# OLSON, BZDOK & HOWARD

December 21, 2018

Ms. Kavita Kale Michigan Public Service Commission 7109 W. Saginaw Hwy. P. O. Box 30221 Lansing, MI 48909 Via E-Filing

RE: MPSC Case No. U-20069

Dear Ms. Kale:

The following is attached for paperless electronic filing:

Direct Testimony of Avi Allison on behalf of the Michigan Environmental Council and Exhibits MEC-1 through MEC-20

Proof of Service

Sincerely,

Christopher M. Bzdok chris@envlaw.com

xc: Parties to Case No. U-20069 James Clift, MEC (james@environmentalcouncil.org)

# STATE OF MICHIGAN MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of **DTE ELECTRIC COMPANY** for reconciliation of its of power supply cost recovery plan (Case No. U-18143) for the 12-month period ending December 31, 2017 L. Wallace

## DIRECT TESTIMONY OF AVI ALLISON

## **ON BEHALF OF**

## MICHIGAN ENVIRONMENTAL COUNCIL

December 21, 2018

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### 1 **1. INTRODUCTION AND PURPOSE OF TESTIMONY**

2	Q	Please state your name and occupation.
3	Α	My name is Avi Allison. I am a Senior Associate with Synapse Energy
4		Economics, Inc.
5	Q	Please describe Synapse Energy Economics.
6	Α	Synapse Energy Economics is a research and consulting firm specializing in
7		electricity industry regulation, planning, and analysis. Synapse works for a
8		variety of clients such as consumer advocates, regulatory commissions, state and
9		federal agencies, and environmental advocates.
10	Q	On whose behalf are you testifying in this case?
11	А	I am testifying on behalf of Michigan Environmental Council.
12	Q	Have you testified before the Michigan Public Service Commission before?
13	Α	Yes. I provided direct testimony before the Michigan Public Service
14		Commission in the following cases:
15		• MPSC Case No. U-18419 regarding the application of DTE Electric
16		Company (DTE) for a Certificate of Necessity to construct a natural gas
17		combined cycle facility.
18		• MPSC Case No. U-18403 regarding DTE's application for authority to
19		implement its 2018 Power Supply Cost Recovery Plan.
20		• MPSC Case No. U-20162 regarding DTE's 2018 rate case application.
21	Q	Please summarize your work experience and educational background.
22	Α	At Synapse, I provide consulting and research services on a wide range of issues
23		related to the electric industry. My areas of focus have included resource
24		planning, economic impact analysis, rate design, and regional capacity markets. I
25		have provided consulting services for a variety of public sector and public

1		interest clients including the U.S. Environmental Protection Agency, the
2		Michigan Public Service Commission, the Michigan Agency for Energy, the
3		New York State Energy Research and Development Authority, the Rhode Island
4		Office of Energy Resources, the Efficiency Maine Trust, the California
5		Department of Justice, Consumers Union, Sierra Club, Natural Resources
6		Defense Council, and other organizations. I have reviewed and commented on
7		coal economics and resource planning analyses as part of docketed proceedings
8		in Michigan, Texas, Indiana, Arizona, Idaho, Oregon, Washington, and
9		Wisconsin.
10		I hold a Master of Environmental Management from Yale University and a
11		Bachelor of Arts in economics from Columbia University. My resume is
12		included as Exhibit MEC-1.
13	Q	What is the purpose of your testimony?
14	A	The primary purpose of my testimony is to assess the 2017 economic
15		performance of the Tier 2 coal units owned by DTE. These units include River
16		Rouge Unit 3; St. Clair Units 1, 2, 3, 6, and 7; and Trenton Channel Unit 9. I also
17		evaluate the extent to which DTE operated these units economically in 2017.
18	Q	What documents do you rely upon in your analysis, and for your findings
19		and observations?
20	Α	My analysis relies primarily upon discovery responses provided by DTE in this
21		proceeding. My analysis also relies to a limited extent on external information
22		regarding historical Midcontinent Independent System Operator (MISO)
23		capacity market clearing prices.
24	Q	Please summarize your findings.
25	Α	My findings include the following:
26		• Each of DTE's Tier 2 coal plants lost money relative to the market in
27		2017. My analysis indicates that each plant lost more than \$15 million in
28		2017, and that altogether the Tier 2 plants lost \$74 million.

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1		• Each of DTE's Tier 2 coal plants incurred net operational losses in 2017.
2		That is, each plant incurred greater fuel and operations and maintenance
3		(O&M) costs than it earned in energy and ancillary revenues. I find that
4		each plant incurred net operational losses of at least \$10 million in 2017,
5		and that altogether the Tier 2 plants incurred net operational losses of \$42
6		million.
7		• DTE's process for deciding whether to run its coal units is biased in favor
8		of keeping its units online and is prone to lead to the uneconomic
9		operation of its coal units.
10		• There were several instances in 2017 in which DTE did not properly carry
11		out its process for deciding whether to run its coal units and unnecessarily
12		incurred operational losses as a result.
13	2.	ALL DTE TIER 2 COAL PLANTS LOST MONEY RELATIVE TO THE MARKET IN
14		<u>2017</u>
15	Q	Please summarize your findings regarding the overall economic performance
16		of DTE's Tier 2 coal plants in 2017.
17	A	Using data provided by DTE, I calculated that each of DTE's Tier 2 coal plants
18		incurred net losses relative to the market in 2017. Table 1 indicates that each of
19		the Tier 2 coal plants lost more than \$15 million relative to the market in 2017. It
20		also shows that altogether these plants lost \$74 million.

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Table 1. 2017 Net Revenues of DTE Tier 2 Coal Plants

Plant	Net Revenues (\$Million)
River Rouge	(\$16)
St. Clair	(\$42)
Trenton Channel	(\$16)
Total	(\$74)

1	Q	Describe how you arrived at the values in Table 1.
2	Α	The net revenue values in Table 1 are based on DTE data related to each Tier 2
3		plant's 2017 energy revenues, ancillary revenues, capacity revenues, fuel costs,
4		O&M costs, routine capital costs, and non-routine capital costs. DTE directly
5		provided 2017 energy revenues and ancillary revenues for each coal unit that
6		remains in operation. <sup>1</sup> To calculate each plant's capacity market revenues, I
7		multiplied each plant's historical annual unforced capacity by the relevant MISO
8		Planning Resource Auction (PRA) clearing price. <sup>2</sup> I calendarized capacity
9		market revenues to account for the discrepancy between the MISO planning
10		year, which runs from June through May, and the calendar year.
11		DTE directly provided historical fuel costs for each of its coal plants, though it
12		did not provide fuel costs at a unit-specific level. <sup>3</sup> Similarly, DTE provided
13		plant-specific 2017 O&M, routine capital, and ongoing capital costs for each of
14		its coal plants. <sup>4</sup> Some capital costs identified by DTE were not associated with a
15		particular coal plant. <sup>5</sup> My analysis ignored these costs.
16		I subtracted fuel, O&M, and capital costs from each plant's energy, ancillary,
17		and capacity revenues to arrive at annual net revenues. Since DTE provided most
18		cost categories at the plant level, I was not able to conduct this analysis at the
19		more granular, unit-specific level for the St. Clair units. <sup>6</sup>

Exhibit MEC-2: Attachment "MECDE-1.2e.xlsx" to DTE Discovery Response No. MECDE-1.2e; Exhibit MEC-3: Attachment "MECDE-1.2g.xlsx" to DTE Discovery Response No. MECDE-1.2g.

<sup>&</sup>lt;sup>2</sup> Exhibit MEC-4: Attachment "MECDE-1.2b.xlsx" to DTE Discovery Response No. MECDE-1.2b; Exhibit MEC-5: MISO 2016/2017 Planning Resource Auction Results; Exhibit MEC-6: MISO 2017/2018 Planning Resource Auction Results.

<sup>&</sup>lt;sup>3</sup> Exhibit MEC-7: Attachment "U-20069 DMM-1.11 2017 Fuel Workbook.pdf" to DTE Audit Response DMM-1.11; Exhibit MEC-8: DTE Discovery Response No. MECDE-1.2h.

<sup>&</sup>lt;sup>4</sup> Exhibit MEC-9: Attachment "MECDE-1.2. i j k.xlsx" to DTE Discovery Response No. MECDE-1.2i.

<sup>&</sup>lt;sup>5</sup> Such cost categories include "Fleet Support Services" and "DSI/ACI Control Projects."

<sup>&</sup>lt;sup>6</sup> Since the River Rouge plant and the Trenton Channel plant each have only one remaining unit, there is no difference between a plant-specific and unit-specific analysis for these plants.

# 1 3. All DTE TIER 2 COAL PLANTS LIKELY INCURRED NET OPERATIONAL LOSSES 2 IN 2017

# Q Please summarize your findings regarding the operational economic performance of the Tier 2 coal units in 2017.

- 5 A Using data provided by DTE, I calculated that each of DTE's Tier 2 coal plants 6 incurred net operational losses in 2017. Table 2 indicates that each of the Tier 2 7 coal plants incurred net operational losses of at least \$10 million in 2017. It also 8 shows that altogether these plants incurred net operational losses of \$42 million.
- 9 Table 2. 2017 Net Operational Revenues of DTE Tier 2 Coal Plants

Plant	Net Operational Revenues (\$Million)
River Rouge	(\$12)
St. Clair	(\$20)
Trenton Channel	(\$10)
Total	(\$42)

10	Q	Describe how you arrived at the values in Table 2.
11	Α	I arrived at the net operational revenue values in Table 2 by subtracting each Tier
12		2 plant's 2017 O&M costs and fuel costs from its energy revenues and ancillary
13		revenues. Each of these costs and revenues were directly provided by DTE, as
14		described above.
15	Q	What are the implications of the results of this net operational revenue
16		analysis?
17	Α	These results suggest that DTE is not operating its coal plants economically. Not
18		only are these plants not earning enough operational revenues to recover their
19		capital costs, they are not even earning enough revenues to recover their
20		operational costs
20		operational costs.

1	Q	Does this analysis distinguish between variable O&M and fixed O&M costs?
2	Α	No. DTE has repeatedly indicated that it is unable to distinguish between
3		historical variable and fixed O&M costs. <sup>7</sup> My analysis of net operational
4		revenues therefore includes all O&M costs identified by DTE as having been
5		incurred by the Tier 2 units in 2017. I note, however, that more granular O&M
6		cost data, including the separation of variable and fixed components of O&M
7		costs, would provide a clearer picture of the extent and nature of the operational
8		losses incurred by the Tier 2 units. I further note that it is odd that DTE does not
9		separately track variable O&M costs, given that it evidently considers these costs
10		when making decisions related to the dispatch of its coal units. <sup>8</sup>
11	4.	DTE'S BIASED DECISION-MAKING PROCESS HAS RESULTED IN THE
12		
		UNECONOMIC OPERATION OF ITS COAL PLANTS
13	Q	<b>UNECONOMIC OPERATION OF ITS COAL PLANTS</b> Please provide a summary of this section.
13 14	Q A	UNECONOMIC OPERATION OF ITS COAL PLANTS Please provide a summary of this section. In this section, I discuss some of the mechanics underlying the net operational
13 14 15	Q A	UNECONOMIC OPERATION OF ITS COAL PLANTS Please provide a summary of this section. In this section, I discuss some of the mechanics underlying the net operational losses identified in Section 3. In particular, I explain how DTE's operational
13 14 15 16	Q A	<ul> <li><u>UNECONOMIC OPERATION OF ITS COAL PLANTS</u></li> <li>Please provide a summary of this section.</li> <li>In this section, I discuss some of the mechanics underlying the net operational losses identified in Section 3. In particular, I explain how DTE's operational decision-making system is biased in favor of using its coal plants to generate</li> </ul>
13 14 15 16 17	Q A	<ul> <li><u>UNECONOMIC OPERATION OF ITS COAL PLANTS</u></li> <li>Please provide a summary of this section.</li> <li>In this section, I discuss some of the mechanics underlying the net operational losses identified in Section 3. In particular, I explain how DTE's operational decision-making system is biased in favor of using its coal plants to generate energy, even when doing so is more costly than serving DTE's load with energy</li> </ul>
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- 20 one of its units offline, but DTE did not do so and incurred operational losses as
  21 a result.
- Q How does DTE typically operate its coal units?
  A DTE typically operates its coal units as "must-run" generation resources. That is,
  DTE decides in advance that it is going to operate its coal units at least up to
  their minimum operational level, regardless of market energy prices and other

<sup>&</sup>lt;sup>7</sup> Exhibit MEC-9: DTE Discovery Response No. MECDE-1.2i; Exhibit MEC-10: DTE Discovery Response No. MECDE-3.1.

<sup>&</sup>lt;sup>8</sup> Exhibit MEC-11: DTE Discovery Response No. MECDE-3.2.

1		economic factors. In 2017, each of DTE's coal units was assigned a commitment
2		status of "must run" in more than 95 percent of the hours in which it was not on
3		outage. <sup>9</sup> All units other than River Rouge Unit 3 and Trenton Channel Unit 9
4		were designated as "must run" in more than 99 percent of the hours in which
5		they were not on outage.
6	Q	Does DTE ever decide to take its coal units offline for economic reasons?
7	Α	Yes. DTE has indicated that it took a coal unit offline based on an economic
8		analysis on five separate occasions in 2017. <sup>10</sup> These five occasions really
9		encompass two periods when DTE decided to take a unit offline and keep it
10		offline for economic reasons: first with Trenton Channel Unit 9 in February 2017
11		and then with River Rouge Unit 3 in August 2017.
12	Q	How does DTE decide whether and when to take its coal units offline for
13		economic reasons?
14	Α	My understanding is that DTE's decisions regarding whether and when to take a
15		coal unit offline for economic reasons rely largely on Economic Reserve &
16		Cycling Opportunities reports regularly published by the Company. <sup>11</sup> DTE
17		published a version of this report on most, but not all, days in 2017. <sup>12</sup> In these
18		reports, DTE forecasts the daily energy margins, or net operational revenues, it
19		will earn by operating each of its coal units over the subsequent two-week
20		period. If these forecasts indicate substantially negative margins in the near term,
21		DTE considers taking that unit offline. Specifically, if DTE's two-week forecasts
22		indicate that a unit will incur operational losses that exceed the start-up costs
23		associated with cycling the unit off and on, then DTE considers taking that unit
24		offline. In addition, DTE considers extending a planned unit outage if it finds

<sup>&</sup>lt;sup>9</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d.

<sup>&</sup>lt;sup>10</sup> Exhibit MEC-13: DTE Discovery Response No. STDE-1.7a.

<sup>&</sup>lt;sup>11</sup> Exhibit MEC-14: DTE Discovery Response No. MECDE-1.4.

<sup>&</sup>lt;sup>12</sup> Exhibit MEC-14: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4.

1		that a unit is forecasted to incur negative margins in the days immediately
2		preceding or succeeding the planned outage.
3	Q	Are there biases built into DTE's process for deciding whether to take a unit
4		offline for economic reasons?
5	Α	Yes. Overall, DTE's process appears to be biased in favor of keeping its coal
6		units online. Some of the ways in which this bias is maintained include the
7		following:
8		• The default plan is to keep the units online. That is, unless DTE's latest
9		forecast provides clear and convincing evidence that a unit will incur
10		substantial operational losses in the near term, that unit is kept online.
11		• A decision to take a unit offline is made only based off of 13 days of
12		forecasted margins. This means that even if a unit is expected to lose
13		money every day for the rest of the year, if the aggregate forecasted losses
14		over the next 13 days are less than expected unit startup costs, DTE will
15		likely keep the unit online. For example, if a unit is forecasted to lose
16		\$10,000 a day for the next several months but has start-up costs of
17		\$140,000, DTE's process would indicate that the unit should remain
18		online, even though continuing to operate the unit could ultimately result
19		in net losses of millions of dollars.
20		• DTE does not appear to apply the same burden of proof for bringing a unit
21		back online as it does for taking a unit offline. As mentioned previously,
22		DTE generally only considers taking a unit offline for economic reasons
23		when it forecasts that the savings from doing so will exceed the unit's
24		startup costs. However, DTE does not appear to require that its forecasts
25		indicate positive net operational revenues in excess of startup costs to
26		justify bringing a unit back online.
27		Fundamentally, DTE's process reflects a baseline presumption that DTE's coal
28		units are economic to operate. This presumption might have made sense in the
29		past, when coal units tended to have low operational costs relative to other

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resources on the electric grid. But in today's era of low gas prices and increasing
 penetrations of zero-marginal-cost renewables, such a presumption of economic
 operation is not reasonable, particularly for DTE's less efficient Tier 2 units.

# 4 Q Have you conducted any analyses of the frequency with which DTE's Tier 2 5 units operate at a loss?

Yes. I combined 2017 hourly generation and locational marginal price (LMP) 6 А data for each of DTE's Tier 2 coal units with average annual fuel cost data for 7 each coal plant and monthly coal unit heat rates.<sup>13</sup> I used this data to estimate the 8 percentage of hours in which each Tier 2 unit operated despite its fuel costs 9 exceeding the LMP it received. Figure 1 summarizes the results of this analysis. I 10 estimate that each Tier 2 unit incurred greater fuel costs than it earned in energy 11 revenues in more than 25 percent of the hours in which it operated in 2017. I 12 further find that River Rouge Unit 3 and St. Clair Units 1, 2, 3, and 4 each 13 incurred greater fuel costs than they earned in energy revenues in more than 45 14 percent of the hours in which they operated in 2017. 15

# 16Figure 1. Percent of 2017 Operational Hours Where Estimated Fuel Costs Were17Greater Than LMP



<sup>13</sup> Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a; Exhibit MEC-7: Attachment "U-20069 DMM-1.11 2017 Fuel Workbook.pdf" to DTE Audit Response DMM-1.11; Exhibit MEC-16: Attachment "MECDE-3.5 Coal Unit Monthly Heat Rate 2017.xlsx" to DTE Discovery Response No. MECDE-3.5.

1	As an assessment of uneconomic operation, this is an inherently limited analysis,
2	as it uses average annual fuel costs and does not account for operational costs
3	other than fuel costs. These limitations are primarily a result of DTE refusing to
4	provide any form of variable production cost data. <sup>14</sup> Nonetheless, this analysis
5	provides a sense of the magnitude of the economic challenge faced by DTE's
6	Tier 2 coal units. For these units, economic operational decision-making requires
7	careful analysis of whether keeping the units online through hours with low
8	energy prices is justified by the higher, peak energy prices that the units will be
9	able to take advantage of when online.

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# Q Were DTE's 2017 operational decisions consistent with the Company's construct for determining whether to designate a unit as must-run?

A No, at least not entirely. In reviewing DTE's 2017 generation data, commitment status data, and Economic Reserve & Cycling Opportunities reports, I found a series of notable examples. In these examples, DTE either ignored the results of its reports or did not publish a report when it should have, and therefore decided to operate a unit when it should not have. These decisions in turn led to unnecessary operational losses that DTE seeks to pass through to ratepayers via proceedings such as this one.

# Q Please provide examples of instances where DTE made unjustified decisions to keep a coal unit online and incurred net operational losses as a result. A The examples I have identified include the following:

 Trenton Channel Unit 9 operations in January and February 2017. DTE data indicates that Trenton Channel Unit 9 went on outage from midday January 27 through mid-day January 28.<sup>15</sup> An Economic Reserve & Cycling Opportunities report published on January 27 indicated that

<sup>&</sup>lt;sup>14</sup> Exhibit MEC-10: DTE Discovery Response No. MECDE-3.1.

<sup>&</sup>lt;sup>15</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d. DTE generation data suggests that Trenton Channel Unit 9 resumed operations around the first hour of January 28. Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

1	Trenton Channel would incur operational losses from generating on
2	January 28 and January 29. <sup>16</sup> I would expect that this report should have
3	led DTE to wait to resume operations at Trenton Channel Unit 9 until at
4	least January 30. Instead, Trenton Channel Unit 9 resumed operations on
5	January 28.17 DTE did not publish Economic Reserve & Cycling
6	Opportunities reports on January 29 or January 30, but the next several
7	reports it did publish continued to indicate near-term losses from operating
8	Trenton Channel Unit 9.18 In fact, every report published between
9	February 3 and February 15 showed Trenton Channel Unit 9 incurring
10	aggregate operational losses over the course of the respective two-week
11	forecast period. <sup>19</sup> Finally, on February 16, DTE published a report in
12	which it identified an opportunity to save money by extending a planned
13	outage and taking Trenton Channel Unit 9 offline for economic reasons
14	starting February 18. <sup>20</sup> DTE did ultimately follow through on this
15	opportunity, taking the unit offline on February 18. <sup>21</sup> However, if DTE
16	had not automatically brought Trenton Channel Unit 9 back online on
17	January 28 and had instead continued to pay attention to its economic
18	reserve reports, it likely would have never brought the unit online at all
19	between the outage that ended on January 28 and the one that began on
20	February 18. Using data from DTE's economic reserve reports, I estimate
21	that the decision to run Trenton Channel Unit 9 during this period resulted

<sup>&</sup>lt;sup>16</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, p. 31.

<sup>&</sup>lt;sup>17</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

<sup>&</sup>lt;sup>18</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 33-41.

<sup>&</sup>lt;sup>19</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 41-57.

<sup>&</sup>lt;sup>20</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, p. 59.

<sup>&</sup>lt;sup>21</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

1	in net losses of more than \$310,000. This includes more than \$180,000 in
2	net negative margins and nearly \$130,000 in unnecessary startup costs.
3	• <b>River Rouge Unit 3 operations in February 2017.</b> River Rouge Unit 3
4	entered an outage on February 10. <sup>22</sup> That same day DTE published a
5	report indicating that River Rouge Unit 3 would incur losses by operating
6	on February 11 and February 12. <sup>23</sup> This report should have led DTE to
7	keep the unit offline through at least February 12. Instead, DTE initially
8	started up River Rouge Unit 3 for a brief period on February 11, and
9	subsequently resumed full-scale operations on February 12.24 I estimate
10	that this unnecessary startup on February 11 and the uneconomic
11	operations on February 12 resulted in net losses of more than \$150,000.
12	Almost as concerning as the losses themselves is DTE's explanation for its
13	decision-making in this instance. DTE stated that it did not identify an
14	economic opportunity to extend the outage of River Rouge Unit 3 because
15	the February 10 report was completed prior to the outage being entered in
16	its software systems and the subsequent report was not published until the
17	outage was complete. <sup>25</sup> This is a weak excuse. It suggests that DTE did
18	not even bother to consult its latest economic forecasts when deciding to
19	resume operations at River Rouge Unit 3 on February 11; it brought the
20	unit back online as a matter of course, without regard for economics.
21	• River Rouge Unit 3 operations in April 2017. River Rouge 3 went on an
22	extended outage from April 28 through May 21. <sup>26</sup> DTE's exhibits indicate

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<sup>&</sup>lt;sup>22</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

<sup>&</sup>lt;sup>23</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, p. 51.

<sup>&</sup>lt;sup>24</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

<sup>&</sup>lt;sup>25</sup> Exhibit MEC-18: DTE Discovery Response No. MECDE-2.6a.

<sup>&</sup>lt;sup>26</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

1	that this was a planned outage, foreseeable in advance. <sup>27</sup> Economic
2	Reserve & Cycling Opportunities reports published by DTE on April 18
3	and April 19 indicated that DTE would incur losses over the period from
4	April 20 through April 27 if the unit were online, and that DTE would
5	therefore save money by beginning the planned outage earlier, on April
6	20. <sup>28</sup> Subsequent reports continued to indicate that DTE would reduce net
7	costs by beginning the outage early, but no outage opportunity was
8	formally identified. <sup>29</sup> Instead, DTE continued to operate River Rouge Unit
9	3 in must-run mode until April 28. <sup>30</sup> I estimate that this decision resulted
10	in DTE incurring unnecessary net costs of about \$22,000. In this case,
11	DTE said that no outage extension opportunity was identified because its
12	report tool "had a broken formula" during the relevant timeframe. <sup>31</sup>
13	However, in discovery DTE maintained that due to "forecast uncertainty"
14	it "would likely have decided to keep River Rouge online" even if the
15	outage extension opportunity was identified in its report. <sup>32</sup> This line of
16	thinking is indicative of DTE's bias toward keeping its coal units online.
17 •	River Rouge Unit 3 operations in late May through early June 2017.
18	DTE ended the extended planned spring outage for River Rouge Unit 3 by

bringing the unit back online on May 21.<sup>33</sup> This decision went against the
 findings of DTE's four most recent Economic Reserve & Cycling
 Opportunities reports, all of which showed losses from operating on May

<sup>32</sup> Id.

<sup>&</sup>lt;sup>27</sup> DTE Exhibit A-3, line 18.

<sup>&</sup>lt;sup>28</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 137-139.

<sup>&</sup>lt;sup>29</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 143-145.

<sup>&</sup>lt;sup>30</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

<sup>&</sup>lt;sup>31</sup> Exhibit MEC-19: DTE Discovery Response No. MECDE-4.4c.

<sup>&</sup>lt;sup>33</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

1	21 and two of which explicitly identified an outage extension opportunity
2	for May 21.34 Subsequently, River Rouge Unit 3 tripped offline on May
3	22 and was promptly restarted. <sup>35</sup> The most recent report as of the time of
4	the re-start may have justified this decision, but that report was three days
5	old. <sup>36</sup> The next report, issued on May 22, indicated losses from operating
6	River Rouge Unit 3 on May 22. <sup>37</sup> There was then another long delay
7	between reports, but the next one issued, on May 26, again showed near-
8	term losses from operating River Rouge Unit 3. <sup>38</sup> Every report issued from
9	May 26 through June 9 continued to show negative margins in the near
10	term. <sup>39</sup> If DTE had regularly published and paid attention to Economic
11	Reserve & Cycling Opportunities reports over this period, it may have
12	extended the April outage all the way through May and into mid-June. I
13	estimate that by re-starting operations on May 21 rather than keeping
14	River Rouge Unit 3 offline through June 10, DTE incurred unnecessary
15	net losses of approximately \$250,000.

- River Rouge Unit 3 operations in late June through early July 2017.
- 17River Rouge Unit 3 was on outage from June 19 through June 29.40 The18three reports leading up to the end of the outage all indicated savings from19extending the outage through July 2.41 DTE ignored these reports,

16

- <sup>38</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, p. 189.
- <sup>39</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 191-205.
- <sup>40</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Attachment "STDE-1.6.xlsx" to DTE Discovery Response No. STDE-1.6.
- <sup>41</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 229-233.

<sup>&</sup>lt;sup>34</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 179-185.

<sup>&</sup>lt;sup>35</sup> Exhibit MEC-20: DTE Discovery Response No. MECDE-2.7a.

<sup>&</sup>lt;sup>36</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, p. 185.

<sup>&</sup>lt;sup>37</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, p. 187.

1	bringing River Rouge Unit 3 back online on June 29.42 DTE states that
2	this decision was "based on the marginal negative forecasted economic
3	value over the period of June 29 <sup>th</sup> through July 2 <sup>nd</sup> and considering the
4	potential near term summer system reliability needs" as well as
5	"forecasted higher market prices" the next week. <sup>43</sup> In fact, subsequent
6	reports showed aggregate negative margins for River Rouge not only
7	through July 2, but through July 9, at the end of the next week. <sup>44</sup> I estimate
8	that DTE incurred unnecessary net losses of more than \$35,000 by re-
9	starting River Rouge Unit 3 on June 29 rather than waiting to bring the
10	unit back online until July 10.
11	• River Rouge Unit 3 operations in August 2017. River Rouge was offline

from August 4 through August 22, due to a combination of maintenance 12 issues and economic reasons.<sup>45</sup> In the two Economic Reserve & Cycling 13 Opportunities reports published just prior to the end of the outage, on 14 August 19 and August 21, DTE's forecast indicated that the Company 15 would save money by keeping River Rouge Unit 3 offline through at least 16 the end of August.<sup>46</sup> Instead, DTE chose to bring the unit back online on 17 August 22.47 Every report published between August 22 and August 28 18 continued to show substantial near-term losses from operating River 19 Rouge Unit 3.48 Finally, on August 28 DTE identified an opportunity to 20

<sup>&</sup>lt;sup>42</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

<sup>&</sup>lt;sup>43</sup> Exhibit MEC-21: DTE Discovery Response No. MECDE-2.8a.

<sup>&</sup>lt;sup>44</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 237-243.

<sup>&</sup>lt;sup>45</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a; Attachment "STDE-1.6.xlsx" to DTE Discovery Response No. STDE-1.6.

<sup>&</sup>lt;sup>46</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 303-305.

 <sup>&</sup>lt;sup>47</sup> Exhibit MEC-12: Attachment "MECDE-1.3d.xlsx" to DTE Discovery Response No. MECDE-1.3d; Exhibit MEC-15: Attachment "MECDE-1.3a-b.xlsx" to DTE Discovery Response No. MECDE-1.3a.

<sup>&</sup>lt;sup>48</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, pp. 307-315.

1		reduce its losses and brought River Rouge back offline for economic
2		reasons starting August 29.49 I estimate that DTE incurred easily
3		avoidable net losses of nearly \$200,000 by running River Rouge Unit 3
4		between August 22 and August 29.
5	Q	Explain how you identified these examples and calculated the losses
6		associated with them.
7	Α	I identified these examples of uneconomic operation by comparing DTE's
8		Economic Reserve & Cycling Opportunities reports with generation and unit
9		commitment data provided by DTE. I focused my review on instances where the

- economic reserve reports identified substantially negative margins from unit
   operations and on instances where a report was issued close to the time of a unit
   outage.
- Once I identified an instance of potential uneconomic decision-making, I 13 calculated the net operational revenue impacts associated with the decision using 14 the most recent economic reserve report data available for each date affected by 15 the decision. For example, if DTE made a questionable decision to operate a unit 16 on February 12 and the latest economic reserve report that contained an 17 estimated margin value for February 12 was issued on February 11, I assumed 18 that the unit earned energy margins consistent with the February 11 report's 19 projection. In addition, where an uneconomic unit operation decision resulted in 20 a unit being cycled on and off unnecessarily, I accounted for the incremental unit 21 22 startup costs associated with the decision.

<sup>&</sup>lt;sup>49</sup> Exhibit MEC-17: Attachment "U-20069 MECDE-1.4 Economic Reserve Opportunities.pdf" to DTE Discovery Response No. MECDE-1.4, p. 315; DTE Discovery Response No. STDE-1.7a.

1	Q	What are the total losses associated with the uneconomic decision-making
2		you describe above?
3	А.	Approximately \$967,000.
4	Q	What are the implications of these examples of uneconomic unit
5		commitment decision-making by DTE?
6	Α	These examples indicate that DTE is not sufficiently evaluating its unit
7		commitment and operations decisions to ensure that they are in the best interest
8		of ratepayers. As a result, DTE has engaged in uneconomic unit operation
9		practices and unnecessarily incurred operational losses on behalf of ratepayers.
10	Q	What are your recommendations?
11	Α	The Commission should assess a disallowance based on the degree of net
12		operational losses incurred by DTE's Tier 2 units. According to my assessment,
13		that disallowance could be up to \$42 million if based on netting energy and
14		ancillary revenues against fuel costs and total O&M expenses – expenses which
15		DTE was unwilling or unable to divide into fixed and variable components.
16		However, if DTE is able to establish that certain of its 2017 O&M costs were in
17		fact fixed and not tied to power plant operation, this number could be lowered by
18		that amount.
19		At a minimum, the Commission should assess a disallowance of \$967,000 for
20		losses associated with the uneconomic decision-making described above.
21		The Commission should also require DTE to track data on its variable costs of
22		production. This will enable a more comprehensive evaluation of the degree to
23		which DTE is engaging in the uneconomic operation of its coal units.
24		Finally, the Commission should require DTE to justify its coal plant unit
25		commitment processes and decisions, particularly where those decisions result in
26		operational losses.

- 1 Q Does this complete your direct testimony?
- 2 A Yes, it does.