April 10, 2023

Ms. Lisa Felice
Michigan Public Service Commission
7109 W. Saginaw Hwy.
P. O. Box 30221
Lansing, MI 48909

Via E-Filing

RE: MPSC Case No. U-21193

Dear Ms. Felice:

The following is attached for paperless electronic filing:

Rebuttal Testimony and Exhibits of Tyler Comings on behalf of Michigan Environmental Council, Natural Resources Defense Council, Sierra Club, and Citizens Utility Board of Michigan (Exhibits MEC-32 through MEC-33); and

Proof of Service.

Sincerely,

Digitally signed by Christopher M. Bzdok
DN: cn=Christopher M. Bzdok, o=Olson, Bzdok & Howard, PC, email=chris@envlaw.com, c=US
Date: 2023.04.10 10:51:04 -04'00'

Christopher M. Bzdok
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xc: Parties to Case No. U-21193

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **DTE ELECTRIC COMPANY** for approval of its Integrated Resource Plan pursuant to MCL 460.6t, and for other relief.	U-21193

REBUTTAL TESTIMONY OF TYLER COMINGS

ON BEHALF OF

MICHIGAN ENVIRONMENTAL COUNCIL,
NATURAL RESOURCES DEFENSE COUNCIL,
SIERRA CLUB, AND CITIZENS UTILITY BOARD OF MICHIGAN

April 10, 2023

TABLE OF CONTENTS

REBUTTAL TESTIMONY OF TYLER COMINGS
CASE NO. U-21193

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, business address, and position.

A. My name is Tyler Comings. I am a Senior Researcher at Applied Economics Clinic, located at 1012 Massachusetts Avenue, Arlington, Massachusetts.

Q. Please describe Applied Economics Clinic.

A. The Applied Economics Clinic is a 501(c)(3) non-profit consulting group formerly housed at Tufts University's Global Development and Environment Institute. Founded in February 2017, the Clinic provides expert testimony, analysis, modeling, policy briefs, and reports for public interest groups on the topics of energy, environment, consumer protection, and equity, while providing on-the-job training to a new generation of technical experts.

Q. Are you the same Tyler Comings who filed direct testimony in this case?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony responds to issues raised by Staff witness Zachary C. Heidemann and ABATE witness James R. Dauphinais on the retirement decision-making and feasibility of retirement of the Monroe coal units.

Q. Are you sponsoring any additional exhibits?

A. Yes, I sponsor Exhibits MEC-32 to MEC-33:

Exhibit MEC-32:	WP JLM 04 – Monroe O&M and Capital Forecast for 2022 IRP, Summary tab
Exhibit MEC-33:	WP JLM 05 – Monroe Capital Forecast for 2022 IRP, ENV MNPP tab

Q. Please summarize your findings and recommendations.

A. Based on my review of direct testimony and discovery responses in this case, I conclude that:

1. **Delaying a firm decision to retire Monroe Units 3 and 4 in 2028 would be a serious mistake.** Despite this being a major near-term resource decision, ABATE recommends that the Company be required to re-evaluate this decision in 2026. This recommendation should be rejected for several reasons: 1) planning for the 2028 retirement now would help prevent feasibility issues that ABATE is concerned about, whereas introducing more uncertainty could foreclose replacement options and make it harder for DTE to plan in earnest; 2) there are roughly $170 million in costs at Monroe over the next three years that are avoidable in a 2028 retirement scenario, but may not be if the retirement date were delayed or uncertain; and 3) concerns about the reliability impacts of retiring Monroe 3 and 4 in 2028 are overblown but even in the unlikely event that retirement would cause a reliability issue, MISO would not let the units retire until the issue was resolved.

2. **There is abundant evidence from multiple parties that 2032 retirement of Monroe Units 1 and 2 is the best option and it should be the default planning date going forward.** No party has offered evidence that incorporates the Inflation Reduction Act (IRA) and shows that DTE's plan to retire these units in 2035 is lower-cost, lower-risk, or lower-emitting than retiring them in 2032. Yet both Staff and ABATE try to argue for delaying this retirement decision and treating the Company's chosen 2035 date as the default option. This is problematic for several reasons: 1) there is more than ample evidence from DTE, MNSC, and other parties'

modeling in 2032 (or earlier) is the most economic option for retirement of these units; 2) Staff and ABATE's concerns about feasibility of replacing the units by 2032 are alarmist given the amount of time for planning if such a decision were made in this case, yet these parties' concerns are more likely to come to pass if their own recommendations were followed and the retirement decision were delayed; 3) planning ahead for 2032 retirement, including procuring clean replacement options with that target in mind, is a cost-saving strategy regardless of retirement dates; and 4) the 2032 date could still be reconsidered at a later date if there are material changes in the replacement options or costs.

II. THE DECISION TO RETIRE MONROE UNITS 3 AND 4 IN 2028 NEEDS TO BE MADE IN THIS CASE

Q. Please summarize this section of your testimony.

A. In this section, I discuss why ABATE's call for a re-evaluation of the 2028 retirement of Monroe Units 3 and 4 would be a mistake,[1] rather that the Company's decision to retire the units is well-founded and should be affirmed by the Commission in this case. I walk through several reasons for a firm commitment to this date in this case. First, uncertainty about the retirement decision would hinder the Company's ability to plan the transition from burning coal to procurement of replacement resources—especially given the short timeframe for this retirement. Second, the concern with possible reliability implications of the units' retirement is unfounded because MISO already has a process to ensure that there were no adverse impacts before allowing units to retire—or else it would leave the unit online until there was no longer an adverse impact from deactivation. Finally, a delay in a

[1] Direct Testimony of James R. Dauphinais, p. 5, lines 3-8; p. 28, lines 3-15.

firm retirement decision in this case could lead to more capital and O&M spending between now and 2026. While DTE's modeling files show approximately $170 million in spending on Monroe Units 3 and 4 in 2024-2026 that would be avoided if those units retire in 2028, Commission uncertainty about, or delay of, such retirement date could lead the Company to decide to incur at least some of that otherwise avoidable spending.

Q. What does ABATE recommend regarding the decision to retire Monroe Units 3 and 4 in 2028?

A. ABATE Witness Dauphinais states that the group generally supports the 2028 retirement, but it also recommends re-evaluating this decision three years from now. He recommends that the Company should perform a re-evaluation of the decision in 2026 in order to assess whether the 2028 retirement would cause a reliability issue or have "major adverse economic impacts" that would lead it to be "no longer in the public interest."[2]

Q. Are you generally concerned with the prospect of leaving a near-term retirement decision open for at least three more years?

A. Yes. While I understand that ABATE is not explicitly calling for a later retirement date for Monroe units 3 and 4, it is creating uncertainty about that date and leaving the door open for a delay by asking the Company and Commission to re-assess the retirement on too short of a timeline to allow for a smooth 2028 retirement. ABATE asks for a 2026 analysis, but there is also a lag between an analysis and a Commission decision—if one were required. In this current IRP, for instance, the Company conducted a new "REFRESH" modeling scenario in the fall of 2022 after the passage of the Inflation Reduction Act (IRA). Now,

[2] *Id.*

we sit in the spring of 2023 and the Commission will likely decide this case in the late fall of this year. This means that there could be a year between the Company's 2026 analysis and a decision; this timeline is typical in resource planning in other states in my experience. At the earliest, even if there were no Commission decision required, the proposed analysis from ABATE would be three years from now. While I am a proponent of using the best data and market intelligence available, I also recognize that a retirement decision should preferably be made several years in advance in order to plan for replacement capacity and energy, as well as transition planning for the retiring units.

Q. Has the Commission previously warned about the risks of not locking in a retirement commitment with sufficient lead time?

A. Yes. In the Commission's order approving construction of DTE's Blue Water Energy Center (BWEC) natural gas combined cycle plant, the Commission explained the importance of committing to retirement well ahead of time in order to allow for further replacement options:

> …the Commission wants to avoid a situation in which low-risk, cost-effective options such as EE and DR, which need time to scale up and that depend on voluntary customer participation, are limited or foreclosed from meeting a longer term need due to a lack of timely commitment by the utility.[3]

The Commission also discussed how the natural gas plant was approved in part because of there being limited time to pursue other replacement options:

> Ultimately, the Commission finds that a narrow window exists prior to the planned coal plant retirements that may not allow sufficient time for

[3] Case No. U-18419, Opinion and Order, p. 100.

> ramping up significant quantities of renewable energy, EE, DR, storage, or other options in order to completely displace the need for the proposed gas plant.[4]

I echo both of these concerns from the Commission. My primary concern with leaving the door open on the 2028 retirement for Monroe units 3 and 4 is that the Company would not have a firm commitment, and thus not be able to plan in earnest. The Commission's findings on the virtues of planning ahead here also pertain to the decision for Monroe 1 and 2 retirement, which I discuss in the next section.

Q. Are you concerned with ABATE's suggestion that retiring these units in 2028 may no longer be in the public interest under its proposed 2026 "refresh analysis"?

A. Yes. First, as a procedural matter, the near-term, major resource decision has been made with evidence available to the Company at the time of its analysis. While I have some issues with some aspects of Company's modeling and its interpretation of results—as discussed at length in my direct testimony—DTE made a reasonable determination in concluding that Monroe units 3 and 4 should be retired in 2028. Moreover, no party in this case has provided modeling or analysis that supports any other date as more reasonable or economic. An affirmation of DTE's 2028 retirement decision would be appropriate in this case given the lack of any contrary evidence and the limited amount of time leading up to 2028.

Even if such a future "refresh analysis" were allowed, it is unclear what would lead it to conclude that a 2028 retirement was no longer economically advantageous. The trend in this industry has been towards planning for accelerated rather than decelerated coal

[4] *Id*., p. 98.

retirements due to the improved economics of replacement options—particularly from clean resources—and from regulatory pressure. For instance, DTE's 2019 IRP concluded that all Monroe units would retire in 2040; but the current IRP has accelerated two units' retirement dates by twelve years and the remaining two units' retirement by five years. In that 2019 IRP, the Company also planned for Belle River units 1 and 2 to retire in 2029 and 2030, respectively; in the current IRP, the Company plans to convert the units to gas four years earlier. Notably, as I discussed in my direct testimony, DTE's decision to accelerate the cessation of coal at all of its units was made prior to the IRA. With the availability of even lower-cost replacement options with the IRA in place, it is harder to economically justify keeping coal units on-line than it was before that law was passed.

Q. Is the retirement of Monroe units 3 and 4 in 2028 likely to lead to a reliability issue?

A. No. Part of ABATE's concern with the 2028 retirement date is the impact on reliability, which in part drives its recommendation for a 2026 "refresh analysis."[5] There are several reasons that I disagree with this recommendation. First, as I will discuss later in testimony regarding the other Monroe units, shoring up the retirement date now makes it less likely that there would be a reliability issue because DTE could plan with more known parameters ahead of time. In the PCA, the Company plans to build replacement resources ahead of time in anticipation of meeting reliability needs for the 2028 retirement, which is a reasonable path. Delaying the retirement decision makes it more difficult to justify procuring resources now if the retirement is uncertain. Second, the Company did not consider MISO capacity purchases (apart from a sensitivity) or bilateral capacity contracts, but those could be a short-term stop-gap solution for capacity needs. Finally, in the unlikely

[5] Dauphinais Direct, p. 5, lines 3-8.

event that there is not enough replacement capacity or market purchases, there is a process in place that would prevent an adverse impact on reliability: in order to "ensure grid reliability," MISO requires that the generator's owner file an Attachment Y before deactivating a unit from its system.[6] After MISO's assessment, the grid operator would then only allow the unit to disconnect "if no reliability issues are identified." If there is a reliability issue identified with the deactivation and there are "no feasible alternatives" to address this issue, then the unit gets System Support reserve (SSR) status and remains on the system until it is no longer needed for reliability.[7] Thus MISO provides a backstop that avoids an adverse reliability impact from retiring generators.

Q. Has MISO recently changed the attachment Y process to require additional lead time for a generator deactivation request?

A. Yes. Previously, the owner had to submit the request 26 weeks (or half a year) prior to the deactivation date. But MISO recently changed the rules to double that lead time, now requiring a filing at least one year before retirement.[8] This means that ABATE's request for a 2026 analysis could hold up the deactivation process. Even if the 2028 retirement decision were re-affirmed after ABATE's requested analysis and decision from the Commission, it would be a tight timeline to meet MISO's required one-year minimum lead time if DTE were to request a May 31, 2028 retirement.

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[6] See MISO Generator Interconnection and Retirement, FAQs: https://www.misoenergy.org/planning/generator-interconnection/, see "FAQs" tab.

[7] *Id.*

[8] MISO Planning Subcommittee, *Tariff and BPM 020 Changes for Attachment Y Improvements Review,* March 15, 2023. Available at: https://cdn.misoenergy.org/20230315%20PSC%20Item%2006%20Improvements%20to%20Attachment%20Y%20-%20BPM%2020%20Changes%20(PAC-2022-1)628219.pdf.

Q. Are there near-term costs that could be avoided if there was a firm decision for 2028 retirement from this case?

A. It is possible. ABATE is proposing that there be no firm commitment on a 2028 decision, which would create uncertainty for purposes of DTE's planning. If the retirement date were up in the air, the Company might decide to proceed with spending at the two Monroe units that its filing shows would otherwise be avoided in a 2028 retirement scenario. For instance, ratepayers could incur over $170 million in additional costs from 2024 through 2026 if there were uncertainty about or delay of the 2028 retirement date for Monroe Units 3 and 4. This timeframe represents the three intervening years between a decision on this case and one that would follow from a 2026 analysis. In this case, the Company has provided forecasts of capital and operations and maintenance (O&M) spending for select Monroe unit retirement scenarios. Comparisons of some scenarios allows one to glean the capital and O&M costs that could be avoided with an earlier retirement date. For instance, capital and O&M costs were projected for the following scenarios (among others):[9]

1. Retirement of Monroe 3 and 4 in 2028, Monroe 1 and 2 in 2035—the Company's chosen retirement plan in the PCA.
2. Retirement of Monroe 3 and 4 in 2030, Monroe 1 and 2 in 2035.
3. Retirement of Monroe 3 and 4 in 2032, Monroe 1 and 2 in 2035.

Comparing scenarios 1 and 2 provides the differences in costs with retiring Monroe units 3 and 4 in 2028 versus 2030; or comparing scenarios 1 and 3 provides the change from 2028 versus 2032 retirement of the two units. These comparisons show that for the next three years, 2024 through 2026, $171 million costs would be avoided if the units were to

[9] Ex MEC-32, WP JLM 04 – Monroe O&M and Capital Forecast for 2022 IRP, Summary tab.

retired in 2028 instead of 2030; or $173 million in costs would be avoided with 2028 instead of 2032 retirement. These cost differences are mostly capital spending—between $161 and $163 million—and the remainder are $10 million in O&M costs.

Q. Do some of the capital costs include environmental compliance?

A. Yes, an incremental $24.4 million in environmental compliance spending is planned by DTE for 2024 through 2026 if the two units retired two or four years later than 2028.[10] Most of these costs, $21.4 million, are for FGD wastewater treatment to comply with Effluent Limitation Guidelines (ELG); and the remaining $3 million are for compliance with the Cooling Water Intake under Clean Water Act Section 316(b).

Q. Is planning ahead for a 2028 retirement important for determining ELG compliance?

A. Yes. The ELG rule provides an offramp for a unit to avoid compliance costs if it ceases burning coal by 2028.[11] The Company's choice to retire Monroe units 3 and 4 in 2028 was in part driven by this offramp and it touted the costs that ratepayers would avoid from that decision.[12] But I am concerned that this savings would not be realized if the Company does not have a firm 2028 retirement date.

Q. Should the Commission approve the retirement of the Monroe units 3 and 4 in 2028?

A. Yes. DTE's plan to retire these units in 2028 is the best course of action, and a further delay in making that decision adds more risks and costs to customers. No party in this case has shown that any other retirement date for these units is a better option. Leaving the door

[10] Ex MEC-33, WP JLM 05 – Monroe Capital Forecast for 2022 IRP, ENV MNPP tab.

[11] See 40 C.F.R. § 423.19(f) (establishing "[r]equirements for units that will achieve permanent cessation of coal combustion by December 31, 2028").

[12] Direct Testimony of Barry J. Marietta, p. 11, line 20 through p. 12, line 6.

open for re-examining the retirement in several years limits the Company's ability to effectively plan for these units' retirement. A firm commitment from the Commission would provide the Company with the certainty it needs to proceed with procurement of replacement resources, and to avoid spending that would be incurred if the units could be kept on-line later.

III. THERE IS AMPLE EVIDENCE FOR RETIRING MONROE 1 AND 2 IN 2032 AND FOR MAKING THAT THE DEFAULT PLANNING ASSUMPTION

Q. Please summarize this section of your testimony.

A. In this section I discuss why the default retirement date for Monroe units 1 and 2 should be 2032 going forward rather than the 2035 date in the PCA. Both Staff and ABATE do not commit to a date but recommend that the retirement of these units be re-examined in several years. In my direct testimony, I discussed at length why 2032 was the more reasonable date, including discussion of modeling done by DTE and MNSC that showed that a 2032 retirement was lower-cost and cleaner than 2035. In their direct testimonies, MEIBC and the CEO group presented more modeling to show that a 2032 or 2030 date, respectively, was preferable to 2035. Yet I am concerned that despite the myriad evidence that retirement prior to 2035 is lower-cost and lower-risk—including from the Company's own modeling—that Staff and ABATE still frame 2035 as the default option and unfairly dismiss 2032 as an option.

Q. What do Staff and ABATE recommend regarding retirement of Monroe units 1 and 2?

A. Staff and ABATE are both skeptical of the potential for a 2032 retirement of these units, despite the strong evidence supporting an earlier retirement that exists in this case. Both parties recommend a re-examination of the retirement date for these units.

Staff recommends delaying the decision on Monroe units 1 and 2 until the next IRP, due in part to its claim that the IRA's effect on the cost and ability to procure replacement resources is uncertain.[13] Staff Witness Heidemann acknowledges that the Company's results showed 2032 as the lower-cost option but appears concerned that these results are heavily reliant on the assumptions for the IRA.[14] As a result, he recommends that the Company file a new IRP in three years with a Commission order "presumably in 2027" which would provide a five-year lead time for a 2032 retirement and re-examine reliability impacts of the retirement.[15] He also claims that if the IRA does not adequately address "procurement issues" in the last few years, then "2035 may be the most prudent choice."[16] Similarly, ABATE also correctly points out that DTE's own analysis shows that 2032 retirement is "more cost effective" than 2035.[17] It also expresses concern that the units would not be able to retire before 2035 "without compromising reliability."[18] ABATE raises the possibility that there would not be "enough time to build the renewable and

[13] Direct Testimony of Zachary C. Heidemann, p. 16, lines 5-17.

[14] *Id*., p. 15, lines 6-14.

[15] *Id*., p. 17, lines 2-5.

[16] *Id*., p. 16, lines 11-13.

[17] Dauphinais Direct, p. 6, lines 25-27.

[18] *Id*., p. 29, lines 2-7.

storage resources" to replace the units by 2032. As a result, as with the 2028 retirement of the other two Monroe units, ABATE recommends a 2026 re-assessment of the 2035 date but, like Staff, leaves the door open for an earlier or later retirement finding at a later date.[19]

Q. Apart from DTE and MNSC modeling, is there additional modeling in this case that supports retiring Monroe units 1 and 2 prior to 2035?

A. Yes. DTE's own modeling shows that 2032 is the lowest-cost and lowest-risk option; and MNSC's modeling also presented portfolios with 2032 that were cheaper than the PCA. In addition, both the CEOs and MEIBC presented their own Encompass modeling in their direct testimonies, with both concluding that Monroe units 1 and 2 should be retired prior to 2035. MEIBC Witness Dr. Maria Roumpani conducted modeling that tested retirement of Monroe units 1 and 2 in 2030, 2032 and 2035. She found that retirement in 2032 was the lowest-cost option being $680 million cheaper than 2035; and 2030 was the next lowest-cost being $580 million cheaper than 2035 retirement.[20] CEO Witness Chelsea Hotaling only tested retiring the units in 2030 or 2035, finding that 2030 was lower-cost than 2035 by between $56 and $140 million.[21]

Q. Has any party in this case presented modeling that incorporates the IRA and shows that 2035 (or later) is the lowest-cost retirement date for Monroe units 1 and 2?

A. No.

[19] *Id*.

[20] Roumpani Direct, p. 74, Table 22.

[21] Hotaling Direct, p. 13, lines 8-10; p. 15, Table 10. The range of savings is dependent on whether CEO's "energy equity package" is included ($140 million in savings) or excluded ($56 million in savings).

Q. Do you agree with Staff's and ABATE's stances on 2032 retirement?

A. No. Both parties are dubious that the Company would be able to procure enough replacement resources in order to meet a 2032 retirement date, and in part this leads both to ask for a re-assessment of the retirement and effectively delay any retirement plan. I disagree both with the concern and the proposed solution put forward by these parties.

Q. Do you agree with Staff's and ABATE's concerns about the risks of procurement of sufficient replacement resources for 2032 retirement?

A. No. The 2032 retirement date is nine years in the future and provides ample time for planning replacement resources. Staff and ABATE discuss recent issues with procurement of clean resources. But, as I stated in my direct testimony, while there have been supply chain complications and delays with the COVID-19 pandemic, more recently these supply issues coupled with tax credits from the IRA have driven a surge in planned domestic solar manufacturing. Neither Staff nor ABATE provide reasons why supply chain issues would persist for the next decade, but rather they are raising the specter of this being a medium to long-term problem.

ABATE cites examples of two coal unit retirement delays that occurred because of procurement complications, but these examples are not comparable to the situation in this current case. First, ABATE uses the example of Public Service Company of New Mexico (PNM) delaying the retirement of the San Juan units 1 and 4 due to supply chain complications with replacement procurement and PNM had to seek out market capacity.[22] But the procurement process, testimony, and hearings were conducted between 2017 and

[22] Dauphinais Direct, p. 17, lines 5-16.

early 2020—with an initial RFP that was issued in 2017 and hearings in February of 2020.[23] The bidders in that case and those involved were initially operating under pre-pandemic conditions, without foreknowledge of the supply chain impacts that would follow. This is not comparable to today. A utility sitting in 2023 has the benefit of hindsight regarding supply chain or trade policy impacts that have occurred in the past and can plan accordingly, as can developers that respond to a utility's RFP. For instance, they can source solar components from more domestic sources or from companies abroad that are not being investigated for tariff avoidance.[24] In addition, PNM had to procure bilateral capacity because, unlike DTE, PNM does not participate in a wholesale capacity market and so did not have that option as a stop-gap.[25] Notably, even with these complications, the PNM coal units' retirement was delayed by only 3 months.

ABATE's second example is the delay in retiring Schahfer units 17 and 18 by Northern Indiana Public Service Company (NIPSCO) from 2023 to 2025. NIPSCO stated that the main reason for this delay was the U.S. Department of Commerce investigation into solar tariffs for parts made in southeast Asia that started in 2022.[26] I do not know if NIPSCO had any foreknowledge of this investigation or its impacts; but sitting in 2023 a utility

[23] I submitted testimony in this case, see Ex MEC-15 (Comings CV).

[24] See: https://www.commerce.gov/news/press-releases/2022/12/department-commerce-issues-preliminary-determination-circumvention.

[25] *Id*., Exhibit AB-5, p. 6.

[26] *Id*., Exhibit AB-6, p. 3; also see: Tomlinson, Harley, "NIPSCO: Need to delay Schahfer closing until 2025," Rensselaer Republican, June 1, 2022, available at: https://www.newsbug.info/rensselaer_republican/news/nipsco-need-to-delay-schahfer-closing-until-2025/article_6af9c081-5a1a-5431-84ba-778058fca38a.html.

making a procurement decision is certainly aware of it and can plan accordingly by making deliberate supplier choice to mitigate or avoid such issues

Q. Are you concerned that delaying the retirement decision would make procurement more difficult?

A. Yes. I am puzzled that both Staff and ABATE are recommending a delay in a retirement decision and simultaneously expressing concerns that DTE will not have enough time to plan for retirement. Delaying a retirement decision also delays the ability for the Company to plan for procuring replacement resources. Thus, their recommendation could create a self-fulfilling prophecy whereby: 1) a decision is delayed because of fears of procuring replacement, and then 2) that delayed decision makes it more likely that there will be a procurement issue because there will be less time to plan.

Contrary to ABATE's use of PNM and NIPSCO's experiences as warnings for DTE, these utilities' experiences make the argument for planning further ahead. PNM and NIPSCO were in the midst of a clean transition when supply chain and tariff issues interfered with their near-term plans. But these companies did not have enough lead time to handle a sudden change in circumstances. It is notable that despite this, PNM only had to delay retirement by three months (June to September 2022); and NIPSCO has not delayed the retirement of its Michigan City units slated for 2026 and 2028.[27]

[27] *Id*.

Q. Are you recommending that a 2032 retirement decision made in this case should be irreversible?

A. No. There is ample evidence in this case, indeed from all parties that have conducted modeling, that Monroe units 1 and 2 should retire by 2032 or earlier. I am recommending that the Company plan for a 2032 retirement and that the Commission affirm that in this case. I understand that there could be unforeseen circumstances that might lead to a delay in this retirement as it gets closer to that date. Therefore, I am not saying that this date should be set in stone at this point, but that setting 2032 as the default retirement date now is fully justified by the evidence and will allow for the early planning that is critical to ensuring a smoother path for clean replacement.

Q. Do you have a problem with DTE re-assessing the 2032 retirement date later on?

A. No. I understand that Staff and ABATE are asking for this, and I do not have an objection to a re-assessment in principle—especially if there is a material change in economic circumstances. Where I differ with Staff and ABATE is that 2032 should be the default planning assumption going forward, and that DTE should start planning for that date in earnest after a Commission decision in this current case. Staff and ABATE wish to delay such a decision; but I find this counterproductive to their own concerns regarding procurement of replacement resources.

Q. Is there a regulatory risk of retiring the Monroe units in 2035 instead of 2032?

A. Yes. As I discussed in my direct testimony, there are several potential environmental compliance costs that could be incurred that DTE has not accounted for if the units operate until 2035 including: the potential need for a cooling tower, further mitigation of particulate matter (PM2.5), and further tightening of ground-level ozone standards.

Q. Is there any harm in DTE planning for 2032 retirement coming out of this case?

A. No. Many parties have shown that it is economic to retire the units on this date or earlier. In criticizing DTE's final PCA (relative to its preliminary PCA), ABATE argues against procuring more replacement resources than required for resource adequacy or reliability, claiming that it is too risky and speculative.[28] But this runs counter to ABATE's own concern about the resource adequacy and reliability impacts of future retirements. Having DTE only procure what is needed for replacement from year-to-year makes the Company more vulnerable to a procurement issue than if it could procure ahead of time in anticipation of a retirement and had time to re-adjust to any issue that might arise. Moreover, even before the IRA, clean replacement resources already carried low risks because they have no fuel risk and no environmental compliance risks—unlike fossil resources which are subject to both. After the IRA, clean resources are even less risky because of the substantial tax credits that will be available for at least another decade. Indeed, as shown by modeling from MNSC, building clean replacement resources in anticipation of retirement later on can still result in lower costs.[29] MEIBC Witness Roumpani also discusses why procuring battery storage in particular is a "no regrets" strategy given the many benefits of this resource, including its contribution to reliability.[30]

[28] Dauphinais Direct, p. 40-45.

[29] Exhibit MEC-11.

[30] Roumpani Direct, p. 100, lines 9-11.

IV. CONCLUSION AND RECOMMENDATIONS

Q. What do you recommend to the Commission?

A. For the reasons explained above I recommend that the Commission:

- Approve DTE's decision to retire Monroe 3 and 4 in 2028 as part of its PCA.
- Recommend that DTE modify the PCA to plan to retire Monroe 1 and 2 in 2032 but allow for re-examination of this date in the next IRP if there is a material change in the underlying economics of the decision.

Q. **Does this conclude your testimony?**

A. Yes.

WP JLM 04 - Monroe O&M and Capital Forecast for 2022 IRP

Michigan Public Service Commission
DTE Electric Company
Monroe O&M and Capital Forecast for 2022 IRP
($ million)

Case No.: U-21193
Workpaper: JLM-04
Witness: J. L. Morren
Page: 1 of 1

Monroe

Dec 2039 Retirement

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	109	116	119	122	124	127	130	134	137	140	143	147	150	154	158	81	17	17	17	18	18	2485
Periodic O&M	20	20	18	23	18	20	27	19	19	23	19	23	22	21	23	19	18	14	—	—	—	—	—	—	369
Periodic Capital	69	114	100	127	129	90	104	89	71	73	60	50	50	34	36	14	7	—	—	—	—	—	—	—	1215
BOP Capital	32	33	33	33	34	32	31	30	30	29	28	28	28	27	27	24	21	—	—	—	—	—	—	—	500
Environmental Capital	84	64	153	156	51	60	73	27	—	—	7	—	—	—	10	—	—	—	40	—	—	—	—	—	725

May 2032 Retirement

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	109	116	119	122	124	127	130	100	14	14	14	15	15	—	—	—	—	—	—	—	—	1327
Periodic O&M	20	20	18	23	18	20	27	19	19	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	201
Periodic Capital	69	114	100	127	129	75	74	33	20	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	745
BOP Capital	32	33	33	33	34	32	23	21	19	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	269
Environmental Capital	84	64	153	156	51	60	73	27	—	—	47	—	—	—	—	—	—	—	—	—	—	—	—	—	714

May 2035 Retirement

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	109	116	119	122	124	127	130	134	137	140	108	15	15	15	16	16	—	—	—	—	—	1750
Periodic O&M	20	20	18	23	18	20	27	19	19	23	18	21	18	—	—	—	—	—	—	—	—	—	—	—	266
Periodic Capital	69	114	100	127	129	90	97	89	42	37	29	21	5	—	—	—	—	—	—	—	—	—	—	—	950
BOP Capital	32	33	33	33	34	32	31	30	30	24	23	20	10	—	—	—	—	—	—	—	—	—	—	—	365
Environmental Capital	84	64	153	156	51	60	73	27	—	—	7	—	—	43	—	—	—	—	—	—	—	—	—	—	717

M34 May 2028, M12 May 2030

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	105	110	113	98	83	64	13	13	14	14	14	—	—	—	—	—	—	—	—	—	—	949
Periodic O&M	20	20	18	23	18	20	3	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	125
Periodic Capital	69	114	34	66	22	20	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	329
BOP Capital	32	33	29	26	22	14	13	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	174
Environmental Capital	84	64	145	142	48	55	65	19	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	667

M34 May 2028, M12 May 2032

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	105	110	113	98	83	85	87	67	14	14	14	15	15	—	—	—	—	—	—	—	—	1128
Periodic O&M	20	20	18	23	18	20	3	3	19	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	159
Periodic Capital	69	114	34	66	129	73	6	6	20	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	521
BOP Capital	32	33	31	30	28	23	16	15	13	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	227
Environmental Capital	84	64	145	142	48	55	65	19	—	—	47	—	—	—	—	—	—	—	—	—	—	—	—	—	669

WP JLM 04 - Monroe O&M and Capital Forecast for 2022 IRP

M34 May 2028, M12 May 2035

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	105	110	113	98	83	85	87	89	91	93	72	15	15	15	16	16	—	—	—	—	—	1412
Periodic O&M	20	20	18	23	18	20	3	3	19	23	—	—	18	—	—	—	—	—	—	—	—	—	—	—	186
Periodic Capital	69	114	34	66	129	89	6	6	42	37	—	—	5	—	—	—	—	—	—	—	—	—	—	—	596
BOP Capital	32	33	31	30	28	23	21	21	21	17	16	14	7	—	—	—	—	—	—	—	—	—	—	—	293
Environmental Capital	84	64	145	142	48	55	65	19	—	—	7	—	—	43	—	—	—	—	—	—	—	—	—	—	672

M34 May 2028, M12 Dec 2039

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	105	110	113	98	83	85	87	89	91	93	96	98	100	103	105	54	17	17	17	18	18	1905
Periodic O&M	20	20	18	23	18	20	3	3	19	23	—	—	22	21	—	—	18	14	—	—	—	—	—	—	244
Periodic Capital	69	114	34	66	129	89	6	6	71	73	—	—	50	34	—	—	7	—	—	—	—	—	—	—	745
BOP Capital	32	33	31	30	28	23	21	21	21	20	20	19	20	19	19	17	15	—	—	—	—	—	—	—	388
Environmental Capital	84	64	145	142	48	55	65	19	—	—	7	—	—	—	10	—	—	—	40	—	—	—	—	—	679

M34 May 2030, M12 May 2035

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	109	116	119	122	124	108	91	94	96	98	75	15	15	15	16	16	—	—	—	—	—	1536
Periodic O&M	20	20	18	23	18	20	26	16	19	23	—	—	18	—	—	—	—	—	—	—	—	—	—	—	223
Periodic Capital	69	114	100	127	129	90	74	33	42	37	—	—	5	—	—	—	—	—	—	—	—	—	—	—	820
BOP Capital	32	33	33	33	31	29	27	21	21	17	16	14	7	—	—	—	—	—	—	—	—	—	—	—	314
Environmental Capital	84	64	153	156	51	60	73	27	—	—	7	—	—	43	—	—	—	—	—	—	—	—	—	—	717

M34 May 2032, M12 May 2035

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	109	116	119	122	124	127	130	114	96	98	75	15	15	15	16	16	—	—	—	—	—	1614
Periodic O&M	20	20	18	23	18	20	27	19	19	23	—	—	18	—	—	—	—	—	—	—	—	—	—	—	227
Periodic Capital	69	114	100	127	129	90	74	33	42	37	—	—	5	—	—	—	—	—	—	—	—	—	—	—	820
BOP Capital	32	33	33	33	34	32	30	27	24	17	16	14	7	—	—	—	—	—	—	—	—	—	—	—	332
Environmental Capital	84	64	153	156	51	60	73	27	—	—	7	—	—	43	—	—	—	—	—	—	—	—	—	—	717

M34 May 2032, M12 Dec 2039

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Base O&M	101	104	102	109	116	119	122	124	127	130	114	96	98	100	103	105	108	110	56	17	17	17	18	18	2132
Periodic O&M	20	20	18	23	18	20	27	19	19	23	—	—	22	21	—	—	18	14	—	—	—	—	—	—	285
Periodic Capital	69	114	100	127	129	90	74	33	71	73	—	—	50	34	—	—	7	—	—	—	—	—	—	—	969
BOP Capital	32	33	33	33	34	32	30	28	26	20	20	19	20	19	19	17	15	—	—	—	—	—	—	—	431
Environmental Capital	84	64	153	156	51	60	73	27	—	—	7	—	—	—	10	—	—	—	40	—	—	—	—	—	725

WP JLM 05 - Monroe Capital Forecast for 2022 IRP
ENV MNPP

Michigan Public Service Commission
DTE Electric Company
Monroe Capital Forecast for 2022 IRP
($ million)

Case No.: U-21193
Workpaper: JLM-05
Witness: J. L. Morren
Page: 1 of 1

MNPP Environmental (includes inflation)

	1.06	1.09	1.11	1.14	1.17	1.19	1.22	1.25	1.28	1.31	1.34	1.38	1.41	1.44	1.48	1.51	1.55	1.59	1.62	1.66	1.70	1.74	1.78	1.83

Sensitivity	DESCRIPTION	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
Dec 2039 Retirement	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																			$ 0.4
	316(b)					$ 10	$ 17	$ 27	$ 27												$ 81.2
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 49	$ 77																$ 128.2
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1															$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40													$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2									$ 3				$ 32	$ 41.8
	Monroe Landfill Vertical Extension (CCR)							$ 6				$ 7				$ 7				$ 8	$ 28.2
	Total	**$ 84**	**$ 64**	**$ 153**	**$ 156**	**$ 51**	**$ 60**	**$ 73**	**$ 27**	**$ -**	**$ -**	**$ 7**	**$ -**	**$ -**	**$ -**	**$ 10**	**$ -**	**$ -**	**$ -**	**$ 40**	$ 724.8
May 2030 Retirement	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																			$ 0.4
	316(b)					$ 10	$ 17	$ 27	$ 27												$ 81.0
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 49	$ 77																$ 128.2
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1															$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40													$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2								$ 29						$ 35.5
	Monroe Landfill Vertical Extension (CCR)							$ 6				$ 7			$ 14						$ 27.2
	Total	**$ 84**	**$ 64**	**$ 153**	**$ 156**	**$ 51**	**$ 59**	**$ 73**	**$ 27**	**$ -**	**$ -**	**$ 7**	**$ -**	**$ -**	**$ 43**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ 717.2
May 2032 Retirement	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																			$ 0.4
	316(b)					$ 10	$ 17	$ 27	$ 27												$ 81.2
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 49	$ 77																$ 128.2
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1															$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40													$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2					$ 27									$ 33.5
	Monroe Landfill Vertical Extension (CCR)							$ 6				$ 20									$ 26.2
	Total	**$ 84**	**$ 64**	**$ 153**	**$ 156**	**$ 51**	**$ 60**	**$ 73**	**$ 27**	**$ -**	**$ -**	**$ 47**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ 714.4
May 2035 Retirement	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																			$ 0.4
	316(b)					$ 10	$ 17	$ 27	$ 27												$ 81.2
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 49	$ 77																$ 128.2
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1															$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40													$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2								$ 29						$ 35.5
	Monroe Landfill Vertical Extension (CCR)							$ 6				$ 7			$ 14						$ 27.2
	Total	**$ 84**	**$ 64**	**$ 153**	**$ 156**	**$ 51**	**$ 60**	**$ 73**	**$ 27**	**$ -**	**$ -**	**$ 7**	**$ -**	**$ -**	**$ 43**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ 717.4
M34 May 2028, M12 May 2030	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																			$ 0.4
	316(b)					$ 7	$ 12	$ 19	$ 19												$ 56.8
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 42	$ 63																$ 106.8
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1															$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40													$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2			$ 26											$ 32.3
	Monroe Landfill Vertical Extension (CCR)							$ 6		$ 19											$ 25.3
	Total	**$ 84**	**$ 64**	**$ 145**	**$ 142**	**$ 48**	**$ 55**	**$ 65**	**$ 19**	**$ 45**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ 666.6

WP JLM 05 - Monroe Capital Forecast for 2022 IRP
ENV MNPP

M34 May 2028, M12 May 2032	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																								$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																											$ 0.4
	316(b)					$ 7	$ 12	$ 19	$ 19																				$ 56.8
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																								$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 42	$ 63																								$ 106.8
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1																							$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40																					$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2										$ 27												$ 33.5
	Monroe Landfill Vertical Extension (CCR)							$ 6									$ 20												$ 26.2
	Total	**$ 84**	**$ 64**	**$ 145**	**$ 142**	**$ 48**	**$ 55**	**$ 65**	**$ 19**	**$ -**	**$ -**	**$ 47**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ 668.7
M34 May 2028, M12 May 2035	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																								$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																											$ 0.4
	316(b)					$ 7	$ 12	$ 19	$ 19																				$ 56.8
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																								$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 42	$ 63																								$ 106.8
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1																							$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40																					$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2													$ 29									$ 35.5
	Monroe Landfill Vertical Extension (CCR)							$ 6				$ 7								$ 14									$ 27.2
	Total	**$ 84**	**$ 64**	**$ 145**	**$ 142**	**$ 48**	**$ 55**	**$ 65**	**$ 19**	**$ -**	**$ -**	**$ 7**	**$ -**	**$ -**	**$ -**	**$ 43**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ 671.7
M34 May 2028, M12 May 2039	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																								$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																											$ 0.4
	316(b)					$ 7	$ 12	$ 19	$ 19																				$ 56.8
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																								$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 42	$ 63																								$ 106.8
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1																							$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40																					$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2														$ 3						$ 32		$ 42.0
	Monroe Landfill Vertical Extension (CCR)							$ 6				$ 7									$ 7						$ 8		$ 28.3
	Total	**$ 84**	**$ 64**	**$ 145**	**$ 142**	**$ 48**	**$ 55**	**$ 65**	**$ 19**	**$ -**	**$ -**	**$ 7**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 10**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 41**		$ 679.3
M34 May 2032, M12 May 2035	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																								$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																											$ 0.4
	316(b)					$ 10	$ 17	$ 27	$ 27																				$ 81.2
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																								$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 49	$ 77																								$ 128.2
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1																							$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40																					$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2													$ 29									$ 35.5
	Monroe Landfill Vertical Extension (CCR)							$ 6				$ 7								$ 14									$ 27.2
	Total	**$ 84**	**$ 64**	**$ 153**	**$ 156**	**$ 51**	**$ 60**	**$ 73**	**$ 27**	**$ -**	**$ -**	**$ 7**	**$ -**	**$ -**	**$ -**	**$ 43**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ 717.4
M34 May 2032, M12 May 2039	Monroe Dry Fly Ash Conversion (ELG)	$ 29	$ 27	$ 10	$ -																								$ 65.8
	Monroe Dry Fly Ash Haul Road	$ 0																											$ 0.4
	316(b)					$ 10	$ 17	$ 27	$ 27																				$ 81.2
	Monroe Bottom Ash Conversion (ELG)	$ 10	$ 10	$ 33	$ 35																								$ 88.2
	Monroe FGD Wastewater (ELG)	$ 1	$ 1	$ 49	$ 77																								$ 128.2
	Monroe Bottom Ash Basin Closure (CCR)	$ 41	$ 23	$ 21	$ 4	$ 1																							$ 89.2
	Monroe Fly Ash Basin Closure (CCR)	$ 1	$ 1	$ 40	$ 40	$ 40	$ 40	$ 40																					$ 201.8
	Sibley Closure and Chimney Drain Lift	$ 2	$ 2				$ 2														$ 3						$ 32		$ 42.0
	Monroe Landfill Vertical Extension (CCR)							$ 6				$ 7									$ 7						$ 8		$ 28.3
	Total	**$ 84**	**$ 64**	**$ 153**	**$ 156**	**$ 51**	**$ 60**	**$ 73**	**$ 27**	**$ -**	**$ -**	**$ 7**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 10**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 41**		$ 725.1

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **DTE ELECTRIC COMPANY** for approval of its Integrated Resource Plan pursuant to MCL 460.6t, and for other relief.	U-21193

PROOF OF SERVICE

On the date below, an electronic copy of **Rebuttal Testimony and Exhibits of Tyler Comings on behalf of Michigan Environmental Council, Natural Resources Defense Council, Sierra Club, and Citizens Utility Board of Michigan (Exhibits MEC-32 through MEC-33)** was served on the following:

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

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Counsel for MEC, NRDC, SC & CUB

Date: April 10, 2023

By: _____
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