June 13, 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-21297

Dear Ms. Felice:

The following is attached for paperless electronic filing:

Direct Testimony and Exhibits of Tyler Comings on behalf of Michigan Environmental Council, Natural Resources Defense Council, Sierra Club, and Citizens Utility Board of Michigan (Exhibit MEC-9 through MEC-16); 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: 2023.06.13 10:51:59 -04'00'

Christopher M. Bzdok
chris@envlaw.com

xc: Parties to Case No. U-21297

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 its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.	U-21297

DIRECT TESTIMONY OF TYLER COMINGS

ON BEHALF OF

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

June 13, 2023

DIRECT TESTIMONY OF TYLER COMINGS OBO MNSC
CASE NO. U-21297

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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. 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. On whose behalf are you testifying in this case?

A. I am testifying on behalf of Michigan Environmental Council (MEC), Natural Resources Defense Council (NRDC), Sierra Club (SC), and Citizens Utility Board of Michigan, collectively referred to as "MNSC."

Q. Please summarize your work experience and educational background.

A. I have 17 years of experience in economic research and consulting. At Applied Economics Clinic, I focus on energy system planning, costs of regulatory compliance, wholesale electricity markets, utility finance, and economic impact analyses. I have provided testimony on these topics in Arizona, Colorado, the District of Columbia, Hawaii, Indiana, Kentucky, Maryland, Michigan, Missouri, New Jersey, New Mexico, Ohio, Oklahoma, West Virginia, and Nova Scotia (Canada). I am also a Certified Rate of Return Analyst (CRRA) and member of the Society of Utility and Regulatory Financial Analysts (SURFA).

I have provided expertise for many public-interest clients including: American Association of Retired Persons (AARP), Appalachian Regional Commission, Citizens Action Coalition of Indiana, City of Atlanta, Consumers Union, District of Columbia Office of the People's Counsel, District of Columbia Government, Earthjustice, Energy Future Coalition, Hawaii Division of Consumer Advocacy, Illinois Attorney General, Maryland Office of the People's Counsel, Massachusetts Energy Efficiency Advisory Council, Massachusetts Division of Insurance, Michigan Agency for Energy, Montana Consumer Counsel, Mountain Association for Community Economic Development, Nevada State Office of Energy, New Jersey Division of Rate Counsel, New York State Energy Research and Development, Nova Scotia Utility and Review Board Counsel, Rhode Island Office of Energy Resources, Sierra Club, Southern Environmental Law Center, U.S. Department of Justice, Vermont Department of Public Service, West Virginia Consumer Advocate Division, and Wisconsin Department of Administration.

I was previously employed at Synapse Energy Economics, where I provided expert testimony and reports on coal plant economics and utility system planning. Prior to that, I performed research on consumer finance and behavioral economics at Ideas42 and conducted economic impact and benefit-cost analysis of energy and transportation investments at EDR Group (now EBP).

I hold a B.A. in Mathematics and Economics from Boston University and an M.A. in Economics from Tufts University.

My full resume is attached as Exhibit MEC-9.

Q. Have you previously testified before the Michigan Public Service Commission?

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

- DTE Electric Company (DTE) Integrated Resource Plan (IRP) (No. U-21193)
- Indiana Michigan Power (I&M) IRP (No. U-21189)
- DTE 2022 rate case (No. U-20836)
- Consumers Energy Company (Consumers) 2021 IRP (No. U-21090)
- Consumers 2021 rate case (No. U-20963)
- Consumers 2020 rate case (No. U-20697)
- I&M 2018-19 IRP (Case No. U-20591)
- Consumers 2018 IRP (No. U-20165)
- Consumers 2018 rate case (No. U-20134)

Q. What is the purpose of your testimony?

A. My testimony focuses on capital spending at the Monroe coal units. First, I discuss the future of these units, including DTE Electric Company's ("DTE" or "the Company") justification for accelerating the retirement for Monroe units 3 and 4. Second, I address DTE's request for rate recovery of certain capital expenditures at Monroe. Many of these capital projects could be avoided if units 3 and 4 retired in 2028, and several other projects lack supporting documentation. I recommend disallowances for these avoidable or unsupported capital projects.

Q. What information did you review in preparing your testimony in this case?

A. I reviewed the Company's testimony, exhibits, workpapers, and discovery responses.

Q. Are you sponsoring any exhibits in this proceeding?

A. Yes, I sponsor the following exhibits:

Exhibit MEC-9:	Resume of Tyler Comings
Exhibit MEC-10:	Case No. U-21193, WP JLM 05 - Monroe Capital Forecast for 2022 IRP
Exhibit MEC-11:	DTE letter to EGLE, *Cessation of Coal Notice of Planned Participation*, April 28, 2023
Exhibit MEC-12:	Company responses to MNSCDE-4.1a, 4.2a
Exhibit MEC-13:	Company responses to STDE-8.10aMNSCDE-4.3cva through 4.3cvc, and MNSCDE-6.7a
Exhibit MEC-14:	Company responses to MNSCDE-6.5aii and MNSCDE-6.7b
Exhibit MEC-15:	Monroe Capital Expenditures – Recommended Disallowances
Exhibit MEC-16:	Company responses to MNSCDE-4.3ci (narrative), 4.cii through 4.3civ, MNSCDE-4.3di, and MNSCDE-6.6ai.

Q. Please summarize your findings and recommendations.

A. Based on my review and analysis, I conclude that:

1. **The Commission should disallow rate recovery of capital spending that could be avoided if Monroe units 3 and 4 retire in 2028.** In its latest IRP, which is still pending, the Company proposed retiring Monroe units 3 and 4 in 2028. This was a much earlier retirement than in the previous IRP, in which DTE planned to operate the units through the end of 2039.[1] The current IRP is still pending. Yet in this case DTE seeks recovery for capital spending that could be avoided should these units retire in 2028. The Company has identified $60 million of this "avoidable"

[1] Case No. U-21193, Revised Direct Testimony of Joyce E. Leslie, 3 Tr 76, lines 18-20.

spending in 2023 and 2024 in its filing and in data responses. This amount should not be included in rates at this time. It is unreasonable to recover costs from ratepayers that would not be incurred if the Company followed its own retirement plan.

2. **The Commission should disallow rate recovery for capital spending at Monroe that is not adequately supported.** The Company is requesting recovery for spending that lacks supporting documentation. The Commission has previously disallowed recovery of capital expenditures at Consumers' generating units for this reason;[2] and it should disallow inclusion in DTE's rate base of the $20.1 million in unsupported capital spending in this case.

II. CAPITAL SPENDING AT MONROE UNITS 3 AND 4 THAT COULD BE AVOIDED WITH 2028 RETIREMENT SHOULD BE DISALLOWED.

Q. Please describe the Monroe plant and its current status.

A. The Monroe plant has four units at a total capacity of 3,066 MW,[3] making it one of the largest coal plants in the U.S. In its most recent IRP, the Company presented a proposed course of action (PCA) that included the retirement of Monroe units 3 and 4 in 2028, and retirement of units 1 and 2 in 2035.[4] The Company's previous IRP had concluded that the units would all retire at the end of 2039; but the latest plan expedited that timeline, especially regarding units 3 and 4.

[2] Case No. U-20697, Order dated December 17, 2020, pp. 73, 78, 79, 80, 94. Case No. U-20963, Order dated December 22, 2021, p. 106.

[3] Direct Testimony of Justin L. Morren ("Morren Direct"), p. 8.

[4] Case No. U-21193, Leslie Revised Direct, 3 Tr 79, lines 1-4.

Q. How are the planned retirement years of Monroe units relevant to this rate case?

A. Prudent spending on generating units changes with the retirement year. Thus, if the retirement year is in flux, then what is considered prudent spending can vary as well. Some expenditures are "avoidable" if the units retire earlier because that planned spending is either no longer necessary or not cost-effective. If the units could be retired at an earlier date, including such avoidable costs in rates now would prevent ratepayers from realizing these savings in the event of that early retirement.

Q. Are there avoidable capital costs at Monroe being requested in this case?

A. Yes. The Company is planning capital expenditures at the Monroe plant that are not needed if units 3 and 4 retire in 2028 – as reflected in DTE's pending IRP. The Company itself identified this spending as avoidable in its filing and in data responses. By default, such costs should be excluded from rate recovery rather than included. Ratepayers should not be on the hook for costs that are unnecessary or unlikely to be incurred. In this section, I discuss: 1) the strong evidence for retiring Monroe units 3 and 4 in 2028; and 2) avoidable capital costs that were identified by the Company in the event of that retirement that should be disallowed in this case. Further in my testimony, in Section III, I discuss other capital spending at Monroe that should be disallowed for lacking adequate documentation and support.

A. <u>There is ample justification for retiring Monroe Units 3 and 4 in 2028.</u>

Q. In its latest IRP, did the Company conclude that retiring Monroe units 3 and 4 in 2028 was the best course of action?

A. Yes. The Company's latest proposed course of action (PCA) included the retirement of Monroe units 3 and 4 in 2028.[5] As part of its IRP, the Company supported this decision by conducting a retirement analysis on its remaining coal-fired resources, Belle River and Monroe. For Monroe, the Company modeled a staggered retirement of Units 3 and 4 and Units 1 and 2, respectively, in 2028 and 2032, 2028 and 2035, 2028 and 2039, 2030 and 2035, 2032 and 2035, 2032 and 2039; or a four-unit retirement in 2032, 2035, and 2039.[6] This analysis found that the least-cost plan included the retirement of Monroe units 3 and 4 in 2028.[7]

In proposing the retirement of Monroe 3 and 4 in 2028, the Company also touted the savings from avoiding compliance costs associated with the Effluent Limitations Guidelines (ELG) and Clean Water Act Section 316(b).[8] Modeling in later stages of the IRP—including the Company's updated analysis to account for the Inflation Reduction Act (IRA) tax incentives—showed substantial savings when all four Monroe units' retirement was moved up from the previous retirement date of December 31, 2039.[9]

[5] U-21193, Leslie Revised Direct, 3 Tr 78-79.

[6] U-21193, Revised Direct Testimony of Shayla D. Manning, 4 Tr 601, lines 3-11. Note this retirement analysis was done prior to the Inflation Reduction Act (IRA). The Company later modeled the IRA tax incentives in a scenario called "REFRESH."

[7] *Id*., 4 Tr 605-06.

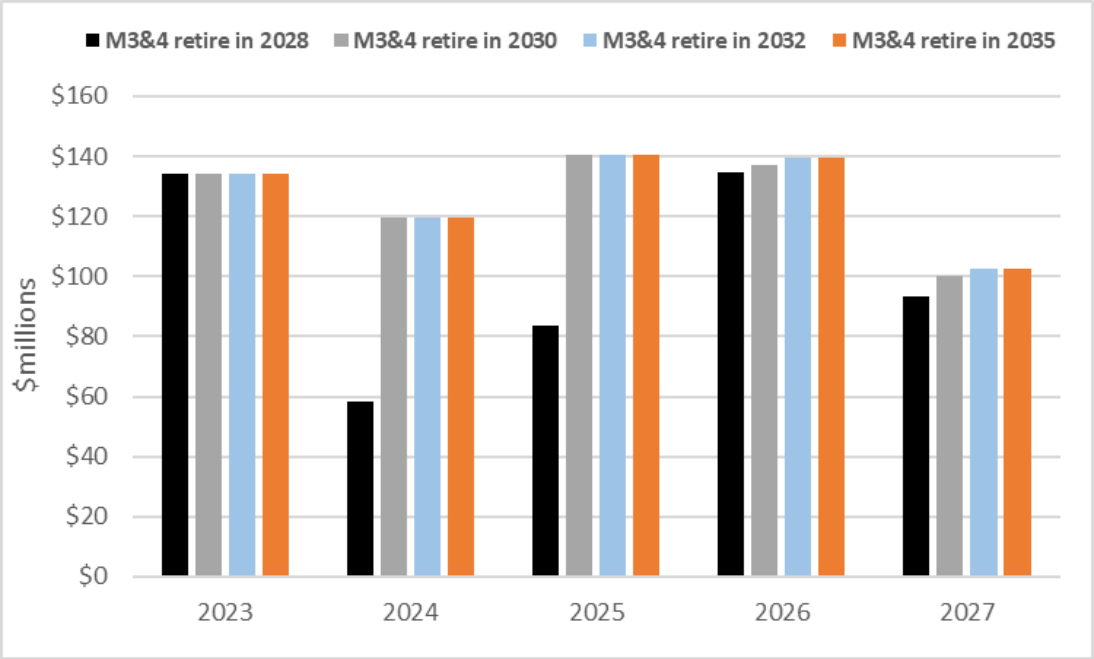
[8] Case No. U-21193, Revised Direct Testimony of Justin L. Morren, 7 Tr 1769, line 16 through 1770, line 3.

[9] Case No. U-21193, Manning Revised Direct, 4 Tr 632.

Q. Are the savings from earlier retirement of Monroe units 3 and 4 partially driven by avoiding capital spending?

A. Yes. As shown in Figure 1, the Company's projections of non-environmental capital spending in the IRP show substantial avoided spending in 2024 and 2025 when the units retire in 2028—relative to 2030, 2032, or 2035 alternatives.

Figure 1: Non-Environmental Capital Spending at Monroe under DTE Retirement Scenarios ($mil)



DTE's projections of Monroe capital spending from 2023 through 2027 under these four retirement scenarios are:[10]

- Retire in 2028: $504 million
- Retire in 2030: $632 million
- Retire in 2032: $637 million

[10] Ex MEC-10, Case No. U-21193, WP JLM 05 - Monroe Capital Forecast for 2022 IRP. Note that the comparison includes scenarios where units 1 and 2 retire in 2035, therefore the only change is in retirement year of units 3 and 4.

- Retire in 2035: $637 million

There is $128 million in non-environmental capital cost savings when comparing 2028 versus 2030 retirement of Monroe units 3 and 4. Nearly all of those avoidable costs— $118 million of the $128 million – occur in 2024 and 2025. In 2024 alone, the Company projected savings of $61.5 million in capital costs compared to the other retirement options modeled by DTE.[11] Thus, this rate case is an opportunity to address the 2024 spending and protect ratepayers from bearing unnecessary costs.

Q. Since the IRP was filed, has the Company further committed to cease burning coal at Monroe units 3 and 4 in 2028?

A. Yes. On April 28 of this year, the Company filed a "Cessation of Coal Notice of Planned Participation" (NOPP) with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) which stated DTE's decision to cease coal at the two units in order to opt out of further ELG compliance requirements.[12] The Company stated that it has submitted this notice to "reflect the company's commitment to the new IRP," namely the "commitment to cease burning coal for Units 3 and 4 at [Monroe Power Plant] by December 31, 2028" pending Commission approval of the IRP.[13] Thus, the Company is reinforcing its prior decision in the IRP to retire these units in 2028.

[11] *Id*.

[12] Ex MEC-11. DTE letter to EGLE, *Cessation of Coal Notice of Planned Participation*, April 28, 2023.

[13] *Id.* Enclosure 1, *Notice Planned Participation (NOPP) Contents Requirements*, p. 1

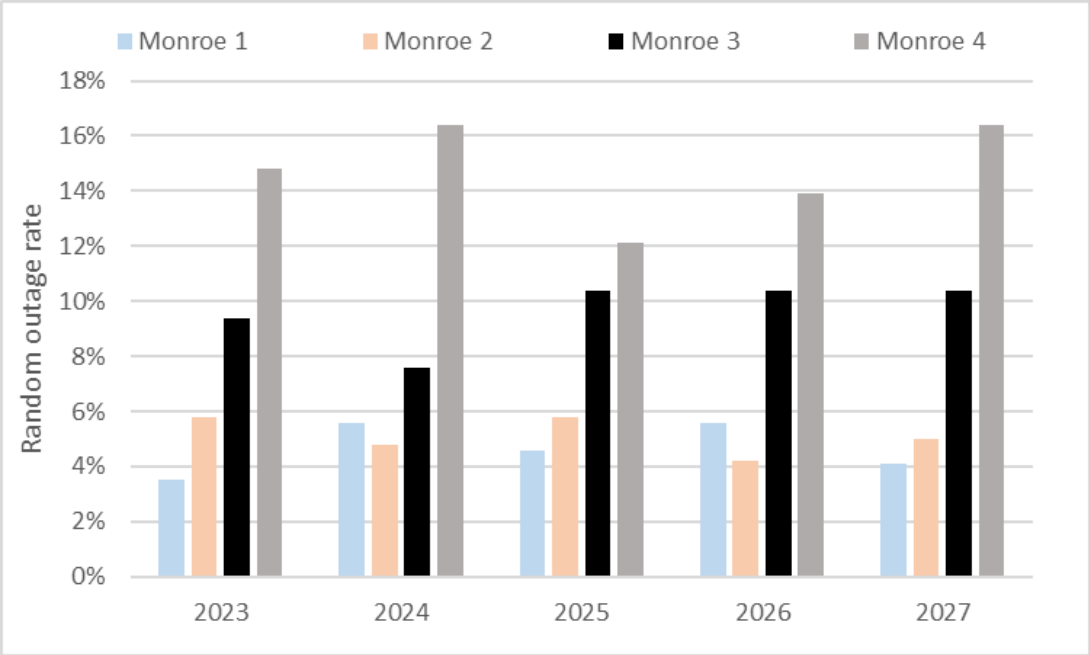
Q. Has the Company provided further evidence in this case to justify retiring the two units?

A. Yes, the Company has provided historical and forecasted operating data for the Monroe units that further demonstrate why Monroe units 3 and 4 should be retired soon. The two units have recently had reliability challenges, which are expected to continue. The 2022 random outage rate (or forced outage rate) provided by DTE shows that Monroe unit 3 was unavailable for unplanned reasons 15 percent of hours in 2022 and unit 4 was forced out 27.7 percent of the time.[14] As shown below in Figure 2, the Company expects that high forced outage rates will persist in the near future. Monroe units 3 and 4 are expected to be forced out of operation roughly two to three times as often, respectively, as the other Monroe units.[15]

[14] Ex MEC-12, Company response to MNSCDE-4.1a.

[15] Ex MEC-12, Company response to MNSCDE-4.2a.

Figure 2: Random Outage Rates at Monroe Units (%)[16]



Monroe units 3 and 4 were out for unplanned reasons often in 2022 and are expected to be more unreliable than the other units in the near-term. The units' continued unreliability is further evidence that the Company has made the right decision to retire these units in 2028.

Q. Does the Company's request for rate recovery in this case assume that Monroe 3 and 4 will retire in 2028?

A. Effectively, no. The Company has clearly stated its plan to retire the units in 2028, both in its IRP and in correspondence with EGLE. While the Company is awaiting Commission approval of that plan, no party seriously challenged that aspect of the plan. But DTE is still requesting recovery of spending that would be superfluous if its own plan came to pass. This is demonstrated by the fact that the Company is seeking to recover capital spending

[16] *Id.*

that the Company admits could be avoided with retirement prior to 2028—as discussed below.

B. The Company-identified avoidable costs should be disallowed.

Q. Did the Company identify capital spending that was avoidable with 2028 retirement of Monroe units 3 and 4 in its rate filing?

A. Yes. Company Witness Morren presented a list of capital projects where some or all of the spending requested in this case could be avoided if Monroe 3 and 4 retire in 2028.[17] The Company categorizes capital projects as either for reliability, safety, environmental, or combustible dust. Witness Morren states that the latter three categories are "required to maintain a safe work environment and meet applicable regulations and standards."[18] None of the identified avoidable spending has been designated as needed for safety reasons. Almost all of the avoidable spending is designated as "reliability" projects, which are intended to decrease the units' random outage rates and mitigate other "negative impacts to unit performance."[19] Witness Morren stated that the reason this spending was avoidable was because of the "limited time for savings to accumulate following the completion of the reliability-based projects in the event of a 2028 retirement."[20] According to the Company, there simply is not enough time for the benefits of these projects to outweigh the costs.

[17] Morren Direct, p. 98, Table 1.

[18] Morren Direct, p. 96, line 24 through p. 97, line 1. Note that in the IRP hearing Witness Morren claimed that spending on safety or combustible dust could be avoided with early retirement in some cases. (Case No. U-21193, Morren Cross, 7 Tr 1841-42).

[19] Morren Direct, p. 97, lines 4-5.

[20] Morren Direct, p. 97, lines 5-9.

Q. Should the costs identified in the Company's filing as avoidable be disallowed in this case?

A. Yes. Disallowing these avoidable costs would prevent ratepayers from paying for activities that are not needed or do not materialize at Monroe. Withholding these costs from rates would also be consistent with DTE's current plans for the Monroe plant. The Company identified 14 projects at Monroe where spending could be avoided with 2028 retirement of Monroe units 3 and 4, including $1.95 million in avoidable costs in 2023 and $33.6 million in avoidable costs in 2024.[21] It would be imprudent to charge ratepayers for costs that the Company could knowingly avoid given its current plans for the future of Monroe. Moreover, the Company would have the opportunity to seek recovery in a future rate case if it chose to pursue any of this currently-deemed avoidable spending.

Costs that were deemed avoidable with even the potential for early retirement have previously been disallowed. In the previous DTE rate case, the Commission denied DTE recovery of avoidable spending at Belle River with the understanding that the retirement or conversion of the plant to natural gas would be explored in the subsequent IRP. The Commission cited the ALJ ruling that there was "uncertainty surrounding the retirement date" and "a concern that DTE [Electric] will not actually invest in the avoidable costs, should funding be included in rates."[22] The Commission also previously disallowed avoidable costs from Consumers Energy for spending at the Campbell coal units that was

[21] Morren Direct, p. 98, Table 1. One of the avoidable projects identified by DTE was PMP 9517 - Unit 3 Waterwall Tubes where the Company claimed $6.5 million of the $17.5 million in cost was avoidable in 2024; but in the IRP filing, the Company projected $0 costs for this project in 2023 and 2024 under 2028 retirement and $17.5 million under 2030 retirement. Case No. U-21193, WP JLM-05 – Monroe Capital Forecast for 2022 IRP, comparing tab "MN May 28" to tab "MN May 30".

[22] Case No. U-20836, Order dated November 18, 2022, pp. 35-36, 40.

potentially avoidable if the units retired in 2024, which was a potential scenario in an upcoming IRP.[23]

Here, the case for denying cost recovery is even more compelling than in those prior instances: there is less ambiguity about the future of the units in question given DTE's 2028 commitment and the lack of controversy surrounding that decision. If the Commission was willing to disallow costs that were potentially avoidable under even a hypothetical retirement date, it should also disallow costs that are avoidable under the Company's current plans.

Q. In its data responses, did the Company identify additional avoidable costs?

A. Yes, in two instances. First, the Company's filing only identified avoidable spending for those projects that included more than $1 million in spending. In response to a Staff data request, the Company also provided a list of avoidable spending for projects whose projected costs are less than $1 million.[24] This avoidable spending totaled $6.6 million in 2024 spread over 13 projects at Monroe units 3 and 4. Second, in response to a MNSC data request, the Company indicated that $17.4 million in spending on the Monroe Bottom Ash Conversion project would be avoidable with the 2028 planned retirement of Monroe units 3 and 4.[25] Collectively, this is an additional $24 million in avoidable 2024 spending that was not identified in the Company's initial filing.

[23] Case No. U-20697, Order dated December 17, 2020, pp. 74-77.

[24] Ex MEC-13, Company response to STDE-8.10a.

[25] Ex MEC-13, Company response to MNSCDE-4.3cva.

Q. Are you concerned that there might be additional avoidable costs for the bottom ash conversion project?

A. Yes. The Company has requested recovery of $74.5 million through 2024 for this project but identified only $17.4 million of this amount as avoidable. In its IRP, DTE projected $53 million in spending on this project through 2024 and an additional $35 million for 2025—regardless of unit retirement dates.[26] However, in discovery in that case, the Company stated that there were $40 to $50 million of these bottom ash costs that were avoidable under a 2028 retirement of Monroe units 3 and 4.[27] At hearing in that IRP proceeding, Witness Morren acknowledged that the $40 to $50 million should be subtracted from the bottom ash conversion costs that he had identified in his Monroe capital costs workpaper.[28] Because almost all of the costs for the bottom ash conversion project are being requested, there is a possibility that the $17.4 million in avoidable costs identified by DTE in this case is too low. I have not recommended an additional disallowance above this amount, but DTE should explain the inconsistency.

Q. Was there avoidable capital spending with 2028 retirement that the Company chose not to request in this filing?

A. Yes. The Company excluded costs associated with FGD wastewater compliance for ELG at Monroe units 3 and 4, assuming that the units were retired in 2028 and therefore could

[26] Ex MEC-10, Case No. U-21193, WP JLM 05 - Monroe Capital Forecast for 2022 IRP.

[27] Case No. U-21193, Ex. MEC-91.

[28] Case No. U-21193, 7 Tr 1848-49, citing Ex. MEC-93.

avoid the $21 million in compliance costs.[29] I am pleased that DTE did not seek recovery for these ELG costs, but it should have also excluded the avoidable costs discussed above.

Q. Is it possible that there are other avoidable costs at Monroe included in this filing?

A. Yes. Nearly all of the avoidable spending identified by DTE is for 2024; only one project was identified as having avoidable spending in 2023. When asked about avoidable 2023 spending for any capital project Monroe with over $100,000 and under $1 million in spending, DTE claimed that there were nothing to add, in part because "nearly half of the calendar year 2023 is in the past and nearly all the year will expire before orders are issued in this instant case and the Company's 2022 IRP…."[30] But the Company should not be moving ahead (or have already moved ahead) with spending in 2023 that it could have avoided if its retirement plan were approved later this year. And to the extent the Company is incurring such avoidable costs, ratepayers should not be responsible for them.[31]

Q. Should the costs that DTE identified as avoidable be disallowed in this case?

A. Yes. In total, the Company identified nearly $60 million in avoidable costs (almost all in 2024) at Monroe between its filing and data responses—none of which should be included in rates at this time. The Commission has previously disallowed DTE's capital spending at the Belle River and Campbell plants for this reason.[32] Given the Company's reluctance to identify further 2023 avoidable spending in its filing or data responses, my disallowance

[29] Morren Direct, p. 29, lines 6-21.

[30] Ex MEC-13, Company response to MNSCDE-6.7a.

[31] It is also possible that the Company has avoidable spending if Monroe units 1 and 2 if those units retired earlier than the currently planned 2035 date. However, the Company has not performed such an analysis. (Ex MEC-14, Company response to MNSCDE-6.5aii and MNSCDE-6.7b).

[32] Case No. U-20836, November 18, 2022, Order, pp. 35-40; Case No. U-20697, Order dated December 17, 2020, pp. 74-77.

amount should be considered conservative. The specific capital expenditures that I recommend disallowing are listed in Exhibit MEC-15.

III. CAPITAL SPENDING AT MONROE THAT IS NOT ADEQUATELY SUPPORTED SHOULD BE DISALLOWED.

Q. Have you identified any other problems with the capital spending at Monroe?

A. Yes. The Company is requesting rate recovery for a number of capital expenditures that lack adequate support in two categories: 1) new projects that lack supporting documents; and 2) projects that were previously approved, but where the spending exceeded the amount approved in 2023 and DTE failed to provide support for that excess spending. These unsupported expenditures, which are also listed in Exhibit MEC-15, should not be included in rate base.

Q. What do you consider adequate documentation?

A. At a bare minimum, a project should have a document that describes the project's objective, schedule, and cost estimates. DTE has provided this for many Monroe projects, found in Witness Morren's workpapers. For some projects, Witness Morren has also provided an internal rate of return (IRR) analysis that projects the costs and benefits of the given project. However, in my review, I've found many projects that lacked any such supporting documentation.

Q. Please describe your process for determining whether there was adequate documentation for Monroe capital projects.

A. I reviewed the workpapers provided by Witness Morren, starting with those regarding the Monroe plant ("WP-JLM-MONPP") and cross checked the project charters and IRR analyses with the projects listed in the Company's Exhibit A-12, Schedule B5.1 (which

included projects with more than $1 million in annual spending) and also with those provided in data responses to Staff and MNSC (which listed projects between $100,000 and $1 million in spending).[33] After noticing that some documents for Monroe projects were mistakenly provided with Witness Morren's Belle River workpapers ("WP-JLM-BLRPP"), I searched in his remaining workpapers to see if other Monroe-related documents had been misplaced. Finally, in two rounds of discovery I asked the Company to provide all available project documentation; DTE responded by claiming that it had all been provided in its filing and in response to a Staff data request.[34]

Q. Are you asking for a disallowance of all project spending that lacked documentation?

A. No. As a starting point, I only focused on Monroe project spending in 2023 and 2024 that was missing documentation. From there I excluded the following from consideration for a disallowance: 1) projects that were needed for safety or environmental reasons and 2) projects for which the amount of spending was previously approved by the Commission. The remaining projects were not deemed necessary for safe operation and had either previously been approved for a lower amount of spending in 2023 than what was filed in this case, or were new projects missing any supporting documents.

Q. Has the Commission previously disallowed capital costs that lacked adequate support?

A. Yes. In several previous rate cases, the Commission has done so. The Commission disallowed capital spending that was unsupported by DTE and Consumers Energy in three

[33] Ex MEC-13, Company response to STDE-8.10a and Ex MEC-16, Company response to MNSCDE-4.3ci.

[34] Ex MEC-16, Company responses to and MNSCDE-6.6ai.

previous rate cases.[35] For instance, in its order in the Consumers 2021 rate case (U-20963), the Commission stated:

> The Commission agrees with the ALJ that the lack of documentation provided by the company justifies a disallowance in this instance. As explained previously, the Commission rejects Consumers' argument that routine projects do not require support to show that they are reasonable and prudent.[36]

Q. What amounts of disallowance are you recommending for projects lacking any supporting documentation?

A. I found seven capital projects that should be disallowed for this reason, with a total of $16 million in 2023 spending and $1.3 million in 2024. These projects are listed in Exhibit MEC-15_.

Q. What amounts of disallowance are you recommending for projects that lack supporting documentation for excess 2023 spending?

A. I found two projects that warrant a disallowance for this reason. The first project, PMP 9327—Unit 1 Waterwall Tubes at Monroe was approved for $16.5 million in 2023 spending in the previous rate case[37] but the Company is requesting $17.6 million in 2023 in the current case, without any apparent documentation provided for this increase.[38] This represents an additional $1.13 million in spending without support, as the Company did not provide a project charter or IRR analysis in this case. Similarly, the other project, PMP

[35] See Case No. U-20697, Order dated December 17, 2020, pp. 73, 78, 79, 80, 94; Case No. U-20963, Order dated December 22, 2021, p. 106; Case No. U-20561, Order dated May 8, 2020, pp. 40-44, 46, 48-57.

[36] Case No. U-20963, Order dated December 22, 2021, p. 106.

[37] Case No. U-20836, Exhibit A-12, Schedule B5.1.

[38] Exhibit A-12, Schedule B5.1, p. 6.

18041—Unit 1 Expansion Joints at Monroe was approved for $5 million in spending in 2023 in the previous case but DTE is requesting $6.6 million in 2023 in this case: an increase of $1.63 million without justification from the Company. In sum, these two projects represent $2.8 million in spending that has not been previously approved nor has it been supported in this case. These projects are listed in Exhibit MEC-15.

Q. Please summarize your recommendations regarding costs which lack adequate supporting documentation.

A. Above I have outlined two types of inadequate support for 2023 and 2024 spending for which I recommend disallowances. Exhibit MEC-15 shows the $18.8 million in 2023 spending and $1.3 million in 2024 spending that should be disallowed in this case due to inadequate documentation.

IV. CONCLUSION AND RECOMMENDATIONS

Q. What do you recommend to the Commission?

A. For the reasons explained above I recommend the following:

1. The Commission should disallow capital costs at Monroe that are avoidable if Monroe units 3 and 4 were to retire in 2028, as contemplated by DTE's most recent IRP. These costs include $1.9 million in 2023 and $57.6 million in 2024.

2. The Commission should disallow capital costs at Monroe that lack supporting documentation. These costs include $18.8 million in 2023 and $1.3 million in 2024.

Q. Does this conclude your testimony?

A. Yes.

Applied Economics Clinic
Economic and Policy Analysis of Energy, Environment and Equity

Tyler Comings, Senior Researcher

1012 Massachusetts Avenue, Arlington MA 02476 ⌘ tyler.comings@aeclinic.org ⌘ 617-863-0139

PROFESSIONAL EXPERIENCE

Applied Economics Clinic, Arlington, MA. Senior Researcher, June 2017 – Present.

Provides technical expertise on electric utility regulation, energy markets, and energy policy. Clients are primarily public service organizations working on topics related to the environment, consumer rights, the energy sector, and community equity.

Synapse Energy Economics Inc., Cambridge, MA. Senior Associate, July 2014 – June 2017, Associate, July 2011 – July 2014.

Provided expert testimony and reports on energy system planning, coal plant economics and economic impacts. Performed benefit-cost analyses and research on energy and environmental issues.

Ideas42, Boston, MA. Senior Associate, 2010 – 2011.

Organized studies analyzing behavior of consumers regarding finances, working with top researchers in behavioral economics. Managed studies of mortgage default mitigation and case studies of financial innovations in developing countries.

Economic Development Research Group Inc., Boston, MA. Research Analyst, Economic Consultant, 2005 – 2010.

Performed economic impact modeling and benefit-cost analyses using IMPLAN and REMI for transportation and renewable energy projects, including support for Federal stimulus applications. Developed a unique web-tool for the National Academy of Sciences on linkages between economic development and transportation.

Harmon Law Offices, LLC., Newton, MA. Billing Coordinator, Accounting Liaison, 2002 – 2005.

Allocated IOLTA and Escrow funds, performed bank reconciliation and accounts receivable. Projected legal fees and costs.

Massachusetts Department of Public Health, Boston, MA. Data Analyst (contract), 2002.

Designed statistical programs using SAS based on data from health-related surveys. Extrapolated trends in health awareness and developed benchmarks for performance of clinics for a statewide assessment.

EDUCATION

Tufts University, Medford, MA

Master of Arts in Economics, 2007

Boston University, Boston, MA

Bachelor of Arts in Mathematics and Economics, Cum Laude, Dean's Scholar, 2002.

AFFILIATIONS

Society of Utility and Regulatory Financial Analysts (SURFA)

Member

Global Development and Environment Institute, Tufts University, Medford, MA.

Visiting Scholar, 2017 – 2020

CERTIFICATIONS

Certified Rate of Return Analyst (CRRA), professional designation by Society of Utility and Regulatory Financial Analysts (SURFA)

PAPERS AND REPORTS

Castigliego, J.R., T. Comings, S. Alisalad, and E.A. Stanton. 2021. *Background Report: Benefits of Coal Ash Cleanup and Remediation*. Applied Economics Clinic. Prepared for Earthjustice. [Online]

Woods, B., E. A. Stanton, T. Comings, and E. Tavares. 2019. *Emission Reduction Synergies for Massachusetts Community Choice Energy Programs, Heat Pumps and Electric Vehicles*. Applied Economics Clinic. Prepared for Green Energy Consumers Alliance. [Online]

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Comings, T., E.A. Stanton, and B. Woods. 2018. *The ABCs of Boston CCE*. Applied Economics Clinic. Prepared for Barr Foundation. [Online]

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Comings, T. and B. Woods. 2017. *The Future of the Martin Drake Power Plant*. Applied Economics Clinic. Prepared for Green Cities Coalition and Southeastern Colorado Renewable Energy Society. [Online]

Wilson, R., T. Comings, and E.A. Stanton. 2017. *Ratepayer Impacts of ConEd's 20-Year Shipping Agreement on the Mountain Valley Pipeline.* Applied Economics Clinic. Prepared for the Environmental Defense Fund. [Online]

Knight, P., A. Horowitz, P. Luckow, T. Comings, J. Gifford, P. Yuen, E. Snook, and J. Shoesmith. 2017. *An Analysis of the Massachusetts Renewable Portfolio Standard*. Synapse Energy Economics and Sustainable Energy Advantage. Prepared for NECEC in Partnership with Mass Energy. [Online]

Knight, P., S. Fields, F. Ackerman, T. Comings, and A. Allison. 2017*. Empowering Kentucky*. Synapse Energy Economics. Prepared for Kentuckians for the Commonwealth. [Online]

Comings, T. and A. Allison. 2017. *More Mileage for Your Money: Fuel Economy Increases While Vehicle Prices Remain Stable*. Synapse Energy Economics. Prepared for Consumers Union. [Online]

Cook, R., J. Koo, N. Veilleux, K. Takahashi, E. Malone, T. Comings, A. Allison, F. Barclay, and L. Beer. 2017. *Rhode Island Renewable Thermal Market Development Strategy*. Meister Consultants Group and Synapse Energy Economics. Prepared for Rhode Island Office of Energy Resources. [Online]

Fisher, J., P. Luckow, A. Horowitz, T. Comings, A. Allison, E.A. Stanton, S. Jackson, and K. Takahashi. 2016*. Michigan Compliance Assessment for the Clean Power Plan: MPSC/MDEQ EPA 111(d) Impact Analysis*. Prepared for Michigan Public Service Commission, Michigan Department of Environmental Quality, and Michigan Agency for Energy. [Online]

White, D., P. Peterson, T. Comings, and S. Jackson. 2016. *Preliminary Valuation of TransCanada's Hydroelectric Assets*. Prepared for the State of Vermont. [Online]

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Comings, T., A. Allison, and F. Ackerman. 2016. *Higher Fuel Economy Standards Result in Big Savings for Consumers*. Synapse Energy Economics. Prepared for Consumers Union. [Online]

Jackson, S., P. Luckow, E.A. Stanton, A. Horowitz, P. Peterson, T. Comings, J. Daniel, and T. Vitolo. 2016*. Reimagining Brayton Point: A Guide to Assessing Reuse Options for the Somerset Community.* Synapse Energy Economics. Prepared for Coalition for Clean Air South Coast, Clean Water Action, and Toxics Action Center. [Online]

Stanton, E.A., P. Knight, A. Allison, T. Comings, A. Horowitz, W. Ong, N. R. Santen, and K. Takahashi. 2016. *The RGGI Opportunity 2.0: RGGI as the Electric Sector Compliance Tool to Achieve 2030 State Climate Targets*. Synapse Energy Economics. Prepared for Sierra Club, Pace Energy and Climate Center, and Chesapeake Climate Action Network. [Online]

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Vitolo, T., M. Chang, T. Comings, and A. Allison. 2015. *Economic Benefits of the Proposed Coolidge Solar I Solar Project*. Synapse Energy Economics. Prepared for Coolidge Solar I, LLC. [Online]

Wilson, R., T. Comings, and E.A. Stanton. 2015. *Analysis of the Tongue River Railroad Draft Environmental Impact Statement.* Synapse Energy Economics. Prepared for Sierra Club and Earthjustice. [Online]

Synapse Energy Economics, Labor Network for Sustainability, and 350.org. 2015. *The Clean Energy Future: Protecting the Climate, Creating Jobs, and Saving Money*. [Online]

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Stanton, E. A., T. Comings, S. Jackson, and E. Karaca. 2015. *Atlantic Coast Pipeline Benefits Review*. Synapse Energy Economics. Prepared for Southern Environmental Law Center. [Online]

Takahashi, K., T. Comings, and A. Napoleon. 2014. *Maximizing Public Benefit through Energy Efficiency Investments*. Synapse Energy Economics. Prepared for Sierra Club. [Online]

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Comings, T., J. Daniel, P. Knight, and T. Vitolo. 2014. *Air Emission and Economic Impacts of Retiring the Shawnee Fossil Plant*. Synapse Energy Economics. Prepared for the Kentucky Environmental Foundation. [Online]

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Stanton, E. A., T. Comings, K. Takahashi, P. Knight, T. Vitolo, and E. Hausman. 2013. *Economic Impacts of the NRDC Carbon Standard.* Synapse Energy Economics. Prepared for Natural Resources Defense Council (NRDC). [Online]

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Colledge Transportation Consulting and Economic Development Research Group. 2008. *Northwest Corridor Trade and Manufacturing Strategy.* Prepared for Northern Development Initiative Trust and Canadian Manufacturers & Exporters. [Online]

Weisbrod, G. and T. Comings. 2008. *The Economic Role of the Gateway Transportation System in the Greater Vancouver Region*. Prepared for Greater Vancouver Gateway Council. [Online]

Cambridge Systematics and Economic Development Research Group. 2008. *Economic Impact Study of Completing the Appalachian Development Highway System*. Prepared for Appalachian Regional Commission. [Online]

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Mead & Hunt and Economic Development Research Group. 2007. *Oregon Aviation Plan 2007*. Prepared for Oregon Department of Aviation. [Online]

Economic Development Research Group. 2007. *The Economic Impact of Philadelphia Convention Center*. Prepared for Pew Charitable Trusts. [Online]

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TESTIMONY AND EXPERT COMMENTS

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Comings, T. 2022. *Testimony on Indiana Michigan Power IRP.* Testimony to Michigan Public Service Commission on behalf of Sierra Club. Docket No. U-21189. [Online]

Comings, T., and Castigliego, J.R. (with Sierra Club). 2022. *Evergy Kansas IRP Comments.* Comments to State Corporate Commission for the State of Kansas on behalf of the Sierra Club, Docket No. 19-KCPE-096-CPL. [Online]

Comings, T. 2022. Entergy Louisiana IRP Comments. Comments to the Louisiana Public Service Commission on behalf of Sierra Club, Docket No. I-36181. [Online]

Comings, T. 2022. *Testimony on Consumers IRP in Michigan*. Testimony to the Michigan Public Service Commission on behalf of Michigan Environmental Council, Natural Resources Defense Council, and Sierra Club, MPSC Case No. U-21090. [Online]

Comings, T., and J.R. Castigliego. 2022. *Minnesota Power IRP Comments*. Comments on Minnesota Power's IRP on behalf of Fresh Energy, Clean Grid Alliance, Minnesota Center for Environmental Advocacy, and Sierra Club. [Online]

Comings, T. 2022. *Testimony on Detroit Edison 2022 Rate Case in Michigan*. Testimony to Michigan Public Service Commission on behalf of Michigan Environmental Council, Natural Resources Defense Council, Sierra Club and Citizens Utility Board of Michigan, Case No. U-20836. [Online]

Comings, T. (with Sierra Club). 2022. *Comments on Entergy Louisiana's Integrated Resource Plan.* Comments to the Louisiana Public Service Commission on behalf of Sierra Club, Docket No. I-36181. [Online]

Comings, T., and J.R. Castigliego. 2022. *Comments on Evergy Missouri's Integrated Resource Plan.* Applied Economics Clinic. Comments to Missouri Public Service Commission on behalf of Sierra Club, File Nos. EO-2022-0201 and EO-2022-0202. [Online]

Comings, T. 2022. *Cost of Capital and Asset Return for Workers' Compensation Insurance in Massachusetts*. Applied Economics Clinic. Advisory Filing prepared for the State Review Board (SRB) of the Massachusetts Division of Insurance, Docket No. R2021-02.

Comings, T. 2021. *Testimony on Consumers Energy 2021 Integrated Resource Plan in Michigan*. Testimony to Michigan Public Service Commission on behalf of Michigan Environmental Council, Natural Resources Defense Council, and Sierra Club, Case No. U-21090. [Online]

Comings, T. 2021. *Testimony on Xcel Colorado's Energy Resource Plan.* Applied Economics Clinic. Prepared for Sierra Club and NRDC, Proceeding No. 21A-0141E. [Online]

Comings, T., and J.R. Castigliego. 2021. *Comments on Evergy Missouri's Integrated Resource Plan.* Applied Economics Clinic. Comments to Missouri Public Service Commission on behalf of Sierra Club, File Nos. EO-2021-0035 and EO-2021-0036.[Online]

Comings, T. 2021. *Testimony on Consumers Energy 2021 rate case in Michigan.* Testimony to Michigan Public Service Commission on behalf of Michigan Environmental Council, Natural Resources Defense Council, Sierra Club, and Citizens Utility Board of Michigan, Case No. U-20963. [Online]

Comings, T., J.R. Castigliego, S. Alisalad, E. Tavares (with Sierra Club). 2021. *Comments on Ameren Missouri's 2020 Integrated Resource Plan*. Comments to the Missouri Public Service Commission on behalf of Sierra Club, File No. EO-2021-0021. [Online]

Comings, T, R. Wilson, M. Goggin, and Sierra Club. 2021. *Comments on Xcel Energy IRP in Minnesota*. Comments to the Minnesota Public Utilities Commission on behalf of Sierra Club, Docket No. E002/RP-19-368. [Online]

Comings, T. 2020. *Testimony on Harrison and Fort Martin Coal Units in West Virginia.* Testimony to West Virginia Public Service Commission on behalf of Earthjustice, Case No. 20-0665-E-ENEC. [Online]

Comings, T. 2020. *Testimony on Four Corners Coal Units in Arizona.* Testimony to Arizona Corporation Commission on behalf of Sierra Club, File No. E-01345A-19-0236. [Online]

Comings, T. 2020. *Testimony on the Prudence of Fuel Costs of the Evergy Missouri Coal Fleet.* Testimony to Public Service Commission of the State of Missouri on behalf of Sierra Club, File Nos. EO-2020-0262 and EO-2020-0263. [Online]

Comings, T. 2020. *Testimony on Consumers Energy's 2020 Rate Case*. Testimony to the Michigan Public Service Commission on behalf of Michigan Environmental Council, Natural Resources Defense Council, Sierra Club and Citizens Utility Board of Michigan, Case No. U-20697. [Online]

Comings, T. 2020. *Comments on Evergy's 2020 Integrated Resource Plan*. Comments to the Public Service Commission of the State of Missouri, File No. EO-2020-0280 EO-2020-0281. [Online]

Comings, T. 2020. *Cost of Capital and Asset Return for Workers' Compensation Insurance in Massachusetts*. Applied Economics Clinic. Advisory Filing prepared for the State Review Board (SRB) of the Massachusetts Division of Insurance, Docket No. R2019-01.

Comings, T. 2020. *Comments on Ameren Missouri Integrated Resource Plan*. Comments to Ameren Missouri on behalf of Sierra Club. [Online]

Comings, T. 2020. *Testimony on Indiana Michigan Power Company's Integrated Resource Plan*. Testimony to the Michigan Public Service Commission on behalf of Sierra Club, Case No. U-20591. [Online]

Comings, T. 2019. *Testimony on the Public Service Company of New Mexico's (PNM) Plan for Replacing the San Juan Coal Units*. Testimony to the New Mexico Public Regulation Commission on behalf of Coalition for Clean Affordable Energy (CCAE). Case No. 19-00195-UT. [Online]

Comings, T. 2019. *Testimony on Duke Energy Indiana's Coal Fleet*. Testimony to the Indiana Utility Regulatory Commission on behalf of Sierra Club, Cause No. 45253. [Online]

Comings, T. 2019. *Testimony on Sooner Coal Plant Scrubbers*. Testimony to the Oklahoma Corporation Commission on behalf of Sierra Club, Cause No. PUD 201800140. [Online]

Sierra Club, assisted by Comings, T., B. Woods, R. Lopez, and E. Tavares. 2019. *Comments on Southwestern Electric Power Company's Draft 2019 Integrated Resource Plan*. Comments to the Louisiana Public Service Commission on behalf of Sierra Club, Docket No. I-34715. [Online]

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Comings, T. 2018. *Testimony on the Economics of Karn Coal Units in Michigan*. Testimony to Michigan Public Service Commission, Case No. U-20134. [Online]

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Comings, T. 2017. *Testimony on the economics of the proposed acquisition of the Pleasants plant*. Testimony to the West Virginia Public Service Commission, Case No. 17-0296-E-PC. [Online]

Fagan, B. and T. Comings. 2017. *Joint testimony regarding the economic analysis of the Maritime Link Project*. Testimony to the Nova Scotia Utility and Review Board, Matter No. 07718. [Online]

Comings, T., A. Horowitz, and K. Takahashi. 2017. *Comments on Portland General Electric's 2016 Integrated Resource Plan*. Comments filed with the Oregon Public Utility Commission, Docket LC 66. [Online]

Comings, T. 2016. *Testimony regarding Dayton Power & Light's proposed Distribution Modernization Rider and the value of the Company's coal fleet*. Testimony to the Ohio Public Utilities Commission, Cases No. 16-0395-EL-SSO, 16-396-EL-ATA, and 16-397-EL-AAM. [Online]

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Resume dated January 2023

WP JLM 05 - Monroe Capital Forecast for 2022 IRP

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

CAPITAL LONG-TERM FORECAST SUMMARY

MNPP

Dec 2039 Retirement	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Monroe 1 Outage	0	90.6	0	4.7	0	71	0	4.7	0	55.7	0	0	0	23.3	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	110.6	0	4.7	0	55	0	0	0	35.3	0	0	0	4.2	0	0
Monroe 3 Outage	4.7	3	85.1	0	0	0	80.5	0	0	0	44.3	0	0	0	24.3	0	0	0	0
Monroe 4 Outage	0	7.7	0	106.6	0	4.7	0	66	0	0	0	36.1	0	0	0	9.2	0	0	0
Total Outage	65.0	104.3	89.8	111.3	110.6	75.7	85.2	70.7	55.0	55.7	44.3	36.1	35.3	23.3	24.3	9.2	4.2	0.0	0.0
Balance of Plant	30.5	30.0	30.0	29.0	29.0	27.0	25.0	24.0	23.0	22.0	21.0	20.0	20.0	19.0	18.0	16.0	13.5	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**119.8**	**140.3**	**139.6**	**102.7**	**110.2**	**94.7**	**78.0**	**77.7**	**65.3**	**56.1**	**55.3**	**42.3**	**42.3**	**25.2**	**17.7**	**0.0**	**0.0**

May 2028 Retirement	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Monroe 1 Outage	0	90.6	0	4.7	0	4.2	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	15.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 3 Outage	4.7	3	25.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	53.1	0	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Outage	65.0	104.3	30.3	57.8	15.5	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Balance of Plant	30.5	30.0	18.5	17.0	14.8	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**48.8**	**74.8**	**30.3**	**14.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

May 2032 Retirement	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Monroe 1 Outage	0	90.6	0	4.7	0	58	0	4.7	0	3.7	0	0	0	0	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	110.6	0	4.7	0	15.5	0	0	0	0	0	0	0	0	0	0
Monroe 3 Outage	4.7	3	85.1	0	0	0	55.6	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	106.6	0	4.7	0	21.6	0	0	0	0	0	0	0	0	0	0	0
Total Outage	65.0	104.3	89.8	111.3	110.6	62.7	60.3	26.3	15.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Balance of Plant	30.5	30.0	30.0	29.0	29.0	27.0	18.5	17.0	14.8	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**119.8**	**140.3**	**139.6**	**89.7**	**78.8**	**43.3**	**30.3**	**10.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

May 2035 Retirement	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Monroe 1 Outage	0	90.6	0	4.7	0	71	0	4.7	0	28.1	0	0	0	0	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	110.6	0	4.7	0	33.1	0	0	0	3.7	0	0	0	0	0	0
Monroe 3 Outage	4.7	3	85.1	0	0	0	75	0	0	0	21.6	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	106.6	0	4.7	0	66	0	0	0	15.5	0	0	0	0	0	0	0
Total Outage	65.0	104.3	89.8	111.3	110.6	75.7	79.7	70.7	33.1	28.1	21.6	15.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Balance of Plant	30.5	30.0	30.0	29.0	29.0	27.0	25.0	24.0	23.0	18.5	17.0	14.8	6.8	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**119.8**	**140.3**	**139.6**	**102.7**	**104.7**	**94.7**	**56.1**	**46.6**	**38.6**	**30.3**	**10.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

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
Monroe 1 Outage	0	90.6	0	4.7	0	13.5	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	18.5	0	3.7	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 3 Outage	4.7	3	25.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	53.1	0	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Outage	65.0	104.3	30.3	57.8	18.5	16.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Balance of Plant	30.5	30.0	26.2	22.5	18.7	11.9	10.3	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**56.5**	**80.3**	**37.2**	**28.6**	**14.0**	**4.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

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
Monroe 1 Outage	0	90.6	0	4.7	0	58	0	4.7	0	3.7	0	0	0	0	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	110.6	0	4.7	0	15.5	0	0	0	0	0	0	0	0	0	0
Monroe 3 Outage	4.7	3	25.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	53.1	0	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Outage	65.0	104.3	30.3	57.8	110.6	61.2	4.7	4.7	15.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Balance of Plant	30.5	30.0	28.0	26.0	23.9	18.9	13.0	11.9	10.3	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**58.3**	**83.8**	**134.5**	**80.1**	**17.7**	**16.6**	**25.8**	**8.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

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
Monroe 1 Outage	0	90.6	0	4.7	0	71	0	4.7	0	28.1	0	0	0	0	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	110.6	0	4.7	0	33.1	0	0	0	3.7	0	0	0	0	0	0
Monroe 3 Outage	4.7	3	25.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	53.1	0	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Outage	65.0	104.3	30.3	57.8	110.6	74.2	4.7	4.7	33.1	28.1	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Balance of Plant	30.5	30.0	28.0	26.0	23.9	18.9	17.5	16.8	16.1	13.0	11.9	10.3	4.7	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**58.3**	**83.8**	**134.5**	**93.1**	**22.2**	**21.5**	**49.2**	**41.1**	**11.9**	**10.3**	**8.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

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
Monroe 1 Outage	0	90.6	0	4.7	0	71	0	4.7	0	55.7	0	0	0	23.3	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	110.6	0	4.7	0	55	0	0	0	35.3	0	0	0	4.2	0	0
Monroe 3 Outage	4.7	3	25.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	53.1	0	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Outage	65.0	104.3	30.3	57.8	110.6	74.2	4.7	4.7	55.0	55.7	0.0	0.0	35.3	23.3	0.0	0.0	4.2	0.0	0.0
Balance of Plant	30.5	30.0	28.0	26.0	23.9	18.9	17.5	16.8	16.1	15.4	14.7	14.0	14.0	13.3	12.6	11.2	9.5	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**58.3**	**83.8**	**134.5**	**93.1**	**22.2**	**21.5**	**71.1**	**71.1**	**14.7**	**14.0**	**49.3**	**36.6**	**12.6**	**11.2**	**13.7**	**0.0**	**0.0**

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
Monroe 1 Outage	0	90.6	0	4.7	0	71	0	4.7	0	28.1	0	0	0	0	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	110.6	0	4.7	0	33.1	0	0	0	3.7	0	0	0	0	0	0
Monroe 3 Outage	4.7	3	85.1	0	0	0	55.6	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	106.6	0	4.7	0	21.6	0	0	0	0	0	0	0	0	0	0	0
Total Outage	65.0	104.3	89.8	111.3	110.6	75.7	60.3	26.3	33.1	28.1	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Balance of Plant	30.5	30.0	30.0	29.0	26.7	24.4	22.1	16.8	16.1	13.0	11.9	10.3	4.7	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**119.8**	**140.3**	**137.3**	**100.1**	**82.4**	**43.1**	**49.2**	**41.1**	**11.9**	**10.3**	**8.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

WP JLM 05 - Monroe Capital Forecast for 2022 IRP

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
Monroe 1 Outage	0	90.6	0	4.7	0	71	0	4.7	0	28.1	0	0	0	0	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	110.6	0	4.7	0	33.1	0	0	0	3.7	0	0	0	0	0	0
Monroe 3 Outage	4.7	3	85.1	0	0	0	55.6	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	106.6	0	4.7	0	21.6	0	0	0	0	0	0	0	0	0	0	0
Total Outage	65.0	104.3	89.8	111.3	110.6	75.7	60.3	26.3	33.1	28.1	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Balance of Plant	30.5	30.0	30.0	29.0	29.0	27.0	24.2	21.5	18.7	13.0	11.9	10.3	4.7	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**119.8**	**140.3**	**139.6**	**102.7**	**84.5**	**47.8**	**51.8**	**41.1**	**11.9**	**10.3**	**8.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

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
Monroe 1 Outage	0	90.6	0	4.7	0	71	0	4.7	0	55.7	0	0	0	23.3	0	0	0	0	0
Monroe 2 Outage	60.27	3	4.7	0	110.6	0	4.7	0	55	0	0	0	35.3	0	0	0	4.2	0	0
Monroe 3 Outage	4.7	3	85.1	0	0	0	55.6	0	0	0	0	0	0	0	0	0	0	0	0
Monroe 4 Outage	0	7.7	0	106.6	0	4.7	0	21.6	0	0	0	0	0	0	0	0	0	0	0
Total Outage	65.0	104.3	89.8	111.3	110.6	75.7	60.3	26.3	55.0	55.7	0.0	0.0	35.3	23.3	0.0	0.0	4.2	0.0	0.0
Balance of Plant	30.5	30.0	30.0	29.0	29.0	27.0	24.9	22.7	20.6	15.4	14.7	14.0	14.0	13.3	12.6	11.2	9.5	0.0	0.0
TOTAL BY YEAR	**95.5**	**134.3**	**119.8**	**140.3**	**139.6**	**102.7**	**85.2**	**49.0**	**75.6**	**71.1**	**14.7**	**14.0**	**49.3**	**36.6**	**12.6**	**11.2**	**13.7**	**0.0**	**0.0**

WP JLM 05 - Monroe Capital Forecast for 2022 IRP
BOP MN

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
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MNPP BALANCE OF PLANT CAPITAL

Dec 2039 Retirement	DESCRIPTION	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	Safety/Combustible Dust	13.0	13.0	13.0	12.0	12.0	10.0	8.0	7.0	6.0	5.0	4.0	3.0	3.0	2.0	2.0	1.0	0.5	-	
	Routine Minor Environmental	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	3.0	1.0	-	
	Regulatory Compliance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-	
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	-	
TOTAL PLANT		**30.5**	**30.0**	**30.0**	**29.0**	**29.0**	**27.0**	**25.0**	**24.0**	**23.0**	**22.0**	**21.0**	**20.0**	**20.0**	**19.0**	**18.0**	**16.0**	**13.5**	**0.0**	**0.0**
May 2028 Retirement	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	2.0	1.5	0.8	0.3	-												
	Routine Minor Environmental	5.0	5.0	4.5	3.5	2.0	0.5	-												
	Regulatory Compliance	2.0	2.0	2.0	2.0	2.0	1.0	-												
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	5.0	-												
TOTAL PLANT		**30.5**	**30.0**	**18.5**	**17.0**	**14.8**	**6.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
May 2030 Retirement	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	12.0	10.0	2.0	1.5	0.8	0.3	-										
	Routine Minor Environmental	5.0	5.0	5.0	5.0	4.5	3.5	2.0	0.5	-										
	Regulatory Compliance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	-										
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	10.0	10.0	5.0	-										
TOTAL PLANT		**30.5**	**30.0**	**29.0**	**27.0**	**18.5**	**17.0**	**14.8**	**6.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
May 2032 Retirement	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	13.0	12.0	12.0	10.0	2.0	1.5	0.8	0.3	-								
	Routine Minor Environmental	5.0	5.0	5.0	5.0	5.0	5.0	4.5	3.5	2.0	0.5	-								
	Regulatory Compliance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	-								
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	-								
TOTAL PLANT		**30.5**	**30.0**	**30.0**	**29.0**	**29.0**	**27.0**	**18.5**	**17.0**	**14.8**	**6.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
May 2035 Retirement	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	13.0	12.0	12.0	10.0	8.0	7.0	6.0	2.0	1.5	0.8	0.3	-					
	Routine Minor Environmental	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	3.5	2.0	0.5	-					
	Regulatory Compliance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	-					
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	-					
TOTAL PLANT		**30.5**	**30.0**	**30.0**	**29.0**	**29.0**	**27.0**	**25.0**	**24.0**	**23.0**	**18.5**	**17.0**	**14.8**	**6.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
M34 May 2028, M12 May 2030	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	10.0	7.0	4.0	1.1	0.5	0.2	-	-	-								
	Routine Minor Environmental	5.0	5.0	4.4	3.7	3.1	2.5	1.4	0.4	-	-	-								
	Regulatory Compliance	2.0	2.0	1.9	1.7	1.6	1.4	1.4	0.7	-	-	-								
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	7.0	7.0	3.5	-	-	-								
TOTAL PLANT		**30.5**	**30.0**	**26.2**	**22.5**	**18.7**	**11.9**	**10.3**	**4.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
M34 May 2028, M12 May 2032	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	11.5	10.0	8.5	7.0	1.4	1.1	0.5	0.2	-								
	Routine Minor Environmental	5.0	5.0	4.6	4.3	3.9	3.5	3.2	2.5	1.4	0.4	-								
	Regulatory Compliance	2.0	2.0	1.9	1.7	1.6	1.4	1.4	1.4	1.4	0.7	-								
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	3.5	-								
TOTAL PLANT		**30.5**	**30.0**	**28.0**	**26.0**	**23.9**	**18.9**	**13.0**	**11.9**	**10.3**	**4.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
M34 May 2028, M12 May 2035	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	11.5	10.0	8.5	7.0	5.6	4.9	4.2	1.4	1.1	0.5	0.2	-					
	Routine Minor Environmental	5.0	5.0	4.6	4.3	3.9	3.5	3.5	3.5	3.5	3.2	2.5	1.4	0.4	-					
	Regulatory Compliance	2.0	2.0	1.9	1.7	1.6	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.7	-					
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	3.5	-					
TOTAL PLANT		**30.5**	**30.0**	**28.0**	**26.0**	**23.9**	**18.9**	**17.5**	**16.8**	**16.1**	**13.0**	**11.9**	**10.3**	**4.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
M34 May 2028, M12 Dec 2039	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	11.5	10.0	8.5	7.0	5.6	4.9	4.2	3.5	2.8	2.1	2.1	1.4	1.4	0.7	0.4	-	
	Routine Minor Environmental	5.0	5.0	4.6	4.3	3.9	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.8	2.1	0.7	-	
	Regulatory Compliance	2.0	2.0	1.9	1.7	1.6	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	-	
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	-	
TOTAL PLANT		**30.5**	**30.0**	**28.0**	**26.0**	**23.9**	**18.9**	**17.5**	**16.8**	**16.1**	**15.4**	**14.7**	**14.0**	**14.0**	**13.3**	**12.6**	**11.2**	**9.5**	**0.0**	**0.0**
M34 May 2030, M12 May 2035	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	13.0	12.0	10.2	8.5	6.7	4.9	4.2	1.4	1.1	0.5	0.2	-					
	Routine Minor Environmental	5.0	5.0	5.0	5.0	4.6	4.3	3.9	3.5	3.5	3.2	2.5	1.4	0.4	-					
	Regulatory Compliance	2.0	2.0	2.0	2.0	1.9	1.7	1.6	1.4	1.4	1.4	1.4	1.4	0.7	-					
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0	3.5	-					
TOTAL PLANT		**30.5**	**30.0**	**30.0**	**29.0**	**26.7**	**24.4**	**22.1**	**16.8**	**16.1**	**13.0**	**11.9**	**10.3**	**4.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
M34 May 2032, M12 May 2035	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	13.0	12.0	12.0	10.0	7.9	5.7	3.6	1.4	1.1	0.5	0.2	-					
	Routine Minor Environmental	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.1	3.6	3.2	2.5	1.4	0.4	-					
	Regulatory Compliance	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.7	1.6	1.4	1.4	1.4	0.7	-					
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0	3.5	-					
TOTAL PLANT		**30.5**	**30.0**	**30.0**	**29.0**	**29.0**	**27.0**	**24.2**	**21.5**	**18.7**	**13.0**	**11.9**	**10.3**	**4.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
M34 May 2032, M12 Dec 2039	**DESCRIPTION**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
	Safety/Combustible Dust	13.0	13.0	13.0	12.0	12.0	10.0	8.4	6.8	5.1	3.5	2.8	2.1	2.1	1.4	1.4	0.7	0.4	-	
	Routine Minor Environmental	5.0	5.0	5.0	5.0	5.0	5.0	4.6	4.3	3.9	3.5	3.5	3.5	3.5	3.5	2.8	2.1	0.7	-	
	Regulatory Compliance	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.7	1.6	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	-	
	Routine Plant Maintenance	10.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	-	
TOTAL PLANT		**30.5**	**30.0**	**30.0**	**29.0**	**29.0**	**27.0**	**24.9**	**22.7**	**20.6**	**15.4**	**14.7**	**14.0**	**14.0**	**13.3**	**12.6**	**11.2**	**9.5**	**0.0**	**0.0**

WP JLM 05 - Monroe Capital Forecast for 2022 IRP
MN May 32

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

Case No.: U-21193
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MNPP OUTAGE CAPITAL
May 2032 Retirement

		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
		10	10, 37	130, 12	10	10	10	10	56	10	10	89, 12	10	10	10	10	21	10	10	40, 12	10																	
		90, 13	38	11	11	11	22	11	56	88, 13	11	10	10	10	21	10	10	60, 12	10	10	10																
		29, 11	11	11	42	90, 13	11	11	11	11	11	10	10	89, 12	10	10	10	10	10	10	10																
Capital Outage		10	10	11	42	11	11	88, 12	11	11	11	10	21	10	10	75, 12	10	10	10	10	10																

UNIT	DESCRIPTION	2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
Monroe 1	Waterwall			18.5																																	
	Turbine Valves			2.6								2.6								-																	
	Expansion Joints			6.0								4.4																									
	Other Large Capital			5.0								2.5																									
	Condenser Retube																																				
	Turbine & Generator Capital			33.5								6.0								-																	
	Other Boiler Capital			3.0								23.0								-																	
	Air Heater Basket Replacement			4.5								3.0								-																	
	SCR Catalyst Replacement			8.5				3.2				8.5				3.2				3.2																	
	Feedwater Heaters & Heat Exchangers																																				
	Small Capital and Common			9.0				1.5				8.0				1.5				0.5																	
TOTAL UNIT 1		**0.0**	**0.0**	**90.6**	**0.0**	**0.0**	**0.0**	**4.7**	**0.0**	**0.0**	**0.0**	**58.0**	**0.0**	**0.0**	**0.0**	**4.7**	**0.0**	**0.0**	**0.0**	**3.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

UNIT	DESCRIPTION	2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
Monroe 2	Waterwall	17.5								16.0																											
	Turbine Valves	1.2								2.6								1.0																			
	Expansion Joints	5.0								5.0								-																			
	Other Large Capital	2.6								2.5								-																			
	Condenser Retube	4.0								2.0								-																			
	Turbine & Generator Capital	9.8								33.5								6.0																			
	Other Boiler Capital	2.7								23.0								-																			
	Air Heater Basket Replacement									9.0								-																			
	SCR Catalyst Replacement	8.5				3.2				8.5				3.2				6.5																			
	Feedwater Heaters & Heat Exchangers																																				
	Small Capital and Common	9.0		3.0		1.5				8.5				1.5				2.0																			
TOTAL UNIT 2		**60.3**	**0.0**	**3.0**	**0.0**	**0.0**	**4.7**	**0.0**	**0.0**	**110.6**	**0.0**	**0.0**	**0.0**	**0.0**	**4.7**	**0.0**	**0.0**	**15.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

UNIT	DESCRIPTION	2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
Monroe 3	Waterwall					17.5																															
	Turbine Valves					2.6								2.6																									
	Expansion Joints					5.0								2.0																									
	Other Large Capital					5.5								2.0																									
	Condenser Retube																																				
	Turbine & Generator Capital					5.0								33.5																									
	Other Boiler Capital					23.0								3.0																									
	Air Heater Basket Replacement					9.0								-																									
	SCR Catalyst Replacement		3.2			8.5								8.5																									
	Feedwater Heaters & Heat Exchangers																																				
	Small Capital and Common		1.5		3.0	9.0								4.0																									
TOTAL UNIT 3		**0.0**	**4.7**	**0.0**	**3.0**	**85.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**55.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

UNIT	DESCRIPTION	2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
Monroe 4	Waterwall							17.5																													
	Turbine Valves							2.6								2.6																							
	Expansion Joints							5.0								1.0																							
	Other Large Capital							5.5								0.5																							
	Condenser Retube							2.0																															
	Turbine & Generator Capital							33.5								6.0																							
	Other Boiler Capital							23.0																															
	Air Heater Basket Replacement																																				
	SCR Catalyst Replacement				3.2			8.5					3.2			8.5																						
	Feedwater Heaters & Heat Exchangers																																				
	Small Capital and Common			3.0	1.5			9.0					1.5			3.0																						
TOTAL UNIT 4		**0.0**	**0.0**	**3.0**	**4.7**	**0.0**	**0.0**	**106.6**	**0.0**	**0.0**	**0.0**	**0.0**	**4.7**	**0.0**	**0.0**	**21.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

TOTALS BY YEAR		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	Monroe 1	0.0	90.6	0.0	4.7	0.0	58.0	0.0	4.7	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Monroe 2	60.3	3.0	4.7	0.0	110.6	0.0	4.7	0.0	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Monroe 3	4.7	3.0	85.1	0.0	0.0	0.0	55.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Monroe 4	0.0	7.7	0.0	106.6	0.0	4.7	0.0	21.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	65.0	104.3	89.8	111.3	110.6	62.7	60.3	26.3	15.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	check	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WP JLM 05 - Monroe Capital Forecast for 2022 IRP
MN May 35

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

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Workpaper: JLM-05
Witness: J. L. Morren
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MNPP OUTAGE CAPITAL

May 2035 Retirement

Capital Outage

		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
		10	10, 37	130, 12	10	10	10	10	56	10	10	89, 12	10	10	10	10	21	10	10	89, 12	10	10	10	10	10	10	10	10	10									
		90, 13	38	11	11	11	22	11	56	88, 13	11	10	10	10	21	10	10	89, 12	10	10	10	10	10	10	10	40, 12	10										
		29, 11	11	11	42	90, 13	11	11	11	11	11	10	10	89, 12	10	10	10	10	10	10	10	75, 12	10	10	10	10	10										
		10	10	11	42	11	11	88, 12	11	11	11	10	21	10	10	89, 12	10	10	10	10	10	10	10	60, 12	10	10	10										

UNIT	DESCRIPTION	2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
Monroe 1	Waterwall			18.5								16.0																											
	Turbine Valves			2.6								2.6								2.6																			
	Expansion Joints			6.0								4.4								2.0																			
	Other Large Capital			5.0								2.5								2.0																			
	Condenser Retube																																						
	Turbine & Generator Capital			33.5								6.0								6.0																			
	Other Boiler Capital			3.0								23.0								3.0																			
	Air Heater Basket Replacement			4.5								-								-																			
	SCR Catalyst Replacement			8.5					3.2			8.5					3.2			8.5																			
	Feedwater Heaters & Heat Exchangers																																						
	Small Capital and Common			9.0					1.5			8.0					1.5			4.0																			
TOTAL UNIT 1		0.0	0.0	90.6	0.0	0.0	0.0	0.0	4.7	0.0	0.0	71.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	28.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

UNIT	DESCRIPTION	2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
Monroe 2	Waterwall	17.5								16.0								-																					
	Turbine Valves	1.2								2.6								2.6								-													
	Expansion Joints	5.0								5.0								2.5																					
	Other Large Capital	2.6								2.5								2.5																					
	Condenser Retube	4.0								2.0																													
	Turbine & Generator Capital	9.8								33.5								6.0								-													
	Other Boiler Capital	2.7								23.0								6.0								-													
	Air Heater Basket Replacement									9.0																-													
	SCR Catalyst Replacement	8.5					3.2			8.5					3.2			8.5								3.2													
	Feedwater Heaters & Heat Exchangers																																						
	Small Capital and Common	9.0		3.0		1.5				8.5				1.5				5.0								0.5													
TOTAL UNIT 2		60.3	0.0	3.0	0.0	0.0	4.7	0.0	0.0	110.6	0.0	0.0	0.0	0.0	4.7	0.0	0.0	33.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

UNIT	DESCRIPTION	2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
Monroe 3	Waterwall					17.5								9.5								-																	
	Turbine Valves					2.6								2.6								2.6																	
	Expansion Joints					5.0								4.4								1.0																	
	Other Large Capital					5.5								2.5								0.5																	
	Condenser Retube																																						
	Turbine & Generator Capital					5.0								33.5								6.0																	
	Other Boiler Capital					23.0								6.0																									
	Air Heater Basket Replacement					9.0								-																									
	SCR Catalyst Replacement		3.2			8.5								8.5								8.5																	
	Feedwater Heaters & Heat Exchangers																																						
	Small Capital and Common		1.5		3.0	9.0								8.0								3.0																	
TOTAL UNIT 3		0.0	4.7	0.0	3.0	85.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

UNIT	DESCRIPTION	2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040	
		S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
Monroe 4	Waterwall							17.5								15.0																							
	Turbine Valves							2.6								2.6								1.0															
	Expansion Joints							5.0								4.4								-															
	Other Large Capital							5.5								2.5								-															
	Condenser Retube							2.0								4.0								-															
	Turbine & Generator Capital							33.5								6.0								6.0															
	Other Boiler Capital							23.0								6.0								-															
	Air Heater Basket Replacement															9.0								-															
	SCR Catalyst Replacement				3.2			8.5					3.2			8.5								6.5															
	Feedwater Heaters & Heat Exchangers																																						
	Small Capital and Common			3.0	1.5			9.0					1.5			8.0								2.0															
TOTAL UNIT 4		0.0	0.0	3.0	4.7	0.0	0.0	106.6	0.0	0.0	0.0	0.0	4.7	0.0	0.0	66.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TOTALS BY YEAR		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	Monroe 1	0.0	90.6	0.0	4.7	0.0	71.0	0.0	4.7	0.0	28.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Monroe 2	60.3	3.0	4.7	0.0	110.6	0.0	4.7	0.0	33.1	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0
	Monroe 3	4.7	3.0	85.1	0.0	0.0	0.0	75.0	0.0	0.0	0.0	21.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Monroe 4	0.0	7.7	0.0	106.6	0.0	4.7	0.0	66.0	0.0	0.0	0.0	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	65.0	104.3	89.8	111.3	110.6	75.7	79.7	70.7	33.1	28.1	21.6	15.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0
	check	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

April 28, 2023

Ms. Tiffany Myers, District Supervisor
Water Resources Division
Michigan Department of Environment, Great Lakes and Energy (EGLE)
Jackson District Office
301 E. Louis B. Glick Highway - 4th Floor
Jackson, Michigan 49201

Re: Cessation of Coal Notice of Planned Participation
DTE – Monroe Plt
NPDES Permit No. MI0001848

Dear Ms. Myers,

On October 13, 2020, the Environmental Protection Agency (EPA) released the Effluent Limit Guidelines (ELG) Reconsideration Rule (2020 Rule) which updated the 2015 ELG Rule (2015 Rule). The 2020 Rule was the product of the EPA's "Reconsideration" of certain portions of the 2015 Rule, specifically addressing bottom ash transport water (BATW) and flue gas desulfurization wastewater (FGD WW).

The 2020 Rule established a compliance subcategory for electric generating unit(s) that would cease the use of coal either by retirement or by fuel conversion. The 2020 Rule allowed operation of such unit(s) until December 31, 2028, if companies fulfilled certain requirements regarding existing treatment technologies and submitted a Notice of Planned Participation (NOPP) by October 13, 2021 in order to qualify for the subcategory. At the time, DTE was still developing its CleanVision Integrated Resource Plan (November 2022 IRP) and did not submit a NOPP for the cessation of coal combustion compliance subcategory.

On July 26, 2021, the EPA announced that it was initiating a rulemaking process to revise the 2020 Rule as a result of a review conducted in accordance with Executive Order 13990. As part of the 2020 Rule revision, on March 29, 2023, EPA took direct final action to issue a new rule to extend the date for existing coal-fired power plants to submit a NOPP for the permanent cessation of coal combustion subcategory in the 2020 Rule. The extension allows for companies to submit an NOPP by June 27, 2023 and qualify for the cessation of coal combustion subcategory established in the 2020 Rule.

In November 2022, DTE filed its IRP with the Michigan Public Service Commission (MPSC) where the Company's proposal to accelerate coal plant retirements was publicly announced. The proposed IRP includes an acceleration of Monroe Power Plant's (MONPP) retirement schedule, with Units 3 and 4 in 2028 and Units 1 and 2 in 2035. Approval of an IRP is obtained through a contested case proceeding under Michigan statute. A Final Order from the MPSC is expected in the fall of 2023, at which time DTE's proposed MONPP retirement schedule will be finalized.

Per 40 CFR 423.19(f)(1), DTE Electric Company (DTE) is submitting this Cessation of Coal NOPP. The following enclosures provide the information necessary to qualify for the compliance subcategory as required by 40 CFR 423.19(f)(2).

This submittal supports and represents DTE's commitment to our November 2022 IRP which provides a detailed assessment of the existing and future energy needs of its customers and how the company plans to meet those needs.

If you have any questions relative to this submittal, please contact Matthew Goddard at (313) 235-7368 or via e-mail at matthew.goddard@dteenergy.com.

Sincerely,

Dan Casey
Plant Manager
Monroe Power Plant
Energy Supply - DTE Electric Company
734-384-2207

Enclosures

Cc: Alexandria Seeger - EGLE, Jackson District Office
Christine Alexander – EGLE, WRD Permits Section
Matthew Goddard – DTE, Environmental Strategies

Enclosure 1

Notice Planned Participation (NOPP) Contents Requirements

Facility Identification

Monroe Power Plant (MONPP) is located at 3500 East Front Street, Monroe, Michigan. MONPP consists of four B&W supercritical wall-fired boilers firing a blend of subbituminous coal, bituminous coal and petroleum coke and is rated for a maximum gross output of 3,280 MW. The units started commercial operation from 1971 to 1974. This cessation of coal NOPP will apply to only Unit 3 and Unit 4 at MONPP.

Expected Date of Coal Cessation

Since the release of the 2020 Rule, DTE has evaluated the feasibility of coal cessation on the units at MONPP. In November 2022, the Company filed the Integrated Resource Plan (November 2022 IRP) that proposes an accelerated retirement timeline for MONPP. Except for the factors identified below in the Notice of Change section, DTE submits this NOPP with a commitment to cease burning coal for Units 3 and 4 at MONPP by December 31, 2028 (pending Michigan Public Service Commission's (MPSC's) approval in the current contested case IRP)

Method for Cessation of Coal Burning Activities

DTE filed an Integrated Resource Plan (IRP) in 2019 that was approved by the MPSC on April 15, 2020. The 2019 IRP provided for planned operations at MONPP until 2040. DTE was initially scheduled to submit an updated IRP by September 2023 for the MPSC's review, but DTE accelerated the timeline and submitted a new IRP on November 3, 2022.

The November 2022 IRP provides a detailed analysis of DTE's long term generation plan, which includes retirement of MONPP Units 3 & 4 by 2028. DTE has submitted this NOPP to reflect the company's commitment to the new IRP. Upon receipt of a final order by the MPSC approving or denying the IRP, DTE will submit applicable documentation in the annual reports as required in 40 CFR 423.19(f)(3) to either withdraw the NOPP or update information submitted in this initial notice.

Regulatory Approval of Coal Cessation

This NOPP represents a formal submittal to a regulatory body regarding DTE's intentions to meet the 2020 Rule's cessation of coal compliance subcategory for MONPP. In the preamble of the 2020 Rule, EPA acknowledges that a company may submit a cessation of coal NOPP and may not receive regulatory approval of those actions until a later date.

DTE's November 2022 IRP was submitted to the MPSC and is currently awaiting approval. Therefore, DTE's current IRP approved in April of 2021 does not contain information set forth in this NOPP. If approved by the MPSC, the November 2022 IRP will qualify as the regulatory approval required by the 2020 Rule to qualify for the cessation of coal combustion compliance subcategory. Upon its approval, a copy of the November 2022 IRP will be submitted to EGLE to supplement this notice. Should the IRP not be approved as proposed, DTE will rescind or modify the NOPP accordingly.

In addition to an updated IRP, DTE will submit appropriate documentation pursuant to 40 CFR 423.19(f)(3) if changes to the NOPP are needed as a result of the IRP process.

Supporting Documentation of Coal Cessation Commitment

This NOPP represents the first document released by DTE regarding its intentions to utilize the 2020 Rule's cessation of coal combustion compliance subcategory at MONPP. More supporting documentation such as the November 2022 IRP and future rate cases will provide additional documentation to support this submittal and achieve compliance with ELG requirements.

Timeline for Achieving Coal Cessation

The table below presents an itemized timeline for achieving cessation of coal at MONPP Units 3 and 4. A timeline with milestones can be found as Enclosure 2.

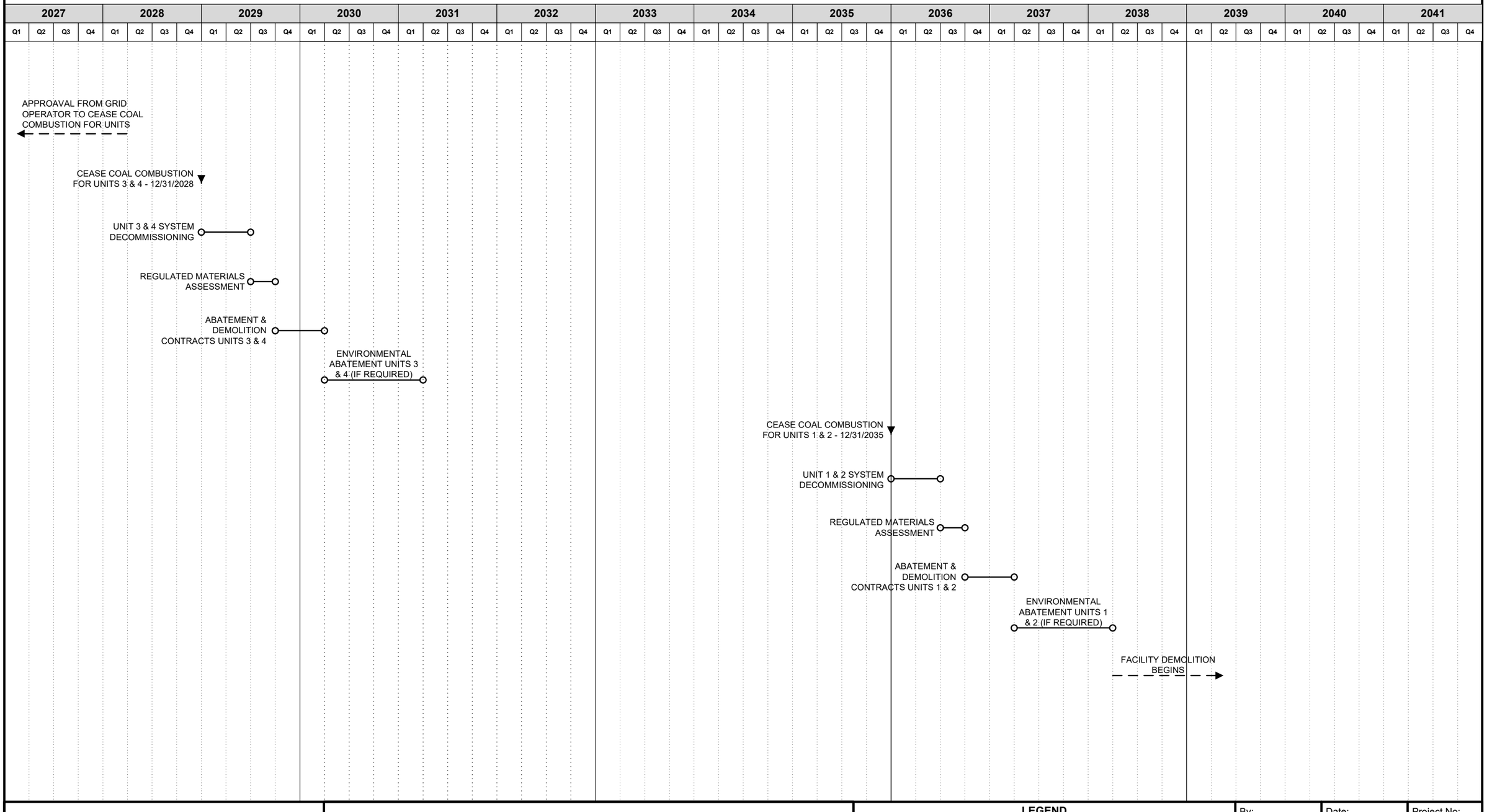
Action	Estimated Timeline (Months) or Target Date
	Unit Retirement
Submit IRP	November 3, 2022
Final approval of IRP	October 30, 2023 (est.)
Approval from grid operator to cease coal combustion	Expected 2024-2027
Cease Coal Operation	12/31/2028
System Decommissioning (steam system draining, evacuate hydrogen from steam turbine generator, ash cleaning, fuel/lubricating/hydraulic oil removal, transformer oil removal, etc. Coal pile and coal handling systems remain to support Units 1 and 2)	6
Regulated Materials Assessment	3
Specify, Bid, and Award: 1. Abatement and/or Demolition Contract(s)	6
Environmental Abatement (if required)	6-12
Demolition (Units 3 and 4 will likely retire and remain in place until all four units are demolished)	N/A

Notice of Change to Initial NOPP

The information presented in this NOPP represents the best information available to meet the requirements of the initial NOPP submittal. DTE has identified the following factors that could result in modifications of information submitted in this NOPP:

1. Integrated Resource Plans – An updated IRP was recently submitted to the MPSC and is pending approval. Changes to the November 2022 IRP as a result of the regulatory approval process may result in changes to this NOPP.
2. Other Regulatory Filings – The IRP will provide the plan by which DTE will provide affordable and reliable electricity to its customers. However, many of the projects that will be required to achieve compliance with ELG Rules will need to be approved within other future DTE regulatory filings, including electric rate cases. The outcome of future regulatory matters regarding future projects may result in modifications to this NOPP.
3. Regulatory Changes / Rule Modifications – On July 26, 2021, the EPA announced that it will initiate a new rulemaking to revise the 2020 Rule for certain wastewater discharge limits. Accordingly, the draft Rule was proposed by EPA on March 29, 2023. The proposed rulemaking or other potential future regulatory changes could impact DTE's ELG compliance strategy including the use of the VIP compliance subcategory and associated NOPP process.
4. Grid reliability, resource adequacy, and/or supply reliability challenges that would require a delay in retirement to address and maintain safe and reliable electric service for customers.
5. Other Factors to Be Determined – Other factors including, but not limited to, legal challenges of EPA's ELG rules or rulemakings conducted by future administrations.

The factors detailed above could result in changes to DTE's ELG compliance strategy and may result in modification of this NOPP. DTE will submit appropriate documentation pursuant to 40 CFR 423.19(h)(3) if changes to the NOPP or transition to other compliance options pursuant to 40 CFR 423.19(o) are needed.



BURNS McDONNELL

DTE MONROE – NOPP RETIREMENTS
TIMESCALE SUMMARY SCHEDULE

LEGEND

ACTIVITY

By:	Date:	Project No:
B. HANSEN	04/24/2023	133699
Dwg No: 133699-L1SCHED2		

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.1a

Respondent: J. Morren

Page: 1 of 1

Question: For each of the Monroe coal units, please provide the following information for each of the years 2017 through 2023 (or latest actual data available):

a. random outage factor (%)

Note: if the Company does not have unit-level information for a particular cost category, please provide the most disaggregated data available.

Answer: Please see table below for the actual random outage factor data (%) for Monroe Power Plant. Actual data for 2023 will be available in 2024.

Resource	2017	2018	2019	2020	2021	2022
Monroe 1	3.6	2.4	2.4	5.4	5.8	11.8
Monroe 2	7.5	5.0	2.8	6.2	7.1	4.6
Monroe 3	7.2	1.6	5.8	10.8	5.6	15.0
Monroe 4	7.6	8.2	11.4	7.4	7.2	27.7

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.2a

Respondent: J. Morren

Page: 1 of 1

Question: For each of the Monroe coal units, and each of the years 2023 through 2032 (or the latest year available), please provide the projected:

a. random outage factor (%)

Note: if the Company does not have unit-level information for a particular cost category, please provide the most disaggregated data available. For 2023 data, please separate and/or indicate actual and forecasted data where applicable.

Answer: Please see table below for the projected random outage factor data (%) from the Company's 2023 PSCR Plan, Case No. U-21259, which is based on historical performance :

Resource	2023	2024	2025	2026	2027
Monroe 1	3.5%	5.6%	4.6%	5.6%	4.1%
Monroe 2	5.8%	4.8%	5.8%	4.2%	5.0%
Monroe 3	9.4%	7.6%	10.4%	10.4%	10.4%
Monroe 4	14.8%	16.4%	12.1%	13.9%	16.4%

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.3cva

Respondent: J. Morren

Page: 1 of 1

Question: For each of Monroe Units 1, 2, 3, and 4, and for any common areas at the Monroe site:

c. Please identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028. Please provide this information in a spreadsheet format, with any formulas intact, and include the following information:

v. for projects that have expenditures in any of the years 2021-2025, please identify whether those expenditures would be avoidable if:

a) Monroe Units 3 and 4 retire in 2028

(This include projects that the Company is currently performing: if a project is already underway, but would have been avoidable under any of these retirement scenarios, please identify it.)

Answer: Please see my direct testimony and discovery response STDE-8.10a. Also, depending on the outcome of the Company's 2022 IRP and other considerations in the NOPP, the Company estimates $17.2 million of Bottom Ash Conversion (ELG) projects on Monroe Units 3 and 4 in 2024 might be avoidable.

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.3cvb

Respondent: J. Morren

Page: 1 of 1

Question: For each of Monroe Units 1, 2, 3, and 4, and for any common areas at the Monroe site:

c. Please identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028. Please provide this information in a spreadsheet format, with any formulas intact, and include the following information:

v. for projects that have expenditures in any of the years 2021-2025, please identify whether those expenditures would be avoidable if:

b) Monroe Units 1 and 2 retire in 2030

(This include projects that the Company is currently performing: if a project is already underway, but would have been avoidable under any of these retirement scenarios, please identify it.)

Answer: The Company has not performed the analysis requested.

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.3cvc

Respondent: J. Morren

Page: 1 of 1

Question: For each of Monroe Units 1, 2, 3, and 4, and for any common areas at the Monroe site:

c. Please identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028. Please provide this information in a spreadsheet format, with any formulas intact, and include the following information:

v. for projects that have expenditures in any of the years 2021-2025, please identify whether those expenditures would be avoidable if:

c) Monroe Units 1 and 2 retire in 2032

(This include projects that the Company is currently performing: if a project is already underway, but would have been avoidable under any of these retirement scenarios, please identify it.)

Answer: The Company has not performed the analysis requested.

Attachment: None.

MPSC Case No: U-21297

Requester: Staff

Question No.: STDE-8.10a

Respondent: J. Morren

Page: 1 of 1

Question: Please identify all capital projects under $1 million included in this rate case for Monroe 3 and Monroe 4 in the format of Exhibit A-12 Schedule B5.1 pages 4-7.

a. Of the projects identified above, please list the project, amount that DTE Electric believes is avoidable and unavoidable, and explain why it is avoidable/unavoidable if Monroe 3 and 4 retire in 2028.

Answer: Please see attachment labelled “U-21297 STDE-8.10a Monroe 3-4 Projects Less Than 1M”, which assumes the Company’s IRP PCA gains approval by late 2023 and Monroe Power Plant Units 3 and 4 retire in 2028.

Attachment: U-21297 STDE-8.10a Monroe 3-4 Projects Less Than 1M

MPSC Case No.: U-21297
Requestor: Staff
Question No.: STDE-8.10a
Respondent: J. Morren

Line No.	Facility	Calendar Year	Unit	High Level Breakdown	Description	Amount	Avoidable	Not Avoidable	Reason	PMP
1	Monroe without Larg	2024 (11 mo)	3	Reliability	Unit 3 Generator Relays	954,394	X		Maintain with O&M. Spare parts will become available when Units 1 and 2 upgrade	19128
2	Monroe without Larg	2024 (11 mo)	3	Reliability	Unit 3 North Boiler Feed Pump Turbine Condens	750,162	X		Expecting to be able to plug tubes, as needed, through 2028	12088
3	Monroe without Larg	2024 (11 mo)	3	Reliability	Unit 3 System Service Bus 63 Regulating Transf	714,881	X		Continue monitoring. Spare replacement is available in case of in-service failure.	10242
4	Monroe without Larg	2024 (11 mo)	3	Minor Environmental	Unit 3 FGD Asset Preservation	543,714		X	Work will be completed in 2023. High impact outage potential.	13758
5	Monroe without Larg	2024 (11 mo)	3	Minor Environmental	Unit 3 Multilin Relays	531,108		X	History of relay failures and these relays are no longer made.	17688
6	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 3 Feedwater Heater #6 South	886,363	X		Expecting to be able to plug tubes, as needed, through 2028	18958
7	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 4 Expansion Joints	838,513		X	Needed to mitigate high risk of failure and known issues	19305
8	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 4 South Boiler Feed Pump Turbine Conden	739,561	X		Expecting to be able to plug tubes, as needed, through 2028	14878
9	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 4 North Boiler Feed Pump Turbine Condens	735,494	X		Expecting to be able to plug tubes, as needed, through 2028	14877
10	Monroe without Larg	2024 (11 mo)	4	Minor Environmental	Unit 4 FGD Asset Preservation	697,363		X	Work will be completed in 2023. High impact outage potential.	13759
11	Monroe without Larg	2024 (11 mo)	4	Minor Environmental	Unit 4 SCR Cleaning System	495,960	X		Continue utilizing less effective sonic horns.	14549
12	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 4 North & South FGD Booster Fans & Hubs	495,960		X	Inspection-based. Overhaul recommended every 4-8 years. Last overhauled in 2016.	17180
13	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 4 Primary Heat Exchanger	494,602	X		Expecting to be able to plug tubes, as needed, through 2028	4855
14	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 4 Coal Mill Feeder Controls	290,000	X		Maintain with O&M. Utilize Unit 1 and 2 parts as spares.	18331
15	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 4 Combustion Coils	198,933	X		Expecting to repair leaks, as needed, through 2028.	18678
16	Monroe without Larg	2024 (11 mo)	4	Minor Environmental	Unit 4 FGD Inlet Expansion Joint	198,863		X	Safety hazard of leaking flue gas. Expansion joint has visible signs of failure.	18537
17	Monroe without Larg	2024 (11 mo)	4	Minor Environmental	Unit 4 SCR Inlet & Outlet Damper	197,073	X		Continue with flow restriction / derate risk	15344
18	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 4 DCS & Control Room	101,918	X		Can operate to 2028 without new controls	14921
19	Monroe without Larg	2024 (11 mo)	4	Minor Environmental	Unit 4 Multilin Relays	84,319		X	History of relay failures and these relays are no longer made.	17689
20	Monroe without Larg	2024 (11 mo)	4	Minor Environmental	Unit 4 SCR Catalyst Layer 2	73,441		X	Required to maintain environmental compliance	13722
21	Monroe without Larg	2024 (11 mo)	4	Reliability	Unit 4 Generator Relays	49,110	X		Maintain with O&M. Spare parts will become available when Units 1 and 2 upgrade	19129
22	**Total 2024 Projects**					**10,071,732**	**6,608,451**	**3,463,281**		

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-6.7a

Respondent: J. Morren

Page: 1 of 1

Question: Refer to discovery request MNSCDE-4.3c, which asked DTE to "identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028."

a. Please identify projects where 2023 spending would be avoidable if Monroe units 3&4 retired in 2028.

Answer: Given nearly half of the calendar year 2023 is in the past and nearly all the year will expire before orders are issued in this instant case and the Company's 2022 IRP, the Company does not anticipate 2023 expenditures identified in discovery response MNSCDE-4.3c being avoidable if Monroe Units 3&4 retired in 2028.

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-6.5aii

Respondent: J. Morren

Page: 1 of 1

Question: Refer to discovery request MNSCDE-4.3cvb, which requested the Company to identify capital projects at Monroe between 2021-28 that would be avoidable if Monroe 1&2 retired in 2030, and to the Company's response, which states: "The Company has not performed the analysis requested." Further refer to page 1 of Exhibit MEC-93 from Case No. U- 21193, which projects $56.5 million of capital spending in 2024 under the "M34 May 2028, M12 May 2030" scenario, and $58.3 million under the "M34 May 2028, M12 May 2035" scenario.

a. Please confirm that retiring Monroe 1&2 in 2030 rather than 2035 would result in $1.8 million of avoidable capital costs in 2024.

ii. If not confirmed, please reconcile your response with the projection in Exhibit MEC-93.

Answer: Not confirmed. The discovery question is intermingling an IRP modeling assumption with rate case-specific project details, analysis, and justification.

It is unknown whether retiring Monroe 1&2 in 2030 rather than 2035 will result in avoidable capital costs in 2024. The IRP projections utilize patterns and profiles to develop an overall reasonable long-term forecast, which may not come to fruition in the specific years identified.

Additionally, the difference being referenced in the question is associated with generic areas of capital and is not project specific. It is not possible to determine whether a project would or would not be completed under a postulated earlier retirement scenario.

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-6.7b

Respondent: J. Morren

Page: 1 of 1

Question: Refer to discovery request MNSCDE-4.3c, which asked DTE to "identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028."

b. Please identify projects where 2024 spending would be avoidable if Monroe units 1&2 retired in 2030.

Answer: The Company has not performed the analysis requested.

Attachment: None.

Monroe Capital Expenditures – Recommended Disallowances

Proposed Disallowances for Avoidable Capital Costs at Monroe

Project #	Monroe Unit	Description	2023 Disallowance amount	2024 Disallowance amount	Reason for disallowance
7067	3	Unit 3 Horizontal Reheater Tubes	$0	$2,797,471	Avoidable in 2024 per DTE filing
9516	4	Unit 4 Waterwall Tubes	$0	$2,496,608	
9517	3	Unit 3 Waterwall Tubes	$0	$6,499,997	
14924	3	Unit 3 DCS & Control Room	$0	$750,000	
15343	3	Unit 3 SCR Inlet & Outlet Dampers	$0	$1,765,401	
16707	3	Unit 3 Feedwater Heater #6 South	$0	$3,198,597	
18040	3	Unit 3 Expansion Joints	$0	$2,015,746	
18075	3	Unit 3 Economizer Tubes	$0	$2,800,185	
18330	3	Unit 3 Coal Mill Feeder Controls	$0	$1,100,000	
18552	3	Unit 3 SCR Cleaning System	$0	$2,447,047	
18677	3	Unit 3 Combustion Coils	$0	$1,249,720	
18852	3	Unit 3 Reheat Outlet Pendants	$0	$2,499,811	
19101	3	Unit 3 Coal Mill Classifiers	$1,953,683	$2,241,469	
19102	4	Unit 4 Coal Mill Classifiers	$0	$1,759,128	
15134 19356 19357 19358 19359	Common	Monroe Bottom Ash Conversion (ELG)	$0	$17,400,000	Avoidable in 2024 per DTE data responses
4855	4	Unit 4 Primary Heat Exchanger	$0	$494,602	
10242	3	Unit 3 System Service Bus 63 Regulating Transformer	$0	$714,881	
12088	3	Unit 3 North Boiler Feed Pump Turbine Condenser	$0	$750,162	
14549	4	Unit 4 SCR Cleaning System	$0	$495,960	
14877	4	Unit 4 North Boiler Feed Pump Turbine Condenser	$0	$735,494	
14878	4	Unit 4 South Boiler Feed Pump Turbine Condenser	$0	$739,561	
14921	4	Unit 4 DCS & Control Room	$0	$101,918	
15344	4	Unit 4 SCR Inlet & Outlet Damper	$0	$197,073	
18331	4	Unit 4 Coal Mill Feeder Controls	$0	$290,000	
18678	4	Unit 4 Combustion Coils	$0	$198,933	
18958	3	Unit 3 Feedwater Heater #6 South	$0	$886,363	
19128	3	Unit 3 Generator Relays	$0	$954,394	
19129	4	Unit 4 Generator Relays	$0	$49,110	
TOTAL AVOIDABLE			**$1,953,683**	**$57,629,631**	

Proposed Disallowances for Unsupported Capital Costs at Monroe

Project #	Monroe Unit	Description	2023 Disallowance amount	2024 Disallowance amount	Reason for disallowance
16667	1	Unit 1 Turning Gear & Bull Gear	$1,299,581	$0	No supporting documentation for any 2023 or 2024 spending
17180	4	Unit 4 North & South FGD Booster Fans & Hubs	$0	$495,960	
18095	3	Unit 3 IP Turbine Blades	$1,076,998	$0	
18851	1	Unit 1 Reheat Outlet Pendants	$6,407,001	$0	
18890	1	Unit 1 Main Steam Stop Valve	$1,061,842	$0	
19116	1	Unit 1 HP Turbine Blades	$6,162,443	$0	
19305	4	Unit 4 Expansion Joints	$0	$838,513	
9327	1	Unit 1 Waterwall Tubes Monroe	$1,129,013	$0	Unsupported excess spending in 2023
18041	1	Unit 1 Expansion Joints	$1,628,188	$0	
TOTAL MISSING DOCUMENTATION			**$18,765,066**	**$1,334,473**	

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.3ci

Respondent: J. Morren

Page: 1 of 1

Question: For each of Monroe Units 1, 2, 3, and 4, and for any common areas at the Monroe site:

c. Please identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028. Please provide this information in a spreadsheet format, with any formulas intact, and include the following information:

i. the unit and/or common area where such project was or would be performed;

(This include projects that the Company is currently performing: if a project is already underway, but would have been avoidable under any of these retirement scenarios, please identify it.)

Answer: Please see Exhibit A-12, Schedule B5.1 and the attachment labelled “U-21297 MNSCDE-4.3ci Monroe Capital Under 1M”. Please also see my workpapers.

O&M work does not follow the PMP process.

Attachment: U-21297 MNSCDE-4.3ci Monroe Capital Under 1M

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.3cii

Respondent: J. Morren

Page: 1 of 1

Question: For each of Monroe Units 1, 2, 3, and 4, and for any common areas at the Monroe site:

c. Please identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028. Please provide this information in a spreadsheet format, with any formulas intact, and include the following information:

ii. the PMP Project ID and project description;

(This include projects that the Company is currently performing: if a project is already underway, but would have been avoidable under any of these retirement scenarios, please identify it.)

Answer: Please see discovery response MNSCDE-4.3ci.

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.3ciii

Respondent: J. Morren

Page: 1 of 1

Question: For each of Monroe Units 1, 2, 3, and 4, and for any common areas at the Monroe site:

c. Please identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028. Please provide this information in a spreadsheet format, with any formulas intact, and include the following information:

iii. the actual or projected cost for each of the years 2021-2028;

(This include projects that the Company is currently performing: if a project is already underway, but would have been avoidable under any of these retirement scenarios, please identify it.)

Answer: Please see discovery response MNSCDE-4.3ci.

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.3civ

Respondent: J. Morren

Page: 1 of 1

Question: For each of Monroe Units 1, 2, 3, and 4, and for any common areas at the Monroe site:

c. Please identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028. Please provide this information in a spreadsheet format, with any formulas intact, and include the following information:

iv. the project's Investment Reason category (e.g., reliability, safety, environmental, etc.)

(This include projects that the Company is currently performing: if a project is already underway, but would have been avoidable under any of these retirement scenarios, please identify it.)

Answer: Please see discovery response MNSCDE-4.3ci.

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-4.3di

Respondent: J. Morren

Page: 1 of 1

Question: For each of Monroe Units 1, 2, 3, and 4, and for any common areas at the Monroe site:

d. For each capital and O&M project identified in subpart c, please:

i. Produce any project charter, project scope document, economic analysis, and/or other written evaluation of the costs and benefits of such project. (If the supporting documentation for a particular project was already provided with DTE's initial filing, please state that in your response.)

Answer: Please see discovery response MNSCDE-4.3ci.

Attachment: None.

MPSC Case No: U-21297

Requester: MNSC

Question No.: MNSCDE-6.6ai

Respondent: J. Morren

Page: 1 of 1

Question: Refer to discovery requests MNSCDE-4.3c, which asked DTE to "identify each capital and O&M project with costs greater than $100,000 that was performed, is planned, or is under consideration for any of the years 2021 through 2028"; and MNSCDE-4.3di, which asked DTE to produce, for each capital and O&M project identified, "any project charter, project scope document, economic analysis, and/or other written evaluation of the costs and benefits of such project." Further refer to your responses to those requests.

a. Please confirm that any project charters, scope documents, economic analyses, or other supporting documents for 2023 and 2024 capital expenditures >$100,000 at Monroe were either (i) provided with Mr. Morren's workpapers in the Company's initial filing, or (ii) produced in response to Staff request STDE-8.9.

i. If not confirmed, please supplement your response to MNSCDE-4.3di by providing the requested information.

Answer: Confirmed, to the best of my knowledge, the information requested has been provided.

Attachment: None.

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 its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.	U-21297

PROOF OF SERVICE

On the date below, an electronic copy of **Direct Testimony and Exhibits of Tyler Comings on behalf of Michigan Environmental Council, Natural Resources Defense Council, Sierra Club, and Citizens Utility Board of Michigan (Exhibit MEC-9 through MEC-16)** was served on the following:

Name/Party	E-mail Address
Administrative Law Judge Hon. Sharon Feldman	feldmans@michigan.gov
DTE Electric Company Jon P. Christinidis Paula Johnson-Bacon Andrea E. Hayden	mpscfilings@dteenergy.com jon.christindis@dteenergy.com paula.bacon@dteenergy.com andrea.hayden@dteenergy.com
Michigan Attorney General Joel King Amanda Churchill Tracy Jane Andrews Sebastian Coppola	ag-enra-spec-lit@michigan.gov kingj38@michigan.gov achurchill1@michigan.gov tjandrews@envlaw.com sebcoppola@corplytics.com
Michigan Public Service Commission Staff Daniel E. Sonneveldt Monica M. Stephens Anna B. Stirling Lori Mayabb	sonneveldtd@michigan.gov stephensm11@michigan.gov stirlinga1@michigan.gov mayabbl1@michigan.gov
Gerdau MacSteel, Inc. Jennifer U. Heston	jheston@fraserlawfirm.com
Michigan Cable Telecommunications Association Sean P. Gallagher Jordyn DuPuis	sgallagher@fraserlawfirm.com jdupuis@fraserlawfirm.com
International Transmission Company Richard J. Aaron Hannah E. Buzolits Olivia R.C.A. Flower Lisa Agrimonti	mpscfilings@dykema.com raaron@dykema.com hbuzolits@dykema.com oflower@dykema.com lagrimonti@fredlaw.com

Michigan Municipal Association for Utility Issues and City of Ann Arbor Valerie J.M. Brader Valerie Jackson	ecf@rivenoaklaw.com valerie@rivenoaklaw.com valeriejackson@rivenoaklaw.com
Residential Customer Group and Great Lakes Renewable Energy Association Don L. Keskey Brian W. Coyer	adminasst@publiclawresourcecenter.com dkeskey@publiclawresourcecenter.com bwcoyer@publiclawresourcecenter.com
Walmart Inc. Melissa M. Horne	mhorne@hcc-law.com
EVgo Services LLC Nikhil Vijaykar Alicia Zaloga Brian R. Gallagher Sara Rafalson	nvijaykar@keyesfox.com azaloga@keyesfox.com bgallagher@moblofleming.com sara.rafalson@evgo.com
Association of Businesses Advocating Tariff Equity Stephen A. Campbell Michael J. Pattwell James Dauphinais Jessica York	scampbell@clarkhill.com mpattwell@clarkhill.com jdauphinais@consultbai.com jyork@consultbai.com
The Kroger Company Kurt Boehm Jody Kyler Cohn	kboehm@bkllawfirm.com jkylercohn@bkllawfirm.com
Soulardarity & We Want Green, Too Mark Templeton Amanda Urban	Aelc_mpsc@lawclinic.uchicago.edu templeton@uchicago.edu t-9aurba@lawclinic.uchicago.edu
ChargePoint, Energy Michigan, Bloom Energy, Foundry Association of Michigan, Michigan Energy Innovation Business Council, Institute for Energy Innovation, and Advanced Energy United Laura Chappelle Timothy Lundgren Justin Ooms Dr. Laura S. Sherman Jason W. Hoyle Justin Barnes	lchappelle@potomaclaw.com tlundgren@potomaclaw.com jooms@potomaclaw.com laura@mieibc.org
Environmental Law & Policy Center, The Ecology Center, VoteSolar, and Union of Concerned Scientists, Inc. Nicholas J. Schroeck Daniel H.B. Abrams William Kenworthy A Estrada	schroenj@udmercy.edu dabrams@elpc.org will@votesolar.org aestrada@elpc.org
Utility Workers Union of America, Local 223 Benjamin L. King	bking@michworkerlaw.com

[signature page to follow]

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

OLSON, BZDOK & HOWARD, P.C.
Counsel for MEC, NRDC, SC & CUB

Date: June 13, 2023

By: Digitally signed by Breanna Thomas
DN: cn=Breanna Thomas, o=Olson, Bzdok & Howard, PC, email=breanna@envlaw.com, c=US
Date: 2023.06.13 10:54:30 -04'00'

Breanna Thomas, Legal Assistant
420 E. Front St.
Traverse City, MI 49686
Phone: 231/946-0044
Email: breanna@envlaw.com