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 its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.	))))))	Case No. U-21534

QUALIFICATIONS AND DIRECT TESTIMONY OF

RYAN BOUTET

MICHIGAN PUBLIC SERVICE COMMISSION

July 26, 2024

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

A. My name is Ryan Boutet (he/him/his), 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 Engineer in the Electric Operations Section of the Energy Operations Division.

Q. Please describe your educational background.

A. I earned a Bachelor of Science in Mechanical Engineering from Michigan State University in December of 2019, as well as additional minors in Computer Science & Engineering, and German from Michigan State University.

Q. What is your professional background?

A. During my time at Michigan State University I focused my electives on the energy sector and renewable technologies, allowing me to spend a summer abroad on a research program at RWTH Aachen University in Germany in the Summer of 2016, a top technical institute in Europe. There, I conducted comparative research on wind energy conversion rates for various horizontal and vertical-axis turbine configurations, as well as aspects such as economic factors, payback periods, material and construction costs, estimated energy production, and more. Following this, and still during my education at Michigan State University, I took a part-time position with a drone company known as Vision Air Systems,

where I worked as a Drone Data Analyst. Vision Air Systems provided drone services primarily focused on visual inspections in construction zones and other hard-to-access industrial areas. My responsibilities included creating and verifying flight paths for drones used in visual inspections, communicating needs between drone operators and clients, and working with drone operators to ensure data and flight paths are properly databased and made available to clients. I remained with Vision Air Systems until late 2018 when business heavily declined due to oversaturation and heavy competition in the Drone Services industry. Post graduation, in 2020, during the height of the pandemic, I took a position as a Delivery Associate for Amazon, under a contracting company known as DEK Delivery LLC, where I remained until joining the MPSC in October of 2023. As a Public Utilities Engineer in the Electric Operations Section of the MPSC, my responsibilities include reviewing electric rate cases, handling customer complaints and safety concerns, and contributing to multiple other efforts to ensure the electrical grid in Michigan stays reliable and safe. Some such examples include projects focused on the needs of critical facilities such as hospitals and nursing homes, projects on defining and supporting grid resilience, and projects focused on performance metrics and incentivized performance for utility companies.

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

A. Yes. The trainings I have completed so far include:

- OSMOSE: Contact Voltage is Unseen and Unforgiving
- MPSC Rate Case Training Series

- Regulatory Training Initiative: Performance Based Ratemaking for Energy Utilities (2023)
- NARUC/NASEO: Distribution System Planning & Resilience Planning Training
- Regulatory Assistance Project: Improving Utility Performance Incentives
- Regulatory Training Initiative: Rate Case Basics (2024)
- Energy Utility Consultants Inc.: Right of Way Management (2024)
- Regulatory Training Initiative: The Basics of Utility Accounting & Ratemaking (2024)

Q. Have you previously testified before the Commission?

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

Case No	Company	Type of Case	Subject of Testimony
U-21461	I&M Power	Electric Rate	Storm Expenses & Restoration, Tree Trim
U-21555	UPPCO	Electric Rate	Fleet & Facility Expenses

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

A. The purpose of my testimony is to provide the Michigan Public Service Commission Staff's (Staff) insights and recommendations on the topics of Vehicle Fleet and Maintenance, and Base Capital Programs.

Q. Are you sponsoring any exhibits?

A. Yes, I am sponsoring five exhibits:

Exhibit No.	Description
Exhibit S-12.1	DTE Response to Staff Discovery Questions Topic: Fleet Capital Purchases
Exhibit S-12.2	DTE Response to Staff Discovery Questions Topic: Fleet Repair Expenses
Exhibit S-12.3	DTE Response to Staff Discovery Questions Topic: Fleet Service Providers
Exhibit S-12.4	DTE Response to Staff Discovery Questions Topic: Base Capitals Program – Actual 2023 Expenses
Exhibit S-12.5	DTE Response to Staff Discovery Questions Topic: Summary of Relocations Projects
Exhibit S-12.6	DTE Response to Staff Discovery Questions Topic: Fleet Capital – Actual 2023 Expenses
Exhibit S-12.7	DTE Response to Staff Discovery Questions Topic: Fleet Capital – Actual 2024 Expenses

Vehicle Fleet Capital Expenses

Q. Please provide an overview of the Company's Vehicle Fleet Capital Expenses.

A. Company witness Uzenski supports the Company's proposed expenses for Vehicle Fleet Capital expenditures in her direct testimony. In summary, this category includes expenses such as cars, trucks, bucket trucks, trailers, and forklifts that are purchased to replace aging fleet assets and maintain a safe and reliable fleet. DTE uses a proprietary model to track asset lifecycles and optimize total costs of ownership. As seen on Company Exhibit A-12 Schedule B5.8, The Company projected 2023 calendar year capital expenditures of $32.79 million, 2024 calendar year capital expenditures of $38.24 million, and 2025 test year capital expenditures of $42.6 million, all following a historic spend of $43.82 million in 2022. The Company provided greater insight during discovery, providing a spreadsheet showing all planned fleet purchases for the above timelines, summarized in Staff Exhibit S-12.1. Actual 2023 expenditures for new fleet purchases came out to approximately $29.35 million spread across approximately 570 fleet purchases. Calendar year 2024 actuals come in at $4.94 million between January 1, 2024, and April 30, 2024, while projections for the rest of 2024 are approximately $30.45 million for a projected total of $35.4 million in new fleet purchases spread across approximately 360 fleet purchases for 2024. Staff notes that the Company over projected their 2023 costs by approximately $3.5 million and is on track for a similar over projection of approximately $3 million in 2024. Projected purchases for the test period, calendar year 2025, sit at a total of $42.595 million spread across approximately 260 fleet purchases.

Q. Does Staff have any recommendations concerning the Company's Vehicle Fleet Capital Expenses?

A. Yes. Staff is recommending a disallowance of $2.84 million for the bridge period and a disallowance of $3.83 million for the test year. This adjustment is based on historical underspending in 2023 in this category as well as evidence that the Company is again on track to underspend in 2024. Staff Exhibit S-12.6 showcases that actual 2023 expenditures came in $3.44 million under the Company projections, an approximate underspend of 10.5%. Discovery responses seen in Staff Exhibit S-12.7 show that 2024 expenditures are on track to come in $2.84 million under the Company projections, an approximate underspend of 7.5%. Staff is recommending that this $2.84 million be disallowed from the bridge period. Further, Staff is recommending that $3.83 million be disallowed from the test year, based on averaging the underspend from 2023 and 2024 to arrive at a 9% disallowance for 2025.

Q. Do you have any additional information to add regarding your adjustment?

A. Yes. Regarding my recommendation for the above adjustment, it should be noted that my analysis concluded after internal deadlines finalizing Staff's revenue deficiency. The impacts of this adjustment are not reflected in the testimony and exhibits of other Staff witnesses or in the Staff's revenue deficiency supported by Staff witness Nichols. All impacts of this adjustment will be included in Staff's Brief.

Vehicle Fleet Operations & Maintenance Expenses

Q. Please provide an overview of the Company's Vehicle Fleet Operations & Maintenance Expenses.

A. The Company tracks O&M for fleet vehicles in two categories, capital repair work and O&M work. Capital repair work includes engine and transmission repairs, body work, and any other large, unexpected expenses. O&M work consists of routine and predictable maintenance, including oil changes, tire rotations, brake replacements, and fluid refills.

Q. Please provide more detail on the Company's Vehicle Fleet Capital Repair expense trends.

A. Both historic actual and projected future costs for capital repair work done to Fleet Vehicles from 2020 to 2025 are provided in Staff Exhibit S-12.2. The spike in capital repair expenses around 2022 were related to supply chain issues and the chip shortage during the COVID-19 pandemic, which resulted in the Company spending more on capital repairs for older vehicles, as new ones were not readily available.

Q. Please provide more detail on the Company's Vehicle Fleet O&M work expense trends.

A. Both historic actual and projected future costs for O&M work done to Fleet Vehicles from 2020 to 2025 are provided in Staff Exhibit S-12.2. The dip in O&M work spending around 2022 was related to the supply chain issues and the chip shortage during the COVID-19 pandemic, which resulted in the Company spending less on O&M work as its fleet was aging and requiring a greater portion of capital repair work.

Q. Who services Company owned fleet vehicles?

A. Revealed in discovery, seen in Staff Exhibit S-12.3, the Company states it has 92% of O&M related work done in-house by DTE mechanics, while 91% of capital repair related work is done in-house by DTE mechanics. The Company typically only outsources work related to insurance claims, warranty claims, or heavy-duty suspension, transmission, or engine work.

Q. Does Staff have any recommendations concerning the Company's Vehicle Fleet Operations & Maintenance expenses or procedures?

A. Staff does not have any suggestions currently.

Base Capital Programs

Q. Please provide an overview of the Company's Base Capital Program.

A. The Base Capital Program concerns itself with several broad categories such as emergent equipment replacements, customer connections, relocations, new load connections, public lighting, and other general tools and equipment necessary for this work. The breakdown for this category can be seen on lines 1-17 on page 1 of Company Exhibit A-12 Schedule B5.4

Q. Are there any spending trends of note in the Base Capital Programs category?

A. Generally speaking, the total cost of the Base Capital Program only increases by approximately 3% from the historic 2022 year to the projected 2025 test year. However, the same cannot be said for all sub-programs in this category. Notably, the 'Relocations' sub-program costs doubles from 2022 to 2023 and continues growing into 2024. Relocation

projects are often tied to requests by other city, state, or government agencies that involve public infrastructure. It is noted that the number of these projects has been increasing in recent years due to recent influxes in infrastructure spending at both the state and federal levels.

Q. Please provide greater detail on the 'Relocations' sub-program and its spending trends.

A. Despite the trends listed above and seen in the Company Exhibits filed with this rate case, DTE was able to show that actual spending for 2023 in this category came in well below forecast. Revealed in discovery, now seen in Staff Exhibit S-12.4, DTE spent only $38.08 million of the $45.77 million projected for 2023. Further, it is worth noting that the Company revealed in discovery that most relocation requests do indeed come at the behest of government agencies. Staff Exhibit S-12.5 shows that for calendar year 2023, of the $38.08 million spent, $24.65 million was for "Relocation Projects (excl. Major Infrastructure)" and $20.34 million of that was at the request of city, state, or county agencies.

Q. Does Staff have any recommendations concerning the Company's Base Capital Programs?

A. Staff does not have any suggestions currently.

Summary

Q. Please summarize your recommendations.

A. 1. Staff recommends a disallowance of $2.84 million for the bridge period in the category Vehicle Fleet Capital Expenditures. Staff Further recommends a disallowance of $3.83 million for the test year in the category Vehicle Fleet Capital Expenditures.

2. Staff currently has no recommendations on the topic of Vehicle Fleet Operations & Maintenance Expenses.

3. Staff currently has no recommendations on the topic of Base Capital Programs.

Q. Does this conclude your testimony?

A. Yes.

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 its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.	))))))	Case No. U-21534

QUALIFICATIONS AND DIRECT TESTIMONY OF

JESSICA DUELL

MICHIGAN PUBLIC SERVICE COMMISSION

July 26, 2024

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

A. My name is Jessica Duell (she/her/hers), 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 Departmental Analyst in the Electric Operations Section of the Energy Operations Division.

Q. Please describe your educational background.

A. I earned a Bachelor of Liberal Arts with a major in Biology and minor in psychology at Olivet College in 2015.

Q. What is your professional background?

A. In 2015 I worked as a certified nurse assistant (CNA) at Green Acres of Ionia in Ionia, Michigan. As a CNA, I would take care of patients with their daily needs. In 2016, I started working for State of Michigan Department of Health and Human Services (MDHHS) at the Hawthorn Center as a Childcare Worker. My responsibilities were to watch over the children and take care of them while they stayed at the hospital. I worked at the Hawthorn Center until January of 2018 when I then transferred to become an Eligibility Specialist for MDHHS. I worked as an Eligibility Specialist from 2017-2022. As an eligibility specialist I had to work with policy and procedures to determine each client's eligibility for state benefits. I would process applications, conduct reviews, interview clients, speak to clients on the phone, and process verifications received to determine eligibility for each program. As an eligibility specialist I would contact utility companies when a client's utilities were turned off or in shut-off status. I would

communicate with the utilities to figure out how much the client owed and to determine what I could do to get the client's utility service turned back on or not shut off, depending on the circumstances. Clients would submit an SER (State Emergency Relief) application and I would then have to process the application to prevent a shut off of their utilities. I also worked as a mentor for new workers. My responsibilities as a mentor were to train new workers in every aspect of the job and make sure they could complete the job precisely and accurately. In February of 2022, I left MDHHS and started working at the MPSC in Electric Operations as Departmental Analyst.

As a Departmental Analyst in the Electric Operations Section of the MPSC, my responsibilities include analysis of electric rate cases for reasonableness and prudency, regular reporting of nuclear and storms, assist with order compliance, and other tasks that may entail workgroups or research.

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

A. Yes. The trainings I have completed so far include:

- FEMASID Training
- Introduction to Incident Command System, ICS-100
- Basic Incident Command System for Initial Response ICS-200
- An Introduction to the National Incident Management System
- National Response Framework, An Introduction,
- MI CIMS (WebEOC) End-User Training,
- Multicultural Self-Awareness,
- NRRI-RTI Training

- The Basics for the Electric Industry
- Root Cause Training
- MIC AM Champion
- Fundamentals of Overhead Distribution Systems
- Introduction to Substation Design
- Underground Electric Distribution Fundamentals
- Electric Distribution Safety
- NARUC/NASEO & LBNL Distribution System Planning
- Integrated Right-of-Way Vegetation Management
- NARUC RTI - The Basics of Utility Accounting and Ratemaking 2024
- Rate Case Basics 2024

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-21286	UPPCO	Electric Rate	Tree Trim and Facilities
U-21297	DTE	Electric Rate	Tree Trim, Streetlighting, Storm Restoration
U-21389	Consumers	Electric Rate	Line Clearing, Streetlighting, Storm Restoration
U-21555	UPPCO	Electric Rate	Distribution Capital Expenditures

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) recommendations regarding DTE Electric Company's (DTE Electric, DTE, or the Company) Tree Trimming and Service Restoration programs.

Q. Are you sponsoring any exhibits?

A. No, I am not sponsoring any exhibits in my direct testimony.

Tree Trimming Expenses

Q. Please briefly describe the Company's Tree Trim program.

A. Rachel Steudle explains DTE's tree trimming program on page 4 lines 18-23 of her direct testimony.

The Tree Trimming Pillar focuses on keeping vegetation (trees, brush, vines) clear of our overhead electrical equipment, including poles, wires, transformers, etc. The objectives of these investments are to reduce tree-related safety hazards and to reduce the volume of tree-related trouble cases, thereby increasing customer reliability. All vegetation management investments are made through the Company's Tree Trimming Program.

Q. When does the Company plan on completing their current tree trim surge program?

A. Rachel Steudle states in testimony on page 6 lines 23-24, that DTE plans on completing the surge program by the end of 2025. Once the surge program is completed the Company will be in their post-surge period. It is extremely crucial that DTE completes all reclaim miles by the end of 2025 so the Company can be in their post-surge period. DTE plans on continuing its maintenance of tree trimming by using a risk-based/variable cycle approach. Rachel Steudle states in testimony on page 28 lines 14-21, with a risk-based cycle approach the Company would be adjusting cycle lengths based on tree species growth rates, risk of outages, and cost of trimming using LiDAR technology.

Q. Please explain DTE's proposal for remaining funding for the completion of the tree trim surge program.

A. Rachel Steudle explains DTE's proposal on page 23 lines 24-25 of her direct testimony.

> The Company proposes to address the $110 million through a combination of incremental regulatory asset in 2025 ($87 million) and increasing the base O&M ($23 million) in 2026. The regulatory asset would be required to address the remaining reclaim miles needed to complete the Surge. The increase in base O&M is to fund trimming on-cycle miles based on the new projections. Increasing the O&M for the first year post-Surge would set the appropriate baseline budget for a fully on-cycle system into the future.

Rachel Steudle states on page 18 lines 1-21, the reason behind this requested amount is because back in 2015-2017 DTE had third-party consultant (ECI) complete a study regarding their vegetation management program. After ECI analysis DTE found that the surge would cost $1,131 million, $721 million treated as O&M and $410 million booked as a regulatory asset (Rachel Steudle testimony page 16 lines 11-14). Towards the end of 2023 DTE realized they needed more funding than originally projected to get their whole system to a 5-year cycle due to various cost drivers.

Q. Does Staff support the Company's tree trimming request of $240,000,000 in 2025?

A. Yes, Staff supports the Company's 2025 tree trimming request of $109,000,000 in Base O&M, $43,700,000 in regulatory asset that was approved in Case No. U-21297, and $87,000,000 in incremental regulatory asset all totally $240,000,000.

Tree Trimming Recommendations

Q. Please explain DTE's proposal for risk-based cycle clearing after the completion of their surge program.

A. Rachel Steudle states on page 28 lines 14-21 of her direct testimony,

> As the Company enters the final years of the Surge, the Company recognizes that there are opportunities to adjust the target cycle for different parts of the system utilizing technology such as LiDAR. Adjusting cycle lengths based on tree species' growth rates, risk of outages, and cost of trimming will further improve trimming efficiencies and provide reliability benefits to customers. With the acquisition of LiDAR tree density and encroachment data combined with tree species data the Company has acquired over the course of the Surge program, DTE Electric has the necessary information to make data-driven improvements to the program.

Q. Does Staff support the Company's proposal for risk-based cycle trimming after the completion of the surge program?

A. At this time, Staff would like to see the results of the third-party audit, currently being conducted by the Liberty Consulting Group, to determine what would be the best option for the Company regarding a definitive tree trimming program after the surge program is completed. The results of the audit may give Staff answers regarding any tree trimming specifications the Company may need to use and potential cycle lengths that will be beneficial for DTE's service territory.

Q. Please explain DTE's proposal regarding Staff's recommendation for more aggressive tree trimming of zones 2 and 3.

A. Rachel Steudle states on page 37 lines 9-14 of her direct testimony,

> The Company proposes comparing circuits trimmed on our regular maintenance program (control group) to circuits trimmed for construction projects (test group). The Company has a small subset of circuits that have been trimmed to a more expansive specification, with all overhang removed, in preparation for construction projects. The Company can compare the cost and reliability of these two groups to understand the impact of potentially changing the specification.

Q. Does Staff support the Company's proposal for more aggressive tree trimming for zones 2 and 3.

A. Staff supports DTE's proposal to look at circuits trimmed on regular maintenance versus circuits trimmed during construction projects. Staff believes this approach will help determine whether zones 2&3 need to be trimmed more aggressively or not.

Storm Restoration Expenses

Storm Restoration

Q. Please briefly describe the Company's Storm Restoration expenses.

A. DTE storm restoration program entails the Company completing restoration activities after a storm occurs. Staff had difficulty finding in testimony from the Company a description stating what it is spending storm restoration expenses on and what the Company defines as storm restoration expense. Staff recommends that the Company provide a brief description in future cases of what the Company defines as storm restoration expenses and describe what the Company plans on spending their storm restoration expenses on.

Q. Did Staff review the Company's projected test year for service restoration O&M expense?

A. Yes, Staff reviewed the Company's projected test year service restoration spending of $64,500,000 in O&M expenses. This amount can be found in Exhibit A-13 Schedule C5.6 page 2 lines 1-8.

Q. Does Staff support the Company's requested $64,500,000 in service restoration for the projected test year O&M expense?

A. Yes, staff approves the spend of $64,500,000 for the projected test year O&M expense for service restoration.

Storm Restoration Cost Sharing Mechanism

Q. Please briefly describe the Company's Storm Restoration Cost Sharing Mechanism.

A. DTE is proposing a Storm Restoration Cost Sharing Mechanism that will become effective January 1, 2025. Company witness Foley explains in his direct testimony on page 23 lines 1-25, that storm restoration O&M expenses follow a five-year trailing average and are authorized for recovery from customers through base rates. At the end of each year, storm restoration expenses would be compared to what has been authorized to be recovered from customers in base rates. Any difference between storm restoration expenses for the year and those that have been authorized for recovery will be equally shared between the company and their customers. Mr. Foley explains in detail how this will work on page 23-24 lines 23-25 and 1-3 of his direct testimony.

If actual storm restoration O&M expenses are less than projected, the Company returns 50% of the difference to customers by recording that amount as a Regulatory Liability. If actual storm restoration O&M expenses are more than projected, the Company recovers 50% of the difference from customers by recording that amount as a Regulatory Asset. Regulatory Assets and/or Liabilities accumulate between general rate cases until a subsequent general rate case when any net Regulatory Liability or Regulatory Asset is addressed.

Mr. Foley testifies that this mechanism will help the Company control costs. On page 26, lines 8-15 of his direct testimony he states the following:

> [T]he Company is proposing the equal sharing of costs that differ from those authorized for recovery in base rates. The sharing of costs ensures that the Company has a strong incentive to control costs regardless of what actual costs are for a given year. Specifically, if actual costs are greater than projected, the Company is incentivized to control costs because it must absorb 50 cents of every incremental dollar that is spent. If actual costs are less than projected, the Company is still incentivized to control costs because it is allowed to retain 50 cents of every incremental dollar that is saved.

Q. Does Staff support the Company's request for a Storm Restoration Cost Sharing Mechanism?

A. No, Staff does not support the Storm Restoration Cost Sharing Mechanism. Staff believes this mechanism should not be approved because 1) Staff is supporting the full-service restoration expense for the test year; 2) the Commission rejected similar mechanisms in prior cases U-20963, U-20697, and U-21389; and 3) Staff would like to see results from the third-party audit to further determine cost savings in storm restoration expenses. In Case No. U-21305 the Commission ordered a third-party audit be completed by a consultant who will investigate Consumers and DTE's distribution systems. After the audit is completed, the results may show cost savings for DTE and give Staff ideas on what could be beneficial to both the Company and their customers.

Storms are also progressively getting worse each year. Customers may never see a benefit from the proposed storm restoration mechanism due to the Company spending over the requested amounts each year.

Finally, the way the Company currently recovers storm restoration expenses provides a stronger incentive to control costs than the Storm Restoration Cost Sharing Mechanism. The Company currently keeps 100% of savings, rather than 50%, and absorbs 100% of costs overages, rather than 50%. The Company's proposal dulls these incentives.

Summary

Q. Please summarize your recommendations.

A. 1. Staff approves the spend of $109,000,000 in Base O&M for 2025 for tree trimming. Staff also supports $87,000,000 in incremental regulatory asset to complete the surge program.

2. Staff recommends waiting on results of Audit to determine if risk-based cycle tree trimming works for DTE Electric's service territory.

3. Staff approves DTE's proposal to investigate more aggressive trimming of zones 2&3.

4. Staff approves the spend of $64,500,000 for the projected test year O&M expense in service restoration.

5. Staff recommends the Storm Restoration Cost Sharing Mechanism not be approved.

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

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In the matter of the application 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-21534

QUALIFICATIONS AND DIRECT TESTIMONY OF

ALLY DURFEE

MICHIGAN PUBLIC SERVICE COMMISSION

July 26, 2024

QUALIFICATIONS OF ALLY DURFEE
CASE NUMBER U-21534
PART I

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

A. My name is Ally Durfee, 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 Engineer in the Electric Operations Section of the Energy Operations Division.

Q. Please describe your educational background.

A. I earned a Bachelor of Science degree in Civil Engineering from Utah State University in 2011.

Q. What is your professional background?

A. In 2013, I began working at Rocky Mountain West Telecom (RMWT), a telecommunications engineering firm in Utah, as an Engineering Assistant. I was later promoted to department manager. While working at RMWT, I gained a lot of experience working with many electric utilities to gain joint use rights on poles. I completed many projects involving upwards of 500 poles and became very familiar with the NCEES standards for pole attachments. I completed the CET Design Methods and Procedures training course in 2021. I started with the MPSC a Public Utilities Engineer in the Electric Operations section in April of 2022. My current responsibilities include reviewing reasonableness and prudency of electric rate cases and testifying on my findings.

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

A. Yes. In June of 2022, I completed the Michigan Infrastructure Council Asset Management Champion Course through the Michigan Infrastructure Council. I also completed Stray Voltage Training that same month. I completed the IPU's Annual Regulatory Studies Program Fundamentals Course, the Incident Investigation, Root Cause Analysis Training and MORT Certification, and the Basics Practical Regulatory Training for the Electric Industry. I have also completed several EUCI training courses including Distribution Reliability Fundamentals, Electric Utility Pricing: Trends in Cost Recovery, Electric Distribution Safety, and Electric Distribution Planning Fundamentals. I attended the Distribution System Planning and Resilience Training by NASEO, NARUC & LBNL.

Q. Have you previously testified before the Commission?

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

Case No.	Company	Type of case	Assisted with
U-21224	Consumers Energy	Electric Rate	Service Restoration, Line Clearing, and CVR
U-21286	Upper Peninsula Power Company	Electric Rate	Substation Projects
U-21461	Indiana Michigan Power Company	Electric Rate	Distribution Capital Expenditures

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

A. Yes, in the following case:

Case No.	Company	Type of Case	Assisted with:
U-21297	DTE Electric	Electric Rate	Distribution capital

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) recommendations regarding DTE Electric Company's (DTE or the Company) strategic capital programs.

Q. Are you sponsoring any exhibits?

A. No.

Strategic Capital Programs

Q. Did Staff review Company's proposed distribution strategic capital expenditures?

A. Yes, Staff reviewed the Company's proposed distribution strategic capital expenditures.

Q. Which categories are considered to be distribution strategic capital?

A. The Company categorizes distribution strategic capital into 3 categories. They are Infrastructure Resilience and Hardening, Infrastructure Redesign and modernization, and Technology and Automation.

Infrastructure Resilience and Hardening

Q. Briefly describe the infrastructure Resilience and Hardening category.

A. The Infrastructure Resilience and Hardening Pillar includes programs and projects focused on near-term grid infrastructure investments to harden the system against an increasing frequency and severity of high winds and storms, address frequent outage circuits, and replace damaged and/or defective infrastructure.

Q. What are the projected expenditures for the infrastructure resilience and hardening category?

A. The company is projecting $671,539,000 for the 2023 and 2024 bridge period and $364,706,000 for the 2025 test year.

Q. Do you have any adjustments to this category?

A. At this time, no.

Infrastructure Redesign and Modernization

Q. Briefly describe the Infrastructure Redesign and Modernization category.

A. The Infrastructure Redesign and Modernization category focuses on fundamentally rebuilding and modernizing the near century old grid to support the long-term grid needs. The specific investments in this pillar are essential to meeting the evolving needs of customers, including adoption of electric vehicles (EVs) and other forms of electrification, distributed energy resources (DER), and the evolving ways in which customers are interacting with the grid.

Q. What are the projected expenditures for the Infrastructure Redesign and Modernization category?

A. The Company is projecting $550,740,000 for the 2023 and 2024 bridge period and $227,003,000 for the 2025 test year.

Q. Do you have any adjustments to this category?

A. At this time, no.

Technology and Automation

Q. Briefly describe the Technology and Automation Category.

A. Investments in new technologies are a fundamental part of the grid, improving the way modern electric grids operate and resulting in improved reliability, operability, and safety. They also provide new opportunities to improve

operations in ways that benefit customers, such as the ability to automatically isolate outages to limit the number of impacted customers. An additional critical function is to provide real-time visibility for system operators and engineers into circuit and substation loading. This loading data is critical to managing circuits efficiently both today and in the future, and to accommodating electric vehicles and increasing numbers of DER such as solar, and energy storage.

Q. What are the projected expenditures for the Technology and Automation Category?

A. The Company is projecting $287,524,000 for the 2023 and 2024 bridge period and $235,571,000 for the 2025 test year.

Q. Do you have any adjustments to this category?

A. At this time, no.

Q. Are the results of the third-party audit of the Company, which was initiated by the Commission in Case No. U-21305, available at this time?

A No. The results are not currently available but are expected to be later in 2024.

Q. Can the results of the audit cause spending priorities to change?

A. Yes, the results of the audit have the potential to change spending priorities of the Company depending on what are deemed the best investments to reach the goals of the Company regarding its electric distribution system.

Q. Please summarize your recommendations.

A. At this time staff has no recommended adjustments to the strategic capital programs.

Q. Does this conclude your testimony?

A. Yes.

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 its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.	))))))	Case No. U-21534

QUALIFICATIONS AND DIRECT TESTIMONY OF

NICHOLAS M. EVANS

MICHIGAN PUBLIC SERVICE COMMISSION

July 26, 2024

QUALIFICATIONS OF NICHOLAS M. EVANS
CASE NUMBER U-21534
PART I

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

A. My name is Nicholas M. Evans (he/him/his), 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 Manager of the Electric Operations Section. This section is part of the Energy Operations Division, which 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 Staff for six electric cooperatives' cases 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 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 2013, I transferred to the Generation and Certificate of Need Section. My primary responsibility was 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 tracking and monitoring various environmental rules as they were proposed and finalized. In 2017, I led two workgroups as part of the Integrated Resource Plan Statewide Parameter Setting/Modeling stakeholder outreach process.

In 2017, I was promoted to a Public Utilities Engineering Specialist and began working in the Electric Operations section. My primary responsibilities were to review distribution system expenditures and expenses in utility rate case filings and co-lead the Interconnection Standards and Worker Safety workgroup, which was tasked with updating Michigan's interconnection, distributed generation, and legally enforceable obligation rules. My other responsibilities were to review distribution operations five-year plans, log safety incidents associated with utility equipment, assist with investigations, and assist with updating the Service Quality and Reliability Standards for Electric Distribution Systems rules and the Technical Standards for Electric Service rules.

In 2020, I was promoted to Manager of the Electric Operations Section. As manager, I continue to review utility rate case filings, and I regularly assist with various Commission initiatives. I also serve as a point of contact for utilities when safety incidents associated with utility equipment occur. Since 2020, I have been participating in the MPSC's Diversity, Equity, and Inclusion (DEI) initiative. In 2022, I began assisting with the oversight of the third-party review of the electric distribution systems of Consumers Energy and DTE Electric, required by the October 5, 2022 order in Case No. U-21305. In 2023, I began participating in the Financial Incentives and Disincentives workgroup, which was established in Case No. U-21400 and is tasked with reviewing and considering issues related to the creation of financial incentives and penalties involving outages and distribution performance.

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, and the IPU Ratemaking Course.

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

A. Yes. Since 2007, I have attended training programs and events on energy auditing, smart grid applications, electric generation, environmental compliance, root cause analysis, asset management, diversity, equity, incident command and management, distributed

energy resources, and electric distribution. Programs and events focused on electric distribution include the following:

-Distribution Efficiency Planning and Voltage Optimization conference sponsored by EUCI, in 2012.

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

-Fundamentals of Overhead Distribution Systems, presented by EUCI, in April 2023.

-Underground Electrical Distribution Fundamentals, presented by EUCI, in April 2023.

-Electrical Distribution Safety, presented by EUCI, in May 2023.

-Electricity 101, presented by EUCI, in June 2023.

-PBR for Energy Utilities, presented by NARUC Regulatory Training Initiative, in October 2023.

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. In July 2022, I completed the Michigan Infrastructure Council Asset Management Champion Program.

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

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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
U-20162	DTE Electric	Electric rate	Distribution capital and O&M
U-20561	DTE Electric	Electric rate	Distribution capital and O&M
U-20697	Consumers Energy	Electric rate	Distribution capital and O&M
U-20963	Consumers Energy	Electric rate	Distribution capital and O&M (with Rebuttal)
U-20836	DTE Electric	Electric rate	Distribution system programs, Vehicle Fleet, outage credits
U-21224	Consumers Energy	Electric rate	IT project, service restoration, advanced lighting controls
U-21286	Upper Peninsula Power Company	Electric rate	Overhead-to-underground projects

U-21297	DTE Electric	Electric rate	Distribution capital, undergrounding, IT projects
U-21389	Consumers Energy	Electric rate	Distribution deferral mechanism, Investment Recovery Mechanism
U-21461	Indiana-Michigan	Electric rate	IIJA grant funding, grant writing costs, outage credits

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
U-21045	Alpena Power Company	Electric rate (settled)	Distribution capital and O&M
U-21097	Northern States Power	Electric rate (settled)	Distribution capital
U-21138	Consumers Energy	Complaint (withdrawn)	Distribution system operations

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) recommendations regarding DTE Electric Company's (DTE Electric or the Company) proposals to recover certain outage credits paid to customers and to expand the duration and scope of the Infrastructure Recovery Mechanism (IRM).

Q. Are you sponsoring any exhibits?

A. No.

Outage Credits

Q. What is the Company proposing regarding cost recovery of customer outage credits in the instant case?

A. The Company's position regarding credits paid for outages that exceed the duration limits in service quality rules R 460.744 and R 460.745 is that these credits should be recoverable from ratepayers when the outage was caused by the transmission operator, another utility, public interference, or animal interference. The Company's position regarding credits paid to customers for exceedance of the outage frequency limit in service quality rule R 460.746 is that a portion of the total credits provided to ratepayers as a whole under this rule should be recoverable, and this portion would correspond to outages caused by the transmission operator, another utility, public interference, animal interference, ice, lightning, wind, or other weather.

The Company proposes to recover the outage credit costs by deferring the costs related to credits eligible for recovery, starting after an order in the instant case. The deferred amounts would be reviewed for reasonableness and prudency in the next general electric rate case. Once the deferred amounts are approved by the Commission the

Company begin amortizing and recovering them. This proposed recovery treatment is very similar to what the Company proposed in U-20836.

Q. Does Staff agree with this proposal?

A. Not all of it. While Staff agrees with deferring the costs related to credits eligible for recovery, Staff's position is that recovery should be far more limited than what DTE Electric has proposed.

For credits paid for outages that exceed the duration limit, only those outages caused by a transmission operator or another utility should be recovered from ratepayers.

For credits paid to customers for exceedance of the outage frequency limit, the recoverable portion of the total credit amount provided to ratepayers should correspond only to outages caused by the transmission operator, another utility, or public interference. For example, let's assume that 150,000 residential customers will receive credits for experiencing 6 sustained interruptions in 2024, consistent with the language of Rule 460.746. The total credit amount provided should be $5,700,000, as the current bill credit at the time of this filing is $38. (Commercial customers and industrial customers can also receive credits, but for the sake of simplicity, this example only includes residential customers. In addition, I am assuming that the bill credit amount does not get updated in September and stays at $38 for the entire year.) Let's further assume that each customer who receives a credit experienced exactly 6 outages over the course of the year, which corresponds to 900,000 outages total for this group of customers. After some analysis in early 2025, the Company finds that 20% of those outages were caused by the transmission operator, another utility, or public interference. In this case, the Company

should only recover from ratepayers 20% of the $5,700,000 paid out, or $1,140,000. The remaining 80%, or $4,560,000, would be borne by shareholders.

Q. Is this methodology similar to the Company's initial proposal?

A. Yes, based on the testimony of Company witness Adella Crozier, who states on page 34 of her direct testimony:

> **Q47. Does the Company have a proposal for how recoverable credits related to frequent outages would be calculated?**
>
> A47. The Company would like to spend more time with Staff to design a methodology for the recovery of these credits but has an initial proposal. If a customer meets the criteria for the outage credit based on outage frequency, there will likely be a mix of underlying causes. Though mathematically simple to determine the percentage of the outage credit that is recoverable, it will be expensive and complicated to implement an algorithm into the billing system to calculate a unique percentage to apply to each $38 credit that is being deferred for recovery. The Company proposes that a common percentage be applied to all outage credits paid for outage frequency exceedances that reflects some analytics from the previous year. In this way, a simple and consistent factor can be applied to each outage credit paid for frequency exceedances, avoiding the need for complicated and costly system programming.
>
> It would be less costly to analyze the prior year's data and apply a common percentage than to analyze each payment real-time and apply a unique factor. The Company would like to work with Staff to develop a methodology that is reasonable and able to be implemented without billing system complexities.

Q. Is Staff open to collaborating with the Company and other intervenors after the conclusion of this rate case on finalizing the methodology for the recovery of repetitive outage credits, if necessary?

A. Yes.

Q. Why does Staff oppose recovery of long-duration outage credits for outages caused by public interference and animal interference?

A. Staff's position is that the Company recover from ratepayers only those outage credits that are paid out due to outages that are outside the control of the Company to resolve. An outage caused by the transmission system operator or another utility clearly falls

within this category. However, under Staff's position, credits paid out due to events such as a car hitting a DTE Electric-owned pole or an animal damaging equipment could not be recovered from ratepayers, because restoring customers in a timely manner after car-pole accidents or other public interference and animal interference is an expected utility function.

Q. Why does Staff oppose recovery of repetitive outage credits for outages caused by animal interference, ice, lightning, wind, and other weather?

A. Staff's position is that the Company recover from ratepayers only those outage credits that are paid out due to outages that are completely outside the control of the Company to prevent. An outage caused by the transmission system operator, another utility, or public interference clearly falls within this category. However, under Staff's position, credits paid out due to events such as an animal damaging equipment or a storm could not be recovered from ratepayers, because the utility should be hardening or otherwise upgrading its distribution system to reduce or eliminate the occurrences of these types of outages.

Infrastructure Recovery Mechanism

Q. Please describe DTE Electric's proposed infrastructure recovery mechanism (IRM).

A. In Case No. U-21297, the Company proposed IRM treatment for five distribution capital programs:

1) Conversions;

2) Subtransmission Redesign and Rebuild;

3) Breaker Replacement;

4) Underground Residential Distribution (URD) Replacement; and

5) 4.8 kV Circuit Automation.

The IRM would be in place for just over three years:

-IRM Plan Year 1 would cover December 1, 2023 – December 31, 2024;

-IRM Plan Year 2 would cover January 1, 2025 - December 31, 2025; and

-IRM Plan Year 3 would cover January 1, 2026 – December 31, 2026.

The Company proposed that two stakeholder processes, the IRM Planning Process and the IRM Reconciliation Process, be part of the IRM. Company witness Neal Foley describes these processes on page 5 of his direct testimony in the instant case.

Q. What did the Commission approve in its December 1, 2023 order in Case No. U-21297?

A. The Commission approved the Company's proposed IRM with several modifications. For the purposes of my testimony, I will only list and describe the modifications that are relevant to my recommendations.

-The Company shall submit its annual IRM Investment Plan no later than four months prior to the start of each IRM Plan Year, and the Plan must be submitted to all intervening parties in the Company's most recently filed general rate case.

-The Company shall schedule and provide a forum, no later than two months before the start of the IRM plan year, for Staff and intervening parties to ask questions or raise concerns about the plan.

-Only years 1 and 2 were approved. In other words, absent an extension granted by the Commission, the current IRM will expire at the end of 2025.

Q. Is the Company asking for the IRM to be modified in the instant case?

A. Yes, the Company is asking for four modifications to the current IRM in this case:

1. Extend the IRM through calendar years 2026 and 2027.

2. Starting in 2026, Pole and Pole Top Maintenance and Modernization (PTMM) should be authorized for IRM treatment.

3. Starting in 2026, the scope of the automation program be modified from "4.8 kV Circuit Automation" to "Distribution Automation."

4. Include $434,100,000 in additional capital expenditures to the IRM for 2025. This amount is spread across four programs:
Distribution Automation- an additional $125.6 million;
PTMM - $121 million;
4.8 kV Hardening - $125 million; and
Frequent Outage Management (CEMI) - $62.5 million.
If the Commission were to authorize, in full or in part, those capital programs and associated investment amounts for IRM treatment in 2025, the capital expenditures would have to be removed from the Company's base rate recovery request.

Q. Does Staff support these proposed modifications?

A. Only one of them. Staff supports modifying the scope of "4.8 kV Circuit Automation" to "Distribution Automation" after the conclusion of IRM Plan Year 2.

Q. What proposed modifications to the IRM does Staff not support?

A. -Staff does not support extending the IRM through calendar years 2026 and 2027.
-Since Staff does not support extending the IRM through calendar year 2026 and 2027, Staff cannot support authorizing Pole and Pole Top Maintenance and Modernization (PTMM) be authorized for IRM treatment, starting in 2026.

-For 2025, Staff does not support increasing the distribution automation investment from $24.4 million to $150 million for inclusion in the IRM. Also for 2025, Staff does not support adding $121 million in PTMM investment, $125 million in 4.8 kV hardening, and $62.5 million in Frequent Outage Program (CEMI) investment to the IRM.

Q. Please explain why Staff does not support these changes.

A. As the Commission stated on page 289 of its December 1, 2023 order in the Company's last electric rate case, Case No. U-21297:

> [T]he Commission finds that approval is limited to Plan Years 1 and 2. As noted on the record, there is ongoing discussion regarding PBR in Case No. U-21400 and an ongoing audit in Case No. U-21305. Therefore, the Commission finds that limiting the approval to the first two years will allow the company to move forward with the IRM without precluding the incorporation of any potential insights gained from those proceedings to better inform the potential continuation of the IRM.

Staff does not want to have the Company locked into spending specific amounts in those IRM programs for all of 2026 and 2027, and further increase the IRM spending in 2025, when the U-21305 audit report, authored by the Liberty Consulting Group, will be finished sometime in late summer or the fall, and the Commission may issue an order in Case No. U-21400 regarding financial incentives and disincentives. The Liberty audit report may have recommendations that could cause DTE Electric to change spending amounts and programs included in the IRM. Company witness Neal Foley says as much on page 16 of his direct testimony:

> [F]uture IRM proposals would incorporate the recommendations from the Distribution System Audit where appropriate. For example, while the Company cannot predict what those recommendations will be, it is possible that the Company may propose changes to either the programs or the investment levels authorized for IRM treatment based on Liberty Consulting Group's findings.

Staff's position is that it is far better to have DTE Electric review the audit report later this year and next year and then make adjustments, where appropriate, to potential

2026 IRM spending and programs, rather than risk being locked into inefficient spending for 2026.

Q. Please describe the Company's concerns with only approving the IRM for two years as opposed to four.

A. According to Company witness Neal Foley, on page 10-11 of his direct testimony:

> Absent an extension granted in this case, the existing IRM will cease at the end of 2025 and could only be re-established through a Commission order in a future case. Such stopping and restarting of the IRM and its associated processes could lead to inefficiencies and reduce the ability to improve upon the process through stakeholder feedback. Importantly, the proposed extension will ensure that the customer and stakeholder benefits realized through the IRM do not lapse.

Q. What does Mr. Foley mean by "stopping and restarting"?

A. I will provide a hypothetical scenario to illustrate what Mr. Foley is referring to. Assume the Company files a rate case next year, on June 2, 2025, with an order issued the following year on April 1, 2026. As part of this order, a revised IRM, incorporating to some degree the Liberty audit findings, is authorized for the remainder of 2026. Since the IRM had expired on December 31, 2025, this reauthorization would bookend a three-month gap from January 1, 2026 – April 1, 2026 where no IRM was in effect. This is how "stopping and restarting" can happen with an IRM.

Q. Does Staff have any concerns with a gap occurring in the IRM?

A. No. Strictly from a process standpoint, a gap can be accommodated. Using the scenario described above, the Company would receive the results of the Liberty audit later in 2024, incorporate findings as appropriate into the partial year 2026 and likely calendar year 2027 IRM Plans, and then include those plans and the IRM authorization requests in the rate case filed on June 2, 2025. Knowing that an order would be issued around April 1, 2026, and assuming that the 2026 IRM Plan Year would start that same day, the

Company could send the Partial Year 2026 IRM Investment Plan out to Staff and intervenors on December 1, 2025, and then schedule the forum on or before February 1, 2026.

Again, it is better to pause the IRM for part of 2026 to allow for more efficient spending in 2026 and 2027 than to authorize in this rate case 2026 and 2027 IRM plans that may have already been rendered outdated by the Liberty audit report in U-21305 and a Commission order in U-21400 on financial incentives and disincentives.

Q. Please summarize your recommendations.

A. My recommendations are as follows:

1. For outage credits paid for outages that exceed the duration limit, only those outages caused by a transmission operator or other utility should be recovered from ratepayers.

2. For outage credits paid to customers for exceedance of the outage frequency limit, the recoverable portion of the total credit amount provided to ratepayers as a whole should correspond to outages caused by the transmission operator, another utility, or public interference.

3. Staff does not support extending the IRM through calendar years 2026 and 2027.

4. For 2025, Staff does not support increasing the distribution automation investment from $24.4 million to $150 million for inclusion in the IRM. Also for 2025, Staff does not support adding $121 million in PTMM investment, $125 million in 4.8 kV hardening, and $62.5 million in Frequent Outage Program (CEMI) investment to the IRM.

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

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In the matter of the Application of	**)**	
DTE ELECTRIC COMPANY	**)**	
for authority to increase its rates, amend	**)**	**Case No. U-21534**
its rate schedules and rules governing the	**)**	
distribution and supply of electric energy, and	**)**	
for miscellaneous accounting authority.	**)**	

QUALIFICATIONS AND DIRECT TESTIMONY OF

LISA M. KINDSCHY

MICHIGAN PUBLIC SERVICE COMMISSION

July 26, 2024

QUALIFICATIONS OF LISA M. KINDSCHY
CASE NUMBER U-21534
PART I

Q. Please state your name and business address.

A. My name is Lisa M. Kindschy. My business address is 7109 W. Saginaw Highway, Lansing, Michigan 48917.

Q. Where are you currently employed and in what position?

A. I am employed by the Michigan Public Service Commission (MPSC or Commission) as a Public Utilities Engineering Specialist in the Energy Cost Recovery & Generation Operations section within the Energy Operations Division.

Q. What are your responsibilities in your current position?

A. I perform technical analyses in Act 304 electric plan and reconciliation proceedings. In these cases, I evaluate and review power supply cost recovery (PSCR) plans and reconciliations and develop MSPC Staff's (Staff) position as appropriate. In addition, I review production-related operation and maintenance expenses and capital expenditures as well as PSCR-related costs in rate case proceedings. I am also involved in prevailing nuclear engineering matters. I currently serve as the Commission's representative on the National Association of Regulatory Utility Commissioners (NARUC) Staff Subcommittee on Nuclear Issues – Waste Disposal, and I participate in the Nuclear Waste Strategy Coalition bi-weekly conference calls.

Q. Please discuss your experience with the MPSC.

A. I began working at the MPSC in 2005 on gas cost recovery (GCR) plan and reconciliation cases. In this capacity, I was responsible for performing Staff's analysis and presenting Staff's position. In the fall of 2007, I began working as

the executive assistant to MPSC Chairman Orjiakor Isiogu. In the fall of 2008, I returned to the Act 304 and Sales Forecasting section (renamed to the Energy Cost Recovery & Generation Operations section) to work on PSCR plans and reconciliations as described above in my current position.

Q. Please describe your educational background.

A. I earned a Bachelor of Science degree in 2002 and a Master of Science degree in 2005, both in Biosystems Engineering from Michigan State University.

Q. Have you attended any training courses or participated in any professional seminars while employed at the MPSC?

A. Yes. In August 2006, I attended the two-week NARUC Annual Regulatory Studies Program held at Michigan State University by the Institute of Public Utilities (IPU). I attended a seminar sponsored by New Energy titled "How to Manage Your Gas Supply Portfolio in an Uncertain Gas Market" in April 2006 and two courses by Electric Utility Consultants, Inc. titled "Nuclear Power Fundamentals" in July 2010 and "Nuclear Power Operations and Regulations" in December 2013. I have attended numerous advanced regulatory sessions hosted by IPU as well as two courses – the Power Grid course in 2017 and the Accounting and Ratemaking course in 2019.

Q. Do you hold any licenses?

A. Yes. I am a registered Professional Engineer in the State of Michigan and have been since September 2012.

Q. Have you previously presented testimony before the MPSC?

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

QUALIFICATIONS OF LISA M. KINDSCHY
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Case No.	Company	Description
U-14547	Consumers Energy Company	Gas Rate Case
U-14715	Michigan Gas Utilities Corporation	GCR Plan
U-14718	SEMCO Energy Gas Company	GCR Plan
U-14401-R	Michigan Consolidated Gas Company	GCR Reconciliation
U-16180	Indiana Michigan Power Company	Rate Case
U-16801	Indiana Michigan Power Company	Rate Case
U-17026	Indiana Michigan Power Company	Certificate of Necessity
U-16892-R	DTE Electric Company	PSCR Reconciliation
U-17767	DTE Electric Company	Rate Case
U-18370	Indiana Michigan Power Company	Rate Case
U-18404	Indiana Michigan Power Company	PSCR Plan
U-20350	Upper Peninsula Power Company	IRP
U-20223	Indiana Michigan Power Company	PSCR Plan
U-20359	Indiana Michigan Power Company	Rate Case
U-20529	Indiana Michigan Power Company	PSCR Plan
U-20224	Indiana Michigan Power Company	PSCR Reconciliation
U-20826	DTE Electric Company	PSCR Plan
U-20530	Indiana Michigan Power Company	PSCR Reconciliation
U-20836	DTE Electric Company	Rate Case
U-21050	DTE Electric Company	PSCR Plan
U-20827	DTE Electric Company	PSCR Reconciliation

QUALIFICATIONS OF LISA M. KINDSCHY
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U-21259	DTE Electric Company	PSCR Plan
U-21297	DTE Electric Company	Rate Case
U-21051	DTE Electric Company	PSCR Reconciliation
U-21425	DTE Electric Company	PSCR Plan

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present Staff's adjustments to DTE Electric Company's (DTE Electric or the Company) Steam Power Generation, MERC & Fuel Supply, Nuclear Generation, and Other Power Generation capital expenditures and operations and maintenance (O&M) expenses.

Q. Are you sponsoring any exhibits?

A. Yes. I am sponsoring the following exhibits:

- S-16.0: Actual capital expenditures through April 2024 for Non-Routine Steam Generation additions from discovery response STDE-2.1a and STDE-2.1b
- S-16.1: Calculation of the reduction for the Monroe Bottom Ash Conversion project and updated project sheets from discovery response STDE-2.1d
- S-16.2: Actual capital expenditures through April 2024 for Routine Maintenance over $1 million from discovery response STDE-2.1a and STDE-2.1b
- S-16.3: AACE Cost Estimate Classification System: Cost Estimating and Budgeting
- S-16.4: Reductions for PAT0 and PAT1 Routine Maintenance capital projects over $1 million in 2024 and 2025
- S-16.5: Actual capital expenditures through April 2024 for MERC & Fuel Supply from discovery response STDE-2.21a and STDE-2.21b
- S-16.6: Actual capital expenditures through April 2024 for Nuclear Generation from STDE-2.15a and STDE-2.15b and Reductions for Nuclear capital projects in 2024 and 2025

- S-16.7: Updated O&M Exhibits for Steam, MERC & Fuel Supply, Nuclear and Other Power Generation using a 2023 Historic Year

Steam, MERC & Fuel Supply, Nuclear, and Other Power Generation Capital Expenditures

Q. Please describe Staff's adjustments to Steam Power Generation capital expenditures.

A. Staff is recommending two adjustments to the Company's Non-Routine Steam Power Generation capital expenditures and two adjustments to the Company's Routine Maintenance projects greater than $1 million.

Q. Please describe Staff's first adjustment to the additions for Non-Routine Steam Power Generation capital expenditures on Exhibit A-12 Schedule B5.1 page 2.

A. Staff's first adjustment is to update the capital expenditures for Non-Routine Steam Generation with actual amounts incurred through April 2024 on Exhibit A-12 Schedule B5.1 page 2 on lines 1-18. Please note that the remainder of the lines on this exhibit were reviewed by other Staff. The Company's case as filed included actual amounts through October 2023. Updating the additions to Non-Routine Steam Power Generation results in a decrease of ($579,559) for 2023 and a decrease of ($3,130,502) for 2024 for a total reduction to the bridge period of ($3,710,061). Please see Exhibit S-16.0 for the calculation of these adjustments for 2023 and 2024.

Q. Please describe Staff's second adjustment to the additions for Non-Routine Steam Power Generation capital expenditures on Exhibit A-12 Schedule B5.1 page 2.

A. Staff's second adjustment to Non-Routine Steam Power Generation capital expenditures involves an update to the costs for the Monroe Bottom Ash Conversion project on line 5. In response to discovery, Staff received updated project sheets that show reduced capital expenditures for the Monroe Bottom Ash Conversion project. Specifically, the amounts approved by upper management without contingency in the updated project sheets show a reduction to capital expenditures in 2025 of ($1,909,812) for the Monroe Bottom Ash Conversion project compared to what the Company included in its case as filed. Therefore, Staff recommends that the capital expenditures for the Monroe Bottom Ash Conversion project be reduced in the test year by ($1,909,812) to match the Company's updated projections for spending on this project. Please see Exhibit S-16.1 for the calculation of the adjustment to the Monroe Bottom Ash Conversion project and the updated project sheets.

Q. Please describe Staff's first adjustment to the Company's Routine Maintenance capital projects over $1 million on Exhibit A-12 Schedule B5.1 pages 4-8.

A. Staff's first adjustment to the Company's Routine Maintenance capital projects greater than $1 million is to update the capital expenditures with actual amounts incurred through April 2024 since the Company's case as filed included actual amounts through October 2023. The Routine Maintenance capital projects greater than $1 million that were updated are found on Exhibit A-12 Schedule B5.1 on pages 5-6. Updating Routine Maintenance capital projects greater than $1 million results in an increase of $1,224,761 in 2023 and a decrease of ($22,558,252) in

2024 for a total reduction to the bridge period of ($21,333,492). Please see Exhibit S-16.2 for the calculation of this adjustment.

Q. Please describe Staff's second adjustment to the Company's Routine Maintenance capital projects over $1 million on Exhibit A-12 Schedule B5.1 pages 4-8.

A. Staff's second adjustment to the Company's Routine Maintenance capital projects greater than $1 million is to reduce the estimated costs for certain projects for May-December 2024 by 15% and to reduce certain project estimates by 20% in 2025. In response to discovery, DTE Electric stated that it does not classify its Steam, Hydro or Other Power Generation capital expenditures into the Class Cost Levels specified by the Association for the Advancement of Cost Engineering (AACE). Instead, the Company uses three internal levels to describe the stage of a project: 1) PAT0 is used to accept a new capital project into the process, 2) PAT1 is where detailed engineering and procurement of long lead materials is undertaken, and 3) PAT2 is where construction of the project is completed. For routine capital projects greater than $1 million, Staff made an adjustment to all projects that were at the PAT0 and PAT1 stage as Staff typically has made adjustments for projects that are not in their final stages and where the engineering is not complete as the estimates for these projects are less certain. The stage of each project was found in the project sheets included with the Company's workpapers. For the projections for May-December 2024, Staff used the AACE Class 4 expected accuracy reduction range since these estimates are not as far into the future and reduced these estimates by 15%. For all of 2025, Staff used the AACE Class 5 expected accuracy reduction range and reduced

these estimates by 20%. Staff determined it was reasonable to reduce the 2025 cost estimates more than 2024 since most of the projects in 2025 are at the PAT0 stage of development and the projections are also farther into the future. Furthermore, Staff concluded that reductions to the cost estimates in the bridge and test period are reasonable given that the monthly actual amounts Staff received compared to the projections included in the Company's original filing are lower for January to April 2024. (See Exhibit S-16.2 page 4.) For these reasons, Staff recommends a reduction of 15% for May-December 2024 of ($10,648,865) and a reduction of 20% in 2025 of ($28,451,121) for all PAT0 and PAT1 Routine Maintenance capital projects greater than $1 million on Exhibit A-12 Schedule B5.1 pages 6-7. Please see Exhibit S-16.4 for the calculation of the adjustments in 2024 and 2025 for Routine Maintenance capital projects greater than $1 million.

Q. Please explain Staff's adjustment to MERC & Fuel Supply capital expenditures.

A. Staff is recommending one adjustment to the Company's MERC & Fuel Supply capital expenditures on Exhibit A-12 Schedule B5.2. Staff's one adjustment is to update the months for which actual amounts are now known through April 2024. Updating MERC & Fuel Supply capital expenditures with actual amounts through April 2024 results in a decrease of ($130,514) for 2023 and an increase of $28,000 for 2024 for a total reduction to the bridge period of ($102,514). Please see Exhibit S-16.5 for the calculation of this adjustment.

Q. Please explain Staff's adjustments to Nuclear Generation capital expenditures.

A. Staff is recommending two adjustments to the Company's capital expenditures for Nuclear Generation Routine and Small Projects and two adjustments to the Company's capital expenditures for Nuclear Generation Non-Routine and Large Projects.

Q. Please explain Staff's first adjustment to Nuclear Generation Routine and Small projects capital expenditures on Exhibit A-12 Schedule B5.3 pages 2-3.

A. Staff's first adjustment is to update the capital expenditures on Exhibit A-12 Schedule B5.3 pages 2-3 for Nuclear Routine and Small Projects with actual amounts incurred through April 2024. Updating the Company's exhibit with actual amounts through April 2024 for Nuclear Routine and Small Projects results in a decrease of ($1,442,207) for 2023 and a decrease of ($6,428,078) for 2024 for a total decrease in the bridge period of ($7,870,285). Please see Exhibit S-16.6 page 1 for the calculation of this adjustment.

Q. Please explain Staff's second adjustment to the capital expenditures for Nuclear Generation Routine and Small projects on Exhibit A-12 Schedule B5.3 pages 2-3.

A. Staff's second adjustment to Nuclear Generation Routine and Small projects capital expenditures is to reduce the Company's projected nuclear capital expenditures for May-December 2024 by 15% and all capital expenditures in 2025 by 20%. Similar to Steam capital expenditures, Staff requested in discovery what stage of planning each nuclear capital project was in. The Company's response did not provide any indication of what stage of planning each project is in or how complete each nuclear project is; therefore, Staff adjusted all nuclear capital projects. Staff used the same approach as previously discussed for Steam

capital expenditures based on the guidance in the AACE class cost estimate accuracy range for class 4 and 5 estimates and reduced projects in May-December 2024 by 15% and all projects in 2025 by 20%. Staff's recommended reductions to 2024 and 2025 are further supported by the comparison of the actual capital expenditures through April 2024 to what the Company included in its case. Nuclear Routine and Small capital expenditures for December 2023 to April 2024 in total were 14.3% lower than the projections included in the Company's original case. Therefore, Staff determined it is reasonable to reduce the remainder of 2024 by 15%, and to reduce the 2025 test year by 20% since those estimates are farther into the future with less certainty. This adjustment is also consistent with Staff's approach to Steam Generation capital expenditures. For the reasons described above, Staff recommends a reduction of 15% for May-December 2024 of ($3,737,313) and a reduction of 20% for 2025 of ($8,490,015) for Nuclear Generation Routine and Small projects capital expenditures on Exhibit A-12 Schedule B5.3 pages 2-3. Please see Exhibit S-16.6 page 1 for the calculation of these adjustments.

Q. Please explain Staff's first adjustment to the capital expenditures for Nuclear Generation Non-Routine and Large projects on Exhibit A-12 Schedule B5.3 page 4.

A. Staff's first adjustment is to update the capital expenditures for Nuclear Non-Routine and Large Projects with actual amounts incurred through April 2024 on Exhibit A-12 Schedule B5.3 page 4. Updating the Company's exhibit with actual amounts through April 2024 for Nuclear Non-Routine and Large Projects results

in a decrease of ($371,147) in 2023 and a decrease of ($7,502,363) in 2024 for a total decrease in the bridge period of ($7,873,510). Please see Exhibit S-16.6 page 2 for the calculation of this adjustment.

Q. Please explain Staff's second adjustment to the capital expenditures for Nuclear Generation Non-Routine and Large projects on Exhibit A-12 Schedule B5.3 page 4.

A. Similar to the capital expenditures for Nuclear Routine and Small projects, Staff's second adjustment is to reduce the Nuclear Generation Non-Routine and Large projects capital expenditures for May-December 2024 by 15% and all capital expenditures in 2025 by 20%. As previously discussed, Staff used the same approach for Steam capital expenditures based on the guidance in the AACE class cost estimate accuracy range for class 4 and 5 estimates. Staff's recommended reductions to 2024 and 2025 are further supported by the comparison of actual capital expenditures through April 2024 to what the Company included in its case. The capital expenditures for Nuclear Non-Routine and Large projects for December 2023 to April 2024 in total were 12.9% lower than the projections included in the Company's original case. Therefore, Staff concluded it is reasonable to reduce the remainder of 2024 by 15%, and to reduce the 2025 test year by 20% since those estimates are further into the future with less certainty. As previously noted, this adjustment is also consistent with Staff's approach to Steam Generation capital expenditures. For all the reasons discussed earlier, Staff recommends a reduction of 15% for May-December 2024 of ($9,895,210) and a reduction of 20% for 2025 of ($7,683,968) to the Company's capital expenditures

for Nuclear Generation Non-Routine and Large projects on Exhibit A-12 Schedule B5.3 pages 4. Please see Exhibit S-16.6 page 2 for the calculation of these adjustments.

Steam, MERC & Fuel Supply, Nuclear, and Other Power Generation O&M Expenses

Q. Please provide an overview of Staff's recommended adjustments to the Company's Generation-related O&M expenses.

A. Staff is recommending an adjustment to each of the following categories of O&M expenses: Steam Power Generation, MERC & Fuel Supply, Nuclear Generation, and Other Power Generation. Specifically, Staff is recommending that the Company's Steam Power Generation, MERC & Fuel Supply, Nuclear Generation, and Other Power Generation O&M expenses be calculated using a 2023 adjusted historical test year instead of the 2022 adjusted historical test year that the Company used in its case as filed. These expenses are presented on the Company's Exhibit A-13 Schedules C5.1, 5.2, 5.3, and 5.5.

Q. Why is Staff recommending that DTE Electric's O&M expenses for Steam Power Generation, MERC & Fuel Supply, Nuclear Generation, and Other Power Generation be calculated beginning with a 2023 adjusted historical test year?

A. There are several reasons Staff determined that using an adjusted historical 2023 test year as the starting point for determining these categories of O&M expenses was more reasonable than beginning with 2022. First, DTE Electric experienced several major changes to its generation fleet in 2022. In particular, the Company retired its St. Clair and Trenton Channel power plants as well as adding the Blue

Water Energy Center, both occurring midway through 2022. By beginning with actual 2023 expenses, adjustments for these generation fleet changes are not necessary as 2023 captures both changes for the entire 12 months without the need for adjustment. The second reason Staff determined that 2023 is a more reasonable historical year is that 2023 O&M expenses include the actual inflation experienced in 2023 without the need to be adjusted as is the case when beginning with 2022. Staff requested in discovery that the Company update its Steam Power Generation, MERC & Fuel Handling, and Nuclear Generation O&M expenses using an adjusted 2023 historical test year to arrive at an adjusted 2025 projected test year. Other Power Generation O&M expenses were provided in a response to an intervenor's discovery in ABDE-1.6 Supplemental. DTE Electric's updated O&M exhibits can be found in Exhibit S-16.7. Beginning with an adjusted 2023 historical test year results in a reduction of ($19,392,393) to Steam Generation O&M, a reduction of ($463,140) to MERC & Fuel Supply O&M, a reduction of ($370,897) to Nuclear Generation O&M, and a reduction of ($3,008,921) to Other Power Generation O&M.

Conclusion

Q. Please summarize Staff's recommended adjustments to capital expenditures for Steam Power Generation, MERC & Fuel Supply, Nuclear Generation, and Other Power Generation that you are supporting.

A. Staff recommends the following adjustments to the Company's capital expenditures for Steam Power Generation, MERC & Fuel Supply, Nuclear Generation, and Other Power Generation:

- A reduction of ($579,559) in 2023 and a reduction of ($3,130,502) in 2024 to update the capital expenditures with actual amounts through April 2024 for Steam Power Generation Non-Routine on Exhibit A-12 Schedule B5.1 page 2.
- A reduction of ($1,909,812) in 2025 to update the capital expenditures for the Monroe Bottom Ash Conversion project with amounts from the revised project sheets on Exhibit A-12 Schedule B5.1 page 2 line 5.
- An increase of $1,224,761 in 2023 and a reduction of ($22,558,252) in 2024 to update the capital expenditures with actual amounts through April 2024 for Routine Maintenance capital projects over $1 million on Exhibit A-12 Schedule B5.1 pages 5-6.
- A 15% reduction for May-December 2024 of ($10,648,865) and a 20% reduction for 2025 of ($28,451,121) to adjust down the projected capital expenditures for PAT0 and PAT1 Routine Maintenance capital projects over $1 million on Exhibit A-12 Schedule B5.1 pages 6-7.
- A reduction of ($130,514) in 2023 and an increase of $28,000 in 2024 to update the capital expenditures with actual amounts through April 2024 for MERC & Fuel Supply on Exhibit A-12 Schedule B5.2 page 1.
- A reduction of ($1,442,207) in 2023 and a reduction of ($6,428,078) in 2024 to update the capital expenditures with actual amounts through April 2024 for Nuclear Routine and Small Projects on Exhibit A-12 Schedule B5.3 pages 2-3.
- A 15% reduction for May-December 2024 of ($3,737,313) and a 20% reduction for 2025 of ($8,490,015) to adjust down the projected capital

expenditures for all Nuclear Routine and Small Projects on Exhibit A-12 Schedule B5.3 pages 2-3.

- A reduction of ($371,147) in 2023 and a reduction of ($7,502,363) in 2024 to update with actual amounts through April 2024 for Nuclear Non-Routine and Large Projects on Exhibit A-12 Schedule B5.3 page 4.
- A 15% reduction for May-December 2024 of ($9,895,210) and a 20% reduction for 2025 of ($7,683,968) to adjust down the projected capital expenditures for Nuclear Non-Routine and Large Projects on Exhibit A-12 Schedule B5.3 page 4.

Q. Please summarize Staff's recommended adjustments to O&M expenses for Steam Power Generation, MERC & Fuel Supply, Nuclear Generation, and Other Power Generation that you are supporting.

A. Staff recommends the following adjustments to the Company's O&M expenses for Steam Power Generation, MERC & Fuel Supply, Nuclear Generation, and Other Power Generation:

- A reduction of ($19,392,393) to Steam Generation O&M expenses on Exhibit A-13 Schedule C5.1 for the 2025 test year when starting with a 2023 adjusted historical test year.
- A reduction of ($463,140) to MERC & Fuel Supply O&M expenses on Exhibit A-13 Schedule C5.2 for the 2025 test year when starting with a 2023 adjusted historical test year.

- A reduction of ($370,897) for Nuclear Generation O&M expenses on Exhibit A-13 Schedule C5.3 for the 2025 test year when starting with a 2023 adjusted historical test year.
- A reduction of ($3,008,921) for Other Power Generation O&M expenses on Exhibit A-13 Schedule C5.5 for the 2025 test year when starting with a 2023 adjusted historical test year.

Q. Does that complete your testimony?

A. Yes, it does.

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-21534
its rate schedules and rules governing the	)	
distribution and supply of electric energy,	)	
and for miscellaneous accounting authority.	)	

QUALIFICATIONS AND DIRECT TESTIMONY OF

CODY S. MATTHEWS

MICHIGAN PUBLIC SERVICE COMMISSION

July 26, 2024

QUALIFICATIONS OF CODY S. MATTHEWS
CASE NUMBER U-21534
PART I

Q. Please state your name and business address.

A. My name is Cody S. Matthews. My business address is 7109 W. Saginaw Hwy., Lansing, Michigan 48917.

Q. By whom are you employed and in what capacity?

A. I am employed by the Michigan Public Service Commission (MPSC or Commission) as a Public Utilities Engineer Specialist in the Interconnection and Distributed Energy Resources Section of the Energy Operations Division.

Q. Please describe your educational background.

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

Q. Would you please describe your professional background.

A. In 2014 I began working for the MPSC in the Smart Grid Section. I reviewed sections of utility rate case filings that pertained to smart grid, advanced metering infrastructure (AMI), demand response (DR), information technology (IT), and cyber security. In 2019 I transferred into the Renewable Energy Section, which was renamed the Interconnection and DER section as of August 2022, and am focusing on electric provider's Renewable Energy (RE) Plan and reconciliation filings, electric utility interconnection, integrated resource plan (IRP) filings, energy storage, and activities related to the Public Utility Regulatory Policies Act (PURPA) of 1978.

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 and intermediate course, and the Advanced Regulatory Studies Program, as well as the Michigan Forum on Economic Regulatory Policy and the Rate Making Course. Additionally, I have participated in several conferences both in person and online concerning cyber security, IEEE 1547, and other renewable energy related topics.

Q. Have you previously testified before the Commission?

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

Case Number	Company	Case Type/Subject
U-17767	DTE Electric Company	Rate Case
U-17999	Consumers Gas Company	Rate Case
U-18014	DTE Electric Company	Rate Case
U-18255	DTE Electric Company	Rate Case
U-18370	Indiana Michigan Power Co.	Rate Case
U-18999	DTE Gas Company	Rate Case
U-20137	Indiana Michigan Power Co.	Opt-Out Tariff
U-20162	DTE Electric Company	Rate Case
U-20165	Consumers Energy Company	IRP
U-15800	Commission's Own Motion	2019 Transfer Price
U-18091	DTE Electric Company	Avoided Cost Update
U-20350	Upper Peninsula Power Co.	IRP
U-20471	DTE Electric Company	IRP

QUALIFICATIONS OF CODY S. MATTHEWS
CASE NUMBER U-21534
PART I

1	U-20485	Indiana Michigan Power Co.	RE Recon
2	U-20591	Indiana Michigan Power Co.	IRP
3	U-15800	Commission's Own Motion	2020 Transfer Price
4	U-20561	DTE Electric Company	Rate Case
5	U-18232	DTE Electric Company	RE Plan
6	U-20697	Consumers Energy Company	Rate Case
7	U-20713	DTE Electric Company	VGP
8	U-15800	Commission's Own Motion	2021 Transfer Price
9	U-20851	DTE Electric Company	RE Plan
10	U-20963	Consumers Energy Company	Rate Case
11	U-21090	Consumers Energy Company	IRP
12	U-21009	Consumers Energy Company	RE Plan
13	U-21081	UMERC	IRP
14	U-21010	DTE Electric Company	RE Recon
15	U-21148	Consumers Energy Company	Rate Case
16	U-15800	Commission's Own Motion	2022 Transfer Price
17	U-21189	Indiana Michigan Power Co.	IRP
18	U-20836	DTE Electric Company	Rate Case
19	U-21224	Consumers Energy Company	Rate Case
20	U-21286	Upper Peninsula Power Co.	Rate Case
21	U-20803	Consumers Energy Company	PSCR Recon
22	U-21198	DTE Electric Company	RE Recon
23	U-21197	Consumers Energy Company	RE Recon

QUALIFICATIONS OF CODY S. MATTHEWS
CASE NUMBER U-21534
PART I

1	U-21193	DTE Electric Company	IRP
2	U-21172	DTE Electric Company	VGP
3	U-21297	DTE Electric Company	Rate Case
4	U-15800	Commission's Own Motion	2023 Transfer Price
5	U-21389	Consumers Energy Company	Rate Case
6	U-21410	Consumers Energy Company	DR Recon
7	U-21374	Consumers Energy Company	VGP
8	U-21353	DTE Electric Company	RE Recon
9	U-21352	Consumers Energy Company	RE Recon
10	U-18091	DTE Electric Company	Avoided Cost Update
11	U-15800	Commission's Own Motion	2024 Transfer Price
12	U-21555	Upper Michigan Power Co.	Rate Case

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present the MPSC Staff's (Staff) recommendations for DTE Electric Company's (DTE or the Company) proposed commercial and industrial (C&I) battery demand response pilot, the distributed generation program, and the proposed non-wires alternative (NWA) pilots.

Q. Are you sponsoring any exhibits in this proceeding?

A. Yes, I am sponsoring the following exhibits:

Exhibit S-8.0, Discovery Response STDE-3.11h

Exhibit S-8.1, Discovery Response STDE-3.11g

Exhibit S-8.2, Discovery Response STDE-3.11i

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

A. Yes.

C&I Battery Storage Demand Response Pilot

Q. Please describe the Company's proposal for the C&I battery storage pilot.

A. The Company is proposing to install two batteries on large customer sites. Each battery will be up to 250 kW/1 MWh in size with the potential to be located at up to two customer sites to reduce peak customer and system demand for an event of up to 4 hours. The Company is targeting customers who are enrolled on the Company's D4 rate, D6.2 rate or D11 rate.[1]

Q. Has the Company requested recovery of this program previously?

[1] DTE Exhibit A-12, B5.6.1.

A. Yes. In the Company's previous rate cases U-20836, and U-21297, DTE requested approval of this program.

Q. Did the Commission take a position on this program in that filing?

A. Yes. In its order in case No. U-20836 the Commission found the proposal to be lacking details, which made it impossible for the Commission to evaluate the potential effectiveness of the pilot and whether it will provide sufficient benefit to ratepayers in relation to the cost.[2] While its order in Case No. U-21297 the Commission agreed with Staff's recommendation in that case to disallow half of the program costs the Commission stated, "Commission finds it would not be reasonable or prudent, in this case, to approve funding for a second participant that has not been identified."[3]

Q. Has the Company provided more details about the proposed program in this filing?

A. The Company provided an update that it has the storage equipment but is waiting on switch gear equipment due to the extended lead time.[4] While the Company has continued to look for customers to participate it has not been successful at this time. Additionally, the Company has not completed the installation of the first participants battery and therefore has not begun any testing of the battery for the purposes of the pilot. While Staff understands the long lead times for the equipment, Staff does have concerns about the amount of time it is taking to find a second customer who is willing to participate. Given that this program appears

[2] U-20836 11/18/2022 Commission Order p.316
[3] U-21297 12/1/2023 Commission Order p. 247
[4] Testimony of Keegan O. Farrell, p.30

to have minimal costs to the participant and provides the participant with essentially $2,000,000 in battery equipment to utilize on site without charging a fee, Staff would have expected much more interest in the program. Additionally, the company still has no agreements in place with the first participant on battery use or charging which would be required prior to the operation of the battery.[5]

Q. Does Staff have any recommendations about this pilot?

A. Yes. Staff recommends the Company limit the current pilot to a single participant given the difficulty the Company has experienced in finding a willing second participant to date. This would allow the Company to focus on the single participant that has agreed to participate and allow more flexibility in the use of the second battery. Staff recommends the Company then use this second battery to conduct a follow-up pilot once it is able to gain operational information from the initial pilot. Given that the Company is not planning to charge a fee to participating customers for enrollment in the program, Staff recommends that the second pilot have a fee structure for participation. [6] As discussed in more detail below, Staff finds it important to pilot charging a fee for this type of program, as this would more closely mirror what a program of this type would look like and allow for a gauge of customer interest. Once the Company has begun testing and determining a value of this program Staff recommends finding a second participant and charging some portion of the battery cost to the participating customer.

[5] Exhibit S-8.0 Discovery Response STDE-3.11h
[6] Exhibit S-8.1 Discovery Response STDE-3.11g

Q. Has the Commission commented on this issue previously?

A. Yes. In order in Case No. U-21297 the Commission found that that consideration of whether the cost of the battery should be shared with future C&I participants, and a method for the customer to share the energy savings from use of the battery, should be conducted when and if the pilot is transitioned to a permanent program.[7]

Q. Why does Staff find it to be important that the second participant have some kind of fee to participate?

A. There are several reasons Staff finds it to be important that that a fee structure be made for a second participant. First, this would be more representative of how a final program of this type may work. Previously the Company proposed a residential battery program which involved the customers paying for a portion of the battery. While that program was much smaller in scale it is important to note that the Company's proposal included a fee associated with joining that program. Additionally other national battery programs such as Green Mountain Power's battery program[8] also includes a fee to participate. Additionally, it is Staff's opinion is that if a customer is required to pay to participate in the program than those customers more likely to utilize the storage to its highest capabilities to ensure the participation cost is recouped in the savings. Said differently, if a participating customer has paid to participate in the program there is an incentive to utilize the battery to recover those costs. Participating customers will be able to

[7] U-21297 12/1/2023 Commission Order p. 247
[8] https://greenmountainpower.com/rebates-programs/home-energy-storage/powerwall/

utilize the battery to reduce demand charges and shift load away from peak times which will allow them to benefit the grid and recoup the participation costs. This incentive to utilize the battery is not the same for participating customers that have no costs to participate as this arrangement has no costs to recoup through utilization of the battery.

Q. Does the Company have plans for the end of the pilot?

A. Yes. The Company is planning to give the customer an option to purchase or rent the battery or have it removed.[9]

Q. Does Staff find this proposal for the end of the pilot to be reasonable?

A. Yes. This is a very reasonable plan for the end of the pilot, but this plan does confirm that there is value in charging a fee for the customer to participate in the program. Given that the customer would need to purchase or rent the battery at the end of the pilot, the Company itself is acknowledging that a payment for a customer to participate is necessary for a full-scale program. If the Company were to charge a fee for participation the customer would be accustomed to a fee and using the battery to recoup its costs. This may make the customer more likely to retain the battery and not strand DTE with a large battery with no plan to use at this time. Staff finds it critical to test whether payments for participation would impact the customer's utilization of the battery, which is accomplished by Staff's recommended two-phased pilot approached.

Q. Does Staff have any further recommendations?

[9] Staff Exhibit S-8.2

A. Yes. As previously mentioned, Staff is recommending the pilot be limited to a single customer at this time. Given this recommendation Staff is also recommending a disallowance of $2,000,000 for this program which is broken down as $1.4 million during the bridge and $0.6 million in the forecasted test year.[10]

Q. Does this conclude your testimony?

A. Yes

[10] Testimony of Keegan O. Farrell, p. 32

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 its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.	))))))	Case No. U-21534

EXHIBITS OF

ENERGY OPERATIONS DIVISION

MICHIGAN PUBLIC SERVICE COMMISSION

July 26, 2024

MPSC Case No: U-21534

Requester: Staff

Question No.: STDE-3.11h

Respondent: K. Farrell

Page: 1 of 1

Question: 11. Concerning the C&I Battery Energy Storage Pilot detailed in Exhibit A-12, Sch.B5.6.1:

h. Has the Company developed any commercial arrangements that will balance the different control and use possibilities split between the Company and customer?

Answer: No, a commercial arrangement has not yet been developed.

Attachment: *None*

MPSC Case No: U-21534

Requester: Staff

Question No.: STDE-3.11g

Respondent: K. Farrell

Page: 1 of 1

Question: 11. Concerning the C&I Battery Energy Storage Pilot detailed in Exhibit A-12, Sch.B5.6.1:

g. Referring to the Company's discovery response STDE-3.2i from Case No. U-21297, is the Company still planning to not charge fees for participation in the pilot, and has the Company done any calculations to determine the customer savings and battery performance?

Answer: The Company has performed calculations to estimate the bill savings a potential customer would receive. However, due to the upfront costs associated with the installation of the battery that are the customer's responsibility, the Company does not plan to charge a fee for participation. Since battery performance is dependent on unique usage characteristics, no additional battery performance calculations have been performed.

Attachment: *None*

MPSC Case No: U-21534

Requester: Staff

Question No.: STDE-3.11i

Respondent: K. Farrell

Page: 1 of 1

Question: 11. Concerning the C&I Battery Energy Storage Pilot detailed in Exhibit A-12, Sch.B5.6.1:

i. What is the Company planning to do with the battery after pilot has concluded? Has the Company considered a longer-term agreement to ensure use for the full life of the battery and installation equipment?

Answer: At the conclusion of the pilot, the customer can purchase the battery outright, lease to own, rent the equipment or have the battery removed. Dependent upon the customer's decision, a further term agreement would be necessary.

Attachment: *None*

Michigan Public Service Commission
DTE Electric Company
U-21534 Fleet Capital Purchases

DTE Fleet Spending - Capital Purchases

Year	Rate Case	Amount
2021	21297	$46,346,506
2022	21297	$43,820,948
2023	21534	$29,347,214
2024	21534	$35,391,032
2025	21534	$42,595,010

DTE Fleet Capital Purchases Plan

Year	# of Purchases (Approximate)	Amount
2023	570	$29,347,214
2024	360	$35,391,032
2024	260	$42,595,010

Michigan Public Service Commission
DTE Electric Company
U-21534 Fleet Repair Expenses

DTE Fleet Spending - Capital Repair Expenses

Year	Rate Case	Amount
2020	21297	$407,844
2021	21297	$455,190
2022	21297	$891,585
2023	21534	$948,104
2024	21534	$975,599
2025	21534	$1,003,892

DTE Fleet Spending - O&M Repair Expenses

Year	Rate Case	Amount
2020	21297	$10,150,289
2021	21297	$9,739,263
2022	21297	$8,912,952
2023	21534	$10,023,219
2024	21534	$10,313,892
2025	21534	$10,612,995

MPSC Case No: U-21534
Requester: Staff
Question No.: STDE-4.4
Respondent: T. Uzenski
Page: 1 of 1

Question: 4. Who provides O&M work to Company fleet vehicles, such as oil changes, tire rotations, and brake replacements?

Answer: Approximately 92% of O&M work for Company vehicles is completed in-house. The remaining work is completed by various external service providers. Typical outsourced repairs include body work, warranty/recalls, glass work, vehicle alignments, and heavy-duty suspensions.

Attachment: *None.*

MPSC Case No: U-21534
Requester: Staff
Question No.: STDE-4.5
Respondent: T. Uzenski
Page: 1 of 1

Question: 5. Who provides emergent capital work to Company fleet vehicles, such as engine or transmission repairs or other emergency repairs?

Answer: Approximately 91% of capital work is completed in-house. The remaining work is completed by various external service providers. Outsourced capital work includes warranty/recalls, engines and transmissions.

Attachment: *None.*

U-21534 STDE-1.3-01 Pages 4-9

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

Line No.	Description	Actual 2018	Actual 2019	Actual 2023
1	**Connections and New Load**			
2	Small Load Growth Projects (Blanket)	$ 12,613	$ 15,856	$ 18,283
3	Customer Connections	84,777	91,418	123,234
4	Customer Connections CIAC	(14,161)	(12,746)	(18,857)
5	Customer Connections (Net of CIAC)	70,616	78,672	104,377
6	New Business Projects	37,842	35,231	73,236
7	New Business Projects CIAC	(12,814)	(8,849)	(6,303)
8	Subtotal New Business Projects (net of CIAC)	25,028	26,382	66,933
9	**Total Connections and New Load**	**135,232**	**142,504**	**214,753**
10	**Total Connections and New Load CIAC**	(26,975)	(21,594)	(25,160)
11	**Total Connections and New Load (Net of CIAC)**	108,257	120,910	189,593
12	**Relocations**			
13	Small Relocation Projects (Blanket)	7,607	8,316	7,098
14	Major Infrastructure Relocation Project			
15	Gordie Howe International Bridge	10,915	5,351	-
	I-375 Electric Relocations			6,334
16	Relocation Projects (excl.Major Infrastructure Projects)	7,661	3,662	24,650
17	Relocation Projects CIAC	(3,648)	-	(466)
18	Subtotal Relocation Projects (Net of CIAC)	4,013	3,662	24,184
19	**Total Relocations**	**26,183**	**17,328**	**38,082**
20	**Total Relocations CIAC**	(3,648)	-	(466)
21	**Total Relocations (Net of CIAC)**	22,535	17,328	37,615
22	**Electric System Equipment**			
23	Distribution Transformers & Regulators	25,827	27,693	816
24	Major Equipment	14,945	11,759	11,470
25	Meters	11,196	10,801	15,384
26	**Total Electric System Equipment**	**51,967**	**50,253**	**27,670**
27	**NRUC and Improvement Blankets**			
28	System Improvements	8,887	10,166	8,020
29	Normal Retirement Unit Changeouts (NRUC)	3,782	7,220	3,888
30	Operational Technologies	2,955	2,800	7,834
31	Batteries and Chargers	2,221	1,400	-
32	Animal Mitigation	35	4	-
33	**Total NRUC and Improvement Blankets**	**17,879**	**21,589**	**19,742**
34	**General Plant, Tools & Equipment and Miscellaneous**			
35	Substation Physical Security	-	704	88
36	Warren SC Transformer Yard Reorganization	-	-	-
37	General Plant, Tools & Equipment and Miscellaneous	5,887	4,815	6,002
38	**Total General Plant, Tools & Equipment and Miscellaneous**	**5,887**	**5,519**	**6,090**
39	**Public Lighting Department Project**			2,186
40	**Total Customer Connections, Relocations & Other**	237,147	237,193	308,523
41	**Total Cust Connections, Relocations & Other CIAC**	(30,623)	(21,594)	(25,626)
42	**Total Cust Connections, Relocations & Other Net of CIAC**	**$ 206,525**	**$ 215,599**	**$ 282,897**

MPSC Case No: U-21534

Requester: STAFF

Question No.: STDE-12.1a

Respondent: B. Hill

Page: 1 of 1

Question: 1. Referring to page 6 of Exhibit A-12, Schedule B5.4, prepared by witness Hill, attached, please provide explanation for the actual reported expenditure in category 'Relocation Projects (excl. Major Infrastructure Projects)' for 2023 of $24.65 million in comparison to the 3-year historical average of $13.02 million. This actual expenditure amount of $24.65 million was reported in document 'U-21534 STDE 1.3-01 Pages 4-9', provided by DTE as part of a response to Staff's first discovery request in this case.

a. How many projects in this category for 2023 were at the request of a state agency, such as MDOT?

Answer: Please see table below for details of Relocation Projects (excl. Major Infrastructures Projects) in 2023:

Customer	Projects	Capital Investment ($ thousands)
State Agency	10	$ 8,448
County Agency	8	$ 10,891
City Agency	6	$ 1,007
Ordinary Customer	10	$ 4,304
Total	**34**	**$ 24,650**

Attachment: *N/A*

Michigan Public Service Commission
DTE Electric Company
U-21534 Fleet Capital Actuals 2023

Vehicle and equipment purchases for 2023

Make	Model	Cap Ex
CATERPILLAR	260T	102,727.00
ALTEC	AT48PW	111,640.50
ALTEC	AT48PW	111,640.50
CROWN	C5 1050-50	56,191.72
CROWN	C5 1050-50	56,191.72
CUSTOM	CABLE PULLING TRAILER	186,299.00
EZ STAK	CARGO TRAILER	137,977.84
EZ STAK	CARGO TRAILER	18,640.00
CROWN	CG35S	72,850.11
CROWN	CG35S	72,850.11
CROWN	CG35S	72,850.11
CROWN	CG35S	72,850.11
Ford	E350 CUTAWAY	58,752.45
JLG	E400AJPN	59,400.00
YALE	ERP050VL	74,070.30
YALE	ERP050VL	74,070.30
PETERBILT	EV220	30,654.14
Ford	EXPLORER XLT	42,671.22
Ford	EXPLORER XLT	42,671.22
Ford	EXPLORER XLT	42,671.22
Ford	EXPLORER XLT	42,671.22
Ford	EXPLORER XLT	42,671.22
Ford	EXPLORER XLT	42,671.22
Ford	EXPLORER XLT	39,498.16
Ford	EXPLORER XLT	39,498.16
Ford	EXT LIGHTNING	74,462.58
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F 350	52,673.08
Ford	F150	16,473.05
Ford	F150	16,473.05
Ford	F150	29,847.77
Ford	F150	29,847.77
Ford	F150	29,847.77
Ford	F150	29,847.77
Ford	F150	29,847.77
Ford	F150	11,781.44

Ford	F150	11,781.44
Ford	F150	11,781.44
Ford	F150	55,763.51
Ford	F150	55,763.51
Ford	F150	37,723.00
Ford	F150	37,723.00
Ford	F150	36,723.00
Ford	F150	34,355.00
Ford	F150	34,355.00
Ford	F150	39,276.34
Ford	F150	39,276.34
Ford	F150	39,276.34
Ford	F150	39,276.34
Ford	F150 CREW	11,646.90
Ford	F150 CREW	11,646.90
Ford	F150 CREW	11,646.90
Ford	F150 HYBRID	11,712.90
Ford	F150 HYBRID	11,665.47
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
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Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	64,105.88
Ford	F150 HYBRID	49,043.04
Ford	F250	54,285.61
Ford	F250	54,285.61
Ford	F250	54,285.61
Ford	F250	54,285.61
Ford	F250	54,285.61
Ford	F250	54,285.61
Ford	F250	54,285.61
Ford	F250	54,285.61
Ford	F250	73,268.67
Ford	F250	73,268.67
Ford	F250	73,268.67
Ford	F250	73,268.67
Ford	F250	73,268.67
Ford	F250	73,268.67
Ford	F250	73,268.67
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Ford	F250	73,268.67
Ford	F250	73,268.67
Ford	F250	73,268.67

Ford	F250	73,268.67
Ford	F250	73,268.67
Ford	F350	39,770.70
Ford	F350	39,770.70
Ford	F350	39,770.70
Ford	F350	39,770.70
Ford	F350	39,770.70
Ford	F350	47,902.27
Ford	F350	47,902.27
Ford	F350	47,902.27
Ford	F350	47,902.27
Ford	F350	47,902.27
Ford	F350	47,657.66
Ford	F350	47,657.66
Ford	F350	47,657.66
Ford	F350	47,657.66
Ford	F350	50,909.37
Ford	F350	50,859.37
Ford	F350	51,275.49
Ford	F350	50,915.81
Ford	F350	50,909.37
Ford	F350	50,859.37
Ford	F350	51,275.49
Ford	F350	50,915.81
Ford	F350	15,464.40
Ford	F350	44,235.12
Ford	F350	15,464.40
Ford	F350	44,235.12
Ford	F350	15,464.40
Ford	F350	44,235.12
Ford	F350	15,464.40
Ford	F350	44,235.12
Ford	F350	15,464.40
Ford	F350	44,235.12
Ford	F350	44,235.12
Ford	F350	44,235.12
Ford	F350	20,371.57
Ford	F350	20,371.57
Ford	F350	20,371.57
Ford	F350	20,371.57
Ford	F350	20,371.57
Ford	F350	20,371.57
Ford	F350	20,371.57
Ford	F350	20,371.57
Ford	F350	20,371.57
Ford	F350	20,371.57
Ford	F350	47,571.11
Ford	F350	47,571.11
Ford	F350	47,571.11
Ford	F350	47,571.11
Ford	F350	47,571.11
Ford	F350	37,895.54
Ford	F350	56,835.82
Ford	F350	56,835.82
Ford	F450	100,711.76
Ford	F450	100,711.76
Ford	F450	100,711.76
Ford	F450	100,711.76

Ford	F550	97,302.00
FORD / ALTEC	F550 / AT48 (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48 (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48 (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48 (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48 (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48 (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48 (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48 (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48 (JEMS)	208,495.62
FORD / ALTEC	F550 / AT48 (JEMS)	208,495.62
FORD / ALTEC	F550 / AT48 (JEMS)	208,495.62
FORD / ALTEC	F550 / AT48 (JEMS)	208,495.62
FORD / ALTEC	F550 / AT48 (JEMS)	278,115.36
FORD / ALTEC	F550 / AT48 (JEMS)	277,965.36
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	30,584.81
FORD / ALTEC	F550 / AT48PE (JEMS)	210,747.67
FORD / ALTEC	F550 / AT48PE (JEMS)	210,747.67
FORD / ALTEC	F550 / AT48PE (JEMS)	210,747.67
FORD / ALTEC	F550 / AT48PE (JEMS)	210,747.67
FORD / ALTEC	F550 / AT48PE (JEMS)	210,747.67
FORD / ALTEC	F550 / AT48PE (JEMS)	212,319.98
FORD / ALTEC	F550 / AT48PE (JEMS)	210,679.34
FORD / ALTEC	F550 / AT48PE (JEMS)	212,319.98
FORD / ALTEC	F550 / AT48PE (JEMS)	210,679.34
FORD / ALTEC	F550 / AT48PE (JEMS)	212,319.98
FORD / ALTEC	F550 / AT48PE (JEMS)	210,679.34
FORD / ALTEC	F550 / AT48PE (JEMS)	212,319.98
FORD / ALTEC	F550 / AT48PE (JEMS)	210,679.34
FORD / ALTEC	F550 / AT48PE (JEMS)	212,319.98
FORD / ALTEC	F550 / AT48PE (JEMS)	210,679.34
FORD / ALTEC	F550 / AT48PE (JEMS)	210,683.67
FORD / ALTEC	F550 / AT48PE (JEMS)	210,683.67
FORD / ALTEC	F550 / AT48PE (JEMS)	210,683.67
FORD / ALTEC	F550 / AT48PE (JEMS)	210,683.67

FORD / ALTEC	F550 / AT48PE (JEMS)	210,683.67
FELLING	FT-12-OT	25,930.60
Grove Crane	GRT8100	990,000.00
CM Welding	Jumbo 7 Tube Nitrogen	261,331.00
Ford	LIGHTNING	10,393.07
Ford	LIGHTNING	10,435.35
Ford	LIGHTNING	10,393.07
Ford	LIGHTNING	10,435.35
Ford	LIGHTNING	10,393.07
Ford	LIGHTNING	10,435.35
Ford	LIGHTNING	10,393.07
Ford	LIGHTNING	10,435.35
Ford	LIGHTNING	10,393.07
Ford	LIGHTNING	10,435.35
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
Ford	LIGHTNING	68,435.90
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	239,191.36
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	239,191.36
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	239,191.36
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	159,460.91
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	240,930.03
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	159,460.91
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	240,930.03
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	159,460.91
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	240,930.03
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	181,043.76
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	181,043.76
FREIGHTLINER/ALTEC	M2106 / DM47B (JEMS)	216,592.96
FREIGHTLINER/ALTEC	M2106 / DM47B (JEMS)	216,592.96
FREIGHTLINER/ALTEC	M2106 / AN46E-OC (JEMS)	257,953.00
FREIGHTLINER/ALTEC	M2-106/AT41PE	189,117.76
Ford	Maverick	29,066.48
Ford	Maverick	29,066.48
Ford	Maverick	29,066.48
Ford	Maverick	29,066.48
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30

Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
Ford	MAVERICK (GAS AWD)	29,018.30
MOTREC	MP-250	12,961.77
MOTREC	MP-250	12,961.77
MOTREC	MP-250	12,961.77
MOTREC	MP-250	12,961.77
MOTREC	MP-250	12,961.77
MOTREC	MP-480	17,690.32
MOTREC	MP-480	17,690.32
MOTREC	MP-480	17,690.32
FREIGHTLINER	MT55	253,591.63
FREIGHTLINER	MT55	253,591.63
FREIGHTLINER	MT55	253,591.63
FREIGHTLINER	MT55	253,591.63
POLARIS	PROXD 2000D	30,536.00
POLARIS	PROXD 2000D	30,536.00
POLARIS	PROXD 2000D	30,536.00
SALISBURY	PT122-8ke	31,884.80
SALISBURY	PT122-8ke	31,884.80
SALISBURY	PT122-8ke	31,884.80
KUBOTA	RTVX1100CWLH	32,766.00
KUBOTA	RTVX1100CWLH	36,211.00
KUBOTA	RTVX1100CWLH	38,807.00
KUBOTA	RTX1140WLH	10,121.84
TENNANT	S30	44,225.91
CHEVROLET	Silverado 1500 Double Cab	53,382.31
CHEVROLET	Silverado 1500 Double Cab	53,380.07
CHEVROLET	Silverado 1500 Double Cab	53,364.30
CHEVROLET	Silverado 1500 Double Cab	53,380.07
CHEVROLET	Silverado 1500 Double Cab	53,359.26
CHEVROLET	Silverado 1500 Double Cab	53,378.39
CHEVROLET	Silverado 1500 Double Cab	53,369.43
CHEVROLET	Silverado 1500 Double Cab	51,910.74
CHEVROLET	Silverado 1500 Double Cab	53,358.14
CHEVROLET	Silverado 1500 Double Cab	53,134.13
CHEVROLET	Silverado 1500 Double Cab	53,364.30
CHEVROLET	Silverado 1500 Double Cab	53,227.65
CHEVROLET	Silverado 1500 Double Cab	53,297.50
CHEVROLET	Silverado 1500 Double Cab	53,134.13
CHEVROLET	Silverado 1500 Double Cab	53,364.30
CHEVROLET	Silverado 1500 Double Cab	53,227.65
CHEVROLET	Silverado 1500 Double Cab	53,297.50
CHEVROLET	Silverado 1500 Double Cab	53,369.77
CHEVROLET	Silverado 1500 Double Cab	53,369.77
CHEVROLET	Silverado 1500 Double Cab	53,369.77
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
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CHEVROLET	SILVERADO EV	77,763.45
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CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	77,763.45
CHEVROLET	SILVERADO EV	82,824.84
CHEVROLET	SILVERADO EV	82,824.84
CHEVROLET	SILVERADO EV	82,824.84
CHEVROLET	SILVERADO EV	82,824.84
CHEVROLET	SILVERADO EV	82,824.84
CM Welding	Small 6 Tube Nitrogen	118,087.00
CM Welding	Small 6 Tube Nitrogen	118,087.00
TENNANT	T300	15,013.24
Ford	T350	55,166.06
Ford	T350	25,704.97
Ford	T350	27,281.56
Ford	T350	27,281.56
Ford	T350	27,281.56
Ford	T350	27,281.56
Ford	T350	21,753.51
Ford	T350	21,753.51
Ford	T350	21,753.51
Ford	T350	21,753.51
Ford	T350	21,753.51
Ford	T350	12,080.93
Ford	T350	12,080.93
Ford	T350	12,080.93
Ford	T350	12,080.93
Ford	T350	12,080.93
Ford	T350	58,724.58
Ford	T350 (MILLWRIGHT)	59,208.67
Ford	T350 (MILLWRIGHT)	59,208.67
Ford	T350 (MILLWRIGHT)	59,208.67
Ford	T350 148WB	58,996.48
Tennant	T500 WALK BEHIND	14,062.80
ALTEC	Tandem Digger (AWD) (JEMS)	120,695.84
ALTEC	Tandem Digger (AWD) (JEMS)	120,695.84
ALTEC	Tandem Digger (AWD) (JEMS)	120,695.84
ALTEC	Tandem Digger (AWD) (JEMS)	120,695.84
ALTEC	Tandem Digger (AWD) (JEMS)	120,695.84
ALTEC	Tandem Digger (FWD) (JEMS)	120,695.84
ALTEC	Tandem Digger (FWD) (JEMS)	120,695.84
ALTEC	Tandem Digger (FWD) (JEMS)	120,695.84
ALTEC	Tandem Digger (FWD) (JEMS)	120,695.84
TOWMASTER	TC-12HD	20,587.00
NORAMP	U-14	16,207.00
POLARIS	XP 1000 NorthStar	37,317.29
2022 Electric Tools	0000204565-SHELVING INC	22,886.43
2023 Electric Tools	0000200186-ALLIED INC	85,116.00
2023 Electric Tools	0000201767-CDW DIRECT LLC	19,748.40
2023 Electric Tools	0000203306-IDSC HOLDINGS LLC	47,178.41
2023 Electric Tools	0000205352-EXPERT AUTO ACCENTS INC	11,850.00
2023 Electric Tools	0000211104-CUMMINS INC	25,264.52
2023 Electric Tools	0000230744-APH STORES INC	19,493.88

2023 Electric Tools	0000231898-AUTO WARES LLC	28,344.27	
		$ 28,629,291.66	**Total**
		$ 717,922.62	**Total of Items Less than $10K**
		$ 29,347,214.28	Grand Total 2023

Forecasted vehicle and equipment purchases from 5/1/2024 until 12/31/2024 (actuals purhcases from 1/1/2024 to 4/30/2024 included on STDE-4.3c tab)

Make	Model	Forecasted Cap Ex
FREIGHTLINER	AA55E 6x4 (JEMS)	391,166.00
FREIGHTLINER	AA55E 6x4 (JEMS)	391,166.00
FREIGHTLINER	AA55E 6x4 (JEMS)	391,166.00
FREIGHTLINER	AA55E 6x4 (JEMS)	391,166.00
FREIGHTLINER	AA55E 6x4 (JEMS)	391,166.00
FREIGHTLINER	AA55E 6x4 (JEMS)	391,166.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
INTERNATIONAL	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	417,063.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	400,000.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	400,000.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	400,000.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	400,000.00
FREIGHTLINER	AA55E 6x6(AWD) (JEMS)	400,000.00
FREIGHTLINER	AN46 (JEMS)	400,375.00
FREIGHTLINER	AN46 (JEMS)	400,375.00
FREIGHTLINER	AN46 (JEMS)	400,375.00
ALTEC	AN46 (JEMS)	400,375.00
FREIGHTLINER	AN46 (JEMS)	400,375.00
FREIGHTLINER	AN46 (JEMS)	400,375.00
FREIGHTLINER	AN46 (JEMS)	400,375.00
ALTEC	AT48PW	266,237.00
ALTEC	DB41B	262,052.00
ALTEC	DB41B	262,052.00
YALE	ERC045VG	61,606.40
YALE	ERP035VT	72,432.00
INTERNATIONAL	EV MV 607	520,410.00
Ford	F 350	125,658.97
Ford	F 350	125,658.97
Ford	F 350	125,658.97
Ford	F 350	125,658.97
Ford	F 350	125,658.97
Ford	F 350	125,658.97
Ford	F 350	125,658.97
Ford	F 350	125,658.97
Ford	F 350	125,658.97
Ford	F 350	125,658.97
Ford	F 350	120,536.28
Ford	F 350	120,536.28
Ford	F 350	120,536.28
Ford	F 350	120,536.28
Ford	F150	69,840.72
Ford	F150	69,840.72
Ford	F150	60,866.76
Ford	F150	60,866.76
Ford	F150	60,866.76
Ford	F150	60,866.76
Ford	F150	59,724.12
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34

Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	59,640.34
Ford	F150	45,000.00
Ford	F150	45,000.00
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	85,083.52
Ford	F150 HYBRID	73,438.08
Ford	F150 HYBRID	69,840.72
Ford	F250	86,374.60
Ford	F350	117,337.00
Ford	F350	117,337.00
Ford	F350	117,337.00
Ford	F350	117,337.00
Ford	F350	117,337.00
Ford	F350	117,337.00
Ford	F350	117,337.00
Ford	F350	117,337.00
Ford	F350	117,337.00
Ford	F350	117,337.00
Ford	F350_GB5-108D-S	115,225.39
Ford	F350_GB5-108D-S	115,225.39
Ford	F350_GB5-108D-S	115,225.39
FORD / ALTEC	F550 / AT37G	168,951.28
YALE	GP60N	61,378.70
YALE	GP60N	61,378.70
YALE	GP60N	61,378.70
INTERNATIONAL	HV607	504,011.26
INTERNATIONAL	HV607	504,011.26
EZ STAK	Material Trailer	50,000.00
EZ STAK	Material Trailer	50,000.00
EZ STAK	Material Trailer	50,000.00
EZ STAK	Material Trailer	50,000.00
MOTREC	MC-480	25,923.34
KUBATO	RTVX1100CWLH	32,766.00
KUBATO	RTVX1100CWLH	32,766.00
KUBATO	RTVX1100CWLH	32,766.00
TOWMASTER	T-12 HD	20,885.00
Ford	T350	103,084.80
Ford	Transit 350 MR 148 WB	93,699.20
Ford	TRANSIT 350 MR 148WB	115,405.88
Ford	TRANSIT 350 MR 148WB	93,699.20
Ford	TRANSIT 350 MR 148WB	93,699.20
Ford	TRANSIT 350 MR 148WB	93,699.20
Ford	TRANSIT 350 MR 148WB	93,699.20
Ford	TRANSIT 350 MR 148WB	93,699.20
Ford	TRANSIT 350 MR 148WB	93,699.20
Ford	TRANSIT 350 MR 148WB	93,058.96

Ford	TRANSIT 350 MR 148WB	93,058.96
Ford	TRANSIT 350 MR 148WB	93,058.96
GENIE	Z-45 XC	105,000.00
FORD		504,011.26
GREAT DANE		210,331.20
GREAT DANE		210,331.20
GREAT DANE		210,331.20
FORD		80,000.00
FORD		80,000.00
JLG		75,000.00
FORD		59,640.34
Ford	F 350	55,000.00
Ford	F 350	55,000.00
Ford	F 350	30,000.00
Ford	F 350	30,000.00
Ford	F 350	55,000.00
Ford	F 350	55,000.00
Ford	F 350	45,000.00
Ford	F 350	45,000.00
Ford	F 350	30,000.00
Ford	F 350	45,000.00
Ford	F 350	30,000.00
Ford	F 350	30,000.00
Ford	F 350	45,000.00
Ford	F 350	45,000.00
Ford	F 350	45,000.00
Ford	F 350	45,000.00
Ford	F 350	30,000.00
Ford	F 350	30,000.00
Ford	F 350	55,000.00
Ford	F 350	30,000.00
Ford	F150	35,000.00
Ford	F150	15,000.00
Ford	F150 HYBRID	15,000.00
Ford	F150 HYBRID	10,000.00
Ford	F250	45,000.00
Ford	F250	45,000.00
Ford	F250	55,000.00
Ford	F250	55,000.00
Ford	F250	55,000.00
Ford	F250	55,000.00
Ford	F250	55,000.00
Ford	F250	55,000.00
Ford	F250	55,000.00
Ford	F250	55,000.00
Ford	F350	50,551.00
Ford	F450	95,000.00
Ford	F550	44,056.20
Ford	LIGHTNING	30,000.00
Ford	LIGHTNING	15,000.00
Ford	LIGHTNING	15,000.00
Ford	LIGHTNING	15,000.00
Ford	LIGHTNING	15,000.00
Ford	LIGHTNING	15,000.00
Ford	LIGHTNING	30,000.00
Ford	LIGHTNING	15,000.00
Ford	LIGHTNING	15,000.00
Ford	LIGHTNING	15,000.00
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	225,000.00
CHEVROLET	SILVERADO 2500	28,000.00
CHEVROLET	SILVERADO 2500	28,000.00
CHEVROLET	SILVERADO 2500	28,000.00
CHEVROLET	SILVERADO 2500	28,000.00
CHEVROLET	SILVERADO 2500	28,000.00
CHEVROLET	SILVERADO 2500	28,000.00
CHEVROLET	SILVERADO 2500	28,000.00

CHEVROLET	SILVERADO 2500	28,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
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CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
CHEVROLET	SILVERADO 3500	50,000.00	
Ford	T350	30,000.00	
Ford	T350	95,800.89	
Ford	T350 (MILLWRIGHT)	25,245.78	
Ford	T350 130WB	33,030.42	
Ford	T350 148WB	45,000.00	
ALTEC	Tandem Digger (AWD) (JEMS)	225,000.00	
ALTEC	Tandem Digger (AWD) (JEMS)	225,000.00	
ALTEC	Tandem Digger (AWD) (JEMS)	225,000.00	
ALTEC	Tandem Digger (AWD) (JEMS)	225,000.00	
ALTEC	Tandem Digger (FWD) (JEMS)	225,000.00	
ALTEC	Tandem Digger (FWD) (JEMS)	225,000.00	
ALTEC	Tandem Digger (FWD) (JEMS)	225,000.00	
ALTEC	Tandem Digger (FWD) (JEMS)	225,000.00	
ALTEC	Tandem Digger (FWD) (JEMS)	225,000.00	
Ford	TRANSIT 350	33,164.22	
Ford	TRANSIT 350	33,164.22	
Ford	TRANSIT 350	33,164.22	
Ford	TRANSIT 350	33,164.22	
Ford	TRANSIT 350 MR 148WB	30,000.00	
Ford	TRANSIT 350 MR 148WB	30,000.00	
		$ 30,447,121.95	**Total**
	Actual January - April 2024	$ 4,943,910.48	from Tab STDE-4.3c
		$ 35,391,032.43	Total 2024 Forecast

Actual Vehicle and Equipment purchases year-to-date (1/1/2024 through 4/30/2024)

Make	Model	Cap Ex
CROWN	C5P1050-65	68,230.67
CROWN	C5P1050-65	68,230.67
YALE	ERC065VG	65,487.33
YALE	ERC065VG	65,487.33
JLG	ES1932	17,500.00
JLG	ES1932	17,500.00
JLG	ES1932	17,500.00
JLG	ES1932	17,500.00
JLG	ES2632	26,182.00
Ford	F150 HYBRID	22,535.00
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
Ford	F250	10,539.62
FORD	F250	17,515.92
FORD	F250	17,515.92
FORD	F250	17,515.92
Ford	F350	28,314.87
Ford	F350	28,314.87
Ford	F450	97,518.36
YALE	GP060VX	67,821.45
YALE	GP060VX	67,821.45
HOT	HOT Trailblazer	16,436.84
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	428,512.04
FREIGHTLINER/ALTEC	M2106 / AA55E (JEMS)	428,512.04
EZ STAK	Material Trailer	50,167.68
FORD	MAVERICK AWD	23,879.96
FORD	MAVERICK AWD	23,879.96
FORD	MAVERICK AWD	23,879.96
FORD	MAVERICK AWD	23,879.96
ALLMAND	NightLite GR3	13,250.00
ALLMAND	NightLite GR3	13,250.00
ALLMAND	NightLite GR3	13,250.00

ALLMAND	NightLite GR3	13,250.00
KUBOTA	RTVX1100CWLH	48,665.66
KUBOTA	RTVX1100CWLH	48,665.66
CHEVROLET	SILVERADO 2500	53,514.90
CHEVROLET	SILVERADO 2500	53,514.90
CHEVROLET	SILVERADO 2500	53,514.90
CHEVROLET	SILVERADO 2500	53,514.90
CHEVROLET	SILVERADO 2500	53,514.90
CHEVROLET	SILVERADO 2500	53,514.90
CHEVROLET	SILVERADO 2500	53,514.90
CHEVROLET	SILVERADO 2500	53,514.90
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO 3500	49,892.91
CHEVROLET	SILVERADO EV	21,321.78
CHEVROLET	SILVERADO EV	21,321.78
CHEVROLET	SILVERADO EV	21,321.78
CHEVROLET	SILVERADO EV	21,321.78
CHEVROLET	SILVERADO EV	21,321.78
DREXEL	SL40AC	122,127.90
Ford	T350	19,987.00
Ford	T350	51,084.16

Ford	T350		19,987.00	
Ford	T350 (MILLWRIGHT)		25,345.67	
Ford	T350 (MILLWRIGHT)		25,345.67	
Ford	T350 (MILLWRIGHT)		25,345.67	
Ford	T350 130WB		34,699.60	
TENNANT	T600		21,135.41	
FORD	TRANSIT 350 MR 148WB		52,551.04	
CROWN	WAVE60-118		28,401.64	
KARCHER	BR 75/110 R		26,404.60	
2023 Electric Tools	0000200000-BAKERS GAS AND WELDING SUPPLIES		15,206.76	
2023 Electric Tools	0000200186-ALLIED INC		148,849.44	
2023 Electric Tools	0000201508-VESCO OIL CORP		38,419.61	
2023 Electric Tools	0000203306-IDSC HOLDINGS LLC		141,474.69	
2023 Electric Tools	0000205498-BETTER BOLTING INC		112,360.00	
2023 Electric Tools	0000211104-CUMMINS INC		13,282.21	
2023 Electric Tools	0000226238-MYERS TIRE SUPPLY DISTRIBUTION IN		34,107.03	
		$	**4,943,910.48**	**Total**

Steam, Hydraulic, and
Other Power Generation -- Non-Routine
($000)

Monthly amounts from case as filed from A-12 Schedule B5.1 p. 2

Line No.	Description	Bridge Jan-23	Bridge Feb-23	Bridge Mar-23	Bridge Apr-23	Bridge May-23	Bridge Jun-23	Bridge Jul-23	Bridge Aug-23	Bridge Sep-23	Bridge Oct-23	Bridge Nov-23	Bridge Dec-23	Bridge Jan-24	Bridge Feb-24	Bridge Mar-24	Bridge Apr-24
1	**Steam Power Generation - Non-Routine Additions:**																
2	Belle River Fuel Conversion	221	92	32	41	140	88	74	86	78	202	(330)	1,520	13,312	3,796	6,205	289
3	Belle River Bottom Ash Basin Modification (CCR)	408	20	222	566	506	216	780	313	380	(50)	2	-	-	-	-	-
4	Monroe Dry Fly Ash Conversion (ELG)	260	1,157	3,879	(310)	3,236	5,737	(405)	352	(40)	602	5,412	951	305	228	180	184
5	Monroe Bottom Ash Conversion (ELG)	2,868	476	3,859	244	200	1,328	604	726	831	(574)	445	350	2,014	980	866	394
6	Monroe FGD Wastewater (ELG)	13	62	120	78	35	48	(3)	13	7	16	21	68	83	83	83	83
7	Monroe Dry Fly Ash Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Site Security Project 11504	48	518	363	328	(170)	228	236	(247)	166	197	240	249	108	50	203	732
9	Site Security Project 18700	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Site Security Project 18906	6	5	5	(0)	1	10	96	12	25	113	279	211	101	53	71	46
11	Site Security Project 20061	-	-	-	-	-	153	8	-	5	1	16	-	-	-	-	-
12	NERC Compliance Project 18885	358	226	126	82	160	28	42	11	12	1	31	-	-	-	-	-
13	NERC Compliance Project 19895	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-
14	Sibley Quarry Landfill Modification (CCR)	18	278	311	586	134	240	(5)	(91)	9	41	107	176	8	-	-	-
15	Sibley Quarry Conveyor Installation (CCR)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Sibley Quarry Infrastructure Modification (CCR)	6	-	(0)	3	-	-	-	-	-	-	-	-	-	-	-	-
17	Sibley Quarry Landfill Dewatering and Discharging Line	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Total Steam Power Generation - Non-Routine	4,290	2,833	8,917	1,617	4,249	8,076	1,427	1,176	1,473	549	6,223	3,525	15,932	5,190	7,607	1,728

2023 actuals from STDE-2.1a and 2024 actuals through April from STDE-2.1b

Line No.	Description	Bridge Jan-23	Bridge Feb-23	Bridge Mar-23	Bridge Apr-23	Bridge May-23	Bridge Jun-23	Bridge Jul-23	Bridge Aug-23	Bridge Sep-23	Bridge Oct-23	Bridge Nov-23	Bridge Dec-23	Bridge Jan-24	Bridge Feb-24	Bridge Mar-24	Bridge Apr-24
1	**Steam Power Generation - Non-Routine Additions:**																
2	Belle River Fuel Conversion	221	92	32	41	140	88	74	86	78	202	177	858	7,352	4,462	6,429	119
3	Belle River Bottom Ash Basin Modification (CCR)	490	(69)	268	645	492	150	910	206	395	(150)	65	(9)	80	(148)	26	-
4	Monroe Dry Fly Ash Conversion (ELG)	260	1,157	3,879	(310)	3,236	5,737	(405)	352	(40)	602	5,412	872	254	307	388	180
5	Monroe Bottom Ash Conversion (ELG)	2,868	476	3,859	244	200	1,328	604	726	831	(574)	448	651	1,775	938	1,754	1,511
6	Monroe FGD Wastewater (ELG)	13	62	120	78	35	48	(3)	13	7	16	21	12	8	11	11	8
7	Monroe Dry Fly Ash Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Site Security Project 11504	48	518	363	328	(170)	228	236	(247)	166	197	63	(7)	35	48	207	251
9	Site Security Project 18700	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Site Security Project 18906	6	5	5	(0)	1	10	96	12	25	113	291	113	252	200	201	561
11	Site Security Project 20061	-	-	-	-	-	153	8	-	5	1	-	-	-	-	-	-
12	NERC Compliance Project 18885	351	196	103	72	177	(1)	46	4	13	(5)	33	(10)	-	-	-	-
13	NERC Compliance Project 19895	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-
14	Sibley Quarry Landfill Modification (CCR)	18	278	311	586	134	240	(5)	(91)	9	41	115	175	33	(23)	0	97
15	Sibley Quarry Conveyor Installation (CCR)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Sibley Quarry Infrastructure Modification (CCR)	6	-	(0)	3	-	-	-	-	-	-	-	-	-	-	-	-
17	Sibley Quarry Landfill Dewatering and Discharging Line	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Total Steam Power Generation - Non-Routine	4,365	2,715	8,941	1,686	4,253	7,981	1,561	1,062	1,489	444	6,626	2,654	9,789	5,796	9,015	2,728
	Difference between Actuals and Case as Filed	76	(118)	24	69	3	(95)	134	(114)	16	(106)	402	(871)	(6,143)	605	1,408	999

Sum of difference for Jan-Dec 2023 **(580)**
Sum of difference for Jan-Apr 2024 **(3,131)**

Monroe Bottom Ash Conversion Breakdown from STDE-2.2b

	Forecast Jan-25	Forecast Feb-25	Forecast Mar-25	Forecast Apr-25	Forecast May-25	Forecast Jun-25	Forecast Jul-25	Forecast Aug-25	Forecast Sep-25	Forecast Oct-25	Forecast Nov-25	Forecast Dec-25	Jan-Dec 2025
Units 1&2	$ 693,229	$ 354,739	$ 300,030	$ 483,463	$ 621,132	$ 2,134,056	$ 2,797,296	$ 2,243,064	$ 2,284,989	$ 2,286,782	$ 3,131,219	$ 659,724	$ 17,989,722
Units 3&4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Common	$ 73,770	$ 73,770	$ 73,770	$ 73,770	$ 73,770	$ 73,770	$ 73,770	$ 73,770	$ 73,770	$ 73,770	$ 73,770	$ 73,770	$ 885,241
Total	$ 766,999	$ 428,509	$ 373,800	$ 557,233	$ 694,902	$ 2,207,826	$ 2,871,066	$ 2,316,834	$ 2,358,759	$ 2,360,552	$ 3,204,989	$ 733,494	$ 18,874,963

Costs without contingency from updated project sheets provided in response to STDE-2.1d

	2025
PMP 15134	$ 14,900,464
PMP 19356	$ 2,048,273
PMP 19357	$ 16,414
Total	$ 16,965,151

2025 Total from updated project sheets	$ 16,965,151
Jan-Dec 2025 costs in case	$ 18,874,963
Reduction in project costs from Updated project sheets	**$ (1,909,812)**

ENERGY SUPPLY PAT REVIEW REQUEST FORM

PAT-AT Agenda Date:	3/13/2024		
PMP Project ID:	15134		
PAT LVL/REV:	PAT 2 REV 0		

	Scope Change	X	New Revision
	Schedule Change		Realized Risk

			Cancel

Project Title: Monroe Bottom Ash Conversion (ELG)

Project Site:	MONPP	Project Complexity:	High
Unit:	Common	Project Start Date:	5/4/2020
Outage Related?	Yes	Constr. Start Date:	10/1/2023
Current IRR:	N/A	Project I/S Date:	12/19/2025
SAP Profit Center #:	0202R165-FG MNPP COM CA	Investment Reason:	9 Environmental
WBS Element:	I-000022-0367		
Project Type/Systems:	14 Common		
Reconciliation Category:	Engineering & Long Lead for Future Projects		

PMP Problem Description & Project Objective *(Project deliverables? Sum benefits-attach extra sheets if required):*

PROBLEM: Monroe Units 1-4 currently have bottom ash sluicing and dewatering systems that do not meet the proposed criteria established in the Effluent Limitation Guidelines (ELG) as the transport water is discharged in a once-through operation. According to the proposed rules, conversion to dry handling or a high recycling system is required no later than 12/31/2023.

OBJECTIVE: The plant will implement a cost-effective project to satisfy the proposed ELG mandate related to bottom ash. Preliminary engineering has confirmed that compliance can be accomplished with a closed-loop, high-recycle system that recirculates the water sent to the existing Bottom Ash Dewatering System (BADS) and uses it for bottom ash sluicing, spray water, bottom ash hopper and boiler seal trough uses. The proposed rule, which is expected to be finalized later this year, allows for blowdown to the FGD and, under certain conditions, to the chem ditch. Blowdown is needed to maintain a balanced chemistry of the recirculated water.

Brief Project Scope Summary *(Summarize products & services provided)*

1. Additon of new grinders and compact submerged conveyors(CSC) under each unit's bottom ash hoppers.
2. Additon of pipe-style belt conveyors to collect and trasport bottom ash from CSCs
3. Additon of bottom ash loadout bunker
4. Adjustment of truck access routes and grading around bunkers in order to accomadate truck traffic to and from bunkers
5. Eliminate tie between economizer ash removal system and bottom ash system. The economizer ash removal system will be replaced by a drag chain conveyor system tied inti the ELG complinat dry flyash system under separate projects.

Reason for Submittal *(State reason for submittal, categorize requested dollar amount changes, and explain any estimate at completion (EAC) benefits or IRR changes):*

PAT 2 revision to true-up 2023 costs and request release of funding to cover construction costs based on labor bids receieved and most up to date estimates for engineering and DTE construction support.

Project cost changes as follows:

DTE Labor: Decreased $83,354 due to less than expected hours from all DTE teams in 2023 and later construction start date than expected in 2024.
Contract Labor: Decreased $1,583,618 based on labor bids received.
Material: Increased $229,099 based on recent material bids.
Other: Increased $5,268.
Shared Costs: No change.
Indirects: Decreased $558,586 based on above changes and latest indirect rates.
Calculated Risk: Increased $1,991,191to maintain EAC.

No Change to EAC.

SAP Budget Approval	Prior Years	2023	2024	2025
Previously Approved PAT:	$10,412,386	$9,043,950	$5,539,411	$0
PAT Change Request:	$0	$0	$15,101,096	$14,900,464
Current PAT Request:	$10,412,386	$9,043,950	$20,640,507	$14,900,464
Total PAT Request:	**$54,997,307**		Total PAT Change:	**$30,001,560**

Forecast Charge Categories	Current Approved PAT Form				Forecast Changes				Revised PAT Forecast				
	Prior Years	2023	2024	2025	Prior Years	2023	2024	2025	Prior Years	2023	2024	2025	Project Total (EAC)
DTE Labor (Direct)	$138,176	$65,517	$390,000	$174,493	$0	-$3,089	-$80,265	$0	$138,176	$62,428	$309,735	$174,493	**$684,832**
Contract Labor (Direct)	$5,640,125	$1,779,343	$13,149,913	$13,585,740	$0	$295,000	-$578,618	-$1,300,000	$5,640,125	$2,074,343	$12,571,295	$12,285,740	**$32,571,503**
Material (Direct)	$3,378,814	$6,355,694	$5,716,270	$1,110,541	$0	$11,373	$217,726	$0	$3,378,814	$6,367,067	$5,933,996	$1,110,541	**$16,790,418**
Other (Direct)	$4,423	$0	$0	$0	$0	$200	$5,068	$0	$4,423	$200	$5,068	$0	**$9,691**
Shared Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Indirects	$1,250,848	$843,396	$2,130,786	$1,577,612	$0	-$291	-$310,373	-$247,922	$1,250,848	$843,105	$1,820,413	$1,329,690	**$5,244,056**
Sub-Total	**$10,412,386**	**$9,043,950**	**$21,386,969**	**$16,448,386**	**$0**	**$303,193**	**-$746,462**	**-$1,547,922**	**$10,412,386**	**$9,347,143**	**$20,640,507**	**$14,900,464**	**$55,300,500**
Calculated Risk	$0	$500,000	$18,700,867	$18,407,442	$0	-$500,000	$2,491,191	$0	$0	$0	$21,192,058	$18,407,442	**$39,599,500**
TOTAL	**$10,412,386**	**$9,543,950**	**$40,087,836**	**$34,855,828**	**$0**	**-$196,807**	**$1,744,729**	**-$1,547,922**	**$10,412,386**	**$9,347,143**	**$41,832,565**	**$33,307,906**	**$94,900,000**
						Change in Total EAC:		$0					

Project Developer:	R. Luberacki	APPROVAL DISPOSITION:					
Project Engineer:	S. Labaf	Without Risk:					
Project Manager:	P. Duran	With Risk:	X	Approved by:		Date:	3-13-24

See SWI (Standard Work Instruction) ALLPP-SWI-03-004-011-0643 for instructions on filling out this form

Form: ALLPP-FM-0013 Rev: 8 Date: 01/25/2022

ENERGY SUPPLY PAT REVIEW REQUEST FORM

PAT-AT Agenda Date:	1/24/2024
PMP Project ID:	19356
PAT LVL/REV:	PAT 2 REV 0

	Scope Change	X	New Revision
	Schedule Change		Realized Risk

			Cancel

Project Title: MONPP U1 Economizer Ash Conveyor (ELG)

Project Site:	MONPP	Project Complexity:	Medium
Unit:	1	Project Start Date:	10/17/2022
Outage Related?	Yes	Constr. Start Date:	7/8/2024
Current IRR:	N/A	Project I/S Date:	11/29/2025
SAP Profit Center #:	0202R169-FG MNPP U1 CAP	Investment Reason:	9 Environmental
WBS Element:	I-000022-0455		
Project Type/Systems:	08 Plant Waste		
Reconciliation Category:	Approved Projects in Development		

PMP Problem Description & Project Objective *(Project deliverables? Sum benefits-attach extra sheets if required):*

PROBLEM: Ash from the existing Economizer Ash Handling systems is currently sluiced to the BADS system and will need to be separated in order to be comply with the ELG Rule. Also, the existing Economizer Ash Hoppers experience frequent pluggage when operating with fuel blends consisting of Pet coke. The current system is not designed to convey large particles of ash as found when burning pet coke blends, nor is the system designed for continuous operation. This results in increased cleaning of the hoppers and O&M expense, as well as dedicated Operator when in use.

OBJECTIVE: Replace the current economizer ash system conveyor which is tied in with the dry fly ash system.

Brief Project Scope Summary *(Summarize products & services provided)*

Engineer, procure and install a conveyor system which conveys to a holding tank, and then pneumatically conveyed from the holding tank to the dry fly ash filter separator.

Reason for Submittal *(State reason for submittal, categorize requested dollar amount changes, and explain any estimate at completion (EAC) benefits or IRR changes):*

This is a PAT 2 request to update 2023 to actual costs and request release of $1,708,564 to cover constructions costs.

Project cost changes as follows:
DTE Labor: Decreased $11,490 due to less than expected spend in 2023.
Contract Labor: Increased $1,085,356 based on labor bids received and remaining material being purchased by contractor.
Material: Decreased $1,467,052, due tomaterials being purchased by the installation contractor.
Other: No change.
Shared Costs: Increased $13,640 based on bids recieved and updated DTE labor costs.
Indirects: Decreased $137,083 based on above changes and latest indirect rates.

Increased Calculated Risk by $516,629 to maintain EAC.

SAP Budget Approval	2022	2023	2024	2025
Previously Approved PAT:	$480,881	$900,274	$1,613,344	$200,000
PAT Change Request:	$0	-$342,721	$203,012	$1,848,273
Current PAT Request:	$480,881	$557,553	$1,816,356	$2,048,273
Total PAT Request:	**$4,903,063**	**Total PAT Change:**		**$1,708,564**

Forecast Charge Categories	Current Approved PAT Form				Forecast Changes				Revised PAT Forecast				
	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	Project Total (EAC)
DTE Labor (Direct)	$487	$17,710	$29,000	$79,740	$0	-$11,490	$0	$0	$487	$6,220	$29,000	$79,740	**$115,447**
Contract Labor (Direct)	$0	$85,000	$120,000	$1,745,294	$0	-$85,000	$1,440,974	-$270,618	$0	$0	$1,560,974	$1,474,676	**$3,035,650**
Material (Direct)	$439,548	$665,265	$1,173,354	$0	$0	-$293,698	-$1,173,354	$0	$439,548	$371,567	$0	$0	**$811,115**
Other (Direct)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Shared Costs	$0	$0	$0	$133,082	$0	$0	$0	$13,640	$0	$0	$0	$146,722	**$146,722**
Indirects	$40,846	$132,299	$290,990	$382,077	$0	-$37,533	-$64,608	-$34,942	$40,846	$94,766	$226,382	$347,135	**$709,129**
Sub-Total	**$480,881**	**$900,274**	**$1,613,344**	**$2,340,193**	**$0**	**-$427,721**	**$203,012**	**-$291,920**	**$480,881**	**$472,553**	**$1,816,356**	**$2,048,273**	**$4,818,063**
Calculated Risk	$0	$0	$0	$865,308	$0	$0	$381,937	$134,692	$0	$0	$381,937	$1,000,000	**$1,381,937**
TOTAL	**$480,881**	**$900,274**	**$1,613,344**	**$3,205,501**	**$0**	**-$427,721**	**$584,949**	**-$157,228**	**$480,881**	**$472,553**	**$2,198,293**	**$3,048,273**	**$6,200,000**
						Change in Total EAC:		**$0**					

Project Developer:	Sulove Patel	APPROVAL DISPOSITION:	
Project Engineer:	Saeid Labaf	Without Risk:	
Project Manager:	Paul Duran	With Risk:	

1/24/24

Approved by: Date:

ENERGY SUPPLY PAT REVIEW REQUEST FORM

PAT-AT Agenda Date:	1/24/2024
PMP Project ID:	19357
PAT LVL/REV:	PAT 2 REV 0

	Scope Change	X	New Revision
	Schedule Change	X	Realized Risk

Project Site:	MONPP	Project Complexity:	Medium
Unit:	2	Project Start Date:	10/17/2022
Outage Related?	Yes	Constr. Start Date:	5/6/2024
Current IRR:	N/A	Project I/S Date:	11/23/2024
SAP Profit Center #:	0202R173-FG MNPP U2 CAP	Investment Reason:	9 Environmental
WBS Element:	I-000022-0456		
Project Type/Systems:	08 Plant Waste		
Reconciliation Category:	Approved Projects in Development		

Project Title: MONPP U2 Economizer Ash Conveyor (ELG)

PMP Problem Description & Project Objective *(Project deliverables? Sum benefits-attach extra sheets if required):*

PROBLEM: Ash from the existing Economizer Ash Handling systems is currently sluiced to the BADS system and will need to be separated in order to be comply with the ELG Rule. Also, the existing Economizer Ash Hoppers experience frequent pluggage when operating with fuel blends consisting of Pet coke. The current system is not designed to convey large particles of ash as found when burning pet coke blends, nor is the system designed for continuous operation. This results in increased cleaning of the hoppers and O&M expense, as well as dedicated Operator when in use.

OBJECTIVE: Replace the current economizer ash system conveyor which is tied in with the dry fly ash system.

Brief Project Scope Summary *(Summarize products & services provided)*

Engineer, procure and install a conveyor system which conveys to a holding tank, and then pneumatically conveyed from the holding tank to the dry fly ash filter separator.

Reason for Submittal *(State reason for submittal, categorize requested dollar amount changes, and explain any estimate at completion (EAC) benefits or IRR changes):*

This is a PAT 2 request to update 2023 to actual costs and request release of $1,855,986 to cover constructions costs.

Project cost changes as follows:
DTE Labor: Decreased $10,081 due to less than expected spend in 2023.
Contract Labor: Increased $1,667,256 based on labor bids received and remaining material being purchased by contractor.
Material: Decreased $1,410,582, due to materials being purchased by the installation contractor.
Other: No change.
Shared Costs: Increased $75,029 based on bids recieved and updated DTE labor costs.
Indirects: Decreased $111,167 based on above changes and latest indirect rates.

Decreased Calculated Risk by $210,455.

SAP Budget Approval	2022	2023	2024	2025
Previously Approved PAT:	$486,019	$1,594,917	$1,555,000	$0
PAT Change Request:	$0	-$197,214	$2,036,786	$16,414
Current PAT Request:	$486,019	$1,397,703	$3,591,786	$16,414
Total PAT Request:	**$5,491,922**	**Total PAT Change:**		**$1,855,986**

Forecast Charge Categories	Current Approved PAT Form				Forecast Changes				Revised PAT Forecast				
	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	Project Total (EAC)
DTE Labor (Direct)	$158	$20,367	$97,633	$9,234	$0	-$9,074	-$1,007	$0	$158	$11,293	$96,626	$9,234	**$117,311**
Contract Labor (Direct)	$5,000	$547,700	$1,337,594	$65,000	$0	$294,622	$1,437,634	-$65,000	$5,000	$842,322	$2,775,228	$0	**$3,622,550**
Material (Direct)	$439,695	$813,240	$1,030,232	$0	$0	-$440,350	-$970,232	$0	$439,695	$372,890	$60,000	$0	**$872,585**
Other (Direct)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Shared Costs	$0	$0	$133,082	$0	$0	$0	$75,029	$0	$0	$0	$208,111	$0	**$208,111**
Indirects	$41,166	$213,610	$514,019	$13,737	$0	-$42,412	-$62,198	-$6,557	$41,166	$171,198	$451,821	$7,180	**$671,365**
Sub-Total	**$486,019**	**$1,594,917**	**$3,112,560**	**$87,971**	**$0**	**-$197,214**	**$479,226**	**-$71,557**	**$486,019**	**$1,397,703**	**$3,591,786**	**$16,414**	**$5,491,922**
Calculated Risk	$0	$0	$918,533	$0	$0	$0	-$210,455	$0	$0	$0	$708,078	$0	**$708,078**
TOTAL	**$486,019**	**$1,594,917**	**$4,031,093**	**$87,971**	**$0**	**-$197,214**	**$268,771**	**-$71,557**	**$486,019**	**$1,397,703**	**$4,299,864**	**$16,414**	**$6,200,000**
						Change in Total EAC:		**$0**					

Project Developer:	Sulove Patel	APPROVAL DISPOSITION:	
Project Engineer:	Saeid Labaf	Without Risk:	
Project Manager:	Paul Duran	With Risk:	

1/24/24

Approved by: Date:

See SWI (Standard Work Instruction) ALLPP-SWI-03-004-011-0643 for instructions on filling out this form

Michigan Public Service Commission
DTE Electric Company
Actual Capital Expenditures
Years 2022 to 2023
Routine Maintenance Projects greater than $1M

Case No.: U-21534
Requestor: Staff
Question No.: STDE-2.1a
Respondent: M. Guillaumin

Line No.	(a) Facility	(b) Calendar Year	(c) Unit	(d) High Level Breakdown	(f) Description	Actual Jan-23	Actual Feb-23	Actual Mar-23	Actual Apr-23	Actual May-23	Actual Jun-23
68	Belle River/Range Road	2023	2	Safety	Unit 2 LP Turbine Rotor & Blades	129,989	13,900	66,834	864,765	(106,923)	114,429
69	Belle River/Range Road	2023	2	Reliability	Unit 2 Exciter	(3,609)	36,825	31,773	679,598	(17,424)	45,922
70	Belle River/Range Road	2023	2	Reliability	Unit 2 Waterwall Tubes	92,474	149,963	(15,957)	15,431	26,783	(11,977)
71	Belle River/Range Road	2023	2	Safety	Unit 2 IP Turbine Valves	-	79,231	(13,727)	18,732	(2,463)	756
72	Belle River/Range Road	2023	Fuel Supply	Infrastructure	Fuel Supply & Common Systems Separation from St. Clair Power Plant	790,386	743,039	157,081	88,093	33,280	632,763
73	Belle River/Range Road	2023	Fuel Supply	Combustible Dust	Fuel Supply Dust Collector 3TH-9	33,525	19,747	(3,696)	259,410	(31,952)	17,626
74	Greenwood Energy Center	2023	1	Safety	Unit 1 LP Turbine Rotor & Blades	64,904	33,258	1,710,791	1,033,831	119,026	84,148
75	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Waterwall Tubes	1,789,066	2,554,599	4,426,430	3,796,794	2,076,894	219,868
76	Monroe without Large Enviro.	2023	1	Safety	Unit 1 LPA & LPB Turbine Rotor and Blades	512,858	2,672,590	5,125,815	1,224,167	892,898	514,830
77	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Reheat Outlet Pendants	583,658	970,724	1,820,217	1,453,217	1,341,192	(889,760)
78	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Expansion Joints	125,888	1,900,421	1,513,564	1,681,700	115,016	(13,584)
79	Monroe without Large Enviro.	2023	1	Safety	Unit 1 Coal Mill Primary Air Duct & Damper	593,816	207,132	1,212,937	1,533,499	592,981	54,161
80	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 HP Turbine Blades	35,802	1,322,199	1,207,568	826,635	665,761	388,686
81	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 IP Turbine Blades	65,940	984,296	1,389,980	1,278,216	657,745	205,119
82	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 SCR Catalyst Layers 1, 2, & 4	182,679	622,445	1,112,805	676,691	610,787	50,307
83	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 IP Turbine Rotor	-	-	-	-	-	1,240,326
84	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Economizer Tubes	167,607	744,499	604,023	701,542	222,313	17,806
85	Monroe without Large Enviro.	2023	1	Safety	Unit 1 Reheat Stop Valves	440,739	187,171	426,117	950,863	401,015	63,631
86	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 SCR Inlet & Outlet Dampers	4,221	92,425	773,492	590,320	19,467	940
87	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Air Heater Hot and Cold End Baskets	15,302	162,952	395,236	811,338	47,658	(1,368)
88	Monroe without Large Enviro.	2023	1	Safety	Unit 1 Main Turbine Control Valves	125,254	231,975	652,258	541,612	(165,503)	(28,158)
89	Monroe without Large Enviro.	2023	1	Safety	Unit 1 Main Steam Stop Valve	170,207	166,228	676,411	159,019	73,781	21,900
90	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Coal Mill 1-3 Silo	1,850	65,554	4,824	842	127,340	931,198
91	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Turning Gear & Bull Gear	338,367	655,075	163,402	(19,092)	25,611	1,001
92	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 1st & 2nd Stage FGD Mist Eliminators	91,266	865,733	71,336	55,543	6,396	8,634
93	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 FGD Absorber Inlet Expansion Joint	908	492,033	247,059	296,112	22,776	(3,573)
94	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 North & South FGD Booster Fans & Hubs	99,135	11,951	881,708	39,226	105	(81,113)
95	Monroe without Large Enviro.	2023	2	Reliability	Unit 2 Air Heater Cold End Baskets	-	-	-	-	-	-
96	Monroe without Large Enviro.	2023	3	Reliability	Unit 3 Air Heater Cold End Baskets	-	-	-	-	-	536
97	Monroe without Large Enviro.	2023	3	Minor Environmental	Unit 3 SCR Catalyst	1,562	1,601	478,663	969,269	32,184	(3,768)
98	Monroe without Large Enviro.	2023	3	Reliability	Unit 3 Expansion Joints	4,823	303,636	18,121	5,052	3,822	306,295
99	Monroe without Large Enviro.	2023	3	Safety	Unit 3 Coal Mill Primary Air Duct & Damper	92,139	9,250	8,725	12,345	5,077	33,638
100	Monroe without Large Enviro.	2023	3	Reliability	Unit 3 Coal Mill 3-6 Overhaul	-	-	-	-	-	-
101	Monroe without Large Enviro.	2023	4	Safety	Unit 4 LPA & LPB Turbine Rotor and Blades	-	-	6,420	31,293	120,637	124,352
102	Monroe without Large Enviro.	2023	4	Minor Environmental	Unit 4 SCR Catalyst Layer 2	3,652	1,322	8,923	2,422	5,374	271,703
103	Monroe without Large Enviro.	2023	4	Reliability	Unit 4 South Boiler Feed Pump Turbine Condenser	-	-	-	-	6,742	14,698
104	Monroe without Large Enviro.	2023	4	Minor Environmental	Unit 4 SCR Catalyst Layers 1, 3, & 4	-	-	-	-	-	-
105	Monroe without Large Enviro.	2023	4	Reliability	Unit 4 Coal Mill 4-1 Silo	-	-	-	-	-	-
106	Monroe without Large Enviro.	2023	Common	Reliability	Main Unit Transformer	-	-	34,045	33,555	44,226	33,461
107	Monroe without Large Enviro.	2023	Common	Minor Environmental	Underground Storage Tank 389	6,469	30,152	14,414	38,113	91,138	64,496
108	Monroe without Large Enviro.	2023	Fuel Supply	Minor Environmental	Fuel Supply Coal Pile Runoff Oil Waste Water System	23,413	49,519	1,285,369	80,130	50,077	394,954
109	Monroe without Large Enviro.	2023	Fuel Supply	Safety	Fuel Supply Tripper Gallery B Infrastructure	5,179	3,738	4,266	-	3,484	17,217
110	Monroe without Large Enviro.	2023	Fuel Supply	Combustible Dust	Fuel Supply CV-C4 to CV-C5 & CV-CV5A Transfer Chute	2,530	192,592	17,390	6,213	387,343	232,458
111	Monroe without Large Enviro.	2023	Fuel Supply	Combustible Dust	Fuel Supply CV-04 Transfer Chute	778,267	109,853	(33,119)	16,276	16,508	18,365
112	Monroe without Large Enviro.	2023	Fuel Supply	Safety	Fuel Supply Tripper Gallery C Infrastructure	-	-	-	-	624	20,729
113	Monroe without Large Enviro.	2023	Fuel Supply	Combustible Dust	Fuel Supply CV-19 to CV-10 Transfer Chute	-	101,491	2,475	15,069	15,757	6,035
114	Peakers	2023	Belle River	Reliability	Belle River 12-2 Peaker Major Overhaul	2,794,997	876,899	457,913	1,197,032	137,986	9,119
115	Peakers	2023	Belle River	Reliability	Belle River 13-1 Peaker Modified Hot Gas Path Overhaul	-	-	-	-	-	-
116	Peakers	2023	Belle River	Reliability	Belle River 12-2 Peaker Generator Field	69,968	198,413	756,048	311,095	69,967	(6,747)
117	Peakers	2023	Greenwood	Reliability	Greenwood 11-1 Peaker Major Overhaul	-	-	-	-	-	-
118	Peakers	2023	Northeast	Reliability	Northeast 13-2 Peaker Generator Field	7,570	1,463,430	88,821	30,834	7,578	12,862
119	Peakers	2023	Renaissance	Reliability	Renaissance Unit 4 Peaker Generator Stator & Rotor	3,666,806	1,874,088	549,144	2,086,017	156,952	69,893
120	Peakers	2023	Renaissance	Reliability	Renaissance Unit 3 Peaker Major Overhaul	331,579	1,443,429	354,305	4,347,347	445,443	114,605
121	Peakers	2023	Renaissance	Reliability	Renaissance Unit 2 Peaker Modified Hot Gas Path Overhaul	-	-	-	-	-	-
122	Peakers	2023	Renaissance	Minor Environmental	Renaissance Unit 2 Peaker Exhaust Silencers	4,567	513,915	597,896	1,123,110	42,278	12,441
123	Peakers	2023	Renaissance	Reliability	Renaissance Unit 3 Peaker Exhaust Cylinder & Manifold	88,390	425,193	102,281	1,033,741	73,773	45,916
124	Peakers	2023	Renaissance	Minor Environmental	Renaissance Unit 4 Peaker Exhaust Silencers	30,095	1,138,196	505,275	14,109	2,495	888
125	Peakers	2023	Renaissance	Reliability	Renaissance Peakers Main Unit Transformer	35,144	11,397	11,397	11,601	11,398	11,398
126	Trenton Channel	2023	Sibley	Minor Environmental	Sibley Quarry Capping Section 1A	102,380	72,955	94,671	245,077	219,376	603,971
	Monroe without Large Enviro.	2023	2	Minor Environmental	Unit 2 SCR Catalyst L3 Replacement - 2024	-	-	-	-	-	1,429
	Monroe without Large Enviro.	2023	Common	Reliability	Inlet Canal Skimmer	-	-	-	206,737	6,326	-
	Peakers	2023	Greenwood	Minor Environmental	Greenwood 11-1, 11-2 & 12-1 Exhaust Silencer Baffle Replacements	235	6,827	1,812	5,180	6,918	179,910

Michigan Public Service Commission
DTE Electric Company
Actual Capital Expenditures
Years 2022 to 2023
Routine Maintenance Projects greater than $1M

Case No.: U-21534
Requestor: Staff
Question No.: STDE-2.1a
Respondent: M. Guillaumin

Line No.	(a) Facility	(b) Calendar Year	(c) Unit	(d) High Level Breakdown	(f) Description	Actual Jul-23	Actual Aug-23	Actual Sep-23	Actual Oct-23	Actual Nov-23	Actual Dec-23	Jan-Dec 2023
68	Belle River/Range Road	2023	2	Safety	Unit 2 LP Turbine Rotor & Blades	2,636,306	(58,235)	17,841	106,877	75,799	1,996,573	5,858,155
69	Belle River/Range Road	2023	2	Reliability	Unit 2 Exciter	14,473	136,672	147,947	900,165	72,754	349,563	2,394,659
70	Belle River/Range Road	2023	2	Reliability	Unit 2 Waterwall Tubes	12,399	26,812	56,065	230,421	365,314	754,229	1,701,958
71	Belle River/Range Road	2023	2	Safety	Unit 2 IP Turbine Valves	123,241	93,544	372,803	55,198	55,647	26,878	809,839
72	Belle River/Range Road	2023	Fuel Supply	Infrastructure	Fuel Supply & Common Systems Separation from St. Clair Power Plant	557,823	(16,564)	15,688	19,176	56,013	(3,494)	3,073,284
73	Belle River/Range Road	2023	Fuel Supply	Combustible Dust	Fuel Supply Dust Collector 3TH-9	320,543	373,324	297,948	241,383	175,307	40,822	1,743,984
74	Greenwood Energy Center	2023	1	Safety	Unit 1 LP Turbine Rotor & Blades	236,216	65,736	102,867	102,045	2,002,106	283,671	5,838,599
75	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Waterwall Tubes	59,177	104,436	8,576	853	3,726	-	15,040,419
76	Monroe without Large Enviro.	2023	1	Safety	Unit 1 LPA & LPB Turbine Rotor and Blades	(39,082)	(463,476)	15,718	(13,604)	-	5,866	10,448,580
77	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Reheat Outlet Pendants	35,652	69,569	18,359	821	-	-	5,403,649
78	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Expansion Joints	1,144	-	-	-	-	-	5,324,148
79	Monroe without Large Enviro.	2023	1	Safety	Unit 1 Coal Mill Primary Air Duct & Damper	11,041	(213)	-	-	-	-	4,205,353
80	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 HP Turbine Blades	(251,050)	(335,402)	9,173	(13,454)	(2,572)	-	3,853,346
81	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 IP Turbine Blades	(350,958)	(421,071)	(63,873)	-	-	-	3,745,394
82	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 SCR Catalyst Layers 1, 2, & 4	13,415	43,371	-	-	-	-	3,312,499
83	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 IP Turbine Rotor	91,139	941,601	35,955	17,645	226,134	22,141	2,574,941
84	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Economizer Tubes	(139)	-	-	-	-	-	2,457,650
85	Monroe without Large Enviro.	2023	1	Safety	Unit 1 Reheat Stop Valves	242	(75,308)	-	-	-	-	2,394,471
86	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 SCR Inlet & Outlet Dampers	-	-	-	-	-	-	1,480,864
87	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Air Heater Hot and Cold End Baskets	(201)	-	-	-	-	-	1,430,916
88	Monroe without Large Enviro.	2023	1	Safety	Unit 1 Main Turbine Control Valves	(22,071)	-	-	(13,956)	-	-	1,321,411
89	Monroe without Large Enviro.	2023	1	Safety	Unit 1 Main Steam Stop Valve	(7,015)	973	-	13	-	-	1,261,517
90	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Coal Mill 1-3 Silo	61,774	-	(11,479)	-	-	-	1,181,903
91	Monroe without Large Enviro.	2023	1	Reliability	Unit 1 Turning Gear & Bull Gear	(4,735)	-	-	(275)	-	196	1,159,550
92	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 1st & 2nd Stage FGD Mist Eliminators	(4,523)	(496)	9,486	-	-	-	1,103,375
93	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 FGD Absorber Inlet Expansion Joint	17,363	37	-	-	-	-	1,072,714
94	Monroe without Large Enviro.	2023	1	Minor Environmental	Unit 1 North & South FGD Booster Fans & Hubs	104,414	-	-	-	-	-	1,055,427
95	Monroe without Large Enviro.	2023	2	Reliability	Unit 2 Air Heater Cold End Baskets	-	-	1,049	232,016	16,507	924,826	1,174,397
96	Monroe without Large Enviro.	2023	3	Reliability	Unit 3 Air Heater Cold End Baskets	236,926	933,596	952,663	86,611	24,066	12,065	2,246,462
97	Monroe without Large Enviro.	2023	3	Minor Environmental	Unit 3 SCR Catalyst	826	461	6,428	259	259	3,590,252	5,077,996
98	Monroe without Large Enviro.	2023	3	Reliability	Unit 3 Expansion Joints	25,723	4,665	264,728	(39,413)	186,320	272,919	1,356,692
99	Monroe without Large Enviro.	2023	3	Safety	Unit 3 Coal Mill Primary Air Duct & Damper	12,356	302,209	12,614	498,408	39,202	7,591	1,033,555
100	Monroe without Large Enviro.	2023	3	Reliability	Unit 3 Coal Mill 3-6 Overhaul	-	-	246	181,424	1,060,385	57,759	1,299,813
101	Monroe without Large Enviro.	2023	4	Safety	Unit 4 LPA & LPB Turbine Rotor and Blades	9,088	(4,951)	1,717,923	2,146,820	167,385	19,417	4,338,382
102	Monroe without Large Enviro.	2023	4	Minor Environmental	Unit 4 SCR Catalyst Layer 2	509,910	81,955	11,282	166,636	733,384	83,236	1,879,799
103	Monroe without Large Enviro.	2023	4	Reliability	Unit 4 South Boiler Feed Pump Turbine Condenser	2,470	23,970	225,192	165,573	981,253	8,251	1,428,149
104	Monroe without Large Enviro.	2023	4	Minor Environmental	Unit 4 SCR Catalyst Layers 1, 3, & 4	-	-	-	7,698	7,827	3,579,288	3,594,813
105	Monroe without Large Enviro.	2023	4	Reliability	Unit 4 Coal Mill 4-1 Silo	-	-	15,423	146,776	900,967	61,211	1,124,377
106	Monroe without Large Enviro.	2023	Common	Reliability	Main Unit Transformer	132,653	2,273,125	290,275	104,584	21,156	8,810	2,975,889
107	Monroe without Large Enviro.	2023	Common	Minor Environmental	Underground Storage Tank 389	9,444	92,878	348,618	369,342	379,253	426,600	1,870,916
108	Monroe without Large Enviro.	2023	Fuel Supply	Minor Environmental	Fuel Supply Coal Pile Runoff Oil Waste Water System	173,763	543,247	203,762	885,564	95,329	(68,085)	3,717,043
109	Monroe without Large Enviro.	2023	Fuel Supply	Safety	Fuel Supply Tripper Gallery B Infrastructure	801,025	857,117	1,180,508	109,338	13,055	3,985	2,998,911
110	Monroe without Large Enviro.	2023	Fuel Supply	Combustible Dust	Fuel Supply CV-C4 to CV-C5 & CV-CV5A Transfer Chute	24,223	14,945	11,748	115,908	1,073,223	81,571	2,160,143
111	Monroe without Large Enviro.	2023	Fuel Supply	Combustible Dust	Fuel Supply CV-04 Transfer Chute	109,701	118,264	742,099	75,599	10,028	4,186	1,966,027
112	Monroe without Large Enviro.	2023	Fuel Supply	Safety	Fuel Supply Tripper Gallery C Infrastructure	8,313	929	4,580	8,605	1,541,901	83,460	1,669,141
113	Monroe without Large Enviro.	2023	Fuel Supply	Combustible Dust	Fuel Supply CV-19 to CV-10 Transfer Chute	8,523	213,779	171,845	(19,019)	115,797	555,603	1,187,357
114	Peakers	2023	Belle River	Reliability	Belle River 12-2 Peaker Major Overhaul	(65,226)	-	-	-	-	-	5,408,718
115	Peakers	2023	Belle River	Reliability	Belle River 13-1 Peaker Modified Hot Gas Path Overhaul	-	-	-	-	409,478	809,235	1,218,712
116	Peakers	2023	Belle River	Reliability	Belle River 12-2 Peaker Generator Field	(7,262)	-	-	-	-	-	1,391,482
117	Peakers	2023	Greenwood	Reliability	Greenwood 11-1 Peaker Major Overhaul	-	-	-	269	-	1,348,854	1,349,123
118	Peakers	2023	Northeast	Reliability	Northeast 13-2 Peaker Generator Field	(303)	-	-	-	-	-	1,610,791
119	Peakers	2023	Renaissance	Reliability	Renaissance Unit 4 Peaker Generator Stator & Rotor	164,871	68,925	75,826	19,934	22,678	201,128	8,956,261
120	Peakers	2023	Renaissance	Reliability	Renaissance Unit 3 Peaker Major Overhaul	(22,454)	82,538	9,550	2,155	(0)	-	7,108,498
121	Peakers	2023	Renaissance	Reliability	Renaissance Unit 2 Peaker Modified Hot Gas Path Overhaul	-	-	-	-	10	3,869,907	3,869,917
122	Peakers	2023	Renaissance	Minor Environmental	Renaissance Unit 2 Peaker Exhaust Silencers	384	-	-	-	-	-	2,294,591
123	Peakers	2023	Renaissance	Reliability	Renaissance Unit 3 Peaker Exhaust Cylinder & Manifold	(17,765)	(21,286)	62,995	22,098	-	-	1,815,336
124	Peakers	2023	Renaissance	Minor Environmental	Renaissance Unit 4 Peaker Exhaust Silencers	202	-	-	3,246	3,496	-	1,698,001
125	Peakers	2023	Renaissance	Reliability	Renaissance Peakers Main Unit Transformer	11,512	18,691	38,158	103,733	821,150	97,439	1,183,017
126	Trenton Channel	2023	Sibley	Minor Environmental	Sibley Quarry Capping Section 1A	475,646	412,203	1,156,280	2,315,967	1,618,483	1,745,305	9,062,316
	Monroe without Large Enviro.	2023	2	Minor Environmental	Unit 2 SCR Catalyst L3 Replacement - 2024	5,441	9,290	4,976	166,783	15,790	964,367	1,168,077
	Monroe without Large Enviro.	2023	Common	Reliability	Inlet Canal Skimmer	209,156	528,252	27,990	4,710	-	27,463	1,010,634
	Peakers	2023	Greenwood	Minor Environmental	Greenwood 11-1, 11-2 & 12-1 Exhaust Silencer Baffle Replacements	513,362	38,168	2,716	3,602	5,152	500,041	1,263,924
											Total of Lines 68-126 that match case exhibit	181,315,232
											A-12 B5.1 p. 5 Line 127	180,090,471
											Increase due to Actual spending for 2023	**1,224,761**

Michigan Public Service Commission
DTE Electric Company
Actual Capital Expenditures
Year 2024
Routine Maintenance Projects greater than $1M

Case No.: U-21534
Requestor: Staff
Question No.: STDE-2.1b
Respondent: M. Guillaumin

Line No.	(a) Facility	(b) Calendar Year	(c) Unit	(d) High Level Breakdown	(f) Description	Actual Jan-24	Actual Feb-24	Actual Mar-24	Actual Apr-24
128	Belle River/Range Road	2024	1	Safety	Unit 1 480 Volt Breakers	2,195	2,126	413,151	(15,327)
129	Belle River/Range Road	2024	1	Safety	Unit 1 Medium Voltage Breakers	721	970	4,792	1,182
130	Belle River/Range Road	2024	1	Reliability	Unit 1 East Boiler Feed Pump Turbine Blades & Rotor	(29)	1	213,543	(30,857)
131	Belle River/Range Road	2024	1	Reliability	Unit 1 White Coal Mill	(36,427)	(2,022)	-	133,843
132	Belle River/Range Road	2024	2	Safety	Unit 2 LP Turbine Rotor & Blades	2,760,967	1,771,558	(3,646)	(119,287)
133	Belle River/Range Road	2024	2	Reliability	Unit 2 Waterwall Tubes	1,340,829	1,570,807	(76,853)	116,074
134	Belle River/Range Road	2024	2	Reliability	Unit 2 Exciter	977,474	571,060	422,685	(42,494)
135	Belle River/Range Road	2024	2	Safety	Unit 2 IP Turbine Valves	1,798,590	939,851	(57,734)	(155,887)
136	Belle River/Range Road	2024	2	Safety	Unit 2 Turbine Stop Valve Actuators	574,892	499,451	740,580	13,910
137	Belle River/Range Road	2024	2	Safety	Unit 2 480 Voltage Breakers	377	3,796	856	399,356
138	Belle River/Range Road	2024	2	Safety	Unit 2 Medium Voltage Breakers	377	(21,064)	25,554	964
139	Belle River/Range Road	2024	2	Reliability	Unit 2 Primary Superheat Tubes	462,220	716,587	(19,245)	(17,207)
140	Belle River/Range Road	2024	Common	Safety	Unit 1 & 2 Common Systems 480 Volt Breakers	141	(115)	6,438	529
141	Belle River/Range Road	2024	Common	Safety	Unit 1 & 2 Common Systems Medium Voltage Breakers	513	1,003	4,343	352
142	Belle River/Range Road	2024	Common	Minor Environmental	Underground Storage Tanks 387 and 388	(1,178)	27,270	21,766	3,215
143	Belle River/Range Road	2024	Common	Minor Environmental	Underground Storage Tank 393	(1,951)	30,996	20,576	23,696
144	Blue Water Energy Center	2024	Common	Infrastructure	Circulating Water Pumps Enclosure	22,576	51,853	46,759	7,810
145	Blue Water Energy Center	2024	Common	Safety	Conference Room Building	25,913	11,412	26,925	520,343
146	Blue Water Energy Center	2024	Common	Reliability	Control Server	-	-	-	-
147	Blue Water Energy Center	2024	ST1	Reliability	STG Transformer	-	-	-	-
148	Greenwood Energy Center	2024	1	Safety	Unit 1 LP Turbine Rotor & Blades	238,965	109,506	2,310,248	344,303
149	Greenwood Energy Center	2024	1	Reliability	Unit 1 Feedwater Heater #6	183,494	32,562	193,970	34,373
150	Greenwood Energy Center	2024	1	Reliability	Unit 1 Feedwater Heater #3	137,009	23,237	146,294	35,463
151	Monroe without Large Enviro.	2024	1	Minor Environmental	Unit 1 SCR Catalyst Layer 3	-	-	6,053	2,869
152	Monroe without Large Enviro.	2024	1	Reliability	Unit 1 IP Turbine Rotor	11,578	840,700	60,841	15,589
153	Monroe without Large Enviro.	2024	2	Safety	Unit 2 LPA & LPB Turbine Rotor and Blades	-	208,518	123,277	3,940,817
154	Monroe without Large Enviro.	2024	2	Reliability	Unit 2 Air Heater Cold End Baskets	33,485	942,059	63,078	13,361
155	Monroe without Large Enviro.	2024	2	Minor Environmental	Unit 2 SCR Catalyst	35,579	98	6,472	6,583
156	Monroe without Large Enviro.	2024	2	Reliability	Unit 2 Coal Mill Feeder Controls	10,444	6,101	4,090	376,560
157	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Waterwall Tubes	33,016	153,450	2,296,932	7,621,327
158	Monroe without Large Enviro.	2024	3	Minor Environmental	Unit 3 SCR Catalyst	165,179	197,117	562,359	1,074,494
159	Monroe without Large Enviro.	2024	3	Safety	Unit 3 Coal Mill Primary Air Duct & Damper	634,469	50,210	1,378,104	1,244,086
160	Monroe without Large Enviro.	2024	3	Safety	Unit 3 Turbine Valves	181,208	620,241	953,920	2,114,992
161	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 IP Turbine Blades	82,220	153,731	1,295,776	1,596,068
162	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Expansion Joints	29,242	203,859	1,118,563	755,211
163	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Reheat Outlet Pendants	104,459	18,019	336,634	1,400,895
164	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Air Heater Cold End Baskets	297,316	198,377	704,435	822,080
165	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Horizontal Reheater Tubes	22,469	187,257	657,172	1,144,605
166	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 DCS & Control Room	128,368	116,679	307,315	338,949
167	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Coal Mill Classifiers	4,196	398,501	330,171	505,152
168	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Coal Mill 3-7 Silo	37,304	142,111	562,133	418,045
169	Monroe without Large Enviro.	2024	4	Safety	Unit 4 LPA & LPB Turbine Rotor and Blades	1,785,036	119,076	32,338	1,036,210
170	Monroe without Large Enviro.	2024	4	Minor Environmental	Unit 4 SCR Catalyst	107,470	2,761	1,693	1,331
171	Monroe without Large Enviro.	2024	4	Safety	Unit 4 Coal Mill Primary Air Duct & Damper	5,128	56,497	9,228	6,339
172	Monroe without Large Enviro.	2024	4	Reliability	Unit 4 Expansion Joints	327,132	21,159	3,481	3,437
173	Monroe without Large Enviro.	2024	4	Safety	Unit 4 Turbine Valves	-	-	-	-

	(a)	(b)	(c)	(d)	(f)					
Line No.	**Facility**	**Calendar Year**	**Unit**	**High Level Breakdown**	**Description**	Actual Jan-24	Actual Feb-24	Actual Mar-24	Actual Apr-24	
174	Monroe without Large Enviro.	2024	Common	Minor Environmental	Underground Storage Tank 389	46,820	333,929	46,950	546,136	
175	Monroe without Large Enviro.	2024	Fuel Supply	Safety	Fuel Supply Tripper Gallery C Infrastructure	6,058	7,292	6,391	6,664	
176	Monroe without Large Enviro.	2024	Fuel Supply	Combustible Dust	Fuel Supply CV-C2 Loading Zone Transfer Chutes	948	1,333	(2,249)	153,738	
177	Monroe without Large Enviro.	2024	Fuel Supply	Minor Environmental	Fuel Supply Coal Pile Runoff Oil Waste Water System	81,271	63,611	83,427	24,348	
178	Peakers	2024	Belle River	Reliability	Belle River 13-1 Peaker Combustion Overhaul	25,183	-	-	-	
179	Peakers	2024	DTE	Reliability	Blackstart Peaker Unit 1 Starting System	1,563	1,410	3,377	1,138	
180	Peakers	2024	Greenwood	Reliability	Greenwood 11-1 Peaker Major Overhaul	138,094	10,600	72,652	37,421	
181	Peakers	2024	Greenwood	Minor Environmental	Greenwood 11-1, 11-2 & 12-1 Peakers Exhaust Silencers	19,624	7,007	225,940	702,366	
182	Peakers	2024	Greenwood	Reliability	Greenwood 11-1 Peaker Generator Field	2,878	13	13	13	
183	Peakers	2024	Renaissance	Reliability	Renaissance Unit 1 Peaker Generator Stator & Rotor	115,487	4,638	3,340	61,353	
184	Peakers	2024	Renaissance	Reliability	Renaissance Unit 3 Peaker Generator Stator Rewind & Rotor	25,438	3,360	-	-	
185	Peakers	2024	Renaissance	Reliability	Renaissance Unit 1 Peaker Main Unit Transformer	14,732	8,501	46,080	17,060	
186	Trenton Channel	2024	Sibley	Minor Environmental	Sibley Quarry Capping Section 1A	412,099	287,340	203,097	788,144	
										Jan-Apr 2024
					Sum of lines 128-186	13,413,156	11,706,397	15,944,085	28,031,737	69,095,375
					Projected Monthly Total Amounts for A-12 B5.1 page 6 from Part III file "U-21534 FG Att 9.7"	16,186,281	14,908,104	26,151,651	34,407,592	91,653,628
					Difference	(2,773,125)	(3,201,706)	(10,207,567)	(6,375,855)	**(22,558,252)**

aace International

AACE International Recommended Practice No. 18R-97

COST ESTIMATE CLASSIFICATION SYSTEM – AS APPLIED IN ENGINEERING, PROCUREMENT, AND CONSTRUCTION FOR THE PROCESS INDUSTRIES

TCM Framework: 7.3 – Cost Estimating and Budgeting

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TCM Framework: 7.3 – Cost Estimating and Budgeting

February 2, 2005

PURPOSE

As a recommended practice of AACE International, the Cost Estimate Classification System provides guidelines for applying the general principles of estimate classification to project cost estimates (i.e., cost estimates that are used to evaluate, approve, and/or fund projects). The Cost Estimate Classification System maps the phases and stages of project cost estimating together with a generic maturity and quality matrix, which can be applied across a wide variety of industries.

This addendum to the generic recommended practice provides guidelines for applying the principles of estimate classification specifically to project estimates for engineering, procurement, and construction (EPC) work for the process industries. This addendum supplements the generic recommended practice (17R-97) by providing:

- a section that further defines classification concepts as they apply to the process industries;
- charts that compare existing estimate classification practices in the process industry; and
- a chart that maps the extent and maturity of estimate input information (project definition deliverables) against the class of estimate.

As with the generic standard, an intent of this addendum is to improve communications among all of the stakeholders involved with preparing, evaluating, and using project cost estimates specifically for the process industries.

It is understood that each enterprise may have its own project and estimating processes and terminology, and may classify estimates in particular ways. This guideline provides a generic and generally acceptable classification system for process industries that can be used as a basis to compare against. It is hoped that this addendum will allow each user to better assess, define, and communicate their own processes and standards in the light of generally-accepted cost engineering practice.

INTRODUCTION

For the purposes of this addendum, the term process industries is assumed to include firms involved with the manufacturing and production of chemicals, petrochemicals, and hydrocarbon processing. The common thread among these industries (for the purpose of estimate classification) is their reliance on process flow diagrams (PFDs) and piping and instrument diagrams (P&IDs) as primary scope defining documents. These documents are key deliverables in determining the level of project definition, and thus the extent and maturity of estimate input information.

Estimates for process facilities center on mechanical and chemical process equipment, and they have significant amounts of piping, instrumentation, and process controls involved. As such, this addendum may apply to portions of other industries, such as pharmaceutical, utility, metallurgical, converting, and similar industries. Specific addendums addressing these industries may be developed over time.

This addendum specifically does not address cost estimate classification in nonprocess industries such as commercial building construction, environmental remediation, transportation infrastructure, “dry” processes such as assembly and manufacturing, “soft asset” production such as software development, and similar industries. It also does not specifically address estimates for the exploration, production, or transportation of mining or hydrocarbon materials, although it may apply to some of the intermediate processing steps in these systems.

The cost estimates covered by this addendum are for engineering, procurement, and construction (EPC) work only. It does not cover estimates for the products manufactured by the process facilities, or for research and development work in support of the process industries. This guideline does not cover the

significant building construction that may be a part of process plants. Building construction will be covered in a separate addendum.

This guideline reflects generally-accepted cost engineering practices. This addendum was based upon the practices of a wide range of companies in the process industries from around the world, as well as published references and standards. Company and public standards were solicited and reviewed by the AACE International Cost Estimating Committee. The practices were found to have significant commonalities that are conveyed in this addendum.

COST ESTIMATE CLASSIFICATION MATRIX FOR THE PROCESS INDUSTRIES

The five estimate classes are presented in figure 1 in relationship to the identified characteristics. Only the level of project definition determines the estimate class. The other four characteristics are secondary characteristics that are generally correlated with the level of project definition, as discussed in the generic standard. The characteristics are typical for the process industries but may vary from application to application.

This matrix and guideline provide an estimate classification system that is specific to the process industries. Refer to the generic standard for a general matrix that is non-industry specific, or to other addendums for guidelines that will provide more detailed information for application in other specific industries. These will typically provide additional information, such as input deliverable checklists to allow meaningful categorization in those particular industries.

	Primary Characteristic	***Secondary Characteristic***			
ESTIMATE CLASS	**LEVEL OF PROJECT DEFINITION** Expressed as % of complete definition	**END USAGE** Typical purpose of estimate	**METHODOLOGY** Typical estimating method	**EXPECTED ACCURACY RANGE** Typical variation in low and high ranges [a]	**PREPARATION EFFORT** Typical degree of effort relative to least cost index of 1 [b]
Class 5	0% to 2%	Concept Screening	Capacity Factored, Parametric Models, Judgment, or Analogy	L: -20% to -50% H: +30% to +100%	1
Class 4	1% to 15%	Study or Feasibility	Equipment Factored or Parametric Models	L: -15% to -30% H: +20% to +50%	2 to 4
Class 3	10% to 40%	Budget, Authorization, or Control	Semi-Detailed Unit Costs with Assembly Level Line Items	L: -10% to -20% H: +10% to +30%	3 to 10
Class 2	30% to 70%	Control or Bid/ Tender	Detailed Unit Cost with Forced Detailed Take-Off	L: -5% to -15% H: +5% to +20%	4 to 20
Class 1	50% to 100%	Check Estimate or Bid/Tender	Detailed Unit Cost with Detailed Take-Off	L: -3% to -10% H: +3% to +15%	5 to 100

Notes: [a] The state of process technology and availability of applicable reference cost data affect the range markedly. The +/- value represents typical percentage variation of actual costs from the cost estimate after application of contingency (typically at a 50% level of confidence) for given scope.

[b] If the range index value of "1" represents 0.005% of project costs, then an index value of 100 represents 0.5%. Estimate preparation effort is highly dependent upon the size of the project and the quality of estimating data and tools.

Figure 1. – Cost Estimate Classification Matrix for Process Industries

CHARACTERISTICS OF THE ESTIMATE CLASSES

The following charts (figures 2a through 2e) provide detailed descriptions of the five estimate classifications as applied in the process industries. They are presented in the order of least-defined estimates to the most-defined estimates. These descriptions include brief discussions of each of the estimate characteristics that define an estimate class.

For each chart, the following information is provided:

- **Description:** a short description of the class of estimate, including a brief listing of the expected estimate inputs based on the level of project definition.
- **Level of Project Definition Required:** expressed as a percent of full definition. For the process industries, this correlates with the percent of engineering and design complete.
- **End Usage:** a short discussion of the possible end usage of this class of estimate.
- **Estimating Methods Used:** a listing of the possible estimating methods that may be employed to develop an estimate of this class.
- **Expected Accuracy Range:** typical variation in low and high ranges after the application of contingency (determined at a 50% level of confidence). Typically, this results in a 90% confidence that the actual cost will fall within the bounds of the low and high ranges.
- **Effort to Prepare:** this section provides a typical level of effort (in hours) to produce a complete estimate for a US$20,000,000 plant. Estimate preparation effort is highly dependent on project size, project complexity, estimator skills and knowledge, and on the availability of appropriate estimating cost data and tools.
- **ANSI Standard Reference (1989) Name:** this is a reference to the equivalent estimate class in the existing ANSI standards.
- **Alternate Estimate Names, Terms, Expressions, Synonyms:** this section provides other commonly used names that an estimate of this class might be known by. These alternate names are not endorsed by this Recommended Practice. The user is cautioned that an alternative name may not always be correlated with the class of estimate as identified in the chart.

CLASS 5 ESTIMATE	
Description: Class 5 estimates are generally prepared based on very limited information, and subsequently have wide accuracy ranges. As such, some companies and organizations have elected to determine that due to the inherent inaccuracies, such estimates cannot be classified in a conventional and systemic manner. Class 5 estimates, due to the requirements of end use, may be prepared within a very limited amount of time and with little effort expended—sometimes requiring less than an hour to prepare. Often, little more than proposed plant type, location, and capacity are known at the time of estimate preparation. **Level of Project Definition Required:** 0% to 2% of full project definition. **End Usage:** Class 5 estimates are prepared for any number of strategic business planning purposes, such as but not limited to market studies, assessment of initial viability, evaluation of alternate schemes, project screening, project location studies, evaluation of resource needs and budgeting, long-range capital planning, etc.	**Estimating Methods Used:** Class 5 estimates virtually always use stochastic estimating methods such as cost/capacity curves and factors, scale of operations factors, Lang factors, Hand factors, Chilton factors, Peters-Timmerhaus factors, Guthrie factors, and other parametric and modeling techniques. **Expected Accuracy Range:** Typical accuracy ranges for Class 5 estimates are - 20% to -50% on the low side, and +30% to +100% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** As little as 1 hour or less to perhaps more than 200 hours, depending on the project and the estimating methodology used. **ANSI Standard Reference Z94.2-1989 Name:** Order of magnitude estimate (typically -30% to +50%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Ratio, ballpark, blue sky, seat-of-pants, ROM, idea study, prospect estimate, concession license estimate, guesstimate, rule-of-thumb.

Figure 2a. – Class 5 Estimate

CLASS 4 ESTIMATE	
Description: Class 4 estimates are generally prepared based on limited information and subsequently have fairly wide accuracy ranges. They are typically used for project screening, determination of feasibility, concept evaluation, and preliminary budget approval. Typically, engineering is from 1% to 15% complete, and would comprise at a minimum the following: plant capacity, block schematics, indicated layout, process flow diagrams (PFDs) for main process systems, and preliminary engineered process and utility equipment lists. **Level of Project Definition Required:** 1% to 15% of full project definition. **End Usage:** Class 4 estimates are prepared for a number of purposes, such as but not limited to, detailed strategic planning, business development, project screening at more developed stages, alternative scheme analysis, confirmation of economic and/or technical feasibility, and preliminary budget approval or approval to proceed to next stage.	**Estimating Methods Used:** Class 4 estimates virtually always use stochastic estimating methods such as equipment factors, Lang factors, Hand factors, Chilton factors, Peters-Timmerhaus factors, Guthrie factors, the Miller method, gross unit costs/ratios, and other parametric and modeling techniques. **Expected Accuracy Range:** Typical accuracy ranges for Class 4 estimates are -15% to -30% on the low side, and +20% to +50% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** Typically, as little as 20 hours or less to perhaps more than 300 hours, depending on the project and the estimating methodology used. **ANSI Standard Reference Z94.2-1989 Name:** Budget estimate (typically -15% to + 30%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Screening, top-down, feasibility, authorization, factored, pre-design, pre-study.

Figure 2b. – Class 4 Estimate

CLASS 3 ESTIMATE	
Description: Class 3 estimates are generally prepared to form the basis for budget authorization, appropriation, and/or funding. As such, they typically form the initial control estimate against which all actual costs and resources will be monitored. Typically, engineering is from 10% to 40% complete, and would comprise at a minimum the following: process flow diagrams, utility flow diagrams, preliminary piping and instrument diagrams, plot plan, developed layout drawings, and essentially complete engineered process and utility equipment lists. **Level of Project Definition Required:** 10% to 40% of full project definition. **End Usage:** Class 3 estimates are typically prepared to support full project funding requests, and become the first of the project phase “control estimates” against which all actual costs and resources will be monitored for variations to the budget. They are used as the project budget until replaced by more detailed estimates. In many owner organizations, a Class 3 estimate may be the last estimate required and could well form the only basis for cost/schedule control.	**Estimating Methods Used:** Class 3 estimates usually involve more deterministic estimating methods than stochastic methods. They usually involve a high degree of unit cost line items, although these may be at an assembly level of detail rather than individual components. Factoring and other stochastic methods may be used to estimate less-significant areas of the project. **Expected Accuracy Range:** Typical accuracy ranges for Class 3 estimates are -10% to -20% on the low side, and +10% to +30% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** Typically, as little as 150 hours or less to perhaps more than 1,500 hours, depending on the project and the estimating methodology used. **ANSI Standard Reference Z94.2-1989 Name:** Budget estimate (typically -15% to + 30%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Budget, scope, sanction, semi-detailed, authorization, preliminary control, concept study, development, basic engineering phase estimate, target estimate.

Figure 2c. – Class 3 Estimate

CLASS 2 ESTIMATE	
Description: Class 2 estimates are generally prepared to form a detailed control baseline against which all project work is monitored in terms of cost and progress control. For contractors, this class of estimate is often used as the "bid" estimate to establish contract value. Typically, engineering is from 30% to 70% complete, and would comprise at a minimum the following: process flow diagrams, utility flow diagrams, piping and instrument diagrams, heat and material balances, final plot plan, final layout drawings, complete engineered process and utility equipment lists, single line diagrams for electrical, electrical equipment and motor schedules, vendor quotations, detailed project execution plans, resourcing and work force plans, etc. **Level of Project Definition Required:** 30% to 70% of full project definition. **End Usage:** Class 2 estimates are typically prepared as the detailed control baseline against which all actual costs and resources will now be monitored for variations to the budget, and form a part of the change/variation control program.	**Estimating Methods Used:** Class 2 estimates always involve a high degree of deterministic estimating methods. Class 2 estimates are prepared in great detail, and often involve tens of thousands of unit cost line items. For those areas of the project still undefined, an assumed level of detail takeoff (forced detail) may be developed to use as line items in the estimate instead of relying on factoring methods. **Expected Accuracy Range:** Typical accuracy ranges for Class 2 estimates are -5% to -15% on the low side, and +5% to +20% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** Typically, as little as 300 hours or less to perhaps more than 3,000 hours, depending on the project and the estimating methodology used. Bid estimates typically require more effort than estimates used for funding or control purposes. **ANSI Standard Reference Z94.2-1989 Name:** Definitive estimate (typically -5% to + 15%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Detailed control, forced detail, execution phase, master control, engineering, bid, tender, change order estimate.

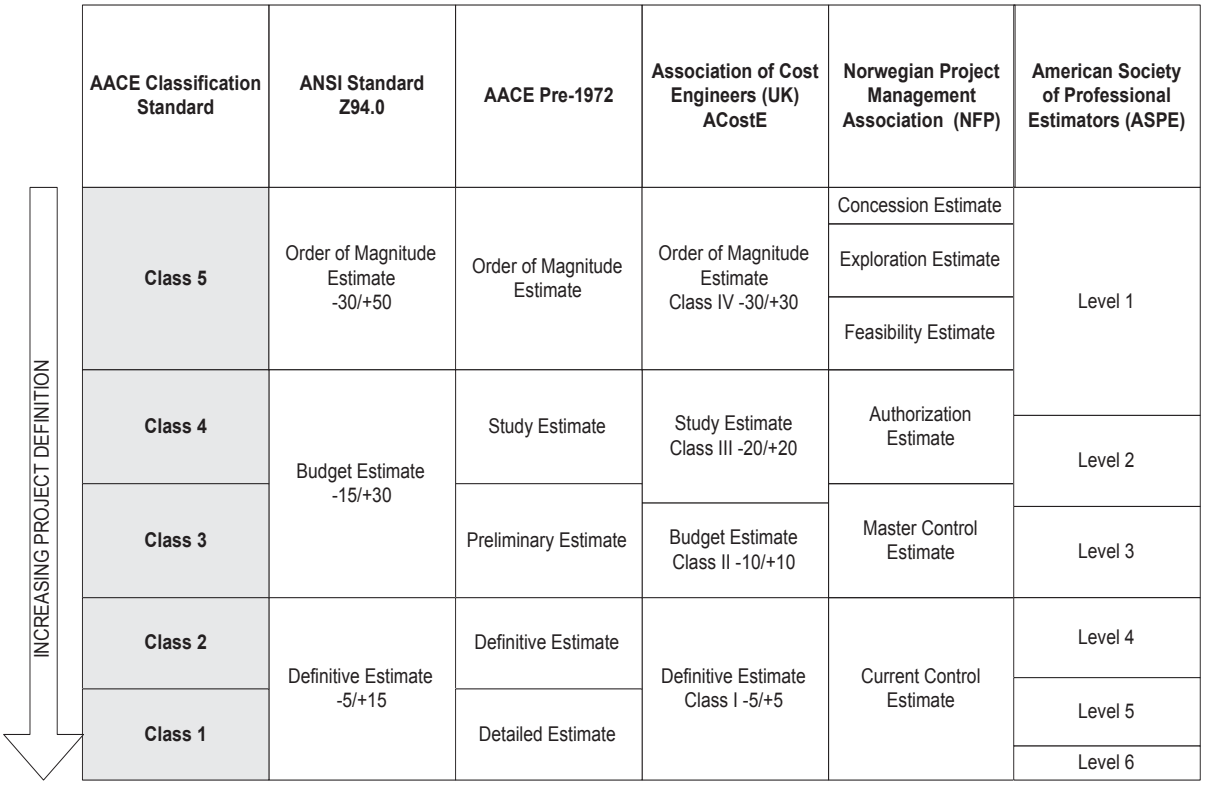
Figure 2d. – Class 2 Estimate

CLASS 1 ESTIMATE	
Description: Class 1 estimates are generally prepared for discrete parts or sections of the total project rather than generating this level of detail for the entire project. The parts of the project estimated at this level of detail will typically be used by subcontractors for bids, or by owners for check estimates. The updated estimate is often referred to as the current control estimate and becomes the new baseline for cost/schedule control of the project. Class 1 estimates may be prepared for parts of the project to comprise a fair price estimate or bid check estimate to compare against a contractor's bid estimate, or to evaluate/dispute claims. Typically, engineering is from 50% to 100% complete, and would comprise virtually all engineering and design documentation of the project, and complete project execution and commissioning plans. **Level of Project Definition Required:** 50% to 100% of full project definition. **End Usage:** Class 1 estimates are typically prepared to form a current control estimate to be used as the final control baseline against which all actual costs and resources will now be monitored for variations to the budget, and form a part of the change/variation control program. They may be used to evaluate bid checking, to support vendor/contractor negotiations, or for claim evaluations and dispute resolution.	**Estimating Methods Used:** Class 1 estimates involve the highest degree of deterministic estimating methods, and require a great amount of effort. Class 1 estimates are prepared in great detail, and thus are usually performed on only the most important or critical areas of the project. All items in the estimate are usually unit cost line items based on actual design quantities. **Expected Accuracy Range:** Typical accuracy ranges for Class 1 estimates are -3% to -10% on the low side, and +3% to +15% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** Class 1 estimates require the most effort to create, and as such are generally developed for only selected areas of the project, or for bidding purposes. A complete Class 1 estimate may involve as little as 600 hours or less, to perhaps more than 6,000 hours, depending on the project and the estimating methodology used. Bid estimates typically require more effort than estimates used for funding or control purposes. **ANSI Standard Reference Z94.2 Name:** Definitive estimate (typically -5% to + 15%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Full detail, release, fall-out, tender, firm price, bottoms-up, final, detailed control, forced detail, execution phase, master control, fair price, definitive, change order estimate.

Figure 2e. – Class 1 Estimate

COMPARISON OF CLASSIFICATION PRACTICES

Figures 3a through 3c provide a comparison of the estimate classification practices of various firms, organizations, and published sources against one another and against the guideline classifications. These tables permits users to benchmark their own classification practices.



	AACE Classification Standard	ANSI Standard Z94.0	AACE Pre-1972	Association of Cost Engineers (UK) ACostE	Norwegian Project Management Association (NFP)	American Society of Professional Estimators (ASPE)
	Class 5	Order of Magnitude Estimate -30/+50	Order of Magnitude Estimate	Order of Magnitude Estimate Class IV -30/+30	Concession Estimate	Level 1
					Exploration Estimate	
					Feasibility Estimate	
	Class 4	Budget Estimate -15/+30	Study Estimate	Study Estimate Class III -20/+20	Authorization Estimate	Level 2
	Class 3		Preliminary Estimate	Budget Estimate Class II -10/+10	Master Control Estimate	Level 3
	Class 2	Definitive Estimate -5/+15	Definitive Estimate	Definitive Estimate Class I -5/+5	Current Control Estimate	Level 4
	Class 1		Detailed Estimate			Level 5
						Level 6

Figure 3a. – Comparison of Classification Practices

AACE Classification Standard	Major Consumer Products Company (Confidential)	Major Oil Company (Confidential)	Major Oil Company (Confidential)	Major Oil Company (Confidential)
Class 5	Class S Strategic Estimate	Class V Order of Magnitude Estimate	Class A Prospect Estimate	Class V
			Class B Evaluation Estimate	
Class 4	Class 1 Conceptual Estimate	Class IV Screening Estimate	Class C Feasibility Estimate	Class IV
			Class D Development Estimate	
Class 3	Class 2 Semi-Detailed Estimate	Class III Primary Control Estimate		Class III
			Class E Preliminary Estimate	
Class 2	Class 3 Detailed Estimate	Class II Master Control Estimate	Class F Master Control Estimate	Class II
Class 1		Class I Current Control Estimate	Current Control Estimate	Class I

INCREASING PROJECT DEFINITION

Figure 3b. – Comparison of Classification Practices

AACE Classification Standard	J.R. Heizelman, 1988 AACE Transactions [1]	K.T. Yeo, The Cost Engineer, 1989 [2]	Stevens & Davis, 1988 AACE Transactions [3]	P. Behrenbruck, Journal of Petroleum Technology, 1993 [4]
Class 5	Class V	Class V Order of Magnitude	Class III*	Order of Magnitude
Class 4	Class IV	Class IV Factor Estimate	Class II	Study Estimate
Class 3	Class III	Class III Office Estimate		Budget Estimate
Class 2	Class II	Class II Definitive Estimate		
Class 1	Class I	Class I Final Estimate	Class I	Control Estimate

INCREASING PROJECT DEFINITION

[1] John R. Heizelman, ARCO Oil & Gas Co., 1988 AACE Transactions, Paper V3.7
[2] K.T. Yeo, The Cost Engineer, Vol. 27, No. 6, 1989
[3] Stevens & Davis, BP International Ltd., 1988 AACE Transactions, Paper B4.1 (* Class III is inferred)
[4] Peter Behrenbruck, BHP Petroleum Pty., Ltd., article in Petroleum Technology, August 1993

Figure 3c. – Comparison of Classification Practices

ESTIMATE INPUT CHECKLIST AND MATURITY MATRIX

Figure 4 maps the extent and maturity of estimate input information (deliverables) against the five estimate classification levels. This is a checklist of basic deliverables found in common practice in the process industries. The maturity level is an approximation of the degree of completion of the deliverable. The degree of completion is indicated by the following letters.

- None (blank): development of the deliverable has not begun.
- Started (S): work on the deliverable has begun. Development is typically limited to sketches, rough outlines, or similar levels of early completion.
- Preliminary (P): work on the deliverable is advanced. Interim, cross-functional reviews have usually been conducted. Development may be near completion except for final reviews and approvals.
- Complete (C): the deliverable has been reviewed and approved as appropriate.

	ESTIMATE CLASSIFICATION				
General Project Data:	**CLASS 5**	**CLASS 4**	**CLASS 3**	**CLASS 2**	**CLASS 1**
Project Scope Description	General	Preliminary	Defined	Defined	Defined
Plant Production/Facility Capacity	Assumed	Preliminary	Defined	Defined	Defined
Plant Location	General	Approximate	Specific	Specific	Specific
Soils & Hydrology	None	Preliminary	Defined	Defined	Defined
Integrated Project Plan	None	Preliminary	Defined	Defined	Defined
Project Master Schedule	None	Preliminary	Defined	Defined	Defined
Escalation Strategy	None	Preliminary	Defined	Defined	Defined
Work Breakdown Structure	None	Preliminary	Defined	Defined	Defined
Project Code of Accounts	None	Preliminary	Defined	Defined	Defined
Contracting Strategy	Assumed	Assumed	Preliminary	Defined	Defined
Engineering Deliverables:					
Block Flow Diagrams	S/P	P/C	C	C	C
Plot Plans		S	P/C	C	C
Process Flow Diagrams (PFDs)		S/P	P/C	C	C
Utility Flow Diagrams (UFDs)		S/P	P/C	C	C
Piping & Instrument Diagrams (P&IDs)		S	P/C	C	C
Heat & Material Balances		S	P/C	C	C
Process Equipment List		S/P	P/C	C	C
Utility Equipment List		S/P	P/C	C	C
Electrical One-Line Drawings		S/P	P/C	C	C
Specifications & Datasheets		S	P/C	C	C
General Equipment Arrangement Drawings		S	P/C	C	C
Spare Parts Listings			S/P	P	C
Mechanical Discipline Drawings			S	P	P/C
Electrical Discipline Drawings			S	P	P/C
Instrumentation/Control System Discipline Drawings			S	P	P/C
Civil/Structural/Site Discipline Drawings			S	P	P/C

Figure 4. – Estimate Input Checklist and Maturity Matrix

REFERENCES

ANSI Standard Z94.2-1989. **Industrial Engineering Terminology: Cost Engineering**.
AACE International Recommended Practice No.17R-97, **Cost Estimate Classification System**.

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Projected amounts from Part III attachment U-21534 FG Att 9.7

Line No.	(a) Facility	(b) Calendar Year	(c) Unit	(d) High Level Breakdown	(e) Description	(j) Forecasted May-24	(k) Forecasted Jun-24	(l) Forecasted Jul-24	(m) Forecasted Aug-24	(n) Forecasted Sep-24	(o) Forecasted Oct-24	(p) Forecasted Nov-24	(q) Forecasted Dec-24	(r) May-Dec 2024	(s) 15% reduction	(t) PAT level from project sheets
128	Belle River/Range Road	2024	1	Safety	Unit 1 480 Volt Breakers	14,779	14,836	14,893	14,950	15,007	15,064	15,121	1,610,384	1,715,032	(257,255)	PAT 0 REV 0
129	Belle River/Range Road	2024	1	Safety	Unit 1 Medium Voltage Breakers	2,316	668,499	716,021	148,063	30,556	23,175	23,243	80,342	1,692,214	(253,832)	PAT 0 REV 0
130	Belle River/Range Road	2024	1	Reliability	Unit 1 East Boiler Feed Pump Turbine Blades & Rotor	27,928	5,015	5,024	515,703	30,353	7,142	7,150	7,159	605,473	(90,821)	PAT 0 REV 1
131	Belle River/Range Road	2024	1	Reliability	Unit 1 White Coal Mill	417,966	18,002	-	-	-	-	-	-	435,968		
132	Belle River/Range Road	2024	2	Safety	Unit 2 LP Turbine Rotor & Blades	603,500	26,404	-	-	-	-	-	-	629,905		PAT 2 REV 0
133	Belle River/Range Road	2024	2	Reliability	Unit 2 Waterwall Tubes	46,780	-	-	-	-	-	-	-	46,780		PAT 2 REV 1
134	Belle River/Range Road	2024	2	Reliability	Unit 2 Exciter	126,964	3,303	-	-	-	-	-	-	130,267		PAT 2 REV 0
135	Belle River/Range Road	2024	2	Safety	Unit 2 IP Turbine Valves	12,937	-	-	-	-	-	-	-	12,937		PAT 2 REV 1
136	Belle River/Range Road	2024	2	Safety	Unit 2 Turbine Stop Valve Actuators	361,769	43,960	-	-	-	-	-	-	405,729		PAT 2 REV 1
137	Belle River/Range Road	2024	2	Safety	Unit 2 480 Voltage Breakers	14,667	14,725	14,784	14,842	14,899	14,958	15,016	1,622,952	1,726,844	(259,027)	PAT 0 REV 0
138	Belle River/Range Road	2024	2	Safety	Unit 2 Medium Voltage Breakers	3,044	704,761	37,483	6,037	707,753	40,615	107,459	14,263	1,621,416	(243,212)	PAT 0 REV 0
139	Belle River/Range Road	2024	2	Reliability	Unit 2 Primary Superheat Tubes	4,900	-	-	-	-	-	-	-	4,900		PAT 2 REV 3
140	Belle River/Range Road	2024	Common	Safety	Unit 1 & 2 Common Systems 480 Volt Breakers	62,064	22,402	19,679	19,753	19,826	19,899	19,973	2,203,305	2,386,901	(358,035)	PAT 0 REV 0
141	Belle River/Range Road	2024	Common	Safety	Unit 1 & 2 Common Systems Medium Voltage Breakers	2,327	712,922	762,631	240,950	35,309	23,943	24,011	21,183	1,823,275	(273,491)	PAT 0 REV 0
142	Belle River/Range Road	2024	Common	Minor Environmental	Underground Storage Tanks 387 and 388	155,932	169,321	392,812	405,944	379,852	34,520	4,919	13,822	1,557,121	(233,568)	PAT 0 REV 1
143	Belle River/Range Road	2024	Common	Minor Environmental	Underground Storage Tank 393	267,573	257,230	332,713	385,237	226,496	20,130	5,769	15,697	1,510,846	(226,627)	PAT 0 REV 0
144	Blue Water Energy Center	2024	Common	Infrastructure	Circulating Water Pumps Enclosure	47,333	41,963	260,396	757,240	807,161	622,976	511,413	467,068	3,515,550	(527,333)	PAT 0/1 REV 0
145	Blue Water Energy Center	2024	Common	Safety	Conference Room Building	603,097	283,225	320,041	321,381	322,721	254,677	46,471	16,886	2,168,499	(325,275)	PAT 0 REV 1
146	Blue Water Energy Center	2024	Common	Reliability	Control Server	13,312	13,346	13,379	13,414	13,447	13,481	13,515	11,817	105,711	(15,857)	PAT 0 REV 0
147	Blue Water Energy Center	2024	ST1	Reliability	STG Transformer	8,745	1,001,415	45,986	6,221	6,230	6,237	6,245	6,253	1,087,332	(163,100)	PAT 0 REV 0
148	Greenwood Energy Center	2024	1	Safety	Unit 1 LP Turbine Rotor & Blades	175,692	82,968	75,463	2,136,536	1,572,315	2,285,560	232,100	2,748,156	9,308,790	(1,396,318)	PAT 1 REV 4
149	Greenwood Energy Center	2024	1	Reliability	Unit 1 Feedwater Heater #6	262,546	52,018	133,328	216,062	199,217	47,283	32,483	40,888	983,825	(147,574)	PAT 1 REV 1
150	Greenwood Energy Center	2024	1	Reliability	Unit 1 Feedwater Heater #3	181,635	27,963	157,862	250,380	210,211	105,950	34,739	30,455	999,195	(149,879)	PAT 1 REV 1
151	Monroe without Large Enviro.	2024	1	Minor Environmental	Unit 1 SCR Catalyst Layer 3	640,582	17,963	18,025	17,459	17,578	18,114	650,602	17,635	1,397,958	(209,694)	PAT 0 REV 1
152	Monroe without Large Enviro.	2024	1	Reliability	Unit 1 IP Turbine Rotor	13,624	13,625	162,118	21,525	14,205	14,206	14,207	72,626	326,134	(48,920)	PAT 0/1 REV 0
153	Monroe without Large Enviro.	2024	2	Safety	Unit 2 LPA & LPB Turbine Rotor and Blades	138,673	15,594	15,601	15,608	15,616	15,623	4,605,170	198,733	5,020,618	(753,093)	PAT 0 REV 1
154	Monroe without Large Enviro.	2024	2	Reliability	Unit 2 Air Heater Cold End Baskets	12,932	12,951	244,052	151,404	413,021	1,274,912	866,639	135,146	3,111,056	(466,658)	PAT 1 REV 2
155	Monroe without Large Enviro.	2024	2	Minor Environmental	Unit 2 SCR Catalyst	37,367	8,448	538,113	348,397	594,573	606,087	198,813	23,480	2,355,279	(353,292)	PAT 0/1 REV 0
156	Monroe without Large Enviro.	2024	2	Reliability	Unit 2 Coal Mill Feeder Controls	28,398	13,590	13,635	45,962	182,734	413,055	331,909	139,080	1,168,365	(175,255)	PAT 1 REV 1
157	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Waterwall Tubes	2,134,734	151,548	49,883	-	-	149,666	6,592	-	2,492,423		PAT 2 REV 2
158	Monroe without Large Enviro.	2024	3	Minor Environmental	Unit 3 SCR Catalyst	664,295	590,853	121,132	4,313	-	-	-	-	1,380,593		PAT 2 REV 0
159	Monroe without Large Enviro.	2024	3	Safety	Unit 3 Coal Mill Primary Air Duct & Damper	1,345,525	61,166	3,503	-	-	-	-	-	1,410,194		PAT 2 REV 0
160	Monroe without Large Enviro.	2024	3	Safety	Unit 3 Turbine Valves	1,721,539	75,912	1,771	1,771	-	-	-	-	1,800,993	(270,149)	PAT 0/2 REV 2
161	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 IP Turbine Blades	1,245,849	335,572	12,688	-	-	-	-	-	1,594,109		PAT 2 REV 0
162	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Expansion Joints	824,587	348,362	20,939	-	-	-	-	-	1,193,887		PAT 2 REV 0
163	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Reheat Outlet Pendants	397,830	116,212	4,526	-	-	-	-	-	518,568		PAT 2 REV 0
164	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Air Heater Cold End Baskets	593,170	140,541	322,935	19,980	-	-	-	-	1,076,626		PAT 2 REV 1
165	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Horizontal Reheater Tubes	413,146	129,177	9,555	-	-	-	-	-	551,878		PAT 2 REV 0
166	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 DCS & Control Room	1,134,300	185,576	26,153	-	-	-	-	-	1,346,030		PAT 2 REV 0
167	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Coal Mill Classifiers	531,911	114,933	5,940	1,771	-	-	-	-	654,556		PAT 2 REV 1
168	Monroe without Large Enviro.	2024	3	Reliability	Unit 3 Coal Mill 3-7 Silo	203,032	44,833	-	-	-	-	-	-	247,866		PAT 2 REV 2
169	Monroe without Large Enviro.	2024	4	Safety	Unit 4 LPA & LPB Turbine Rotor and Blades	26,759	30,322	30,344	30,366	26,831	26,838	1,009,091	2,899,681	4,080,232	(612,035)	PAT 1 REV 1
170	Monroe without Large Enviro.	2024	4	Minor Environmental	Unit 4 SCR Catalyst	18,184	20,005	2,301,697	141,585	27,383	27,427	29,248	1,138,099	3,703,629	(555,544)	PAT 0/1 REV 0
171	Monroe without Large Enviro.	2024	4	Safety	Unit 4 Coal Mill Primary Air Duct & Damper	30,279	46,140	135,517	183,084	403,000	290,723	284,732	390,737	1,764,212	(264,632)	PAT 0/1 REV 0
172	Monroe without Large Enviro.	2024	4	Reliability	Unit 4 Expansion Joints	6,216	326,241	22,113	9,220	9,245	11,047	648,996	42,666	1,075,743	(161,361)	PAT 1 REV 0
173	Monroe without Large Enviro.	2024	4	Safety	Unit 4 Turbine Valves	4,220	421,247	241,232	15,383	6,972	6,990	7,007	445,982	1,149,033	(172,355)	PAT 0 REV 0
174	Monroe without Large Enviro.	2024	Common	Minor Environmental	Underground Storage Tank 389	177,205	7,627	-	-	-	-	-	-	184,832		PAT 2 REV 2
175	Monroe without Large Enviro.	2024	Fuel Supply	Safety	Fuel Supply Tripper Gallery C Infrastructure	1,064,723	1,168,903	144,909	1,130,827	631,783	74,028	30,501	396,062	4,641,735		PAT 2 REV 0
176	Monroe without Large Enviro.	2024	Fuel Supply	Combustible Dust	Fuel Supply CV-C2 Loading Zone Transfer Chutes	5,520	7,306	7,321	998,412	776,917	614,991	41,724	15,241	2,467,432	(370,115)	PAT 0/1 REV 0
177	Monroe without Large Enviro.	2024	Fuel Supply	Minor Environmental	Fuel Supply Coal Pile Runoff Oil Waste Water System	35,429	-	-	-	-	-	-	-	35,429		PAT 2 REV 1
178	Peakers	2024	Belle River	Reliability	Belle River 13-1 Peaker Combustion Overhaul	3,542	1,519	-	-	-	-	-	-	5,061		PAT 2 REV 2
179	Peakers	2024	DTE	Reliability	Blackstart Peaker Unit 1 Starting System	23,422	23,507	23,593	30,073	854,341	1,310,434	85,409	24,634	2,375,414		
180	Peakers	2024	Greenwood	Reliability	Greenwood 11-1 Peaker Major Overhaul	36,625	3,542	551,455	1,441,659	1,666,952	1,083,147	621,857	601,909	6,007,145	(901,072)	PAT 0/2 REV 0
181	Peakers	2024	Greenwood	Minor Environmental	Greenwood 11-1, 11-2 & 12-1 Peakers Exhaust Silencers	343,114	513,872	29,368	-	-	-	-	-	886,354		PAT 2 REV 0
182	Peakers	2024	Greenwood	Reliability	Greenwood 11-1 Peaker Generator Field	2,656	2,656	2,656	75,806	959,009	239,260	205,086	205,721	1,692,850	(253,928)	PAT 0/2 REV 0
183	Peakers	2024	Renaissance	Reliability	Renaissance Unit 1 Peaker Generator Stator & Rotor	4,194,765	2,414,651	697,477	33,715	-	-	-	-	7,340,608		PAT 2 REV 2
184	Peakers	2024	Renaissance	Reliability	Renaissance Unit 3 Peaker Generator Stator Rewind & Rotor	3,388	6,819	6,832	6,845	6,859	1,590,643	2,512,318	2,888,642	7,022,345		PAT 2 REV 1
185	Peakers	2024	Renaissance	Reliability	Renaissance Unit 1 Peaker Main Unit Transformer	516,529	512,102	29,466	3,861	1,771	-	-	-	1,063,730	(159,559)	PAT 1 REV 3
186	Trenton Channel	2024	Sibley	Minor Environmental	Sibley Quarry Capping Section 1A	922,889	1,243,548	139,056	78,936	65,037	64,477	2,844	-	2,516,788		PAT 2 REV 2

15% reduction for May-December 2024 for PAT 0 and PAT 1 projects **(10,648,865)**

Line No.	(a) Facility	(b) Test Year	(c) Unit	(d) High Level Breakdown	(e) Description	(f) Amount	(g) 20 % reduction	(h) PAT Level
188	Belle River/Range Road	2025	1	Reliability	Unit 1 Waterwall Tubes	6,347,145	(1,269,429)	PAT 0 REV 1
189	Belle River/Range Road	2025	1	Reliability	Unit 1 Secondary Air Heater Baskets	5,288,096	(1,057,619)	PAT 0 REV 0
190	Belle River/Range Road	2025	1	Safety	Unit 1 IP Turbine Valves	4,475,894	(895,179)	PAT 0 REV 1
191	Belle River/Range Road	2025	1	Reliability	Unit 1 Duplex Heater	3,258,602	(651,720)	PAT 0 REV 1
192	Belle River/Range Road	2025	1	Reliability	Unit 1 Expansion Joints	2,607,260	(521,452)	PAT 0 REV 1
193	Belle River/Range Road	2025	1	Reliability	Unit 1 Horizontal Middle Reheat Tubes	2,197,608	(439,522)	PAT 0 REV 0
194	Belle River/Range Road	2025	1	Reliability	Unit 1 East Boiler Feed Pump Turbine Blades & Rotor	2,392,484	(478,497)	PAT 0 REV 1
195	Belle River/Range Road	2025	Common	Minor Environmental	Range Road Landfill Capping (Area G2 Phase II)	5,022,703	(1,004,541)	PAT 1 REV 0
196	Belle River/Range Road	2025	Common	Safety	North Auxiliary Boiler	1,869,086	(373,817)	PAT 0 REV 1
197	Belle River/Range Road	2025	Common	Safety	South Auxiliary Boiler	1,866,836	(373,367)	PAT 0 REV 2
198	Blue Water Energy Center	2025	ST1	Reliability	STG Transformer	1,900,068	(380,014)	PAT 0 REV0
199	Blue Water Energy Center	2025	Common	Reliability	CT Transformer	1,798,256	(359,651)	PAT 0 REV 1
200	Blue Water Energy Center	2025	Common	Reliability	Control Server	1,701,212	(340,242)	PAT 0 REV 0
201	Greenwood Energy Center	2025	1	Safety	Unit 1 LP Turbine Rotor & Blades	5,863,594	(1,172,719)	PAT 1 REV 4
202	Greenwood Energy Center	2025	1	Reliability	Unit 1 Feedwater Heater #6	2,225,303	(445,061)	PAT 1 REV 1
203	Greenwood Energy Center	2025	1	Reliability	Unit 1 Feedwater Heater #3	2,117,684	(423,537)	PAT 1 REV 1
204	Greenwood Energy Center	2025	1	Safety	Unit 1 Turbine Valves	1,765,657	(353,131)	PAT 1 REV 1
205	Greenwood Energy Center	2025	1	Reliability	Unit 1 North Boiler Feed Pump Turbine Blades	1,508,890	(301,778)	PAT 1 REV 2
206	Greenwood Energy Center	2025	1	Minor Environmental	Underground Storage Tank 377	1,310,838	(262,168)	PAT 0 REV 1
207	Monroe without Large Enviro.	2025	1	Reliability	Unit 1 IP Turbine Rotor	4,167,682	(833,536)	PAT 0/1 REV 0
208	Monroe without Large Enviro.	2025	1	Minor Environmental	Unit 1 SCR Catalyst Layer 3	2,530,867	(506,173)	PAT 0 REV 1
209	Monroe without Large Enviro.	2025	1	Reliability	Unit 1 Coal Mill Feeder Controls	1,363,072	(272,614)	PAT 0/1 REV 0
210	Monroe without Large Enviro.	2025	2	Safety	Unit 2 LPA & LPB Turbine Rotor and Blades	10,976,839	(2,195,368)	PAT 0 REV 1
211	Monroe without Large Enviro.	2025	2	Minor Environmental	Unit 2 SCR Catalyst Layers 1, 2, & 4	4,399,643	(879,929)	PAT 0 REV 1
212	Monroe without Large Enviro.	2025	2	Reliability	Unit 2 North & South Air Heater Hot End Baskets	2,993,448	(598,690)	PAT 0 REV 0
213	Monroe without Large Enviro.	2025	4	Safety	Unit 4 LPA & LPB Turbine Rotor and Blades	5,257,264	(1,051,453)	PAT 1 REV 1
214	Monroe without Large Enviro.	2025	4	Safety	Unit 4 Turbine Valves	4,194,728	(838,946)	PAT 0 REV 0
215	Monroe without Large Enviro.	2025	4	Minor Environmental	Unit 4 SCR Catalyst Layers 1, 3, & 4	3,588,903	(717,781)	PAT 0/1 REV 0
216	Monroe without Large Enviro.	2025	4	Safety	Unit 4 Coal Mill Primary Air Duct & Damper	2,649,721	(529,944)	PAT 0/1 REV 0
217	Monroe without Large Enviro.	2025	4	Reliability	Unit 4 Expansion Joints	2,381,698	(476,340)	PAT 1 REV 0
218	Monroe without Large Enviro.	2025	4	Minor Environmental	Unit 4 FGD Inlet Expansion Joint Flange Mod & Joint	2,054,274	(410,855)	PAT 1/2 REV 0
219	Monroe without Large Enviro.	2025	4	Reliability	Unit 4 DCS & Control Room	1,914,456	(382,891)	PAT 0 REV 1
220	Monroe without Large Enviro.	2025	4	Reliability	Unit 4 Secondary Heat Exchanger	1,906,379	(381,276)	PAT 1 REV 0
221	Monroe without Large Enviro.	2025	Common	Reliability	U2A Emergency Reactor Cooling & GSW Return Piping	1,038,478	(207,696)	PAT 0 REV 0
222	Monroe without Large Enviro.	2025	Common	Reliability	U2A Reactor Condensate Return	1,032,462	(206,492)	PAT 0 REV 0
223	Monroe without Large Enviro.	2025	Fuel Supply	Safety	Fuel Supply Tripper Gallery D Infrastructure	7,134,048	(1,426,810)	PAT 0 REV 1
224	Monroe without Large Enviro.	2025	Fuel Supply	Safety	Fuel Supply Dust Collector 04	1,900,054	(380,011)	PAT 0 REV 1
225	Peakers	2025	DTE	Reliability	Blackstart Peaker Unit 2 Starting System	2,794,791	(558,958)	N/A
226	Peakers	2025	Delray	Minor Environmental	Delray 11-1 & 12-1 Peaker Exhaust Silencers	1,894,035	(378,807)	PAT 0 REV 1
227	Peakers	2025	Greenwood	Reliability	Greenwood 11-2 Peaker Major Overhaul	1,179,132	(235,826)	PAT 0 REV 1
228	Peakers	2025	Greenwood	Reliability	Greenwood 12-1 Peaker Major Overhaul	1,137,038	(227,408)	PAT 0 REV 1
229	Peakers	2025	Renaissance	Reliability	Renaissance 4 Peaker Exhaust Cylinder & Manifold	8,658,508	(1,731,702)	PAT 0 REV 1
230	Peakers	2025	Renaissance	Reliability	Renaissance Unit 2 Peaker Generator Rotor	3,214,388	(642,878)	PAT 0 REV 1
231	Peakers	2025	DTE	Reliability	Blackstart Unit Major Overhaul	6,376,480	(1,275,296)	N/A
232	**Total 2025 Projects**					**142,255,604**		
					20% reduction for 2025 for all PAT0 and PAT1 projects		**(28,451,121)**	

Michigan Public Service Commission
DTE Electric Company
Projected Capital Expenditures
Midwest Energy Resources Company (MERC) & Fuel Supply
($000)

Case No.: U-21534
Exhibit No.: A-12
Schedule: B5.2
Witness: D. C. Milo
Page: 1 of 1

	(a)	(b)	(c)	(d)	(e)	(f)
		Capital Expenditures				
		Historical	**Projected Bridge Period**			**Projected Test Year**
Line No.	**Description**	**12 mos. ended 12/31/2022**	**12 mos. ending 12/31/2023**	**12 mos. ending 12/31/2024**	**24 mos. ending 12/31/2024**	**12 mos. ending 12/31/2025**
					col. (c)+(d)	
1	MERC:					
2	Conveyor Belting	563	112	-	112	-
3	D11 Caterpillar Dozer	295	-	-	-	-
4	85' Man Lift	153	-	-	-	-
5	Large Mobile - Major Components (Engine, Transmission, etc.)	-	254	106	360	54
6	Terminal Roadways & Railroad Tracks	-	117	-	117	-
7	750KVA & 1500KVA Transformers	-	165	-	165	-
8	Other Capital Spend <$100K	213	278	184	462	100
9	Total MERC	1,224	926	290	1,216	154
10	Fuel Supply:					
11	Railcar truck/ draft system rebuilds	1,000	700	1,000	1,700	1,000
12	Total Fuel Supply	1,000	700	1,000	1,700	1,000
13	**Total MERC and Fuel Supply**	2,224	1,626	1,290	2,916	1,154
	Actual amounts from STDE-2.21a and 2.21b		1,495	1,318		
	Difference updating with actual amounts through April 2024		**(131)**	**28**		

Midwest Energy Resources Company (MERC) & Fuel Supply
Actual Capital Expenditures
($000's)

Case: U-21534
Response: STDE-2.21a
Respondent: D. Milo

Line No.	(a) Description	(b) Jan-22	(c) Feb-22	(d) Mar-22	(e) Apr-22	(f) May-22	(g) Jun-22	(h) Jul-22	(i) Aug-22	(j) Sep-22	(k) Oct-22	(l) Nov-22	(m) Dec-22	(n) Actual 12 mos. ended 12/31/2022
1	MERC:													
2	Conveyor Belting			284	147							132		563
3	D11 Caterpillar Dozer										277	18		295
4	85' Man Lift								138			15		153
5	Other Capital Spend <$100K	11	38	36	28	23	14	9	11	16	55	(53)	24	213
6	Total MERC	11	38	320	175	23	14	9	149	16	331	112	24	1,224
7	Fuel Supply:													
8	Railcar truck/ draft system rebuilds	142	134	179	145	-	110	192	86	-	-	-	13	1,000
9	Total Fuel Supply	142	134	179	145	-	110	192	86	-	-	-	13	1,000
10	**Total MERC and Fuel Supply**	153	172	499	320	23	124	201	236	16	331	112	37	2,223

Line No.	Description	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Actual 12 mos. ended 12/31/2023
11	MERC:													
12	Conveyor Belting	23	61		51									135
13	Large Mobile - Major Components (Engine, Transmiss	25	22	139	25						42			253
14	Terminal Roadways & Railroad Tracks							20		83				103
15	750KVA & 1500KVA Transformers									102	45	15		161
16	Other Capital Spend <$100K	10	13	24	29	6	15	4	21	14	6	4	74	221
17	Total MERC	58	96	163	105	6	15	24	21	200	92	18	74	873
18	Fuel Supply:													
19	Railcar truck/ draft system rebuilds	-	166	-	-	-	-	31	64	26	150	134	51	622
20	Total Fuel Supply	-	166	-	-	-	-	31	64	26	150	134	51	622
21	**Total MERC and Fuel Supply**	58	262	163	105	6	15	55	85	226	242	152	125	1,495

Midwest Energy Resources Company (MERC) & Fuel Supply
Projected 2024 Capital Expenditures
($000's)

Case: U-21534
Response: STDE-2.21b
Respondent: D. Milo

Line No.	(a) Description	(b) Actual Jan-24	(c) Actual Feb-24	(d) Actual Mar-24	(e) Actual Apr-24	(f) Projected May-24	(g) Projected Jun-24	(h) Projected Jul-24	(i) Projected Aug-24	(j) Projected Sep-24	(k) Projected Oct-24	(l) Projected Nov-24	(m) Projected Dec-24	(n) Projected 12 mos. ended 12/31/2024
1	MERC:													
2	Large Mobile - Major Components (Engine, Transmission, etc.)	-	37	-	-	-	-	-	-	-	-	-	-	37
3	Other Capital Spend <$100K	11	48	85	17	45	35	-	-	-	40	-	-	281
4	Total MERC	11	85	85	17	45	35	-	-	-	40	-	-	318
5	Fuel Supply:													
6	Railcar truck/ draft system rebuilds	18	212	70	15	86	86	86	86	86	86	86	83	1,000
7	Total Fuel Supply	18	212	70	15	86	86	86	86	86	86	86	83	1,000
8	**Total MERC and Fuel Supply**	30	297	154	32	131	121	86	86	86	126	86	83	1,318

Sum Jan-Apr 2024 513

DTE Electric Company
Projected Capital Expenditures
Nuclear Production Plant
Routine and Small Projects
($000)

Line No.	Project Name	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	Forecasted May-Dec 24	Forecasted Jan-Dec 25
1	**Routine and Small Projects**							
2	Undervessel replacements	**212**	**865**	**49**	**1,177**	**44**	985	-
3	Visual Annunciator System (VAS) replacement	-	-	-	-	-	-	-
4	Security system computer	**715**	**423**	**466**	**459**	**403**	7,837	-
5	Plant radio system	567	362	342	74	72	-	-
6	Residual heat removal service water outlet valve (F068A/B) replacement	**76**	**96**	**317**	**1,129**	**819**	767	-
7	Environmentally Qualified (EQ) seal replacements	-	-	-	-	-	-	-
8	Safety relief valves (SRVs)	**391**	**(812)**	**22**	1,076	1,037	287	759
9	Snubbers	**23**	**(14)**	**9**	**796**	**228**	10	32
10	Low Pressure Turbine (LPT) expansion joints	-	-	-	-	-	-	-
11	Unitized actuators (UAs) replacement	**507**	**195**	**373**	**699**	**593**	986	230
12	Residual Heat Removal (RHR) motors replacement	**117**	**532**	**285**	**1,005**	**644**	521	949
13	High pressure stop and control valves (HPSV/HPCV) replacement	**528**	**190**	**666**	**1,512**	**1,123**	943	-
14	Reactor recirculation system (RRS) replacements	-	-	-	-	-	-	-
15	Main Steam Isolation Valves (MSIV) replacement	**227**	**5**	**(1)**	**750**	**1,121**	-	-
16	Low pressure stop and intercept valves (LPSV/LPIV) replacements	**352**	**125**	**588**	**994**	**350**	945	-
17	Valve replacements	**146**	**(97)**	**190**	**210**	**1,536**	5	-
18	Main steam bypass valve (MSBV) replacement	-	-	-	-	-	-	-
19	Core spray line vents	108	204	114	**102**	**188**	255	-
20	Diesel fire pump	-	-	-	-	-	-	-
21	Emergency equipment service water (EESW) pump	-	-	-	-	-	-	-
22	Motor operated valves (MOV)	-	-	-	-	-	-	-
23	Reactor Protection System (RPS) motor-generator (MG) set replacements	**(385)**	**13**	**13**	**420**	**195**	-	176
24	Emergency Diesel Generator (EDG) cylinder liner replacements	-	-	-	-	-	-	-
25	Flow accelerated corrosion (FAC) program piping insulation	73	1	195	**278**	**1,011**	-	-
26	Owner Controlled Area (OCA) security access control system	-	-	-	-	-	-	-
27	Residual heat removal service water (RHRSW) pump	-	-	-	-	-	-	-
28	Control rod drive mechanism (CRDM) replacement	**56**	**12**	**25**	**142**	**635**	-	4,867
29	Moisture separator reheater relief valve (MSRRV)	-	-	-	-	-	-	-
30	General plant tools	**1,505**	**203**	**168**	**401**	**469**	1,669	3,375
31	Heater Drains Pump (HDP) replacement	-	-	-	-	-	-	-
32	Condensate pump	**205**	**6**	**184**	**250**	**79**	-	189
33	Residual Heat Removal (RHR) HVAC hydramotors	-	-	-	-	-	83	45
34	Breaker replacement	-	-	-	-	-	190	265
35	Plant wireless	**183**	**279**	**139**	**88**	**41**	5,615	-
36	Condensate filter demineralizer (CFD) septas	1	-	180	**50**	**1**	349	345
37	Refuel bridge mast	-	-	-	-	-	-	-
38	Refuel Floor monorail replacement	**(6)**	**20**	**22**	**41**	**10**	-	-
39	Switchyard footer replacement	-	-	-	-	-	132	-
40	Unitized Actuator shop	**8**	**6**	**6**	**4**	**56**	58	-
41	Hot machine shop	**947**	**456**	**388**	**313**	**2**	-	-
42	Contractor time & work tracking system	-	-	-	-	-	-	-
43	Piping replacements	**28**	**1**	**(26)**	46	8	-	-
44	Security defensive strategy simulator	-	-	-	-	-	-	-
45	Control rod blade (CRB) replacements	**1,495**	**31**	**(9)**	-	-	-	887
46	Pump and motor replacements	-	**44**	**3**	**57**	**672**	-	-
47	Reverse osmosis system replacement	-	-	-	-	-	-	2,597
48	Independent Spent Fuel Storage Installation (ISFSI) casks	**2**	**1**	-	**2**	**1,028**	301	282
49	Integrated Plant Computer System (IPCS) replacement	-	-	-	-	-	-	-
50	Paperless recorders replacement	-	-	-	-	-	126	124
51	Roof replacements	**568**	**33**	-	-	-	-	-
52	Neutron Monitoring System replacements	**22**	**17**	**32**	**16**	**10**	420	-
53	SCRAM discharge header	**320**	**366**	**234**	**348**	**(41)**	-	-
54	Temporary power modifications	**180**	**22**	**18**	**9**	**2**	1,842	-
55	Balance of plant (BOP) battery replacement	**85**	**32**	**18**	**212**	**558**	-	-
56	Reactor feed pump turbine (RFPT) rotor	**167**	**59**	**124**	**249**	**844**	331	-
57	Hydrogen seal replacement	**124**	**46**	**93**	**165**	**264**	244	-
58	Heater Feed Pump (HFP) replacement	-	-	-	**217**	**164**	-	-
59	Natural draft cooling towers	-	-	**42**	**4**	**915**	-	9,515
60	Document management system enhancements	-	-	-	-	-	-	9,992
61	Remote monitoring	-	-	-	-	-	-	4,473
62	Electronic work package system	-	-	-	-	-	-	2,584
63	GSW Pump House Critical Digital Asset (CDA)	-	-	-	-	-	-	745
64	Balance of Projects (<$500K)	-	**53**	**3**	**11**	**115**	14	16
65	**Total Routine and Small Projects**	**9,547**	**3,775**	**5,272**	**13,306**	**15,196**	24,915	42,450
	Difference between actual Dec 23 to Apr 24 to projections	(1,442)	(3,167)	(7,936)	(71)	4,745	**15% reduction for May-Dec 24** (3,737)	**20% reduction for Jan-Dec 2025** (8,490)

Total difference between actual Dec 23 to Apr 24 to projections in case as filed (7,870)
Projections in case Dec 23 to Apr 24 54,966

Percent Reduction of actual compared to projections for Dec 23 to Apr 24 -14.3%

DTE Electric Company
Projected Capital Expenditures
Nuclear Production Plant
Non-Routine and Large Projects
($000)

No.	Project Name	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	Forecasted May-Dec 24	Forecasted Jan-Dec 25
1	**Non-Routine and Large Projects**							
2	Main Unit Generator replacement	3,300	5,849	(1,600)	5,408	1,358	**33,230**	**14,292**
3	Torus Vent Header	-	-	-	-	-	**-**	**-**
4	Underground safety-related service water piping	863	1,946	1,584	5,495	10,320	**14,865**	**-**
5	Main Unit Generator rotor replacement	-	-	-	-	-	**-**	**-**
6	Generator excitation automatic voltage regulator (AVR)	-	-	-	-	-	**-**	**-**
7	Transformer #65 and #69 replacements	-	-	-	36	105	**-**	**-**
8	License renewal implementation (LRI)	417	427	425	624	1,220	**4,285**	**729**
9	Circulating Water (CW) Discharge Pipe	-	-	-	-	-	**-**	**734**
10	Feed water heaters replacements	2,159	288	303	510	547	**1,603**	**4,730**
11	Drywell Coolers #12 and #13	-	-	-	-	-	**-**	**-**
12	Boraflex fuel storage racks	1,178	336	417	162	48	**90**	**-**
13	Radiation monitors	983	319	319	341	311	**6,969**	**2,611**
14	Reactor Building Freight Elevator	-	-	-	-	-	**-**	**-**
15	Transformer replacements	-	-	-	-	-	**-**	**-**
16	Drywell Cooler #8	-	-	-	-	-	**-**	**626**
17	Fire header restoration	204	(4)	(1)	-	-	**-**	**-**
18	Drywell Coolers #10 and #14	-	-	-	-	-	**-**	**-**
19	Off-gas chiller replacement	-	-	-	-	-	**-**	**-**
20	General Service Water (GSW) intake groin replacement	3,693	(35)	50	-	-	**-**	**-**
21	Turbine Building moisture barrier	36	53	180	22	230	**-**	**-**
22	Digital control modifications	-	-	-	-	-	**-**	**-**
23	Drywell moisture barrier replacement	66	83	420	988	970	**2,766**	**-**
24	Fire detection system replacement	13	38	59	56	80	**1,537**	**1,252**
25	Interuptable Air Supply (IAS) dryer replacements	4	10	7	10	20	**558**	**-**
26	Reactor recirculation motor-generator (RRMG) replacements	-	-	-	-	-	**-**	**6,226**
27	Turbine controls replacements	37	11	19	18	20	**64**	**762**
28	Sanitary system replacement	-	-	-	-	-	**-**	**6,457**
29	Emergency Diesel Generator Service Water (EDGSW) piping	-	-	-	-	-	**-**	**-**
30	Other Capital Spend <$100K						**-**	**-**
31	**Total Non-Routine and Large Projects**	12,953	9,321	2,182	13,670	15,229	**65,968**	**38,420**
	Difference between actual Dec 23 to Apr 24 to projections	(371)	(1,874)	(3,697)	7,220	(9,151)	**15% reduction for May-Dec 24** (9,895)	**20% reduction for Jan-Dec 2025** (7,684)

Total difference between actual Dec 23 to Apr 24 to projections in case as filed (7,874)
Projections in case Dec 23 to Apr 24 61,229

Percent Reduction of actual compared to projections for Dec 23 to Apr 24 -12.9%

Michigan Public Service Commission
DTE Electric Company
Projected Operation and Maintenance Expenses
Steam Power Generation
($000)

MPSC Case No.: U-21534
Requestor: Staff
Question No.: STDE-9.1 Sup
Respondent: M. Guillaumin

Line No.	(a) Description	(b) Account	(c) 2023	(d) Rate Case Adjustments: Reclass Fuel Handling to O&M 2/	(e) Rate Case Adjustments: Reclass MERC Fuel Handling Non-O&M Expense 3/	(f) Historical Adjustments 4/	(g) Adjusted Historical Test Period	(h) Projected Adjustments	(i) Projected Adjustments: 1/1/24 - 12/31/24 Inflation Adj 5/	(j) Projected Adjustments: 1/1/25 - 12/31/25 Inflation Adj 5/	(k) Projected Adjustments: Other Adjustments 6/	(l) Total Projected Adjustments	(m) Projected Test Period
1	**Steam Power Generation**						sum (c) thru (f)					sum (h) thru (k)	(g) + (l)
2	**Operation**												
3	Operation Supervision and Engineering	500	8,114	-	-	2,445	10,558	-	306	315	-	621	11,180
4	Fuel Handling	501	-	23,332	(6,391)	5,854	22,795	-	661	680	-	1,341	24,136
5	Steam Expenses	502	13,634	-	-	422	14,056	-	408	419	-	827	14,883
6	Steam from Other Sources	503	-	-	-	-	-	-	-	-	-	-	-
7	(Less) Steam Transferred-Cr.	504	-	-	-	-	-	-	-	-	-	-	-
8	Electric Expenses	505	2,193	-	-	(162)	2,032	-	59	61	-	120	2,151
9	Misc Steam Power Expenses	506	27,763	-	-	3,541	31,304	-	908	934	-	1,842	33,146
10	Rents	507	-	-	-	-	-	-	-	-	-	-	-
11	Total Operation Expense		51,704	23,332	(6,391)	12,100	80,744	-	2,342	2,409	-	4,751	85,495
12	**Maintenance**												
13	Maintenance Supervision and Engineering	510	295	-	-	-	295	-	9	9	-	17	313
14	Maintenance of Structures	511	5,038	-	-	3,414	8,452	-	245	252	-	497	8,949
15	Maintenance of Boilers	512	39,266	-	-	14,987	54,253	-	1,573	1,619	-	3,192	57,445
16	Maintenance of Electric Plant	513	7,023	-	-	1,263	8,286	-	240	247	-	488	8,774
17	Maintenance of Misc Steam Plant	514	32,710	-	-	5,718	38,428	-	1,114	1,147	-	2,261	40,690
18	Total Maintenance Expense		84,332	-	-	25,382	109,714	-	3,182	3,274	-	6,456	116,170
19	Total Steam Power Generation		136,036	23,332	(6,391)	37,482	190,458	-	5,523	5,683	-	11,207	201,665
20	Less Fuel Supply & MERC Fuel Handling	1/	1,672	12,226	(6,391)	-	7,507	-	218	224	(297)	145	7,652
21	Total Steam excluding Fuel Supply & MERC		134,363	11,106	-	37,482	182,951	-	5,306	5,459	297	11,062	194,013

1/ Reclassify Fuel Supply and MERC Fuel Handling sponsored by Witness Milo on Exh A-13, C5.2

2/ Reclassify Fuel Handling O&M charged to Fuel Account 501

3/ Portion of MERC Fuel Handling Charge that is reallocated to other line item classifications within net operating income (see Witness Milo's Exh A-13, C5.2)

5/ Annual Inflation Rate	1/1/23 - 12/31/23	1/1/24 - 12/31/24	1/1/25 - 12/31/25
	0.00%	2.90%	2.90%
No. of Months in Period	12	12	12
Pro-rated Inflation Rate	0.00%	2.90%	2.90%

(sponsored by Witness T. Uzenski on Exh. A-13, Sch.C5.15)

4/ Historical Adjustments:	Account	Amount
Corporate Membership Adjustment	506	(42)
Temporary reductions from deferral of non time-critical contract labor maintenance activities	500,501,502, 505, 506, 511, 512,513,514	6,780
Temporary reductions from deferral of non time-critical material procurement	500,501,502, 505, 506, 511, 512,513,514	11,231
Temporary delay in hiring to replace employees that retired or left the company	500,501,502, 505, 506, 511, 512,513,514	8,698
Periodic Outage Timing	500,501,502, 505, 506, 511, 512,513,514	7,232
Environmental compliance requirements	506	3,583
Total Estimated Historical Adjustments		37,482

6/ Projected Adjustments	Account	Amount
Projected savings from reduced operations as transshipments decrease	501	(297)

Michigan Public Service Commission
DTE Electric Company
Projected Operation and Maintenance Expenses
Fuel Supply & Midwest Energy Resources Company (MERC)
($000)

Case No.: U-21534
Exhibit: A-13
Case: U-21534
Response: STDE-9.3
Respondent: D. Milo

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
				Rate Case Adjustments			Projected Adjustments					
Line No.	Description	Account	1/1/2023 - 12/31/2023	Reclass Fuel Handling to O&M 1/	Reclass MERC Fuel Handling Non-O&M Expense 2/	Adjusted Historical Test Period		1/1/24 - 12/31/24 Inflation Adj 3/	1/1/25 - 12/31/25 Inflation Adj 3/	Other Adjustments 4/	Total Projected Adjustments	Projected Test Period
						sum (c) thru (e)					sum (g) thru (j)	(f) + (k)
1	**Fuel Supply**											
2	Operation Supervision and Engineering	500	533	-	-	533	-	15	16	-	31	565
3	Fuel Handling	501	-	2,484	-	2,484	-	72	74	-	146	2,630
4	Misc Steam Power Expenses	506	37	-	-	37	-	1	1	-	2	39
5	Maintenance Supervision and Engineering	510	79	-	-	79	-	2	2	-	5	84
6	Maintenance of Misc Steam Plant	514	1,023	-	-	1,023	-	30	31	-	60	1,084
7	Total Fuel Supply		1,672	2,484	-	4,156	-	121	124	-	245	4,401
8	**MERC Fuel Handling**											
9	O&M			3,351	-	3,351	-	97	100	(297)	(100)	3,251
10	Depreciation			3,985	(3,985)	-	-	-	-	-	-	-
11	Property Taxes			865	(865)	-	-	-	-	-	-	-
12	Payroll Taxes			172	(172)	-	-	-	-	-	-	-
13	Income Taxes			(31)	31	-	-	-	-	-	-	-
14	Interest Expense			1,400	(1,400)	-	-	-	-	-	-	-
15	Total MERC Fuel Handling	501		9,742	(6,391)	3,351	-	97	100	(297)	(100)	3,251
16	Total Fuel Supply & MERC Fuel Handling		1,672	12,226	(6,391)	7,507	-	218	224	(297)	145	7,652

1/ Reclassify Fuel Supply's Fuel Handling O&M charged to Fuel Account 501

2/ MERC fuel handling is reallocated to the proper line item classification within net operating income as shown on Exhibit A-3 C16 sponsored by Witness Uzenski.

3/ Annual Inflation Rate	1/1/23 - 12/31/23	1/1/24 - 12/31/24	1/1/25 - 12/31/25
	0.00%	2.90%	2.90%
No. of Months in Period	12	12	12
Pro-rated Inflation Rate	0.00%	2.90%	2.90%

(sponsored by Witness T. Uzenski on Exh. A-13, Sch.C5.15)

4/ Projected savings from reduced operations as transshipments decrease

Michigan Public Service Commission
DTE Electric Company
Projected Operation and Maintenance Expenses
Nuclear Power Generation
($000)

Discovery Response STDE-9.5

Case No.: U-21534
Exhibit: A-13
Schedule: C5.3
Witness: J. C. Davis
Page: 1 of 2

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
				Rate Case Adjustments				Projected Adjustments						
Line No.	Description	Account	2023	Nuclear Surcharge 1/	Reclassify PERC	Historical Adjustments 2/	Adjusted Historical Test Period		1/1/24 - 12/31/24 Inflation Adj 3/	1/1/25 - 12/31/25 Inflation Adj 3/	Outage Accrual 4/	PERC Amortization 5/	Total Projected Adjustments	Projected Test Period
1	**Nuclear Power Generation**						sum (c) thru (f)						sum (h) thru (l)	(g) + (m)
2	**Operation**													
3	Operation Supervision and Engineering	517	9,330	(172)	-	-	9,158	-	266	273	-	-	539	9,696
4	Coolants and Water	519	3,307	-	-	-	3,307	-	96	99	-	-	195	3,502
5	Steam Expenses	520	12,459	(4,772)	-	-	7,687	-	223	229	(622)	-	(170)	7,517
6	Steam from Other Sources	521	-	-	-	-	-	-	-	-	-	-	-	-
7	(Less) Steam Transferred-Cr.	522	-	-	-	-	-	-	-	-	-	-	-	-
8	Electric Expenses	523	3,960	-	-	-	3,960	-	115	118	-	-	233	4,193
9	Misc Nuclear Power Expenses	524	57,638	(22,832)	(356)	1,088	35,538	-	1,031	1,060	-	-	2,091	37,629
10	Rents	525	-	-	-	-	-	-	-	-	-	-	-	-
11	Station Expense	562	(20)	-	-	-	(20)	-	(1)	(1)	-	-	(1)	(21)
12	Total Operation Expense		86,673	(27,776)	(356)	1,088	59,629	-	1,729	1,779	(622)	-	2,886	62,516
13	**Maintenance**													
14	Maintenance Supervision and Engineering	528	13,592	-	-	-	13,592	-	394	406	-	-	800	14,392
15	Maintenance of Structures	529	18,972	(20)	-	-	18,952	-	550	566	-	-	1,115	20,067
16	Maintenance of Reactor Plant Equipment	530	33,943	(0)	(13,825)	-	20,118	-	583	600	(1,866)	-	(683)	19,435
17	Maintenance of Electric Plant	531	15,488	-	(13,085)	4,070	6,472	-	188	193	-	-	381	6,853
18	Maintenance of Misc Nuclear Plant	532	15,204	-	(209)		14,995	-	435	447	-	-	882	15,878
19	Maintenance of station equipment	570	-	-	-	-	-	-	-	-	-	-	-	-
20	Total Maintenance Expense		97,199	(20)	(27,119)	4,070	74,130	-	2,150	2,212	(1,866)	-	2,495	76,625
	PERC Regulatory Asset													
21	PERC Base Expense		-	-	15,000	-	15,000	-	-	-	-	-	-	15,000
22	Reg Asset Amortization-PERC		-	-	12,475	-	12,475	-	-	-	-	(7,621)	(7,621)	4,854
23	Total PERC Expense		-	-	27,475	-	27,475	-	-	-	-	(7,621)	(7,621)	19,854
24	Total Nuclear Power Generation		183,873	(27,796)	-	5,158	161,235	-	3,879	3,992	(2,489)	(7,621)	(2,239)	158,996

1/ Eliminate O&M expenses recovered separately in Nuclear Surcharge

	Amount	Account
Site Security	(16,133)	524
Radiation Protection	(11,663)	517-520,524 ,530,531
	(27,796)	

2/ Historical Adjustments:

	Amount	Account
Utility Service Alliance (USA) Refund Adjustment (one-time difference)	1,116	524
Staffing temporarily below long-term sustainable threshold	4,070	529
Excluded membership dues	(28)	524

3/ Annual Inflation Rate

	1/1/23 - 12/31/23	1/1/24 - 12/31/24	1/1/25 - 12/31/25
No. of Months in Period	12	12	12
Pro-rated Inflation Rate	0.00%	2.90%	2.90%

(sponsored by Witness T. Uzenski on Exh. A-13, Sch.C5.15)

4/ Outage Accrual Projection Adjustment:

	Amount	Account
Outage Accrual Steam Expense	(622)	520
Outage Accrual Reactor Plant Maint.	(1,866)	530
Total Outage Accrual	(2,489)	

5/ PERC (Performance Evaluation Review Committee) regulatory asset amortization sponsored by Witness T. Uzenski on Exh. A-13, Sch.C5.17

Michigan Public Service Commission
DTE Electric Company
Projected Operation and Maintenance Expenses
Other Power Generation
($000)

Case No.: U-21534
Discovery Request: ABDE-1.6 Supplemental

	(a)	(b)	(c)	(d)		(e)		
Line No.	**Description**	**Account**	**2023 Actual**	**Estimated Rate Case Adjustments 1/2**	**Estimated Historical Adjustments 3/**	**Estimated Adjusted 2023**		
1	**Other Power Generation**					sum (c) thru (d)		
2	**Operation**							
3	Operation Supervision and Engineering	546	-	-		-		
4	Generation Expenses	548	4,180		507	4,687		
5	Misc Other Power Expenses	549	16,362	(15,063)		1,299		
6	Rents	550	-	-	-	-		
7	Total Operation Expense		20,542	(15,063)	507	5,986		
8	**Maintenance**							
9	Maintenance Supervision and Engineering	551	-	-	-	-		
10	Maintenance of Structures	552	-	-	-	-		
11	Maintenance of Generating & Electric Plant	553	38,520	(25,366)	1,783	14,937		
12	Maintenance of Misc Other Power Plant	554	1,993	-	1,202	3,195		
13	Total Maintenance Expense		40,513	(25,366)	2,985	18,132		
14	**Power Supply Related Expenses**							
15	Operation Supervision and Engineering	556	2,658	-	-	2,658		
16	Generation Expenses	557	2	(2)	118	118		
17	Total Expense		2,660	(2)	118	2,776	Inflation 2024	Inflation 2025
							2.9%	2.9%
18	Total Other Power Generation Expenses		63,715	(40,431)	3,610	26,894	27,673	28,476

1/ Eliminate Renewable Energy Program

2/ Rate Case Adjustments	Account	Amount
Eliminate Renewable Energy Program	549, 553, 557	(40,431)

3/ Normalization Adjustments:	Account	Amount
Normalization of Periodic Outage spend	548, 553, 554,557	1,667
Temporary reductions for deferral of non time-critical material procurement	548, 553, 554,557	988
Temporary delay of hiring replacement employees.	548, 553, 554,557	220
BWEC Routine Maintenance	548, 553, 554,557	735
Total Estimated Historical Adjustments		3,610

STATE OF MICHIGAN

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-21534
its rate schedules and rules governing the	)	
distribution and supply of electric energy,	)	
and for miscellaneous accounting authority.	)	

PROOF OF SERVICE

Michelle L. Conarton, being duly sworn, deposes and says that on July 26, 2024, A.D., she emailed a copy of the attached MPSC Testimony and Exhibits to the persons as shown on the attached list.

Michelle L. Conarton
Digitally signed by Michelle L. Conarton
Date: 2024.07.26 11:06:13 -04'00'

Michelle L. Conarton

Subscribed and sworn to before me
this 26th day of July 2024.

Jillian Bowden

Jillian Bowden, Notary Public
State of Michigan, County of Ingham
Acting in the County of Eaton
My Commission Expires June 19, 2025

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