Accessed on 7/27/26 at: https://www.renewableenergyworld.com/news/ferc-takes-historic-action-orders-us-grid-operators-to-defend-or-revise-large-load-interconnection-tariffs/

Q. What are the benefits of data center on-site power?

A. According to The Rocky Mountain Institute, there are benefits for all parties. The customer gets speed-to-power, and a choice of technologies. Other ratepayers are insulated from the costs of new generation and the risk of the customer's load failing to materialize. Utilities get planning certainty and increased resource adequacy.[97]

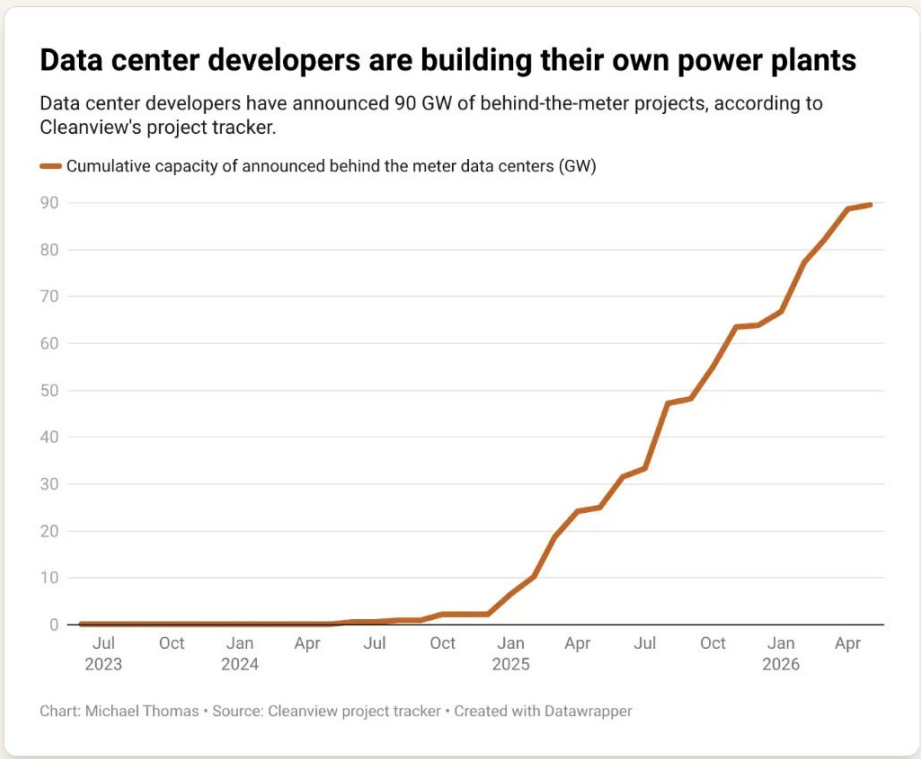
Q. Are data centers already building on-site, behind the meter (BTM) generation?

A. Many are, and the practice is increasing *rapidly*. A company called Clearview did a comprehensive study of data centers building on-site generation. It identified 59 data centers, totaling 82 GW that are planning onsite power since 2025; about 25% of all planned data center capacity in the US. The trend includes nearly every hyperscaler, and a broad variety of generation equipment including gas turbines of various kinds and reciprocating engines.[98] Bloom Energy reports that "over one-third of data centers are expected to use 100% onsite power by 2030 and developers increasingly expect permanent onsite generation to emerge as a preferred long-term approach. Their report includes a graph illustrating how rapidly

[97] Alyssa Perez, Sarah Wang, and Charles Cannon, "New Ways to Power Data Centers and Other Large Energy Users," *Rocky Mountain Institute*, February 6, 2026. Accessed on 8/1/26, at: https://rmi.org/resources/new-ways-to-power-data-centers-and-other-large-energy-users/

[98] Michael Thomas, "Bypassing the Grid: How Data Center Developers Are Building Their Own Power Plants," *Clearview*, 2026. Accessed on 7/27/26 at: https://cleanview.co/reports/behind-the-meter-data-centers

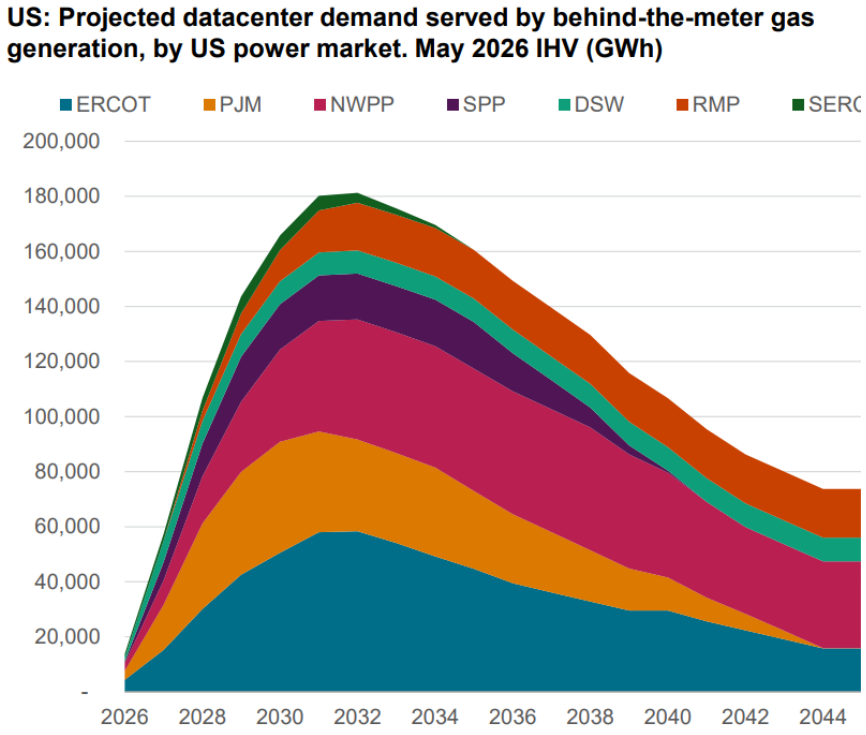
data centers have switched to on-site power:[99]



S&P Global also reported on data center's move to on-site power, projecting rapid increases across the next four to six years:[100]

[99] "2026 Data Center Power Report," *Bloom Energy*, January, 2026, p 3. Accessed on 7/27/26 at: https://www.bloomenergy.com/wp-content/uploads/2026-power-report.pdf

[100] "AI infrastructure growing pains: Ensuring energy resilience amid grid constraints and public demands," *S&P Global*, June 11, 2026, slide 22. Accessed on 8/1/2026 at: https://on24static.akamaized.net/event/53/56/76/9/rt/1/documents/resourceList1781194546520/aiinfrastructuregrowingpainswebinardeckfinalversion1781194546520.pdf



Q. Does Michigan law allow data centers to generate on-site power?

A. Yes. The law creating tax incentives specifically names on-site generation as an option, see MCL 205.54.(10)e(ix)(A).

Q. Are DTE customers on the D.11 industrial rate able to use onsite generation?

A. Yes. DTEE's rider 3 for standby power is available for customers on the D.11 rate sheet. It provides grid power during any periods when the customer is unable to provide their own electricity, and has a variety of charges based on capacity.[101] The process for interconnection under this

[101] DTE Electric Rate Book, *MPSC*, "Standard Contract Rider No. 3 Parallel Operation and Standby Service and station power standby service," p D-67.00

service is defined by the Interconnection and Distributed Generation Standards, Mich Admin Code R 460.901a – 460.1026.[102] Alternatively, if the customer is confident in the redundancy of their onsite generation, they could forego grid connection entirely and operate entirely off-grid.

Q. Are data center developers actually designing for 100% island power (off-grid)?

A. Some are. A data center in West Virgina is being designed with 2 GW of gas generators, potentially scaling to 8 GW, in a huge microgrid. A Meta data center In Louisianna is planning 7+ GW of dedicated onsite generation – a $200 billion project, with no grid dependency in the design. xAI Colossus complex in Memphis plans 2 GW of onsite capacity. Per Avanza Energy, for all three of these examples: "These are not backup strategies. They are primary power strategies - a parallel private power infrastructure built from scratch over 18 months."[103]

[102] Interconnection and Distributed Generation Standards, *MPSC*, January 31, 2023. Accessed on 7/27/26 at: https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/workgroups/interconnection-std/MIXDG-Updated-Rules.pdf?rev=e0aba826a2414cea810b29a27ae9c814&hash=FCD2FD051E0ABE7C4E8A504C4F6BB31E

[103] Christopher Johnson, "The $150 Billion Private Grid: How Data Centers Built the Largest Private Power Program in US History," *Avanza Energy*, June 2, 2026. Accessed on 7/27/26 at: https://avanzaenergy.substack.com/p/the-150-billion-private-grid-how

Q. If a data center was constructed in DTE Electric's territory and operated 100% off-grid, how would that affect the Company?

A. It wouldn't. Nothing would change for DTEE. But DTEE might view that as a lost opportunity to supply capacity and energy, and earn a profit on the capital invested in equipment necessary to do so. I would not expect the Company to favor data centers providing their own energy.

Q. If a data center was constructed in DTE Electric's territory and generated most of its own power, but signed up for standby service, how would that affect the Company?

A. The Company would gain revenue from the standby power agreement. It would also need to plan capacity to meet the customer load on the occasions when the customer switches to grid power

Q. Do Data Centers prefer building on-site power plants to getting their energy from the grid?

A. No. Data Centers much prefer grid power, *if* the grid can provide capacity quickly. The long delays to install and interconnect new grid generation facilities have forced data centers into building on-site power.[104] As ClearView put it,

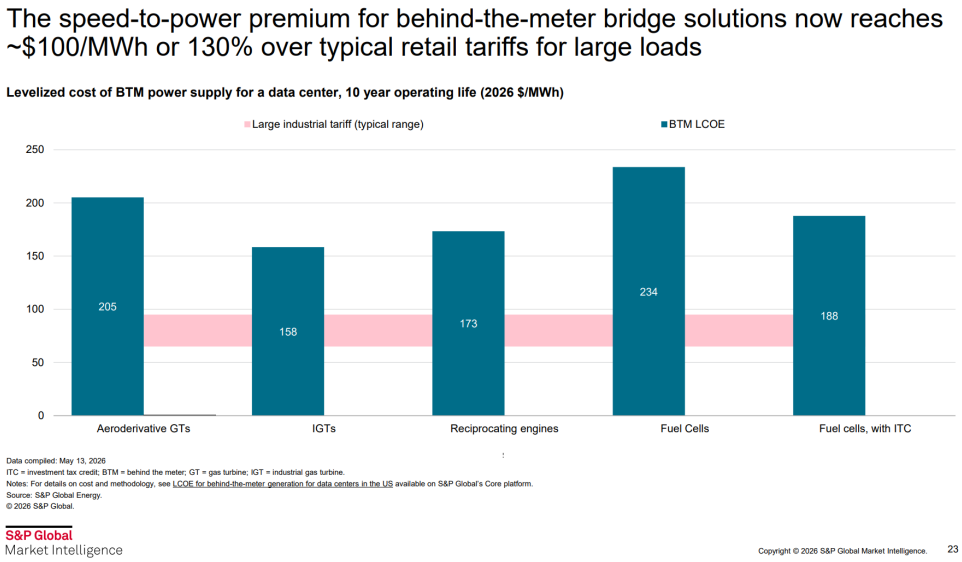
[104] Shaun Walsh, "Hyperscalers didn't set out to be power companies. The grid left them no choice." *Utility Dive*, May 28, 2026. Accessed on 8/1/26 at: https://www.utilitydive.com/news/hyperscaler-data-center-power-companies-grid-utilities/820568/

> "Power generation efficiency is out. *Speed to power is all that developers care about*. AI data centers can generate $10–12 million per MW annually, or $10–12 billion per GW. Bringing a data center online even a few years early could result in tens of billions in revenue that would otherwise be forgone.[105] (emphasis added)

Another report put it this way: "Hyperscalers are increasingly giving up on the grid for AI training capacity."[106]

Q. Why do data centers prefer grid power?

A. S&P Global did a study showing that the cost of on-site power is more than twice as expensive as utility energy under large load tariffs:[107]



[105] Michael Thomas, "Bypassing the Grid: How Data Center Developers Are Building Their Own Power Plants," *Clearview*, 2026. Accessed on 7/27/26 at: https://cleanview.co/reports/behind-the-meter-data-centers

[106] Olivia Wang, "Data center outlook: half of 2026 pipeline may not materialize," *Concurrence*, February 24, 2026. Accessed on 8/1/26 at https://www.currence.ai/blog/data-center-outlook

[107] "AI infrastructure growing pains: Ensuring energy resilience amid grid constraints and public demands," *S&P Global*, June 11, 2026, slide 23. Accessed on 8/1/2026 at: https://on24static.akamaized.net/event/53/56/76/9/rt/1/documents/resourceList1781194546520/aiinfrastructuregrowingpainswebinardeckfinalversion1781194546520.pdf

Q. What should the Commission do regarding data center options for self-power?

A. When negotiating a power supply agreement with a potential data center customer, the Company's self-interest is not well aligned with the potential customer's interests. DTEE would make more profit if it can supply all the capacity and energy that the customer needs, rather than if the customer provides capacity via DR or on-site batteries, or if the customer meets most or all of their needs with on-site generation. Some data center developers are very knowledgeable about energy supplies, but many are not. Bloomberg reports that "the majority of new projects are sponsored by first-time developers rather than more experienced firms."[108] When negotiating the power supply agreements, DTEE has an informational advantage.

The Commission should ensure that the customer is aware of their options. This could be done with a directive that Staff hold discussions with prospective data center customers to ensure the customer is aware of their alternatives. Alternatively, the Commission could have DTEE include language about large load's options for DR, onsite generation with grid standby power (rider 3), or onsite generation with no interconnection to the grid.

[108] Catherine Boudreau, "BNEF nearly doubled its forecast for US data center power demand," Latitude Media, July 21, 2026. Accessed on 7/28/26 at: https://www.latitudemedia.com/news/bnef-nearly-doubled-its-forecast-for-us-data-center-power-demand/

4. Demand Response

Q. Can Demand Response (DR) programs support resource adequacy for new data center loads?

A. Yes. According to an often-cited study from Duke University, if all US data centers cut back their usage by 1-2% during peak hours, NGCC (natural gas combined cycle) construction would be reduced by 10-15%.[109]

Q. Have data centers voluntarily signed up for DR programs elsewhere?

A. Yes. Google has declared that their data centers (across the country) are providing one GW of flexible load via DR programs.[110] Google's proposed data center in Van Buren Twp. has agreed to provide 650 MW of DR for six years.[111] Data center enrollment in DR in the PJM region makes up about 5% of the program.[112] The "Flex" data center project proposed by developer Verras for South Lyon Twp. is planning to have sufficient battery storage onsite to power the data center for four hours, and plans to participate in

[109] M.T. Ross and Jackson Ewing, "Data Centers and Generation Capacity over the Next Decade: Potential Benefits of Flexibility," *Nicholas Institute for Energy, Environment & Sustainability*, 2026. Accessed on 8/1/26 at: https://nicholasinstitute.duke.edu/sites/default/files/publications/data-centers-generation-capacity-over-next-decade.pdf

[110] Michael Terrell, "A new milestone for smart, affordable electricity growth," *Google*, March 19, 2026. Accessed on 7/27/26 at: https://blog.google/innovation-and-ai/infrastructure-and-cloud/global-network/demand-response-data-center-milestone/

[111] U-22058, direct testimony of N.T. Foley, 3 TR 90

[112] Jack Newsham, "Dark smoke rose above a Virginia data center as a heat wave pushed the power grid close to its limits," *Business Insider*, July 11, 2026. Accessed on 7/26/27 at: https://www.businessinsider.com/virginia-data-center-diesel-backup-generator-heat-wave-pjm-2026-7

DTE's DR programs.[113]

Q. How do demand response programs provide resource adequacy?

A. In MISO's resource adequacy process, demand response capacity is included in the calculation of resource adequacy for the utility (Load Serving Entity, or LSE).

5. Shedding Data Center Load First

Q. How has MPSC managed capacity adequacy for data center customers so far?

A. The MPSC took a major step beyond the customer contracts that DTEE has negotiated with the customers. In U-21990, the Commission ordered DTE Energy to "within 90 days of the date of this order, to file an application to update its Emergency Electric Procedures outlined in Section C3 of its Rate Book… the company will shed firm load from the Customer prior to shedding firm load of any of DTE Electric's other customers…"[114] DTEE has proposed such changes in U-22059. But, as far as I know, there has been no similar order issued to Consumers Energy.

[113] Verras, "Project Flex Study Meeting," *Lyon Township*, January 2026, slides 15, 19-20. Accessed on 7/27/26 at: https://cms2.revize.com/revize/lyontownship/Project%20Flex%20Presentation%20-%2001-22-26.pdf

[114] U-21990, Commission order dated December 18, 2025, p 41

Q. Has PJM implemented the recommendations made by Morning Analytics to address the capacity shortfall caused by data centers?

A. PJM has only implemented the recommendation to shed large loads that have backup power first. PJM got approval from the US Department of Energy to curtail service to large loads that have backup power as a last resort before instituting rolling blackouts.[115]

Q. Have other jurisdictions gotten authorization to curtail service to large loads before instituting rolling blackouts?

A. Yes. The DOE issued emergency orders for data center curtailment to Duke Energy Carolinas, Duke Energy Progress, and the Electric Reliability Council of Texas.[116] In Texas, all large loads (> 75 MW) interconnected after the passage of SB 6, are subject to mandatory curtailment before load-shed of other customers.[117]

[115] Ethan Howland, "PJM gets emergency approval to curtail data centers, large loads during hot weather," *Utility Dive*, May 19, 2026. Accessed on 7/27/26 at: https://www.utilitydive.com/news/pjm-doe-emergency-order-curtail-data-centers/820571/

[116] Zachary Skidmore, "PJM granted emergency approval to curtail data centers due to hot weather concerns," *Data Center Dynamics*, May 20, 2026. Accessed on 7/27/26 at: https://www.datacenterdynamics.com/en/news/pjm-granted-emergency-approval-to-curtail-data-centers-due-to-hot-weather-concerns/

[117] Christopher Johnton, "Why Data Centers Are Breaking Up with Traditional Power Utilities," *Avanza Energy*, September 19, 2025. Accessed on 7/27/26 at: https://avanzaenergy.substack.com/p/why-data-centers-are-breaking-up

Q. What is your view of the Commission's "first load to shed" directive in U-21990?

A. I think it was an essential, quick-to-implement measure to protect grid reliability. While the directive protects grid *reliability* from excess large load demand, it does not help the Company to meet the *resource adequacy* requirements of MISO. I think there is a better way to simultaneously address the related issues of grid reliability and resource adequacy.

6. Proposal: Two-Tiered Demand Response

Q. How could the Commission protect grid reliability while helping the Company meet resource adequacy requirements?

A. The Commission could direct the Company to create an *option* in the proposed large load tariff, or in a separate tariff, to specify that the service is not firm; putting the large load customer into a two-tiered demand response (DR) program. Large loads in this second tier (which I will call "tier-2") would only be called upon after existing DR customers (tier-1) have been called upon, but would not receive any reduction in their electric rates. To the large load customer, this would function much like the current "first load to shed" directive in U-21990; the large load customer would have their service curtailed only when necessary to prevent the firm load shed of other customers. But it would have the huge advantage that DTE Electric could register the customer's load flexibility as demand response in the MISO resource adequacy process. Therefore, DTE Electric would not have

to acquire nearly as much additional capacity to meet the large customer's load. This would reduce the Company's cost of service, putting downward pressure on customer rates.

Q. Is there any downside for the large load customer in "last demand response" option?

A. There is only one that I can think of. MISO recently changed their demand response rules to require an annual test, showing at least an 80% load reduction.[118] Under the tier-2 DR option, the large load customer would be required to switch to backup power once a year. With sufficient advanced notice, this should not be a major burden to the customer; they are likely doing occasional tests of their backup power systems already.

Q. How would offering large load customers in a two-tiered demand response program affect DTE Energy?

A. Because the Company would not (necessarily) need to sign PPAs or acquire generation or storage assets to supply the customer's load under the MISO resource adequacy process, the Company's opportunity to earn a profit may be reduced. I would not expect the Company to favor this option.

[118] Ben Duwve and Jill Drum, "FERC Accepts MISO's Revised Demand Resource Real Power Testing Requirements," *Troutman Pepper Locke*, December 11, 2025. Accessed on 7/27/26 at: https://www.troutmanenergyreport.com/2025/12/ferc-accepts-misos-revised-demand-resource-real-power-testing-requirements/

7. Capacity Adequacy Summary

Q. Can you summarize your proposed options to ensure resource adequacy as new large load customers are interconnected?

A. Yes. I propose that new large load customers be presented with four options (which are not mutually exclusive) to provide the capacity needed to support their load:

1. A special contracts approach in which the customer provides funding for sufficient capacity to support their load, for the duration of the primary supply agreement (PSA). They will still be subject to the "first load shed" provision.
2. The customer can build their own on-site power system. The customer may either be entirely off-grid, with no DTEE interconnect, or interconnect on standby power. Because standby power still imposes a major load on the grid (on occasion), the customer, when pulling power from the grid, would still be subject to the "first load shed" provision.
3. The customer can sign up for a traditional demand response program. Unless the customer agrees to 100% load reduction during declared events, the customer would still be subject to the "first load shed" provision.

4. The customer can sign up for a new program, as a tier-2 demand response participant, at 100% of their load. The customer would only be called upon to drop off the grid after all standard (tier-1) DR customers had been called upon, and if there was still a shortfall of capacity. The customer would need to participate in a DR test once per year. The "first load to shed" provision would have no impact on this customer, since their load will already be off-grid before any load shedding occurs. Compared to the special contracts or on-site power options, this option allows the data center customer to interconnect without the delays of power plant or battery construction. Compared to the traditional DR program, this option will call upon the customer to reduce their load less frequently.

V. DATA CENTER LOADS ARE UNIQUE

Q. Why is it important for the Commission to consider data centers as a unique load?

A. Multiple aspects of data centers make them a unique load, including the risk that a data center's load will not materialize – causing stranded assets, the 24-hour/day and 365 day per year (24x365) load profile, and the rate at which new data centers are being proposed. UPS systems may simultaneously trip the data center off-grid in response to transient grid fluctuations, potentially resulting in cascading blackouts. Additionally, data centers doing AI training have loads that vary wildly in less than a second which can cause frequency deviations.[119] I will discuss each of these characteristics in sequence.

[119] Chuck Ross, "It's Not Just the Load: A.I. data center grid impacts," *Electrical Contractor*, January 15, 2026. Accessed on 5/27/26 at: https://www.ecmag.com/magazine/articles/article-detail/it-s-not-just-the-load--a.i.-data-center-grid-impacts

Q. Why do large computing loads (i.e., data centers) present a greater risk of stranded grid assets than typical large industrial loads?

A. According to Consumers Energy:

> "…data center hardware needs to be refreshed more often than other typical manufacturing equipment, and data centers have the ability to easily transfer their functions to locations outside of Michigan. She states that other differences from typical large industrial customers are that data centers do not develop local supply chains and do not create significant local commercial activity or employment. Ms. Connolly opines that these differences present a greater risk for stranded assets."[120]

ABATE has made similar observations:

> "[b]eyond their size, it is the relatively new and immediate scale of their proliferation, their specific operating characteristics, and their limited operational ties to their localities that make them unique. As such they present specific stranded cost concerns which are not present with other types of large customers, such as industrial or manufacturing entities.... While a sizable manufacturing facility entails a local workforce and supply chain commitments which ground it in its location, data center customers have none of these locational attachments."[121]

I agree with their assessments. These characteristics, along with the huge size of their loads, are why tariff terms such as long contract duration, minimum payments, and exit fees are essential. But these are not the only characteristics that make data center loads unique.

[120] U-21859, Commission order dated November 6 2025, p 13

[121] Ibid, p 60

Q. How does planning and forecasting of large computing loads differ from typical large industrial loads?

A. New data centers differ in both scale and speed from new industrial facilities. Load can materialize in 18-36 months, faster than new industrial facilities and faster than an electric utility can get a new gas-fired plant approved, permitted, built, and interconnected.[122] Load planning for data centers requires a different process.[123] This has led to data center developers' willingness to work with electric utilities in ways large industrial customers have not.

Q. How do Data Center developers work with electric utilities differently from typical large industrial customers?

A. Data center developers have repeatedly declared that they are willing to pay the full costs of their impact to the grid.[124,125] In U-21859 and U-21990, Oracle and Google each provided substantial funding for network assets to be owned and operated by the utility. This is not behavior we normally see in other customers. One analyst put it this way:

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[122] "How Should Utilities Prepare for Rapid Data Center Load Growth?" *Ascend Analytics*, March 16, 2026. Accessed on 8/3/26 at: https://www.ascendanalytics.com/blog/best-practices-utilities-managing-data-center-demand

[123] Emeka Obikwelu, "The New Large-Load Compact," *Power Magazine*, July 14, 2026. Accessed on 8/3/26 at: https://www.powermag.com/the-new-large-load-compact/

[124] Sonal Patel, "White House Expands Data Center Ratepayer Pledge as Congress Moves to Codify Protections," *Power Magazine*, July 23, 2026. Accessed on 8/3/26 at: https://www.powermag.com/white-house-expands-data-center-ratepayer-pledge-as-congress-moves-to-codify-protections/

[125] Kinsey Grant Baker, "Anthropic to cover 100% of grid upgrade costs, demand-driven price hikes from data centers," *Energy Central*, February 12, 2026. Accessed on 8/3/26 at: https://www.energycentral.com/customer-engagement-experience/post/news-anthropic-to-cover-100-of-grid-upgrade-costs-demand-driven-price-qbmOHOLAdave6KO

> "…data centers have more strategic options than many earlier industrial loads. They can sign long-term power purchase agreements, co-locate with generation, install backup generation and batteries, build private substations, participate in demand response pilots, or shift some workloads across time and geography. These options do not eliminate the need for reliable grid service, but they change the bargaining relationship between customer and utility."[126]

Q. How does the response of data center loads to brief grid disturbances differ from typical industrial loads?

A. As I discussed earlier in this testimony, data centers are concerned with protecting their extremely expensive electronic equipment from power quality issues; their UPS settings can cause their load to trip off the grid (to run on backup power) during minor grid disturbances. As I discussed, there have been numerous documented cases of this behavior, some involving dozens of data centers dropping off-grid simultaneously. National Energy Reliability Corporation's (NERC's) Large Load Working Group report went into extensive discussion of the negative impacts that data center's tendency to trip off can have on the grid. UPS trips can negatively affect frequency stability, rotor angle stability, and voltage stability.[127]

Q. How does the load profile of data centers differ from typical industrial loads?

A. The load profile of a data center is unusual because these facilities typically run 24x7x365; most industrial facilities have downtime at night, and/or weekends, and/or

[126] Morgan Bazilioan, "How Artificial Intelligence Data Centers Are Reshaping the Regulatory Architecture of U.S. Electricity," *AI Energy*, 2026. Accessed on 8/3/26 at: https://www.aixenergy.io/how-artificial-intelligence-data-centers-are-reshaping-the-regulatory-architecture-of-u-s-electricity/

[127] "Characteristics and Risks of Emerging Large Loads: Large Load Task Force White Paper," *NERC*, July 2025, p 22-8. Accessed on 8/3/26 at: https://www.nerc.com/globalassets/who-we-are/standing-committees/rstc/whitepaper-characteristics-and-risks-of-emerging-large-loads.pdf

holidays.

As I discussed earlier in this testimony, the load profile of data centers is unique because their load can rise to contracted capacity and plunge to a small fraction of contracted capacity in sub-second time intervals, repeatedly, over minutes and hours. Quoting former Secretary of Energy Granholm again:

> "One of the least understood aspects of the AI-data-center boom is not the size of the load … it's the *volatility of the load*. Utilities have historically treated data centers as large but relatively flat demand sources — closer to steady industrial load than to highly dynamic systems… And unlike traditional utility planning assumptions, these changes may occur in seconds — or subseconds — rather than over hours. This matters because the grid was largely designed around gradual load ramps, predictable industrial demand and hourly planning models… AI infrastructure may require a different architecture…" AI changes that."[128]

In addition to the contract conditions needed to prevent stranded assets, a tariff for data centers needs to include limitations about ramp rates, for both ramp-up and ramp-down speeds (MW/minute). On May 4 of this year, the National Energy Reliability Corporation (NERC), issued a level-3 alert, escalating its prior level 2 alert because it

> "…found that entities generally did not have sufficient processes, procedures, or methods to address risks associated with computational loads. This contrasts with the robust historical experience with traditional non-power electronic non-computational load. As seen in the public report, NERC found specific deficiencies with the treatment of computational loads."[129]

[128] Jennifer Granholm, *LinkedIn*, 2026. Accessed on 7/26/26 at: https://www.linkedin.com/posts/jennifergranholm_one-of-the-least-understood-aspects-of-the-activity-7458242574542327808-bZoX/

[129] "Essential Action to Industry Computational Load Modeling, Studies, Instrumentation, Commissioning, Operations, Protection, and Control," *NERC*, May 4, 2026. Accessed on 8/3/26 at: https://www.nerc.com/globalassets/programs/bpsa/alerts/level-3-computational-load-alert.pdf

The alert requires transmission entities to acknowledge the alert by August 3, 2026. The alert requires transmission entities to collect a variety of data about data centers, including "electrical size and power factor," "dynamic characteristics" (UPS ride-through), "expected ramp rate (MW/min) in down-ramp and up-ramp," "protective devices," "on-site generation," and other information.[130] NERC has also modified its organization registration manual to require every "Computational Load Entity (CLE)" to register with NERC.[131] NERC had previously issued a white paper on large loads, which described how AI training can create rapid load ramps, both up and down. Using a "high-speed recorder" on a 50 MW block of a Google data center, ramp speed was measured and recorded, with approximately 40% of load ramping up or down in 250 milliseconds:[132]

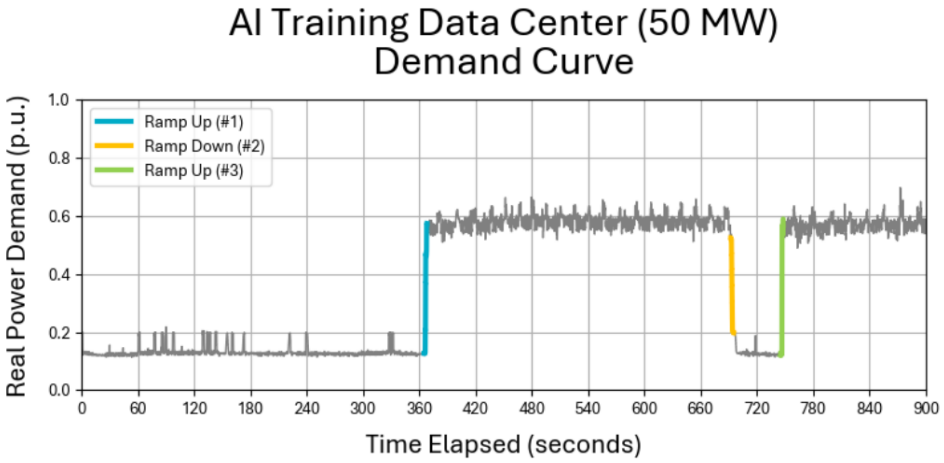


Figure 2.2: An AI Training Data Center Begins a Training Run (EdgeTunePower)

[130] Ibid, "Essential Action #1," p 3-5

[131] "Appendix 5A Organization Registration and Certification Manual," *NERC*, p 1. Accessed on 8/3/26 at: https://www.nerc.com/globalassets/who-we-are/rules-of-procedure/proposed/appendix-5a-redline-to-last-approved---april-2026-posting.pdf

[132] "Characteristics and Risks of Emerging Large Loads: Large Load Task Force White Paper," *NERC*, July 2025, p 6-7. Accessed on 8/3/26 at: https://www.nerc.com/globalassets/who-we-are/standing-committees/rstc/whitepaper-characteristics-and-risks-of-emerging-large-loads.pdf

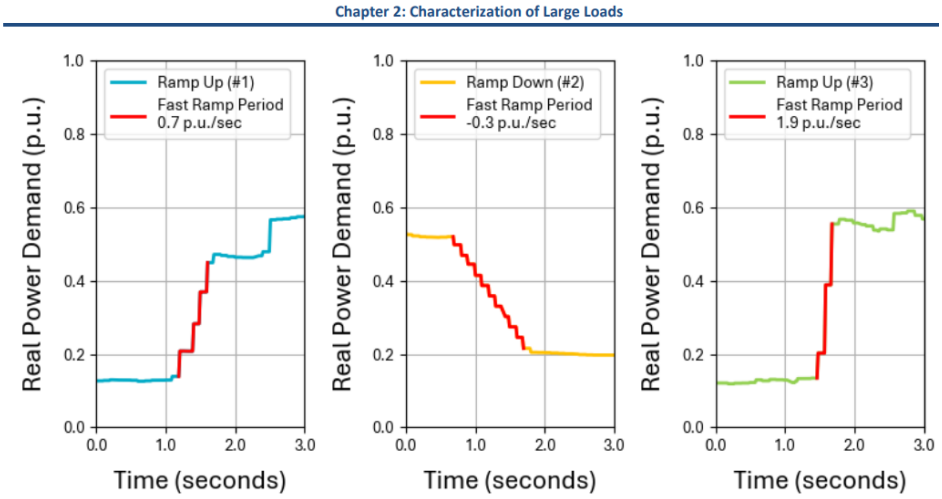


Figure 2.3: Zoomed-In Views of AI Training Data Center Ramping Up and Down Due to Transitioning Between Training and Saving Checkpoint Progress

NERC's large load working group recommended that:

> "Several other factors, such as *load ramp rates*, real-time behavior and flexibility, protection systems, and backup power schemes, *should be considered if a large load definition is developed for regulatory procedures or policies.* Some of the additional factors for consideration are described below."[133] (emphasis added)

Q. What risks to the reliable operation of the grid has NERC attributed to high load ramp-rates?

A. NERC says that these rapid swings in load can cause issues with frequency regulation, and trigger outages:

[133] Ibid, p 11

> "Large load ramp rates may cause issues with frequency regulation by outstripping the reserves held to regulate frequency. These reserves are provided by on-line spinning resources with headroom to manage a decrease in frequency and units that can further lower their output to manage an increase in frequency. With larger ramp rates, more regulation services will be needed to handle larger swings… If the system operator fails to procure adequate regulation to manage frequency, then load shed or rapid generation curtailment may take place and result in unplanned outages, reducing system security/reliability. In addition to the loss of load, the sudden restoration of a large load could exhaust available balancing reserves, ultimately leading to decreased system frequency and potential frequency instability. Large rapid changes in demand will also rapidly alter the flow of reactive power in the system, potentially exceeding the ability of existing voltage controls to respond and lead to over- and undervoltage conditions. This could lead to the unplanned outages of generation plants initiated by voltage-ride through protection, load loss related to undervoltage load shedding, or even more widespread outages caused by voltage instability and collapse."[134]

Q Do data centers have statutory obligations, which other industrial customers do not?

A. Yes. Michigan statute restricts data centers from using tariffs available to some other industrial customers, and requires that data centers not use "A rate that causes residential customers to subsidize the costs incurred to provide electric service to the facility."[135]

Although the ratemaking process normally assigns costs to the customer *class* that causes them, the legislature has given the Commission a specific legal obligation to ensure that residential customers do not subsidize *any particular data center facility*. This regulatory treatment of data centers is mandated by Michigan law.

[134] Ibid, p 20

[135] MCL 205.54ee(10)(e)(x)(C)

Q Have other jurisdictions recognized that data centers require special regulatory treatment?

A. Yes. Oregon enacted a law that has special rules for data centers. It defines data centers using code 518210 of the 2022 North American Industry Classification System ("Computing Infrastructure Providers and Web Hosting."[136] It requires the PUC to create a separate tariff for these customers, with specific terms and conditions. The Georgia PSC has issued a series of orders on data centers, including a provision to ensure that data center revenue reduces residential bills.[137]

Q Has the Commission recognized that data centers are a unique industry?

A. Yes. In U-21859, the Commission stated, "As Consumers makes clear in its application, data centers are a unique industry with characteristics that differ significantly from other commercial and industrial enterprises.[138]

Q. What characteristics of data centers has the Commission recognized as unique?

A. The Commission has recognized several characteristics that make data centers unique:

1. The load "presents unique and significant cost implications."[139]

[136] Kevin Hardy, "With electricity bills rising, some states consider new data center laws", Stateline, February 5, 2026. At: https://stateline.org/2026/02/05/with-electricity-bills-rising-some-states-consider-new-data-center-laws/ linked to: "House Bill 3546", *Oregon Legislative Assembly*, 2025. Accessed on 8/3/26 at: https://olis.oregonlegislature.gov/liz/2025R1/Downloads/MeasureDocument/HB3546/Enrolled

[137] "Data Center Fact Sheet," Geoia Public Service Commission, March, 2026. Accessed on 8/3/26 at: https://psc.ga.gov/site/downloads/datacenterfactsheet.pdf

[138] U-21859, Commission order dated November 6, 2025, p 10 and p 103

[139] U-21859, Commission order dated March 13, 2025, p 3

2. The magnitude of the potential stranded costs.[140]

3. The risk of cross-subsidization.[141]

4. "… unprecedented character, including the high load factor, 24/7/365 demand profile, and the fact that the vast majority of new generation and transmission investments will be driven by such a small number of discrete loads.[142]

Q. What has the Commission said about the data center and the large load tariff?

A. In U-21859, the Commission ordered that the large load tariff should be end-use neutral, explaining:

> "…eligibility should be end-use neutral, rather than applied only to data center customers. The Commission agrees with the Staff that the end-use at issue here does not involve a unique type of service such as that required for metal melting or electric vehicle charging, but that the size itself is the unique feature that must be addressed."[143]

[140] [140] U-21859, Commission order dated November 6, 2025, p 10

[141] Ibid, p 103-4

[142] Ibid, p 116

[143] Ibid, p 106

Q. Do you agree with that Commission finding that the large load tariff should be end-use neutral?

A. No. In the NERC Large Load report, under the section on "Power Quality" and the sub-section "Voltage Fluctuations," the report discussed how electric arc furnaces (metal melting) induce voltage fluctuations into the bulk power system. The next two sentences are: "Some new large electric loads, such as cryptocurrency miners and AI data centers, also have the potential to introduce significant voltage fluctuations to the supply system. This can be attributed to the significant variation in the load profile of these loads"[144] Data centers as an end-use do involve issues similar to metal melting.

For all of the reasons described above, and perhaps additional reasons that other intervenors in the instant case will identify, data centers require different tariff terms and conditions and power quality monitoring equipment, and methods & procedures than other end-uses.

[144] "Characteristics and Risks of Emerging Large Loads: Large Load Task Force White Paper," *NERC*, July 2025, p 32-6. Accessed on 8/3/26 at: https://www.nerc.com/globalassets/who-we-are/standing-committees/rstc/whitepaper-characteristics-and-risks-of-emerging-large-loads.pdf

Q. What action should the Commission take, due to the unique qualities of data center developers and data center loads?

A. The Commission should order that the new tariff should be created that only applies only to enterprise data centers, as defined in MCL 205.54ee(10)(e) - (i) through (iii). Terms and conditions added to D11 for large loads in the Company's proposal should instead be applied to the new tariff, which would copy the rates in D11, until they may be changed in a rate case.

VI. RECOMMENDATIONS

Q. What actions should the Commission take in this case?

1. The Commission should order that a new tariff should be created that applies only to enterprise data centers, as defined in MCL 205.54ee(10) (e)(i) through (iii). Terms and conditions added to D11 for large loads in the Company's proposal should instead be applied to the new tariff, which would copy the rates in D11, until they may be changed in a rate case.

2. The Commission should order that any tariff approved in this case (D11 revisions or a new tariff) should limit the customer's reduction in their capacity commitment to a one-time 10% reduction, or get special approval via an ex parte filing per U-21859.

3. The Commission should order that any tariff approved in this case (D11 revisions or a new tariff) address collateral requirements consistent with prior cases. The Commission may reasonably order:

    a. Grant the Company control over the amount and type of collateral accepted and assign the Company full liability if the collateral is insufficient, as it did in U-21990.

    Or

    b. Require 100% of the exit fee as collateral, in either cash or an irrevocable letter of credit, following the precedent in U-21859, but with a 100% requirement (vs. 50% in U-21859)

    Or

    c. Require 50% of the exit fee as collateral, in either cash or an irrevocable letter of credit, following the precedent in U-21859, but including a credit rating clause to demand more collateral, if the customer's credit rating declines.

4. The Commission should order that in any tariff approved in this case (D11 revisions or a new tariff) that the Company remove the provision allowing the customer to exceed their contracted capacity. Alternatively, if the Commission favors giving large load customers some latitude, the provision should be re-written. The cap should be the lessor of: 5% of the customer's contracted capacity, or 50 MW, and be restricted to the nine non-summer months, as defined in MISO capacity auctions.

5. The Commission should order that any tariff approved in this case (D11 revisions or a new tariff) include a clear statement in the tariff that all new large load customers must sign a power supply agreement, subject to review by the Commission, in a contested case.

6. The Commission should order that any tariff approved in this case (D11 revisions or a new tariff) include language about customer's options for demand response (DR), onsite generation with grid standby power (rider 3), or onsite generation with no interconnection to the grid.

7. The Commission should order that any tariff approved in this case (D11 revisions or a new tariff) include limits to customer load ramp rates, both ramp-up and ramp-down (MW/min).

8. The Commission should order that any tariff approved in this case (D11 revisions or a new tariff) require that the interconnect with any large load customer shall include monitoring equipment to ensure that the customer adheres to ramp limits and other power quality requirements, at the customer's expense.

9. The Commission should order that any tariff approved in this case (D11 revisions or a new tariff) include a customer *option* which specifies that the service is not firm; putting the large load customer into a two-tiered demand response (DR) program, as described in my testimony.

10. The Commission should order Staff to set up a study group to look at the UPS trip issue, including ERCOT interconnect requirements, and the proposed MISO requirements, and make a recommendation – urgently!

Q. Does that conclude your testimony?

A. Yes.

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

REBUTTAL TESTIMONY AND EXHIBITS OF JOHN RICHTER

On Behalf of

Great Lakes Renewable Energy Association

August 25, 2026

I. Contents

II. QUALIFICATIONS 1
III. UPS RIDE-THROUGH STANDARD 2
IV. THE AMOUNT OF COLLATERAL 13
V. ANNUAL REPORTING 17
VI. CONCLUSIONS AND RECOMMENDATIONS 18

II. QUALIFICATIONS

Q. Please state your name and business address.

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

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

A. Yes.

Q. Are you sponsoring any additional exhibits?

A. Yes:

Exhibit GLREA-2 Discovery Responses of DTE Electric

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

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

A. Exhibit 2 consists solely of DTE Electric responses to GLREA discovery questions. These responses were received on August 4, the date of the deadline for direct testimony. Exhibit 3 is an ERCOT publication, accessed on 8/20/26 at: https://www.ercot.com/mktrules/issues/NOGRR282#keydocs. I added yellow highlights to critical passages, but did not otherwise change the report.

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony addresses statements made by DTE Electric in their discovery responses to the GLREA and CEO, and also the variations in intervenor 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.

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

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

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

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

"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."[4] (emphasis added)

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

"DTE Electric does not yet have a single completed generic Large Load Connection Requirements document, though such a document *is planned to be developed*." (emphasis added).[5]

[3] Yiheng Xie, Wenqi Cui, Adam Wierman, "Enhancing Data Center Low-Voltage Ride-Through," *arXvi*, 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.

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

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

Q. Have any other jurisdictions adopted a FRT standard?

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

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

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

> 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 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."[8] (emphasis added)

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

[7] Exhibit GLREA-3.

[8] Ibid, p 1-2.

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

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

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

> "…if ERCOT determines that the operation of an LEL [Large Electric Load] 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."[10]

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

A. The Company objected to the question, stating…

[9] Ibid, p 3 and p 5, respectively.

[10] Ibid, p 7.

> "…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."[11] (emphasis added)

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

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

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

[11] Exhibit 2, GLREADE-1.2c.

[12] Direct testimony of John Richter, p 39.

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

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

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

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

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

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

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

A. I think of three, related reasons why this is urgent. Firstly, these standards need to be in effect prior to a large load with a UPS going into service, to protect grid stability. In U-21900, the Company said that the load from the Oracle data center "…will begin to materialize in January 2027…"[16] We don't have much time. Secondly, large load customers *may* need to make extensive and expensive changes to their power system design to comply with the standard, depending on their initial design. Customers will need 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-21990 Commission order dated December 18, 2025, p 3.

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

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

A. Complying with FRT requirement is often not as simple as changing a few settings in the UPS. Data centers very intentionally configure their UPS to be very sensitive to voltage changes in utility power. A data center may be operating tens of billions of dollars of very sensitive electronics; protecting those assets from spikes in voltage is imperative. If the data center is compelled to ride-through very brief voltage spikes, it needs to add 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://gilleschaspiere.substack.com/p/the-grid-code-gauntlet-requirements.

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

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

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

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

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

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

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

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

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

[24] Direct testimony of Lee Shaver, p 25.

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

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

IV. THE AMOUNT OF COLLATERAL

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

A. The Company's application proposes:

> "COLLATERAL AND CREDIT: The Company shall be entitled to require the customer to provide collateral *equal to the termination fee* as described above. The Company, at its sole discretion, may determine a lower required collateral amount. The required collateral amount may be reduced as the termination fee declines over the term of the contract. The Company, at its sole discretion and determination, may require a letter of credit, cash, parent guarantee, or a combination thereof, as collateral."[25] (emphasis added)

[25] Company exhibit A-1, page 6.

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

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

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

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

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

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

A. Yes, with any modifications "subject to Commission review on a case-by-case basis…"[28]

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

A. No. ABATE cited the collateral language approved in U-21859, and recommended that the Commission not allow "DTE to reduce a customer's collateral requirement to less than 50% of the customer's termination fee…" unless approved to do so in an "ex parte 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.

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

A. Yes, ABATE did, but only by citing the language in U-21859.[30] But ABATE also argued that the Minimum Monthly Charge (MMC) may not be enough to protect other customers, recommending that the Company should be required to demonstrate that it is sufficient in ex parte filings for each new large load customer.[31] Because the collateral amount is tied to the termination fee, and the termination fee is the product of the MMC and the remaining years in the contract (except near the end of the contract), increasing the MMC would have the effect of increasing the termination fee and therefore the default amount of collateral.

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

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

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

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

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

V. ANNUAL REPORTING

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

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

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

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

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

Q. Why is reporting of operating parameter violations important?

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

VI. CONCLUSIONS AND RECOMMENDATIONS

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

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

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

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

Q. Does that conclude your rebuttal testimony?

A. Yes.

MR. JANISZEWSKI: Yes, thank you, Your Honor. The company wants to clarify for the record that it does not object to the ALJ and Commission taking official notice of the existence, filing date, FERC docket, and accession numbers, the requested effective date, and the procedural status of MISO's August 28, 2026 tariff filing concerning the prospective interconnection reliability requirements for large loads, which are referred to as the IRR proposal in documents in that docket. The company's stipulation does not, however, constitute a stipulation that the proposed tariff has been approved or is presently effective, that its technical assertions are true for evidentiary purposes in this proceeding before the Michigan Public Service Commission, or that its proposed requirements apply to any particular DTE Electric customer at this time, or that the MISO filing and attachment support any particular relief in this MPSC proceeding. And I would like to clarify for the record the docket number before FERC is ER26-3650, and the accession number is 20260828-5278.

THE COURT: All right. Mr. Keskey?

MR. KESKEY: Your Honor, we appreciate the agreement to take official notice of the MISO

rulemaking and tariff proposals. We believe it is relevant to the issues in the case, but I don't think anything further has to be said. It'll be available for briefing and for consideration by Your Honor and by the Commission.

THE COURT: Thank you. Last words, Mr. Janiszewski?

MR. JANISZEWSKI: Nothing further from the company. Thank you, Your Honor.

THE COURT: You're welcome. So we will take judicial notice of the existence of the rulemaking. Is that sufficient for the parties?

MR. KESKEY: Yes, Your Honor.

MR. JANISZEWSKI: Yes, Your Honor. Thank you.

THE COURT: Great. Thank you very much. Moving back to binding in. Ms. Duckworth, CEO.

MS. DUCKWORTH: Thank you. At this time, on behalf of the Ecology Center, the Environmental Law & Policy Center, Union of Concerned Scientists, and Vote Solar, collectively CEO, I move to bind into the record the direct testimony of Lee Shaver, consisting of a cover page, a table of contents, and 32 pages of questions and answers. I also move for the admission of Mr. Shaver's testimony exhibits,

CEO-1 through CEO-9, of which Exhibit CEO-6 is confidential. CEO have also agreed by stipulation of the parties to the admission of one hearing room exhibit in lieu of cross-examination, which consists of discovery responses provided by DTE. It is loaded onto the SharePoint in the CEO folder under a subfolder titled hearing exhibits. At this time, I would also like to move for the admission of Exhibit CEO-10.

THE COURT: Is CEO-10 the exhibit in the hearing room folder?

MS. DUCKWORTH: Yes, Your Honor.

THE COURT: Okay, thank you. All right. Are there any objections to the binding in of the pre-filed direct testimony of Lee Shaver? Hearing none, the direct testimony of Lee Shaver is bound into the public record. Are there any objections to the admission of Exhibits CEO-1, 2, 3, 4, 5, 7, 8, 9, and 10? Hearing none, Exhibits CEO-1, 2, 3, 4, 5, 7, 8, 9, and 10 are admitted into evidence for the public record. Are there any objections to the admission of confidential Exhibit CEO-6? Hearing none, Exhibit CEO-6 is admitted into evidence as part of the confidential record. Anything else, Ms. Duckworth?

(Exhibits CEO-1 through CEO-10 admitted; CEO-6 confidential)

(Testimony bound in)

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.	)))	Docket No. U-22061

DIRECT TESTIMONY OF

LEE SHAVER

ON BEHALF OF

THE ECOLOGY CENTER, ENVIRONMENTAL LAW & POLICY CENTER, UNION OF CONCERNED SCIENTISTS, AND VOTE SOLAR

August 4, 2026

TABLE OF CONTENTS

I. Introduction and Summary 1
II. Purpose of Testimony 3
III. Reliability Impacts of Large Data Centers 5
IV. Review of Prior Testimony on Reliability Impacts 14
V. Recent Developments 17
A. FERC, NERC, and MISO 17
B. Developments Elsewhere 21
C. Summary 22
VI. DTE's Approach to the Reliability Impacts of Large Loads 24
VII. Conclusion 32

I. INTRODUCTION AND SUMMARY

Q: Please state your name and business address.

A: My name is Lee Shaver. My business address is 200 East Randolph Street, Suite 5151, Chicago, IL 60601.

Q: By whom are you employed and in what capacity?

A: I am employed by the Union of Concerned Scientists ("UCS") as a Senior Energy Analyst. In this role, I focus on research and analysis of state and regional energy system transformation to support increasing shares of renewable energy and distributed energy resources. My work contributes to UCS's efforts to reform wholesale electricity market designs to increase market share of clean energy technologies. I also contribute to UCS's state-focused efforts for policies that enhance equity and enable clean energy technologies, including distribution grid planning and energy storage.

Q: Please describe the Union of Concerned Scientists.

A: The Union of Concerned Scientists was founded in 1969 by scientists and students of the Massachusetts Institute of Technology. UCS employs scientists, analysts, and engineers to develop and implement innovative, practical solutions to some of the most pressing problems that society faces today—from developing sustainable ways to feed, power, and transport humanity, to reducing the threat of nuclear war. UCS's mission is to put rigorous, independent science to work by combining technical analysis and effective advocacy to create policy solutions for a healthy, safe, and sustainable future.[1]

[1] For more information, including UCS's history and mission statement, visit: https://www.ucs.org/about-us.

Q: Please describe your educational background.

A: I hold a Master of Science degree in Electrical Engineering from the University of Wisconsin-Madison, conferred in May 2017. I also have a Bachelor of Science degree in Electrical Engineering from LeTourneau University, conferred in December 2007.

Q: Please describe your work experience and professional background.

A: Prior to joining UCS in January 2024, I was an energy engineer for six years with Slipstream, a non-profit focused on building decarbonization and electrification. In this role I designed and conducted research on grid edge technologies including microgrids, grid-interactive efficient buildings, energy management information systems, and refrigeration thermal energy storage. During my graduate program, my research focused on developing and testing hardware and software for small-scale, remote microgrids. Earlier in my career, I served in various engineering roles for over five years at Quadlogic, a manufacturer of electric metering equipment. My resumé, including a list of publications, is attached to this testimony as Exhibit CEO-1.

Q: Have you previously testified before this Commission as an expert?

A: Yes. I provided testimony before the MPSC in the following cases:

- U-21482, DTE Electric Company Interconnection Procedures
- U-21816, Consumers Energy Company's Renewable Energy Plan
- U-21870, Consumers Energy Company's Rate Case
- U-21986, Indiana Michigan Power Company Large Power Tariff
- U-22058, DTE Electric Company Application for Approval of Special Contract for 1 GW Google Data Center

Q: Have you provided testimony or comments in other proceedings or venues?

A: I have prepared or assisted with preparation of testimony and comments in stakeholder venues involving the Michigan Public Service Commission, the Illinois Commerce

Commission, the Wisconsin Public Service Commission, and the Federal Energy Regulatory Commission.

Q: Are you sponsoring any exhibits?

A: Yes, I am sponsoring the following exhibits:

- Exhibit CEO-1: Resumé of Lee Shaver
- Exhibit CEO-2: NERC, *Characteristics and Risks of Emerging Large Loads: Large Loads Task Force White Paper* (July 2025)
- Exhibit CEO-3: NERC, *Incident Review Considering Simultaneous Voltage Sensitive Load Reductions* (Jan. 2025)
- Exhibit CEO-4: NERC, *2026 State of Reliability: Assessment Overview of 2025 Bulk Power System Performance* (June 2026)
- Exhibit CEO-5: DTE discovery responses to CEODE-2.2a; CEODE-2.3a; CEODE-2.3e; CEODE-2.4a; CEODE-2.4b; CEODE-2.4c; CEODE-2.5bi–bii; CEODE-2.7a–d; CEODE-2.7f–g; CEODE-2.7i; CEODE-2.7k; CEODE-2.10i; CEODE-2.14c; and CEODE-2.16b
- Exhibit CEO-6: ***Confidential*** DTE discovery response to CEODE-3.1
- Exhibit CEO-7: Energy Systems Integration Group, *Interconnection Processes for Large Loads: Current Practices and Recommendations*. (June 2026)
- Exhibit CEO-8: NERC, *Assessment of Gaps in Existing Practices, Requirements, and Reliability Standards for Emerging Large Loads White Paper* (March 2026)
- Exhibit CEO-9: NERC, *Draft Large Load Disturbance Performance Impact Analysis and Ride-Through Recommendations* (August 2026)

II. PURPOSE OF TESTIMONY

Q: On whose behalf are you appearing in this case?

A: I am testifying on behalf of the Ecology Center, Environmental Law & Policy Center, Union of Concerned Scientists, and Vote Solar, collectively the "Clean Energy Organizations" or "CEO."

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to evaluate whether DTE's proposed Large Load Provisions in Tariff D11 adequately address the grid reliability risks associated with large loads, particularly data centers. I review the history of how these risks have been covered in previous cases before the Commission and summarize recent developments at the North American Electric Reliability Corporation ("NERC"), the Federal Energy Regulatory Commission ("FERC"), the Midcontinent Independent System Operator ("MISO"), and others. I then assess DTE's application, testimony, and discovery responses, finding that the Company does not appear to be taking adequate steps to address these risks, and that further requirements and transparency are required.

Q: Please summarize your recommendations.

A: In light of insufficiencies in DTE's proposed approach for addressing the reliability risks of large load customers and in the absence of enforceable NERC, MISO, or other federal or regional standards, I recommend that the Commission adopt a three-part approach to ensure that DTE adequately manages these risks:

1) **Impose additional, specific reliability-related requirements as part of DTE's proposed Rate D11 Large Load provisions.** The Commission should require DTE to provide its specific, detailed minimum interconnection requirements for large loads, including draft operating parameters and sample

study reports that will be applicable to any large loads that DTE seeks to serve under its proposed Rate D11 Large Load provisions.

2) **Greater transparency in future data center interconnection applications.** The Commission should order the Company to provide the customer-specific study results and operating parameters when it seeks to serve new large loads under Rate D11, as well as a detailed explanation of how the operating parameters address the reliability risks.

3) **Confirmation of compliance with NERC and MISO requirements, including retroactive application of these requirements.** Once NERC and MISO have finalized and enacted their requirements, the Commission should order DTE to demonstrate that it is appropriately applying those requirements. Further, the Commission should evaluate whether DTE should also be applying those requirements to existing or previously approved large load customers that otherwise would not be subject to the new standards.

III. RELIABILITY IMPACTS OF LARGE DATA CENTERS

Q: What is DTE seeking in this docket?

A: In this docket, DTE is responding to the Commission's order in Case No. U-21990 to "file an application for approval of a generally applicable large load customer tariff that aligns with the findings in the November 6, 2025, order in Case No. U-21859."[2]

Specifically, the Company's "proposed Large Load Provision incorporates new terms of service and requirements for large load customers requesting service under the

[2] Case No. U-22061, Application of DTE Electric Company at 2 (Mar. 18, 2026).

existing Rate Schedule D11."[3] The proposed Large Load Provision would be mandatory for any new customer with an aggregate incremental load of 100 MW or greater, as well as any new customer with "100 MW or more of incremental load across multiple sites if the average load of those sites is >20 MW."[4] According to DTE, "[t]he intent of the proposed applicability term is to ensure that adequate protections are in place to manage the potential risk associated with serving new, large loads."[5]

Q: What specific concerns related to large loads did the Commission raise in its November 6 Order in Case No. U-21859?

A: The Commission identified that "that the significant increase in load represented by data centers and other large load customers poses several potential risks related to system reliability, cost impacts, and regulatory compliance."[6]

Q: Which of these concerns will you address in your testimony?

A: I will address the reliability impacts of large loads, focusing specifically on data centers, which represent the predominant form of large loads currently seeking interconnection and would be eligible for service under DTE's proposed Large Load provisions in Rate D11.

Q: Please provide an overview of the reliability risks associated with data centers.

[3] Case No. U-22061, Direct Testimony and Exhibit of Witness Aaron Willis on behalf of DTE Electric Company at 7 (Mar. 18, 2026).
[4] *Id.* at *9*.
[5] *Id.*at 8.
[6] Case No. U-21859, In the Matter of the Application of Consumers Energy Company for Ex Parte Approval of Certain Amendments to Rate GPD, Order at 103 (Nov. 6, 2025) (internal quotations omitted).

A: Data centers' load characteristics and sensitivity to grid disturbances pose significant challenges to the grid. NERC, the federally-designated organization responsible for developing and enforcing grid reliability standards, describes the full range of reliability risks associated with large loads like data centers:

> The fast ramp rates and variability of the [large] loads could exhaust reserves for balancing and contribute to voltage and frequency instability. If system planners and operators lack accurate dynamic models, they may be unable to predict ride-through and system behaviors during events. Much of the PEL [power electronics] load can contribute to harmonics and voltage fluctuations. Large loads like data centers can also be susceptible to cyber-attacks that could trigger load ramps. Additionally, the rapid pace of load integration with large loads' magnitude could negatively impact system resilience.[7]

I will describe two specific behaviors of data centers that result in the risks NERC describes above. First, data centers are typically interconnected to the grid through uninterruptible power supplies ("UPS") which can quickly switch data centers from grid power to backup generation. UPS are typically programmed to be very sensitive to fluctuations in grid voltage and frequency and can disconnect from the grid quickly when they detect a grid disturbance—even minor ones. This is a key difference between data centers and other types of loads (even large industrial or commercial loads) that are less sensitive to minor changes in voltage or frequency, which are relatively common. Data centers' UPS programming can cause them to instantaneously and voluntarily disconnect from the grid, typically without any notice to grid operators. Such rapid disconnections are known to trigger even greater disturbances. This phenomenon, referred to as "customer initiated load reduction" ("CILR") is just one type of risk which data centers pose to grid reliability and will only increase as the prevalence of data centers increase.

[7] Exhibit CEO-2 at 38.

Similar to the risk of CILR, the excessive ramp rates of data centers are a system-wide challenge to grids. Data centers can shift their demand by hundreds of MW per second. At a fundamental level, most generators on the grid cannot match these ramp rates: modern gas plants can achieve 75 MW per minute,[8] while older plants may be limited to as little as 19 MW per minute.[9] In addition to the sheer physical challenge of matching data centers' ramping needs, the rapid oscillations that they produce can resonate with and stress generator turbine shafts, leading to accelerated aging and premature failure.[10]

Q: What could be the impact of such events?

A: Significant outages and even rolling blackouts are possible, impacting not just the large load customer itself but other ratepayers. CILR from data centers can result in instability and outages because the grid cannot adequately respond due to their massive size and speed. The fact that they are typically connected directly to the transmission system increases the scope of the risk. I will explain these factors here.

First, the grid is not capable of responding to the kind of sudden, large changes like those caused by CILR from data centers. Although the grid is designed to continually ramp generation up and down as supply and demand fluctuates, most resources on the grid do not communicate directly to each other. Instead, their output is based on pre-programmed, standard responses to changes in frequency and voltage which they detect

[8] "7HA Gas Turbine," *GE Vernova*, 2026, https://www.gevernova.com/gas-power/products/gas-turbines/7ha#:~:text=43%2E3%25-,Ramp,75.
[9] EPRI, *Unit Ramp Rate Optimization Guidelines: Methodology and Technical Approach (Supersedes 3002011175)*, Technical Report (Electric Power Research Institute (EPRI), November 16, 2018), 1–3, https://www.epri.com/research/products/3002012979.
[10] Nick Giffin, "EMT Analysis of Datacenter Loads," October 2025, https://events.ornl.gov/emt-workshop/wp-content/uploads/sites/67/2025/10/5.-Elevate_Large_Loads_Nick-Giffin.pdf.

at their point of interconnection. For the grid to function properly, this programming relies on standard assumptions and limits about what types of changes to expect, and how to respond to them.

For small and slow changes in load, this is straightforward—a few MW more or less of generation can easily be adjusted. But the advent of GW-scale loads upends these assumptions. A GW-scale load reduction requires a GW-scale adjustment in generation, which is larger than many generating resources on the grid. This takes more time and more coordination, and depending on where the event occurs, there may not be enough electrically proximate resources to quickly respond, extending the duration of the event. And aside from the scale of these load reductions, the speed of the reductions is also much faster than most resources can respond.

Second, because data centers are typically connected to the transmission system (and often at two points in a network configuration), any impacts they cause will inherently affect a wider area of the grid and simultaneously be harder to isolate.[11] In sum, if one or more large data centers drop off the grid, "that suddenly leaves a local power grid with a lot of excess power, creating frequency spikes that can trip power plants offline and trigger wider blackouts."[12]

The result is that reliability impacts of data centers risk larger-scale and longer disruptions, including outages. The time and cost (including to other ratepayers) to restore power following outages would also be subsequently larger.

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[11] Data centers and large loads differ in this respect than most loads, which are connected on the distribution system. In a scenario involving a distribution-connected load, the affected section of the grid can be isolated at the substation or feeder level (either manually or automatically), limiting the number of other customers affected.

[12] Catherine Boudreau, "As More Data Centers Trip off the Grid, 'ride-through' Rules Gain Steam," *Latitude Media*, July 28, 2026, https://www.latitudemedia.com/news/as-more-data-centers-trip-off-the-grid-ride-through-rules-gain-steam/.

Q: Have any recent events highlighted these reliability risks?

A: Yes, a recent event in Virginia underscores the urgency of addressing the reliability impacts of data centers. News reports indicate that on the morning of July 22, 2026, the simultaneous disconnection of 3 GW of data center load in Dominion Virginia's territory caused a massive disruption to the grid.[13] This CILR event caused voltage and frequency disturbances which took approximately 10 minutes to resolve. While the grid is designed and operated to handle sudden changes in load to some extent, the scale of this event, especially in response to a fairly mundane transmission fault, is largely unprecedented.

That said, it closely mirrors a July 2024 event in which 1.5 GW of data center load simultaneously disconnected from the grid in response to a similar transmission fault. In an incident review of this event, NERC explained that "operators [had] to take action to reduce the voltage to within normal operating levels."[14] NERC noted that:

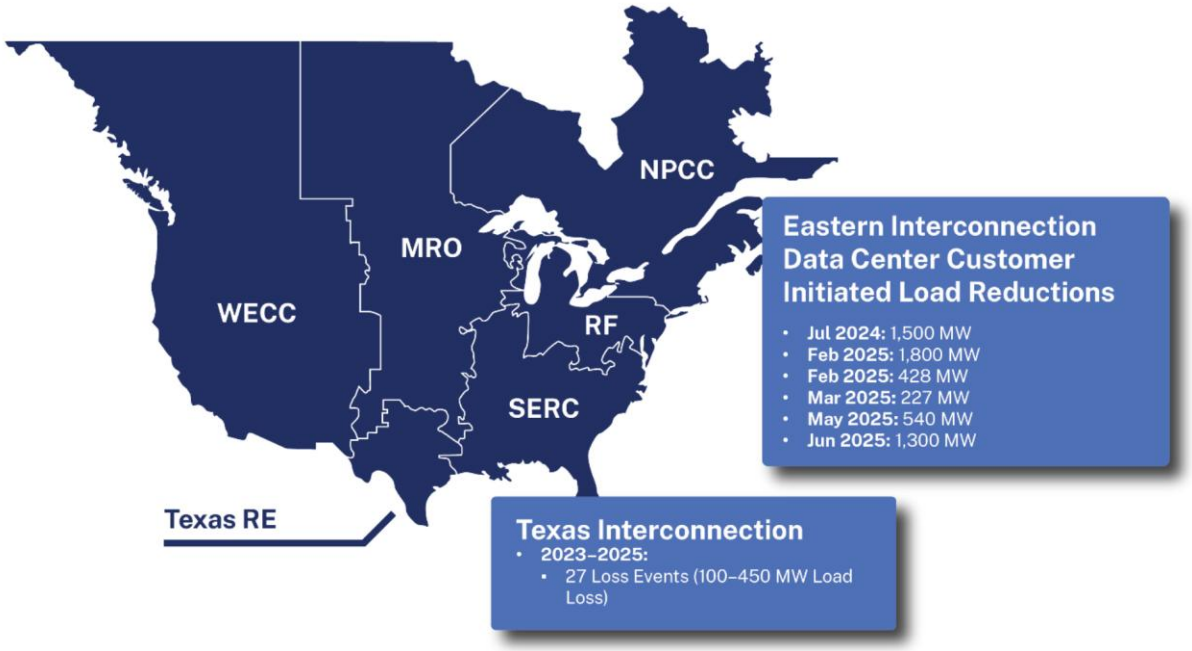
> [A]s the potential for this type of load loss increases, the risk for frequency and voltage issues also increases. Operators and planners should be aware of this reliability risk and ensure that these load losses do not reach intolerable levels.[15]

NERC's analysis indicates that voltage and frequency disturbances from the June 2024 event took approximately four minutes to resolve. That analysis combined with the preliminary details of the more recent event indicate that the risk of disturbances caused by large loads is increasing; the later event was twice as large and took over twice as long to resolve. While neither event directly resulted in outages or other damage to the grid, as

[13] Tim McLaughlin, "Massive Disconnect of Power Roils Largest US Electric Grid," *Reuters*, July 22, 2026, sec. Energy, https://www.reuters.com/business/energy/massive-disconnect-power-roiled-largest-us-electric-grid-2026-07-22/.
[14] Exhibit CEO-3 at 1.
[15] Exhibit CEO-3 at 1.

large data centers continue to seek interconnection, the risk that such events will increase in magnitude and duration grows, placing greater stress on the system.

In addition to these two recent events, NERC's recently published holistic 2026 State of Reliability Assessment, which provides an overview of bulk power system ("BPS") performance in 2025, documented similar customer-initiated load reduction events:[16]



Discussing the growing magnitude and prevalence of these events, NERC concluded:

> These events demonstrate that the reliability challenges from large loads will increase as these facilities become more prevalent on the grid. As the size of individual large load facilities increases and if large load facilities are located near one another, the sizes of these large load events will likely increase. This could lead to measurable frequency or voltage stability issues.[17]

[16] Exhibit CEO-4 at 5.
[17] *Id.* at 6.

After describing its own ongoing efforts to address these reliability risks, NERC made several recommendations targeting other actors. Particularly relevant to my testimony in this proceeding, NERC recommended that "[r]egulators should work with utilities to address the risks posed by emerging large loads."[18] If these risks are not adequately addressed by improved planning, operational requirements, and monitoring of data center loads, it is inevitable that such events will ultimately result in outages and damage to grid equipment.

As I will discuss more below, this indicates the importance of addressing the reliability risks from multiple fronts—including by state regulators like the Commission—rather than simply waiting on or relying on NERC or others to implement requirements.

Q: Should utilities impose any operating requirements on large load customers to address the potential reliability risks you discuss above?

A: Yes. Voltage ride-through requirements and ramp rate limits are appropriate to include in the terms and conditions applicable for large loads and thus should be incorporated into DTE's large load tariff as I will discuss more below. These two requirements are simple and straightforward to implement, have industry precedent, and can protect against many near-term reliability risks caused by large data center loads.

Without voltage ride-through requirements, data centers may choose to disconnect from the grid unexpectedly in response to system disturbances, which can exacerbate the disturbance and lead to further challenges. This requirement is more urgent than others due to the fact that incidents have already been documented, as discussed above.

[18] *Id.* at 8.

Underscoring the urgency of this type of requirement, one of the "essential actions" which NERC directed utilities to take in its recent level three alert was to work with existing customers to improve ride-through performance.[19]

Similarly, excessive ramping of data centers has also been observed, as described in NERC's white paper *Characteristics and Risks of Emerging Large Loads* (Exhibit CEO-2). This excessive ramping can threaten the grid's ability to maintain adequate voltage and frequency regulation, potentially leading to unplanned outages. Gathering information about ramp rates of existing facilities was also included as an "essential action" in NERC's recent alert.[20]

Q: Is DTE proposing specific voltage ride-through or ramp rates as part of its proposed Large Load provisions?

A: No. Although DTE's existing Tariff D11 includes a requirement related to voltage stability, it is insufficient to address the risks posed by data centers on its own. Specifically, the tariff provides that:

> Customer-owned equipment must be operated so that voltage fluctuations on the primary distribution system of the Company shall not exceed permissible limits.[21]

In a discovery response, DTE confirmed that this requirement would also apply to transmission-connected customers such as large data centers.[22] On its own, however, this requirement is insufficient. Voltage limits and ride-through requirements should be much

[19] NERC, "Essential Action to Industry: Computational Load Modeling, Studies, Instrumentation, Commissioning, Operations, Protection, and Control," Level 3 Alert, (May 4, 2026), 7–8, https://www.nerc.com/globalassets/programs/bpsa/alerts/level-3-computational-load-alert.pdf.
[20] *Id.* at 4.
[21] Case No. U-22061, DTE Exhibit A-1 at 3.
[22] Exhibit CEO-5 at 1.

more stringent and detailed, such as the example recently approved by the Public Utility Commission of Texas that I will discuss later in testimony.

DTE has also confirmed in discovery that all large loads will be subject to operating parameters.[23] A draft of the parameters (provided as a confidential discovery response) indicates that both ramp rates and voltage ride-through requirements will be included as part of the operating parameters.[24]

Therefore, while it appears that DTE does plan to include both types of requirements in the operating parameters for all large loads under Tariff D11's large load provision, the Company has not provided sufficient detail about what the minimum requirements will be. Later in testimony I will provide recommendations to address this shortcoming.

Q: What specific voltage ride-through and ramp rate requirements should DTE implement?

A: This is something that only DTE can determine, as it will depend on the nature of its system. However, the various draft requirements and recommendations I have discussed here from MISO, NERC, and others represent valid starting points. The important point is the DTE must provide and justify these requirements to the Commission, so that their adequacy for addressing reliability risks can be assessed.

IV. REVIEW OF PRIOR TESTIMONY ON RELIABILITY IMPACTS

Q: Have you testified about these reliability risks previously?

[23] Exhibit CEO-5 at 2.
[24] Confidential Exhibit CEO-6.

A: Yes. First, in Case No. U-21986, the application of Indiana Michigan Power Company ("I&M") for approval of changes to its large load tariff, I testified extensively about these reliability risks.[25] Second, in Case No. U-22058, the application of DTE Electric Company for approval of special contracts with Google for a 1 GW data center, I testified about the specific risks posed by the proposed data center as well as additional research and data on reliability risks that became available after the filing of my testimony in Case No. U-21986.[26]

Q: What did you recommend in Case No. U-21986 to address these risks?

A: I made two major recommendations. First, I recommended the creation of a statewide large load interconnection working group, made up of utility personnel, Commission staff, and other stakeholders, to develop comprehensive interconnection requirements for large loads and propose a pathway for their implementation. Second, I recommended that the Commission require I&M to implement voltage ride-through requirements and operational ramp rate limits for large loads, because such requirements are critical to address the near-term risks caused by large data centers.

In the proposal for decision ("PFD") issued in May, the Administrative Law Judge adopted both of these recommendations. First, the PFD recommended that the Commission establish a large load interconnection workgroup to "address the reliability impacts of large load customers on the grid."[27] Second, the PFD found that CEO "demonstrated that I&M's interconnection requirements are likely not robust enough to manage large load customers" and recommended that I&M update its interconnection

[25] Case No. U-21986, Revised Direct Testimony and Exhibits of Lee Shaver (Mar. 17, 2026).
[26] Case No. U-22058, Direct Testimony and Exhibits of Lee Shaver (June 5, 2026).
[27] Case No. U-21986, Administrative Law Judge, Proposal for Decision at 99–100 (May 19, 2026).

requirements to "improve its voltage ride-through requirements and add operational ramp rate limits."[28] The Commission has not yet issued an order in the case.

Q: What did you recommend in Case No. U-22058 to address these grid reliability risks?

A: In my testimony, I highlighted how the industry's understanding of reliability risks is continuing to evolve and summarized the ongoing work of NERC and MISO to develop and implement reliability requirements for large loads. Given these ongoing developments, CEO urged the Commission to require transparency from DTE about its operating parameters for the 1 GW Google data center proposed in that case. Specifically, CEO recommended the Commission require DTE: 1) provide all completed studies and finalized operating parameters, when available, to the Commission and parties; 2) host a public, virtual workshop to provide parties an overview of the study results and parameters and to take questions; and 3) confirm that DTE can update or modify the operating parameters applicable to the facility at any time up to or after DTE begins providing electric service, if necessary to comply with requirements imposed by the Commission, NERC, FERC, MISO, or ITC.[29] The Commission has not yet issued an order in the case.

[28] *Id.* at 97.

[29] Environmental Law & Policy Center, Opening Brief of the Michigan Energy Innovation Business Council, Institute for Energy Innovation, the Ecology Center, Environmental Law & Policy Center, Union of Concerned Scientists, and Vote Solar (MEI/CEO), Docket U-22058 (MPSC July 20, 2026), 44.

V. RECENT DEVELOPMENTS

Q: Since filing testimony in those two cases, have there been additional developments related to the reliability impacts of data centers?

A: Yes, this is a rapidly changing space, and there have been a number of significant developments. I will first address developments at FERC, NERC, and MISO, whose jurisdiction applies directly in the instant case. Then, I will discuss other recent developments from across the industry.

A. FERC, NERC, and MISO

Q: Please describe recent developments at the federal level.

A: FERC has recently determined that neither MISO nor NERC are adequately addressing the reliability risks posed by the interconnection of large loads. On June 18, 2026, FERC issued a show cause order to MISO as a part of its response to the Advanced Notice of Proposed Rulemaking issued by the US Secretary of Energy in October 2025 relating to the interconnection of large loads.[30] In the order, FERC found that "[t]he unique nature of these large loads creates challenges for operation of the transmission system and necessitates greater visibility and operational control when providing transmission service to transmission customers on behalf of large loads, without which the reliability of the transmission system could be at risk."[31] FERC concluded that MISO's tariff is inadequate because it "lacks provisions addressing ongoing operational requirements for

[30] Federal Energy Regulatory Commission, "FERC Launches Aggressive Targeted Action to Speed Large Load Integration," News release, (June 18, 2026), https://www.ferc.gov/news-events/news/ferc-launches-aggressive-targeted-action-speed-large-load-integration.
[31] FERC, Order Instituting Proceeding Under Section 206 of the Federal Power Act, Docket EL26-70-000 (FERC June 18, 2026), 42–43.

transmission customers taking transmission service on behalf of large loads," including ramp rate or ride-through requirements.

In sum, FERC finds that MISO is not doing enough, quickly enough,[32] to address the reliability impacts of large loads seeking to interconnect in its territory. This is an important point, as later in testimony I will discuss how DTE's current strategy largely involves waiting on other authorities (including MISO) to address reliability concerns.

Shortly afterwards, FERC turned to NERC. As discussed in my testimony in Case Nos. U-21986 and U-22058, NERC has been actively tracking large load reliability issues through its Large Load Working Group. However, FERC issued an order that converted NERC's proposed, voluntary timeline for developing reliability requirements into a statutorily mandated timeline. FERC explained:

> While we support and encourage NERC's activities to date, in light of the unprecedented load growth driven by data centers, it is imperative that NERC address the reliability concerns associated with computational loads in a timely manner and with greater certainty than provided by voluntary timelines.[33]

The order requires three actions by NERC:

- Develop and file changes to its rules and registry criteria in order to register "computational load entities" such as data centers by the end of the year;
- File one or more reliability standards to address reliability risks of computational loads by the end of the year ("Phase I"); and
- File a workplan by March 1, 2027, outlining details and timing of any additional reliability standards.[34]

[32] Exacerbating this, on August 3, 2026, MISO filed an abeyance request with FERC seeking a 90 day extension of the filing deadline "to permit MISO and the MISO Transmission Owners to continue the MISO stakeholder process." Motion of Midcontinent Independent System Operator Inc. and the MISO Transmission Owners to Hold Proceeding in Abeyance and Request for Shortened Comment Period and Expedited Treatment under EL26-70, FERC Docket EL26-70-000 (Aug. 3, 2026).

[33] FERC, Docket RD26-7-000, Order Directing the North American Electric Reliability Corporation to File Reliability Standard(s) Pertaining to Computational Load Integration under RD26-7 at 5 (July 16, 2026).

[34] *Id.* at 1, 6.

Almost simultaneously with this order, NERC released a proposed roadmap for developing and releasing reliability standards.[35] The proposed standards include:

- Interconnection Requirements
- Interconnection and Planning Studies
- Data Sharing and Modeling Requirements
- Protection, Disturbance Performance, and Stability Requirements
- Real-Time Communication Requirements
- Disturbance Monitoring and Reporting Requirements
- Cyber & Physical Security Requirements
- Balancing and Operations Requirements

The roadmap indicates that the first five standards are already under development, with work on the other three slated to begin between the fourth quarter of this year and early next year.

Q: Please describe recent developments at MISO.

A: As mentioned above, MISO has begun developing its own strategy to address the reliability risks of large loads. On June 29, 2026, MISO's large load working group presented an outline of potential tariff changes to address reliability concerns, responsive to FERC's show cause order, and consistent with NERC's emerging requirements.[36] The proposed requirements included definitions of computational loads and large loads, and requirements for operational ramp rates, visibility/telemetry,[37] and ride-through. A white paper released at the same time included further detail on the proposed requirements,

[35] NERC, "Computational Loads Standard Authorization Request Roadmap," July 16, 2026, https://www.nerc.com/globalassets/who-we-are/standing-committees/rstc/0-rstc-agenda-links/5_llwg-sar-roadmap_final_clean.pdf.
[36] MISO, "Large Load Interconnection Reliability Requirements," June 29, 2026, https://cdn.misoenergy.org/20260629%20LLWG%20Item%2007%20Large%20Load%20Interconnection%20Reliability%20Requirements%20(LLWG-2026-3)765705.pdf.
[37] Additional detail on the telemetry requirements was provided in a separate presentation: MISO, "Large Load Telemetry and PMU Requirements," June 29, 2026, https://cdn.misoenergy.org/20260629%20LLWG%20Item%2008a%20Large%20Load%20Telemetry%20and%20PMU%20Requirements%20(LLWG-2026-4C)765706.pdf.

providing the level of detail and specificity needed to demonstrate how the requirements adequately manage the reliability risks of large loads.[38]

While the requirements themselves are robust, a key shortcoming relates to the proposed implementation timeline. Under MISO's current proposals, these requirements would not be effective until December 2026, and ramp and ride-through requirements would only apply to new loads seeking interconnection after that date. While there is a provision for existing loads which increase their demand by 25 MW or more, the requirements would only apply to the new portion of the load (rather than the full facility).[39] In response to my question during the meeting, MISO indicated that there is an estimated 30 GW of large loads (committed or under construction but not yet fully operational) that would not be subject to the ramp and ride-through requirements under this transition provision.

In response to concerns raised about this gap, MISO pointed to the provision that gives transmission providers the right to apply the requirements if they determine it is necessary.[40] However, as I will continue to stress throughout my testimony, this "backstop" is insufficient given that most of the relevant entities are taking a "wait and see" approach.

MISO has not yet finalized or filed with FERC any of these proposed reliability requirements.

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[38] MISO, *Interconnection Reliability Requirements for Large Load*, June 2026, https://cdn.misoenergy.org/20260629%20LLWG%20Item%2007%20Draft_MISO_Large_Load_Interconnection_Requirement_Technical%20Compendium765704.pdf.

[39] MISO, "Large Load Interconnection Reliability Requirements," July 27, 2026, 10–12, https://cdn.misoenergy.org/20260727%20LLWG%20Item%2003%20Interconnection%20Reliability%20Requirements%20(LLWG-2026-3)_Presentation770291.pdf.

[40] *Id.* at 12.

B. Developments Elsewhere

Q: Please describe recent developments in other states or jurisdictions.

A: On July 9, 2026, the Public Utility Commission of Texas ("PUCT") approved the addition of frequency and voltage ride-through requirements for data centers to the operating requirements of Electric Reliability Council of Texas.[41] Similar to recommendations I provided in previous testimony in Case Nos. U-21986 and U-22058, these ride-through requirements are detailed and clearly defined. Below, I have reproduced the minimum performance requirements for voltage ride-through approved by the PUCT:

Root-Mean-Square Voltage (p.u. of nominal)	Minimum Ride-Through Time (seconds)
$V > 1.20$	May ride-through or trip
$1.10 < V \leq 1.20$	1.0
$0.90 \leq V \leq 1.10$	Continuous
$0.80 \leq V < 0.90$	2.0
$0.50 \leq V < 0.80$	0.5
$0.35 \leq V < 0.50$	0.25
$V < 0.35$	0.15

I do not include these to suggest that these specific requirements should be applied in DTE's territory; rather, I include them as an example of the type of robust and well-defined requirements that should be implemented for large loads. Note also that these are *minimum* requirements, giving utilities the option to implement more strict requirements on a case-by-case basis as needed.

Q: Please describe recent developments elsewhere.

[41] ERCOT, NOGRR 282: Board Priority - Large Computational Load Ride-Through Requirements, Docket 54445 (Public Utility Commission of Texas July 9, 2026).

A: The large loads task force of the Energy Systems Integration Group ("ESIG"), a non-profit that convenes technical experts to support grid modernization, continues to publish whitepapers on the reliability issues related to interconnection of large loads. Recent publications include "Reliability Impacts of Large Loads,"[42] "Large Loads: Behaviors, Capabilities, and Limitations,"[43] and "Interconnection Processes for Large Loads: Current Practices and Recommendations."[44]

The Energy Markets and Planning division of Berkeley Lab also published an updated "Large Load Literature Review" which collects research, analysis, and recommendations published by experts and stakeholders across the industry.[45] Seven publications are included under the heading of "Reliability and Resource Adequacy" (some of which I have referenced here and in prior testimony), in addition to six publications on the topic included in the 2025 literature review.[46]

C. Summary

Q: Please summarize these recent developments and the implications for the instant case.

A: These recent developments indicate both a rapid pace of progress in addressing the reliability impacts of large loads at the federal and regional levels, while also exposing gaps which can only be addressed at the state and retail utility levels. Specifically, while

[42] ESIG, *Reliability Impacts of Large Loads* (July 2026), https://www.esig.energy/wp-content/uploads/2026/07/ESIG-Large-Loads-Reliability-Impacts-report-2026a.pdf.
[43] ESIG, *Large Loads: Behaviors, Capabilities, and Limitations* (Large Loads Task Force, July 2026), https://www.esig.energy/wp-content/uploads/2026/07/ESIG-Large-Loads-Behaviors-Capabilities-Limitations-report-2026.pdf.
[44] Exhibit CEO-7.
[45] Vinita Srinivasan, Jon Cook, and Natalie Mims Frick, *Large Load Literature Review: August 2026 Update* (Berkeley Lab, July 2026), https://emp.lbl.gov/publications/2026-large-load-literature-review.
[46] Vinita Srinivasan and Natalie Mims Frick, *Large Load Literature Review: December 2025 Update* (Berkeley Lab, December 2025), https://emp.lbl.gov/publications/large-load-literature-review.

NERC, with a requirement from FERC, is actively developing robust reliability requirements, they will not be filed until the end of the year, with implementation and enforcement further out. And while MISO is also seeking to address reliability risks, its own implementation plan leaves a gap to the tune of 30 GW.

These gaps have already been acknowledged by NERC, which has urged regulators (including state regulators) and utilities to address them.[47] For example, in a recent draft publication, NERC specifically "identified that large load ride-through and ramping characteristics are a risk to [grid] reliability and that the lack of predictable ride-through performance for large loads is a reliability gap."[48] Unfortunately, many utilities are taking a "wait and see" approach. In March 2026, NERC released a report[49] summarizing responses to the level two alert it issued in September 2025 containing recommendations for managing reliability risks of large loads.[50] Throughout the summary report, NERC noted that many respondents indicated they are not yet addressing NERC's recommendations and instead waiting on guidance from their ISO or RTO. For example, NERC provided this summary of responses to its recommendation for the development of interconnection requirements:

> This question was required of all TO [Transmission Owner] and DP [Distribution Provider] entities. Of these entities, roughly half of them do not plan to address or revise their processes to address the issues raised in Recommendation 1. The other half of entities that do plan to make changes indicated that they may start a long-term process within two years; however,

[47] *See* Exhibit CEO-8.
[48] Exhibit CEO-9.
[49] NERC, *Aggregated Report on NERC Level 2 Industry Recommendation: Large Load Interconnection, Study, Commissioning, and Operations*, March 17, 2026, https://www.nerc.com/globalassets/programs/bpsa/alerts/2025/aggregated-report-level-2-large-load-interconnection-study-commissioning-and-operations.pdf.
[50] NERC, "Industry Recommendation: Large Load Interconnection, Study, Commissioning, and Operations," Level 2 Alert, (September 9, 2025), https://www.nerc.com/globalassets/programs/bpsa/alerts/2025/nerc-alert-level-2--large-loads.pdf.

> the completion of this may go beyond the two-year period asked in the question. Some entities cited their ISO or RTO making changes to align with Recommendation 1 and are waiting to make changes to align with their ISO or RTO. Some other entities also highlighted that they plan to align with NERC Reliability Standards during these two years.[51]

VI. DTE'S APPROACH TO THE RELIABILITY IMPACTS OF LARGE LOADS

Q: Is DTE also taking this "wait and see approach?"

A: It appears so. In discovery responses, DTE indicated that, like utilities across the country,

> it will revise its operating protocols as needed consistent with any changes made to applicable NERC or MISO standards as they are revised.[52]

While it is certainly appropriate for DTE to be responsive to NERC and MISO standards, the current moment calls for a more proactive approach, as well as a higher level of transparency.

Q: What information *has* DTE provided about how it develops reliability requirements for individual customers?

A: For individual customers, DTE uses a study process to develop operating parameters.

Reliability studies. DTE's response to CEODE-2.4a lists the types of studies that DTE or ITC (the transmission owner and operator) may require prior to energization of large load customers: short-circuit studies, steady state power-flow studies, dynamic stability studies, voltage studies, harmonic and power-quality studies, electromagnetic transient ("EMT") studies, and protection coordination studies.[53] Per DTE's response to

[51] NERC, *Aggregated Report on NERC Level 2 Industry Recommendation: Large Load Interconnection, Study, Commissioning, and Operations*, 20.
[52] Exhibit CEO-5 at 19–21 (DTE responses to CEODE-2.10i, CEODE-2.14c, and CEODE-2.16b).
[53] Exhibit CEO-5 at 4.

CEODE-2.4c, study results are kept confidential between DTE, ITC, and other parties as needed (such as MISO and the customer).[54]

Operating parameters. As mentioned above, DTE indicated that all large load customers will be subject to operating parameters.[55] DTE's response to CEODE-2.4b describes the type of requirements which the operating parameters will include:

> power factor, load ramping, load block oscillations, ride-through, harmonics, UFLS [under-frequency load shed], MLS [manual load shed], and other operating parameters.[56]

However, per DTE's discovery response to CEODE-2.3e, the completed version of this document is only available to DTE, ITC, and the customer.[57] A draft copy of the operating parameters, was provided in a confidential discovery response from DTE is included as Confidential Exhibit CEO-6.

Q: Does DTE maintain a set of generally applicable requirements from which the individual operating parameters are developed?

A: As far as I can tell, no. Across multiple discovery responses, DTE declined to provide specific requirements for:

- Operational ramp rate limits[58]
- Load disconnect limits[59]
- Modeling data[60]
- Voltage and frequency ride-through[61]
- Real-time and disturbance recording[62]

[54] Exhibit CEO-5 at 6.
[55] Exhibit CEO-5 at 2.
[56] Exhibit CEO-5 at 5.
[57] Exhibit CEO-5 at 3.
[58] Exhibit CEO-5 at 12–13.
[59] Exhibit CEO-5 at 15.
[60] Exhibit CEO-5 at 16.
[61] Exhibit CEO-5 at 17.
[62] Exhibit CEO-5 at 18.

Only in one case did the Company provide a specific, generally applicable requirement: "the customer may not cause power fluctuations greater than 30 MW over a five-second sliding window, subject to further investigation and potential mitigation requirements."[63] The draft operating parameters likewise do not include any generally applicable requirements of the type critical for large loads.

The Company simply states that "it intends to comply with applicable MISO requirements once effective"[64] and that "the proposed MISO requirement categories closely align with DTE's operating parameter framework."[65]

Q: What concerns do you have about how DTE is handling the reliability impacts of large loads based on these answers to your discovery requests?

A: My main concern is about the lack of generally applicable requirements, and, in the absence of such requirements, the lack of transparency of individual customers' requirements.

On the one hand, DTE appears to follow a detailed process for developing requirements for individual customers, based on various studies coordinated with ITC and MISO, and codified in the operating agreements with each customer. But in order to have confidence that these agreements adequately address the reliability risks of each large load, the Company should either provide a detailed starting point common to all customers, or the specific requirements for each individual customer. In the future, NERC and MISO requirements will serve as that starting point and will likely be

[63] Exhibit CEO-5 at 14.
[64] Exhibit CEO-5 at 7–8.
[65] Exhibit CEO-5 at 9–10.

sufficiently robust; but in the interim, DTE has neither established its own starting point, nor has it committed to sharing the per-customer requirements.

It is understandable (even in a future with NERC and MISO requirements in place) that DTE would seek to have the flexibility to adapt individual customer requirements to the situation and needs of that customer, informed by study results. However, without knowing DTE's starting point or being able to see its specific individual requirements, there is no way to have confidence that DTE is adequately addressing the reliability risks of large load customers. This gap must be addressed by the Commission. The need for transparency is illustrated in particular by the contrast between DTE's two applications to date for approval of special contracts with large data centers, as I discuss in the following section.

Q: Was reliability addressed in Case No. U-21990, DTE's application for approval of special contracts with a 1.4 GW Oracle data center in Saline Township ("the Oracle case")?

A: DTE's application and supporting testimony included just two mentions of reliability, but only in relation to resource adequacy.[66] Neither the application nor the testimony engaged the concerns of grid reliability that I have addressed here in testimony, and which are the subject of the various FERC, NERC, and MISO proceedings I have discussed. The Primary Supply Agreement (Exhibit A-1 of that case) includes a section titled "5.5 Operational Parameters," which in theory would address reliability concerns, but it is less than a page in length and is almost completely redacted. The unredacted portions of the

[66] DTE Electric, Application for Approval of Special Contracts, Docket U-21990 (MPSC October 31, 2025).

Energy Storage Agreement (Exhibit A-2 of that case) do not include any terms related to reliability.

As DTE applied for, and the Commission granted, *ex parte* approval of the case, there was no opportunity to issue discovery requests to DTE to better understand the operating parameters, or whether DTE was adequately planning for the grid reliability impacts of the Oracle project.

In its order approving the application, the Commission made only one mention of reliability, when directing DTE to update its Emergency Electric Procedures to allow for load shed of the Oracle facility when doing so could prevent shedding other customer load.[67] While this is an important measure which can help address reliability concerns related to resource adequacy, it does nothing to prevent the unplanned, customer-initiated disconnection incidents that I discussed above and which can only be addressed by ramp rate limits and voltage ride-through requirements.

Q: Was reliability addressed in Case No. U-22058, DTE's application for approval of special contracts for a 1 GW Google data center ("the Google case")?

A: Yes, but mainly through discovery and intervenor testimony. DTE's initial application and direct testimony discussed resource adequacy, but no other mentions of reliability or related issues.[68] It is important to note that while resource adequacy is certainly a valid concern, it is separate from the types of grid reliability risks I am focused on here.

[67] MPSC, December 18 Order, Docket U-21990 (MPSC December 18, 2025), 41.
[68] DTE Electric Company, DTE Electric Company's Application, Docket U-22058 (MPSC March 17, 2026); DTE Electric Company, Direct Testimony and Exhibits of Witnesses, Neal T. Foley, Steven N. Benyard, Kevin L. Bilyeu, Shawn D. Burgdorf, Justin J. W. Brooks, and Aaron Willis, Docket U-22058 (MPSC March 17, 2026).

In response to discovery requests, DTE provided significantly more information. In this respect, the Google case represents a marked difference from the Oracle case. While the facilities are similar in scale (1 GW for Google and 1.4 GW for Oracle), DTE submitted its application in the Google case as a contested proceeding. As a result, intervenors, including the CEO, were able to submit discovery requests and gain substantial insight into DTE's plans for addressing the grid reliability risks posed by the Google facility. Specifically:

- In the Primary Supply Agreement,[69] the section detailing the Operational Parameters was unredacted, giving insight into the type of requirements that would apply to the Google facility.
- Across several discovery responses, the Company detailed the types of reliability studies conducted, including steady state thermal and voltage studies, short circuit studies, and stability analysis.[70]
- Preliminary results of these studies as conducted by ITC were provided as a confidential discovery response.[71]
- DTE explained the broad outlines of the operating parameters and how they are developed in cooperation between the customer, DTE, MISO, and ITC.[72]
- A draft of the operating parameters themselves was provided as a confidential discovery response, which has also been included in this case.[73]

While final study results and completed operational parameters are necessary to evaluate whether DTE has adequately addressed reliability concerns related to the Google facility, the choice to file the application as a contested case meant that intervenors and the Commission could gain a much better understanding of, and confidence in, how DTE will address the Google facility's reliability impacts. As discussed above, my

[69] DTE Electric Company, Exhibit A-16, Docket U-22058 (MPSC July 2, 2026).
[70] Environmental Law & Policy Center, Exhibit MEICEO-21, Docket U-22058 (MPSC July 2, 2026).
[71] Environmental Law & Policy Center, Exhibit MEICEO-25, Docket U-22058 (MPSC July 2, 2026).
[72] Environmental Law & Policy Center, Exhibit MEICEO-22, Docket U-22058 (MPSC July 2, 2026); Environmental Law & Policy Center, Exhibit MEICEO-23, Docket U-22058 (MPSC July 2, 2026).
[73] Exhibit CEO-5 at 2; Confidential Exhibit CEO-6.

recommendations to the Commission in that case specifically focused on the need for transparency to confirm that DTE's plan and requirements are sufficient.

Q: Returning to the instant case, how has DTE addressed reliability concerns so far?

A: DTE's application and testimony in this case include even less detail about how the Company will handle the grid reliability impacts of large loads than either the Oracle or Google cases. There are no mentions of how DTE will evaluate the grid reliability impacts of the new large load customers taking service under the proposed Rate D11 Large Load provisions, nor how it would address any reliability risks. There are some references to the "risks" associated with serving large load, but these appear to focus almost exclusively on costs.

But because this is also a contested case, the CEO were able to submit several discovery requests to better understand the Company's plan for addressing the reliability impacts of large loads, as I discussed above. However, I conclude that based on the current record, the Commission cannot determine that DTE is adequately addressing the reliability risks of the large load customers that will be applicable for service under Rate D11.

If the reliability impacts of large loads are not sufficiently addressed in the instant case, then DTE will be under no obligation to provide detail about how it is addressing reliability concerns before serving new large load customers under Rate D11, just like in the Oracle case. Thus, it is imperative that the Commission address these concerns in the instant case, as future large loads will likely not proceed as contested cases but rather can take service under DTE's proposed Rate D11 Large Load provisions. This case

represents the last, best chance to ensure that DTE is adequately addressing the reliability risks of large loads.

While it is true that at some future point NERC and MISO will both implement reliability requirements, the timeline for (and applicability of) these requirements remains unclear. It is also unclear whether, and to what extent, these requirements will be retroactive to existing and committed projects. In the absence of enforceable requirements at the national or regional level, it is thus imperative that they be enforced at the state and utility level by the Commission.

Q: What do you recommend?

A: I recommend that the Commission order a three-part strategy.

First, in the instant docket, the Commission should order DTE to provide a detailed overview of how it will address the reliability impacts of large loads, including draft operating agreements showing the generally applicable requirements for ramp rate and voltage ride-through. The Commission should also order DTE to provide sample reports for the types of studies that would be conducted to ensure future large load customers would be connected without introducing reliability risks (such as short-circuit studies, steady state power-flow studies, dynamic stability studies, voltage studies, harmonic and power-quality studies, EMT studies, and protection coordination studies).

Second, until NERC and MISO requirements are in effect, the Commission should order DTE to provide finalized copies of operating parameters and study results in each docket where the Company seeks to serve a new large load customer under its proposed Large Load provisions of Rate D11, and a detailed explanation of how the chosen parameters adequately address the reliability risks of that customer. Because the

Company and its customers may (reasonably) wish for these details to remain private, I recommend that the Commission develop a plan to ensure that Commission staff have the needed resources to review these documents and make a determination as to whether, in each case, DTE is in fact adequately managing the reliability risks of the proposed large load customer.

Third, following the implementation of NERC and MISO standards, the Commission should order DTE to file sufficient documentation in this docket to assure the Commission and other stakeholders that it is appropriately following and applying those requirements. Because such NERC and MISO requirements may not apply retroactively, I further recommend that at the time of that filing, the Commission evaluate whether it may be necessary to require DTE to apply those requirements retroactively to existing, planned, or under construction large loads, even if the NERC and MISO standards as written would not apply to these loads.

VII. CONCLUSION

Q: Does this conclude your testimony?

A: Yes.

MS. DUCKWORTH: No, thank you, Your Honor. At this time, CEO rests its case.

THE COURT: Thank you. Mr. Clark.

MR. CLARK: Thank you, Your Honor. On behalf of the Attorney General, Natural Resources Defense Council, and Sierra Club, I move to bind to the record the pre-filed direct testimony of Ben Havumaki, which consists of a cover page, table of contents, and 26 pages of questions and answers. I also move for the admission of Mr. Havumaki's exhibits, which include Exhibits AG-NS-1 through AG-NS-9. By agreement with the company in lieu of cross-examination in this case, I also move to admit Exhibits AG-NS-10 through AG-NS-34, which include the company's responses to certain discovery requests, all of which were uploaded to the hearing SharePoint for the parties to review.

THE COURT: Is there anything confidential in the items that you've mentioned?

MR. CLARK: No, Your Honor.

THE COURT: Thank you. Are there any objections to the binding in of the pre-filed direct testimony of Ben Havumaki? Hearing none, the direct testimony of Ben Havumaki is bound into the public record. Are there any objections to the admission

of Exhibits AG-NS-1 through 34? Hearing none, Exhibits AG-NS-1 through 34 are admitted into evidence. Anything else, Mr. Clark?

(Exhibits AG-NS-1 through AG-NS-34 admitted)

(Testimony bound in)

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

DIRECT TESTIMONY OF BEN HAVUMAKI

ON BEHALF OF

THE MICHIGAN ATTORNEY GENERAL, NATURAL RESOURCES DEFENSE COUNCIL, AND SIERRA CLUB

August 4, 2026

TABLE OF CONTENTS

I. INTRODUCTION AND QUALIFICATIONS 1

II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS..... 3

III. RECOMMENDED MODIFICATIONS TO THE LARGE LOAD PROVISION 10

a. Recommended Modifications to Applicability Criteria 10

b. Recommended Modifications to Collateral Provisions 13

c. Recommended Modifications to Minimum Monthly Charge..... 16

d. Recommended Modifications to Termination Notice and Fee 19

e. Recommended Modifications to CIAC Allowance 22

f. Recommended Modifications to Administrative Fees..... 23

IV. RELATIONSHIP WITH COST ALLOCATION UPDATES IN DTE RATE CASE 24

DIRECT TESTIMONY OF BEN HAVUMAKI FOR AG-NS
CASE NO. U-22061

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state for the record your name, position, and business address.

A. My name is Ben Havumaki. I am a Principal Associate at Synapse Energy Economics, Inc. ("Synapse"), located at 485 Massachusetts Avenue, Suite 3, Cambridge, MA 02139.

Q. Please describe Synapse Energy Economics, Inc.

A. Synapse is a research and consulting firm specializing in electricity and gas industry regulation, planning, and analysis. Our work covers a range of issues, including economic and technical assessments of demand-side and supply-side energy resources; energy efficiency policies and programs; integrated resource planning; electricity market modeling and assessment; renewable resource technologies and policies; and climate change strategies. Synapse works for a wide range of clients, including state attorneys general, offices of consumer advocates, public utility commissions, environmental advocates, the U.S. Environmental Protection Agency, U.S. Department of Energy, U.S. Department of Justice, the Federal Trade Commission, and the National Association of Regulatory Utility Commissioners. Synapse has over 40 professional staff with extensive experience in the electricity industry.

Q. On whose behalf do you offer this testimony?

A. I am testifying on behalf of Natural Resources Defense Council, Sierra Club, and the Michigan Attorney General.

Q. Please summarize your experience in the field of utility regulation.

A. I have eight years of experience in economic research and consulting. At Synapse, my work has focused on electric and gas utility regulatory issues, usually in the context of litigated

proceedings. I provide technical analysis and expert witness support in general rate cases, where I focus on rate design and cost allocation. Much of my recent work has focused on cost allocation issues relating to new large load customers, including tariff development. I also have expertise in performance-based regulation and grid modernization. I have provided testimony to utility regulatory commissions in Michigan, Maine, Georgia, Illinois, New York, Minnesota, Maryland, Rhode Island, New Hampshire, Pennsylvania, West Virginia, New Brunswick, and Nova Scotia. I hold a Bachelor of Arts degree in History from McGill University and a Master of Arts degree in Applied Economics from the University of Massachusetts. My Curriculum Vitae is attached as Exhibit AG-NS-1.

Q. Have you testified before this Commission as an expert in any other proceeding?

A. I testified before the Michigan Public Service Commission ("MPSC" or "Commission") on Indiana Michigan Power Company's ("I&M") proposed large load tariff in MPSC Case No. U-21986.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to respond to DTE Electric Company's ("DTE" or "the Company") proposed amendments to Rate D11. Through my recommended modifications to these large load tariff provisions ("Large Load Provisions"), I seek to ensure that the provisions are sufficient to protect other customers from rate increases and the risks of stranded assets resulting from the investments that DTE makes to serve new large loads. My recommendations on specific tariff provisions are largely aligned with the tariff provisions approved by the Commission in the Consumers Energy ("Consumers") large load tariff proceeding, Case No. U-21859, and aim to strengthen consumer protections.

Q. Who are the customers that would be subject to the Large Load Provision?

A. DTE defines new large load customers as customers with a contract capacity exceeding 100 megawatts (MW)—either at a single site or in aggregate across multiple sites, provided that the average size of each site is greater than 20 MW and that all included sites begin taking service within a five-year window ("large load customers").[1]

Q. Are you sponsoring any exhibits?

A. Yes, I am sponsoring the following exhibits:

Exhibit AG-NS-1	CV of B. Havumaki
Exhibit AG-NS-2	Company Response U-22061-NRDCSCDE-1.12
Exhibit AG-NS-3	Company Response U-22061-AGNSDE-1.5b & c
Exhibit AG-NS-4	Company Response U-22061-NRDCSCDE-1.4c
Exhibit AG-NS-5	Company Response U-22061-AGNSDE-1.2a & b
Exhibit AG-NS-6	Company Response U-22061-AGNSDE-1.7b & c
Exhibit AG-NS-7	Company Response U-22061-AGDE 1.7e
Exhibit AG-NS-8	Company Response U-22061-AGNSDE-1.3
Exhibit AG-NS-9	Company Response U-22061-AGNSDE-1.1a & b

II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Q. Please summarize your conclusions.

A. My conclusions are as follows:

[1] DTE's Application, Exhibit A-1, p 4.

- In several respects, DTE's proposed provisions are out of step with the Consumers tariff and less protective of other customers:
    - the collateral terms reserve to DTE sole discretion to reduce the required collateral amount and permit parent guarantees as a default form of collateral;
    - the termination notice requirement is inconsistent with the longer notice required for both non-renewal and early termination, and the termination fee structure is less protective;
    - the proposed contribution in aid of construction (CIAC) allowance would socialize a portion of interconnection costs onto other customers; and
    - the proposed administrative fee is not reconciled to actual costs.
- The proposed applicability criteria could present loopholes for customers to avoid the Large Load Provisions—through the five-year aggregation limit and through the treatment of co-located and multi-site customers.
- The proposed minimum billing demand of 80 percent is too low and, because the minimum monthly charge is set on demand alone, it may not provide for sufficient recovery of investments made to service new large load customers.
- Preventing cost-shifting and stranded assets requires a robust cost allocation framework, to be developed in DTE's rate case.
- Direct assignment of the incremental costs of serving each new large load customer is the preferred approach to preventing cost-shifting.

Q. Please summarize your recommendations.

A. I recommend the following changes to the Large Load Provisions:

- Modify the applicability criteria so the Large Load Provisions apply to any aggregation of new load exceeding 100 MW, with each site averaging at least 20 MW, irrespective of when the individual sites entered service.

- Extend the Large Load Provisions to co-located sites—whether associated with the same or different customers—whose combined capacity exceeds 100 MW, even where the average site capacity is less than 20 MW.

- Permit modification to the required collateral amount only with Commission review and approval.

- Exclude parent guarantees as a default form of collateral, limiting the default forms to an irrevocable letter of credit or cash.

- Set the minimum billing demand at 90 percent rather than 80 percent of contract capacity.

- Modify the minimum monthly charge so that it recovers sufficient revenue to reflect the fixed costs recovered through energy and rider charges and require the Company to clarify the extent of that recovery.

- Add language to the Large Load Provisions making explicit that reductions to contract capacity are not permitted.

- Require four years' notice for both early termination and non-renewal, consistent with the Consumers tariff.

- Require a termination fee equal to the product of the minimum monthly charge and the number of months remaining in the contract term, inclusive of any extension period, where that time exceeds two years; where the remaining contract term is shorter than two years, set the termination fee equal to the product of twenty-four months and the minimum monthly charge.

- Remove any CIAC allowance from the Large Load Provisions.

- Require the administrative fee to be reconciled to the actual costs the Company incurs in evaluating a prospective large load customer, consistent with U-21859.

Q. Why is DTE proposing the Large Load Provisions?

A. The Commission directed DTE to file these provisions pursuant to its order in Case No. U-21990, dated December 18, 2025 ("December 18 Order").

Q. Did the Commission set any parameters for the contents of the Large Load Provisions?

A. Yes. The Commission stated in the December 18 Order that DTE's proposed Large Load Provisions should align with the tariff provisions approved by the Commission for Consumers in the Commission's order in the Consumers large load tariff proceeding, issued on November 6, 2025.

Q. Has the Commission rendered a decision in the I&M large load tariff proceeding?

A. No. The Administrative Law Judge's Proposal for Decision was issued on May 19, 2026,

but the Commission has yet to issue a final decision.[2]

Q. Has DTE fulfilled the Commission's order requirements through its proposed Large Load Provisions?

A. DTE's proposed Large Load Provisions are complete in the sense that they include all of the common elements of a large load tariff. However, certain elements of DTE's Large Load Provisions are both inconsistent with the Consumers tariff *and* less consumer protective. I recommend modifications that strengthen consumer protections and enhance alignment with the approved tariff from U-21859.

Q. In what specific ways are DTE's proposed Large Load Provisions not aligned with the Commission-approved tariff in U-21859 and less consumer protective?

A. In several specific ways:

- DTE's collateral proposal diverges from the Consumers' tariff in reserving discretion for DTE to relax collateral requirements for selected large load customers;
- DTE proposes shorter notification requirements for contract termination and a termination fee structure that is more lax in certain cases;
- The proposed CIAC proposal would socialize a portion of interconnection costs for large load customers, unlike in the Consumers case where the issue of sufficiency of CIAC terms was routed to the utilities' rate case for evaluation as part of the Commission-ordered cost-of-service scenarios; and

[2] Michigan Administrative Law Judge, Proposal for Decision, May 19, 2026, Case U-21986, available at: https://mi-psc.my.site.com/sfc/servlet.shepherd/version/download/068cs000022DynPAAS.

- DTE's proposed administrative fee would not be reconciled to actual administrative expenses, unlike in the Consumers case.

An overview of DTE's proposed provisions and the corresponding provisions from the Consumers tariff is shown below in Table 1.

Table 1. Summary of DTE's proposed Large Load Provisions and Consumers Energy Tariff

	DTE Proposal	**Consumers Tariff (approved)**
Applicability	Greater than 100 MW at single site or in aggregation if average of each site exceeds 20 MW and sites commence operations within 5-year period.	100 MW or greater at a single site or in aggregation if each site is equal to or exceeds 20 MW under a common owner.
Contract term	15-year minimum contract term plus ramp period of up to 3 years.	15-year minimum contract term plus ramp period up to 5 years.
Collateral	Full remaining termination fee. Letter of credit, cash, or parent guarantee accepted, based on Company's discretion. Company has sole discretion to lower collateral requirement.	Collateral is equal to 50 percent of the remaining termination fee. Letter of credit or interest-bearing cash only. Modifications require Commission approval.
Minimum billing demand	80 percent of contracted capacity; 80 percent of committed demand during ramp period.	80 percent of contracted capacity.
Capacity reduction	Not addressed in DTE's proposal, though DTE has clarified in discovery that customers may not reduce their contract capacity during the contract term.[3]	One-time discretionary reduction of ≤10 percent with 4-year notice; larger or additional reductions require pro-rated exit fee or Commission approval.
Early termination notice	2 years	4 years
Termination fee	Greater of remaining minimum billing demand (MBD) through end of initial contract term up to 15 years MBD, or 2 years of MBD."	MBD multiplied by months remaining; includes system access charge.
Automatic extension (evergreen provision)	Automatic 5-year extensions; 3-year required notice for customer non-renewal.	Automatic 5-year evergreen extensions; 4-year required notice for customer non-renewal.

[3] Ex AG-NS-2, Company Response U-22061-NRDCSCDE-1.12.

	DTE Proposal	Consumers Tariff (approved)
CIAC allowance	Twice the expected distribution revenue (fixed tariff allowance).	Routed to rate case for cost-of-service determination.
Administrative fee	$100,000 for <200 MW; $250,000 for ≥200 MW.	$100,000 upfront, reconciled to actual costs, no cap.

Q. In addition to the issues you have already discussed, do you have any other concerns with DTE's large load tariff proposal?

A. Yes, there are several additional issues. I am concerned that the applicability criteria could permit gaming or otherwise exempt certain customers from the tariff provisions even though those customers present similar risks as the large load customers that *will* be subject to the Large Load Provisions. I am also concerned that the minimum billing demand and minimum monthly charge formula are not sufficient to prevent cost-shifting.

Q. Will you address every component of the proposed Large Load Provision?

A. No. I focus my testimony on certain priority components requiring modification. However, the absence of comment on any specific part of DTE's proposed Large Load Provisions does not indicate support for it.

Q. Please describe how you organized the remainder of your testimony.

A. In the next section, I present recommended tariff modifications, addressing issues relating to tariff applicability, collateral, minimum monthly charges, termination notice and fee calculation, CIAC allowances, and administrative fees. In the following section, I connect this proceeding to the ongoing efforts in DTE's rate case to model different large load rate design and cost allocation scenarios and discuss how that tariff proceeding should interact with efforts to update cost allocation practices to mitigate cost-shifting caused by large load customers and the risk of stranded assets.

III. RECOMMENDED MODIFICATIONS TO THE LARGE LOAD PROVISION

a. Recommended Modifications to Applicability Criteria

Q. Please describe DTE's proposed applicability criteria for the Large Load Provisions.

A. The Large Load Provisions would apply to new customers with capacity exceeding 100 MW either at a single site or aggregated across multiple sites. For multi-site customers, the average capacity of the sites must exceed 20 MW and service must commence within a five-year period.[4] Under DTE's proposal, when the 100 MW threshold is met through an aggregation of sites, each of the individual sites is subject to its own service contract.[5] The Large Load Provisions also applies to existing customers with *incremental* capacity meeting these conditions.

Q. What are your general concerns with DTE's proposed applicability criteria?

A. While the 100 MW threshold and aggregation conditions are largely consistent with the Consumers tariff, I am concerned that DTE's introduction of a provision that would only aggregate sites entering service within a five-year period is arbitrary and could create a loophole for some customers to avoid DTE's large load tariff provisions. I am also concerned that the Company's tariff would potentially permit co-located customers with aggregate demand exceeding 100 MW to avoid being subject to the Large Load Provisions.

Q. Please explain your concerns with the proposed five-year aggregation window.

A. The Company states that five years is reasonable as a limit for aggregations because it

[4] Direct Testimony of Aaron Willis, p 9.

[5] Ex AG-NS-3, Company Response U-22061-AGNSDE-1.5b & c.

aligns with planning timelines.[6] In response to discovery, the Company indicates that it considered an "unbounded period" for multi-site aggregation eligibility but determined that that would be "unreasonable."[7] However, multiple sites entering service over a longer period could still create cost-shifting risks.

Q. Should the Company maintain its five-year limit on aggregations?

A. No. I recommend that the Company include sites at different locations in aggregation *irrespective of when the individual sites included in the aggregation have entered service.* Provided that the collection of sites exceeds the 100 MW threshold, with the individual sites averaging at least 20 MW (which is the Company's other proposed criteria for aggregation), then the sites should be aggregated and subject to the Large Load Provisions.

Q. Please provide an illustrative example that demonstrates how your proposed modified aggregation criteria would operate.

A. Consider the case of a customer that establishes a first site with a demand exceeding 100 MW. This customer would be subject to the Large Load Provisions based on the contract capacity of the initial site. Now, suppose that this customer adds a second site ten years later, with a peak demand of 15 MW. This site would also be subject to the Large Load Provision, through aggregation with the first site, because the average peak demand of the two sites would be 57.5 MW (which exceeds the Company's proposed 20 MW average

[6] Willis Direct, p 9.

[7] Ex AG-NS-3, Company Response U-22061-AGNSDE-1.5b & c.

requirement).[8] This second site would be subject to its own minimum 15-year contract term, which would commence when the second site had ramped up to full capacity.

Q. How would the ramp period affect the aggregation of multiple sites?

A. It is not clear under the Company's proposal whether sites would be aggregated based upon actual demand or contracted capacity. The Company should clarify its proposal and provide rationale for its treatment of the ramp period in aggregating sites.

Q. Do you recommend modifications to the proposed treatment of co-located sites associated with different customer accounts?

A. Yes. The Company's applicability criteria appear to exempt co-located data centers (i.e., multiple data centers that are located on the same campus) from being subject to the Large Load Provisions even if the aggregate demand of the data centers at a given site exceeds 100 MW, provided that each entity requesting service has demand under the 100 MW threshold.[9] This potential loophole could allow customers to avoid the Large Load Provisions even when they should in aggregate be subject to the tariff because of their co-location, combined scale, and the potential risks of cost-shifting and stranded assets that they collectively impose on the system.

Q. How should the Company treat co-located sites associated with different customers?

A. These sites should be subject to the same aggregation threshold; if their combined capacity exceeds 100 MW, then the sites should be subject to the Large Load Provisions. Further,

[8] $57.5 = \frac{(100+15)}{2}$

[9] Ex AG-NS-4, Company Response U-22061-NRDCSCDE-1.4c.

they should be subject to the Large Load Provisions even if their average capacity is less than 20 MW, since they are located at the same site rather than dispersed across multiple locations.

b. Recommended Modifications to Collateral Provisions

Q. Please describe DTE's proposed collateral requirements.

A. The Large Load Provisions makes the default collateral requirement equal to the termination fee, which would reduce annually with the customer's remaining financial obligation.[10] DTE also requests to retain the option to require a lesser amount of collateral from some customers at the Company's sole discretion, which it states that it will exercise on a case-by-case basis based on the risk profile of each customer.[11] The eligible forms of collateral per DTE's proposal include a letter of credit, cash, a parent guarantee, or a combination thereof; the tariff gives DTE sole discretion over the composition of the collateral.

Q. How would the Company determine the form of collateral for given large load customers?

A. DTE states that it will determine the precise form and structure of the collateral based on the customers' creditworthiness including the credit rating of the customer and/or its parent

[10] Willis Direct, p 13.

[11] *Id.*

company.[12] DTE appears to not have specific criteria for determining creditworthiness and collateral requirements.[13]

Q. Are DTE's proposed collateral terms sufficiently consumer protective?

A. No. While I support the Company's proposal to fix the collateral requirement to the termination fee, the Company's proposal to accept parent guarantees for collateral and its request for discretion to reduce the required collateral amount are inconsistent with the Commission's directives in Case U-21859.[14]

Q. What did the Commission order regarding collateral in U-21859?

A. The Commission approved a default set of collateral requirements and determined that all modifications to the default would require Commission approval. The approved default forms of collateral include an irrevocable letter of credit or cash for Consumers' large load customers. Importantly, the Commission did not allow parent guarantees as a default form of collateral, citing "uncertainty regarding credit quality of an unknown large load customer."[15] However, the Commission permitted Consumers to apply for approval to use a parent guarantee for some or all of the required collateral amount on a case-by-case basis. In any such request, Consumers would be required to show that it is "reasonable and prudent" to adjust the default form of collateral and demonstrate that the alternative will not burden other customers with the risk of stranded costs.[16]

[12] *Id.* at 13-14.

[13] Ex AG-NS-5, Company Response U-22061-AGNSDE-1.2a & b.

[14] Case No. U-21859, Order, November 6, 2025, pp 112-114.

[15] Case No. U-21859, Order, November 6, 2025, p 112.

[16] Case No. U-21859, Order, November 6, 2025, pp 113-114.

Q. What are your concerns with DTE's proposal to retain sole discretion over the required amount of collateral for a given customer?

A. DTE should not have sole discretion over the amount of collateral required because this decision has major financial implications for ratepayers. In the case that collateral is drawn upon and the amount is insufficient to cover the remaining incremental costs, other customers may ultimately be responsible for the shortfall. Allowing DTE to reduce the amount of collateral without Commission approval will expose customers to undue risk.

Q. Why is collateral so important?

A. Collateral is what ensures large load customers satisfy their financial obligations to the Company. The other terms and conditions in the Large Load Provisions that are intended to protect consumers are only as good as the collateral that that customer is made to provide.

Q. What do you recommend regarding the amount of collateral required under the Large Load Provisions?

A. I recommend the Commission adopt the Company's proposal that the amount of collateral required should be equal to the termination fee due at the time collateral is initially supplied, and that the collateral be reduced over time. I further recommend that any modifications to the amount of collateral required should be subject to Commission review on a case-by-case basis, consistent with the Commission's decision in Case U-21859.

Q. Should DTE be permitted to accept parent guarantees for collateral?

A. Parent guarantees should not be included as a default form of collateral for customers taking service under the Large Load Provisions because of uncertainty regarding the credit

quality of large load customers, as discussed by the Commission in its order in Case U-21859.[17] Parent guarantees might expose the Company and its customers to undue risk if the parent company does not remain financially healthy. Consistent with the Commission's decision in Case No. U-21859, I recommend that the default forms of collateral be limited to an irrevocable letter of credit and/or cash.[18] I recommend that the Commission exclude parent guarantees from the default set of acceptable collateral forms.

Q. Should DTE retain discretion over whether to require a cash deposit, as opposed to an irrevocable letter of credit, for collateral?

A. Yes. However, in the event of large load customer default where collateral is insufficient and results in the Company incurring stranded asset costs, the Commission should not permit cost recovery for these stranded assets from other customers.

c. Recommended Modifications to Minimum Monthly Charge

Q. Please describe the Company's proposed minimum monthly charge.

A. The Company proposes a minimum billing demand of 80 percent of contract capacity.[19] During the ramp period, the minimum applies to the customer's committed load ramp; thereafter, it applies to 80 percent of the contracted capacity.

[17] Case No. U-21859, Order, November 6, 2025, p 112.

[18] Case No. U-21859, Order, November 6, 2025, p 112 ("The default acceptable forms of collateral include a standby irrevocable letter of credit or cash (which earns interest).").

[19] Application, pp 3-4.

Q. Why has the Company determined to set the minimum billing demand at 80 percent of contract capacity?

A. The Company points to the Consumers case as its principal justification. DTE states that its Large Load Provision, including the 80 percent minimum billing demand, is "consistent with the approach approved in Case No. U-21859" and is designed to "broadly align" with the Commission's order in that case.[20]

Q. Does the precedent from the Consumers case mean that the Company's minimum monthly charge proposal should be adopted?

A. No. In this specific instance, I recommend a departure from the Consumers case precedent in favor of more robust consumer protection. Notwithstanding the Commission's decision in the Consumers case, the Company's monthly minimum charge proposal is deficient and risks under-recovering the fixed costs associated with serving large load customers, which could result in cost-shifting.

Q. Why do you say that the monthly minimum charge risks under-recovery of the fixed costs associated with serving large load customers?

A. The Company will make capital investments to serve large load customers at full capacity, so setting the MBD at any level under 100 percent of contract capacity creates some risk of cost-shifting. I recommend that the Commission order DTE to set the MBD at 90 percent of contract capacity, which is more protective of other consumers and consistent with the

[20] Willis Direct, pp 7-8.

practices adopted in other jurisdictions that have minimum billing demand provisions of 90 percent or higher.[21]

Q. What is your recommendation regarding the minimum billing demand?

A. I recommend that the minimum billing demand be set at 90 percent instead of 80 percent of contract capacity.

Q. May large load customers reduce their contract capacity?

A. No. The Company clarifies through response to discovery that reductions in contract capacity are not permitted.[22] I support this position, though I recommend that the Company add language to its Large Load Provisions to make it explicit that contract capacity reductions are not allowed.

Q. Should the minimum monthly charge include only minimum billing demand revenues?

A. No. The Company appears to recover a portion of its fixed costs through energy rates and riders. In separate discovery responses, the Company confirmed that it recovers a portion of its production revenue requirement through energy charges and that it recovers some of its base rate costs through various riders.[23] Yet confusingly, the Company also stated that

[21] *See, e.g.,* Kentucky Public Service Commission's March 18, 2025, Order in KPSC Docket No. 2024-00305 at 3, accessible at https://psc.ky.gov/pscscf/2024%20Cases/2024-00305//20250318_PSC_ORDER.pdf.

(90% MBD term); the Public Service Commission of Wisconsin's May 21, 2026, Order in PSCW Docket 6630-TE-113 at 26 – 27, accessible at https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=591873 (100% MBD for transmission service).

[22] Ex AG-NS-2, Company Response U-22061-NRDCSCDE-1.12.

[23] Ex AG-NS-6, Company Response U-22061-AGNSDE-1.7b & c.

"there is no specific assignment of fixed or variable costs to demand or energy charges,"[24] and that "there is no specific assignment of fixed (or variable) costs to these riders."[25]

Q. How should the Company address these gaps in the minimum monthly charge?

A. The Company should clarify the extent to which the costs of production, transmission, and distribution infrastructure are recovered through energy rates and through riders. It should also modify its minimum monthly charge to ensure that it recovers sufficient revenue from large load customers to fairly defray the costs of serving them and prevent cost-shifting to other customers. It may look to the example of I&M's proposed tariff, which included a minimum energy provision in addition to the minimum demand component.[26]

d. Recommended Modifications to Termination Notice and Fee

Q. Please describe DTE's proposed notice requirements relating to contract termination.

A. DTE's proposed tariff would require two years' advance notice of contract termination.[27] Further, the Company proposes to automatically extend the contract term by five years if three years' advance notice is not given before the end of the original contract term.

Q. What are the termination notice requirements in the Consumers tariff?

A. The Consumers tariff requires four years' notice for termination of service.[28] This requirement is the same whether a customer will be terminating service early or at the end

[24] *Id.*

[25] *Id.*

[26] Michigan Administrative Law Judge, Proposal for Decision, May 19, 2026, Case U-21986, at 60, available at: https://mi-psc.my.site.com/sfc/servlet.shepherd/version/download/068cs000022DynPAAS.

[27] Willis Direct, p 13.

[28] Case No. U-21859, Order, November 6, 2025, p 108.

of the contract term.

Q. Should DTE adopt the same termination notice requirements as are included in the Consumers tariff?

A. Yes. The proposed two-year requirement is inconsistent with the Consumers tariff and results in greater risk to other customers. Further, there is no clear reason why the notice requirement for early termination should differ from the notice requirement for not extending the contract at the end of the term, which is itself a form of service termination. I recommend adopting a standardized four years' notice for termination of service and notice for declining contract extension. This longer period aligns with the Consumers tariff, and as the Commission noted in its decision in this tariff proceeding, a four-year requirement is consistent with the state reliability mechanism (SRM) planning period.[29]

Q. Please describe the Company's proposal regarding the termination fee.

A. If a large load customer exits before the end of the contract term, the Company proposes to assess a termination fee. During the ramp period, the Company proposes to set the termination fee equal to the minimum bills associated with the contracted ramp schedule plus fifteen years of minimum bills at the full contract capacity. After the ramp period (including during any contract extension), the Company proposes to assess a termination fee equal to the greater of (i) the total value of minimum bills over the remaining months up to the fifteen-year anniversary of reaching full contract capacity, or (ii) two years of minimum bills.[30]

[29] Case No. U-21859, Order, November 6, 2025, p 108.

[30] Willis Direct, p 12.

Q. How is the termination fee calculated in the Consumers tariff?

A. In the Consumers tariff proceeding, the Commission "approve[d] an exit fee equal to the MBD multiplied by the number of months remaining on the contract term, to be applicable during the ramp-up period and contract term (and including contract extensions if notice of contract termination has not been provided)."[31]

Q. Is the proposed termination fee sufficiently consumer protective?

A. No. For example, if a customer enters into a twenty-year contract, but terminates service in year fifteen, it would only need to pay two years of termination fee at that point, despite having five years remaining in its contract.[32] And, if a customer extends its contract for a five-year period, but terminates service shortly after the start of the extension period, it would only need to pay two years of termination fee at that point, despite having nearly five years remaining in its contract extension.[33] While I support the Company's proposal for a minimum termination fee equal to two years of minimum bills, the Company should require a termination fee that is equal to the time remaining in the contract term (inclusive of any contract extension period) if that time exceeds two years, as required in the Consumers tariff.

[31] Case No. U-21859, Order, November 6, 2025, pp 109-110.

[32] Ex AG-NS-8, Company Response U-22061-AGNSDE-1.3.

[33] Ex AG-NS-7, Company Response U-22061-AGDE 1.7e.

Q. Would your recommended modifications to the termination fee eliminate the risk of cost-shifting and stranded assets?

A. No. While my proposal will reduce the risk of cost-shifting, it may not entirely eliminate this risk or the risk of stranded assets. As I explained before, the minimum monthly charges that will be used to calculate the termination fee include only demand revenues but not energy rates or riders.[34] The Company must modify its minimum monthly charge to ensure full recovery of fixed charges.

e. Recommended Modifications to CIAC Allowance

Q. What is the Company's proposal for CIAC allowance?

A. DTE proposes that large load customers receive a CIAC allowance equal to two times their expected distribution revenue based on the full contract capacity and prevailing rates.[35]

Q. Should the Company grant a CIAC allowance to new large load customers?

A. No. The Company has not shown that a CIAC allowance is warranted and granting any allowance for CIAC risks shifting a portion of interconnection costs onto other customers. DTE's proposal is also inconsistent with the Consumers case result. There, the Commission did not approve a CIAC allowance for large load customers; it found that CIAC and cost allocation must be addressed in a rate case rather than a tariff proceeding, because the tariff record lacked the cost-of-service study needed to evaluate them.[36] Similarly, the record in this proceeding does not support acceptance of the Company's CIAC proposal.

[34] See *supra*, pp 18-19.

[35] Exhibit A-1, p 6.

[36] Case No. U-21859, Order, November 6, 2025, p 114.

f. Recommended Modifications to Administrative Fees

Q. What is the Company's proposal for administrative fees?

A. The Company proposes a fixed, tiered administrative fee: $100,000 for customers with contracted capacity of less than 200 MW, and $250,000 for customers with contracted capacity of 200 MW or greater.[37]

Q. Is this consistent with the Consumers tariff?

A. No. In Case No. U-21859, the Commission adopted an administrative fee of $100,000 charged upfront to the applicant but required that the fee be reconciled to the actual costs incurred in performing the studies necessary to develop the customer's project proposal, with no cap — allowing for refunds if actual costs are lower and further payments if they are higher.[38] The Commission's stated purpose was to ensure that the actual costs of responding to large load inquiries are recovered from the applicant rather than borne by existing ratepayers. DTE's proposed administrative fee does not include a reconciling mechanism.

Q. What is your recommendation relating to the administrative fee?

A. I recommend reconciling the administrative fee to the actual costs incurred by the Company in evaluating a prospective large load customer, consistent with Case No. U-21859. The Company may retain an initial upfront charge, but any amount collected should be trued up to actual cost—with refunds where actual costs are lower and additional payment where

[37] Willis Direct, p 16.

[38] Case No. U-21859, Order, November 6, 2025, p 123.

they are higher—so that the costs of evaluating prospective large load customers are neither over-recovered from those customers nor shifted to other ratepayers.

IV. RELATIONSHIP WITH COST ALLOCATION UPDATES IN DTE RATE CASE

Q. How does the tariff design at issue in this proceeding relate to the cost allocation modeling that DTE is undertaking as part of its rate case?

A. They are closely related. In its rate case, DTE presented its evaluation of a set of cost allocation and rate design proposals for large load customers; the specific scenarios evaluated by the Company were established by the Commission in Case No. U-21859.[39] That modeling, if done correctly, should help demonstrate the extent of any cost-shifting from large load customers and identify cost allocation approaches to remedy or prevent cost-shifting. The tariff sets minimum terms of service; the cost allocation modeling is what tests whether those terms, as applied to a given customer, actually leave other customers whole.

Q. Are the Large Load Provisions sufficient to prevent cost-shifting?

A. No. With the improvements recommended in my testimony, the Large Load Provisions could represent a reasonable set of provisions to reduce the risk of cost-shifting, but they do not ensure that there is no cost-shifting.

Q. Why does the risk of cost-shifting persist in spite of the Large Load Provisions?

A. Because individual customer costs may exceed the revenues provided through minimum bills. Further, even with a contract term of fifteen years, new assets added to serve large

[39] See Case No. U-21859, Order, November 6, 2025, p 115; see also Case No. U-21990, Order, December 18, 2025, pp 39-40.

loads may persist far longer than the large loads themselves, potentially causing certain system assets to be stranded. As I discussed earlier in my testimony, collateral provides a critical backstop against cost-shifting and stranded assets; but even collateral can fail, so some risk associated with new large load customers is ultimately unavoidable.

Q. Is there a preferred approach to entirely preventing cost-shifting and stranded assets?

A. While no approach can absolutely prevent cost-shifting, two practices complementary to the Large Load Provisions would materially reduce the risk to other customers. First, the Commission should require the Company to make a filing before each new large load customer commences service; to support this filing, the Company should use cost modeling to demonstrate that the costs caused by that customer will not be borne by other customers. This is not a novel requirement: in Case No. U-21859, the Commission required Consumers to make precisely such a demonstration prior to each large load customer taking service, supported by any modeling or cost-of-service studies.[40] DTE's application contains no analogous provision. Notably, when asked in discovery whether the proposed Large Load Provisions would fully protect other customers from cost-shifting, the Company declined to answer directly and elsewhere stated that it was "not aware of [a] requirement" in the U-21859 order to track and report on cost-shifting— a position difficult to reconcile with the order DTE was directed to follow.[41] Second, the Commission should directly assign any incremental production, transmission, and distribution costs of serving

[40] Case No. U-21859, Order, November 6, 2025, p 117.

[41] Ex AG-NS-9, Company Response U-22061-AGNSDE-1.1a & b.

each new large load customer to that customer, while also requiring large load customers to contribute their fair share of embedded system costs. I anticipate that implementation details for a direct assignment framework will be further developed within DTE's rate case.

Q. Does that complete your testimony?

A. Yes.

MR. CLARK: No, Your Honor.

THE COURT: Thank you. Ms. Stephens.

MS. STEPHENS: Thank you, Your Honor. Pursuant to the agreement of the parties and on behalf of the Michigan Public Service Commission staff, I move to admit, for the following staff, the qualifications and the pre-filed direct testimony of Johnathon Higgins. This includes a cover page as well as five pages of questions and answers. Mr. Higgins does not sponsor any exhibits. Also for staff, Mark Pung. This includes a cover sheet and ten pages of questions and answers, and Mr. Pung does not sponsor any exhibits, and there is nothing further.

THE COURT: Thank you. Are there any objections to the binding in of the pre-filed direct testimony of Johnathon Higgins or Mark Pung? Hearing none, the direct testimony of Johnathon Higgins and Mark Pung is bound into the public record. Anything else from you, Ms. Stephens?

(Testimony bound in)

S T A T E OF M I C H I G A N

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

*** * * ***

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

QUALIFICATIONS AND DIRECT TESTIMONY OF

JOHNATHON L. HIGGINS

MICHIGAN PUBLIC SERVICE COMMISSION

August 4, 2026

QUALIFICATIONS OF JOHNATHON L. HIGGINS
CASE NUMBER U-22061
PART I

Q. Please state your name and business address.

A. My name is Johnathon L. Higgins. My business address is 7109 W. Saginaw Hwy., Lansing, Michigan 48917.

Q. By whom are you employed and in what capacity?

A. I am employed by the Michigan Public Service Commission (MPSC or Commission) as a Departmental Analyst in the Interconnection and Distributed Energy Resources Section of the Energy Operations Division.

Q. Please describe your educational background.

A. I earned a Bachelor of Science degree in Microbiology from Michigan State University in 2019.

Q. Would you please describe your professional background.

A. In March 2026 I began working for the MPSC in the Interconnection and Distributed Energy Resources Section. I reviewed sections of utility rate case filings and other related filings and resources that pertained primarily to community solar, distributed energy resources and aggregation, hosting capacity mapping, and virtual power plants. Prior to this, much of my professional experience was related to working in various laboratory settings as a technician. This has included work in both private and public laboratories in research and industrial capacity. Of notable pertinence was my experience gained in procedural and experimental design and review in these positions, where a strong ability to conduct literary research and digest and interpret information provided in dense, technical documents was crucial.

QUALIFICATIONS OF JOHNATHON L. HIGGINS
CASE NUMBER U-22061
PART I

Q. Have you received any work-related training since starting your employment with the MPSC?

A. Yes, I have attended a multitude of webinars and presentations on topics pertinent to the work the Commission performs. Additionally, I have attended meetings and workgroups on a variety of cases and topics within the Commission, and reviewed cases, papers, and other written articles to further my knowledge in the field.

Q. Have you previously testified before the Commission?

A. No, but I have assisted in the Staff review of the following cases:

Case Number	Company	Case Type/Subject
U-22059	DTE	Procedural Update
U-21972	Consumer's Energy	Voluntary Green Pricing
U-22058	DTE	Special Contract
U-22070	Consumer's Energy	Rate Case
U-22046	DTE	Rate Case
U-21653	DTE	Expedited Pilot

DIRECT TESTIMONY OF JOHNATHON L. HIGGINS
CASE NUMBER U-22061
PART II

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present the MPSC Staff's (Staff) recommendations in regards to DTE Electric Company's (DTE or the Company) emergency electrical procedures located in section C3 of its rate book for electric service.

Q. Are you sponsoring any exhibits in the instant proceeding?

A. No.

Q. Has the Commission cited concerns regarding large load customers and system reliability prior to this proceeding?

A. Yes, in MPSC Case No. U-21859 the Commission noted that the substantial increase in load associated with data centers and other large load customers has the potential to lead to risks related to system reliability.[1]

Q. Has the Commission made any recommendations regarding its concern in those cases?

A. Yes, in its order in MPSC Case No. U-21990, the Commission directed DTE to update its emergency procedures.[2] On March 18th, 2026 DTE filed an application to amend its emergency procedures to comply with the Commission's above-referenced order. Those proposed amendments include broadly applicable language that would apply to the large load tariff being addressed in the instant case.

Q. Has the Commission approved the changes to DTE's electrical rate book in

[1] MPSC Case No. U-21859, 11/6/25 Order, p 103.
[2] MPSC Case No. U-21990, 12/8/25 Order, p 41.

MPSC Case No. U-22059?

A. As of the date of the preparation of this testimony the Commission has not approved DTE's proposed amendments to its emergency procedures.

Q. Would the amendment proposed by DTE in U-22059 be applicable to the tariff provision at issue in the instant case?

A. Yes. DTE's proposed amendment to the emergency procedures includes new provisions that would apply to the D11 rate provision requested in the instant case. The specific amendment that would be of interest in the instant case is as follows:

> As a measure of last resort, manual load shedding of firm customer loads will be instituted as necessary to maintain the integrity of the system.
> Customers that take service from DTE Electric after October 1, 2025 with capacity of at least 500MW or customers that take service under the Large Load Provision of Rate Schedule No. D11 will be subject to firm load shedding prior to other customers, provided that such customer load shedding 1) does not compromise system reliability and 2) can prevent shedding the firm load of other DTE Electric customers.[3]

The changes proposed by DTE to its emergency procedures in MPSC Case No. U-22059 include provisions that would apply to any customers over 500MW, or any customers that take service under the proposed large load provision under the D11 rate at issue in the instant case. It is worth emphasizing further that the proposed language directly references the proposed tariff in the instant case.

Q. If the Commission does not approve the amended emergency procedures in MPSC Case No. U-22059, does Staff have an alternative recommendation?

[3] MPSC Case No. U-22059, Proposed rate book amended language, pg. 2

A. If the Commission does not approve the proposed amendment to emergency procedures in MPSC Case No. U-22059, Staff recommends that the Commission require DTE amend the large load provisions of rate D11 to include language to address the Commission's concerns it laid out in the above-referenced U-21990 order.

Q. Does this conclude your testimony?

A. Yes.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

****

Case No. U-22061

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

QUALIFICATIONS AND DIRECT TESTIMONY OF

MARK J. PUNG

MICHIGAN PUBLIC SERVICE COMMISSION

August 4, 2026

QUALIFICATIONS AND DIRECT TESTIMONY OF
MARK J. PUNG
U-22061

Q. Please state your name and business address.

A. My name is Mark J. Pung. My business address is 7109 West Saginaw Highway, Lansing, Michigan 48917.

Q. By whom are you employed and in what capacity?

A. I am employed by the Michigan Public Service Commission (MPSC or Commission) as a Departmental Specialist in the Rates and Tariff Section of the Regulated Energy Division. I serve as the section's Electric Cost of Service Specialist.

Q. Please briefly describe your educational background.

A. I graduated from Michigan State University in 2004 with a Bachelor of Arts degree in Supply Chain Management.

Q. Have you completed any other courses?

A. Yes, I have completed two graduate courses at Central Michigan University's Lansing campus, Quantitative Applications in Administrative Decision Making and Financial Management. I have also completed the Association of Edison Illuminating Company's Fundamentals of Customer Load Data Analysis course, the National Association of Regulatory Utility Commissioners (NARUC) Annual Regulatory Studies Program held at Michigan State University, and the following EUCI courses: 1) Electric Cost-of-Service Course - Essential Concepts for a Changing Industry, and 2) Ratemaking for Data Centers & Other Large Power Loads.

Q. What are your current responsibilities at the MPSC?

A. As the Electric Cost of Service Specialist, I am responsible for developing Staff electric cost of service studies, interpreting and applying laws related to electric cost-of-service,

and any other electric cost-of-service-related issues in cases before the Commission under the supervision of the Rates and Tariff Section Manager.

Q. Have you previously presented testimony or participated in utility cases before the MPSC?

A. Yes. I have participated in the following cases:

Case No.	Utility	Description
U-14270-R	Presque Isle, Cherryland, Tri-County, and Great Lakes	PSCR Reconciliation
U-14637	Presque Isle Electric and Gas Cooperative	Rate Design
U-14710-R	Presque Isle, Cherryland, Tri-County, and Great Lakes	PSCR Reconciliation & TIER Audit
U-14713-R	Ontonagon County REA	Rate Design
U-14745	Upper Peninsula Power Company	Rate Design
U-14790	Great Lakes Energy Cooperative	Rate Design
U-14893	SEMCO Energy Gas Company	Rate Design
U-15071	Wisconsin Electric Power Company	Rate Design
U-15114	Wisconsin Public Service Corp.	Ex parte of new rate
U-15244	DTE Electric Company	Rate Design
U-15245	Consumers Energy Company	Rate Design
U-15487	Alpena Power Company	Ex parte of new rate
U-15500	Wisconsin Electric Power Company	Rate Design
U-15645	Consumers Energy Company	Rate Design
U-15981	Wisconsin Electric Power Company	Rate Design
U-15988	Upper Peninsula Power Company	Rate Design
U-16180	Indiana Michigan Power Company	Rate Design
U-16472	DTE Electric Company	Rate Design
U-16794	Consumers Energy Company	Rate Design
U-16860	Consumers Energy Company	Revenue Decoupling
U-16877	Michigan Consolidated Gas Company	Revenue Decoupling
U-17043	Consumers Energy Company	VHWF
U-17087	Consumers Energy Company	Rate Design
U-17221	Michigan Gas Utilities Corporation	Revenue Decoupling
U-17222	Michigan Gas Utilities Corporation	Un-collectables
U-17479	Tilden Mining Company	RAS-1 Tariff
U-17530	DTE Michigan Gathering Company	Ex parte of new rate
U-17547	Michigan Gas Utilities Corporation	Revenue Decoupling
U-17686	Michigan Gas Utilities Corporation	Tariff Revisions
U-17688	Consumers Energy Company	Act 169 Case

Case No.	Utility	Description
U-17735	Consumers Energy Company	Rate Design
U-17895	Upper Peninsula Power Company	Rate Design
U-17990	Consumers Energy Company	Rate Design
U-18255	DTE Electric Company	Rate Design
U-18462	Northern States Power Company	Rate Design
U-20101	Alpena Power Company	TCJA Credit A
U-20108	Northern States Power Company	TCJA Credit A
U-20110	Upper Michigan Energy Resource Corp.	TCJA Credit A
U-20111	Upper Peninsula Power Company	TCJA Credit A
U-20162	DTE Electric Company	Rate Design
U-20359	Indiana Michigan Power Company	Rate Design
U-20697	Consumers Energy Company	Rate Design
U-21045	Alpena Power Company	Rate Design
U-21097	Northern States Power Company	Rate Design
U-20836	DTE Electric Company	Rate Design
U-21224	Consumers Energy Company	Cost of Service
U-21297	DTE Electric Company	Cost of Service
U-21389	Consumers Energy Company	Cost of Service
U-21488	Alpena Power Company	Cost of Service
U-21534	DTE Electric Company	Cost of Service
U-21541	Upper Michigan Energy Resource Corp.	Cost of Service
U-21860	DTE Electric Company	Cost of Service
U-21870	Consumers Energy Company	Cost of Service
U-21986	Indiana Michigan Power Company	Large Tariff

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present the Michigan Public Service Commission (MPSC or the Commission) Staff's recommendations regarding DTE Electric Company's (the Company) proposed large load provision tariff amendments for its Primary Supply Rate D11.

Q. Are you sponsoring any exhibits?

A. No.

Q. How is your direct testimony organized?

A. I first provide Staff's recommendations regarding modifications of the Company's original tariff amendment proposal concerning the proposed administrative fee. Next, I present Staff's recommendation concerning acceptable forms of collateral and lowering of the collateral amount. I then offer Staff's recommendations concerning cost-of-service and rate design models the Company should be required to provide in its next general electric rate case. Finally, I provide a summary of Staff's recommendations concerning the above topics at the end of my testimony.

Administrative Fee

Q. What is Staff's position concerning the Company's proposed administrative fee amount?

A. Staff takes no issue with the initial proposed tiered administrative fee amounts. The Company explained in response to Staff's discovery that the amounts reflect estimated costs for projects at the respective sizes. See Company's Response to the MPSC Staff's

Second Discovery Request. Additionally, the lower tier of the administrative fee which is applicable to customers who project to be less than 200 MW is consistent with the $100,000 administrative fee approved by the Commission in Case No. U-21859.

Q. Does Staff have any recommendations for the Company's proposed administrative fee?

A. Yes. Staff recommends that the administrative fee amount charged to the customer be reconciled to actual costs upon completion of all projects associated with serving that customer. A reconciliation clause is important because it will protect prospective large customers from being overcharged for costs they did not incur. Another important function is that it will also protect all other ratepayers from subsidizing the projects required to explore serving large load customers. Staff's recommendation is also consistent with the administrative fee method the Commission recently approved for Consumers Energy Company's Large Load Customer Provision in Case No. U-21859.

Q. What tariff language does Staff recommend adding to the Large Load Provision?

A. Staff recommends adding the following tariff language onto the end of the Administrative Fee section:

> "The administrative fee shall be reconciled to actual costs upon completion of the project."

<u>Collateral and Credit</u>

Q. What tariff language is the Company proposing for the Collateral and Credit section of its proposed Large Load Provision?

A. The Company is proposing the following tariff language in Exhibit A-1, page 6 of 6:

> "The Company shall be entitled to require the customer to provide collateral equal to the termination fee as described above. The Company, at its sole discretion, may determine a lower required collateral amount. The required collateral amount may be reduced as the termination fee declines over the term of the contract. The Company, at its sole discretion and determination, may require a letter of credit, cash, parent guarantee, or a combination thereof, as collateral."

Q. Does Staff agree with this language as proposed by the Company?

A. No.

Q. Is Staff proposing any changes to the Company's proposed Collateral and Credit tariff language?

A. Yes. Staff recommends the Company's proposed language be modified to align with the language approved by the Commission in Case No. U-21859. Concerning changing the amount of required collateral, the Commission approved the following tariff language for Consumers Energy Company in Case No. U-21859:

> "The Company may, at its discretion, require a different collateral amount or accept a form of collateral other than described above, subject to Commission review and approval."

Staff recommends that the Company's proposed "sole discretion" language be modified to remove the word "sole" and to include that it is subject to Commission review and approval. Staff also recommends that the forms of acceptable collateral be modified to align with what the Commission approved in U-21859. In its Order dated November 6, 2025, the Commission approved one or both of the following forms of collateral, 1.) a standby irrevocable letter of credit, and 2.) cash. Staff recommends these two forms of collateral also be approved in this case and that the parent guarantee be removed from the tariff language. Therefore, Staff recommends the following language for the Collateral and Credit section be as follows:

> "COLLATERAL AND CREDIT: The Company shall be entitled to require the customer to provide collateral equal to the termination fee as described above. The required collateral amount may be reduced as the termination fee declines over the term of the contract.
>
> The Collateral Requirement may be provided to the Company in one or both of the following forms:
>
> a) A standby irrevocable letter of credit ("Letter of Credit") for the full Collateral Requirement.
>
> b) Cash for the full Collateral Requirement.
>
> The Company may, at its discretion, require a different collateral amount or accept a form of collateral other than described above, subject to Commission review and approval."

Q. If a parent guarantee is approved by the Commission in this case as an alternative form of collateral, does Staff have any recommendations ?

A. Yes, should the Commission approve a parent guarantee, Staff recommends that the Commission make the same finding as it did in the December 18, 2025 Order in Case No. U-21990. In that Order, the Commission stated on page 41:

> "In addition, in the event of a failure to pay the MBD under the PSA, or in the event of a termination, default, or other event whereby DTE Electric is required to draw on the letter of credit or parental guaranty, if the company determines that the specified collateral is not sufficient to cover the full amount of the remaining financial exposure associated with the ESA or the PSA (minus the value to customers), the Commission specifically cautions DTE Electric that any unrecovered costs shall not be borne by ratepayers and that DTE Electric bears responsibility for any remaining liability. All risk associated with the sufficiency of the collateral shall be borne by DTE Electric."

Just like the Commission order above, Staff recommends for the Large Load Provision that if there is a failure to pay the Minimum Billing Demand, or in the event of a termination, default, or other event whereby DTE Electric is required to draw on the

parental guarantee, if the Company determines that the specified collateral is not sufficient to cover the full amount of the remaining financial exposure associated with the customer's contract that the Company bear responsibility for any remaining liability. All risk associated with the sufficiency of the collateral should be borne by the Company.

Cost-of-Service and Rate Design Analysis

Q. Is Staff making any recommendations concerning cost allocations and rate designs?

A. Yes. Staff is recommending that the Company continue to be required to provide six cost allocation and rate design studies along with all the data necessary to allow recreation of the proposals as ordered by the Commission in Case No. U-21990. However, Staff proposes to modify the six studies to specify that the data used to populate the six studies should be the same data as the Company used to populate its proposed test-year COSS and Rate Design in its currently filed rate case. Therefore, those six studies should include: (1) one under traditional ratemaking as exemplified by DTE Electric's proposed test-year COSS including the expected full contract capacity of any large load customer(s) on Rate D11; (2) same as (1), but with the inclusion of a new large load customer rate class; (3) same as (2), but using 12CP to allocate costs instead of 4CP where 4CP is currently being utilized; (4) one under traditional ratemaking utilizing the proposed test-year COSS without the large load customer(s) in service; (5) one utilizing a direct assignment of costs to a new large load customer rate class, including transmission, generation, and distribution costs; and (6) one utilizing a direct assignment of costs to the individual large load customer, again including transmission, generation, and distribution

costs. The Company should also continue to provide a summary exhibit comparing the impacts of these six cost allocation and rate design proposals on all customer classes on a side-by-side basis.

Q. Why does Staff propose modifying the six cost allocation and rate design studies?

A. In the Company's current electric rate case, Case No. U-22046, the six cost-of-service and rate design studies were provided, but with numbers from the Company's previously approved rate case and not its current rate case. This does not allow for an analysis that is relevant to the instant case because it does not allow the scenarios to be used for allocating costs and designing rates for the rate case in which they are filed. Therefore, Staff recommends that the data used to populate the six cost-of-service and rate design studies be the same data as used in the Company's currently filed rate case. For example, if the Company used a projected test-year in its current electric rate case, that same projected test-year data would be used to populate the six additional studies. This will allow Staff and all parties to the case to make more meaningful and relevant analysis of the impact of large load customers on the Company's system.

Summary

Q. Please summarize your recommendations in this proceeding.

A. Staff's recommendations are as follows:

1. Staff takes no issue with the Company's proposed tiered Administrative Fee but recommends that it be reconciled with the customer or prospective customer once final project costs become known.

2. For the Collateral and Credit section, Staff recommends the two forms of Commission approved collateral and to remove "sole discretion" language. This aligns with the language the Commission approved in Case No. U-21859. If a parental guarantee is allowed by the Commission, the Company should bear all risk associated with the sufficiency of the collateral.

3. Staff recommends that the Company be required to continue providing the six cost allocation and rate design studies Ordered in Case No. U-21990, but modified by Staff and using the same data as used to populate the Company's projected test-year exhibits in its currently filed case and not data from a previous case.

Q. Does this conclude your testimony?

A. Yes, it does.

MS. STEPHENS: No, Your Honor.

THE COURT: Thank you. All right. Does that conclude the binding in of all the testimony and the entry of all the exhibits that we need to address today? And is there anything -- go ahead.

MR. JANISZEWSKI: I believe so, Your Honor.

THE COURT: Does that conclude the case for all the parties?

MR. KESKEY: Yeah, yes, Your Honor, but as a housekeeping matter, I want to make sure that we have the email address of the court reporter so that we can send the court reporter copies of our testimony and then our exhibit list.

THE COURT: I've dropped the email address into the meeting chat, Mr. Keskey, so it's available.

MR. KESKEY: Okay.

THE COURT: And he does have access to the SharePoint.

MR. KESKEY: Okay, very good. Thank you.

THE COURT: You're welcome. Is there anything further for the record from any of the parties before we adjourn for the day?

MR. JANISZEWSKI: Nothing from the

company, Your Honor. Thank you.

THE COURT: All right. Thank you very much. And we are off the record.

(At 9:43 a.m., proceedings concluded)

STATE OF MICHIGAN) SS

COUNTY OF BAY)

I certify that this transcript, consisting of 351 pages, is a complete, true, and correct record of the proceedings in this case held on Wednesday, September 16, 2026, to the best of my ability, prepared from the official recording. I further certify that I am not a relative or employee of any attorney or party to this action, nor am I financially interested in the outcome of this matter. This certified reporter accepts no responsibility for any inaudible, indiscernible, or unintelligible responses by any participant.



_____

ROBERT J. TRUDELL

CER 16210, Notary Public, Bay County

My commission expires: 12/4/2030