STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter of the application of	**)**	
DTE ELECTRIC COMPANY,	**)**	
for authority to increase its rates, amend	**)**	**Case No. U-20162**
its rate schedules and rules governing the	**)**	
distribution and supply of electric energy, and	**)**	
for miscellaneous accounting authority.	**)**	
	)	

QUALIFICATIONS AND DIRECT TESTIMONY OF

NICHOLAS M. EVANS

MICHIGAN PUBLIC SERVICE COMMISSION

November 7, 2018

QUALIFICATIONS OF NICHOLAS M. EVANS
CASE NUMBER U-20162
PART I

Q. Please state your full name and business address for the record.

A. My name is Nicholas M. Evans, and 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 Public Utilities Engineering Specialist in the Electric Operations Section, which is part of the Energy Operations Division. This Division is responsible for ensuring safe, reliable and accessible energy supplies.

Q. Please describe your educational background.

A. I earned a Bachelor of Science in Electrical Engineering from Kettering University in 2005. In addition, I earned a Master of Public Administration degree from Western Michigan University in 2012.

Q. What is your professional background?

A. In 2007, I began working at the State of Michigan Energy Office as a staff engineer, where I performed energy audits on local government, school district, and state office buildings and advised the building managers and other personnel on ways to conserve energy and increase their buildings' energy efficiency. I also reviewed energy audits from private contractors for these customers.

In April 2010, I began working for the MPSC in the Energy Efficiency Section as a Public Utilities Engineer. In this Section, I reviewed filings made in the reconciliation process of utility Energy Optimization plans. I was the case coordinator for six electric cooperatives and for Case Nos. U-16013 and U-16014.

In addition, I participated in the MPSC Energy Optimization Collaborative and the MPSC Plug-in Hybrid Electric Vehicle Task Force.

In November 2010, I was placed into the Smart Grid Section where I reviewed the portions of utility rate case filings that pertained to Smart Grid, Advanced Metering Infrastructure (AMI) and Automated Meter Reading (AMR). I testified in several rate cases on AMI issues. I also assisted in writing the Staff Report in Case No. U-17000 and was a member of the MPSC Smart Grid Collaborative.

In July 2013, I transferred to the Generation and Certificate of Need Section. My primary responsibilities were to review expenditures related to environmental compliance and the purchase of new fossil generation in utility rate case filings. My other responsibilities were to review portions of Certificate of Necessity applications and assist with the tracking and monitoring of various environmental rules as they were proposed and finalized. From June 2014 until February 2016, I helped analyze and track developments with the Environmental Protection Agency's Clean Power Plan rule, providing assistance to the Commission, the Michigan Department of Environmental Quality, and the Michigan Agency for Energy. I also represented the MPSC on the Midcontinent Power Sector Collaborative.

From March 2017 through June 2017, I participated in the Integrated Resource Plan (IRP) Statewide Parameter Setting/Modeling stakeholder outreach process, primarily by serving as workgroup lead of the Market Options and Advanced Technologies workgroup and co-chairman of the Environmental Policy

workgroup. I later assisted in drafting the MPSC Staff's Draft Integrated Resource Planning Parameters (Strawman Proposal).

In November 2017, I was promoted to a Public Utilities Engineering Specialist and began working in the Electric Operations section. My primary responsibility is to review distribution system expenditures and expenses in utility rate case filings. My other responsibilities are to review distribution operations five-year plans, assist with updating the state electric interconnection standards, procedures and applications, log injury and fatality incidents associated with utility equipment, and assist with investigations.

Q. Have you received any work-related training since starting your employment with the MPSC?

A. Yes. I have attended the following programs hosted by the Institute of Public Utilities at Michigan State University:

-Forecasting for Regulators

-Annual Regulatory Studies Program

-Advanced Regulatory Studies Program

-Michigan Forum on Economic Regulatory Policy

-Introduction to Public Utility Regulation and Ratemaking.

Q. Have you attended any other training programs or events since 2007?

A. Yes. I have attended:

-Michigan Farm Energy Audit Program at Michigan State University in 2007.

-Fundamentals of Energy Auditing course at the University of Wisconsin-Madison in 2008.

-Distribution Efficiency Planning and Voltage Optimization conference sponsored by Electric Utility Consultants, Inc. in 2012.

-2014 National Energy Risk Lab sponsored by the National Association of Regulatory Utility Commissioners (NARUC).

-Power Experts 2014 - Air Quality and Environmental Compliance for Coal Power Plants.

-National Summit on Smart Grid and Climate Change in 2014.

-Power Experts 2017 – Utility Air Quality and Environmental Compliance Conference.

-Distribution Systems and Planning, hosted by NARUC, Organization of MISO States, and Lawrence Berkley National Laboratory, in January 2018.

-IEEE 1547 Distributed Energy Resource Interconnection with Electrical Power Systems Workshop, hosted by the Organization of MISO States, in March 2018.

-DER (Distributed Energy Resources) Ride-Through Workshop, hosted by PJM, in October 2018.

Q. Have you been awarded any certificates as a result of your regulatory training?

A. Yes. In 2014, I was awarded a Tier One Certificate of Continuing Regulatory Education from the Institute of Public Utilities at Michigan State University.

Q. Have you previously testified before the Commission?

A. Yes. I have filed testimony in the following cases:

Case No	Company	Type of Case	Subject of Testimony
U-16180	Indiana-Michigan	Electric rate (settled)	gridSMART[sm] project
U-16472	Detroit Edison	Electric rate	AMI, SmartCurrents
U-16794	Consumers Energy	Electric rate	AMI/Smart Grid
U-16999	MichCon	Gas rate (settled)	AMI and AMR
U-15768	Detroit Edison	Remand – Electric rate	AMI pilot program

QUALIFICATIONS OF NICHOLAS M. EVANS
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PART I

U-17087	Consumers Energy	Electric rate (settled)	AMI
U-17429	Consumers Energy	Certificate of Necessity (withdrawn)	Thetford Plant- IRP review
U-16472	DTE Electric	Remand – Electric rate	AMI (with Rebuttal)
U-17735	Consumers Energy	Electric rate	Environmental capital and O&M, Jackson Plant
U-17990	Consumers Energy	Electric rate	Environmental capital and O&M
U-18224	Upper Michigan Energy Resources Corporation	Certificate of Necessity	RICE Units – Environmental review
U-18322	Consumers Energy	Electric rate	Environmental capital and O&M
U-18370	Indiana-Michigan	Electric rate	Contingency and SCR

Q. Have you provided technical assistance in any other cases?

A. Yes, in multiple cases.

Case No.	Company	Type of Case	Assisted with:
U-17053	Detroit Edison	Tariff	Non-transmitting meter provision
U-15645	Consumers Energy	Remand – Electric rate	AMI pilot program.
U-18462	Northern States Power	Electric rate (settled)	Distribution system capital and O&M

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

A. The purpose of my testimony is to present the Michigan Public Service Commission Staff's (Staff) adjustments to DTE Electric Company's (DTE Electric or Company) projected distribution capital expenditures and O&M expenses. I also present Staff's proposed reporting requirements and recommendations regarding the Company's Tree Trimming Surge Proposal.

Q. Are you sponsoring any exhibits?

A. Yes, I am sponsoring multiple exhibits:

Exhibit No.	**Description**
Exhibit S-10.0	U-20162 Distribution Capex with Staff adjustments.
Exhibit S-10.1	DTE Electric's Exhibit A-9, Schedule B6.4 from Case No. U-18255, which shows projected capital expenditures for distribution plant.
Exhibit S-10.2	U-18255 Distribution capex authorized amounts, created from DTE Electric's Exhibit A-9, Schedule B6.4 from Case No. U-18255 (Staff Exhibit S-10.1).
Exhibit S-10.3	Crosswalk between Exhibit A-9, Schedule B6.4 from U-18255 to Exhibit A-12, Schedule B5.4 from U-20162.
Exhibit S-10.4	DTE Electric's Response to Discovery Question STDE-7.8a 2nd Supplemental, which shows actual spending on distribution capital programs from January 1, 2018 – August 31, 2018.
Exhibit S-10.5	Staff Surge Proposal
Exhibit S-10.6	DTE Electric's Response to Discovery Question STDE-3.24d, which shows actual total tree trim expense for 2012-2016.
Exhibit S-10.7	2018 Distribution Capex by month, from DTE Electric's Exhibit A-12, Schedule B5.4.

2017 - 2020 capital expenditures – distribution plant

Q. On which Company exhibit can the historical and projected capital expenditures associated with distribution plant ("distribution capex") be found?

A. Company Exhibit A-12, Schedule B5.4, pages 1-10.

Q. What is the Company requesting?

A. The Company is requesting $651.372 million for 2017, $810.157 million for 2018, $285.557 million for the four months ending 4/30/2019, and $830.578 million for the projected test year, which runs from May 1, 2019 – April 30, 2020. The 2017 historical amount is 15.7% higher than the 2017 amount authorized in the U-18255 case. The Company's 2018 projection is 44% higher than the 2017 authorized amount, the 2019 calendar year projection is 47.6% higher than the 2017 authorized amount, and the 2020 calendar year projection is 51.3% higher than the 2017 authorized amount.

Q. What adjustments to distribution capex are you recommending?

A. I am recommending the Commission disallow the following capex amounts:

1) $88,615,000 from the 2017 historic year;

2) $64,455,000 for calendar year 2018;

3) $31,447,000 for the first four months of 2019; and

4) $61,894,000 for the test year.

All of these disallowances can be viewed on line 22 of Staff Exhibit S-10.0. The reasons for these adjustments include lack of testimonial support and pace of spending from January 2018 – August 2018.

The 2017 historic year

Q. Why are you recommending an adjustment to the 2017 historical year distribution capex?

A. The Company spent more than was authorized by the Commission in 2017 for distribution plant. By Staff's calculation, the Commission authorized 2017 distribution capex spending in the Company's last electric rate case to be $562,757,000. The Company spent $651,372,000, or $88,615,000 more.

Q. How did Staff calculate the $562,757,000?

A. Staff started with Staff Exhibit S-10.1 (which is Company Exhibit A-9, Schedule B6.4 from Case No. U-18255) and compared it to the approvals found in part B of the April 18, 2018 Order in Case No. U-18255.[1] In the April 2018 Order, the Commission adopted adjustments to the 4.8kV Relay Improvement Project, Advanced Distribution Management System (ADMS), AMI mesh network, pole top maintenance, Total New Business and the System Strengthening Blankets subtotal. The adjustments to Total New Business and System Strengthening Blankets were due to the Commission agreeing with Staff's inflation rates. All of these programs and categories are part of electric distribution capex.

With these adjustments, the total capital authorized for distribution is found to be $464,498,000 for the 10 months ending 10/31/2017 and $589,554,000 for the 12 months ending 10/31/2018. These amounts and their originally-requested amounts are shown in Exhibit S-10.2, page 1, line 25.

With these numbers, Staff can calculate how much spending the Commission authorized for the full 12 months of 2017 in the Company's last

[1] Part B is titled "Distribution Operations Capital Expenditures" and is found on pages 9 - 16.

electric rate case. With the authorized spending for the 10 months ending 10/31/2017 already in hand, only the authorized spending for the remaining two months of the year needs to be calculated. To do this, I took the authorized spending of $589,554,000 for the 12 mos. ending 10/31/2018 and divided it by 12 to give an average monthly amount. I then multiplied the average monthly amount by two to obtain a combined November - December 2017 spending estimate of $98,259,000. I then added this figure to the 1/1/2017 – 10/31/2017 authorized amount of $464,498,000 to calculate total 2017 authorized spending of $562,757,000. This method allows for an apples-to-apples comparison to actual 2017 spending provided in the instant case.

As shown in Exhibit A-12, Schedule B5.4, page 1, column (b), line 22, the Company's total capital spending for the 12 months ending 12/31/2017 was $651,372,000. Staff subtracted the $562,757,000 authorized spending from the actual spending of $651,372,000, which yields overspending by the Company of $88,615,000.[2]

Q. Is spending beyond what the Commission authorizes always imprudent or unreasonable?

A. No. Sometimes a project or program warrants increased spending. However, a utility that over-spends its Commission authorization in a major category, like distribution plant, should justify this higher spending in the next rate case. Staff should not be caught unaware of over-spending in the historic year of a rate case.

[2] Due to an error caught later, $591,459,000, not $589,554,000, was used for the 12 months ending 10/31/2018. This leads to a slightly smaller downward adjustment of $88,298,000. This is the adjustment used in calculating Staff's proposed rates, but is not used in my testimony here.

Q. Did DTE Electric support the over-spending in 2017 in this case?

A. No. The Company provided historical 2017 spending on a wide range of projects and programs, as shown in Exhibit A-12, Schedule B5.4. Some of these, such as "Meters," "Cable Replacement," and "System Improvements," were carried over from Exhibit S-10.1. Many projects and programs, however, did not carry over from Exhibit S-10.1 to Exhibit A-12, Schedule B5.4. For example, "Maxwell Transformer #2", "Extend CATLI DC 9128", and "PR Recloser Replacement" were all projects listed in U-18255 but not in the instant case. A comprehensive, apples-to-apples comparison of programs and projects between the two exhibits is not possible. Nevertheless, I did attempt a limited crosswalk to discover if a program or multiple programs could be identified as major drivers of the 2017 over-spending.

Q. Please briefly describe the crosswalk you performed between Exhibit S-10.1 and Exhibit A-12, Schedule B5.4.

A. The crosswalk, shown as Staff Exhibit S-10.3, first lists the line items from Exhibit S-10.1, their locations within the exhibit, and how much was authorized by the Commission for those line items by the Commission's April 18, 2018 Order. Next to those items are my best guesses on what their equivalent line items are in Exhibit A-12, Schedule B5.4, their locations within the exhibit, and how much was actually spent on those line items by the Company. Another column calculates the over-spend or under-spend for each line item pair, and the last column is reserved for comments.

Q. What were the results of your crosswalk analysis?

A. As stated earlier, many projects in Exhibit S-10.1 have no obvious equivalents in Exhibit A-12, Schedule B5.4. These were simply marked as "(Not found)" or "(Unknown)" in the "U-20162 Equivalent Category or Project (Staff's Best Guess)" column. Several programs, such as 4.8 kV Consolidation and Conversion, the Pontiac Vaults, and Transformers and Regulators had moderate over-spending. Some projects, like the Gordie Howe Bridge and Ann Arbor System Improvement, had under-spending. However, one category had massive over- spending and appears to be the primary contributor to the overall over-spending in 2017.

Q. Which category had the massive over-spending?

A. "Emergency Retirement Unit Changeouts and Storm," which became "Storm" and "Non- Storm" in the instant case.

Q. How much was over-spent in this category?

A. By my calculation, approximately $99,226,000. In Exhibit S-10.1, "Emergency Retirement Unit Changeouts and Storm" had $124,124,000 in capex for 10 mos. ending 10/31/2017 and $152,549,000 for 12 mos. ending 10/31/2018. Using Staff's earlier formula of adding the 10 mos. ending 10/31/2017 spending to two months of spending from the 12 mos. ending 10/31/2018 projection, I calculated that $149,549,000 was authorized for the entirety of 2017. By comparison, the Company ended up spending $248,775,000, a combination of $122,588,000 for Storm and $126,187,000 for Non-Storm. The difference between the authorized amount of $149,549,000 and the actual spend of $248,775,000 is an over-spend of $99,226,000.

Q. How do you know that "Emergency Retirement Unit Changeouts and Storm" is equivalent to "Storm" and "Non-Storm"?

A. Their descriptions are very similar. On page 37 of his direct testimony in Case No. U-18255, Company witness Paul D. Whitman states:

> "Emergency Retirement Unit Changeouts and Storm": Projects to **perform emergency replacement work for retirement unit items on the overhead and underground subtransmission and distribution systems.** Capital expenditures for storms are also included in this line. (emphasis added.)

In the instant case, "Storm" and "Non-Storm" are part of a larger category called "Emergent Replacements," which also includes a line item called "Substation Reactive." On page 89 of his direct testimony, Company witness Marco A. Bruzzano states the following:

> Q. Can you describe Emergent Replacements, lines 2 to 7, in more detail?
>
> A. These costs are to **perform emergency replacement work for retirement unit items on the overhead and underground subtransmission and distribution systems** and in substations. Capital expenditures for the restoration associated with storms is included in line 3 and similar expenditures for non-storm restoration is included in line 4. (emphasis added.)

Based on the similar definitions, it is logical to conclude that "Emergency Retirement Unit Changeouts and Storm" in Case No. U-18255 became two categories, "Storm" and "Non-Storm", for Case No. U-20162.

Q. Did the Company explain the 2017 over-spending in Storm and Non-Storm?

A. No. The most that is said about Storm and Non-Storm is the following:

> Q. Can you describe Emergent Replacements, lines 2 to 7, in more detail?
>
> A. These costs are to perform emergency replacement work for retirement unit items on the overhead and underground subtransmission and distribution systems and in substations. Capital expenditures for the restoration associated with storms is included in line 3 and similar expenditures for non-

storm restoration is included in line 4. In 2017, DTE Electric replaced approximately 3.6 million feet of wire and cable and 5,400 poles.[3]

While the 3.6 million feet of wire and cable and 5,400 poles likely contributed to the over-spending, the Company did not explicitly confirm this in testimony or explain why they needed to replace the wire, cable and poles. The over-spending in distribution capex is not mentioned anywhere in Mr. Bruzzano's testimony.

Q. What was Staff expecting?

A. When significant over-spending on capex distribution is planned, Staff should be notified by the Company. For this case, Staff did not expect the Company to provide a line-by-line explanation as to why spending was higher or lower than forecasted for individual projects. However, a list of the programs that were the major contributors to the over-spending, the amount of over-spending that occurred, a list of equipment purchased, an explanation as to why the over-spending for each program needed to occur, and an explanation as to why the spending could not be deferred until after 2017 would have been helpful for Staff in determining cost recovery of 2017 historical expenditures. The Company provided none of these items in its filing. Staff did its own analysis to determine the programs and categories in which overspending occurred and how much the Company overspent, but is still in the dark as to what equipment or items were purchased, why the overspending occurred and why it had to occur in 2017.

Q. What is Staff expecting in the future if the Company overspends in its historical test year?

[3] Direct Testimony of Marco A. Bruzzano, page 89, lines 16-21.

A. The Company should provide to Staff a list of the programs that were the major contributors to the over-spending, the amount of over-spending that occurred, a list of equipment purchased, an explanation as to why the over-spending for each program needed to occur, and an explanation as to why the spending could not be deferred until a later year. Staff recommends that the Company should be directed to notify the Staff before a significant over-spend of Commission-approved electric distribution capex occurs.

Calendar year 2018

Q. Broadly speaking, why are you recommending a downward adjustment of $64,455,000 to 2018 distribution capex?

A. Staff's is recommending this adjustment so that 2018 distribution capex reflects the Company's actual spending patterns during the January 2018 – August 2018 timeframe.

On page 1 of Exhibit A-12, Schedule B5.4, the Company includes the entirety of its distribution capex for 1/1/2017 – 4/30/2020, and this capex is divided into several categories: Emergent Replacements (lines 2-7), Customer Connections, Relocations and Other (lines 8-15), and Strategic Capital Programs (lines 17-21).[4] The remaining pages of the exhibit show distribution capex in greater detail.

Staff requested actual spending on distribution programs in a discovery question. The response from the Company, Discovery Response

[4] The Emergent Replacements and Customer Connections, Relocations and Other categories are part of Base Capital Programs (lines 1-16).

STDE-7.8a 2nd Supplemental, is provided as Staff Exhibit S-10.4. This exhibit shows the actual spending from January 1, 2018 through August 31, 2018 (Year to Date or "YTD") for the various distribution programs in the same format as Exhibit A-12, Schedule B5.4. The Company has, as of August 31, spent less than forecasted (YTD Forecast) on Strategic Capital Programs but more than forecasted on the Emergent Replacements category. Spending on Customer Connections, Relocations and Other, when Customer Advances for Construction (CIAC) are included, is on track with what the Company forecasted for 2018. Staff made an overall downward adjustment of $64,455,000 to the Company's requested $810,157,000, as shown on Exhibit S-10.0, so that 2018 distribution capex reflects the Company's slower rate of spending in the Strategic Capital category and the accelerated rate of spending in the Emergent Replacements category.

Q. Is the $64,655,000 disallowance composed of numerous smaller adjustments?

A. Yes. The disallowance is the net result of several smaller disallowances and upward adjustments.

Q. Are the Emergent Replacements and Strategic Capital categories composed of several sub-categories each?

A. Yes. Emergent Replacements is composed of the Storm, Non-Storm, Substation Reactive, and Emergent Replacement Reduction Based on Strategic Spend sub-categories. Strategic Capital is composed of the Infrastructure Resilience and Hardening, Infrastructure Redesign, and Technology and Automation sub-categories. Staff's recommended reduction to 2018 distribution capex is made up

of adjustments to most of these sub-categories, and these are shown on Exhibit S-10.0.

Q. Let's start with Customer Connections, Relocations and Other, spending on which you said was "on track". Please describe Staff's analysis of this category.

A. Staff noted that Total Customer Connections, Relocations, and Other Net of CIAC ("Connections & Other") category, shown on page 8, column (b), line 94 of Staff Exhibit 10.4, appears to be on track when YTD Actual spending is compared to the YTD Forecast.[5] Also, since the YTD Actuals and Forecast only covered January 1, 2018 through August 31, 2018, extrapolating the spending out 12 months and then comparing it to the 2018 filed projection of $201,921,000 - shown in Exhibit A-12, Schedule B5.4, page 5, column (c), line 94 - is also important. The extrapolated spending is calculated by dividing $135,843,000 by 8 months and then multiplying the result by 12. (This is mathematically equivalent to multiplying by 1.5, and will be referred to as such throughout the remainder of my testimony.) This yields predicted spending of $203,764,500, which is very close to the official projected spending of $201,921,000. Staff therefore had no concerns with the Connections & Other category.

Q. Please describe Staff's analyses of the three Strategic Capital sub-categories - Infrastructure Resilience and Hardening, Infrastructure Redesign, and Technology and Automation.

[5] This amount can also be derived by adding the $160,266,000 in column (b), line 14 on page 6 of Exhibit S-10.4 to the -$24,423,000 shown in column (b), line 15 on page 6 of that same exhibit.

A. Staff looked at actual spending on the Infrastructure Resilience and Hardening sub-category, shown on page 9 of Exhibit 10.4, which amounted to $108,217,000 from January 1, 2018 to August 31, 2018. Extrapolating the eight-month number to 12 months by multiplying by 1.5 yields $162,326,000, which is less than the projected $199,054,000.[6] Staff earmarked the difference of $36,728,000 as a disallowance.

Staff looked at actual spending on the Infrastructure Redesign sub-category, shown on page 10 of Exhibit S-10.4, which amounted to $37,249,000 from January 1, 2018 to August 31, 2018. Extrapolating the eight-month number to 12 months yields $55,874,000, which is substantially less than the projected $121,905,000.[7] Staff earmarked the difference of $66,031,000 as a disallowance.

Staff looked at actual spending for the Technology and Automation sub-category, shown on page 11 of Exhibit S-10.4, which was $20,541,000 from January 1, 2018 through August 31, 2018. Extrapolating the eight-month number to 12 months yields $30,812,000, which is substantially less than the projected $85,174,000.[8] Staff earmarked the difference of $54,362,000 as a disallowance.

Q. Is it reasonable to expect that the three Strategic Capital sub-categories will continue to spend at the same slower pace throughout the remainder of 2018?

A. Overall, yes. While spending on some projects and programs will likely match projections by the end of the year, numerous others will likely fall short. In Staff

[6] Exhibit A-12, Schedule B5.4, page 7, column (c), line 27; see also page 1, column (c), line 18.
[7] Exhibit A-12, Schedule B5.4, page 8, column (c), line 42; see also page 1, column (c), line 19.
[8] Exhibit A-12, Schedule B5.4, page 9, column (c), line 15; see also page 1, column (c), line 20.

Exhibit S-10.4, the Company provided commentary regarding spending for many of the Strategic Capital projects. Some reasons for the slower spending include:

Project deferred, delayed, or postponed due to local permitting issues, land availability, or other reasons (ten instances)[9]
Awaiting approval from Army Corps of Engineers (one instance)[10]
Design not approved by local government (one instance)[11]
Project has been rescheduled due to resource allocation to support hurricane relief efforts and to address emergent work (four instances)[12]

With the large number of delays which are outside the control of the Company, it is difficult to believe that spending will catch up in the remaining four months of the year.

In addition, for the Technology and Automation projects shown on page 11 of Exhibit S-10.4, the YTD actual spend of $20,541,000 falls far short of the $43,621,000 projected by the Company for the first eight months of 2018.[13] Even the YTD Forecast of $25,035,000 falls far short of the $43,621,000, with no clear explanation in the commentary as to why this occurred. Staff can only conclude that the Company has revised its Technology and Automation projection downward.

Finally, the spending on other projects, such as 4.8 kV Hardening and Pontiac Vaults, from January 2018 – August 2018 is far less than the projected 2018 spending.[14] The Company has only spent one-third of its projection for 4.8

[9] Exhibit S-10.4, page 9, lines 3 and 24; Exhibit S-10.4, page 10, lines 2, 3, 5, 9, 10, 22, 27, 34.
[10] Exhibit S-10.4, page 9, line 16.
[11] Exhibit S-10.4, page 10, line 26.
[12] Exhibit S-10.4, page 10, lines 18, 19, 20, and 23.
[13] See Staff Exhibit S-10.7 for the source of the $43,621,000. Add up the amounts in line 20 "Technology and Automation", columns (b) – (i) to calculate the $43,621,000.
[14] Compare amounts in Exhibit S-10.4, page 9, column (b), lines 12 and 19 with amounts in Exhibit A-12, Schedule B5.4, page 7, column (c), lines 12 and 19.

kV Hardening, for instance. Although the Company claims that work will be ramping up, Staff is not sure there is enough time left in the year to spend over $35 million on just this one program.

For these reasons, Staff believes that actual spending will likely not match projections in 2018. Staff believes there is simply not enough time left in 2018 to catch up on spending. Staff is assuming that spending will continue at the same pace as occurred from January 2018 – August 2018.

Q. Were there any more disallowances that went into calculating the 2018 distribution capex adjustment?

A. Yes, to the Substation Risk: Drexel project. As shown on page 9 of Exhibit S-10.4, column (b), line 5, actual spending on Drexel substation from January 1, 2018 – August 31, 2018 was $1,512,000. Extrapolating this to 12 months yields $2,268,000, and this amount should be disallowed.

Q. Why?

A. The Company did not include that particular substation in Table 16: Substation Risk Model Results, shown on page 49 of the Direct Testimony of Marco A. Bruzzano. Staff therefore does not know that substation's outage risk score, the outage rate, the stranded load after load transfer, or the stranded load after distributed generation. With this information missing, Staff cannot recommend that capital expenditures for Substation Risk: Drexel be placed into rate base at this time.

Q. Let's turn to those upward adjustments you mentioned earlier. Are all of the upward adjustments in the Emergent Replacements category?

A. Yes.

Q. What prompted Staff to recommend upward adjustments in the Emergent Replacements category?

A. Staff is recommending upward adjustments due to the current year over-spending which occurred in this category from January 1, 2018 to August 31, 2018. A comparison of the YTD Actuals shown on page 6, column (b), lines 3-7 of Exhibit S-10.4 to the 2018 projections shown in Exhibit A-12, Schedule B5.4, page 1, column (c), lines 3-7 shows the Company had, by August 31, already spent more than its 2018 projection in three of the sub-categories that compose Emergent Replacements: Storm, Non-Storm and Substation Reactive. In total, the Company spent $232,043,000 from January 2018 – August 2018 compared to a $202,104,000 projection for calendar year 2018.[15]

Q. Does Staff recommend for the Emergent Replacements category that the Company recover the entire $232,0143,000, which would constitute an upward adjustment of $29,939,000?

A. Yes. As explained by Company witness Bruzzano on page 1 of Staff Exhibit S-10.4: "Emergent Replacement capital is higher than the rate case projection, driven in large part by high storm activity in the first half of the year and by higher volumes of non-storm trouble (including weather driven outages and substation equipment failures)." The Staff accepts this explanation for the over-spending.

[15] Exhibit S-10.4, page 6, column (b), line 7; Exhibit A-12, Schedule B5.4, column (c), line 7.

Q. How much more is the Company likely to spend on the Emergent Replacements category during the remaining four months in 2018?

A. To arrive at a reasonable estimate, Staff utilized a methodology that assumed the accelerated pace of spending would continue for the rest of the year in two of the three Emergent Replacements sub-categories and stop completely in the third. To lower the risk of overestimating, Staff chose the two sub-categories with the lower YTD Actual spending, Non-Storm and Substation Reactive, as the sub-categories to adjust upward. Storm, the sub-category with the highest YTD Actual spending, was determined to be the sub-category where spending stops.

For the Non-Storm sub-category, Staff extrapolated the YTD Actual spending of $99,970,000 to 12 months to arrive at annual spending of $149,955,000. Subtracting the two amounts yields an upward adjustment of $49,985,000. For the Substation Reactive sub-category, Staff extrapolated the YTD actual spending of $30,020,000 to 12 months to arrive at annual spending of $45,030,000. Subtracting the two amounts yields an upward adjustment of $15,010,000. For the Storm sub-category, Staff did not add any additional expenditures. Staff is also not proposing any adjustment to the Emergent Replacement Reduction Based on Strategic Spend sub-category, as zero was recorded for YTD actual for January 1, 2018 – August 31, 2018 in Exhibit S-10.4, page 6, line 6, column (b). Adding the two upward adjustments together yields an upward adjustment to the Emergent Replacements category in the amount of $64,995,000, which is an estimate of how much the Company could spend in the Emergent Replacements category from September 1, 2018 – December 31, 2018.

Q. Should the Company consider the lack of an upward adjustment to the Storm sub-category a constraint on storm restoration capital spending from September 2018 to December 2018?

A. No. The incremental $64,995,000 that Staff is recommending for the Emergent Replacements category could certainly be used for the Storm sub-category during the last four months of 2018. Staff understands that the fast pace of spending in the Non-Storm and Substation Reactive sub-categories may not continue past August 2018, and spending on storm capex likely did not stop on August 31. Some of the additional capex placed into the Non-Storm and Substation Reactive sub-categories could be used for projects and work in the Storm sub-category. Staff is adjusting the Emergent Replacements category upward as a whole, and Staff's methodology should provide the Company enough funding to meet the various demands of the Storm, Non-Storm and Substation Reactive sub-categories.

Q. Is there an alternate method to calculating an upward adjustment to the Emergent Replacements category that supports Staff's adjustment as reasonable?

A. Yes. This alternate method assumes that spending on the Emergent Replacements category (including reductions from Strategic Spend) will return to the Company's projected pace from September – December 2018, so the amount of spending during that time would be $67,368,000.[16] If this amount is added to the

[16] Exhibit A-12, Schedule B5.4, page 1, column (c), line 7. $\frac{\$202,104,000}{3} = \$67,368,000$.

$232,043,000 already spent, the total is $299,411,000, which is within 1% of the Staff's recommended amount of $297,038,000.[17]

Q. Let's put the disallowances and upward adjustments together. Does the sum equal the previously stated amount of -$64,455,000?

A. Yes. When the adjustments are added together, the following is obtained:

Infrastructure Resilience and Hardening =	-$36,728,000
Infrastructure Redesign =	-$66,031,000
Technology and Automation =	-$54,362,000
Substation Risk: Drexel =	-$ 2,268,000
Emergent Replacements Jan – Aug 2018 Overspend =	+$29,939,000
Emergent Replacements Sept – Dec 2018 =	+$64,995,000
Total Adjustment =	**-$64,455,000**

Q. With this $64,455,000 downward adjustment, what does Staff consider a reasonable and prudent amount of total distribution capex for 2018?

A. $745,702,000, which is the Company's projected $810,157,000[18] minus Staff's $64,455,000 disallowance.

Q. What does Staff consider to be reasonable and prudent amounts of capex for the Emergent Replacements, Connections & Other, and Strategic Capital categories for 2018?

A. The two upward adjustments to the Emergent Replacements category changed the Company's projected $202,104,000 to $297,038,000, as stated earlier. Staff considers the latter figure to be reasonable and prudent for 2018. Staff is not proposing to adjust spending in the Connections & Other category, so Staff considers the Company's projection of $201,921,000 to be reasonable and prudent

[17] $232,043,000 + $64,995,000 = $297,038,000.
[18] Exhibit A-12, Schedule B5.4, column (c), line 22.

for 2018. The disallowances to the Strategic Capital category decreased the Company's projection of $406,132,000 to $246,743,000, and Staff considers the latter figure to be reasonable and prudent for 2018.

The four months ending April 30, 2019 and the test year

Q. Why is Staff recommending downward adjustments to the four months ending April 30, 2019 and the test year?

A. Given that spending on the Strategic Capital category is behind in 2018, Staff believes it prudent to assume that spending in this category will continue to fall short of projections in the 16-month period following 2018. However, after reviewing the Company's testimony and five-year distribution plan, Staff also believes the Company will be able to ramp up spending on the Strategic Capital category in 2019, so the shortfall should be much less than what Staff is predicting for 2018.

Staff also thinks it is reasonable to believe that spending on the Emergent Replacements category will be significantly less than what Staff is forecasting for 2018. Spending on the Connections and & Other category will likely be similar to the Company's projections, since 2018 spending is tracking closely with projections.

Q. Based on these general guidelines, did Staff choose an overall distribution capex amount for 2019 and the first four months of 2020?

A. Yes. For 2019, Staff believes the Company will spend $762,331,000, which is equal to Staff's distribution capex projection for 2018 plus Staff's 2019 inflation

rate of 2.23%.[19] Inflating the 2019 amount by Staff's 2020 inflation rate of 2.50% but only including four months of spending provides $260,463,000 for the first four months of 2020. Staff adopts these amounts for total distribution capex for January 1, 2019 – April 30, 2020.

Q. How did Staff calculate the $31,447,000 downward adjustment to the four months ending April 30, 2019?

A. Staff took our $762,331,000 projection number for 2019 distribution capex and divided this number by three to obtain four months of distribution capex for 2019, which equals $254,110,000. Subtracting this amount from the Company's first four months of 2019 projection of $285,557,000[20] yields the $31,447,000 disallowance. This can be seen in Staff Exhibit S-10.0 in column (g), line 22.

Q. How much is Staff projecting for the Emergent Replacements and Connections & Other categories for the four months ending April 30, 2019?

A. To determine amounts for the Emergent Replacements and Connections & Other categories, Staff looked at the Company's projections for these categories for calendar year 2019. Staff decided that capital expenditures for the Emergent Replacements category, based on the historical annual expenditures from 2013 – 2017, were likely to be closer to the Company's projection of $203,800,000 than to Staff's 2018 projection of $297,038,000. Staff finds the Company's 2019 projection of $203,800,000 to be reasonable (although this amount will be modified later).

[19] Staff's inflation rates can be found in the Direct Testimony of Kirk Megginson.
[20] Exhibit A-12, Schedule B5.4, page 1, column (d), line 22.

Staff also decided the Company's 2019 projection for the Connections & Other category, which is $198,521,000, was reasonable based on the fact that 2018 spending is tracking closely with the Company's projections. While spending during the first four months of 2019 was a little more than one third of total 2019 spending for the Connections & Other category, Staff has no reason to find this minor imbalance to be imprudent. Therefore, Staff finds the Company's projection for the first four months of 2019 for the Connections & Other category to be reasonable and prudent.

Q. What was the first step in projecting expenditures for the Strategic Capital category for the first four months of 2019?

A. To determine how much Staff is recommending for the Strategic Capital category, I first took Staff's forecasted distribution capex amount for the first four months of 2019, $254,110,000, and from it subtracted the $67,933,000 for the Emergent Replacements category and the $71,845,000 for the Connections & Other category. This left $114,332,000.

Q. Is Staff recommending any adjustments to the Emergent Replacement Reduction Based on Strategic Spend sub-category?

A. Yes. Since Staff has calculated an amount for the Strategic Capital category that is 78.4% of the Company's projection, Staff conservatively estimates that the emergent replacement reduction will be about 75% of the Company's projection. Therefore, Staff lowered the $2,827,000 reduction to $2,120,000, a decrease of $707,000. This changes Staff's projection for the Emergent Replacement

category to $68,640,000, and Staff considers this amount to be reasonable and prudent.

Q. What effect does this $707,000 change have on the other categories?

A. Since Staff had already adopted total distribution capex amounts, those expenditures must come from another distribution capex category. Staff decided to adjust its calculated Strategic Capital category amount downward by $707,000, which results in a final Staff projection of $113,625,000, or 77.9% of the Company's projection. Staff finds this amount to be reasonable and prudent. Staff chose to adjust the Strategic Capital category downward because expenditures from this category were used to fund work in the Emergent Replacements category in 2018.

Q. Let's turn to the test year. How did Staff calculate the $61,894,000 downward adjustment to the test year?

A. First, Staff calculated how much distribution capex should be authorized for the test year. Since Staff had decided that $762,331,000 was reasonable and prudent for 2019, Staff simply took two thirds of this amount to obtain a reasonable and prudent spending amount for May 1, 2019 – December 31, 2019, which turned out to be $508,221,000. Next, Staff took the $260,463,000 calculated for the first four months of 2020, and then added this number to the May 1, 2019 – December 31, 2019 amount to obtain $768,684,000. Staff then subtracted this number from the Company's projected $830,578,000 to arrive at the test year disallowance of $61,894,000.

Q. How much is Staff projecting for the Emergent Replacements and Connections & Other categories for the test year?

A. Having already determined two thirds of spending in these categories during the test year was reasonable, Staff only had to make sure the full test year amounts were not wildly different from calendar year 2019 projections. As expected, the test year projections were close to calendar year 2019 projections, since the two 12 month periods overlap by nine months. Staff finds the Company's test year projection for the Connections & Other category to be reasonable and prudent. The projection for the Emergent Replacements category was also reasonable (but will be modified shortly).

Q. What was the first step in projecting expenditures for the Strategic Capital category for the test year?

A. Subtracting the Company's $204,580,000 projection for the Emergent Replacements category and its $193,059,000 projection for the Connections & Other category from the Staff's recommended test year distribution capex amount of $768,684,000 leaves $371,045,000 for the Strategic Capital category.

Q. Is Staff recommending any adjustments to the Emergent Replacement Reduction Based on Strategic Spend category?

A. Yes. Since Staff has calculated an amount for the Strategic Capital category that is 85.7% of the Company's projection, Staff conservatively estimates that the emergent replacement reduction will be about 80% of the Company's projection. Therefore, Staff lowered the $9,824,000 reduction to $7,859,000, a decrease of $1,965,000. This changes Staff's projection for the Emergent Replacement

category to $206,545,000, and Staff finds this amount to be reasonable and prudent.

Q. What effect does this $1,965,000 change have on the other categories?

A. Since Staff had already adopted total distribution capex amounts, those expenditures must come from another distribution capex category. Staff decided to adjust its calculated Strategic Capital category amount downward by $1,965,000, which results in a final Staff projection of $369,080,000, or 85.2% of the Company's projection. Staff finds this amount to be reasonable and prudent. Staff chose to adjust the Strategic Capital category downward because expenditures from this category were used to fund work in the Emergent Replacements category in 2018.

Q. Did Staff apply any tests to check if its methodology of projecting Strategic Capital led to reasonable and prudent amounts?

A. Yes, Staff tested its results. For the test, Staff first calculated the Company would be able to spend approximately 61.3% of its 2018 projection. This percentage was calculated by taking the YTD Actual spending for 2018, which equals $166,007,000, and extrapolating it out to twelve months.[21] This gives $249,011,000, which is then divided by the Company's projection for Strategic Capital for 2018, which is $406,132,000. (Staff left in expenditures for Substation Risk: Drexel for this calculation.) This yields the 61.3%.

[21] The $166,007,000 is shown in Exhibit S-10.4, page 6, column (b), line 21.

Next, Staff assumed that spending in Strategic Capital for January 1, 2019 – April 30, 2020 will be greater than 61.3% of the Company's forecast for that time period but not more than 100%. A reasonable "middle ground" amount of spending would be halfway between 61.3% and 100%, or 80.7%. This 80.7% would be the average amount of spending over that time period, and embodies the possibility that spending will still be slower in the Strategic Capital category but also that the Company will be able to ramp up spending in that category. Any projection calculated by Staff should be greater than or equal to 80.7% of the Company's projection to pass the test.

The Company is projecting to spend $578,718,000 from January 1, 2019 – April 30, 2020.[22] Multiplying this amount by 80.7% yields $467,025,000. By contrast, Staff is recommending the Company recover $482,705,000, or 83.4% of the Company's projection, over this same time period.[23] Therefore, Staff's projection for Strategic Capital is reasonable.

A more stringent version of the test uses actual spending during the January 1, 2018 – August 31, 2018 period compared with the Company's projection, which is shown in Exhibit S-10.7. The Company spent $166,007,000 on Strategic Capital during this period but projected $256,054,000.[24] The Company therefore spent 64.8% of its projection, so the "middle ground" in this version would be 82.4%. Since Staff is recommending the Company receive

[22] The addition of $145,779,000, shown on Exhibit A-12, Schedule B5.4, page 1, column (d), line 21, with the $432,939,000, shown on Exhibit A-12, Schedule B5.4, page 1, column (f), line 21.
[23] The addition of Staff's recommended $113,625,000 for the first four months of 2019 with Staff's recommended $369,080,000 for the test year.
[24] The $256,054,000 was calculated by adding up the amounts in line 21, columns (b) – (i) in Exhibit S-10.7.

83.4% of its projection, Staff's methodology passes this more stringent version of the test.

January 1, 2018 – April 30, 2020

Q. If the Commission agrees with your recommended distribution capex amounts, and the Company over-spends, will Staff recommend recovery of the incurred capital expenditures?

A. Yes, as long as the over-spending is explained according to the requirements discussed earlier and the expenditures are found to be reasonable and prudent.

Q. Overall, are Staff's adjustments to January 1, 2018 – April 30, 2020 distribution capex similar to past Commission adjustments?

A. Yes. For distribution plant as a whole, Staff is recommending the Company receive 91.2% of its requested funding during the 16 mos. ending 4/30/2019.[25] For comparison, in the Company's last rate case, the Commission granted the Company 93.9% of its requested funding during the 10 mos. ending 10/31/2017.[26]

For the test year, Staff is recommending the Company receive 92.5% of its requested funding for the test year.[27] For comparison, in Case No. U-18255, the Commission granted the Company 91.5%[28] of its requested funding for the test year.

[25] Add together Staff's $745,702,000 for 2018 and $254,110,000 for the first four months of 2019 to obtain $999,812,000. Divide this number by the Company's projection for 16 mos. ending 4/30/2019, which is $1,095,714,000, to obtain the 91.2%.
[26] Take the $464,498,000 authorized for the 10 months ending 10/31/2017, discussed earlier, and divide it by the Company's projection of $494,802,000, shown in Exhibit S-10.1, page 1, column (c), line 25. This results in 93.9%.
[27] Take Staff's recommended amount of $768,684,000 and divide it by the Company's projection of $830,578,000 to obtain the 92.5%.
[28] Take the $589,554,000 authorized for the test year, discussed earlier, and divide it by the Company's projection of $644,545,000 to obtain the 91.5%.

Reporting Requirements

Q. Is Staff recommending any reporting requirements?

A. Yes. Staff is recommending the following reports or updates be filed by the Company by May 31, 2019, and by March 31 every year thereafter:

1) A timeline that shows when individual circuits or substations will be hardened or converted to 13.2 kV over the next five years and provide an updated report every following year.

2) Disclosure of how much money was spent on hardening, the amount of vegetation funds spent on hardening, the number of miles trimmed for hardening, the names of circuits hardened, how many miles of circuits were hardened, how many miles of arc wire were removed, why more or less arc wire was removed than planned, changes in procedures (if any), changes in plan for the upcoming year, the number of poles replaced, the number of poles retired, the number of cross arms replaced, and how many miles of wire were replaced.

3) A tabulation of how many miles of arc wire were removed under the following programs: 4.8 kV Hardening Program, System Resiliency Program, the 4.8 kV Conversion Program, the Frequent Outage (CEMI) Program, and other planned capital work.

Q. Does Staff have any other recommendations?

A. Yes. Staff recommends the Company maintain a minimum of ten years between the 4.8 kV Hardening Program and any conversion program. Under this proposal, substation areas that are not expected to be converted to 13.2 kV within the following 10 years can be considered for the 4.8 kV Hardening Program, and

substation areas that are scheduled for conversion within 10 years cannot be considered for hardening.

Q. Has the Company already agreed to most of these recommendations?

A. Yes, in the Company's Reply to the MPSC Staff's Response to DTE Electric's Arc Wire Report, filed on August 31, 2018 in Case No. U-18484.[29] Staff is also willing to work collaboratively with DTE Electric to learn where necessary data currently exists in other filings.

Tree Trimming Surge

Q. What is the Company's Tree Trimming Surge proposal?

A. The Company's Tree Trimming Surge is an increase in tree trimming over seven years to achieve a five-year tree trim cycle and eliminate the backlog of miles yet to be trimmed as part of the Enhanced Tree Trimming Program.

Q. When would the Surge occur?

A. From 2019 until the end of 2025.

Q. According to the Company, how much will this program cost?

A. $410 million above normal tree trimming costs over the seven years of the surge program. However, since the Company plans to place the surge expenses into a regulatory asset and amortize the costs over 14 years, the actual cost to ratepayers could be over $600 million due to the return on deferral.[30] If the Company securitizes those costs, the cost to ratepayers could potentially be less, but

[29] Case No, U-18484, DTE Electric's Reply to the MPSC Staff's Response to DTE Electric's Arc Wire Report, pp. 20-22. Accessible at: https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t0000002STcUAAW

[30] Exhibit A-22, Schedule L1, pages 5-6, lines 20 and 21, columns (c) – (m).

ratepayers would still be burdened with paying for the tree trim surge over 14 years instead of funding it as traditional O&M expenses as costs are incurred.

Q. What is the Net Present Value of the Tree Trim Surge as proposed?

A. $46.1 million.

Q. Does Staff support the Company's surge proposal?

A. Staff supports some aspects of the Surge but not others. Staff supports the goal of achieving a five-year tree trimming cycle for distribution circuits, and Staff also supports the Company's current three-year cycle for sub-transmission circuits. Staff also agrees that there is a backlog of overgrown vegetation that must be addressed for the Company to achieve a five-year cycle, and that removing this backlog will require additional funding over a period of time.

However, Staff believes that amortizing the costs is not in the best financial interest of ratepayers. Placing the Surge costs into a regulatory asset and amortizing them will burden future ratepayers with costs that are more appropriately O&M expense that should be paid as the costs are incurred.

Q. What is the Net Present Value of the Tree Trim Surge without regulatory asset treatment?

A. $55.4 million, which can be derived by clearing the contents of "Credit to Regulatory Asset" in the modeling spreadsheet.[31] Therefore, in the long run, ratepayers would be better off paying the higher O&M costs every year rather than deferring them.

Q. Are there other reasons to oppose the Surge as proposed?

[31] This line item is shown in Exhibit A-22, Schedule L1 on page 1, line 6.

A. Yes. Amortizing the costs of the Surge over 14 years means that ratepayers will be paying for a year of Surge-related tree trimming for 14 years thereafter. In fact, a circuit trimmed as part of the Surge may be trimmed two more times with the new five-year cycle and customers on that circuit will still not have paid off the Surge-related trimming of the circuit. In this manner, tree trimming would be treated similar to a capital expenditure when traditionally tree trimming is an O&M expense.

Q. What is Staff's proposal?

A. First, Staff recommends the Commission not approve the regulatory asset for the Tree Trim Surge, which means disallowing the $7,053,000 revenue requirement associated with the Surge.[32] At the same time, the Commission should increase Tree Trim Expense during the test year from $95,092,000 to $108,099,000. This should provide the Company with a good start on transitioning to a five-year cycle but also keep the revenue increase affordable.

Second, for years following the test year, the Company could request increases in spending on tree trimming until the backlog is eliminated and the five-year cycle is achieved, then drop the O&M amount to its forecasted amount in Exhibit A-22, Schedule L1. This would allow tree trim O&M expense embedded in rates to increase gradually and make the Surge more affordable in the short term. Staff Exhibit S-10.5 shows how Staff's proposed approach to Tree Trim O&M with a Surge might work.

Q. Please describe Exhibit S-10.5.

[32] Shown on Exhibit A-22, Schedule L2, line 12 and Exhibit A-11, Schedule A1, line 9.

A. Exhibit S-10.5 shows Staff's Surge Proposal. Column (a) shows the time period that rates would be in effect, assuming a new order is issued by the Commission every 16 months. Column (b) shows the authorized annual tree trim expense, and these amounts were chosen by Staff to create a gradual ramping up of Tree Trim Expense. Column (c) is non-surge tree trim expense, and this was taken from Exhibit A-22, Schedule L1, page 1, line 7, "Total Tree Trimming Program Cost". In deciding which Total Tree Trimming Program Cost to use, I chose the annual amount of the year that was overlapped by a majority of the future hypothetical test year. (For example, for a projected test year beginning May 2023, I chose the 2023 expense of $106,000,000 - shown on Exhibit A-22, Schedule L1, page 1, column (g), line 7 - since the test year of May 2023 – April 2024 would cover more of calendar year 2023 than 2024.[33] As another example, for a projected test year beginning September 2024, I chose the 2025 expense of $112,500,000 - shown on Exhibit A-22, Schedule L1, page 1, column (i), line 7 - since the test year of September 2024 – August 2025 would cover more of calendar year 2025 than 2024.) Column (d) of Staff Exhibit S-10.5 is the annual surge expense, which is the difference between the authorized annual tree trim expense in column (b) and the non-surge tree trim expense in column (c). Columns (e) and (f) convert the annual tree trim expenses and annual surge expenses to the actual revenue amounts that will be recovered over the 16-month time periods. This was accomplished by dividing each expense by 12 months and then multiplying the

[33] Here I am assuming that new rates will go into effect at around the start of the test year, as is the case in the instant proceeding.

quotient by 16 months. The total actual Surge revenue is provided at the bottom of column (f), and the $410 million matches the Company's estimate of the Surge cost. This shows that Staff's proposal could provide the Company with the revenue the Surge requires.

Q. Do you have any other comments regarding Staff's proposal?

A. Yes. The proposed O&M expenses should be justified and shown to be reasonable and prudent in any rate cases that are filed in the 2019 – late 2020s time period. As part of this justification, the Company's should show that the most recent, Commission-approved tree trim O&M amount is providing benefits to both customers and the Company. Progress toward shortening the trim cycle and improving reliability should be documented and provided in each rate case.

Staff's example in Exhibit S-10.5 should not be taken as pre-approval of future tree trim O&M amounts. Staff anticipates that the Company's proposed expenses will be different from Staff's, as the Company will be able to incorporate workforce constraints, field conditions, and other pertinent factors into its forecasts.

Q. Earlier you stated the Commission should increase Tree Trim Expense during the test year from $95,092,000 to $108,099,000. How did you calculate the $13,007,000 increase?

A. Using a discovery response from the Company that shows actual spending on tree trimming in prior years (see Staff Exhibit S-10.6), I calculated the percentage increase in spending since 2015. From 2015 to 2016, spending increased by 14.7%, and from 2016 to 2017, spending increased by 13.6%. The average

annual increase was therefore 14.15%. I doubled this amount and then applied it to actual spending in 2017, which was $84,255,000. This yields $108,099,000, which is what Staff is recommending the Company recover for Tree Trim Expense in the test year.

Other 2018 - 2020 projected O&M expenses - distribution

Q. Staff is recommending an upward adjustment to tree-trimming expenses. Is Staff recommending any other adjustments to 2019 and 2020 projected distribution O&M expenses?

A. No.

Q. Does this conclude your direct testimony?

A. Yes.

S T A T E O F 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 authority to increase its rates, amend	**)**	**Case No. U-20162**
its rate schedules and rules governing the	**)**	
distribution and supply of electric energy, and	**)**	
for miscellaneous accounting authority.	**)**	
	)	

EXHIBITS OF

NICHOLAS M. EVANS

MICHIGAN PUBLIC SERVICE COMMISSION

November 7, 2018

Michigan Public Service Commission
DTE Electric Company
U-20162 Distribution Capex w/ Staff Adjustments ($000)

Case: U-20162
Witness: N. M. Evans
Exhibit: S-10.0
Date: 11/7/18

Line No.	(a) Description	(b) Capital Expenditures Historical 12 mos. ended 12/31/2017	(c) Staff Adjustments	(d) Projected Bridge Period 12 mos. ending 12/31/2018	(e) Staff Adjustments	(f) 4 mos. ending 4/30/2019	(g) Staff Adjustments	(h) Projected Test Year 12 mos. ending 4/30/2020	(i) Staff Adjustments
2	**Emergent Replacements**								
3	Storm	122,588		90,580	0	31,069	0	94,139	0
4	Non - Storm	126,187		87,437	49,985	29,991	0	90,872	0
5	Substation Reactive	35,495		28,282	15,010	9,701	0	29,393	0
6	Emergent Replacement Reduction Based on Strategic Spend	-		(4,195)	0	(2,827)	707	(9,824)	1,965
	January 2018 - August 2018 Overspend				29,939		0		0
7	Subtotal Emergent Replacements	284,270		202,104	94,934	67,933	707	204,580	1,965
8	**Customer Connections, Relocations & Other**								
9	Connections and New Load	132,483		133,282	0	45,766	0	138,468	0
10	Relocations	16,375		30,864	0	13,122	0	15,331	0
11	Electric System Equipment	45,230		46,587	0	15,979	0	48,417	0
12	NRUC and Improvement Blankets	15,778		16,252	0	5,574	0	16,890	0
13	General Plant, Tools & Equipment and Miscellaneous	4,020		4,141	0	1,420	0	4,303	0
14	Subtotal Customer Connections, Relocations & Other	213,886		231,125	0	81,862	0	223,410	0
15	Customer Advances for Construction	(28,472)		(29,204)	0	(10,017)	0	(30,351)	0
	Total Customer Connections & Other	185,414		201,921	0	71,845	0	193,059	0
17	**Strategic Capital Programs**								
18	Infrastructure Resilience and Hardening	119,448		199,054	(38,996) 1/	67,000	0	201,078	0
19	Infrastructure Redesign	42,844		121,905	(66,031)	39,344	0	127,040	0
20	Technology and Automation	19,397		85,174	(54,362)	39,435	0	104,820	0
21	Subtotal Strategic Capital Programs	181,689		406,132	(159,389)	145,779	(32,154)	432,939	(63,859)
22	Total Capital	651,372	**(88,615)**	810,157	**(64,455)**	285,557	**(31,447)**	830,578	**(61,894)**

Notes:
1/ Includes -$36,728,000 underspending adjustment and -$2,268,000 for Substation Risk: Drexel.

Michigan Public Service Commission
DTE Electric Company
Projected Capital Expenditures
Distribution Plant
($000)

Case No.: U-18255
Exhibit: A-9
Schedule: B6.4
Witness: P. D. Whitman
Page: 1 of 6

Line No.	(a) Description		(b) Historical 12 mos. ended 12/31/2016	(c) Projected 10 mos. ending 10/31/2017	(d) Projected 12 mos. ending 10/31/2018	(e) Capital Expenditures 22 mos. ending 10/31/2018 col. (c)+(d)
	Capital Expenditures					
1	New Business:					
2	Customer Connections		69,069	59,227	72,790	132,017
3	Meters		6,220	5,334	6,555	11,889
4	Transformers		29,608	25,389	31,203	56,591
5	Customer Advances for Construction		(10,057)	(8,624)	(10,599)	(19,223)
6	Total New Business		94,840	81,325	99,949	181,274
7	System Strengthening and Reliability:					
8	Reliability	1/	94,699	143,896	252,384	396,280
9	General Load Growth	2/	9,535	16,362	10,903	27,265
10	New Business Specific Projects	3/	21,708	29,318	9,630	38,948
11	Major Equipment		23,575	11,787	13,484	25,271
12	Substation/Station Improvement	4/	72,051	65,750	78,315	144,065
13	Customer Advances for Construction		(3,562)	(3,055)	(3,754)	(6,809)
14	Subtotal System Strengthening and Reliability		218,006	264,059	360,961	625,020
15	System Strengthening Blankets:					
16	Increased Loads		13,185	11,306	13,895	25,201
17	System Improvements		1,628	1,396	1,716	3,112
18	Relocations		7,744	6,641	8,162	14,802
19	Normal Retirement Unit Changeouts		2,089	1,791	2,202	3,993
20	Emergency Retirement Unit Changeouts and Storm		144,751	124,124	152,549	276,673
21	Subtotal System Strengthening Blankets		169,398	145,259	178,523	323,781
22	Total System Strengthening, Reliability and Blankets		387,404	409,317	539,484	948,801
23	Miscellaneous					
24	Other Miscellaneous		11,189	4,160	5,113	9,272
25	**Total Capital**		493,433	494,802	644,545	1,139,348
26	**Regulatory Asset**					
27	Advanced Distribution Management System (ADMS)	1/, 5/	-	1,753	7,291	9,044

1/ Exh A-9, Sch B6.4 - pg 2
2/ Exh A-9, Sch B6.4 - pg 3
3/ Exh A-9, Sch B6.4 - pg 4
4/ Exh A-9, Sch B6.4 - pg 5

5/ Regulatory Asset treatment for Advanced Distribution Management System (ADMS) is sponsored by Witness Uzenski

Michigan Public Service Commission — Case No.: U-18255
DTE Electric Company — Exhibit: A-9
Projected Capital Expenditures — Schedule: B6.4
Distribution Plant - System Strengthening and Reliability — Witness: P. D. Whitman
($000) — Page: 2 of 6

Line No.	(a) Description		(b) Historical 12 mos. ended 12/31/2016	(c) Projected 10 mos. ending 10/31/2017	(d) Projected 12 mos. ending 10/31/2018	(e) Projected 22 mos. ending 10/31/2018 col. (c)+(d)
			Capital Expenditures			
1	**Reliability:**					
2	4.8 kV Relay Improvement	1/	1,904	13,955	17,177	31,132
3	Advanced Distribution Management System (ADMS)	1/	-	6,243	33,058	39,301
4	AMI mesh network	1/	-	2,335	12,210	14,546
5	Analog Lines Elimination		3,954	-	-	-
6	Breaker Replacement Program	1/	7,439	10,823	9,703	20,526
7	Brest Substation		1,613	85	17	103
8	Cable Replacement Program	1/	1,263	5,696	11,415	17,111
9	Calla Substation		357	628	786	1,414
10	City of Detroit Infrastructure		66	1,880	2,578	4,457
11	Conduit Replacement I-696/Dequindre Overpass		2	258	52	310
12	4.8 kV Cortland Consolidation	1/	2,853	4,101	8,013	12,114
13	Essex 24kV H-Breaker Decom & Bus Consolidation		249	870	174	1,044
14	Extend CATLI DC 9128		4,809	-	-	-
15	IT Applications		1,373	1,922	2,366	4,289
16	Maxwell Transformer #2		2,081	3,538	708	4,245
17	MCGRW1321_TRSD15736		687	-	-	-
18	Misc. Reliability Projects/Programs		237	-	-	-
19	Nunneley Switchgear Replacement		48	285	57	342
20	OUTDR DC 1299 - Primary Main to URD Conv		(39)	157	31	188
21	Pontiac Downtown UG Vault System		110	433	87	519
22	Pole Top Maintenance	1/	17,977	23,596	32,609	56,205
23	PR Recloser Replacement		524	586	117	703
24	Reconductor		-	-	3,875	3,875
25	Repetitive Outage Pocket Program	1/	7,245	9,614	11,843	21,456
26	SCADA monitoring	1/	9,970	4,535	9,348	13,883
27	Trk 2250 & Trk 2218 Relocation		7	142	28	171
28	Construct Lark Substation to Relieve Spruce		5	2,256	1,552	3,808
29	RELI0109 Tie 2648 Reconductor		1,036	1,635	327	1,962
30	System Resiliency	1/	25,062	25,035	34,149	59,185
31	Tiffany Switchgear Replacement		1,193	71	14	85
32	UNLAK1692 Reliability		533	-	-	-
33	URD Replacement Program	1/	1,073	8,551	11,727	20,279
34	Ann Arbor Systems Improvement	1/	1,068	14,665	48,363	63,027
35	Total Reliability Projects and Programs		94,699	143,896	252,384	396,280
36	**Regulatory Asset**					
37	Advanced Distribution Management System (ADMS)	2/	-	1,753	7,291	9,044

Source:
1/ Exhibit A-22, Schedule N1
2/ Regulatory Asset treatment for Advanced Distribution Management System (ADMS) is sponsored by Witness Uzenski

Michigan Public Service Commission — Case No.: U-18255
DTE Electric Company — Exhibit: A-9
Test Period Capital Project Details — Schedule: B6.4
Distribution Plant - System Strengthening and Reliability — Witness: P. D. Whitman
($000) — Page: 3 of 6

Line No.	(a) Description		(b) Historical 12 mos. ended 12/31/2016	(c) Projected 10 mos. ending 10/31/2017	(d) Projected 12 mos. ending 10/31/2018	(e) Projected 22 mos. ending 10/31/2018
			Capital Expenditures			
1	**General Load Growth:**					
2	Argo Overloads		553	942	188	1,130
3	Baldwin Rd. Relocation, Orion		19	1,987	894	2,881
4	Big Beaver Rd Conduit/Cable Relocation		1,033	-	-	-
5	Gordie Howe International Bridge	1/	3,320	12,365	8,874	21,238
6	Buckler Substation & Phoenix Station		213	-	-	-
7	Charles Ln Relocation		462	-	-	-
8	Dequindre Rd Relocation		445	-	-	-
9	Detroit Event Center Relocation/Removal		434	-	-	-
10	Extend CATLI9136 in Pontiac		736	-	-	-
11	John R, Troy Relocation		71	-	-	-
12	Misc. General Load Growth Projects		18	-	-	-
13	Opal Substation		374	-	-	-
14	Relocations		-	1,068	948	2,016
15	Rushton Rd Relocation		139	-	-	-
16	South Street Development in Ann Arbor		51	-	-	-
17	TRK8407 Relocation		1,245	-	-	-
18	M1 Rail		421	-	-	-
19	Total General Load Growth and Relocations		9,535	16,362	10,903	27,265

Source:
1/ Exh A-22, Sch N2

Michigan Public Service Commission — Case No.: U-18255
DTE Electric Company — Exhibit: A-9
Test Period Capital Project Details — Schedule: B6.4
Distribution Plant - System Strengthening and Reliability — Witness: P. D. Whitman
($000) — Page: 4 of 6

Line No.	(a) Description		(b) Historical 12 mos. ended 12/31/2016	(c) Projected 10 mos. ending 10/31/2017	(d) Projected 12 mos. ending 10/31/2018	(e) Capital Expenditures 22 mos. ending 10/31/2018 col. (c)+(d)
1	**New Business Specific Projects:**					
2	120kV Adams-Bunce Creek Tap		104	-	-	-
3	40kV Tap on Tie 9205		19	-	-	-
4	41.57 kV Tap on Tie 2025 for New Business		75	214	43	256
5	Add PL 9178 Giddings for New Business		186	304	61	364
6	New STDF for Hospital Expansion		265	623	125	748
7	New Business fed from Neast Substation		29	-	-	-
8	New Business fed from CATO Substation		1,260	626	125	751
9	New Business fed from Navar Substation		60	-	-	-
10	New Business for Headquarters in Dearborn		14	2,282	470	2,752
11	Hospital Transformer #4		1,181	-	-	-
12	New Business for Headquarters in Detroit		30	287	57	344
13	M1 Rail		1,856	674	135	809
14	New STDF for Hospital Expansion in Pt. Huron		320	2,390	478	2,868
15	Misc. New Business Specific Projects		15	-	-	-
16	New 120kV Class I Dusk		211	71	14	85
17	New Business fed from SW Industrial Substation	1/	4,223	4,185	837	5,022
18	New Business fed from Ruby Substation		2,474	-	-	-
19	New Business fed from Virgo Substation		1,859	1,666	2,195	3,861
20	New Business for Dairy Farm		522	-	-	-
21	New Class I in Howell		1,512	-	-	-
22	New Class I on Trunk 8215		934	-	-	-
23	New STDF Trunk		819	1,362	272	1,634
24	Duvall DC9644 & DC9460T		249	433	87	520
25	New Business for Development in River Town		1,112	-	-	-
26	New Class I on Trunk 3650		-	890	178	1,068
27	Expand Explorer Substation for New Business		-	1,992	704	2,695
28	New Class I in Detroit fed from 120kV Tap		-	1,201	304	1,504
29	New Class I on Trunk 2032		-	2,568	2,037	4,605
30	New Class I on the Bismarch-Lenox 120 kV line		-	991	198	1,189
31	New Class I on Trunk 2907		-	1,698	340	2,037
32	New Business fed from JSLYN 9182		-	1,028	206	1,233
33	Rebuild FAWN 8799 for New Business		-	1,692	338	2,030
34	New Business for Development in Detroit Park		845	-	-	-
35	Add 3rd TRF at Skylark Substation for New Business		1,112	1,699	340	2,039
36	New Business fed from Navar TRK346		373	-	-	-
37	New Business for School in Detroit		46	444	89	533
38	Total New Business Projects		21,708	29,318	9,630	38,948

Source:
1/ Exh A-22, Sch N3

Michigan Public Service Commission
DTE Electric Company
Test Period Capital Project Details
Distribution Plant - System Strengthening and Reliability
($000)

Case No.: U-18255
Exhibit: A-9
Schedule: B6.4
Witness: P. D. Whitman
Page: 5 of 6

Line No.	(a) Description		(b) Historical 12 mos. ended 12/31/2016	(c) Projected 10 mos. ending 10/31/2017	(d) Projected 12 mos. ending 10/31/2018	(e) Capital Expenditures 22 mos. ending 10/31/2018 col. (c)+(d)
1	**Substation/Station Improvement:**					
2	Major Equipment	1/	13,887	7,817	9,381	17,197
3	Minor Equipment	1/	10,067	5,219	6,263	11,482
4	Transformers/Regulators	1/	7,334	4,068	4,882	8,950
5	Batteries and Chargers		1,607	911	1,093	2,004
6	Non-Electrical (Environmental)		1,961	1,875	2,266	4,141
7	Brooklyn Substation (CODI)	1/	-	1,253	4,654	5,907
8	Install-40 KV Equip Reloc to Adams Stat		70	540	108	648
9	Install-40KV-3 Phase-Gang Op Disc-Repl		1,041	-	-	-
10	Pontiac Substation & Decommission BARTL	1/	-	877	10,451	11,328
11	Stone Pool Exit Conduit (CODI)		-	2,256	451	2,707
12	Tie 4512 / 120-40 kV station in Lima Twp.		4,248	39	8	47
13	Trk 1518 Cable Replacement (YPSIL)		796	-	-	-
14	Villa Breaker Replacement		234	-	-	-
15	Misc. Substation/Station Improvement Projects		73	-	-	-
16	Substation/Station Improvement	1/	25,998	32,571	29,596	62,167
17	DG Distributed Generators		4,469	3,487	697	4,184
18	MALTA Substation Switchgear	1/	265	3,236	8,144	11,380
19	MALTA Substation Project Stranded Load		-	746	149	895
20	SAVGE-Stranded Load Mitigation		-	856	171	1,028
21	Total Substation/Station Improvement Projects		72,051	65,750	78,315	144,065

Source:
1/ Exh A-22, Sch N4

Michigan Public Service Commission Case No.: U-18255
DTE Electric Company Exhibit: A-9
Projected Capital Expenditures Schedule: B6.4
Allowance for Funds Used During Construction (AFUDC) Witness: P. D. Whitman
Distribution Operations Page: 6 of 6
($000)

Line No.	(a) Description	(b) Adjusted Historical 12 mos. ended 12/31/2016	(c) Projected 12 mos. ending 10/31/2018
1	**Distribution Operations - Routine Expenditures 1/**	**617**	**719**
2	**Distribution Operations - Project Specific:**		
3	Advanced Distribution Management System (ADMS)	-	1,265
4	Ann Arbor Systems Improvement	35	2,446
5	Gordie Howe International Bridge (GHIB) Relocations	300	2,002
6	Temple Substation	195	-
7	Ariel Substation	409	123
8	Zenon Substation	861	155
9	Hilton Substation	209	529
10	Belle Isle State Park Substation	-	400
11	Duval Substation	-	176
12	Scio Substation	-	245
13	M-1 Rail Relocation	52	-
14	**Subtotal Project Specific**	**2,061**	**7,341**
15	**Total AFUDC - Distribution Operations**	**2,677**	**8,060**

1/ AFUDC estimates for routine projects are developed at a high level based on historical trend
2/ the AFUDC amounts are based on the authorized U-18014 rate of 5.55%

Line No.	(a) Description		(b) Projected 10 mos. ending 10/31/2017	(c) Authorized Amount	(d) 12 mos. ending 10/31/2018	(e) Authorized Amount
	Capital Expenditures					
1	New Business:					
2	Customer Connections		59,227		72,790	
3	Meters		5,334		6,555	
4	Transformers		25,389		31,203	
5	Customer Advances for Construction		(8,624)		(10,599)	
6	Total New Business	1/	81,325	**80,930**	99,949	**99,068**
7	System Strengthening and Reliability:					
8	Reliability	3/	143,896	**114,693**	252,384	**199,846**
9	General Load Growth		16,362	16,362	10,903	10,903
10	New Business Specific Projects		29,318	29,318	9,630	9,630
11	Major Equipment		11,787	11,787	13,484	13,484
12	Substation/Station Improvement		65,750	65,750	78,315	78,315
13	Customer Advances for Construction		(3,055)	(3,055)	(3,754)	(3,754)
14	Subtotal System Strengthening and Reliability		264,059	**234,856**	360,961	**308,423**
15	System Strengthening Blankets:					
16	Increased Loads		11,306		13,895	
17	System Improvements		1,396		1,716	
18	Relocations		6,641		8,162	
19	Normal Retirement Unit Changeouts		1,791		2,202	
20	Emergency Retirement Unit Changeouts and Storm		124,124		152,549	
21	Subtotal System Strengthening Blankets	2/	145,259	**144,553**	178,523	**176,950**
22	Total System Strengthening, Reliability and Blankets		409,317	379,409	539,484	485,373
23	Miscellaneous					
24	Other Miscellaneous		4,160	4,160	5,113	5,113
25	Total Capital		494,802	**464,498**	644,545	**589,554**

Source:
1/ Case No. U-18255, Direct Testimony of Donald J. Mazuchowski, page 9, lines 7-14; Case No. U-18255, Staff Exhibit S-10.0, page 1, line 3; Case No. U-18255, April 18, 2018 Order, pages 37-38.
2/ Case No. U-18255, Direct Testimony of Donald J. Mazuchowski, page 9, lines 7-14; Case No. U-18255, Staff Exhibit S-10.0, page 1, line 11; Case No. U-18255, April 18, 2018 Order, pages 37-38.
3/ Page 2, line 35.

Line No.	(a) Description		(b) Projected 10 mos. ending 10/31/2017	(c) Authorized Amount	(d) 12 mos. ending 10/31/2018	(e) Authorized Amount
1	Reliability:					
2	4.8 kV Relay Improvement	3/	13,955	**1,587**	17,177	**6,904**
3	Advanced Distribution Management System (ADMS)	4/	6,243	**0**	33,058	**6,243**
4	AMI mesh network	5/	2,335	**0**	12,210	**2,335**
5	Analog Lines Elimination		0	0	0	0
6	Breaker Replacement Program		10,823	10,823	9,703	9,703
7	Brest Substation		85	85	17	17
8	Cable Replacement Program		5,696	5,696	11,415	11,415
9	Calla Substation		628	628	786	786
10	City of Detroit Infrastructure		1,880	1,880	2,578	2,578
11	Conduit Replacement I-696/Dequindre Overpass		258	258	52	52
12	4.8 kV Cortland Consolidation		4,101	4,101	8,013	8,013
13	Essex 24kV H-Breaker Decom & Bus Consolidation		870	870	174	174
14	Extend CATLI DC 9128		0	0	0	0
15	IT Applications		1,922	1,922	2,366	2,366
16	Maxwell Transformer #2		3,538	3,538	708	708
17	MCGRW1321_TRSD15736		0	0	0	0
18	Misc. Reliability Projects/Programs		0	0	0	0
19	Nunneley Switchgear Replacement		285	285	57	57
20	OUTDR DC 1299 - Primary Main to URD Conv		157	157	31	31
21	Pontiac Downtown UG Vault System		433	433	87	87
22	Pole Top Maintenance	6/	23,596	**15,340**	32,609	**27,034**
23	PR Recloser Replacement		586	586	117	117
24	Reconductor		0	0	3,875	3,875
25	Repetitive Outage Pocket Program		9,614	9,614	11,843	11,843
26	SCADA monitoring		4,535	4,535	9,348	9,348
27	Trk 2250 & Trk 2218 Relocation		142	142	28	28
28	Construct Lark Substation to Relieve Spruce		2,256	2,256	1,552	1,552
29	RELI0109 Tie 2648 Reconductor		1,635	1,635	327	327
30	System Resiliency		25,035	25,035	34,149	34,149
31	Tiffany Switchgear Replacement		71	71	14	14
32	UNLAK1692 Reliability		0	0	0	0
33	URD Replacement Program		8,551	8,551	11,727	11,727
34	Ann Arbor Systems Improvement		14,665	14,665	48,363	48,363
35	Total Reliability Projects and Programs		143,896	**114,694**	252,384	**199,845**

Source:
3/ Case No. U-18255, April 18, 2018 Order, pp. 9-11.
4/ Case No. U-18255, April 18, 2018 Order, pp. 11-12.
5/ Case No. U-18255, April 18, 2018 Order, pp. 12-13.
6/ Case No. U-18255, April 18, 2018 Order, pp. 13-15.

Michigan Public Service Commission
DTE Electric Company
Crosswalk between distribution capex exhibits

Case: U-20162
Witness: N. M. Evans
Exhibit: S-10.3
Date: 11/7/18

Line No.	(a) U-18255 Category or Project	(b) Location in Exhibit A-9, Schedule B6.4	(c) Amount Authorized*	(d) U-20162 Equivalent Category or Project (Staff's Best Guess)	€ Location in Exhibit A-12, Schedule B5.4	(f) Amount Spent	(g) Overspend/(Underspend)	(h) Comments
1	Customer Connections	page 1, line 2	$60,968	Customer Connections (Net of CIAC)	page 4, line 6	$54,516	($6,452)	Customer Advances for Construction taken out.
2	Meters	page 1, line 3	$6,427	Meters	page 5, line 79	$7,980	$1,554	
3	Transformers	page 1, line 4	$30,590	(Unknown)	N/A		($30,590)	
4	Reliability	page 1, line 8	$148,001	(See comment)	N/A			Already accounted for- see lines 14 - 51
5	General Load Growth	page 1, line 9	$18,179	(See comment)	N/A			Already accounted for -see lines 52 - 68.
6	New Business Specific Projects	page 1, line 10	$30,923	(See comment)	N/A			Already accounted for -see line 69 below.
7	Major Equipment	page 1, line 11	$14,034	(Not found)	N/A		($14,034)	
8	Substation/Station Improvement	page 1, line 12	$78,803	(See comment)	N/A			Already accounted for- see lines 70-88.
9	Increased Loads	page 1, line 16	$13,622	(Not found)	N/A		($13,622)	
10	System Improvements	page 1, line 17	$1,682	System Improvements	page 5, line 83	$6,327	**$4,645**	
11	Relocations	page 1, line 18	$8,001	Subtotal Relocation Projects (Net of CIAC)?	page 5, line 70	$1,339	($6,662)	
12	Normal Retirement Unit Changeouts	page 1, line 19	$2,158	NRUC and Improvement Blankets	page 1, line 12	$15,778	**$13,620**	
13	Emergency Retirement Unit Changeouts and Storm	page 1, line 20	$149,549	Storm and Non-Storm	page 1, lines 3-4	$248,775	**$99,226**	
14	4.8 kV Relay Improvement	page 2, line 2	$2,738	4.8 kV Relay Improvements	page 7, line 25	$1,753	($985)	Authorized amounts taken from Exhibit S-10.2, line 2
15				ADMS: EMS/GMS	page 9, line 3	$1,031		
16				ADMS: DMS/OMS	page 9, line 4	$1,438		
17				ADMS: Network Management System	page 9, line 5	$0		
18	ADMS	page 2, line 3	$1,041	Total ADMS		$2,469	$1,429	Authorized amounts taken from Exhibit S-10.2, line 3
19	AMI Mesh Network	page 2, line 4	$389	AMI: 3G to 4G Communications Upgrades	page 9, lines 6 and 7	$39	($350)	Authorized amounts taken from Exhibit S-10.2, line 4
20	Analog Lines Elimination	page 2, line 5	$0	Analog Lines Elimination	page 9, line 12	$1,150	$1,150	
21	Breaker Replacement Program	page 2, line 6	$12,440	Breaker Replacement Program	page 7, line 18	$13,233	$793	
22	Brest Substation	page 2, line 7	$1,627	(Not found)	N/A		($1,627)	
23				Cable Replacement Program	page 7, line 15	$9,545		
24				Cable Replacement Harsen's Island	page 7, line 16	$31		
25	Cable Replacement Program	page 2, line 8	$7,599	Cable Replacement Total		$9,576	$1,978	
26	Calla Substation	page 2, line 9	$759	4.8 kV CC: Calla Circuit Conversion	page 8, line 26	$0		Not actually $0, already included in line 29.
27	City of Detroit Infrastructure	page 2, line 10	$2,310	CODI	page 8, lines 9-17	$8,582	**$6,272**	
28	Conduit Replacement I-696/Dequindre Overpass	page 2, line 11	$267	(Not found)	N/A		($267)	
29	4.8 kV Cortland Consolidation	page 2, line 12	$5,437	4.8 kV CC	page 8, lines 18-32	$22,188	**$16,752**	
30	Essex 24 kV H-Breaker Decom & Bus Consolidation	page 2, line 13	$899	(Not found)	N/A		($899)	
31	Extend CATLI DC 9128	page 2, line 14	$0	(Not found)	N/A		$0	
32	IT Applications	page 2, line 15	$2,316	(Not found)	N/A		($2,316)	
33	Maxwell Transformer #2	page 2, line 16	$3,656	(Not found)	N/A		($3,656)	
34	MCGRW1321_TRSD15736	page 2, line 17	$0	(Not found)	N/A		$0	
35	Misc. Reliabilty Projects/Programs	page 2, line 18	$0	(Not found)	N/A		$0	
36	Nunneley Switchgear Replacement	page 2, line 19	$295	Substation Risk: Nunneley?	page 7, line 7	$0		Not actually $0, already included in line 84.
37	OUTDR DC 1299 - Primary Main to URD Conv	page 2, line 20	$162	(Not found)	N/A		($162)	
38	Pontiac Downtown UG Vault System	page 2, line 21	$448	Pontiac Vaults	page 7, line 19	$6,571	**$6,124**	
39	Pole Top Maintenance	page 2, line 22	$19,846	Pole and Pole Top Hardware?	page 7, lines 13-14	$19,595	($251)	Authorized amounts taken from Exhibit S-10.2, line 22.
40	PR Recloser Replacement	page 2, line 23	$606	(Not found)	N/A		($606)	
41	Reconductor	page 2, line 24	$646	(Not found)	N/A		($646)	
42	Repetitive Outage Pocket Program	page 2, line 25	$11,588	Frequent Outage Program (CEMI) including Circuit Renewal?	page 7, line 17	$20,671	**$9,083**	
43	SCADA Monitoring	page 2, line 26	$6,093	(Not found)	N/A		($6,093)	
44	Trk 2250 & Trk 2218 Relocation	page 2, line 27	$147	(Not found)	N/A		($147)	
45	Construct Lark Substation to Relieve Spruce	page 2, line 28	$2,515	Substation Risk: Spruce?	page 7, line 10	$0		Already included in line 84.
46	REL10109 Tie 2648 Reconductor	page 2, line 29	$1,690	(Not found)	N/A		($1,690)	
47	System Resiliency	page 2, line 30	$30,727	System Resilency - Efficient Frontier	page 7, line 21	$20,851	($9,876)	

48	Tiffany Switchgear Replacement	page 2, line 31	$73	Substation Risk: Tiffany	page 7, line 11	$0		Not actually $0, already included in line 84.
49	UNLAK 1692 Reliability	page 2, line 32	$0	(Not found)	N/A		$0	
50	URD Replacement Program	page 2, line 33	$10,506	URD Replacement Program	page 7, line 20	$7,776	($2,730)	
51	Ann Arbor Systems Improvements	page 2, line 34	$22,726	Ann Arbor System Improvement	page 8, lines 2-4	$3,026	($19,700)	
52	Argo Overloads	page 3, line 2	$973	4.8 kV CC: Argo/Buckler Load Transfer?	page 8, line 24	$0		Not actually $0, already included in line 29.
53	Baldwin Rd. Relocation, Orion	page 3, line 3	$2,136	Baldwin Rd. Relocation, Orion	page 5, line 64	$0		Not actually $0, already included in line 11.
54	Big Beaver Rd. Conduit/Cable Relocation	page 3, line 4	$0	Small Relocation Projects (Blanket)? See line 64.	N/A			
55	Gordie Howe International Bridge	page 3, line 5	$13,844	Gordie Howe International Bridge	page 5, line 55	$6,673	($7,171)	
56	Buckler Substation & Phoenix Station	page 3, line 6	$0	(Not found)	N/A			
57	Charles Ln Relocation	page 3, line 7	$0	Small Relocation Projects (Blanket)? See line 64.	N/A			
58	Dequindre Rd Relocation	page 3, line 8	$0	Small Relocation Projects (Blanket)? See line 64.	N/A			
59	Detroit Event Center Relocation/ Removal	page 3, line 9	$0	Small Relocation Projects (Blanket)? See line 64.	N/A			
60	Extend CATLI9136 in Pontiac	page 3, line 10	$0	(Not found)	N/A			
61	John R, Troy Relocation	page 3, line 11	$0	Small Relocation Projects (Blanket)? See line 64.	N/A			
62	Misc. General load Growth Projects	page 3, line 12	$0	(Not found)	N/A			
63	Opal Substation	page 3, line 13	$0	(Not found)	N/A			
64	Relocations	page 3, line 14	$1,226	Small Relocation Projects (Blanket)?	page 5, line 52	$7,004	$5,778	
65	Rushton Rd Relocation	page 3, line 15	$0	Small Relocation Projects (Blanket)? See line 64.	N/A			
66	South Street Development in Ann Arbor	page 3, line 16	$0	(Not found)	N/A			
67	TRK8407 Relocation	page 3, line 17	$0	Small Relocation Projects (Blanket)? See line 64.	N/A			
68	M1 Rail	page 3, line 18	$0	New Business for M1 Rail	page 4, line 32	$0	$0	Not actually $0, already included in line 69.
69	New Business Specific Projects	page 4, line 38	$30,923	Subtotal New Business Projects (Net of CIAC)	page 4, line 46	$41,877	**$10,954**	
70	Major Equipment	page 5, line 2	$9,381	Major Equipment	page 5, line 78	$14,531	**$5,151**	
71	Minor Equpment	page 5, line 3	$6,335	(Not found)	N/A		($6,335)	
72	Transformers/Regulators	page 5, line 4	$4,882	Distribution Transformers and Regulators	page 5, line 77	$22,719	**$17,837**	
73	Batteries and Chargers	page 5, line 5	$1,093	Batteries and Chargers	page 5, line 86	$1,654	$561	
74	Non-Electrical (Environmental)	page 5, line 6	$2,253	(Not found)	N/A		($2,253)	
75	Brooklyn Substation (CODI)	page 5, line 7	$2,029	(Not found)	N/A			
76	Install - 40 kV Equipment Roloc to Adams Stat	page 5, line 8	$558	(Not found)	N/A		($558)	
77	Install - 40 KV -3 Phase-Gang Op Disc Repl	page 5, line 9	$0	(Not found)	N/A		$0	
78	Pontiac Substation & Decommission BARTL	page 5, line 10	$2,619	8.3 kV CC: Pontiac Overhead Conversion?	page 8, line 33	$168	($2,451)	
79	Stone Pool Exit Conduit (CODI)	page 5, line 11	$2,331	CODI: Stone Pool Exit Conduit	page 8, lines 16	$0		Not actually $0, already included in line 27.
80	Tie 4512 / 120-40 kV station in Lima Twp.	page 5, line 12	$40	(Not found)	N/A		($40)	
81	Trk 1518 Cable Replacement (YPSIL)	page 5, line 13	$0	(Not found)	N/A		$0	
82	Villa Breaker Replacement	page 5, line 14	$0	(Not found)	N/A		$0	
83	Misc Substation / Station Improvement Projects	page 5, line 15	$0	(Not found)	N/A		$0	
84	Substation/Station Improvement	page 5, line 16	$37,504	Substation Risk?	page 7, lines 3-11	$6,589	($30,915)	
85	DG Distributed Generators	page 5, line 17	$3,603	(Not found)	N/A		($3,603)	
86	MALTA Substation Switchgear	page 5, line 18	$4,593	Substation Risk: Malta?	page 7, line 4	$0		Not actually $0, already included in line 84.
87	MALTA Substation Project Stranded Load	page 5, line 19	$771	Substation Risk: Malta?	page 7, line 4	$0		Not actually $0, already included in line 84.
88	SAVGE-Stranded Load Mitigation	page 5, line 20	$885	(Not found)	N/A		($885)	

* Amount Authorized = (10 mos. ending 10/31/2017) + ((12 mos. ending 10/31/2018)/12) x 2

MPSC Case No.: U-20162
Requestor: Staff
Question No.: STDE-7.8a 2nd Supplemental
Respondent: M. A. Bruzzano
Page: 1 of 1

Question: Refer to Exhibit A-12, Schedule B5.4. Please provide actual spending for January 1, 2018 – July 31, 2018 for the following:

a. Page 4, lines 1-50;

Answer: Attachment "U-20162 STDE-7.8a 2nd Supplemental Actual Spending" compares actual to forecasted spending for January 1, 2018 through August 31, 2018, which is the latest period available at the time of this response. Overall distribution capital spending is 8% higher than the rate case year-to-date projection through August 31, 2018, as shown on page 1, line 23 of the attachment.

While in aggregate capital expenditures are in line with the rate case forecast, there are variations in specific categories. Emergent Replacement capital is higher than the rate case projection, driven in large part by high storm activity in the first half of the year and by higher volumes of non-storm trouble (including weather driven outages and substation equipment failures). Customer Connections, Relocations & Other net of CIAC is very close to the forecasted amount, as shown on U-20162 STDE-7.8a Supplemental, page 3 of 6, line 94. Strategic Capital Programs are below forecast, driven by a variety of factors, including delays in permitting, use of resources to address the impact of higher than normal storm volumes and adverse weather events in Michigan, some support of hurricane relief efforts in other states, changes to system loading conditions, and challenges in acquiring land for new substations.

While there have been delays in some of the Strategic Capital Programs, the Company fully intends and has plans to complete the projects identified in the Five-Year Plan and in this rate case.

Attachment U-20162 STDE-7.8a 2nd Supplemental provides a summary breakdown of the expenditures by category on page 1. Details of actual spend against forecast, along with an explanation of what has driven delays and rescheduling of projects for areas with the largest variances or for which expenditures have not yet occurred, are provided on attachment U-20162 STDE-7.8a 2nd Supplemental, pages 2-6, which correspond to pages 4, 5, 7, 8 and 9 of Exhibit A-12, Schedule B5.4.

Attachment: U-20162 STDE-7.8a 2nd Supplemental Actual Spending

MPSC Case No.: U-20162
Requestor: Staff
Question No.: STDE-7.8b 2nd Supplemental
Respondent: M. A. Bruzzano
Page: 1 of 1

Question: Refer to Exhibit A-12, Schedule B5.4. Please provide actual spending for January 1, 2018 – July 31, 2018 for the following:

b. Page 5, lines 51-94;

Answer: Please refer to the response to Question No. STDE-7.8a and see attachment "U-20162 STDE-7.8a 2nd Supplemental - Actual Spending".

Attachments: U-20162 STDE-7.8a 2nd Supplemental - Actual Spending

MPSC Case No.: U-20162
Requestor: Staff
Question No.: STDE-7.8c 2nd Supplemental
Respondent: M. A. Bruzzano
Page: 1 of 1

Question: Refer to Exhibit A-12, Schedule B5.4. Please provide actual spending for January 1, 2018 – July 31, 2018 for the following:

c. Page 7, lines 1-27;

Answer: Please refer to the response to Question No. STDE-7.8a and see attachment "U-20162 STDE-7.8a 2nd Supplemental - Actual Spending".

Attachments: U-20162 STDE-7.8a 2nd Supplemental - Actual Spending

MPSC Case No.: U-20162
Requestor: Staff
Question No.: STDE-7.8d 2nd Supplemental
Respondent: M. A. Bruzzano
Page: 1 of 1

Question: Refer to Exhibit A-12, Schedule B5.4. Please provide actual spending for January 1, 2018 – July 31, 2018 for the following:

d. Page 8, lines 1-42;

Answer: Please refer to the response to Question No. STDE-7.8a and see attachment "U-20162 STDE-7.8a 2nd Supplemental - Actual Spending".

Attachments: U-20162 STDE-7.8a 2nd Supplemental - Actual Spending

MPSC Case No.: U-20162
Requestor: Staff
Question No.: STDE-7.8e 2nd Supplemental
Respondent: M. A. Bruzzano
Page: 1 of 1

Question: Refer to Exhibit A-12, Schedule B5.4. Please provide actual spending for January 1, 2018 – July 31, 2018 for the following:

e. Page 9, lines 1-15.

Answer: Please refer to the response to Question No. STDE-7.8a and see attachment "U-20162 STDE-7.8a 2nd Supplemental - Actual Spending".

Attachments: U-20162 STDE-7.8a 2nd Supplemental - Actual Spending

Distribution Operations - Rate Case View
August 2018 Capital Expenditures
($000)

Case No.: U-20162
Exhibit: A-12
Schedule: B5.4
Witness: M.A. Bruzzano
Page: 1 of 10 **

Line No.	(a) Description	(b) YTD Actuals	(c) YTD Forecast*	(d) H/(L)	(e) Commentary
1	**Base Capital Programs**				
2	Emergent Replacements				
3	Storm	102,052	60,387	41,665	
4	Non - Storm	99,970	58,291	41,679	
5	Substation Reactive	30,020	18,855	11,166	
6	Emergent Replacement Reduction Based on Strategic Spend	-	(2,797)	2,797	
7	Subtotal Emergent Replacements	232,043	134,736	97,307	
8	Customer Connections, Relocations & Other				
9	Connections and New Load	91,922	88,855	3,067	Page 2 of 6, line 48
10	Relocations	20,251	20,398	(147)	Page 3 of 6, line 72
11	Electric System Equipment	31,867	31,058	809	Page 3 of 6, line 80
12	NRUC and Improvement Blankets	11,335	10,834	501	Page 3 of 6, line 88
13	General Plant, Tools & Equipment and Miscellaneous	4,891	2,760	2,130	Page 3 of 6, line 90
14	Subtotal Customer Connections, Relocations & Other	160,266	153,906	6,360	
15	Customer Advances for Construction	(24,423)	(19,469)	(4,953)	Page 3 of 6, line 93
16	**Total Base Capital Programs**	**367,886**	**269,172**	**98,714**	
17	**Strategic Capital Programs**				
18	Infrastructure Resilience and Hardening	108,217	116,930	(8,713)	Page 4 of 6, line 27
19	Infrastructure Redesign	37,249	79,730	(42,481)	Page 5 of 6, line 44
20	Technology and Automation	20,541	25,035	(4,494)	Page 6 of 6, line 15
21	**Subtotal Strategic Capital Programs**	**166,007**	**221,695**	**(55,688)**	
22	Miscellaneous (Settlement to AUC, Pole Haul, etc.)	(3,037)	-	(3,037)	
23	**Total Capital**	**530,857**	**490,868**	**39,989**	

* Year to Date Forecast is equal to 2018 Rate Case Forecast divided by 12 and multiplied by 8 unless otherwise noted

**Page number is consistent with Exhibit A-12, Schedule B5.4

Michigan Public Service Commission
DTE Electric Company
August 2018 Capital Expenditures
Distribution Plant - Connections, Relocations and Other
($000)

Case No.: U-20162
Exhibit: A-12
Schedule: B5.4
Witness: M.A. Bruzzano
Page: 4 of 10 **

Line No.	Description	YTD Actuals	YTD Forecast*	H/(L)	Commentary
	(a)	(b)	(c)	(d)	(e)
1	**Connections and New Load**				
2	Small Load Growth Projects (Blanket)	8,298	6,164	2,134	
3					
4	Customer Connections	57,739	48,852	8,887	
5	Customer Connections CIAC	(11,612)	(11,418)	(194)	
6	Customer Connections (Net of CIAC)	46,127	37,434	8,693	
7					
8	New Business Projects:				
9	New Business fed from Boyne Substation	296	5,491	(5,195)	Construction is awaiting final customer approval.
10	New Business Auto Data Center	3,454	2,734	719	
11	New Class I for Research Facility	3,127	2,663	465	
12	Quaker Transformer Upgrade	1,773	2,177	(403)	
13	New Business Compressor Station	1,112	1,894	(782)	
14	New Business Health Co Campus	47	1,586	(1,539)	On hold until customer completes equipment layout.
15	New Business for generation facility	2,182	1,534	648	
16	New Business Data Center	484	1,517	(1,033)	Delay caused by local permitting issues. The first feed has been installed, and the permit for the second feed is expected by end of September.
17	New Class I from Warren Evergreen	1,272	1,422	(151)	
18	New Class I on Trunk 2032	435	1,364	(929)	
19	New Business fed from Hood Substation	857	1,246	(389)	
20	New Substation (Nitro) to support new load	470	1,065	(594)	
21	New Class I Farmington Hills	95	938	(844)	
22	New Business fed from Alamo Substation	85	930	(845)	
23	New Business fed from Fleming Substation	2,136	705	1,432	
24	Duvall DC9644 & DC9460T	805	603	202	
25	Expand Explorer Substation for New Business	1,269	598	670	
26	New Business for Apartments	146	585	(439)	
27	New Business Willis & Woodward	149	573	(424)	
28	New Business Henry St	32	570	(538)	
29	New Business fed from Willow Run Substation	21	567	(546)	
30	New Business fed from Cato, St Antoine	447	541	(94)	
31	New Class I on the Bismarck-Lenox 120 kV line	1,339	462	877	
32	New Business for M1 Rail	659	396	263	
33	New STDF for Hospital Expansion in Pt. Huron	781	393	388	
34	New Business for Development in Detroit Park	-	316	(316)	
35	New Business fed from JSLYN 9182	170	260	(90)	
36	New Business fed from SE Industrial Substation	96	183	(87)	
37	New Class I on Trunk 3650	-	147	(147)	
38	Mercury-MOS GLBRT8095	148	145	3	
39	New Class I in Detroit fed from 120kV Tap	145	121	23	
40	New Business for Headquarters in Dearborn	596	92	503	
41	New Business for Headquarters in Detroit	139	21	118	
42	Prior Year's New Business Projects 3/	725	-	725	
43	Expected New Business Projects	394	-	394	
44	Subtotal New Business Projects	25,884	33,839	(7,955)	
45	New Business Projects CIAC	(8,404)	(6,567)	(1,838)	
46	Subtotal New Business Projects (net of CIAC)	17,480	27,272	(9,792)	
47					
48	**Total Connections and New Load**	**91,922**	**88,855**	**3,067**	
49	**Total Connections and New Load CIAC**	(20,016)	(17,984)	(2,032)	
50	**Total Connections and New Load (Net of CIAC)**	**71,905**	**70,870**	**1,035**	

(continued on next page)

* Year to Date Forecast is equal to 2018 Rate Case Forecast divided by 12 and multiplied by 8 unless otherwise noted
**Page number is consistent with Exhibit A-12, Schedule B5.4

Michigan Public Service Commission
DTE Electric Company
August 2018 Capital Expenditures
Distribution Plant - Connections, Relocations and Other
($000)

Case No.: U-20162
Exhibit: A-12
Schedule: B5.4
Witness: M.A. Bruzzano
Page: 5 of 10 **

Line No.	(a) Description	(b) YTD Actuals	(c) YTD Forecast*	(d) H/(L)	(e) Commentary
51	**Relocations**				
52	Small Relocation Projects (Blanket)	6,839	4,809	2,030	
53					
54	Major Infrastructure Relocation Project				
55	**Gordie Howe International Bridge**	**7,193**	**9,169**	**(1,976)**	**YTD Forecast is latest forecast at time of filing.**
56					
57	Relocation Projects (excl.Major Infrastructure Projects):				
58	Dearborn Relocation	2,127	1,939	189	
59	Relocate for rail right of way	88	1,381	(1,293)	Awaiting permits from rail companies.
60	Temple West block Relocation	565	790	(225)	
61	Mt. Elliot I-94 Bridge Relocation	84	738	(654)	
62	23 Mile Rd Relocation	1,169	659	509	
63	Vining Rd Relocation	1,032	396	636	
64	Baldwin Rd. Relocation, Orion	94	332	(238)	
65	Armstrong Rd. relocation	336	185	152	
66	Prior Year's Relocation Projects	662	-	662	
67	Expected Relocation Projects	62	-	62	
68	Subtotal Relocation Projects	6,219	6,420	(201)	
69	Relocation Projects CIAC	(4,406)	(1,485)	(2,921)	
70	Subtotal Relocation Projects (Net of CIAC)	1,812	4,935	(3,122)	
71					
72	**Total Relocations**	**20,251**	**20,398**	**(147)**	
73	**Total Relocations CIAC**	(4,406)	(1,485)	(2,921)	
74	**Total Relocations (Net of CIAC)**	15,845	18,913	(3,068)	
75					
76	**Electric System Equipment**				
77	Distribution Transformers & Regulators	17,928	15,601	2,327	
78	Major Equipment	8,063	9,978	(1,915)	Timing of large transformer purchases.
79	Meters	5,876	5,479	397	
80	**Total Electric System Equipment**	**31,867**	**31,058**	**809**	
81					
82	**NRUC and Improvement Blankets**				
83	System Improvements	6,042	4,345	1,698	
84	Normal Retirement Unit Changeouts (NRUC)	1,967	3,495	(1,529)	
85	Operational Technologies	1,859	1,840	19	
86	Batteries and Chargers	1,435	1,136	299	
87	Animal Mitigation	31	18	13	
88	**Total NRUC and Improvement Blankets**	**11,335**	**10,834**	**501**	
89				-	
90	**General Plant, Tools & Equipment and Miscellaneous**	**4,891**	**2,760**	**2,130**	
91					
92	**Total Customer Connections, Relocations & Other**	**160,266**	**153,906**	**6,360**	
93	**Total Cust Connections, Relocations & Other CIAC**	(24,423)	(19,469)	(4,953)	
94	**Total Cust Connections, Relocations & Other Net of CIAC**	**135,843**	**134,436**	**1,407**	

* Year to Date Forecast is equal to 2018 Rate Case Forecast divided by 12 and multiplied by 8 unless otherwise noted

**Page number is consistent with Exhibit A-12, Schedule B5.4

Michigan Public Service Commission
DTE Electric Company
August 2018 Capital Expenditures
Distribution Plant - Infrastructure Resilience and Hardening
($000)

Case No.: U-20162
Exhibit: A-12
Schedule: B5.4
Witness: M.A. Bruzzano
Page: 7 of 10 **

Line No.	Description	YTD Actuals	YTD Forecast*	H/(L)	Commentary
	(a)	(b)	(c)	(d)	(e)
1	**Infrastructure Resilience and Hardening**				
2	Mobile Fleet Program	2,842	3,427	(585)	
3	Substation Risk: Chestnut	309	2,944	(2,635)	Project deferred due to changes in system loading conditions.
4	Substation Risk: Malta	3,394	2,451	943	
5	Substation Risk: Drexel	1,512	2,044	(532)	
6	Substation Risk: Apache	-	439	(439)	This project is part of a portfolio of substation work that has been bundled in an RFP to ensure cost-effective and timely execution. Bids have been received and are being evaluated.
7	Substation Risk: Nunneley	0.5	352	(351)	Final circuit cutovers are being scheduled for Q4 2018.
8	Substation Risk: Bloomfield	-	-	-	
9	Substation Risk: Savage	143	-	143	This project is part of a portfolio of substation work that has been bundled in an RFP to ensure cost-effective and timely execution. Bids have been received and are being evaluated.
10	Substation Risk: Spruce	-	-	-	
11	Substation Risk: Tiffany	5	-	5	
12	**4.8 kV Hardening**	**17,537**	**23,027**	**(5,490)**	**YTD forecast based on latest forecast at time of filing. Ramping up work in Q4 2018.**
13	Pole and Pole Top Hardware	22,966	21,091	1,875	
14	Pole and Pole Top Hardware: Stockbridge Substation	1,286	990	296	
15	**Cable Replacement Program**	**4,523**	**5,141**	**(618)**	**YTD forecast based on 2017 spending profile which incorporates summer shutdown restrictions.**
16	Cable Replacement: Harsen's Island	168	1,272	(1,104)	Awaiting Army Corps of Engineers approval.
17	Frequent Outage Program (CEMI) including Circuit Renewal	16,693	17,777	(1,084)	
18	Breaker Replacement Program	7,193	9,314	(2,121)	
19	Pontiac Vaults	1,806	6,152	(4,345)	Equipment has been installed for testing at the first location. Vault replacement is being scheduled in the fourth quarter 2018/early 2019.
20	URD Replacement Program	8,579	6,086	2,493	
21	System Resiliency - Efficient Frontier	9,182	4,598	4,584	
22	Porcelain Cutout Replacement Program	4,098	3,515	583	
23	Relay Replacement: Warren	4,346	2,003	2,343	To better leverage shutdowns and resources, additional equipment was replaced for this project that would have been replaced as part of the Breaker Replacement Program.
24	Relay Replacement: Northeast	-	1,230	(1,230)	This project was postponed to leverage lessons learned from Warren Relay Replacement. Conceptual and detailed design are expected to be completed in 2018.
25	4.8 kV Relay Improvements (Delta Ground Detection Program)	762	1,758	(995)	Design is complete and construction is being scheduled.
26	Disconnect and Switcher Replacement	872	1,318	(446)	
27	**Total Infrastructure Resilience and Hardening Projects and Programs**	**108,217**	**116,930**	**(8,713)**	

* Year to Date Forecast is equal to 2018 Rate Case Forecast divided by 12 and multiplied by 8 unless otherwise noted
**Page number is consistent with Exhibit A-12, Schedule B5.4

Michigan Public Service Commission
DTE Electric Company
August 2018 Capital Expenditures
Distribution Plant - Infrastructure Redesign
($000)

Case No.: U-20162
Exhibit: A-12
Schedule: B5.4
Witness: M.A. Bruzzano
Page: 8 of 10 **

Line No.	(a) Description	(b) YTD Actuals	(c) YTD Forecast*	(d) H/(L)	(e) Commentary
1	**Infrastructure Redesign**				
2	**Ann Arbor System Improvements: State Substation**	**10,454**	**14,832**	**(4,377)**	**YTD Forecast is latest forecast at time of filing. Delays caused by local permitting issues.**
3	**Ann Arbor System Improvements: Apex (Blue) Substation**	**5,721**	**11,865**	**(6,144)**	**YTD Forecast is latest forecast at time of filing. Delays caused by local permitting issues.**
4	Ann Arbor System Improvements: Argo 40kV Reconfiguration	122	-	122	
5	Subtransmission Hardening: Tie 4104	314	3,307	(2,993)	Project was delayed in response to high storm activity in the first half of the year. Current plan is to complete the scheduled portion of the 2018 scope this year; materials are due to be delivered on October 15.
6	Subtransmission Hardening: Tie 3416	964	2,077	(1,113)	
7	Subtransmission Hardening: Tie 810	139	879	(740)	This project is part of a portfolio of substation work that has been bundled in an RFP to ensure cost-effective and timely execution. Bids have been received and are being evaluated.
8	Subtransmission Hardening: Prior Year's	37	-	37	
9	CODI: Charlotte Network Conversion	3,281	12,374	(9,093)	Project delays due to local permitting issues. Assigned additional crews to meet project schedule.
10	CODI: Garfield Network Conversion	-	3,955	(3,955)	This project will follow the Charlotte project which as been delayed due to local permitting issues.
11	CODI: Midtown Substation Expansion	-	2,197	(2,197)	This project is part of a portfolio of substation work that has been bundled in an RFP to ensure cost-effective and timely execution. Bids have been received and are being evaluated.
12	CODI: Corktown Substation	1,539	1,318	220	
13	CODI: Targeted Network Secondary Cable Replacement	1,826	1,160	666	
14	CODI: Alfred Substation Expansion	-	-	-	
15	CODI: Kent/Gibson Conversion	-	-	-	
16	CODI: Stone Pool Exit Conduit	22	-	22	
17	CODI: Temple Cascades	488	-	488	
18	4.8 kV CC: Hilton Substation and Circuit Conversion	5,144	7,505	(2,361)	Project has been rescheduled due to resource allocation to support hurricane restoration efforts (Puerto Rico and Florida) and to address emergent work associated with storms in MIchigan and aging infrastructure.
19	4.8 kV CC: Cortland / Oakman / Linwood Consolidation	664	3,816	(3,152)	Project has been rescheduled due to resource allocation to support hurricane restoration efforts (Puerto Rico and Florida) and to address emergent work associated with storms in MIchigan and aging infrastructure.
20	4.8 kV CC: Ariel Subtation and Circuit Conversion	933	3,180	(2,247)	Project has been rescheduled due to resource allocation to support hurricane restoration efforts (Puerto Rico and Florida) and to address emergent work associated with storms in MIchigan and aging infrastructure.
21	4.8 kV CC: Zenon Substation and Circuit Conversion	2,405	2,162	243	
22	4.8 kV CC: Belle Isle Substation and Circuit Conversion	-	1,526	(1,526)	Project delayed due to land availability.
23	4.8 kV CC: Almont Relief and Circuit Conversion	246	1,318	(1,072)	Project has been rescheduled due to resource allocation to support hurricane restoration efforts (Puerto Rico and Florida) and to address emergent work associated with storms in MIchigan and aging infrastructure.
24	4.8 kV CC: Argo / Buckler Load Transfer	138	923	(785)	
25	4.8 kV CC: I-94 Substation and Circuit Conversion	493	879	(386)	
26	4.8 kV CC: Calla Circuit Conversion	9	659	(651)	Overhead design not approved by Townshp. Underground redesign required to complete.
27	4.8 kV CC: Lapeer - Elba Expansion and Circuit Conversion	1	439	(439)	Project delayed due to land availability.
28	4.8 kV CC: HK Substation and Circuit Conversion	-	-	-	
29	4.8 kV CC: White Lake Decommissiong and Circuit Conversion	-	-	-	
30	4.8 kV CC: Birmingham Decommissioning and Circuit Conversion	-	-	-	
31	4.8 kV CC: Reno Decommissioning and Circuit Conversion	-	-	-	
32	4.8 kV CC: Northville Decommisioning and Circuit Conversion	48	-	48	
33	8.3 kV CC: Pontiac Overhead Conversion	-	439	(439)	This project is part of a portfolio of substation work that has been bundled in an RFP to ensure cost-effective and timely execution. Bids have been received and are being evaluated.
34	System Loading: Carleton	0.2	659	(659)	Project delayed to allow focus on Quaker in Q4 2018.
35	System Loading: Quaker/Hancock	-	-	-	
36	System Loading: Grayling	-	-	-	
37	System Loading: Wixom	-	-	-	
38	System Loading: Sheldon/Gilbert/Zachary	-	-	-	
39	System Loading: Prior Year's	-	-	-	
40	Pilot: Non-Wire Alternatives	-	2,197	(2,197)	RFP and engineering study to be completed in 2018. Trailer-mounted battery benchmarking is being completed to develop criteria for an RFP. Design and construction to follow for mobile unit.
41	Filmore Substation Access	-	63	(63)	
42	**Sub-total Infrastructure Redesign Projects and Programs**	**34,988**	**79,730**	**(44,742)**	
43	Other Infrastructure Redesign Projects	2,261	-	2,261	
44	**Total Infrastructure Redesign Projects and Programs**	**37,249**	**79,730**	**(42,481)**	

* Year to Date Forecast is equal to 2018 Rate Case Forecast divided by 12 and multiplied by 8 unless otherwise noted
**Page number is consistent with Exhibit A-12, Schedule B5.4

Michigan Public Service Commission
DTE Electric Company
August 2018 Capital Expenditures
Distribution Plant - Technology and Automation
($000)

Case No.: U-20162
Exhibit: A-12
Schedule: B5.4
Witness: M.A. Bruzzano
Page: 9 of 10 **

	(a)	(b)	(c)	(d)	(e)
Line No.	**Description**	**YTD Actuals**	**YTD Forecast***	**H/(L)**	**Commentary**
1	**Technology and Automation**				
2	**SOC Modernization**	**3,543**	**4,907**	**(1,365)**	**YTD Forecast is latest forecast at time of filing.**
3	**ADMS: EMS/GMS**	**8,782**	**8,910**	**(128)**	**YTD Forecast is latest forecast at time of filing.**
4	**ADMS: DMS/OMS**	**280**	**470**	**(190)**	**YTD Forecast is latest forecast at time of filing.**
5	**ADMS: Network Management System**	**180**	**180**	**0**	**YTD Forecast is latest forecast at time of filing.**
6	**AMI: 3G to 4G Communication Upgrade**	**718**	**514**	**203**	**YTD Forecast is based on Witness Moccia's testimony.**
7	**AMI: 3G to 4G Industrial Communication Upgrade**	**-**	**295**	**(295)**	**YTD Forecast is based on Witness Moccia's testimony. Project spending is expected to ramp up in the fourth quarter of 2018.**
8	AMI: Installations	2,202	2,333	(131)	
9	AMI Leverage (PI, Analytics)	43	-	43	
10	Line Sensors	2,539	4,394	(1,855)	Purchase Order issued for approximately $1.6M in September.
11	13.2 kV Telecommunications	-	879	(879)	Purchase Order issued for approximately $628K in September. Additional purchase orders to be issued this year for additional locations.
12	Analog Lines Elimination	523	395	127	
13	40 kV: Automatic Pole Top Switch	669	879	(210)	
14	Pilot: Technology Programs	1,064	879	185	
15	**Total Technology and Automation Projects and Programs**	**20,541**	**25,035**	**(4,494)**	

* Year to Date Forecast is equal to 2018 Rate Case Forecast divided by 12 and multiplied by 8 unless otherwise noted

**Page number is consistent with Exhibit A-12, Schedule B5.4

Michigan Public Service Commission
DTE Electric Company
Staff Surge Proposal ($000)

Case: U-20162
Witness: N. M. Evans
Exhibit: S-10.5
Date: 11/7/18

Line No.	(a) Time Period Rates in Effect*	(b) Authorized Annual Tree Trim Expense	(c) Non-Surge Tree Trim Expense		(d) Annual Surge Expense (b) - (c)	(e) Actual Tree Trim Revenue	(f) Actual Surge Revenue
1	May 2019 - Sept 2020	108,099	95,092	1/	13,007	144,132	17,343
2	Sept 2020 - Jan 2022	130,000	100,000	2/	30,000	173,333	40,000
3	Jan 2022 - May 2023	154,000	103,000	3/	51,000	205,333	68,000
4	May 2023 - Sept 2024	175,000	106,000	4/	69,000	233,333	92,000
5	Sept 2024 - Jan 2026	182,000	112,500	5/	69,500	242,667	92,667
6	Jan 2026 - May 2027	190,000	115,000	6/	75,000	253,333	100,000
7	May 2027 - Sept 2028	118,000	118,000	7/	0	157,333	0
8	**Total**						**410,009**

*Assumes a new rate order every 16 months.
1/ Exhibit A-13, Schedule C5.6, page 3, column (h), line 5.
2/ Exhibit A-22, Schedule L1, page 1, column (e), line 7.
3/ Exhibit A-22, Schedule L1, page 1, column (f), line 7.
4/ Exhibit A-22, Schedule L1, page 1, column (g), line 7.
5/ Exhibit A-22, Schedule L1, page 1, column (i), line 7.
6/ Exhibit A-22, Schedule L1, page 1, column (j), line 7.
7/ Exhibit A-22, Schedule L1, page 1, column (k), line 7.

MPSC Case No.: U-20162
Requestor: Staff
Question No.: STDE-3.24d
Respondent: H. D. Rivard
Page: 1 of 1

Question: Refer to Exhibit A-13, Schedule C5.6, page 3:

d. provide the actual total tree trim expense for all years from 2012 through 2016.

Answer: The actual spend on Maintenance and Staff for 2012 – 2016 was as follows:

Year	$ Millions
2012	53.1
2013	56.9
2014	42.3
2015	64.7
2016	74.2

Michigan Public Service Commission
DTE Electric Company
Projected Capital Expenditures
Distribution Plant
($000)

Monthly Support Schedule

Case No.: U-20162
Exhibit & Sch. Supported: A-12 B5.4 p.1
Witness: M. A. Bruzzano

Line No.	Description		Projection Method	(b) Bridge Jan-18	(c) Bridge Feb-18	(d) Bridge Mar-18	(e) Bridge Apr-18	(f) Bridge May-18	(g) Bridge Jun-18	(h) Bridge Jul-18	(i) Bridge Aug-18	(j) Bridge Sep-18	(k) Bridge Oct-18	(l) Bridge Nov-18	(m) Bridge Dec-18
1	**Base Capital Programs**														
2	Emergent Replacements														
3	Storm	1/	*IS Model*	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548
4	Non - Storm	1/	*IS Model*	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286
5	Substation Reactive	1/		2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357
6	Emergent Replacement Reduction Based on Strategic Spend		*IS Model*	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)
7	Subtotal Emergent Replacements		*(Includes Trouble Environmental)*	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842
8	Customer Connections, Relocations & Other														
9	Connections and New Load	2/	*(Most recent full year actuals +/- Major Projects, One-Time Events) X inflation*	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107
10	Relocations	3/	*(Most recent full year actuals +/- Major Projects, One-Time Events) X inflation*	1,191	2,667	2,051	3,005	2,061	1,682	5,382	2,359	3,358	2,064	2,394	2,648
11	Electric System Equipment	3/	*(Most recent full year actuals +/- Major Projects, One-Time Events) X inflation*	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882
12	NRUC and Improvement Blankets	3/	*(Most recent full year actuals +/- Major Projects, One-Time Events) X inflation*	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354
13	General Plant, Tools & Equipment and Miscellaneous	3/	*(Most recent full year actuals +/- Major Projects, One-Time Events) X inflation*	345	345	345	345	345	345	345	345	345	345	345	345
14	Subtotal Customer Connections, Relocations & Other			17,880	19,356	18,739	19,694	18,749	18,370	22,071	19,047	20,047	18,753	19,083	19,337
15	Customer Advances for Construction	3/	*(Most recent full year actuals +/- Major Projects, One-Time Events) X inflation*	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)
16	**Total Base Capital Programs**			**32,288**	**33,764**	**33,148**	**34,102**	**33,158**	**32,778**	**36,479**	**33,455**	**34,455**	**33,161**	**33,491**	**33,745**
17	**Strategic Capital Programs**														
18	Infrastructure Resilience and Hardening	4/	*Reliability Plan*	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588
19	Infrastructure Redesign	5/	*Reliability Plan*	6,959	7,772	8,325	8,044	8,655	13,997	12,695	13,284	10,475	11,338	9,351	11,010
20	Technology and Automation	6/ 7/	*Reliability Plan*	3,383	4,218	5,605	5,628	6,066	6,130	6,182	6,409	9,411	10,958	10,688	10,495
21	**Subtotal Strategic Capital Programs**			**26,929**	**28,577**	**30,518**	**30,260**	**31,309**	**36,715**	**35,465**	**36,281**	**36,474**	**38,884**	**36,627**	**38,093**
22	**Total Capital**		*DO Capital Budget*	**59,217**	**62,341**	**63,665**	**64,362**	**64,467**	**69,494**	**71,944**	**69,737**	**70,929**	**72,045**	**70,118**	**71,838**
23	**Regulatory Asset**														
24	Advanced Distribution Management System (ADMS)	8/													

1/ Exhibit A-12, Schedule B5.4 - page 3
2/ Exhibit A-12, Schedule B5.4 - page 4, line 48
3/ Exhibit A-12, Schedule B5.4 - page 5, lines 72, 80, 88, 90 & 93
4/ Exhibit A-12, Schedule B5.4 - page 7, line 27
5/ Exhibit A-12, Schedule B5.4 - page 8, line 42
6/ Exhibit A-12, Schedule B5.4 - page 9, line 15

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 the authority to increase its rates, amend its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.	**)**	**Case No. U-20162**

QUALIFICATIONS AND DIRECT TESTIMONY OF

RYAN LARUWE

MICHIGAN PUBLIC SERVICE COMMISSION

November 7, 2018

QUALIFICATIONS OF RYAN LARUWE
CASE NUMBER U-20162
PART I

Q. Please state your full name and business address for the record.

A. My name is Ryan Laruwe, and my business address is the Michigan Public Service Commission's (Commission) at 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 as a Public Utilities Engineering Specialist in the Energy Operations Division.

Q. Would you please outline your educational background?

A. I graduated from Michigan State University with a Bachelor of Science in Civil Engineering. I also have formal utility regulation training from the National Association of Regulatory Utility Commissioners (NARUC) Annual Regulatory Studies Program (August 2011, 2012), the Advanced Regulatory Studies Program (October 2011, 2012), and Introduction to Public Utility Regulation and Ratemaking (May 2012).

Q. Would you please outline your professional experience?

In May 2008, I began working at the Michigan Department of Transportation (MDOT) as an Engineering Intern in the Bridge Operations Division. As an intern, I performed many job functions including pavement analysis, structural analysis, traffic safety, construction oversight, and project management. After graduating from Michigan State University, I was hired as a Public Utilities Engineer in the Smart Grid Section at Michigan Public Service Commission, where I oversaw the deployment of Advanced Metering Infrastructure and other "smart grid" technologies in Michigan. In August 2012, I accepted a position in

the Electric Operations Section overseeing system reliability in Michigan and serving as an expert witness in utility rate cases on distribution system investments. In April 2017, I accepted my current position as a Public Utilities Engineering Specialist in the Energy Operations Division. In this role I serve as the technical advisor to the Division Director while continuing to provide expert testimony in gas and electric rate cases.

Q. Do you serve on any industry recognized Committees or Working Groups?

A. Yes. I currently serve on the following Committees and Working Groups;

Chair- NARUC Staff Subcommittee on Electric Reliability

Michigan Infrastructure Asset Management Pilot Advisory Committee

NERC - Operating Committee

NESC – Subcommittee 5, Strength and Loading

IEEE Distribution Reliability Working Group

Staff Lead – Five-Year Distribution Investment and Maintenance Planning

Q. Have you previously presented testimony before the Commission?

A. Yes, I have filed testimony in the following MPSC cases:

QUALIFICATIONS OF RYAN LARUWE
CASE NUMBER U-20162
PART I

Case Number	**Company**	**Subject/Type**
U-17087	Consumers Energy Company	Electric Distribution Expenses
U-17643	Consumers Energy Company	Investment Recovery Mechanism
U-17735	Consumers Energy Company	Investment Recovery Mechanism Demand Response Programs Electric Distribution Expenses
U-17882	Consumers Energy Company	Investment Recovery Mechanism
U-17990	Consumers Energy Company	Investment Recovery Mechanism Electric Distribution Expenses
U-18124	Consumers Energy Company	Investment Recovery Mechanism
U-18322	Consumers Energy Company	Electric Distribution Investments
U-18370	Indiana Michigan Power	Storm Restoration/Tree Trimming
U-20134	Consumer Energy Company	Investment Recovery Mechanism

Q. What is the purpose of your testimony in this case?

A. I provide testimony regarding the Staff's recommendation to the Commission regarding the approval of DTE Electric's proposed Investment Recovery Mechanism (IRM).

Q. Will you be supporting any exhibits with your testimony?

A. No.

Q. Please provide an overview of the Company's proposed IRM as outlined in the testimony and exhibits of Company witnesses.

A. The Company is proposing to recover the incremental revenue requirement associated with certain distribution, fossil generation and nuclear generation capital expenditures through 2022 with an IRM. The Company believes, with the proper IRM in place, it may be able to defer filing for a rate increase until sometime in 2022 for new base rates in 2023.

Q. Please outline the capital expenditures the Company is proposing for inclusion in the IRM.

A. The Company is requesting recovery of approximately $2.8 billion in capital expenditures from the period beginning April 1, 2020 and ending December 31, 2022. The spending by program is outlined in the table below;

Table 1: IRM Capital Spending by Program

Line No.	(a) Description	(b) 8 mos. ending 12/31/2020	(c) 12 mos. ending 12/31/2021	(d) 12 mos. ending 12/31/2022
1	Distribution Operations	$ 435,755	$ 725,866	$ 780,863
2	Fossil Generation	92,000	122,000	122,000
3	Nuclear Generation	74,006	99,054	46,844
4	New 1,100 MW Combined Cycle Generation	205,256	107,328	8,110
5	Total Infrastructure Recovery Mechanism	$ 807,017	$ 1,054,249	$ 957,816

Q. Is the Company proposing a reconciliation of the IRM spending?

A. Yes. The Company is proposing that the IRM surcharge spending be reconciled. More specifically, the Company is proposing that if the Company does not spend all the capital that is reflected in the IRM surcharge, the Company will refund the IRM surcharge revenue associated with that under spending. However, any incremental spending, beyond the level approved by the Commission, would not result in any incremental surcharge.

Q. Is the Company proposing a reconciliation of the IRM revenue collected?

A. Yes. The Company is also proposing the revenue collected through the surcharge be reconciled. That is, if the Company over or under recovers the revenue that should have been recovered in the IRM surcharge, the Company will refund or surcharge that difference at the conclusion of the IRM.

Q. Is the Company committing to not filing a general rate case during the IRM period?

A. No.

Q. Does Staff support the approval of the Company's IRM as proposed in this case?

A. No. There is value to the use of IRM for multi-year rate plans to address known system concerns and modernization such as the DTE Gas's Main Replacement Program (MRP). However, the scope of the proposed IRM in this case exceeds investments for compliance and safety and therefore needs to be approached in a more cautious manner, to ensure all potential benefits are realized. As outlined in the Staff's draft framework for five-year distribution plans provided in Commission Docket U-20147, the use of performance measurements as well as economic incentive and disincentives should be tied to large scale IRM. The use of performance metrics and performance-based ratemaking will allow for the Commission to make clear the public policy and performance goals at the onset of the investment. Under the Company's proposal, it is not clear what value (improved customer service, improved customer satisfaction, improved reliability, etc) will be returned if the Commission was to approve the IRM. What is clear is that rate payers will have guaranteed rate increases in the coming years. The use of performance metrics and performance-based ratemaking will also be beneficial as it will reduce the regulatory burden because it will allow Staff and Intervenors to focus prudency reviews on outcomes in key customer focused performance areas, rather than spending plans and specific costs incurred during the IRM. Although the Company claims the proposed IRM will also minimize regulatory burden, in reality without a clear commitment to not file a base rate case during the IRM, there could be an IRM reconciliations and base rate cases going on concurrently in the future. Given the current construct, this could be a possibility

in the foreseeable future. This would result in a significantly increased burden to all interested parties.

Q. Why is the Staff not recommending performance-based ratemaking (PBR) to the Company's proposed IRM in this case?

A. Given the financial and regulatory implications that are associated with the implementation of PBR, the foundation for PBR is most appropriately developed outside of the context of the general rate case and should include open and transparent discussions with all energy stakeholders. In the Staff's distribution planning framework outlined in the September 1, 2018 report, Staff has recommended the Commission create a collaborative to facilitate these discussions. This will allow for greater consensus building than what can be achieved in the context of the general rate case and inevitably lead to a framework for PBR that better reflects the goals and objectives of the Commission and stakeholders with a vested interest in the future of our electric distribution grid.

Q. Does this conclude your testimony?

A. Yes.

S T A T E O F 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 authority to increase its rates, amend	**)**	**Case No. U-20162**
its rate schedules and rules governing the	**)**	
distribution and supply of electric energy, and	**)**	
for miscellaneous accounting authority.	**)**	
	)	

QUALIFICATIONS AND DIRECT TESTIMONY OF

CODY MATTHEWS

MICHIGAN PUBLIC SERVICE COMMISSION

November 7, 2018

QUALIFICATIONS OF CODY MATTHEWS
CASE NUMBER U-20162
PART I

Q. Please state your full name and business address for the record.

A. My name is Cody S. Matthews. My business address is 7109 W. Saginaw Hwy., Lansing, MI 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 Public Utilities Engineer in the Smart Grid Section of the Energy Operations division. In this position I perform technical analyses and evaluate the prudency and reasonableness of regulated utility companies' investments and operating expenses.

Q. Would you please outline your educational background?

A. I earned a Bachelor of Science degree in Engineering from Michigan State University in 2014.

Q. Would you please outline your professional background?

A. In 2014 I began working for the MPSC in the Smart Grid Section. I review sections of utility rate case filings that pertain to smart grid, advanced metering infrastructure (AMI), demand response (DR), information technology (IT), and cyber-security.

Q. Have you received any work-related training since starting your employment with the MPSC?

A. Yes. I have attended several programs hosted by the Institute of Public Utilities at Michigan State University including Introduction to Public Utility Regulation, the full two-week fundamental course, and the Advanced Regulatory Studies Program, as well as the Michigan Forum on Economic Regulatory Policy.

Additionally, I have participated in numerous conferences and tabletop exercises centering on smart grid, and cyber-security issues.

Q. Have you previously testified before the Commission?

A. Yes, I have testified in the following cases:

- No. U-17767, DTE Electric Company's general electric rate case.
- No. U-17999, DTE Gas Company's gas rate case.
- No. U-18014, DTE Electric Company's general electric rate case.
- No. U-18255, DTE Electric Company's general electric rate case.
- No. U-18370, Indiana Michigan Power Company's general electric rate case.
- No. U-18999, DTE Gas Company's gas rate case.
- No. U-20137, Indiana Michigan Power Company's opt-out tariff case.
- No. U-20165, Consumers Energy Integrated Resource Plan

I have also assisted in testimony and analysis with the following case:

- No. U-17735, Consumers Energy Company's General electric rate case.

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

A. The purpose of my testimony is to present the Michigan Public Service Commission Staff's (Staff) recommendation regarding DTE Gas Company's (DTE or the Company) request for recovery of advanced metering infrastructure (AMI), demand response (DR), shadow billing, summer on-peak rates, information technology (IT), meter reading, and contingency.

Q. Are you supporting any exhibits in this proceeding?

A. Yes, I am sponsoring the following exhibits:

Exhibit S-12.0 Staff Adjustments to AMI Capital Expenditures

Exhibit S-12.1 Staff Adjustments to Demand Side Management Capital Expenditures

Exhibit S-12.2 Staff Adjustments to Information Technology Capital Expenditures

Exhibit S-12.3 DTE Audit Responses

Exhibit S-12.4 Contingency

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

A. Yes.

Advanced Metering Infrastructure

Q. Does Staff have any adjustments to the Company's proposed expenditures for the AMI program?

A. Yes, Staff is recommending a disallowance of $9,600,000 in test year expenditures for the Company's 3G to 4G communication upgrade program shown in Staff Exhibit S-12.0.

Q. Please explain why Staff is making this recommendation.

A. In the instant case the Company states that it has approximately 3300 cellular 3G cell relays integrated within its AMI system[1] that need to be replaced to maintain the viability of the Company's mesh network. As shown in Staff Exhibit S-12.3, page 1, the Company installed 3,000 3G cell relays in its territory to support its AMI mesh network. In the instant case the Company is requesting additional cell relays to strengthen its mesh network and improve its read rates.[2] Staff's recommendation is to disallow all costs associated with the additional relays over the 3,000 the Company initially installed as the Company's meter read rate through 2017 was 98.51%. [3]

Q. Why does staff believe that the Company does not need to improve its meter read rate beyond the 98.51% it reported in its most recent smart grid metrics?

A. While Staff understands that generally a higher read rate is better for customers, in this case the Company is well above the Commissions Service Quality and Reliability Standard of 85%[4] and the incremental costs required to increase the read rate beyond the 98.51% the Company is already achieving are unnecessary at this time. Due to the diminishing returns that can be achieved with increasing its read rates further, the costs that will be required to further increase the read rates

[1] Company witness Moccia direct testimony. p 15.
[2] Staff Exhibit S-12.3. p 2.
[3] DTE Smart Grid Annual Report - https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t0000001fQidAAE
[4] Service Quality and Reliability Standards - http://dmbinternet.state.mi.us/DMB/ORRDocs/AdminCode/826_10792_AdminCode.pdf

are likely above and beyond the benefits that will be achieved and were not supported in the Company's direct case.

Q. Is your recommendation regarding disallowing costs associated with the incremental 4G cell relays reflected in any Staff exhibits, or testimony other than your own?

A. No. Staff witness Evans' adjustments to distribution capital spending includes the Company's 3G to 4G communication upgrade program, and to avoid double counting disallowances associated with this line item, Staff witness Evans adjustments are represented in Staff exhibit S-1 Schedule A-1.

Q. Does Staff have any further recommendations?

A. Yes, in the event that in the instant case the Commission not accept Saff witness Evans adjustments to this line item, Staff urges the Commission to accept Staff witness Matthews recommended adjustment as an alternative.

Q. Does Staff have any other concerns or recommendations?

A. Yes, in case No. U-18203 the Commission ordered Staff to investigate the question of whether there is improper radio transmission by opt-out AMI meters in DTE's upcoming rate case, or, if necessary, a separate proceeding.[5] In the instant case, Staff performed its investigation and found some AMI opt-out customers still have functioning radios after the Company had allegedly disabled radio transmitters. In response to a Staff audit question, the Company stated that as of August 10th there were 267 customers with opt-out meters that were still

[5] MPSC Case No. U-18203, 6/28/2018 Order, pp 5-6

communicating[6], and the Company has provided credits to those 246 customers identified as of August 10th.[7] Because the Company has discovered that it has opt-out customers with radios that continue to transmit after the Company has performed its procedure to disable the radios, and in order to ensure that this does not continue into the future, Staff recommends that the Company replace the meters of all electric customers currently electing service under the Company's Non-Transmitting Meter Provision (DTE Electric tariff C5.7) with digital meters that are not capable of transmitting any signals. DTE Electric should complete the replacement by December 2019, provided that opt-out customers grant the Company access to facilitate the replacement. Before replacing an electric opt-out customer's meter, DTE Electric should test the existing meter to determine if the radio is enabled and/or broadcasting. If the on-site tests indicate that either of the radios in the opt out customer's meter is still sending a signal, all monthly opt-out fees paid to date by the customer should be refunded including interest per the billing rules. Such refunds shall also be provided in previously discovered situations where opt-out customer meters were still sending a signal. Additionally, Staff further recommends that the Company engage in a thorough communication effort with all opt-out customers who will be receiving digital non-transmitting meters to replace their AMI meter. The communication plan should outline to the customers an explanation of the remedy, the refund provisions, and the scheduling of the replacement meters.

[6] Staff Exhibit S-12.3. p 3.
[7] Staff Exhibit S-12.3. p 4.

Q. Is the issue of improper radio transmission by opt-out AMI meters being concurrently investigated in any other cases?

A. Yes, the issue is being discussed in DTE's show cause case number U-20084.

Demand Response

Q. In general, what is Staffs outlook on the Company's demand response (DR) programs?

A. Staff is supportive of the Company's DR efforts. The proposed programs can have a multitude of benefits to both ratepayers and the Company. However, Staffs opinion is that a cautious approach to demand response should be taken to ensure that the benefits of the proposed programs are realized before existing programs are expanded.

Q. Does Staff have any recommendation concerning the Company's request in this case?

A. Yes, Staff is recommending a disallowance of $9.6 million from the Company's proposed Programable Controllable Thermostat (PCT) program for the test year shown in Staff Exhibit S-12.1.

Q. Please describe Staffs recommendation concerning the PCT program.

A. The Company is requesting $6.2 million in the 16 months ending 4/30/2019 and $3.4 million in the test year to purchase an additional 17,000 thermostats to enroll customers onto the PCT program. In case number U-18014, the Commission agreed with Staff's recommendation to limit the Company to 10,000 PCTs until the Company has demonstrated that the existing PCTs are being used and stated, "[i]f DTE Electric demonstrates that its DR programs are successful in the initial

phases, additional DR expenditures will be recoverable in a subsequent rate case".[8] In the instant case the Company states that it has enrolled 2,000 customers on the PCTs since the launch of the program and expects to have 10,000 units by the summer of 2019.[9] Staff does not believe that the Company has demonstrated to the Commission that it has been successful in its initial stages. In the Company's previous rate cases, U-18014, the Company's plan was to enroll 10,000 customers per year over the subsequent five years resulting in 50,000 customers enrolled. Following that case, in Case No. U-18255, Company witness Dimitry stated that the Company expects to enroll up to 10,000 customers by the end of 2017 and requested to purchase an additional 25,000 PCTs to continue to grow the program. While in the instant case Company witness Dimitry states that the Company has only enrolled 2,000 customers and is forecasting to have the initial 10,000 enrolled by year end 2018. Through discovery Staff found that the Company has increased its enrollment in the PCT program to approximately 3,000 as of September 30th, 2018[10]. According to the same discovery response the Company expects to reach 4,500 enrollees by the end of the calendar year, which is well short of the expectations in the Company's previous rate cases. Based on the fact that the Company has failed to effectively complete its own enrollment goal in each of its previous rate cases, and that it has pushed its forecast of enrollment to later years in each case following its initial approval, Staff lacks confidence in DTE's commitment to the PCT program and recommends that

[8] DTE Electric Company Rate Case MPSC Case No. U-18014, 1/31/2017 Order, p. 25.
[9] Company witness Dimitry direct testimony. p 12.
[10] Staff Exhibit S-12.3, p 5.

before the Commission approves any additional PCTs, the Company needs to show a commitment to enroll enough customers to utilize the 10,000 PCTs approved in the Company's previous rate case. The Company's history of seeking recovery for PCTs and lackluster program enrollment suggests the Company's priority should be in marketing and outreach for its DR program. This is exemplified in the Company's DR portfolio investment decision with a proposed $15M for capital[11] compared to a mere $375k in O&M for "Demonstrating and Selling Expenses."[12]

Q. Please summarize the DR framework approved by September 15, 2017 order in Case No. U-18369.

A. The framework established a three-phase approach for evaluation and cost recovery of DR. The first phase is to set short-term DR program plans in the Company's integrated resource plan (IRP), or through a general rate case until the Company's first IRP is approved (such as the instant case). Going forward, the high-level DR plan approval and associated capital costs would be sought in an IRP case. Second, once a DR program plan is approved, capital costs for the approved plan would be placed into rates during a general rate case. O&M costs would be approved and placed into rates through the rate case process as they are today. In the third phase the Company files an annual reconciliation case to reconcile the capital and O&M amounts that have been placed into rates compared to the actual spending that occurred.

[11] Company witness Dimitry Direct Testimony, p 5.
[12] Company Exhibit A-13, Schedule C-5.8, line 9, column k.

Q. Please summarize how the reconciliation portion of the DR framework applies to the Company in this instant case.

A. Any demand response projected costs that have been approved in a rate case will be placed into rates. The actual expenditures will be reconciled in an annual reconciliation case. As reconciliation cases continue to occur annually, under-spent amounts would be returned to the ratepayers, while prudently spent over-expenditures would be recoverable. The under-spent or over-spent amounts would flow into the next rate case following an order in a reconciliation case. Specifically, projected costs that are not spent will be tracked and returned to ratepayers through the reconciliation process. Likewise, any actual costs exceeding the projected costs that are found to have been prudently spent will be tracked and recovered in accordance with the reconciliation process. The final prudency review on project spending would occur in the reconciliation case.

Q. Despite Staff's recommended disallowance, is it possible for the Company to recover costs for its DR portfolio in the future?

A. Yes. While Staff recommends a disallowance of additional capital for the Company's PCT program due to it having failed to match expectations, if actual, prudent expenditures exceed those approved in the instant case, then the Company can be made whole in the reconciliation process. For example, if the Company decides to more heavily market the PCT program, causing test-year O&M expenditures to increase, and the corresponding enrollment in the program increases, causing increased capital spending for the program, then the Company could still recover the full amount of its spending in future reconciliations. The

DR framework recognizes that DR programs are dependent on both the Company's actions (e.g. capital spending, program design, outreach activities) and the customer's willingness to participate in the program (e.g. enrollment, amount of load shifting). The reconciliation process ensures that Company can recover costs, and customers only pay for successful DR programs. Staff continues to recommend a disallowance for additional PCTs with the understanding that if the Company can succeed in enrolling more customers, then future costs for PCT may be recoverable.

Q. Does Staff support performance goals for specific DR programs to be included in future IRP cases?

A. Yes. Staff recommends that performance goals for DR be included as an essential element of a DR plan. Performance goals may include goals such as expected MW of demand reduction from each DR program, capital and O&M costs to implement and maintain each DR program, and the number of installations or participants if applicable, to each DR program. As companies learn more about DR programs, the goals may need to be reviewed and adjusted on an on-going basis through the reconciliation process.

Q. Is Staff recommending specific performance goals for DR programs in this case?

A. Staff is recommending that the Company's performance goals for the test year be based upon the Company's own expected spending, less the aforementioned capital disallowance for PCTs, and peak MW reduction as found in Staff Exhibit S-12.3, page 6. Although actual performance may differ from the original expectation, it is helpful to establish program expectations up front to help

determine how a program might fit into a company's overall resource mix and understand the expected versus actual value of a program.

Shadow Billing

Q. What is shadow billing and explain Staff's recommendation for this feature?

A. Shadow billing is a billing practice that calculates a customer's bill using their actual, historic billing determinants as if the customer were on a different rate, such as a time-of-use rate. For easy comparison the results of the shadow bill (hypothetical bill on a different rate) may be printed on the customer's actual monthly bill, included in an online billing tool, or through the Company's popular DTE Insight application. Staff recommends that the Company explore shadow billing capabilities for inclusion in its next rate case.

Q. Has the Commission addressed shadow billing or a trial period for demand response in a previous case?

A. Yes, the Commission was supportive of Staff's recommendation in its March 29, 2018 order in Case No. U-18322 (pp 76-78) for both shadow billing and a trial period. In that case, the Commission was supportive of a continued investigation into implementing shadow billing and/or a trial period to increase customer understanding and evaluation of demand response rates.[13]

Summer On-Peak Rates

Q. Does Staff have any recommendations concerning the Company's request to include costs to implement summer on-peak rates in a regulatory asset?

[13] March 29, 2018 Commission order in Case No. U-18322, pp 77-78.

A. Yes, Staff supports the Company's request to implement its summer on-peak rates as discussed in Staff witness Revere's testimony and include those costs in a regulatory asset to be reviewed prior to its inclusion in rates as discussed by Staff witness Gerken. Staff also notes that no marketing or educational costs for the purpose of altering usage should be included in the regulatory asset for this program.

Q. Please explain why marketing and educational costs for the purpose of altering usage should not be included in this program.

A. The intention of the summer on-peak Rate is not to illicit a response from customers, as a Demand Response program is intended to do. Rather, the summer on-peak Rate is intended to better reflect the costs that residential customers cause on the system in the summer months. Residential customers will see a change to their rate. However, customers in DTE's service territory have been seeing a change to the rate they pay each year for the last three years, as the Company has been filing for annual rate cases. The Company does not hold customer panels and focus groups every time a new rate order is issued, and Staff does not believe this case should be different. The Summer On-Peak Rate is intended simply to align more closely with the cost of service to residential customers.

Information Technology (IT)

Q. What recommendation does Staff have concerning the Company's request to recover its IT expenditures?

A. Staff is recommending the Commission disallow $3.889 million in the bridge year and $9.730 million from the test period from exhibits A-12 B5.7.1, B5.7.2, B5.7.3, and B5.7.5 as shown in Staff Exhibit S-12.2.

Q. Please describe which programs specifically Staff is recommending full or partial disallowance of.

A. Staff is recommending a disallowance for the following programs:

Exhibit A-12 B5.7.1

ConnectUs Phase 4

Exhibit A-12 B5.7.2

IT Business Planning and Development Sustainment

Customer Digital Channels (MSA) Sustainment

Exhibit A-12 B5.7.3

Work Management Sustainment (Maximo/ESri/Service Suit)

Fuel Supply Sustainment

GenOps Business Sustain

IT FosGen Business Sustain

Fermi – Nuclear Gen Sustain

Exhibit A-12 B5.7.5

2018 Emergent

coDE Sustainment

Q. Please explain Staff's recommendation for the ConnectUs Phase 4 project.

A. Staff is recommending the complete disallowance of this program due to it being unnecessary. In its exhibit the Company states that this project's objective is to

enhance collaboration.[14] When asked about how it will enhance collaboration the Company stated that this platform will improve internal employee communications and efficiently elicit answers to questions through colleague responses, further stating that the spontaneity and real-time nature of such communications enables employees to stay up to date on emergent projects and company priorities.[15] While Staff understands that collaboration is important in the work place, it also recognizes that the described enhanced collaboration that this project is attempting to achieve can also be achieved using the Company's email system. Email allows the employees of the Company to both ask and answer questions collaboratively throughout its organization in a real time manner. The Company has not demonstrated that the benefits of this program are substantial enough compared to an email system to justify the necessity of this internal social media platform. For this reason, Staff recommends the Commission disallow this program based on its lack of benefits compared to an email system.

Q. Please explain Staff's recommendation for the IT Business Planning and Development Sustainment, 2018 Emergent, and coDE Sustainment projects.

A. As shown in Staff Exhibit S-12.3, page 8, and the Company's description of these projects,[16] this group of projects are for emergent needs. While, Staff understands that not all expenses in a given category can easily be projected, due to the nature of a future looking test period and the guaranteed recovery of these projections once approved, it is inappropriate for the Company to recover these costs in rates

[14] Company Exhibit A-12, Schedule B5.7.1, line 6
[15] Staff Exhibit S-12.3. p 7.
[16] Company exhibit A-12, Schedule B5.7.5 lines 4 and 5

given the uncertainty of these projects. While labeled as emergent needs, these projects are more akin to contingency in that there is no certainty in the work to be done, which results in no certainty in the costs that the Company will incur. For this reason, Staff is recommending the complete disallowance of the IT Business Planning and Development project, and for the 2018 Emergent and coDE Sustainment projects Staff is recommending the recovery of only the costs spent to date ($527,651 for the 2018 Emergent and $297,428 CoDE Sustainment CSM-8.1), which results in a disallowance of roughly $3.437 million test period and $2.733 million in the bridge period.

Q. Please explain Staff's recommendation for the Customer Digital Channels (MSA) Sustainment project.

A. Staff is recommending the Customer Digital Channels (MSA) Sustainment project be completely disallowed considering the project is forecasted simply based on historical needs rather than any actual planned work.[17] Staff's opinion is that since the IT and technology sectors are changing so rapidly, it is inappropriate to base a group of projects on simply what has been historically spent. If the Company is simply unable to provide any actual planned work in this area, it is more appropriate for the Company to request recovery of expenses after they have been incurred in a subsequent rate case.

[17] Staff Exhibit S-12.3. p 9.

Q. Please explain Staff's recommendation for the Work Management Sustainment (Maximo/ESri/Service Suit), Fuel Supply Sustainment, GenOps Business Sustain, IT FosGen Business Sustain, and Fermi – Nuclear Gen Sustain projects.

A. Staff recommends a partial disallowance for each of these programs based on the actual needs shown in Staff Exhibit S-12.2. When asked for a more detailed breakdowns of the costs and proposed work included in these projects, the Company provided responses including the total expected costs for the included projects that were far below what was requested in this case. For this reason, Staff is recommending the Commission limit the recovery of these programs to the amounts that DTE has shown in Exhibit S-12.3, pages 10-12, and disallow the costs above what the Company has provided explanations for in these audit responses.

Q. Does Staff have any other recommendation concerning the Company's proposed IT expenditures?

A. Yes. As Staff addressed in its testimony in Case No. U-18424, Consumers Energy Company's gas rate case, (and the Commission included in the subsequent settlement agreement), Staff recommends the Commission require the following to accompany the Company's initial filing:

-Future IT project-level detail should include a breakdown of both the O&M and capital costs. O&M costs should be broken down into two or three sub-categories.

-For each project the Company should submit a project approval document after the project preliminary analysis phase that includes:

1. A brief synopsis describing the project

2. The project approval date

3. The incurred expenditures to date (Operations and Maintenance Cost (O&M)

4. The total project estimated O&M and capital cost through project implementation

5. Any necessary approvals by the Company's management with appropriate expenditure approval authorization (per documented company policy)

6. Any approved change management documentation if the total project estimate grows by greater than 10% or $50,000 (whichever is greater). For IT projects over $100,000, the Company will include as an exhibit. The Company will include as an exhibit a copy of the written, PowerPoint, or other media presentation that the Company's technical staff used to present the project justification and alternatives considered by Company senior management

-Analysis that shows the Company considered cloud computing alternatives in IT project expense requests over $100,000 excluding cyber security or transmission control IT projects. Because the above criteria is submitted does not mean that cloud-based solutions will automatically be approved by the Commission. Staff is also recommending that in future cases the Company include in its testimony breakdown of any IT programs that were approved in its previous rate case that were not completed or were 20% above or below the approved project amount with an explanation of why the project was not completed, or why it was off budget. Staff would expect this breakdown to include the approved project cost as well as what was spent on the project in this breakdown. Due to the ever-

increasing number of IT projects the Company presents in a given rate case, it would be beneficial to all intervenors and the Commission to provide assurance that the programs that were approved are being completed within budget, and this information would provide that assurance.

Meter Reading

Q. What is the Company projecting for meter reading costs in the test year?

A. The Company is projecting $3.630 million in O&M costs for the test year.

Q. Please describe how the Company arrived at its $3.630 million projection.

A. The Company arrived at the test year projection of $3.630 million by taking its 2017 actual meter reading expense of $3.391 million and adding Staffs inflation supported by Staff witness Welke.

Q. Does Staff have any concerns about the Company's methodology for projecting its test year meter reading expense?

A. Yes. it is inappropriate to use 2017 as a base year and inflate it to make the projection from as the Company has continued to install and reduce the amount of manual meter reading it must perform. With the installation of AMI meters since 2017, the number of meter reading employees the Company had in the 2017 historical period was 58, while the number projected in the test period is 24, as shown in Staff Exhibit S-12.3, page 13.

Q. Does Staff have any recommendations concerning the Company's projection?

A. Yes, Staff is recommending a meter reading expense of $1.483 million in the test year.

Q. Please describe how Staff developed this number.

A. Staff developed this number by taking the Company's cost per meter reader in 2017 and applying that cost to the number of meter readers the Company will have in the test year, then adding Staff's inflation. This expense is more representative of the costs the Company will incur to read its existing non-AMI meters, as meter reading is highly proportionate to the number of meters needed to be read and the number of meter readers employed.

Contingency

Q, What contingency did the Company include in this filing?

A. The Company included contingency for other production plant, and corporate staff, Shown in Staff Exhibit S-12.4.

Q. What recommendation is Staff making regarding the contingency expenditures?

A. Staff witness Matthews recommends a disallowance of the contingency expenditures for corporate staff ($1.965 million bridge period and $2.505 million test period), and Staff witness DeCooman has recommendations concerning the other production plant contingency.

Q. Why is Staff recommending a disallowance of contingency expenditures?

A. Staff is recommending contingency expenditures be disallowed from recovery through rates due to the uncertainty that those costs will be incurred. Contingency expenditures are just that, contingent upon the unpredictable. While Staff recognizes these expenditures may be important to the Company for the use of internal budgeting, it is inappropriate to include them in rates at this time. If the Company does incur these costs it may earn a return on them once the Company has proven their reasonableness and prudence. However, at this time, given the

uncertainty, Staff does not find these expenditures to be reasonable and prudent. The Commission has previously approved Staff's recommendation for disallowance of contingency costs in the DTE Gas Company's last rate case, Case No. U-17999, and in the DTE Electric Company's previous rate cases, Case Nos. U-17767, U-18014, and U-16489, as well as in numerous other utility companies' general rate cases before the MPSC. (*In re DTE Gas Company's 2015-2016 Rate Case*, MPSC Case No. U-17999, 12/9/2016 Order, pp 4-6; *In re DTE Electric Company's 2016-2017 Rate* Case, MPSC Case No. U-18014, 12/31/2017 Order, pp 13, 42. *In re DTE Electric Company's 2015-2016 Rate* Case, MPSC Case No. 17767, 12/11/2015, pp 19, 23; *In re the Detroit Edison Company 2011-2012 Rate Case*, MPSC Case No. U-16489, 10/20/2011 Order, pp 36-37.)

Q. Does this conclude your testimony?

A. Yes.

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 authority to increase its rates, amend	**)**	**Case No. U-20162**
its rate schedules and rules governing the	**)**	
distribution and supply of electric energy, and	**)**	
for miscellaneous accounting authority.	**)**	
	)	

EXHIBITS OF

CODY MATTHEWS

MICHIGAN PUBLIC SERVICE COMMISSION

November 7, 2018

Michigan Public Service Commission
DTE Electric Company
Staff Adjustments to AMI Capital Expenditures

Witness: C. Matthews
Exhibit: S-12.0
Page 1 of 1

(a)		(b)	(c)	(d)	(e)	(f)	(g)
		Capital Expenditures					
		Historical	Projected Calendar Year			Bridge Period	Test Year
Line No.	Description	12 mos. ended 12/31/2017	12 mos. ending 12/31/2018	12 mos. ending 12/31/2019	12 mos. ending 12/31/2020	16 mos. ending 4/30/2019	12 mos. ending 4/30/2020
1	**Technology and Automation**						
2	SOC Modernization	1,223	23,770	42,200	35,700	37,837	40,033
3	ADMS: EMS/GMS	1,031	14,273	6,498	-	19,471	1,300
4	ADMS: DMS/OMS	1,438	1,713	25,367	27,908	10,169	26,214
5	ADMS: Network Management System	-	2,751	11,439	2,603	6,564	10,229
6	AMI: 3G to 4G Communication Upgrade	39	10,546	7,243	16,545	2,414	10,344
7	Staff Adjustment						(9,600)
8	AMI: 3G to 4G Industrial Communication Upgrade		5,273	2,634	5,091	878	3,453
9	AMI: Installations	7,686	3,500			-	-
10	AMI Leverage (PI, Analytics)	372	-	-	-	-	-
11	Line Sensors	5,085	6,591	6,585	-	2,195	4,390
12	13.2 kV Telecommunications	-	1,318	2,634	5,091	878	3,453
13	Analog Lines Elimination	1,150	593	-	-	-	-
14	40 kV: Automatic Pole Top Switch	331	1,318	2,634	5,091	878	3,453
15	Pilot: Technology Programs	1,042	1,318	1,975	1,909	658	1,953
16	**Total Technology and Automation Projects and Programs**	**19,397**	**72,965**	**109,208**	**99,937**	**81,943**	**95,220**

Michigan Public Service Commission
DTE Electric Company
Staff Adjustments to Demand Side Management Capital Expenditures

Witness: C. Matthews
Exhibit: S-12.1
Page 1 of 1

Line No.	(a) Description	(b) Historical 12 mos. ended 12/31/2017	(c) Projected Bridge Period 12 mos. ending 12/31/2018	(d) Projected Bridge Period 4 mos. ending 4/30/2019	(e) Projected Bridge Period 16 mos. ending 4/30/2019	(f) Projected Test Year 12 mos. ending 4/30/2020
		Capital Expenditures				
1	Interruptible Air Conditioning (IAC)	4,304	4,152	1,700	5,852	4,892
2	Programmable Communicating Thermostats (PCT)	2,074	4,600	1,567	6,167	3,426
3	Staff Adjustment		(4,600)	(1,567)	(6,167)	(3,426)
4	Other Demand Side Management	-	1,600	966	2,566	3,748
5	**Subtotal Demand Response**	**6,378**	**5,752**	**2,665**	**8,417**	**8,641**
6	DTE Energy Insight	6,295	701	250	951	2,918
7	**Total Demand Side Management**	**12,673**	**6,453**	**2,915**	**9,368**	**11,559**

Michigan Public Service Commission
DTE Electric Company
Staff Adjustments to Information Technology Capital Expenditures

Witness: C. Matthews
Exhibit: S-12.2
Page 1 of 1

Line No.	(a) Description	(b) Historical 12 mos. ended 12/31/2017	(c) Projected Bridge Period 12 mos. ending 12/31/2018	(d) Projected Bridge Period 4 mos. ending 4/30/2019	(e) Projected Bridge Period 16 mos. ending 4/30/2019	(f) Projected Test Year 12 mos. ending 4/30/2020
		Capital Expenditures				
1	Information Technology:					
2	Corporate Applications	7,291	5,798	3,125	8,922	11,547
	Staff Adjustment: ConnectUs Phase 4				-	(625)
3	Customer Service	29,982	30,936	4,953	35,889	24,016
	Staff Adjustment: IT Business Planning and Development Sustainment			(79)	(79)	(400)
	Staff Adjustment: Customer Digital Channels (MSA) Sustainment			(535)	(535)	(2,660)
4	Plant & Field	21,482	13,061	2,247	15,309	10,098
	Staff Adjustment: Fuel Supply Sustainment			(81)	(81)	(362)
	Staff Adjustment: GenOps Business Sustain			(124)	(124)	(553)
	Staff Adjustment: IT FosGen Business Sustainment			(81)	(81)	(362)
	Staff Adjustment: Fermi- Nuclear Gen Sustain		(181)	(75)	(256)	(333)
	Staff Adjustment: Work Management Sustainment (Maximo/Esri/Service Suite)				-	(998)
5	Shared Infrastructure	26,571	14,360	2,196	16,556	19,202
6	Information Technology for IT	1,359	8,359	4,730	13,089	14,693
	Staff Adjustment: 2018 Emergent		(1,457)	(800)	(2,257)	(3,000)
	Staff Adjustment: CoDE Sustainment		(307)	(170)	(477)	(437)
7	**Total Information Technology**	**86,685**	**70,569**	**15,306**	**85,875**	**69,825**

DTE Electric Company
Case No. U-20162

Auditor: **C. S. Matthews**
Request No: **CSM-8.4 Revised**
Respondent: **J. L. Robinson**
Page: **1 of 1**

Request:

4. How much did it cost the Company to install its initial 3G cellular relays? Please provide examples of signed completed work orders for this work.

Response:

The initial installation cost of the 3G cellular relay network was part of a larger bundled contract for all project services with a major vendor. Services contracted included, but not limited to; RF study analysis, on-site engineering support, site selection, cell relay installation, repeater installation, modification rework to achieve contracted meter read rates, device replacement during the non-accepted period, etc. The Company installed approximately 3,000 3G cellular relays. The estimated cost to purchase and install the relays was approximately $3.1 million. However, many of the cellular relays were installed in conjunction with meters and other equipment and there isn't an expedient way to separate installation costs.

DTE Electric Company		**Auditor:**	**C. S. Matthews**
Case No. U-20162		**Request No:**	**CSM-8.6**
		Respondent:	**J. L. Robinson**
		Page:	**1 of 1**

Request:

6. With the 4G relays increased RF signal propagation, and the installation on pole tops, is DTE able to reduce the total number of cell relays needed on its system? Please provide the investigation DTE did on this showing the outcome.

Response:

No. The Company will not be reducing the number of cell relays needed on the system. There will be an actual increase. The new devices are not only cell relays, which collect meter data and transmit cellularly, but they can also connect to an RF Lan backhaul if available. The new devices will strengthen our network and improve our read rates. These devices also allow forward compatibility with new technology. DTE worked with our vendor partners to develop this strategy.

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DTE Electric Company		**Auditor:**	**C. S. Matthews**
Case No. U-20162		**Request No:**	**CSM-3.1**
		Respondent:	**B. V. Moccia**
		Page:	**1 of 1**

Request:

1. Has DTE occurred any instanced of an opt-out customers meter continuing to send a reading after the customer has opted out? If so, how many instances have been discovered?

Response:

Yes, 193 customers had meters that were still communicating on August 10th, 2018. In addition, on that date, there were 53 customers that were classified as opt out and had meters that were communicating, but on contact with these customers, they asked to be removed from the opt out program. DTE is aware of 21 additional customers whose meters may be communicating. DTE has attempted (and will continue to attempt) but has not been able to access those customers' meters.

DTE Electric Company		**Auditor:**	**C. S. Matthews**
Case No. U-20162		**Request No:**	**CSM-3.3**
		Respondent:	**B. V. Moccia**
		Page:	**1 of 1**

Request:

3. Has the Company previously credited a customer that has opted out if the meter continued to send a signal? If so, how many of these credits have been given out?

Response:
DTE has provided credits to the 246 customers in question 1. In addition, DTE is aware of some cases when customers called in to report that their meter was still communicating, and DTE was able to confirm that status. DTE credited those customers, but those credits were given as miscellaneous adjustments to accounts, and aren't separately tracked.

MPSC Case No.: U-20162
Requestor: N. Simpson
Question No.: NS-1.1
Respondent: I. M. Dimitry
Page: 5 of 9

expenditures approved in Case U-18014. The Commission indicated that showing of initial success in the program is required to support increased funding. Therefore, the Company has invested in the 10,000-unit enrollment effort since the fourth quarter of 2017 throughout 2018. The spent and ongoing capital expenditures are covering hardware purchases of the PCTs, the Distributed Energy Resource Management System (DERMS) software, IT integration and program implementation. In the current rate Case U-20162, DTE Electric is requesting additional capital investments that will enable enrollment of a total of 17,000 customers, up from the initial 10,000 customer level, by the end of the test period (April 30, 2020).

As of September 30, 2018, the Company has enrolled approximately 3,000 customers year-to-date in the year 2018, and expects to reach 4,500 enrolled customers by year end 2018, which is lower than the 7,000 enrolled customers previously projected by the time of submission of direct testimony in Rate Case U-20162. The Company has updated the projected customer enrollment data, and is expected to reach the total of 17,000 unit-enrollment by April 30, 2020.

A detail of the projected customer enrollment is as follows:

	Projected 12/31/2018	**Projected 12/31/2019**	**Projected 4/30/2020**
Cumulative Total Enrollment (Period Start)	--	4,500	11,500
New or Planned Enrollments	4,500	7,000	5,500
Cumulative Total Enrollment (Period End)	4,500	11,500	17,000

As mentioned in pages 13-14 of Witness Dimitry's direct testimony in Case U-20162, the Company collected data from three (3) DPP events in the 50-customer technology test in 2017. Similarly, in 2018, the Company called four (4) DPP events, which included increasing activated customer PCT units ranging from 883 (6/28/18) to 1,597 (8/28/2018). Representative data showed that in a DPP event where the PCT program is called upon by the Company, the PCT customers show a decline in usage during the critical hours of

Michigan Public Service Commission
DTE Electric Company
Demand Response Programs and C&I Interruptible Rates

MPSC Case No.: U-20162
Requestor: N. Simpson
Question No.: NS-1.1
Witness: I.M.Dimitry
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Demand Response Program and Rates	2018				2019				2020			
	1/1/2018 - 12/31/2018				1/1/2019 - 12/31/2019				1/1/2020 - 4/30/2020			
	Capital[1]	O&M[2]	MWs[3]	ZRCs[4]	Capital[1]	O&M[2]	MWs[3]	ZRCs[4]	Capital[1]	O&M[2]	MWs[3]	ZRCs[4]
Residential												
D1.1 Interrumptible A/C	$4.2	(2)	135	150	$4.6	(2)	143	158	$2.0	(2)	172	190
D1.8 Dynamic Peak Pricing Rate [5]												
- Programmable Communicating Thermostat (PCT) Program	$4.6	(2)	nyi	nyi	$4.1	(2)	nyi	nyi	$0.9	(2)	nyi	nyi
D5 Interruptible Hot Water Heating Service	n/a	n/a	5	6	n/a	n/a	5	6	n/a	n/a	5	6
Commercial and Industrial (C&I)												
D3.3 Interruptible General Service Rate	n/a	n/a	19	21	n/a	n/a	21	23	n/a	n/a	21	23
D8 Interruptible Supply Rate	n/a	n/a	82	91	n/a	n/a	89	98	n/a	n/a	89	98
R1.1 Alternative Electric Metal Melting	n/a	n/a	7	7	n/a	n/a	7	7	n/a	n/a	7	7
R1.2 Electric Process Heat	n/a	n/a	74	82	n/a	n/a	74	81	n/a	n/a	74	81
R10 Interruptible Suppy Rider	n/a	n/a	282	312	n/a	n/a	305	336	n/a	n/a	305	336
R12 Capacity Release	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5	6
Other DR Pilot Programs (Residential & C&I)[6]	$1.6	(2)	nyd	nyd	$4.0	(2)	nyd	nyd	$0.7	(2)	nyd	nyd
Total	**$10.4**	**$0.4**	**604**	**669**	**$12.7**	**$0.4**	**643**	**709**	**$3.6**	**$0.1**	**677**	**747**

Notes:
1 Forecasted Capital in $ Million
2 Forecasted O&M total expenses of $0.4 Million per calendar year to support marketing and development of the portfolio of programs, including IAC, PCT, BYOD, and other potential residential and C&I programs
3 Installed Capacity (ICAP) - 2018 data represents MISO registrations for the Planning Year (PY) 2018/2019. 2019 and 2020 data represents PY 2019/2020 and PY 2020/2021, respectively, in 2019 PSCR Filing (Oct 1, 2018)
4 ZRCs or Zonal Resource Credits are equivalent to Unforced Capacity (UCAP), account for transmission losses and adjusted for $PRM_{UCAP,}$ and represent data for periods described in point 3 above
5 PCT Program in conjuction with DPP rate
6 Includes: Bring-Your-Own Device (BYOD) program (residential), C&I battery-storage programs, Non-Wires programs, company-controlled electric vehicle charging program or PEV-EPRI program, and other C&I tarif-based programs
General notes:
- Planning Year (PY) ranges from June of the first year to May of the following year, for instance, PY 2018/2019 goes from June 2018 to May 2019
- n/a: Not applicable
- nyi: Not yet included in MISO filings

DTE Electric Company		**Auditor:**	**C. S. Matthews**
Case No. U-20162		**Request No:**	**CSM-1.6a**
		Respondent:	**D. J. Griffin**
		Page:	**1 of 1**

Request:

6. Referring to Exhibit B5.7.1, line 6:

a. Please describe the enhanced collaboration that will be obtained from the internal social media boards.

Response:

The internal social media boards will enhance collaboration by improving internal employee communications and efficiently eliciting answers to questions through colleague responses. The spontaneity and real-time nature of such communications enables employees to stay up to date on emergent projects and company priorities. Social media boards provide an interconnected platform for knowledge sharing and employee engagement activities.

DTE Electric Company	**Auditor:**	**C. S. Matthews**
Case No. U-20162	**Request No:**	**CSM-5.8a**
	Respondent:	**D. J. Griffin**
	Page:	**1 of 1**

Request:

8. Referring to Exhibit B5.7.2, line 4:

a. Please explain what enhancements are being done.

Response:

This portfolio has an ongoing backlog of requested enhancements. This Business Case is forecasted based on historical need for support of the Portfolio and emergent work required on an annual basis. Past years have required work to ensure and enhance application functionality/capacity. Typical Sustainment work regularly includes the addition of disk storage to account for growth, additional hardware for memory and performance enhancement, and end-of-life replacements. An example of items the Company is foreseeing for the next year are new assets such as an improved reporting database to support Community Lighting.

DTE Electric Company
Case No. U-20162

Auditor: **C. S. Matthews**
Request No: **CSM-5.10a**
Respondent: **D. J. Griffin**
Page: **1 of 1**

Request:

10. Referring to Exhibit B5.7.2, line 32:

a. Please provide specific details about what monthly enhancements are planned for this project.

Response:

Each portfolio has an ongoing backlog of requested enhancements. This MSA Sustainment case is forecasted based on historical annual need for supporting our customer facing channels in a timely, effective manner. As these enhancements are prioritized they are bundled into enhancement releases which are done monthly. In this portfolio, enhancements include improvements to our Move-In-Move Out Processes, our IVR system and Customer-facing payment system functionality on our website. While the priority within our Release capacity is defect management, we plan to include enhancements such as the following over our next 12-18 months:

- Response time enhancements
- Kiosk payment improvements
- Outage trouble reporting
- Improve Move in Move out process on web
- IVR outage reporting enhancements
- Enhancements to Agency website for supporting low income customers
- Managing Customer Profile Information/Functionality

DTE Electric Company		**Auditor:**	**C. S. Matthews**
Case No. U-20162		**Request No:**	**CSM-6.5**
		Respondent:	**D. J. Griifin**
		Page:	**1 of 1**

Request:

5. Referring to Exhibit B5.7.3, line 11, please provide detailed information about the planned work that is being done in this line item, please include costs, timeline and a breakdown of the work.

Response:

Objectives of the Work Management Sustainment business case during the test period include workflow implementation for DO System Operations process, Fermi Work Order process enhancements, implementation of the MEP Corrective Action workflow process, enhancement of GAS Field Request process, and implementation of the DO Construction process. Communications related enhancements include Community Lighting Communication implementation, DO Unitization Task Management escalation notifications, and Nuclear PM Notification Enhancement. Interface enhancements include implementation of screen changes for Distribution Operations Systems, updates to Work Order Tracking forms, and API-based data entry. Additional deployments will support code changes to support embedded tests, Service Request application enhancements, and Facilities Field Change tracking. These enhancements are projected to cost $962k.

DTE Electric Company		**Auditor:**	**C. S. Matthews**
Case No. U-20162		**Request No:**	**CSM-6.7**
		Respondent:	**D. J. Griifin**
		Page:	**1 of 2**

Request:

7. Referring to Exhibit B5.7.3, lines24, 32, 33,34, please provide detailed information about the planned work that is being done in this line item, please include costs, timeline and a breakdown of the work.

Response:

B5.7.3 lines 24, 32, 33, and 34 contain financial information spanning both the historical period and ongoing effort within the projected test period.

Efforts occurring within the test period include:

Line 24: Fermi - Nuclear Generation Sustainment funds several initiatives such as the Upgrade of the Nuclear Generation Corrective Action Program, or eCard system, to a new hardware and software stack, improving the security of the system. The case also involves the implementation of failover and physical separation of the Sentinel Radiation Protection Management System, a development of the Automated Records Management System to improve usability, and Site business computer hardware. The Case has expended $149.5k of the allotted capital expense as of Q2 2018, and is targeted to spend $153.8k through Q4 2018

Line 32: Fuel Supply Sustainment involved upgrades to data interfaces for fuel shipping locations to the supported platform to improve information reliability for business processes, and the implementation of invoicing process enhancements for additional automation of more fuel types during Q1 and Q2 2018 at a cost of $165k. The Company will implement a rail scheduling calendar which provides enhanced visual fuel transportation planning capabilities as well as a mobile enabled workflow to support business efforts at the point of activity during Q3 and Q4 2018 for a cost of $197k.

Line 33: GenOps Business Sustainment funds the implementation of planned vendor software releases to the Generation Supply Management System and enhancements to the Energy Account Application. These important system improvements will ensure that the systems remain current and provide up to date functionality and capabilities. These enhancements were delivered in Q1 and Q2 2018 for a cost of $237k. For the remainder of the year this case includes implementing load balancer and security enhancements to the Generation Supply Management System application, additional hardware for Profit & Loss and

DTE Electric Company		**Auditor:**	**C. S. Matthews**
Case No. U-20162		**Request No:**	**CSM-6.7**
		Respondent:	**D. J. Griifin**
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Settlement Analyzers to enable processing of growing data sets, the upgrade of generation data interfaces to supported platforms to ensure data reliability, and

logic upgrades in the Generation Supply Management System for new generation units in Q3 and Q4 2018 for a targeted cost of $316k.

Line 34: Fossil Generation Business Sustainment funds allowed the Company to upgrade the Power Plant Performance Management (P3M) application hardware and platform to improve system reliability, security, and mobile device compatibility during Q1 and Q2 2018 for a cost of $173.9k. Ongoing efforts include an upgrade to plant performance data safety tagging interfaces, and further upgrades of current systems to continue aligning targeted reliability and security during the period spanning Q3 and Q4 2018 for a cost of $189k.

DTE Electric Company
Case No. U-20162

Auditor: **C. S. Matthews**
Request No: **CSM-4.7**
Respondent: **T. D. Johnson**
Page: **1 of 1**

Request:

7. For the period of 2017 through the test period, please break out the number of meter readers by year.

Response:

DTE Energy utilizes a service provider model for its meter reading services. In this model, DTE Energy outsources the meter reading function to a utility contractor provider. The service provider staffs it workforce such that weather and non-productive time do not impact its ability to complete the volume of meter reading routes that are contracted to read, and provides all management responsibilities for this work.

The chart below provides the number of contracted meter readers for the electric only and electric and gas territories.

Year	Number of Contracted Meter Readers
2015	141
2016	84
2017	58
2018	40
1/1/2019- 4/30/2019	28
5/1/2019- 4/30/2020	24

Michigan Public Service Commission
DTE Electric Company
Projected Capital Expenditures
Summary - Reserve or Contingency
($000)

Case No.: U-20162
Audit Request: MLE-1.2
Date of Request: 7/16/2018
Respondent: T. M. Uzenski
Page: 1 of 1

Exhibit A-12, Schedule B5

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
		Capital Expenditures					
		Historical	**Projected Bridge Period**			**Projected Test Year**	
Line No.	**Description**	**12 mos. ended 12/31/2017**	**12 mos. ending 12/31/2018**	**4 mos. ending 4/30/2019**	**16 mos. ending 4/30/2019**	**12 mos. ending 4/30/2020**	**Reference**
					col. (c)+(d)		
1	Production Plant:						
2	Steam	-	-	-	-	-	Exh. A-12, Sch. B5.1
3	Hydraulic	-	-	-	-	-	Exh. A-12, Sch. B5.1
4	Other	-	1,700	4,200	5,900	4,633	Exh. A-12, Sch. B5.1
5	MERC / Fuel Supply	-	-	-	-	-	Exh. A-12,Sch. B5.2
6	Nuclear (including Nuclear Fuel)	-	-	-	-	-	Exh. A-12, Sch.B5.3
7	Distribution	-	-	-	-	-	Exh. A-12, Sch.B5.4
8	Community Lighting	-	-	-	-	-	Exh. A-12, Sch. B5.5
9	Demand Side Management	-	-	-	-	-	Exh. A-12, Sch. B5.6
10	Information Technology	-	-	-	-	-	Exh. A-12, Sch. B5.7
11	Corporate Staff	-	733	1,232	1,965	2,505	Exh. A-12, Sch. B5.8
12	Charging Forward	-	-	-	-	-	Exh. A-12, Sch. B5.9
13	Customer 360	-	-	-	-	-	Exh. A-13, Sch. C5.12
14	Total Capital Expenditures	-	2,433	5,432	7,865	7,138	

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of **DTE ELECTRIC COMPANY** for authority to increase its rates, amend its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.

Case No. U-20162
(e-file paperless)

_____/

PROOF OF SERVICE

STATE OF MICHIGAN)
) ss
COUNTY OF EATON)

Jennifer M. Brooks, being first duly sworn, deposes and says that on **November 7, 2018,** she served a true copy of **Michigan Public Service Commission Staff's Testimony – Evans, Matthews, Laruwe,** upon the following parties **via e-mail only:**

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Jennifer Brooks

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Date: 2018.11.07 13:51:06 -05'00'

Jennifer M. Brooks

Subscribed and sworn to before me
this **7th** day of **November, 2018.**

Lisa Felice

Lisa Felice, Notary Public
State of Michigan, Eaton County
My Commission Expires: April 15, 2020