

STATE OF MICHIGAN
DEPARTMENT OF ATTORNEY GENERAL



7109 W. SAGINAW HWY., 3RD FL.
LANSING, MICHIGAN 48917

BILL SCHUETTE
ATTORNEY GENERAL

December 21, 2018

Ms. Kavita Kale
Executive Secretary
Michigan Public Service Commission
7109 W. Saginaw Highway
Lansing, MI 48917

Re: MPSC Case No. U-20162
Official Exhibits

Dear Ms. Kale:

Attached are Staff's Official Exhibits in the above-referenced matter, including Staff Exhibits S-19 through S-22, which were admitted into evidence during the hearings in this case. They are attached in sequential order. Confidential Exhibit S-13.8 has been filed under seal.

If you have any questions, please feel free to contact me.

Sincerely,

Amit T. Singh
Assistant Attorney General
Public Service Division
Telephone: (517) 284-8140

ATS/car
Enclosures
cc: ALJ Sally Wilson
Parties of record

Michigan Public Service Commission
DTE Electric Company
Projected Revenue Deficiency (Sufficiency)
Projected 12 Month Period Ending April 30, 2020
(\$000)

Case No.: U-20162
Exhibit: S-1
Schedule: A1
Witness: RFNichols
Page: 1 of 1

Line No.	(a) Description	(b) Source	(c) Company Projection	(d) Staff Adjustment	(e) Staff Projection
1	Rate Base	Exh. A-12, Sch. B1	17,172,558	(212,665)	16,959,893
2	Adjusted Net Operating Income	Exh. A-13, Sch. C1	750,856	164,246	915,102
3	Overall Rate of Return	Line 2 ÷ Line 1	4.37%	1.02%	5.40%
4	Projected Rate of Return	Exh. A-14, Sch. D1	5.76%	-0.31%	5.45%
5	Income Requirements	Line 1 x Line 4	988,985	(65,285)	923,700
6	Income Deficiency (Sufficiency)	Line 5 - Line 2	238,129	(229,531)	8,598
7	Revenue Conversion Factor	Exh. A-13, Sch. C2	<u>1.3496</u>	<u>-</u>	<u>1.3496</u>
8	Revenue Deficiency / (Sufficiency)	Line 6 x Line 7	321,387	(309,783)	11,604
9	Revenue Deficiency / (Sufficiency)-Tree Trim Surge	Staff Witness Evans	<u>7,053</u>	<u>(7,053)</u>	<u>-</u>
10	Revenue Deficiency / (Sufficiency)-Total	Line 8 + Line 9	<u>328,440</u>	<u>(316,836)</u>	<u>11,604</u>
11	U-20105 TCJA Rate Impact with New Rates Effective in the Instant Case	Staff Witness Pung			<u>148,237</u>
12	Net Rate Increase	Line 10 + Line 11			<u>\$ 159,840</u>

Michigan Public Service Commission
DTE Electric Company
Projected Net Operating Income
Projected 12 Month Period Ending Apr. 30, 2020
(\$000)

Case No.: U-20162
 Exhibit: S-3
 Schedule: C1
 Witness: RFNichols
 Page: 1 of 1

	(a)	(b)	(c)	(d)	(e)
Line No.	Description	Source	Company Projection	Staff Adjustments	Staff Projection
1	Operating Revenues	Exh. A-13, Sch. C3	4,785,349	-	4,785,349
2	<u>Operating Expenses</u>				
3	Fuel and Purchased Power	Exh. A-13, Sch. C4	1,385,795	-	1,385,795
4	Operations and Maintenance Expenses	Exh. A-13, Sch. C5	1,312,396	(32,587)	1,279,809
5	Depreciation and Amortization	Exh. A-13, Sch. C6	948,986	(187,933)	761,053
6	Property Taxes	Exh. A-13, Sch. C7, C7.1	275,525	-	275,525
7	Other Taxes	Exh. A-13, Sch. C7	52,234	-	52,234
8	State & Local Income Taxes	Exh. A-13, Sch. C9, C10	42,543	14,049	56,592
9	Federal Income Taxes	Exh. A-13, Sch. C8	44,936	44,147	89,083
10	Other Utility (Income)/Deductions	Exh. A-13, Sch. C13	2,134	-	2,134
11	Total Operating Expenses		<u>4,064,549</u>	<u>(162,324)</u>	<u>3,902,225</u>
12	Operating Income		720,800	720,800	883,124
13	<u>Operating Income Adjustments</u>				
14	Allowance for Funds Used During Construction	Exh. A-13, Sch. C11	32,973	1,923	34,896
15	Loss on Reacquired Securities	Exh. A-13, Sch. C12	(3,214)	-	(3,214)
16	Income Tax Effect of Interest	Exh. A-13, Sch. C14	179	-	179
17	Interest Synchronization Tax Adjustment	Exh. A-13, Sch. C15	118	-	118
18	Total Operating Income Adjustments		<u>30,056</u>	<u>1,923</u>	<u>31,978</u>
19	Adjusted Net Operating Income		<u>750,856</u>	<u>164,246</u>	<u>915,102</u>

MICHIGAN PUBLIC SERVICE COMMISSION

Case No.: U-20162

Exhibit: S-3

Schedule C-1.1

Witness: RFNichols

Page 1 of 1

DTE Electric Energy Company

Projected Net Operating Income

for the Test Year Ended April 30, 2020

(\$000)

Line No.	(a) Description (Witness)	Revenue				Expenses									NOI			
		(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		Sales Revenue	Base Fuel & Purchase Power Rev.	Other Revenue and R2	Total	Fuel and Purchased Power	Other O&M Expense	Depreciation & Amort.	Property Taxes	Other Taxes	State & Local Income	FIT	Other Utility (Income) / Deductions	Total	NOI	AFUDC	Other Operating Income Adj.	Adjusted NOI
Company Filed																		
1	Operating Income	3,309,210	1,385,795	90,345	4,785,349	1,385,795	1,312,396	948,986	275,525	52,234	42,543	44,936	2,134	4,064,549	720,800	32,973	(2,917)	750,856
Staff Adjustments																		
2	Inflation (Welke)				-		(12,338)				766	2,430		(9,141)	9,141			9,141
3					-						-	-		-	-			-
4	Injuries and Damages (Welke)				-		(892)				55	176		(661)	661			661
5	Incentive Compensation (McMillan-Sepkoski)				-		(27,083)				1,682	5,334		(20,067)	20,067			20,067
6	Uncollectibles (Welke)				-		(234)				15	46		(173)	173			173
7	Active Healthcare Credit Amortization (Welke)				-		(1,733)				108	341		(1,284)	1,284			1,284
8	Incremental Charge Forward O&M (Ozar)				-		(1,168)				73	230		(865)	865			865
9	Meter Reading (Matthews)				-		(2,147)				133	423		(1,591)	1,591			1,591
10	Tree Trimming O&M Expense (Evans)				-		13,007				(808)	(2,562)		9,637	(9,637)			(9,637)
11					-						-	-		-	-			-
12	AFUDC Adjustment (Gerken)				-						-	-		-	-	1,923		1,923
13	Depreciation Rate Adjustment (Edelyn)				-			(175,795)			10,917	34,624		(130,254)	130,254			130,254
14	Cap Ex. Adj. Impact on Depreciation Expense				-			(12,138)			754	2,391		(8,993)	8,993			8,993
15	Excess DFIT Amortization Adj. (Nichols)				-						-	(411)		(411)	411			411
16	Proforma Interest (Nichols)				-						354	1,124		1,478	(1,478)			(1,478)
17	Interest Synchronization (Nichols)	-	-	-	-	-	-	-	-	-	0	1	-	1	(1)	-	-	(1)
18	Total Adjustments	-	-	-	-	-	(32,587)	(187,933)	-	-	14,049	44,147	-	(162,324)	162,324	1,923	-	164,246
19	Staff NOI - Test Year	3,309,210	1,385,795	90,345	4,785,349	1,385,795	1,279,809	761,053	275,525	52,234	56,592	89,083	2,134	3,902,225	883,124	34,896	(2,917)	915,102

Michigan Public Service Commission
DTE Electric Company
Projected Income Tax Effect of Interest
Allowed in Ratemaking Formula
12 Months Ended 12/31/2017 and 4/30/2020
(\$000)

Case No.: U-20162
 Exhibit: S-3
 Schedule: C14
 Witness: RFNichols
 Page: 1 of 1

Line No.	(a) Description	(b) Source	(c) Staff Projection
1	Rate Base	Exh.A-12, Sch. B1	\$ 16,959,893
2	Weighted Cost of Debt	Exh.A-14, Sch. D1	<u>1.643%</u>
3	Interest Allowed in Ratemaking Formula	Line 1 x Line 2	\$ 278,673
4	Interest Included by Company	WP-KLS-3	<u>\$ 284,378</u>
5	Interest Deduction Change	Line 3 - Line 5	\$ (5,705)
6	Composite State and Municipal Income Tax Rate	Exh. A-13, Sch. C2	6.21%
7	Effect on State and Municipal Income Tax Expense	(Line 6 x Line 7) x -1	\$ 354
8	Effect on Federal Taxable Income	(Line 6 + Line 8) x -1	\$ (5,351)
9	Federal Income Tax Rate	Exh. A-13, Sch. C2	<u>21.00%</u>
10	Effect on Federal Tax Expense	Line 9 x Line 10	<u>\$ 1,124</u>
11	Total Tax Effect on Net Operating Income	(Line 8 + Line 11) x -1	<u>\$ 1,478</u>

Michigan Public Service Commission
DTE Electric Company
Projected Tax Effect of Interest - Synchronization Adjustment
12 Months Ended 12/31/2017 and 4/30/2020
(\$000)

Case No.: U-20162
 Exhibit: S-3
 Schedule: C15
 Witness: RFNichols
 Page: 1 of 1

Line No.	(a) Description	(b) Source	(c) Staff Projection
1	Rate Base	Exh.A-12, Sch. B1	\$ 16,959,893
2	Weighted Cost of JDITC Debt	Exh.A-14, Sch. D1	<u>0.003%</u>
3	Interest Allowed in Ratemaking Formula	Line 1 x Line 2	\$ 449
4	Interest Included by Company	WP-KLS-3	455
5	Interest Deduction Change	Line 3 - Line 5	\$ (6)
6	Composite State and Municipal Income Tax Rate	Exh. A-13, Sch. C2	6.21%
7	Effect on State and Municipal Income Tax Expense	(Line 6 x Line 7) x -1	\$ 0
8	Effect on Federal Taxable Income	(Line 6 + Line 8) x -1	\$ (5)
9	Federal Income Tax Rate	Exh. A-13, Sch. C2	<u>21.00%</u>
10	Effect on Federal Tax Expense	Line 9 x Line 10	<u>\$ 1</u>
11	Total Tax Effect on Net Operating Income	(Line 8 + Line 11) x -1	<u>\$ 1</u>

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>R. Nichols</u>
Question No.:	<u>RFN-1.1</u>
Respondent:	<u>S. L. Wisniewski</u>
Page:	<u>1 of 1</u>

Question: In regards to Witness Wisniewski's testimony page 17, line 1 through 3,

- 1) please provide the final amounts for the re-measurement of deferred taxes and the new regulatory liability;

Answer: Upon completion of the 2017 Federal income tax return, the re-measurement of deferred taxes and new regulatory liability were updated. Revised amounts are as follows:

- The finalized amount for the one-time reduction to DTE Electric's total recoverable deferred income tax liability is \$1,447,436,000. Of this total, \$89,756,000 is related to non-base rate surcharges (Renewable Energy Plan, Energy Waste Reduction and TRM), leaving \$1,357,680,000 to be reflected in this rate case. This is a change of \$35,466,000 from the preliminary amount reflected in the Company's initial filing.
- The one-time reduction to MERC's deferred income tax liability is \$2,793,000. This is a change of \$11,000 from the preliminary amount reflected in the Company's initial filing.
- In accordance with the Commission Order in Case No. U-18494 dated December 27, 2017, the reduction in the deferred tax liabilities of DTE Electric and MERC were offset by a new regulatory liability of \$1,360,473,000. This is a change of \$35,477,000 (\$35,466,000 plus \$11,000) from the preliminary amount reflected in the Company's initial filing.

Attachments: N/A

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>R. Nichols</u>
Question No.:	<u>RFN-1.2</u>
Respondent:	<u>S. L. Wisniewski</u>
Page:	<u>1 of 1</u>

Question: In regards to Witness Wisniewski's testimony page 17, line 1 through 3,

2) provide an updated exhibit A-13, Schedule C8.1 and the projected test period amortization amount;

Answer: See attachment "U-20162 RFN-1.2 revised Exh. A-13 C8.1".

The new amortization amount for the test period May 1, 2019 through April 30, 2020 is \$55,359,000.

Upon preparing this analysis, the Company discovered formula errors in the calculation of the amortization on Exhibit A-13, Schedule C8.1. The change in the regulatory liability discussed in response to RFN-1.1 increased the amortization; however, the correction of the formula errors reduced the amortization. The result is a net increase in the projected test period amortization of \$411,000 from the preliminary amount reflected in our initial filing.

Attachments: U-20162 RFN-1.2 revised Exh. A-13 C8.1

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>R. Nichols</u>
Question No.:	<u>RFN-1.3</u>
Respondent:	<u>K. L. Slater</u>
Page:	<u>1 of 1</u>

Question: In regards to Witness Wisniewski's testimony page 17, line 1 through 3,

3) provide the impacts to the projected capital structure, Exhibit A-14, Schedule D1;

Answer: Since the re-measurement amount is offset by the new regulatory liability within Deferred Income Taxes (Net), the only change to the projected capital structure will result from the change in amortization of \$411,000. The additional amortization will reduce the average Deferred Income Tax balance by \$205,500 ($\$411,000 \div 2$). This would result in \$100,695 higher debt and \$104,805 equity (49% debt-51% equity split). This has a negligible impact on the weighted cost percentages.

Michigan Public Service Commission
DTE Electric Company
Projected Tax Reform Regulatory Liability
Projected 12 Month Period Ending Apr. 30, 2020
(\$000)

Audit Response: RFN 1.2
Revised Exhibit: A-13
Revised Schedule: C8.1
Witness: S. L. Wisniewski
Page: 1 of 1

Line No.	(a) Description	(b) (c) (d)			(e) Total DTE Electric	Per U-20162 Initial	
		Protected Plant	Unprotected Plant	Non-Plant		Filing	Change
1	Amortization Period	ARAM	23	14			
2	Tax Reform Liability Before Gross Up						
3	DTE Electric Company in total	(718,880)	(621,506)	(107,050)	(1,447,436)	(1,448,490)	1,054
4	Less: Non-Base Rate	108,621	-	(18,865)	89,756	126,275	(36,519)
5	Add: MERC	(2,887)		94	(2,793)	(2,782)	(11)
6	General Rate Case Tax Reform Regulatory Liability before gross up	(613,146)	(621,506)	(125,821)	(1,360,473)	(1,324,996)	(35,477)
7							
8	Amortization Schedule					Test Period Amortization	Test Period Amortization Per U- 20162 Initial Filing
9	2019	(11,486)	(18,015)	(5,991)	(35,492)	(35,492)	(35,634)
10	2020	(23,590)	(27,022)	(8,987)	(59,599)	(19,866)	(19,314)
11	2021	(24,958)	(27,022)	(8,987)	(60,967)	(55,359)	(54,948)
12	2022	(21,594)	(27,022)	(8,987)	(57,603)		
13	2023	(23,113)	(27,022)	(8,987)	(59,122)		
14	2024	(25,015)	(27,022)	(8,987)	(61,024)		
15	2025	(23,133)	(27,022)	(8,987)	(59,142)		
16	2026	(21,879)	(27,022)	(8,987)	(57,889)		
17	2027	(19,778)	(27,022)	(8,987)	(55,788)		
18	2028	(17,698)	(27,022)	(8,987)	(53,708)		
19	2029	(18,398)	(27,022)	(8,987)	(54,407)		
20	2030	(19,009)	(27,022)	(8,987)	(55,018)		
21	2031	(21,588)	(27,022)	(8,987)	(57,597)		
22	2032	(21,604)	(27,022)	(8,987)	(57,613)		
23	2033	(20,252)	(27,022)	(2,996)	(50,270)		
24	2034	(17,369)	(27,022)	-	(44,391)		
25	2035	(17,913)	(27,022)	-	(44,935)		
26	2036	(20,969)	(27,022)	-	(47,991)		
27	2037	(23,147)	(27,022)	-	(50,169)		
28	2038	(24,582)	(27,022)	-	(51,604)		
29	2039	(24,026)	(27,022)	-	(51,048)		
30	2040	(23,112)	(27,022)	-	(50,134)		
31	2041	(22,300)	(27,022)	-	(49,322)		
32	2042	(18,860)	(9,007)	-	(27,867)		
33							
34	Amortization beyond 2042	(107,771)	(0)	-	(107,771)		
35	Total Amortization	(613,146)	(621,506)	(125,821)	(1,360,473)		(411)

Schedule C5

Michigan Public Service Commission

DTE Electric Company

Operation and Maintenance Expense

For the Projected 12-Month Period Ending April 30, 2020

(000's)

Case No.: U-20162

Exhibit: S-3

Schedule: C5

Witness: Welke

Page: 1 of 1

Ln	Description	Source	Company Projection	Adjustment	Staff Projection
	(a.)	(b.)	(c.)	(d.)	(e.)
1	Steam Power Generation	WP-BAW-14	\$ 284,732	\$ (3,637)	\$ 281,095
2	Fuel Supply & MERC Fuel Handling	WP-BAW-15	8,666	(112)	8,554
3	Nuclear Power Generation	WP-BAW-16	166,803	(1,895)	164,908
4	Hydraulic Power Generation & Other	WP-BAW-17	26,569	(339)	26,230
5	Distribution	WP-BAW-18	330,533	10,004	340,537
6	Customer Service	WP-BAW-9	97,380	(3,217)	94,163
7	Uncollectible Accounts Expense	WP-BAW 1 & 12	51,620	(234)	51,386
8	Injuries and Damages	WP-BAW-19	13,546	(892)	12,654
9	Marketing	WP-BAW-10	14,483	(1,301)	13,182
10	Corporate Support	WP-BAW-11	171,212	(30,963)	140,249
11	Pension and Benefits	Exhibit S-8	146,853	(1)	146,852
12	TOTAL	Sum Lines 1 through 11	<u>\$ 1,312,397</u>	<u>\$ (32,587)</u>	<u>\$ 1,279,810</u>

Reconciliation

Inflation (WP-BAW-2)	\$ (12,338)
Injuries and Damages	(892)
Incentive Compensation	(27,083)
Uncollectibles	(234)
Active Healthcare Credit Amortization	(1,733)
Incremental Charge Forward O&M	(1,168)
Meter Reading	(2,147)
Tree Trimming Expense	13,007
Total	<u>\$ (32,587)</u>

Schedule C5.1

Michigan Public Service Commission
DTE Electric Company
Projected Operation and Maintenance Expense:
Uncollectibles 3 Year Average Calculation

Case No.: U-20162
Exhibit: S-3
Schedule: C5.1
Witness: Welke
Page: 1 of 1

Line	Description	Source	2015	2016	2017	Projection
	(a.)	(b.)	(c.)	(d.)	(e.)	(f.)
1	Write-Offs (Including Low-Income Match W/O's)	WP-BAW-1	\$ 58,512,139	\$ 59,199,912	\$ 64,077,782	
2	Collections	WP-BAW-1	<u>(5,719,312)</u>	<u>(7,956,525)</u>	<u>(14,391,450)</u>	
3	Net Write-Offs	Add Lines 1 & 2	52,792,827	51,243,387	49,686,332	
4	Revenues		4,600,769,000	4,940,615,000	4,792,186,000	
5	Net Write-Offs / Revenues	Line 3 / Line 4	1.1475%	1.0372%	1.0368%	
6	Three Year Average of Net Write-Offs to Revenues	Avg. Line 5				1.0738%
7	Projected Revenues				Exh A-13 sch C1	<u>4,785,349,000</u>
8	Uncollectible Accounts Expense 3-Year Avg.	Line 6 x Line 7				<u>\$ 51,386,426</u>

Schedule C5.2

Michigan Public Service Commission

DTE Electric Company

Projected Operation and Maintenance Expense:

Injuries and Damages 5 Year Average Calculation

Case No.: U-20162

Exhibit: S-3

Schedule: C5.2

Witness: Welke

Page: 1 of 1

Ln.	Desciption	Year					
	(a.)	(b.)	(c.)	(d.)	(e.)	(f.)	(g.)
		2013	2014	2015	2016	2017	
	MPSC P-521	17,996	13,018	8,042	10,972	13,244	
	Five Year Average						12,654

Case No.:	U-20162
Exhibit:	S-3
Schedule:	C5.3
Witness:	Welke

[illegible]

Michigan Public Service Commission
DTE Electric Company
Projected Rate Base
Projected Average Balances Period Ending April 30, 2020
(\$000)

Case No.: U-20162
Exhibit: S-2
Schedule: B1
Witness: MLEdelyn
Page: 1 of 1

	(a)	(b)	(c)	(d)	(e)
Line No.	Description	Source	Company Projection	Staff Adjustments	Staff Projection
1	<u>Utility Plant in Service:</u>				
2	Plant in Service	Exh. A-12, Sch. B2, L6	21,317,591	(265,853)	21,051,738
3	Plant Held for Future Use	Exh. A-12, Sch. B2, L7	57,923	-	57,923
4	Construction Work in Progress	Exh. A-12, Sch. B2, L8	1,679,418	-	1,679,418
5	Acquisition Adjustments	Exh. A-12, Sch. B2, L9	<u>116,148</u>	-	<u>116,148</u>
6	Total Utility Plant	Sum Lines 2 thru 5	23,171,079	(265,853)	22,905,226
7	Depreciation Reserve	Exh. A-12, Sch. B3, L6	<u>(7,639,577)</u>	<u>103,775</u>	<u>(7,535,802)</u>
8	Net Utility Plant	Line 6 + Line 7	15,531,502	(162,078)	15,369,424
9	Net Capital Lease Property	Exh. A-12, Sch. B4.1, col. (c), L10	6,222	-	6,222
10	Net Nuclear Fuel Property	Exh. A-12, Sch. B4.1, col. (c), L11	<u>112,164</u>	-	<u>112,164</u>
11	Total Utility Property and Plant	Sum Lines 8 thru 10	15,649,888	(162,078)	15,487,810
12	Less: Capital Lease Obligations	Exh. A-12, Sch. B4.1, col. (c), L68 + L80	<u>6,324</u>	-	<u>6,324</u>
13	Net Plant	Line 11 - Line 12	15,643,564	(162,078)	15,481,486
14	Allowance for Working Capital	Exh. A-12, Sch. B4	<u>1,528,994</u>	<u>(50,586)</u>	<u>1,478,408</u>
15	Total Rate Base	Line 13 + Line 14	<u>17,172,558</u>	<u>(212,665)</u>	<u>16,959,893</u>

Michigan Public Service Commission
DTE Electric Company
Projected Working Capital
Periods Ending December 31, 2017 and April 30, 2020
(\$000)

Case No: U-20162
Exhibit: S-2
Schedule: B4
Witness: MLEdelyn
Page: 1 of 1

Line No.	(a) Description	(b) Company Projection (Average Balances)	(c) Staff Adjustments (Average Balances)	(d) Staff Projection (Average Balances)
1	<u>OTHER PROPERTY AND INVESTMENTS</u>			
2	Non-Current Portion of Allowances	477	-	477
3	Investment and Special Funds	32,683	-	32,683
4	Nuclear Decommissioning Trust Funds	0	-	0
5	TOTAL OTHER PROPERTY & INVESTMENTS	33,160	-	33,160
6	<u>CURRENT ASSETS</u>			
7	Cash	14,673	-	14,673
8	Notes Receivable	0	-	0
9	Accounts Receivable	535,668	-	535,668
10	Other Accounts Receivable	114,905	-	114,905
11	Uncollectible Reserve	(30,866)	-	(30,866)
12	Unbilled Revenues	217,893	-	217,893
13	Inventories - Fuel	126,102	-	126,102
14	Inventories - Material and Supplies	274,936	-	274,936
15	Prepayments	77,317	-	77,317
16	Other Current Assets	121	-	121
17	TOTAL CURRENT ASSETS	1,330,748	-	1,330,748
18	<u>DEFERRED DEBITS</u>			
19	Unamortized Loss on Reacquired Debt	40,157	-	40,157
20	Reg Asset - Fermi 2	0	-	0
21	Def Debit - Prepaid Pension Asset	841,087	(44,623)	796,464
22	Reg Asset - Pension FAS 158	0	-	0
23	Reg Asset - FERC Audit Adjustment	327	-	327
24	Reg Asset - Enterprise Business System (EBS)	0	-	0
25	Reg Asset - Transitional Recovery Mechanism (TRM)	-	-	-
26	Reg Asset - Customer 360	38,613	-	38,613
27	Reg Asset - Program Eval. Review Committee (PERC)	44,205	-	44,205
28	Reg Asset - Advanced Distribution Management System (ADMS)	4,917	-	4,917
29	Reg Asset - Charging Forward	793	(793)	-
30	Reg Asset - Pension Capitalized	14,108	-	14,108
31	Def Debit - Prepaid OPEB	73,301	-	73,301
32	Def Debit - Combined Operating License (COL)	-	-	-
33	Def Debit - Cost To Achieve	0	-	0
34	Other Deferred Debits	21,711	(793)	20,919
35	TOTAL DEFERRED DEBITS	1,079,218	(46,208)	1,033,010
36	TOTAL ASSETS AND OTHER DEBITS	2,443,126	(46,208)	2,396,918
37	<u>NON-CURRENT LIABILITIES</u>			
38	Accumulated Provision for Injuries and Damages	28,597	-	28,597
39	Accrued Post Retirement Benefits	0	-	0
40	Accrued Pension Liabilities	0	-	0
41	Other Non-Current Liabilities	12,980	-	12,980
42	TOTAL NON-CURRENT LIABILITIES	41,577	-	41,577
43	<u>CURRENT LIABILITIES</u>			
44	Accounts Payable	502,359	-	502,359
45	Taxes Payable	17,969	-	17,969
46	Interest Payable	73,951	45	73,996
47	Other Current Liabilities	142,439	-	142,439
48	TOTAL CURRENT LIABILITIES	736,717	45	736,762
49	<u>DEFERRED CREDITS</u>			
50	Regulatory Liab-Other Post Empl Benefits (OPEB)	90,602	-	90,602
51	Regulatory Liab-OPEB Capitalized	19,898	-	19,898
52	Fermi 2 Decommissioning	0	-	0
53	Other Deferred Credits	25,337	4,334	29,670
54	TOTAL DEFERRED CREDITS	135,837	4,334	140,170
55	TOTAL LIABILITIES AND OTHER CREDITS	914,132	4,379	918,510
56	Total Working Capital	1,528,994	(50,586)	1,478,408

MPSC Case No.: U-20162
Requestor: M. Edelyn
Question No.: MLE-8.1
Respondent: T. M. Uzenski
Page: 1 of 1

Question: Regarding MLE-6, is there a corresponding impact on rate base for the projected test year if the Company used depreciation rates from the most recent approved order in Case U-16117 instead of projected rates of its pending depreciation case U-18150? If yes, please delineate the impacts of each on the test year.

Answer: The \$175.795 million reduction in depreciation expense would result in an increase in average rate base of \$87.897 million (\$175.795 divided by 2) for the projected test year.

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>ABATE</u>
Question No.:	<u>ABDE-5.54a</u>
Respondent:	<u>T. M. Uzenski</u>
Page:	<u>1 of 1</u>

Question: Referring to Exhibit A-12, Schedule B4, line 21 “Deferred Debit – Prepaid Pension Asset,” and the Direct Testimony of Theresa Uzenski, at page 54, she states the line 35 “Prepaid Pension” represents the funded pension obligation, based on the year-over-year difference between pension expense accruals that are offset by pension fund contributions. With respect to the prepaid pension deferred debit balance please provide the following:

- a. On an electronic spreadsheet with all formulas intact, please outline the annual pension expense, calculated consistent with Generally Accepted Accounting Principles, and DTE actual annual pension contributions that comprise the annual accumulation of this deferred debit or prepaid pension asset, that is shown on Schedule B4 for both 2017 and for the 12-month pro forma test year.

Answer: See attached for a reconciliation of the prepaid pension asset for the historical through the projected period. Upon preparing this analysis, the Company discovered a formula error in the filing related to the prepaid pension asset. The average projected balance of the prepaid pension asset as filed on Exhibit A-12, Schedule B4, was \$841.087 million, but the correct balance should have been \$796.464 million. The attachment includes a reconciliation for both the filed and corrected balance. The revenue deficiency impact of this overstatement of working capital within rate base is \$3.208 million (\$44.623 million x 7.19% overall pre-tax cost of capital).

Attachments: U-20162 ABDE-5.54a Prepaid Pension Asset.xls

DTE Electric Company
Case No. U-20162

Auditor:
Request No:
Respondent:
Page:

M. Edelyn
MLE-5.1a
T. M. Uzenski
1 of 1

Request:

1. Staff's review of the Company's projected working capital found the Company had included the Charging Forward Reg Asset Deferral and Amortization in the balance of both line 29 – Reg Asset – Charging Forward and line 34 – Other Deferred Debits on Exhibit A-12, Schedule B4.
 - a. Does the Company agree or disagree?

Response:

Agree. The balance for Charging Forward Reg Asset was inadvertently double-counted.

DTE Electric Company
Case No. U-20162

Auditor: M. Edelyn
Request No: MLE-5.1b
Respondent: T. M. Uzenski
Page: 1 of 1

Request:

1. Staff's review of the Company's projected working capital found the Company had included the Charging Forward Reg Asset Deferral and Amortization in the balance of both line 29 – Reg Asset – Charging Forward and line 34 – Other Deferred Debits on Exhibit A-12, Schedule B4.

b. If the Company agrees, please provide what the impact would be on the Company's projected working capital.

Response:

The average balance of projected working capital was overstated by \$793,000.

MPSC Case No.: U-20162
Requestor: K. Trachsel
Question No.: KT-1.2
Respondent: [T. M. Uzenski
K. L. Slater_____]
Page: 1 of 1

Question: Company Witness Uzenski, within your exhibits adjustments are made for the renewable energy program. Would you please describe what you mean by “renewable energy program” and confirm what impact the renewable energy program has on the rate case U-20162. Did the amounts within your schedules net out completely the renewable energy program revenue and expenses and thus have no impact on this rate case? Please reference where in this case the adjustments have occurred and reference where within the renewable energy plan/reconciliations (Act 295 cases) the adjusted amounts are derived from. If the adjustments in this case do not tie to the renewable energy cases, please explain/reconcile the differences. The schedules and columns or line items in question are:
Exhibit A-2, Schedule B6.1, pages 1 and 2 of 2, column h
Exhibit A-2, Schedule B6.2, pages 1 and 2 of 2, column h
Exhibit A-3, Schedule C1.1, line number 13
Exhibit A-13, Schedule C5.5, column d
Exhibit A-13, Schedule C5.9, column d

Answer: Costs recovered from other mechanisms are excluded from the financial statements in the rate case, consistent with treatment in past cases. One of these mechanisms is the Renewable Energy program which is recovered through a separate surcharge established by the Commission’s order in Case No. U-15806. The adjustments/eliminations included in my schedule are based on amounts recorded for the Renewable Energy Program on the books of DTE Electric as of December 31, 2017, which are comparable to the 2017 Renewable Energy Reconciliation filing in case no. U-20172. (See attachment for a comparison of Rate Base, Net Operating Income and O&M.)

As a result of this audit, the Company has discovered a formula error which resulted in overstating the Renewables deferred income tax balance used to derive the adjusted capital structure in this rate case. The balance was overstated by \$97.3 million (Deferred Tax Asset for Production Tax Credits was inadvertently omitted). This caused Deferred Income Taxes within the Company’s capital structure to be understated while permanent capital (Long Term Debt and Common Equity) was overstated. The Company has recalculated the capital structure and rate of return on Exhibit A-14 Schedule D1 as well as the Revenue Deficiency on Exhibit A-11 Schedule A1. (The Revenue Deficiency is overstated by \$8.8 million.)

Attachments: *U-20162 KT-1.2 Renewable Comparison*
U-20162 KT-1.2 Revenue Deficiency Correction

DTE Electric Company
Projected Revenue Deficiency (Sufficiency)
Projected 12 Month Period Ending April 30, 2020
(\$000)

Exhibit: A-11
Schedule: A1
Witness: K. L. Slater
Page: 1 of 1

Deferred Tax eliminated for Renewables was overstated in the Filing (Audit KT-1.2)

	(a)	(b)	(c)	(d)
Line No.	Description	As Filed	Corrected	Difference
1	Rate Base	17,172,558	17,172,512	(45) Minor impacts on interest payable/taxes payable
2	Adjusted Net Operating Income	750,856	750,282	(574) Increased income tax as a result of lower interest
3	Overall Rate of Return	4.37%	4.37%	0.00%
4	Projected Rate of Return	5.76%	5.72%	-0.04% Impact of shifting \$97M to DFIT from LTD/Equity
5	Income Requirements	988,985	981,873	(7,112)
6	Income Deficiency (Sufficiency)	238,129	231,591	(6,538)
7	Revenue Conversion Factor	<u>1.3496</u>	<u>1.3496</u>	<u>-</u>
8	Revenue Deficiency / (Sufficiency)	321,387	312,563	(8,824)
9	Revenue Deficiency / (Sufficiency)-Tree Trim Surge	<u>7,053</u>	<u>7,053</u>	<u>-</u>
10	Revenue Deficiency / (Sufficiency)-Total	<u><u>328,440</u></u>	<u><u>319,616</u></u>	<u><u>(8,824)</u></u>

Michigan Public Service Commission
DTE Electric Company
Projected Rate of Return Summary
For Period Ending April 30, 2020

AS FILED

Case No.: U-20162
Exhibit: A-14
Schedule: D1
Witness: K. L. Slater
Page: 1 of 1

Line No.	(a) Description	(b) Amounts (\$000)	(c) Capital Structure		(d) Percent of Total Capital	(e) Cost Rate %	(f) Permanent Capital	(g) Weighted Costs		
			(2)	Percent Permanent Capital (1)				Total Cost %	Conversion Factor	Pre-Tax Return
1	Long-Term Debt	6,432,689	(2)	49.00%	37.46%	4.36%	(3) 2.14%	1.63%	100.000%	1.63%
2	Preferred Stock	0		0.00%	0.00%	0.00%	(4) 0.00%	0.00%	134.964%	0.00%
3	Common Shareholders' Equity	6,695,426	(2)	51.00%	38.99%	10.50%	(5) 5.36%	4.09%	134.964%	5.53%
4	Total	13,128,115		100.00%			7.49%			
5	Short-Term Debt	113,841	(2)		0.66%	3.56%	(6)	0.02%	100.000%	0.02%
6	Investment Tax Credit (ITC) - Debt	10,433			0.06%	4.36%		0.00%	100.000%	0.00%
7	Investment Tax Credit (ITC) - Equity	10,858			0.06%	10.50%		0.01%	134.964%	0.01%
8	Total Investment Tax Credit (ITC)	21,291	(2)							
9	Deferred Income Taxes (Net)	3,909,311	(2)		22.76%	0.000%		0.00%		0.00%
10	Total	17,172,558			100.00%			5.76%		7.19%
11	Rate Base per Exh. A-12, Sch. B1	17,172,512								

- (1) Excludes Short-Term Debt, Deferred Investment Tax Credit, and Deferred Income Taxes to calculate the rate of return for Investment Tax Credit purposes in accordance with Internal Revenue Service Income Tax Regulation section 1.46-6
(2) See Exh. A-12, Sch. B4.1, Cols. (e) thru (i), Line 97
(3) See Exh. A-14, Sch. D2
(4) See Exh. A-14, Sch. D4
(5) See Exh. A-14, Sch. D5.19
(6) See Exh. A-14, Sch. D3

Michigan Public Service Commission
DTE Electric Company
Projected Depreciation and Amortization Expense
Projected 12 Month Period Ending Apr. 30, 2020
(\$000)

Case No.: U-20162
Audit Response: MLE-6.1
Based on Exhibit & Schedule: A-13 C6
Witness: T. M. Uzenski

		Instant Case (based on U-18150 Proposed Rates)				Recalculated (based on U-16117 Current Rates)				
(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Line No.	Description	Projected Depreciation Rate		Average Plant Bal.	Projected	Projected Depreciation Rate		Average Plant Bal.	Projected	Difference
		Source	Composite Depr. Rate 1/	4/30/2019 - 4/30/2020	Depr. Expense 4/30/20	Source	Composite Depr. Rate 1/	4/30/2019 - 4/30/2020	Depr. Expense 4/30/20	
					(c) x (d)				(g) x (h)	(e) - (i)
1	Depreciable Plant:									
2	Production Plant, Steam	U-18150 Filed	4.07%	7,788,845	317,006	U-16117 Order	1.99%	7,788,845	154,998	162,008
3	Production Plant, Nuclear	U-18150 Filed	4.26%	1,209,686	51,533	U-16117 Order	4.03%	1,209,686	48,750	2,782
4	Production Plant, Hydraulic	U-18195 Order	4.14%	556,551	23,041	U-18195 Order	4.14%	556,551	23,041	-
5	Production Plant, Other	U-18150 Filed	1.93%	618,989	11,946	U-16117 Order	4.09%	618,989	25,317	(13,370)
6	Production Plant, MERC	U-10348 Order	2.81%	92,115	2,588	U-10348 Order	2.81%	92,115	2,588	-
7	Transmission Plant	U-18150 Filed	2.51%	86,150	2,162	U-16117 Order	1.65%	86,150	1,421	741
8	Distribution Plant	U-18150 Filed	3.94%	8,676,916	341,870	U-16117 Order	3.91%	8,676,916	339,267	2,603
9	Distribution Plant, AMI	U-18150 Filed	5.15%	391,298	20,152	U-16117 Order	5.00%	391,298	19,565	587
10	General Plant, Amortizable	Specified Years	7.51%	297,926	22,378	Specified Years	7.51%	297,926	22,378	-
11	General Plant, Depreciable	U-18150 Filed	7.21%	814,492	58,725	U-16117 Order	4.70%	814,492	38,281	20,444
12	General Plant, Amortizable 5 Yr.	5 Years	20.00%	50,918	10,169	5 Years	20.00%	50,918	10,169	-
13	Total Depreciable Plant			20,583,885	861,571			20,583,885	685,776	175,795
14	Depreciation & Amort (403-407, 411.1)									
15	Plant DD&A (403, 403.1)				861,571				685,776	175,795
16	Software Amortization / Intangible (405)				76,759				76,759	-
17	Subtotal Plant Depr. & Amortization				938,330				762,535	175,795
18	Amortization of COL (405)				4,893				4,893	-
19	Amort. of Utility Plant Acq. Adj. (406)				5,791				5,791	-
20	Amort. of CTA and DTE2 Regulatory Assets				-				-	-
21	AFUDC-Reg Asset Amort (407.3)				148				148	-
22	Amortization of Capitalized Pension (407.3)				723				723	-
23	Amortization of Capitalized OPEB (407.4)				(899)				(899)	-
24	Depreciation & Amortization				948,986				773,191	175,795

1/ Composite rates have been updated based on 2017 year-end plant balances (see U-20162 MLE-4.1 for calculated rates)

MPSC Case No.: U-20162
Requestor: J. Gerken
Question No.: JSG-6.3a
Respondent: [K. L. Slater / T.M. Uzenski]
Page: 1 of 1

Question: It is Staff's understanding that although the Company included \$32,973,000 to offset the impact of the return on projected test year CWIP for AFUDC eligible CWIP items in its revenue requirement calculation that the actual AFUDC which is embedded in the Company's projected test year CWIP is not offset. In other words, the revenue requirement calculation applies the overall rate of return to rate base and CWIP is a part of rate base. Since CWIP is made up of AFUDC eligible CWIP items as well as the actual AFUDC related to those AFUDC eligible CWIP items and CWIP items which are not AFUDC eligible the revenue requirement calculation is still applying the overall rate of return to both the non-eligible CWIP items and the actual AFUDC embedded in CWIP. Is Staff's understanding correct?

- a. If yes, please provide the impact on the Company's projected revenue deficiency if the return on the actual AFUDC embedded in the Company's projected test year CWIP was to be offset.

Answer: Yes. The projected period CWIP balance includes the \$32,973,000 of AFUDC credited to income. Thus, the rate base to which the required return is applied includes the \$32,973,000. The full year return on this balance is \$2,594,975. ($\$32,973,000 \times 7.87\%$, pre-tax return). Technically, the portion applicable to the revenue deficiency would be 50% of this amount since we use an average balance of rate base to determine the revenue deficiency. However, assuming the beginning balance of CWIP has some embedded AFUDC, it would be reasonable to estimate the impact using the full year amount.

DTE Electric Company
Staff Recommended Ratemaking Capital Structure
For Test Year Ending April 30, 2020

Case No.: U-20162
Witness: K.D. Megginson
Exhibit No: S-4
Schedule: Revised D-1
page: 1 of 1
Date: Nov. 07, 2018

Revised Schedule D-1

Line	Description	Amount	Permanent Ratio	Total Capital Ratio	Cost Rate	Weighted Cost	Convrsn Factor	Pre-Tax Weighted Cost
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Long-Term Debt ¹	\$6,382,775,000	48.98%	37.17%	4.36%	1.62%	1.0000	1.62%
2	Preferred Stock	\$0	0.00%	0.00%	0.00%	0.00%	1.3496	0.00%
3	Common Equity ²	\$6,648,925,000	51.02%	38.72%	9.80%	3.79%	1.3496	5.12%
4	Total Permanent Capital	<u>\$13,031,700,000</u>	<u>100.00%</u>					
5	Short-Term Debt ³	\$ 112,875,000		0.66%	3.56%	0.02%	1.0000	0.02%
6	Deferred FIT ⁴	\$4,006,648,000		23.33%	0.00%	0.00%	1.0000	0.00%
7	JDITC							
8	Def JDITC - Long Term Debt	\$10,428,084		0.06%	4.36%	0.00%	1.0000	0.00%
9	Def JDITC - Preferred Stock	\$0		0.00%	0.00%	0.00%	1.3496	0.00%
10	Def JDITC - Common Equity	\$10,862,916		0.06%	9.80%	0.01%	1.3496	0.01%
11	Total JDITC	<u>\$21,291,000</u>				<u>0.01%</u>		<u>0.01%</u>
12	Total Capitalization	<u><u>\$17,172,514,000</u></u>		<u><u>100.00%</u></u>		<u><u>5.45%</u></u>		<u><u>6.78%</u></u>

Note

Staff agreed with the Company's balances shown on Exhibit A-12, Schedule B4.1, Line 97, page 2 of 2.

- 1) Staff agreed with the Company's balance but modified it by \$49.9 million to account for a DFIT adjustment
- 2) Staff agreed with the Company's balance but modified it by \$46.5 million to account for a DFIT adjustment
- 3) Staff agreed with the Company's balance but modified it by \$966 thousand to account for a DFIT adjustment
- 4) Staff agreed with the Company's balance but modified it up by \$97.3 million to account for a formula error on the Company's behalf

DTE Electric Company
Staff Recommended Long-Term Debt Balance and Cost Rate
For Test Year Ending April 30, 2020

Case No.: U-20162
Witness: K.D. Megginson
Exhibit No: S-4
Schedule: D-2
page: 1 of 1
Date: Nov. 07, 2018

Schedule D-2

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
		Date		Interest	Amount of	Cost Based	Amount	Annual
Line	<u>Mortgage Bonds</u>	<u>Sold</u>	<u>Maturity</u>	<u>Rate</u>	<u>Offering</u>	<u>On Net</u>	<u>Outstanding</u>	<u>Cost</u>
					<u>(000)</u>	<u>Proceeds</u>	<u>(000)</u>	<u>(000)</u>
1	Series 1991 BB (CP)	05/20/91	05/01/21	7.000%	32,800	7.29%	32,800	2,390
2	Series E 1991 (DP)	05/01/91	08/01/21	6.900%	37,600	7.13%	37,600	2,680
3	Series 1992 AA (AP)	03/24/92	09/01/22	6.950%	66,000	7.16%	66,000	4,725
4	Series 1995 CC	09/01/16	09/01/21	1.450%	82,350	1.56%	82,350	1,285
5	2002 Series B	10/23/02	10/15/32	6.350%	225,000	6.47%	225,000	14,566
6	2005 Series BR	02/07/05	02/15/35	5.450%	200,000	5.55%	200,000	11,098
7	2005 Series C	09/29/05	10/01/23	5.190%	100,000	5.23%	100,000	5,232
8	2005 Series E	10/06/05	10/01/37	5.700%	250,000	5.81%	250,000	14,523
7	2006 Series A	06/01/06	06/01/36	6.625%	250,000	6.71%	250,000	16,766
10	2007 Series A	12/18/07	03/15/38	6.470%	50,000	6.53%	50,000	3,266
11	2008 Series ET	09/01/16	09/01/21	1.450%	59,175	1.56%	59,175	923
12	Series 2008KT	06/01/09	07/01/20	5.625%	32,375	5.83%	32,375	1,889
13	2010 Series A	09/15/10	09/15/20	4.890%	300,000	4.96%	300,000	14,893
14	2010 Series B	08/19/10	10/01/20	3.450%	300,000	3.59%	300,000	10,772
15	2011 Series B	05/18/11	06/01/21	3.900%	250,000	4.03%	250,000	10,074
16	2011 Series D	09/01/11	09/01/23	4.310%	102,000	4.37%	102,000	4,461
17	2011 Series E	09/01/11	09/01/26	4.460%	77,000	4.51%	77,000	3,476
18	2011 Series F	09/01/11	09/01/41	5.670%	46,000	5.71%	46,000	2,627
19	2011 Series H	09/20/11	09/01/41	4.500%	140,000	4.64%	140,000	6,490
20	2012 Series A	06/22/12	06/15/22	2.650%	250,000	2.76%	250,000	6,900
21	2012 Series B	06/22/12	06/15/42	3.950%	250,000	4.03%	250,000	10,086
22	2013 Series A	03/27/13	04/01/43	4.000%	375,000	4.09%	375,000	15,327
23	2013 Series B	08/27/13	03/15/24	3.650%	400,000	3.79%	400,000	15,156
24	2014 Series A	06/04/14	06/01/26	3.770%	100,000	3.83%	100,000	3,834
25	2014 Series B	06/04/14	06/01/44	4.600%	150,000	4.64%	150,000	6,957
26	2014 Series D	07/02/14	03/01/25	3.375%	350,000	3.48%	350,000	12,180
27	2014 Series E	07/02/14	07/01/44	4.300%	350,000	4.37%	350,000	15,296
28	2015 Series A	03/11/15	03/11/45	3.700%	500,000	3.77%	500,000	18,854
29	2016 Series A	05/17/16	06/01/46	3.700%	300,000	3.77%	300,000	11,310
30	2017 Series B	08/09/17	08/15/47	3.750%	440,000	3.81%	440,000	16,764
31	2018 Series A	05/01/18	05/01/48	4.050%	525,000	4.13%	525,000	21,683
32	2019 Series A	04/01/19	04/01/49	4.420%	250,000	4.48%	250,000	11,200
33	2019 Series B	10/01/19	10/01/49	4.420%	305,000	4.48%	305,000	13,664
34	Average					4.36%	7,145,300	311,345
Ratemaking Long-term debt balance and cost rate ¹						4.36%	6,432,689	

Notes

1- Staff's ratemaking LT-debt balance is aligned with the Company's average LT-debt balance as shown on Exhibit A-12, Schedule B4.1, pg 2 of 2.
The LT-debt cost rate took into account the proposed new debt issuances in 2018 & 2019 and Staff did not alter the Company's estimated cost rates.
Staff's Ratemaking LT-debt balance is adjusted for issuance premiums/discounts, other debits and unamortized debt expenses.

Case No.: U-20162
 Witness: K.D. Megginson
 Exhibit No: S-4
 Schedule: D-3
 page: 1 of 2
 Date: Nov. 07, 2018

DTE Electric
Staff Recommended 2017 Short-Term Debt Balance and Cost Rate
For Test Year Ending April 30, 2020

Schedule D-3

	(a)	(b)	(c)
<u>Line</u>	<u>Description</u>	<u>Amount</u>	<u>Cost Rate</u>
1	Forecast LIBOR rate		2.77%
2	LIBOR Spread		<u>0.09%</u>
3	Base Short-term interest rate		2.86%
4	Average Short-term Borrowing	\$ 113,841,000.00	
5	Credit Agreement fees	\$ 802,000.00	
6	Cost Rate of fees		0.70%
7	Short-term Debt Amount & Rate ¹	<u>\$ 113,841,000.00</u>	<u>3.56%</u>

Notes

1 - Adopting Company's short-term debt balance and cost rate

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Inflation
(CPI - All Urban)

(a) Line No.	(b) Source	(c) 2018	(d) 2019	(e) 2020	Notes
1	Value Line	2.10%	2.60%	2.70%	Selection & Opinion: <u>6/1/18 page 2315</u>
2	Global Insight	2.60%	2.10%	2.30%	US Economic Outlook: July 2018
4	Energy Information Administration	2.86%	1.99%		Short Term Energy Outlook, July 2018
5	Average	2.52%	2.23%	2.50%	
6	Staff Estimation				

Notes

Date Performed: July 31, 2018

Actual Inflation Rates

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave
2018	2.07%	2.21%	2.36%	2.46%	2.80%	2.87%	2.95%						2.53%
2017	2.50%	2.74%	2.38%	2.20%	1.87%	1.63%	1.73%	1.94%	2.23%	2.04%	2.20%	2.11%	2.13%
2016	1.37%	1.02%	0.85%	1.13%	1.02%	1.01%	0.84%	1.06%	1.46%	1.64%	1.69%	2.07%	1.26%
2015	-0.09%	-0.03%	-0.07%	-0.20%	-0.40%	0.12%	0.17%	0.20%	-0.04%	0.17%	0.50%	0.73%	0.09%
2014	1.58%	1.13%	1.51%	1.95%	2.13%	2.07%	1.99%	1.70%	1.66%	1.66%	1.32%	0.08%	1.56%
2013	1.59%	1.98%	1.47%	1.06%	1.36%	1.75%	1.96%	1.52%	1.18%	0.96%	1.24%	1.50%	1.46%
2012	2.93%	2.87%	2.65%	2.30%	1.70%	1.66%	1.41%	1.69%	1.99%	2.16%	1.76%	1.74%	2.07%
2011	1.63%	2.11%	2.68%	3.16%	3.57%	3.56%	3.63%	3.77%	3.87%	3.53%	3.39%	2.96%	3.16%
2010	2.63%	2.14%	2.31%	2.24%	2.02%	1.05%	1.24%	1.15%	1.14%	1.17%	1.14%	1.50%	1.64%
2009	0.03%	0.24%	-0.38%	-0.74%	-1.28%	-1.43%	-2.10%	-1.48%	-1.29%	-0.18%	1.84%	2.72%	-0.34%
2008	4.28%	4.03%	3.98%	3.94%	4.18%	5.02%	5.60%	5.37%	4.94%	3.66%	1.07%	0.09%	3.85%
2007	2.08%	2.42%	2.78%	2.57%	2.69%	2.69%	2.36%	1.97%	2.76%	3.54%	4.31%	4.08%	2.85%
2006	3.99%	3.60%	3.36%	3.55%	4.17%	4.32%	4.15%	3.82%	2.06%	1.31%	1.97%	2.54%	3.24%
2005	2.97%	3.01%	3.15%	3.51%	2.80%	2.53%	3.17%	3.64%	4.69%	4.35%	3.46%	3.42%	3.39%
2004	1.93%	1.69%	1.74%	2.29%	3.05%	3.27%	2.99%	2.65%	2.54%	3.19%	3.52%	3.26%	2.68%
2003	2.60%	2.98%	3.02%	2.22%	2.06%	2.11%	2.11%	2.16%	2.32%	2.04%	1.77%	1.88%	2.27%
2002	1.14%	1.14%	1.48%	1.64%	1.18%	1.07%	1.46%	1.80%	1.51%	2.03%	2.20%	2.38%	1.59%
2001	3.73%	3.53%	2.92%	3.27%	3.62%	3.25%	2.72%	2.72%	2.65%	2.13%	1.90%	1.55%	2.83%
2000	2.74%	3.22%	3.76%	3.07%	3.19%	3.73%	3.66%	3.41%	3.45%	3.45%	3.45%	3.39%	3.38%

Source: InflationData.com

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DTE Electric
Preferred Stock Balance and Cost Rate

Schedule D-4

(a)	(b) Amount <u>Outstanding</u>	(c) Cost <u>Rate</u>	(d) Annual <u>Cost</u>
Preferred Stock	-	0.00%	-

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DTE Electric
Staff Recommended Common Equity Balance
For Test Year Ending April 30, 2020

<u>Line</u>	<u>(a) Component</u>	<u>(b) Balance</u>
1	Common Stock	\$ 5,138,738,000
2	Retained Earnings	\$ 1,554,021,000
3	Other Comprehensive Income	\$ 2,668,000
4	Subtotal	\$ 6,695,427,000
5	Misc. Other Common Stock Adjustments	\$ -
6	Total Common Equity ¹	<u>\$ 6,695,427,000</u>

Notes

(1) Staff adopted balance shown on Exhibit A-9, Schedule B5.1, Line 93, page 2 of 2.

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Electric Proxy Group Corporate Statistics

Line	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
No.	Company	Ticker	Net Plant	% Reg Elec	S&P Issuer	Moody's Issuer	Dividend Payout	Value Beta	Last Allowed ROE ¹	Date of ROE Order
1	Alliant Energy	LNT	10,798	86	A-	Baa1	72	0.65	9.98%	2/2/2018
2	Ameren, Inc.	AEE	21,466	73	BBB+	Baa1	64	0.60	8.40%	12/6/2017
3	CMS Energy Corp**	CMS	16,761	69	BBB+	Baa1	63	0.55	10.00%	6/28/2018
4	Edison International	EIX	\$ 39,050	90	BBB+	Baa1	53	0.60	10.30%	10/26/2017
5	Eversource Utilities	ES	23,617	75	A+	Baa1	61	0.60	9.25%	4/18/2018
6	OGE Energy Corp	OGE	8,340	100	A-	A3	67	0.90	9.50%	5/18/2017
7	Pinnacle West	PNW	13,445	100	A-	A3	62	0.65	10.00%	8/15/2017
8	PNM Resources, Inc.	PNM	4,980	100	BBB+	Baa3	62	0.75	10.13%	12/20/2017
9	Portland General Electric	POR	6,741	100	BBB+	A3	64	0.65	9.50%	12/18/2017
10	WEC Energy Group	WEC	21,347	80	A-	A3	67	0.55	10.20%	11/14/2014
11	Xcel Energy	XEL	34,329	85	A-	A3	61	0.60	9.80%	12/7/2017
12	Average		18,261	87	A-/BBB+	A3/Baa1	63	0.65	9.73%	
13	DTE Electric*		13,746	80	A	Aa3	68		10.00%	

Proxy Group Selection Criteria:

- Net plant in excess of \$4.0 billion - less than \$40 billion
- Regulated electric revenues approximately 50% or greater
- Investment grade credit rating within three notches of DTE Electric's rating
- currently paying dividends to shareholders
- not involved in a major merger or utility company acquisition

Source: Value Line Investment Survey (July - September 24, 2018)

SNL research data from SNL.com (Site uses several data sources)

(1) column (i) is the most recent authorized electric ROE or average ROE if based on multi-state utility ROE decisions (from the SNL rate case history tab)

*DTE Electric: data obtained from Company witness Exhibits A-18, Schedules H1, page 1 of 1

-Net plant data from Exhibit A-2, Schedule B5, page 1 of 2 for period ending Dec. 31, 2017

**CMS Energy's subsidiary - Consumers Energy Electric Division - current authorized ROE

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Proxy Group Rating's Criteria

<u>S&P</u>	<u>Moody's</u>	
AAA	Aaa	
AA+	Aa1	
AA	Aa2	
AA-	Aa3	← DTE Electric Moody's rating
A+	A1	
A	A2	
A-	A3	
BBB+	Baa1	
BBB	Baa2	
BBB-	Baa3	

DTE Electric S&P rating ⇒

The boxed Credit ratings are within three notches (+) or (-) of DTE Electric's **Issuer** rating

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**Electric Proxy Group & DTE Electric
 Return On Common Equity (%)**

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
		Ticker						
<u>Line</u>	<u>Company</u>	<u>Symbol</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>Average</u>
1	Alliant Energy	LNT	11.3	10.9	10.2	9.7	10.9	10.5
2	Ameren, Inc.	AEE	7.8	8.7	8.3	9.2	9.4	8.5
3	CMS Energy Corp	CMS	13.1	13.0	13.3	13.0	13.7	13.1
4	Edison International	EIX	12.5	8.2	8.5	8.8	10.0	9.5
5	Eversource Utilities	ES	8.2	8.2	8.5	8.8	8.9	8.4
6	OGE Energy Corp	OGE	12.8	12.2	10.2	9.8	10.0	11.3
7	Pinnacle West	PNW	9.7	9.1	9.5	9.2	9.9	9.4
8	PNM Resources, Inc.	PNM	6.8	6.5	7.1	7.0	9.1	6.9
9	Portland General Electric	POR	7.5	9.2	7.6	8.2	8.4	8.2
10	WEC Energy Group	WEC	13.6	13.3	7.4	10.5	10.5	11.1
11	Xcel Energy	XEL	9.9	10.0	10.0	10.2	10.2	<u>10.1</u>
12	Average							9.71
13	DTE Electric*		11.1	10.8	10.0	10.9	10.0	10.56

Source: Value Line Investment Survey (July - September 24, 2018)

* DTE Electric's figures derived from 2013-2017 Monthly Financial Reports

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Discounted Cash Flow (DCF) Analysis

Stock Price & Dividend Analysis

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
			Closing Monthly	Closing Monthly	Closing Monthly	Avg. Closing Monthly	Most Recent Quarterly	Current Annualized	Current Annual Dividend	Adjusted ¹ Annual Dividend
Line	Company	Ticker Symbol	Stock Price Aug. 1, 2018	Stock Price Sep. 1, 2018	Stock Price Oct. 1, 2018	Stock Price	Dividend	Dividend	Yield	Yield
[A]										
1	Alliant Energy	LNT	42.84	42.57	42.56	42.66	0.335	1.34	3.14%	3.23%
2	Ameren, Inc.	AEE	63.23	63.22	63.82	63.42	0.4575	1.83	2.89%	2.99%
3	CMS Energy Corp	CMS	49.24	49	49.01	49.08	0.358	1.43	2.92%	3.02%
4	Edison International	EIX	65.73	67.68	68.88	67.43	0.605	2.42	3.59%	3.67%
5	Eversource Utilities	ES	62.43	61.44	61.37	61.75	0.505	2.02	3.27%	3.36%
6	OGE Energy Corp	OGE	36.83	36.32	36.5	36.55	0.365	1.46	3.99%	4.10%
7	Pinnacle West	PNW	78.55	79.18	81.68	79.80	0.695	2.78	3.48%	3.56%
9	PNM Resources, Inc.	PNM	38.95	39.45	38.53	38.98	0.265	1.06	2.72%	2.80%
9	Portland General Electric	POR	46.4	45.61	45.48	45.83	0.363	1.45	3.17%	3.23%
10	WEC Energy Group	WEC	67.58	66.76	67.94	67.43	0.553	2.212	3.28%	3.37%
11	Xcel Energy	XEL	48.05	47.21	47.64	47.63	0.38	1.52	3.19%	3.28%

Growth Rate Forecast

<u>Growth Rate Forecast</u>			<u>Analysts</u>			One-Step DCF Cost of Equity <u>Estimate</u> [A] + [B]	
			<i>Yahoo</i> ²	<i>Value Line</i> ³	<i>Zacks</i> ⁴		Average
			<i>5-Year</i>	<i>5-7 Year</i>	<i>3-5 Year</i>		Analyst
Ticker			<i>Growth</i>	<i>Growth</i>	<i>Growth</i>		Growth
<u>Line</u>	<u>Company</u>	<u>Symbol</u>	<u>Forecast</u>	<u>Forecast</u>	<u>Forecast</u>		<u>Forecast</u>
[B]							
1	Alliant Energy	LNT	5.75%	6.50%	5.49%	5.91%	9.15%
2	Ameren, Inc.	AEE	6.90%	7.50%	6.46%	6.95%	9.94%
3	CMS Energy Corp	CMS	6.97%	7.00%	6.18%	6.72%	9.73%
4	Edison International	EIX	3.54%	4.50%	5.85%	4.63%	8.30%
5	Eversource Utilities	ES	5.74%	5.00%	5.93%	5.56%	8.92%
6	OGE Energy Corp	OGE	5.30%	6.00%	5.17%	5.49%	9.59%
7	Pinnacle West	PNW	3.75%	5.00%	4.47%	4.41%	7.97%
9	PNM Resources, Inc.	PNM	4.95%	7.50%	4.64%	5.70%	8.49%
9	Portland General Electric	POR	4.95%	4.00%	3.13%	4.03%	7.26%
10	WEC Energy Group	WEC	4.54%	7.00%	4.13%	5.22%	8.59%
11	Xcel Energy	XEL	5.95%	5.50%	5.78%	5.74%	9.03%
12	Average ROE Estimate						8.82%

Notes and Sources

- Adjusted div. yield is 1/2 the annual growth rate to account for dividend distributions throughout year: equation = Div. yield*(1 + 0.5*avg. growth rate)
- Yahoo Finance Analyst Estimates; October 16, 2018
- Value Line: August - September 24, 2018
- Zack's Estimates: October 16, 2018

Statistics for CAPM Analysis

Line No.	Period	Large Company Total Returns (%)	Long Term Gov Bonds Income Returns (%)	Difference
1	1926	11.62	3.73	7.89
2	1927	37.49	3.41	34.08
3	1928	43.61	3.22	40.39
4	1929	(8.42)	3.47	(11.89)
5	1930	(24.90)	3.32	(28.22)
6	1931	(43.34)	3.33	(46.67)
7	1932	(8.19)	3.69	(11.88)
8	1933	53.99	3.12	50.87
9	1934	(1.44)	3.18	(4.62)
10	1935	47.67	2.81	44.86
11	1936	33.92	2.77	31.15
12	1937	(35.03)	2.66	(37.69)
13	1938	31.12	2.64	28.48
14	1939	(0.41)	2.40	(2.81)
15	1940	(9.78)	2.23	(12.01)
16	1941	(11.59)	1.94	(13.53)
17	1942	20.34	2.46	17.88
18	1943	25.90	2.44	23.46
19	1944	19.75	2.46	17.29
20	1945	36.44	2.34	34.10
21	1946	(8.07)	2.04	(10.11)
22	1947	5.71	2.13	3.58
23	1948	5.50	2.40	3.10
24	1949	18.79	2.25	16.54
25	1950	31.71	2.12	29.59
26	1951	24.02	2.38	21.64
27	1952	18.37	2.66	15.71
28	1953	(0.99)	2.84	(3.83)
29	1954	52.62	2.79	49.83
31	1955	31.56	2.75	28.81
32	1956	6.56	2.99	3.57
33	1957	(10.78)	3.44	(14.22)
34	1958	43.36	3.27	40.09
35	1959	11.96	4.01	7.95
36	1960	0.47	4.26	(3.79)
37	1961	26.89	3.83	23.06
38	1962	(8.73)	4.00	(12.73)
39	1963	22.80	3.89	18.91
40	1964	16.48	4.15	12.33
41	1965	12.45	4.19	8.26
42	1966	(10.06)	4.49	(14.55)
43	1967	23.98	4.59	19.39
44	1968	11.06	5.50	5.56
45	1969	(8.50)	5.95	(14.45)
46	1970	4.01	6.74	(2.73)
47	1971	14.31	6.32	7.99
48	1972	18.98	5.87	13.11
49	1973	(14.66)	6.51	(21.17)
50	1974	(26.47)	7.27	(33.74)
51	1975	37.20	7.99	29.21
52	1976	23.84	7.89	15.95
53	1977	(7.18)	7.14	(14.32)
54	1978	6.56	7.90	(1.34)
55	1979	18.44	8.86	9.58
56	1980	32.42	9.97	22.45
57	1981	(4.91)	11.55	(16.46)
58	1982	21.41	13.50	7.91
59	1983	22.51	10.38	12.13
60	1984	6.27	11.74	(5.47)
61	1985	32.16	11.25	20.91
62	1986	18.47	8.98	9.49
63	1987	5.23	7.92	(2.69)
64	1988	16.81	8.97	7.84
65	1989	31.49	8.81	22.68
66	1990	(3.17)	8.19	(11.36)
67	1991	30.55	8.22	22.33
68	1992	7.67	7.26	0.41
69	1993	9.99	7.17	2.82
70	1994	1.31	6.59	(5.28)
71	1995	37.43	7.60	29.83
72	1996	23.07	6.18	16.89
73	1997	33.36	6.64	26.72
74	1998	28.58	5.83	22.75
75	1999	21.04	5.57	15.47
76	2000	(9.11)	6.50	(15.61)
77	2001	(11.88)	5.53	(17.41)
78	2002	(22.10)	5.59	(27.69)
79	2003	28.70	4.80	23.90
80	2004	10.87	5.02	5.85
81	2005	4.91	4.69	0.22
82	2006	15.80	4.68	11.12
83	2007	5.49	4.86	0.63
84	2008	(37.00)	4.45	(41.45)
85	2009	26.46	3.47	22.99
86	2010	15.06	4.25	10.81
87	2011	2.11	3.81	-1.7
88	2012	16.00	2.4	13.6
89	2013	32.39	2.86	29.53
90	2014	13.69	3.12	10.57
91	2015	1.38	2.47	-1.09
92	2016	11.96	2.3	9.66
93	2017	21.83	2.67	19.16
94	1926 - 2017 AVE	12.06	4.99	7.07
95	1952 - 2017 AVE	12.31	5.88	6.44

**Electric Proxy Group
Capital Asset Pricing Model**

Case No.: U-20162
Witness: K.D. Megginson
Exhibit No: S-4
Schedule: D-5
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Ibbotson Historical Return⁽¹⁾

	Proxy Group (1926 - 2017)	Proxy Group (1952 - 2017)
Average Common Stock Return	12.06%	12.31%
Average LT Government Bond Return	4.99%	5.88%
Risk Premium	7.07%	6.44%

Risk Free Rate: Long-term Treasury Bond Yield⁽²⁾ 3.73%

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
		Ticker	Valule Line	Risk Free	Full Term	1952 - 2017	Full Term	Fed-Accord*
<u>Line</u>	<u>Company</u>	<u>Symbol</u>	<u>Beta</u>	<u>Rate</u>	<u>Risk Premium</u>	<u>Risk Premium</u>	<u>CAPM</u>	<u>CAPM</u>
1	Alliant Energy	LNT	0.65	3.73%	7.07%	6.44%	8.33%	7.92%
2	Ameren, Inc.	AEE	0.60	3.73%	7.07%	6.44%	7.97%	7.59%
3	CMS Energy Corp	CMS	0.55	3.73%	7.07%	6.44%	7.62%	7.27%
4	Edison International	EIX	0.60	3.73%	7.07%	6.44%	7.97%	7.59%
5	Eversource Utilities	ES	0.60	3.73%	7.07%	6.44%	7.97%	7.59%
6	OGE Energy Corp	OGE	0.90	3.73%	7.07%	6.44%	10.09%	9.53%
7	Pinnacle West	PNW	0.65	3.73%	7.07%	6.44%	8.33%	7.92%
8	PNM Resources, Inc.	PNM	0.75	3.73%	7.07%	6.44%	9.03%	8.56%
9	Portland General Electric	POR	0.65	3.73%	7.07%	6.44%	8.33%	7.92%
10	WEC Energy Group	WEC	0.55	3.73%	7.07%	6.44%	7.62%	7.27%
11	Xcel Energy	XEL	0.60	3.73%	7.07%	6.44%	7.97%	7.59%
13	Average						8.29%	7.89%

Source: ¹Ibbotson SBBI 2018 Classic Yearbook - as noted on Schedule D5, page 6

⁽²⁾Value Line 2019-2020 LT-Treasury bond rate forecast = 3.40% (August 2018)

Global Insight 2019-2020 -30yr Bond yield forecast = 4.05% (May 2018)

Average: 3.73%

*The 1951 Treasury-Federal Reserve Accord marked the birth of the modern day Fed. Background information from Hetzel & Leach, "The Treasury-Fed Accord: A New Narrative Account", Federal Reserve Bank of Richmond, *Economic Quarterly*, Volume 87/1, Winter 2001.

CAPM Equation = Risk Free + Beta*(Risk Premium)

Case No.: U-20134
 Witness: Kirk D. Megginson
 Exhibit No: S-4
 Schedule: D-5
 Date: September 10, 2018
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Projected Capital Asset Pricing Model

<u>Line</u>	<u>Value Line Market Return Description¹</u>	<u>Estimate</u>
1	Median Dividend Yield, next 12 months	2.10%
2	Median Price Appreciation 3-5 years, 1700 stocks	45.00%
3	Annualized Price Appreciation: Line 2 / 4 years	11.25%
4	Total Market Return: Line 1 + Line 3	13.35%
<u>Value Line Bond Yield Forecast²</u>		
5	Long-Term Treasury Bond Rate: 2019 -2020	3.40%
<u>Forecast Market Risk Premium</u>		
6	Total Market Return - LT-Bond Rate: Line 4 - Line 5	9.95%
7	Average Beta of Proxy Group ³ :	0.65
8	Risk Premium of Proxy Group: Line 6 * Line 7	6.47%
9	Forecast CAPM ROE: Line 5 + Line 8	9.87%

Source

¹Value Line Investment Survey (Summary & Index) [October 19, 2018]

²Value Line Economic Forecast (Selection & Opinion) [August 31, 2018]

³Average proxy group beta derived from Schedule D5, page 2, col g, line 10

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Dow Jones Utility Average
 (2000 - 2017)

<u>Line</u>	(a) <u>Date</u>	(b) <u>Index value</u>	(c) <u>Price Return %</u>	(d) <u>TR Index Value</u>	(e) <u>Total Return %</u>
1	3-Jan-00	276.72		577.38	
2	29-Dec-00	412.16	48.95	890.95	54.31
3	31-Dec-01	293.94	(28.68)	656.90	(26.27)
4	31-Dec-02	215.18	(26.79)	503.29	(23.38)
5	31-Dec-03	266.90	24.04	651.22	29.39
6	31-Dec-04	334.95	25.50	848.16	30.24
7	30-Dec-05	405.11	20.95	1061.35	25.14
8	29-Dec-06	456.77	12.75	1237.84	16.63
9	31-Dec-07	532.69	16.62	1486.82	20.11
10	31-Dec-08	370.76	(30.40)	1072.94	(27.84)
11	31-Dec-09	398.01	7.35	1206.78	12.47
12	31-Dec-10	404.99	1.75	1284.76	6.46
13	30-Dec-11	464.88	14.79	1537.94	19.71
14	31-Dec-12	453.09	(2.54)	1563.18	1.64
15	31-Dec-13	490.57	8.27	1761.56	12.69
16	31-Dec-14	618.08	25.99	2301.45	30.65
17	31-Dec-15	577.82	(6.51)	2230.94	(3.06)
18	31-Dec-16	659.61	14.15	2636.44	18.18
19	31-Dec-17	723.37	9.67	2988.41	13.35

Source

Column (d): data downloaded from Marketwatch.com with reference to the Dow Jones Utility Average Total Return as of December 29, 2017. Address is <https://www.marketwatch.com/investing/index/djutr/charts?countrycode=xx>

Electric Utility Common Stocks					ALL UTILITY
Period	Market Price - Weighted Average - \$ Per Share (End of Dec)	Capital Gain/Loss % Growth (Loss) on Elec Stock	Dividend Yield on Elec Utility Stock (End of Dec) (Mergent)	Total Return (Capital Gain +Dividend Yield)	Yields on A-Rated Public Utility Bonds (end of Dec)
1931	43.23		7.40	7.40	6.24
1932	39.42	(8.81)	5.63	(3.18)	5.85
1933	28.73	(27.12)	6.09	(21.03)	7.22
1934	21.06	(26.70)	6.74	(19.96)	5.36
1935	36.06	71.23	3.69	74.92	4.29
1936	41.60	15.36	4.28	19.64	3.83
1937	24.24	(41.73)	6.93	(34.80)	4.03
1938	27.55	13.66	5.26	18.92	3.74
1939	28.85	4.72	5.23	9.95	3.38
1940	22.22	(22.98)	7.07	(15.91)	3.10
1941	13.45	(39.47)	9.44	(30.03)	3.06
1942	14.29	6.25	8.96	15.21	3.06
1943	21.01	47.03	6.66	53.69	2.99
1944	21.09	0.38	6.40	6.78	2.97
1945	31.14	47.65	4.40	52.05	2.75
1946	32.71	5.04	4.52	9.56	2.76
1947	25.60	(21.74)	6.17	(15.57)	3.05
1948	26.20	2.34	6.22	8.56	3.06
1949	30.57	16.68	5.50	22.18	2.78
1950	30.81	0.79	6.00	6.79	2.86
1951	33.85	9.87	5.61	15.48	3.29
1952	37.85	11.82	5.07	16.89	3.22
1953	39.61	4.65	5.28	9.93	3.38
1954	47.56	20.07	4.50	24.57	3.11
1955	49.35	3.76	4.60	8.36	3.35
1956	48.96	(0.79)	4.84	4.05	3.91
1957	50.30	2.74	4.89	7.63	4.36
1958	66.37	31.95	3.87	35.82	4.49
1959	65.77	(0.90)	4.01	3.11	4.96
1960	76.82	16.80	3.57	20.37	4.65
1961	99.32	29.29	2.88	32.17	4.65
1962	96.49	(2.85)	3.18	0.33	4.44
1963	102.31	6.03	3.25	9.28	4.46
1964	115.54	12.93	3.19	16.12	4.54
1965	114.86	(0.59)	3.50	2.91	4.83
1966	105.99	(7.72)	3.94	(3.78)	5.67
1967	98.19	(7.36)	4.52	(2.84)	6.67
1968	104.04	5.96	4.40	10.36	6.87
1969	84.62	(18.67)	5.47	(13.20)	8.59
1970	88.59	4.69	5.34	10.03	8.48
1971	85.56	(3.42)	5.62	2.20	7.90
1972	83.61	(2.28)	5.88	3.60	7.48
1973	60.87	(27.20)	8.28	(18.92)	8.24
1974	41.17	(32.36)	11.73	(20.63)	10.27
1975	55.66	35.20	8.97	44.17	10.11
1976	66.29	19.10	7.92	27.02	8.62
1977	68.19	2.87	8.33	11.20	8.64
1978	59.75	(12.38)	10.01	(2.37)	9.70
1979	56.41	(5.59)	11.24	5.65	11.79
1980	54.42	(3.53)	12.26	8.73	14.63
1981	57.20	5.11	12.52	17.63	16.29
1982	70.26	22.83	10.87	33.70	14.43
1983	72.03	2.52	11.11	13.63	13.52
1984	80.16	11.29	10.44	21.73	13.11
1985	94.98	18.49	9.17	27.66	10.97
1986	113.66	19.67	7.89	27.56	9.12
1987	94.24	(17.09)	9.68	(7.41)	10.98
1988	100.94	7.11	8.63	15.74	10.06
1989	122.52	21.38	7.22	28.60	9.44
1990	117.77	(3.88)	7.44	3.56	9.73
1991	144.02	22.29	6.26	28.55	8.88
1992	141.06	(2.06)	6.25	4.19	8.43
1993	146.70	4.00	6.16	10.16	7.34
1994	115.50	(21.27)	7.80	(13.47)	8.76
1995	142.90	23.72	6.34	30.06	7.23
1996	136.00	(4.83)	6.67	1.84	7.59
1997	155.73	14.51	5.82	20.33	7.16
1998	181.84	16.77	4.40	21.17	6.91
1999	137.30	(24.49)	5.87	(18.62)	8.14
2000	227.09	65.40	3.84	69.24	7.84
2001	200.50	(11.71)	4.47	(7.24)	7.83
2002	169.50	(15.46)	5.21	(10.25)	6.93
Dow Jones Utility Average (Total Return)					
2003				29.39	6.27
2004				30.24	5.92
2005				25.14	5.80
2006				16.63	5.81
2007				20.11	6.16
2008				(27.84)	6.54
2009				12.47	5.79
2010				6.46	5.56
2011				19.71	4.33
2012				1.64	4.00
2013				12.69	4.81
2014				30.65	3.94
2015				(3.06)	4.39
2016				18.18	4.22
2017				13.35	3.75
1932 - 2017: Electric Utility & "A" Rated Utility Bond Average Returns					11.05
					6.44

Switched to 1932 from 1931 as beginning point because the Mergent/Moody info for market returns only goes back to 1932
Mergent's (formerly Moody's) Public Utility Manual 2003 Edition (dec to dec gain/loss + yrlly ave yield)
2003-2017 Dow Jones Utility Average TR Index from DJAverages.com as noted on Exhibit S-4, Schedule D-5, page 9 of 13
Col (g) - Mergent Public Utility Manual & Bond Record & Bloomberg

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Risk Premium Method

	(a)	(b)	(c)
<u>Line No.</u>	<u>Historical Premium</u>		
1	Electric Utility Realized Market Return Average (1932 - 2017) ⁽¹⁾	11.05%	
2	Realized Utility Bond Yield Average (1932 - 2017) ⁽²⁾	6.44%	
3	Historical Spread [1]	4.61%	
	<u>Projected Premium</u>		
4	Electric Proxy Risk Premium from Projected CAPM ² [3]	6.47%	
		<u>A</u>	<u>Baa/BBB</u>
5	Value Line Long Term Utility Bond Returns ^(a) [2]	4.37%	4.58%
6	Historical Cost of Equity Estimate [1] + [2]	8.97%	9.18%
7	Projected Cost of Equity Estimate [2] + [3]	10.84%	11.05%

Sources

(a) Value Line Selected Yields: Corporate Bonds - Utility 25/30 Year

<u>Date</u>	<u>Utility A-rated</u>	<u>Utility Baa/BBB-rated</u>
10/19/2018	4.51	4.27
9/28/2018	4.40	4.81
9/14/2018	4.28	4.62
8/17/2018	4.28	4.61
Ave	4.37	4.58

(1) Historical Market data from Mergent Public Utility Manual for 1932-2002, per Exhibit S-4, Schedule D5, pg 10
 - 2003-2017 data derived from the Dow Jones Utility Average TR Index per Exhibit S-4, Schedule D-5, page 9 of 13
 and shown at the bottom of Exhibit S-4, Schedule D-5, page 10 of 13.

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Allowed Returns on Common Equity
Electric Utility Rate Case Decisions
From other State Commissions

<u>Time Period</u>	<u>No. of Cases</u>	<u>Average ROE</u>
2016 Full Year Average	41	9.77%
2017 Full Year Average	48	9.74%
2018 Average up to September	37	9.64%

Source: S&P Global Market Intelligence
Regulatory Research Associates
RRA Regulatory Focus
Major Rate Case Decision - January-September 2018
Publication Date: October 11, 2018

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STAFF
Cost of Equity Review

<u>Method</u>	<u>ROE</u>
DCF Model Average	8.82%
Historical CAPM Full Range Average:	8.29%
Historical CAPM Fed-Accord Average:	7.89%
Projected CAPM Average	9.87%
Historical Risk Premium - A-Rated Utilities:	8.97%
Historical Risk Premium - Baa/BBB Rated Utilities:	9.18%
Projected Risk Premium - A-Rated Utilities:	10.84%
Projected Risk Premium - BBB-Rated Utilities:	11.05%
Average Authorized ROEs from Electric Utility Rate Decisions Across the U.S. in 2016:	9.77%
Average Authorized ROEs from Electric Utility Rate Decisions Across the U.S. in 2017:	9.74%
Average Authorized ROEs from Electric Utility Rate Decisions Across the U.S. through Sept. 2018:	9.64%
Recommended Cost of Equity Range:	9.00% - 10.00%
ROE used in Overall Cost of Capital:	9.80%

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

Notes:

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

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

Case No.: U-18255
Exhibit: A-9
Schedule: B6.4
Witness: P. D. Whitman
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	(a)	(b)	(c)	(d)	(e)	
			Capital Expenditures			
			Historical	Projected		
Line No.	Description		12 mos. ended 12/31/2016	10 mos. ending 10/31/2017	12 mos. ending 10/31/2018	22 mos. ending 10/31/2018
						col. (c)+(d)
	Capital Expenditures					
1	New Business:					
2	Customer Connections		69,069	59,227	72,790	132,017
3	Meters		6,220	5,334	6,555	11,889
4	Transformers		29,608	25,389	31,203	56,591
5	Customer Advances for Construction		(10,057)	(8,624)	(10,599)	(19,223)
6	Total New Business		94,840	81,325	99,949	181,274
7	System Strengthening and Reliability:					
8	Reliability	1/	94,699	143,896	252,384	396,280
9	General Load Growth	2/	9,535	16,362	10,903	27,265
10	New Business Specific Projects	3/	21,708	29,318	9,630	38,948
11	Major Equipment		23,575	11,787	13,484	25,271
12	Substation/Station Improvement	4/	72,051	65,750	78,315	144,065
13	Customer Advances for Construction		(3,562)	(3,055)	(3,754)	(6,809)
14	Subtotal System Strengthening and Reliability		218,006	264,059	360,961	625,020
15	System Strengthening Blankets:					
16	Increased Loads		13,185	11,306	13,895	25,201
17	System Improvements		1,628	1,396	1,716	3,112
18	Relocations		7,744	6,641	8,162	14,802
19	Normal Retirement Unit Changeouts		2,089	1,791	2,202	3,993
20	Emergency Retirement Unit Changeouts and Storm		144,751	124,124	152,549	276,673
21	Subtotal System Strengthening Blankets		169,398	145,259	178,523	323,781
22	Total System Strengthening, Reliability and Blankets		387,404	409,317	539,484	948,801
23	Miscellaneous					
24	Other Miscellaneous		11,189	4,160	5,113	9,272
25	Total Capital		493,433	494,802	644,545	1,139,348
26	Regulatory Asset					
27	Advanced Distribution Management System (ADMS)	1/, 5/	-	1,753	7,291	9,044

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

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

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

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

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

Michigan Public Service Commission
DTE Electric Company
Projected Capital Expenditures
Distribution Plant - System Strengthening and Reliability
(\$000)

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

Source:

1/ Exhibit A-22, Schedule N1

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

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

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

Source:

1/ Exh A-22, Sch N2

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

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

Source:

1/ Exh A-22, Sch N3

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

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

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

Source:
1/ Exh A-22, Sch N4

Michigan Public Service Commission
DTE Electric Company
Projected Capital Expenditures
Allowance for Funds Used During Construction (AFUDC)
Distribution Operations
(\$000)

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

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

1/ AFUDC estimates for routine projects are developed at a high level based on historical trend

2/ the AFUDC amounts are based on the authorized U-18014 rate of 5.55%

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

Source:

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

	(a)	(b)	(c)	(d)	(e)
Line No.	Description	Projected 10 mos. ending 10/31/2017	Authorized Amount	12 mos. ending 10/31/2018	Authorized Amount
1	Reliability:				
2	4.8 kV Relay Improvement 3/	13,955	1,587	17,177	6,904
3	Advanced Distribution Management System (ADMS) 4/	6,243	0	33,058	6,243
4	AMI mesh network 5/	2,335	0	12,210	2,335
5	Analog Lines Elimination	0	0	0	0
6	Breaker Replacement Program	10,823	10,823	9,703	9,703
7	Brest Substation	85	85	17	17
8	Cable Replacement Program	5,696	5,696	11,415	11,415
9	Calla Substation	628	628	786	786
10	City of Detroit Infrastructure	1,880	1,880	2,578	2,578
11	Conduit Replacement I-696/Dequindre Overpass	258	258	52	52
12	4.8 kV Cortland Consolidation	4,101	4,101	8,013	8,013
13	Essex 24kV H-Breaker Decom & Bus Consolidation	870	870	174	174
14	Extend CATLI DC 9128	0	0	0	0
15	IT Applications	1,922	1,922	2,366	2,366
16	Maxwell Transformer #2	3,538	3,538	708	708
17	MCGRW1321_TRSD15736	0	0	0	0
18	Misc. Reliability Projects/Programs	0	0	0	0
19	Nunneley Switchgear Replacement	285	285	57	57
20	OUTDR DC 1299 - Primary Main to URD Conv	157	157	31	31
21	Pontiac Downtown UG Vault System	433	433	87	87
22	Pole Top Maintenance 6/	23,596	15,340	32,609	27,034
23	PR Recloser Replacement	586	586	117	117
24	Reconductor	0	0	3,875	3,875
25	Repetitive Outage Pocket Program	9,614	9,614	11,843	11,843
26	SCADA monitoring	4,535	4,535	9,348	9,348
27	Trk 2250 & Trk 2218 Relocation	142	142	28	28
28	Construct Lark Substation to Relieve Spruce	2,256	2,256	1,552	1,552
29	RELIO109 Tie 2648 Reconductor	1,635	1,635	327	327
30	System Resiliency	25,035	25,035	34,149	34,149
31	Tiffany Switchgear Replacement	71	71	14	14
32	UNLAK1692 Reliability	0	0	0	0
33	URD Replacement Program	8,551	8,551	11,727	11,727
34	Ann Arbor Systems Improvement	14,665	14,665	48,363	48,363
35	Total Reliability Projects and Programs	143,896	114,694	252,384	199,845

Source:

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

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

Case: U-20162
Witness: N. M. Evans
Exhibit: S-10.3
Date: 11/7/18
Page 2 of 2

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

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

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

a. Page 4, lines 1-50;

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

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

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

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

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

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

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

b. Page 5, lines 51-94;

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

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

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

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

c. Page 7, lines 1-27;

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

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

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

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

d. Page 8, lines 1-42;

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

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

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

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

e. Page 9, lines 1-15.

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

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

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

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

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

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

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

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

(continued on next page)

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

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

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

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

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

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

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

Michigan Public Service Commission DTE Electric Company Distribution Capital Expenditures - Actual Spending 1/1/2018 - 8/31/2018					Case: U-20162 Witness: N. M. Evans Exhibit: S-10.4 Date: 11/7/18 Page 9 of 11				
Michigan Public Service Commission DTE Electric Company August 2018 Capital Expenditures Distribution Plant - Infrastructure Resilience and Hardening (\$000)					Case No.: U-20162 Exhibit: A-12 Schedule: B5.4 Witness: M.A. Bruzzano Page: 7 of 10 **				
(a)		(b)	(c)	(d)	(e)				
Line No.	Description	YTD Actuals	YTD Forecast*	H/(L)	Commentary				
1	Infrastructure Resilience and Hardening								
2	Mobile Fleet Program	2,842	3,427	(585)					
3	Substation Risk: Chestnut	309	2,944	(2,635)	Project deferred due to changes in system loading conditions.				
4	Substation Risk: Malta	3,394	2,451	943					
5	Substation Risk: Drexel	1,512	2,044	(532)					
6	Substation Risk: Apache	-	439	(439)	This project is part of a portfolio of substation work that has been bundled in an RFP to ensure cost-effective and timely execution. Bids have been received and are being evaluated.				
7	Substation Risk: Nunneley	0.5	352	(351)	Final circuit cutovers are being scheduled for Q4 2018.				
8	Substation Risk: Bloomfield	-	-	-					
9	Substation Risk: Savage	143	-	143	This project is part of a portfolio of substation work that has been bundled in an RFP to ensure cost-effective and timely execution. Bids have been received and are being evaluated.				
10	Substation Risk: Spruce	-	-	-					
11	Substation Risk: Tiffany	5	-	5					
12	4.8 kV Hardening	17,537	23,027	(5,490)	YTD forecast based on latest forecast at time of filing. Ramping up work in Q4 2018.				
13	Pole and Pole Top Hardware	22,966	21,091	1,875					
14	Pole and Pole Top Hardware: Stockbridge Substation	1,286	990	296					
15	Cable Replacement Program	4,523	5,141	(618)	YTD forecast based on 2017 spending profile which incorporates summer shutdown restrictions.				
16	Cable Replacement: Harsen's Island	168	1,272	(1,104)	Awaiting Army Corps of Engineers approval.				
17	Frequent Outage Program (CEMI) including Circuit Renewal	16,693	17,777	(1,084)					
18	Breaker Replacement Program	7,193	9,314	(2,121)					
19	Pontiac Vaults	1,806	6,152	(4,345)	Equipment has been installed for testing at the first location. Vault replacement is being scheduled in the fourth quarter 2018/early 2019.				
20	URD Replacement Program	8,579	6,086	2,493					
21	System Resiliency - Efficient Frontier	9,182	4,598	4,584					
22	Porcelain Cutout Replacement Program	4,098	3,515	583					
23	Relay Replacement: Warren	4,346	2,003	2,343	To better leverage shutdowns and resources, additional equipment was replaced for this project that would have been replaced as part of the Breaker Replacement Program.				
24	Relay Replacement: Northeast	-	1,230	(1,230)	This project was postponed to leverage lessons learned from Warren Relay Replacement. Conceptual and detailed design are expected to be completed in 2018.				
25	4.8 kV Relay Improvements (Delta Ground Detection Program)	762	1,758	(995)	Design is complete and construction is being scheduled.				
26	Disconnect and Switcher Replacement	872	1,318	(446)					
27	Total Infrastructure Resilience and Hardening Projects and Programs	108,217	116,930	(8,713)					

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

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

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

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

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

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

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

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

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

Case: U-20162
Witness: N. M. Evans
Exhibit: S-10.5
Date: 11/7/18
Page 1 of 1

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

*Assumes a new rate order every 16 months.

- 1/ Exhibit A-13, Schedule C5.6, page 3, column (h), line 5.
- 2/ Exhibit A-22, Schedule L1, page 1, column (e), line 7.
- 3/ Exhibit A-22, Schedule L1, page 1, column (f), line 7.
- 4/ Exhibit A-22, Schedule L1, page 1, column (g), line 7.
- 5/ Exhibit A-22, Schedule L1, page 1, column (i), line 7.
- 6/ Exhibit A-22, Schedule L1, page 1, column (j), line 7.
- 7/ Exhibit A-22, Schedule L1, page 1, column (k), line 7.

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

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

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

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

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

Case: U-20162
Witness: N. M. Evans
Exhibit S-10.7
Date: 11/7/18
Page 1 of 1

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

	(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
Line No.	Description	Projection Method	Bridge Jan-18	Bridge Feb-18	Bridge Mar-18	Bridge Apr-18	Bridge May-18	Bridge Jun-18	Bridge Jul-18	Bridge Aug-18	Bridge Sep-18	Bridge Oct-18	Bridge Nov-18	Bridge Dec-18
1	Base Capital Programs													
2	Emergent Replacements													
3	Storm	1/	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548	7,548
4	Non - Storm	1/	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286	7,286
5	Substation Reactive	1/	2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357	2,357
6	Emergent Replacement Reduction Based on Strategic Spend		(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)	(350)
7	Subtotal Emergent Replacements		16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842	16,842
8	Customer Connections, Relocations & Other													
9	Connections and New Load	2/	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107	11,107
10	Relocations	3/	1,191	2,667	2,051	3,005	2,061	1,682	5,382	2,359	3,358	2,064	2,394	2,648
11	Electric System Equipment	3/	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882	3,882
12	NRUC and Improvement Blankets	3/	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354
13	General Plant, Tools & Equipment and Miscellaneous	3/	345	345	345	345	345	345	345	345	345	345	345	345
14	Subtotal Customer Connections, Relocations & Other		17,880	19,356	18,739	19,694	18,749	18,370	22,071	19,047	20,047	18,753	19,083	19,337
15	Customer Advances for Construction	3/	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)	(2,434)
16	Total Base Capital Programs		32,288	33,764	33,148	34,102	33,158	32,778	36,479	33,455	34,455	33,161	33,491	33,745
17	Strategic Capital Programs													
18	Infrastructure Resilience and Hardening	4/	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588	16,588
19	Infrastructure Redesign	5/	6,959	7,772	8,325	8,044	8,655	13,997	12,695	13,284	10,475	11,338	9,351	11,010
20	Technology and Automation	6/ 7/	3,383	4,218	5,605	5,628	6,066	6,130	6,182	6,409	9,411	10,958	10,688	10,495
21	Subtotal Strategic Capital Programs		26,929	28,577	30,518	30,260	31,309	36,715	35,465	36,281	36,474	38,884	36,627	38,093
22	Total Capital	<i>DO Capital Budget</i>	59,217	62,341	63,665	64,362	64,467	69,494	71,944	69,737	70,929	72,045	70,118	71,838
23	Regulatory Asset													
24	Advanced Distribution Management System (ADMS)	8/												
1/ Exhibit A-12, Schedule B5.4 - page 3														
2/ Exhibit A-12, Schedule B5.4 - page 4, line 48														
3/ Exhibit A-12, Schedule B5.4 - page 5, lines 72, 80, 88, 90 & 93														
4/ Exhibit A-12, Schedule B5.4 - page 7, line 27														
5/ Exhibit A-12, Schedule B5.4 - page 8, line 42														
6/ Exhibit A-12, Schedule B5.4 - page 9, line 15														

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

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

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

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C. S. Matthews
CSM-8.4 Revised
J. L. Robinson
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Request:

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

Response:

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

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CSM-8.6
J. L. Robinson
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Request:

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

Response:

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

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C. S. Matthews
CSM-3.1
B. V. Moccia
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Request:

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

Response:

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

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C. S. Matthews
CSM-3.3
B. V. Moccia
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Request:

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

Response:

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

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>N. Simpson</u>
Question No.:	<u>NS-1.1</u>
Respondent:	<u>I. M. Dimitry</u>
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expenditures approved in Case U-18014. The Commission indicated that showing of initial success in the program is required to support increased funding. Therefore, the Company has invested in the 10,000-unit enrollment effort since the fourth quarter of 2017 throughout 2018. The spent and ongoing capital expenditures are covering hardware purchases of the PCTs, the Distributed Energy Resource Management System (DERMS) software, IT integration and program implementation. In the current rate Case U-20162, DTE Electric is requesting additional capital investments that will enable enrollment of a total of 17,000 customers, up from the initial 10,000 customer level, by the end of the test period (April 30, 2020).

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

A detail of the projected customer enrollment is as follows:

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

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

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

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

Notes:

- 1 Forecasted Capital in \$ Million
- 2 Forecasted O&M total expenses of \$0.4 Million per calendar year to support marketing and development of the portfolio of programs, including IAC, PCT, BYOD, and other potential residential and C&I programs
- 3 Installed Capacity (ICAP) - 2018 data represents MISO registrations for the Planning Year (PY) 2018/2019. 2019 and 2020 data represents PY 2019/2020 and PY 2020/2021, respectively, in 2019 PSCR Filing (Oct 1, 2018)
- 4 ZRCs or Zonal Resource Credits are equivalent to Unforced Capacity (UCAP), account for transmission losses and adjusted for PRM_{UCAP}, and represent data for periods described in point 3 above
- 5 PCT Program in conjunction with DPP rate
- 6 Includes: Bring-Your-Own Device (BYOD) program (residential), C&I battery-storage programs, Non-Wires programs, company-controlled electric vehicle charging program or PEV-EPRI program, and other C&I tariff-based programs

General notes:

- Planning Year (PY) ranges from June of the first year to May of the following year, for instance, PY 2018/2019 goes from June 2018 to May 2019
- n/a: Not applicable
- nyi: Not yet included in MISO filings

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C. S. Matthews
CSM-1.6a
D. J. Griffin
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Request:

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

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

Response:

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

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C. S. Matthews
CSM-5.8a
D. J. Griffin
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Request:

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

a. Please explain what enhancements are being done.

Response:

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

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C. S. Matthews
CSM-5.10a
D. J. Griffin
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Request:

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

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

Response:

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

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

DTE Electric Company
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C. S. Matthews
CSM-6.5
D. J. Griifin
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Request:

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

Response:

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

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CSM-6.7
D. J. Griifin
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Request:

7. Referring to Exhibit B5.7.3, lines 24, 32, 33, 34, please provide detailed information about the planned work that is being done in this line item, please include costs, timeline and a breakdown of the work.

Response:

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

Efforts occurring within the test period include:

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

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

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

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Settlement Analyzers to enable processing of growing data sets, the upgrade of generation data interfaces to supported platforms to ensure data reliability, and

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

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

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C. S. Matthews
CSM-4.7
T. D. Johnson
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Request:

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

Response:

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

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

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

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

Case No.: U-20162
Audit Request: MLE-1.2
Date of Request: 7/16/2018
Respondent: T. M. Uzenski
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Exhibit A-12, Schedule B5

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

STANDARD CONTRACT RIDER NO 18

DISTRIBUTED GENERATION PROGRAM

AVAILABILITY:

This Rider can be attached to any metered tariff, excluding riders, unless otherwise noted on the applicable metered tariff. The Distributed Generation Program is offered as authorized by 2008 PA 295, as amended by 2016 PA 342, 1939 PA 3, as amended by 2016 PA 341, Section (6) (a) (14), and the Commission in Case No. U-20162.

The Distributed Generation Program is available for eligible Distributed Generation customers beginning with the first day of the May 2019 Bill Month.

A customer participating in a net metering program approved by the Commission before April, , 2019 shall have the option to take service under this tariff at the time service under the terms and conditions of the previous net metering program terminates in accordance with MCL 463.0183(1).

The Distributed Generation Program is voluntary and available on a first come, first served basis for new customer participants or existing customer participants increasing their aggregate generation. The combined net metering (Rider 16) and Distributed Generation Program size is equal to 1.0% of the Company's average in-state peak load for Full-Service customers during the previous 5 calendar years. Within the Program capacity, 0.5% is reserved for Category 1 Distributed Generation customers, 0.25% is reserved for Category 2 Distributed Generation customers and 0.25% is reserved for Category 3 Distributed Generation customers. The Company shall notify the Commission upon the Program reaching capacity in any Category.

If an existing customer who participates on Rider 16 increases their aggregate generation following the effective date of this rider, then all generation on site will be subject to the terms and conditions of this tariff.

CHARACTER OF SERVICE:

As specified under the applicable Base Rate. The term Base Rate refers to the Rate Schedule under which the Customer takes service and that this Rider is associated with.

DISTRIBUTED GENERATION DEFINITIONS

- (1) A Category 1 distributed generation customer has one or more Eligible Electric Generators with an aggregate nameplate capacity of 20 kW or less that use equipment certified by a nationally recognized testing laboratory to IEEE 1547-2018 testing standards and is in compliance with UL 1741-SA **and** located on the customer's premises. ~~and metered at a single point of contact.~~
- (2) A Category 2 distributed generation customer has one or more Eligible Electric Generators with an aggregate nameplate capacity greater than 20 kW but not more than 150 kW located on the customer's premises and metered at a single point of contact that use equipment certified by a nationally recognized testing laboratory to IEEE 1547-2018 testing standards and is in compliance with UL 1741-SA **and** located on the customer's premises. ~~and metered at a single point of contact.~~

(Continued on Sheet No. D-112.00)

Issued _____, 2019
D. M. Stanczak
Vice President
Regulatory Affairs

Detroit, Michigan

Effective for service rendered on
and after _____, 2019

Issued under authority of the
Michigan Public Service Commission
dated _____, 2019
in Case No. U-20162

(Continued from Sheet No. D-111.00)

STANDARD CONTRACT RIDER NO 18 (contd)

DISTRIBUTED GENERATION PROGRAM

- (3) A Category 3 distributed generation customer has one or more methane digesters with an aggregate nameplate capacity greater than 150 kW but not more than 550 kW located on the customer's premises and metered at a single point of contact that use equipment certified by a nationally recognized testing laboratory to IEEE 1547-2018 testing standards and is in compliance with UL 1741-SA and located on the customer's premises. and metered at a single point of contact.
- (4) Eligible Electric Generator – a renewable energy system or a methane digester with a generation capacity limited to no more than 100% of the customer's electricity consumption for the previous 12 months and does not exceed the following:
a. For a renewable energy system, 150 kW of aggregate generation at a single site
b. For a methane digester, 550 kW of aggregate generation at a single site
- (5) Inflow – the metered inflow delivered by the Company to the customer during the billing month or time-based pricing period.
- (6) Outflow – the metered quantity of the customer's generation not used on site and exported to the utility during the billing month or time-based pricing period.
- (7) Renewable Energy Resource – a resource that naturally replenishes over a human, not a geological, timeframe and that is ultimately derived from solar power, water power or wind power. Renewable energy resource does not include petroleum, nuclear, natural gas, or coal. A renewable energy resource comes from the sun or from thermal inertia of the earth and minimizes the output of toxic material in the conversion of the energy and includes, but is not limited to, all of the following:
(i) Biomass
(ii) Solar and solar thermal energy
(iii) Wind energy
(iv) Kinetic energy of moving water, including the following:
(a) waves, tides or currents
(b) water released through a dam
(v) Geothermal energy
(vi) Thermal energy produced from a geothermal heat pump
(vii) Any of the following cleaner energy resources:
(a) Municipal solid waste, including the biogenic and anthropogenic fractions
(b) Landfill gas produced by municipal solid waste
(c) Fuel that has been manufactured in whole or significant part from waste, including, but not limited to, municipal solid waste. Fuel that meets the requirements of this subparagraph includes, but is not limited to, material that is listed under 40 CFR 241.3(b) or 241.4(a) or for which a nonwaste determination is made by the United States Environmental Protection Agency pursuant to 40 CFR 241.3(c). Pet coke, hazardous waste, coal waste, or scrap tires are not fuel that meets the requirements of this subparagraph.

(Continued on Sheet No. D-113.00)

Issued _____, 2019
D. M. Stanczak
Vice President
Regulatory Affairs

Detroit, Michigan

Effective for service rendered on
and after _____, 2019

Issued under authority of the
Michigan Public Service Commission
dated _____, 2019
in Case No. U-20162

(Continued from Sheet No. D-112.00)

STANDARD CONTRACT RIDER NO 18 (contd)

DISTRIBUTED GENERATION PROGRAM

CUSTOMER ELIGIBILITY

In order to be eligible to participate in the Distributed Generation Program, customers must generate a portion or all of their own retail electricity requirements with an Eligible Electric Generator which utilizes a Renewable Energy Resource, as defined above.

A customer's eligibility to participate in the Distributed Generation Program is conditioned on the full satisfaction of any payment term or condition imposed on the customer by pre-existing contracts or tariffs with the Company, including those imposed by participation in the Distributed Generation Program, or those required by the interconnection of the customer's Eligible Electric Generator to the Company's distribution system.

CUSTOMER BILLING – CATEGORY 1, 2 AND 3 CUSTOMERS

Inflow

(1) Full Service Customers

The customer will be billed according to their retail rate schedule, plus surcharges, and Power Supply Cost Recovery (PSCR) Factor on metered Inflow for the billing period or time-based pricing period.

(2) Retail Open Access Customers

The customer will be billed as stated on the customer's Retail Open Access Rate Schedule on metered Inflow for the billing period or time based pricing period.

Outflow

The customer will be credited on Outflow for the billing period or time-based pricing period. The credit shall be applied to the current billing month and shall be used to offset ~~power supply and PSCR charges on that bill. The credit shall not offset any delivery charges or other surcharges.~~ Any excess credit not used will be carried forward to subsequent billing periods. Unused Outflow Credit from previous months will be applied to the current billing month, if applicable, to offset ~~the power supply component and PSCR components of charges on the customer's bill.~~ Outflow Credit is nontransferable.

(1) Full Service Customers

Power Supply Credit for Outflow:

Customers on non time based rate schedules will be credited for each kWh of Outflow at the monthly average real time locational marginal price for energy at the DTE Electric appropriate load node. Customers on time based rate schedules will be credited for each kWh of Outflow at the monthly average real time locational marginal price for energy at the DTE Electric appropriate load node during the time of use pricing period. Customers will be credited for Outflow according to the non-transmission power supply rates shown on each rate schedule. (Or at the Company's option, the rates may be shown in a table on this Rider.)

(2) Retail Open Access Customers

The Outflow Credit will be determined by the Retail Service Supplier.

(Continued on Sheet No. D-114.00)

Issued _____, 2019
D. M. Stanczak
Vice President
Regulatory Affairs
Detroit, Michigan

Effective for service rendered on
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dated _____, 2019
in Case No. U-20162

(Continued from Sheet No. D-113.00)

STANDARD CONTRACT RIDER NO 18 (contd)

DISTRIBUTED GENERATION PROGRAM

System Access Contribution (SAC)

Customers attaching this rider to residential secondary rate schedules, or to commercial secondary rate schedules that do not have delivery demand charges, shall be subject to the SAC charge. The SAC charge shall be as follows:

Residential Customers: \$2.31 per kW of installed AC capacity, per month

Secondary Commercial Customers with no delivery demand charge: \$2.28 per kW of installed AC capacity, per month

APPLICATION FOR SERVICE

In order to participate in the Distributed Generation Program, a customer shall submit completed Interconnection and Distributed Generation Program Applications, including the application fee of \$50 to the Company.

The Distributed Generation Program application fee is waived if the customer is transitioning from the Net Metering Program.

If a customer does not act or correspond on an application for over 6 months, when some action is required by the customer, the application may voided by the Company.

GENERATOR REQUIREMENTS

The Eligible Electric Generator(s) must be located on the customer's premises, serving only the customer's premises and must be intended primarily to offset a portion or all of the customer's requirement for electricity.

Systems will be limited in size, not to exceed the Customer's self-service needs of the Rate Schedule to which this Rider is attached. The customer's requirement for electricity shall be determined by one of the following methods:

- (1) The customer's annual energy usage, measured in kWh, during the previous 12-month period
- (2) In instances where complete and correct data is not available or where the customer is making changes on-site that will affect total usage, the Company and the customer shall mutually agree on a method to determine the customer's annual electric requirement

The customer is required to provide the Company with a capacity rating in kW of the generating unit and a projected monthly and annual Kilowatt-hour output of the generating unit, along with a one-line of system and site plan when completing the Company's Distributed Generation Program Application.

The customer need not be the owner or operator of the eligible generation equipment, but is ultimately responsible for ensuring compliance with all technical, engineering and operational requirements suitable for the Company's distribution system.

(Continued on Sheet No. D-115.00)

Issued _____, 2019
D. M. Stanczak
Vice President
Regulatory Affairs
Detroit, Michigan

Effective for service rendered on
and after _____, 2019

Issued under authority of the
Michigan Public Service Commission
dated _____, 2019
in Case No. U-20162

Continued from Sheet No. D-114.00)

STANDARD CONTRACT RIDER NO 18 (contd)

DISTRIBUTED GENERATION PROGRAM

GENERATOR INTERCONNECTION REQUIREMENTS

The requirements for interconnecting a generator with the Company's facilities are contained in Rule B8., Electric Interconnection and Distributed Generation Standards, the Michigan Electric Utility Generator Interconnection Requirements and the Company's Generator Interconnection Supplement to Michigan Electric Utility Generator Interconnection Requirements. All such interconnection requirements must be met prior to the effective date of a customer's participation in the Distributed Generation Program. The customer must sign an Interconnection and Operating Agreement with the Company and fulfill all requirements as specified in the Agreement. The customer shall pay actual interconnection costs associated with participating in the Distributed Generation Program, subject to limits established by the Michigan Public Service Commission.

The Company must approve in writing any subsequent changes in the interconnection configuration before such changes are allowed. Operating in parallel with the Company's system without the Company's written approval of the interconnection and written approval of any subsequent changes to the interconnection will subject the Customer's equipment to disconnection.

METERING REQUIREMENTS

Metering requirements shall be specified by the Company, as detailed below. All metering must be capable of recording inflow and outflow and all parameters metered on the customer's otherwise applicable retail rate schedule, for both Full Service and Retail Open Access customers.

DISTRIBUTION LINE EXTENSION AND/OR EXTRAORDINARY FACILITIES

The Company reserves the right to make special contractual arrangements with Distributed Generation Program customers whose utility service requires investment in electric facilities, as authorized by the Company's Standard Contract Rider No. 2, Special Purpose Facilities, Rule C1, Character of Service, and Rule C6., Distribution Systems, Line Extensions and Service Connections, as set out in the Company's Electric Rate Book. The Company further reserves the right to condition a customer's participation in the Distributed Generation Program on a satisfactory completion of any such contractual requirements.

CUSTOMER TERMINATION FROM THE DISTRIBUTED GENERATION PROGRAM

A participating customer may terminate participation in the Company's Distributed Generation Program at any time for any reason on sixty days' notice. In the event that a customer who terminates participation in the Distributed Generation Program wishes to re-enroll, that customer must reapply as a new program participant, subject to program size limitations, application queue and application fees.

The Company may terminate a customer from the Distributed Generation Program if the customer fails to maintain the eligibility requirements, fails to comply with the terms of the interconnection and parallel operating agreement, or if the customer's facilities are determined not to be in compliance with technical, engineering, or operational requirements suitable for the Company's distribution system. The Company will provide sixty days' notice to the customer prior to termination from the Distributed Generation Program, except in situations the Company deems dangerous or hazardous. Such notice will include the reason(s) for termination.

(Continued on Sheet No. D-116.00)

Issued _____, 2019
D. M. Stanczak
Vice President
Regulatory Affairs

Detroit, Michigan

Effective for service rendered on
and after _____, 2019

Issued under authority of the
Michigan Public Service Commission
dated _____, 2019
in Case No. U-20162

(Continued from Sheet No. D-115.00)

STANDARD CONTRACT RIDER NO 18 (contd)

DISTRIBUTED GENERATION PROGRAM

Upon customer termination from the Distributed Generation Program, any existing credit on the customer's account will be ~~forfeited~~ either applied to the customer's bill or refunded to the customer. Distributed Generation Program credit is non-transferrable.

COMPANY TERMINATION OF THE DISTRIBUTED GENERATION PROGRAM

Company termination of the Distributed Generation Program may occur upon receipt of Commission approval.

Upon Company termination of the Distributed Generation Program, any existing credit on the customer's account will be ~~forfeited~~ either applied to the customer's bill or refunded to the customer. Distributed Generation Program credit is non-transferrable.

DISTRIBUTED GENERATION PROGRAM STATUS AND EVALUATION REPORTS

The Company will submit an annual status report to the Commission Staff by March 31 of each year including Distributed Generation Program data for the previous 12 months, ending December 31. **The report will include interconnection costs paid by each customer and the interconnection equipment provided by the Company during the reporting year.** The Company's status report shall maintain customer confidentiality.

RENEWABLE ENERGY CREDITS

Renewable Energy Credits (RECs) are owned by the customer. The Company may purchase Renewable Energy Credits from participating Distributed Generation Program customers who are willing to sell RECs generated if the customer has a generator meter in place to accurately measure and verify generator output. REC certification costs are the responsibility of the customer.

The Company will enter into a separate agreement with the customer for the purchase of any RECs.

Issued _____, 2019
D. M. Stanczak
Vice President
Regulatory Affairs

Detroit, Michigan

Effective for service rendered on
and after _____, 2019

Issued under authority of the
Michigan Public Service Commission
dated _____, 2019

DTE Electric Company
Case No. U-20162

Auditor: J. K. Baldwin
Request No: JKB-1.8
Respondent: P. W. Dennis
Page: 1 of 1

Request:

8. The proposed tariff language provides for the customer to forfeit any existing credit on the customer's account upon company termination of the program. Please explain the company's reasoning for including this language.

Response:

The Company's Rider 18 proposal states outflow credits can offset the power supply portion of a customer's bill (Exhibit A-16, Schedule F-10, Original Sheet No. D-113). If customers who terminate from the program could "cash out" any remaining outflow balance when service was terminated, the limitation on using the credits to only offset power supply charges would essentially be null. See also, testimony of C. Serna, page 62, lines 12 through 18.

In addition, Act 342, Section 177(4) states, "Notwithstanding any law or regulation, distributed generation customers shall not receive credits for electric utility transmission or distribution charges". Finally, assuming the Commission approves the Company's proposed Rider 18 rate structure, the Company does not anticipate customers to have much value in their banks, if at all, at time of termination.

DTE Electric Company
Case No. U-20162

Auditor: J. K. Baldwin
Request No: JKB-1.7
Respondent: R. J. Mueller
Page: 1 of 1

Request:

7. Based on the company's experience interconnecting more than 1,500 net metering customers, please describe some of the potential investment in electric facilities that could be necessary for a Category 1 distributed generation project. Please describe the electric facilities and the potential costs.

Response: To 'net' out the Kwh energy for the year, a DG must be sized to generate all of the required energy during daylight hours. This inherently creates a DG system that is larger than the normal demand of the site. This factor is typically 6-8x the average demand. DTE has many residential transformers that are 10KV, 25KV and 50KV. Often more than one customer is connected to a transformer (typically 3-6).

The following is not a comprehensive list, but represents common scenarios

- 1) If the generation at the site exceeds the household service entrance amperage, the subsequent upgrade may require replacement of secondary, this will be especially true in older neighborhoods as they were typically built with much smaller services than is standard today.
- 2) If the generation at the site exceeds the existing transformers rating, the transformer must be replaced with a larger one.
- 3) If the aggregate generation connected to a transformer exceeds the transformer rating the transformer will need to be replaced with a larger one.
- 4) If the aggregate of the generation on the line section approaches a line limit or produces a high voltage due to conductor impedance, then a conductor will need to be upgraded. The first customer may have no upgrades, subsequent installations in the same area require the upgrades.
- 5) In highly penetrated areas where multiple residences on the same section of line are all generating there may be protection issues that require fuses or reclosers to be replaced or reclosers and relays to have different settings.
- 6) As more generation is placed on the system the generation masks the load from metering since metering is 'net' rather than discrete inflow and outflow. When the generation goes away the load may still be present so the system must still be designed to handle the maximum load.
- 7) Additionally, as more electric vehicles are added to the system, customers may install additional DG to offset the usage from the vehicles potentially increased transformer sizes. This also produces an impact where the transformer will experience longer periods of peak loading as it sees peak load in reverse power for the DG during daylight hours and peak load in forward power when the vehicles are charging.
- 8) All of these above factors result in increases to the thermal load and duty cycle on the transformer and will require higher rated equipment.

DTE Electric Company
Case No. U-20162

Auditor:	J. DeCooman
Request No:	JJD-2.10
Respondent:	M. T. Paul
Page:	1 of 1

Request:

10. Please provide a more detailed description of the need for projects on lines 3, 4 and 5 in Exhibit A-12, schedule B5.1, page 2. Explain how the necessity for the expansion of fly ash storage capabilities works in conjunction with the fly ash processing project listed in line 6. In testimony, witness Paul states that this project will reduce the amount of fly ash transported to landfills. Are these projects designed to segue from wet to dry storage of fly ash? Are these projects inclusive of the cost of removal of wet fly ash storage facilities? Is the concrete transfer pad listed in line item 4 meant to be an intermittent storage location for fly ash before being transferred to the storage silos listed in line item 3?

Response:

Projects identified on lines 3 and 4

The EPA CCR rule and ELG rule required DTE Electric to construct a dry ash landfill (Monroe Fly Ash Basin Vertical Extension, line 3) to allow Monroe PP to have a location to dispose of CCR while the wet ash basin is being dewatered (40CFR Parts 257, 262, and 423).

Line 6, Monroe ELG Fly Ash Processing project will be able to take fly ash coming from the new dry fly ash transportation system (Monroe ELG Fly Ash Dry Conversion – line 5) and divert a portion of the ash from going to the new dry ash impoundment (Monroe Fly Ash Basin Vertical Extension, line 3). The divergence of ash going to the new dry ash landfill will extend the time before additional dry ash storage will be required.

The two projects that will allow us to handle and permanently store dry fly ash are those shown on Line 5 and Line 3. Line 5, Monroe ELG Fly Ash Dry Conversion project will replace the existing wet fly ash transportation system with a dry fly ash transportation system. Line 3, Monroe Fly Ash Basin Vertical Extension is the permanent dry fly ash storage impoundment that will come from the dry fly ash transportation project (Monroe ELG Fly Ash Dry Conversion, line 5).

The dewatering of the wet ash basin project needs to start after Monroe PP is no longer placing wet fly ash into the basin. The compliance date for the EPA ELG rule requiring conversion to a dry fly ash transportation system is 2023. Therefore, none of the projects listed in Exhibit B5.1, page 2 of 9 includes a dewatering project.

The Monroe Coal Combustible Residuals Transfer Pad project, shown on line 4, is a temporary site to store fly ash that could not be collected when the new dry fly ash transportation system is unavailable (Monroe ELG Fly Ash Dry Conversion project-line 5). Fly ash from the transfer pad is transported by truck to the Monroe Fly Ash Basin Vertical Extension (line 3).

Michigan Public Service Commission
DTE Energy Company
Monroe Dry Fly Ash Processing PMP

Case: U-20162
Witness: J. J. DeCooman
Exhibit S-13.1
Page 1 of 2

DTE Energy <i>Detroit Edison</i>		FOSSIL GENERATION PAT REVIEW REQUEST FORM												
PAT-AT Agenda Date: Forecast		Scope Change		New Revision		Cancel								
PMP Project ID: 11512		Schedule Change		Release of Contingency										
PAT LVL/REV: Forecast		Project Title: Monroe U1-4 Dry Fly Ash Processing System												
Project Site: MONPP		Project Start Date: 9/4/2018		PMP Problem Description & Project Objective (Project deliverables? Sum benefits-attach extra sheets if required):										
Unit: Common		Scope Baseline Date: N/A		Problem Description: Most of the fly ash produced at Monroe is not viable for marketing and must be landfilled. Starting in 2024, production ash must be transported in dry form.										
Outage Related? No		Constr. Start Date: 7/8/2019		Project Objective: Invest in technology that is capable of processing the production of dry fly ash and convert it into a marketable product.										
Current IRR: 15%		Project I/S Date: 12/31/2020												
SAP Profit Center #:		Investment Reason:												
WBS Element:														
Project Type/Systems: 14 Common														
Reconciliation Category: Engineering & Long Lead for Future Projects														
Brief Project Scope Summary (Summarize products & services provided)														
Install an ash processing system capable of converting 100% of production ash into a marketable product.														
Reason for Submittal (State reason for submittal, categorize requested dollar amount changes, and explain any estimate at completion (EAC) benefits or IRR changes):														
This is for Pre-PATO project initiation.														
SAP Budget Approval														
Prior Years	2019	2020	2021											
Previously Approved PAT:	\$0	\$0	\$0	\$0										
PAT Change Request:	\$0	\$0	\$0	\$0										
Current PAT Request:	\$0	\$0	\$0	\$0										
Total PAT Request:	\$0	Total PAT Change:			\$0									
Forecast Charge Categories		Current Approved PAT Form				Forecast Changes				Revised PAT Forecast				
		2018	2019	2020	Future Years	2018	2019	2020	2021	2018	2019	2020	Future Years	Project Total (EAC)
DTE Labor (Direct)		\$0	\$0	\$0	\$0	\$50,000	\$500,000	\$500,000	\$0	\$50,000	\$500,000	\$500,000	\$0	\$1,050,000
Contract Labor (Direct)		\$0	\$0	\$0	\$0	\$750,000	\$7,500,000	\$8,500,000	\$0	\$750,000	\$7,500,000	\$8,500,000	\$0	\$16,750,000
Material (Direct)		\$0	\$0	\$0	\$0	\$0	\$15,000,000	\$12,000,000	\$0	\$0	\$15,000,000	\$12,000,000	\$0	\$27,000,000
Other (Direct)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,000,000	\$0	\$0	\$0	\$6,000,000	\$6,000,000
Shared Costs		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Indirects		\$0	\$0	\$0	\$0	\$50,000	\$2,000,000	\$3,000,000	\$0	\$50,000	\$2,000,000	\$3,000,000	\$0	\$5,050,000
Sub-Total		\$0	\$0	\$0	\$0	\$850,000	\$25,000,000	\$24,000,000	\$6,000,000	\$850,000	\$25,000,000	\$24,000,000	\$6,000,000	\$55,850,000
Calculated Risk		\$0	\$0	\$0	\$0	\$150,000	\$5,000,000	\$4,800,000	\$1,200,000	\$150,000	\$5,000,000	\$4,800,000	\$1,200,000	\$11,150,000
TOTAL		\$0	\$0	\$0	\$0	\$1,000,000	\$30,000,000	\$28,800,000	\$7,200,000	\$1,000,000	\$30,000,000	\$28,800,000	\$7,200,000	\$67,000,000
						Change in Total EAC:				\$67,000,000				
Project Developer: Rick Luberacki		APPROVAL DISPOSITION:												
Project Engineer: Rich Nasutovich		Without Calculated Risk:												
Project Manager: Clint Murphy		With Calculated Risk:												
		Approved by:						Date:						
See SWI (Standard Work Instruction) ALLPP-SWI-03-004-011-0643 for instructions on filling out this form														
Form: ALLPP-FM-0013 Rev: 6 Date: 11/2/16														

Fos Gen Large Capital Projects Charter

PMP #11512

Date: Preliminary Draft

Project Name: Monroe U1-4 Dry Fly Ash Processing System [System 2]

Investment Planning Rep.: Rick Luberacki

Problem Statement

The majority of flyash produced at Monroe Power Plant is collected and sluiced with water to an on-site Flyash Impoundment Basin where it is disposed. The remaining flyash is transported dry to a third party storage facility and is then trucked to concrete suppliers. Transporting the ash with water must cease by December 31, 2023 per EPA Effluent Limitation Guidelines (ELG).

Current State

Flyash produced by Units 1 & 2 that meets quality specifications can be transported in dry form via a third party collection system and then marketed to the concrete industry. To meet acceptance criteria for ash sales, those units are restricted from burning any significant amount of pet coke in the fuel mix since it results in higher LOI in the ash. The burning of pet coke in the fuel mix provides a significant PSCR cost savings to DTE customers. Flyash sales benefits the environment (avoids landfilling) and provides an O&M benefit to DTE. Flyash that is rejected from those units, or cannot be collected by the dry method, must be sluiced to the flyash impoundment basin located about 2 miles from the plant. Flyash produced by Units 3 & 4 must all be sluiced to that basin since a dry collection/transport system does not exist on those units.

Projects are being developed to convert all four units for 100% dry flyash collection to comply with ELG [System 1]. When those projects are completed, all flyash will be transported dry to temporary storage silos. Without an alternate solution, that ash would then be disposed of. That would require the ash to be loaded and trucked to the impoundment basin, but that basin doesn't have enough capacity to accept production ash for the projected remaining life of the plant (year 2040).

Technology exists that allows for the processing of high carbon ash so it can meet marketability standards. Two vendors submitted proposals that would take the dry flyash collected by a future "System 1" to process and market it to concrete suppliers, providing an economic benefit to both DTE and its customers, and provide a beneficial option for the environment.

Expected Benefits	Current State	Target State
Provide a "System 2" solution to manage all dry flyash after December 31, 2023 that also delivers long-term value to DTE, its customers and the environment	Once the Plant becomes ELG compliant for dry flyash collection by December 31, 2023, it cannot burn pet coke and market production ash through the existing Headwaters dry ash facility. Nor can the on-site flyash impoundment accept all future flyash production	The Plant would be able to burn the desired/acceptable amounts of pet coke and eliminate or minimize the amount of production flyash that must be landfilled and do so no later than December 31, 2023

Key Business Assumptions

Monroe has been identified as a long-term asset in the fossil generation fleet.

Ideal State

The Plant would be able to blend a desired/acceptable amount pet coke in all four units and still be able to market all or most its flyash production as soon as possible but no later than December 2023.

Case for Change

Compliance with the EPA's ELG will require all flyash production be transported dry to its intended destination by December 31, 2023. By then if the plant burns the desired amount of pet coke in all four units, it will not be able to deliver marketable ash to the existing Boral/Headwaters facility, and all production ash would have to be disposed of. However, the existing on-site flyash impoundment does not have enough capacity remaining to accept all production ash for the remaining life of the Plant.

Gap to be Corrected

If the plant burns the desired amount of pet coke in all four units, without an alternate means to market their production flyash, it must be transported in dry form from proposed temporary storage silos and properly disposed of starting no later than December 2023.

Summary of Scope

Install a dry fly ash beneficiation system capable of processing 100% of the fly ash produced from Units 1-4.

Schedule Assumptions

Obtain funding approval in late-2018

Start detailed engineering in late-2018

Start construction in mid-2019

Commission system in late-2020

Total Estimated Project Cost = \$67M

Preliminary IRR = 15%

Challenges/Risks to Successful Completion

DTE Electric Company
Case No. U-20162

Auditor:
Request No:
Respondent:
Page:

J. DeCooman
JJD-2.2
M. T. Paul
1 of 1

Request:

2. Please reference Exhibit A-12, schedule B5.1 page 2, lines 5 & 6. Please provide a more detailed description of the need for this project and the expected revenues associated with the sale of usable fly ash to concrete manufacturers. What revenue is the Company expecting to gain through this project? On page 36 of witness Paul's testimony, it is stated that "reducing the amount of fly ash placed in the landfill will minimize cost increases related to the new environmental requirements." Please provide an NPVRR analysis that supports this statement. What assumptions went into this analysis (i.e. additional O&M costs, reduced cost of landfill storage, rate of revenue from sales with concrete manufacturers) and what is the basis for these assumptions?

Response:

The project referenced in Exhibit A-12, schedule B5.1 page 2, line 5 (Monroe ELG Fly Ash Dry Conversion) is required to attain compliance under Effluent Limitation Guidelines ("ELG").

Related to Exhibit A-12, schedule B5.1 page 2, line 6 (Monroe Dry Fly Ash Processing), the need for this project is substantiated by DTE's desire to drive customer value through the beneficial reuse of coal combustion residuals (CCR; i.e. fly ash and bottom ash) on all 4 units at Monroe Power Plant, and substantially reduce the amount of CCR material placed in DTE's landfill.

Based on our economic analysis, DTE expects to derive an average net revenue of \$8.0MM per year 2023 – 2040 from the sale of marketable ("usable") fly ash and bottom ash.

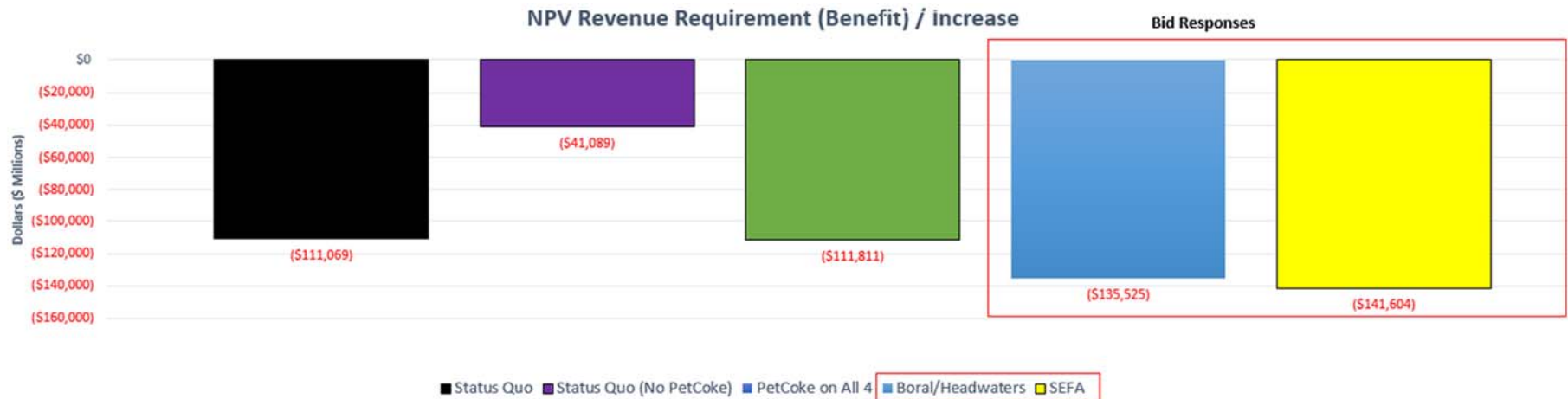
Please see the NPVRR analysis referenced as "U-20162 JJD-2.1 Monroe Ash Model". The basis of the assumptions used in this analysis is validated through conversations with DTE and external industry experts, Burns & McDonnell, peer utilities, and beneficiation technology vendors.

Michigan Public Service Commission
DTE Energy Company
Monroe Dry Fly Ash Processing NPV analysis

Case: U-20162
Witness: J. J. DeCooman
Exhibit S-13.2
Page 2 of 3

Scenarios	1	2	3	4	5
Assumptions	Status Quo	StatusQuo (No PetCoke)	PetCoke (All 4 Units)	Boral / Headwaters	SEFA
Start Date of Project	2023	2023	2023	2023	2023
Project Duration / Contract Length (Yrs)	17	17	17	17	17
Capital - \$ ('000's)					
RFP Budgetary Estimate	\$ -	\$ -	\$ -	\$ 63,320	\$ 77,708
Dry Ash Handling 3/4 Side					
Headwaters Buy-Out					
Ongoing / Maintenance CAPEX					
Depreciation Class	20.00	20.00	20.00	20.00	20.00
O&M					
Trucking/Landfill Costs - (\$/ton)	\$ 15	\$ 15	\$ 15	\$ 15	\$ 15
Boiler Benefits (\$, '000's)	\$ -	\$ 80	\$ (80)	\$ (80)	\$ (80)
PSCR Savings (\$, '000's)	\$ 12,000	\$ -	\$ 18,000	\$ 18,000	\$ 18,000
Other	\$ -	\$ -	\$ -	\$ -	\$ -
Ash Marketing					
Fly Ash Production (Annual)	363,000	363,000	363,000	363,000	363,000
Bottom Ash Production (Annual)	100,000	100,000	100,000	100,000	100,000
Production Ash Market Price	\$ 45	\$ 45	\$ 45	\$ 45	\$ 45
Bottom Ash Market Price	\$ 6	\$ 6	\$ 6	\$ 6	\$ 6
Production Ash Marketed Volumes	113,052	290,400	-	254,100	397,000
Bottom Ash Marketed Volumes	100,000	100,000	100,000	100,000	66,000
Revenue Share DTE / Price Threshold (SEFA)	50%	50%	50%	65%	35
OPEX					
\$/ton	\$13.50	\$13.50	\$13.50	\$ 10.00	\$ 15.20
Other Costs					
SEFA - Technology and SGA					\$10

[illegible]



NPV Deltas			
	SEFA	BORAL	DELTA
Authorized Return	\$43,414	\$35,376	(\$8,038)
Depreciation	\$39,019	\$31,794	(\$7,225)
O&M (Benefit)/Increase	(\$67,189)	(\$42,836)	\$24,354
Ash Sales	(\$66,420)	(\$56,246)	\$10,174
Trucking/Landfill	\$0	\$15,312	\$15,312
Boiler	(\$769)	(\$769)	\$0
PSCR (Benefit)/Increase	(\$173,114)	(\$173,114)	\$0
Property Tax	\$16,266	\$13,254	(\$3,012)
Change in Cost of Service	(\$141,604)	(\$135,525)	\$6,079

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>Staff</u>
Question No.:	<u>STDE-8.1</u>
Respondent:	<u>M. T. Paul</u>
Page:	<u>1 of 1</u>

Question: Please refer to Exhibit A-12, Schedule B5.1, p 2 of 9. Please answer whether DTE Electric has received internal budgetary approval from its management or board of directors for the costs shown on line 6 of this exhibit. If the answer is no, please answer what the expected timeframe is for this project to be reviewed and approved by the proper internal authority.

Answer: For the Monroe Dry Fly Ash Processing project listed on line 6 of Exhibit A-12, Schedule B5.1, p 2 of 9, DTE Electric has received internal approval for benchmarking, legal due diligence, and conceptual design and engineering. We expect to receive the remaining project approvals in late 2018 or early 2019.

Attachments: *None*

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>Staff</u>
Question No.:	<u>STDE-8.2</u>
Respondent:	<u>M. T. Paul</u>
Page:	<u>1 of 1</u>

Question: Please refer to Exhibit A-12, Schedule B5.1, p 2 of 9. Please answer yes or no as to whether a contract has been executed between DTE Electric and an Engineering, Procurement and Construction (EPC) contractor for the project shown on line 6 of this exhibit. If the answer is yes, provide a copy of the Gantt chart for this project with a breakout of construction and financial milestones. If no, please provide an expected date of execution for a contract.

Answer: No, a contract has not been executed between DTE Electric and an Engineering, Procurement and Construction (EPC) contractor at this time. DTE Electric has not yet determined the contracting strategy related to this project, and therefore it is not yet known whether it will be necessary to execute a EPC contract.

Attachments: *None*

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>Staff</u>
Question No.:	<u>STDE-8.3</u>
Respondent:	<u>M. T. Paul</u>
Page:	<u>1 of 1</u>

Question: Please refer to the attachment titled "U-20162 JJD-2.3 PMP 11512" provided to Staff in audit response JJD-02. One of the categories under "Forecast Charge Categories" in the referenced attachment is titled "Calculated Risk". Please define this category, and the types of capital expenses that would fall under it.

Answer: The category defined as "Calculated Risk" is meant to define potential project risks that, if the risks materialized, could result in incremental project capital expenses. For internal capital budgeting purposes, it defines the upper-bound for what capital expenditures could be if all potential risks materialized. None of the expenses designated in the Calculated Risk line are included in the Company's rate revenue request in this case.

Attachments: *None*

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>MECNRDCSCDE</u>
Question No.:	<u>MECNRDCSCDE-2.8ei</u>
Respondent:	<u>R. F. Feldmann</u>
Page:	<u>1 of 1</u>

Question: Refer to Robert Feldmann's direct testimony:

- e. Did DTE Electric solicit bids or proposals for construction of the CHP plant from any entity other than DTE's P&I Group?
 - i. If yes, produce the solicitation and any responses.

Answer: No. The Company requested a 3rd party assessment of the cost to construct this unit and the price that was estimated was significantly higher than the negotiated price with DTE's P&I group.

Basic Assumptions			
Capital - \$ / KW	\$1,832	Steam Sales	
Total Cogen Capital	\$62,300	2019 Annual Steam Sales	749,400
Depreciation Class	10	2026 Annual Steam Sales	592,334
O&M		Steam Factor (mmbtu/mlb)	1.25
Fixed (\$ / KW)	\$0.00	Steam Overhead Fee (\$/mlb)	0.00
Variable (\$ / MWH)	\$0.00	2019 Steam Sales (mlbs/hr)	85.55
Allocated (\$000 / Year at COD)	\$0	2026 Steam Sales (mlbs/hr)	67.62
Year 21 thru 30 O&M (2017\$)	\$0	Utility Pre-tax WACC	10.58%
Include Year 21 thru 30 O&M	no	Rev Req Discount Rate	7.98%
Plant Capacity (MW)	34	Marginal Tax Rate	39.00%
Capacity Factor	91.4%	Inflation Rate	2.00%
MWH Produced (2020)	275,960	Industrial Real Millage Rate	72.00
MWH Produced (2027)	272,299	Percent Industrial Real	60%
Heat Rate - Power 2019	7,751	Industrial Personal Millage Rate	48.00
Heat Rate - Power 2026	7,726	Percent Industrial Personal	40%
Boiler Efficiency	80%	Utility Interest Rate	4.61%
Total Fuel (mmbtu) 2019	3,075,661	Utility Leverage	50.00%
Total Fuel (mmbtu) 2026	2,844,227	Cost of Equity	10.10%
		Cost of Debt	4.61%
		Cost of Capital AFUDC	7.36%
		After-tax WACC	6.46%
		Net Margin Benefit to DTEE (2019)	\$0
		Project Life	30
		Commercial Operation Date ("COD")	12/31/2019
		COD Year	2019
		COD Month	12

Results	
	<u>LCOE</u>
Return	13.6
Depreciation	8.4
Operating Expenses	0.0
Property Tax	7.6
Fuel	62.6
Steam Sale	(16.9)
Cost of Service	75.1
Levelized Cost of Energy	
Levelized Cost of Service	231,325
Levelized Energy	3,078,545
LCOE	75.1
LCOE (Rounded) \$/MWh	75

DTE Electric Company
Case No. U-20162

Auditor:
Request No:
Respondent:
Page:

J. DeCooman
JJD-1.12
R. D. Feldmann
1 of 1

Request:

12. Please reference page 7, lines 1-7 of witness Feldmann's testimony. Compare the CHP LCOE to that assumed for solar, wind and a CC gas plant.

Response:

The project LCOE was \$75. At the time the decision was made in August of 2016 comparable cost for Solar was between \$130-\$530, Wind was \$70-85, and combined cycle gas plant was \$60-\$80.

EXHIBIT S-13.8
IS CONFIDENTIAL AND BEING
FILED UNDER SEAL WITH
THE MPSC

DTE Electric Company
Case No. U-20162

Auditor:
Request No:
Respondent:

M. Edelyn
MLE-1.1
J. C. Davis,
M. T. Paul,
M. A. Bruzzano,
T. M. Uzenski,
I. M. Dimitry,
D. J. Griffin
1 of 1

Page:

Request:

1. Please answer Yes or No to the following question. Does DTE Electric Company's Projected Capital Expenditures Summary Exhibit A-12, Schedule B5, include reserves or contingency costs?

Response:

Yes.

Fossil Generation includes contingency for the Combined Cycle Plant on Line 11 of Exhibit A-12, Schedule B5.1, in the amount of \$5,900,000 for 16 months ending 4/30/2019 and \$4,633,000 for 12 months ending 4/30/2020. This is consistent with the contingency amounts approved by the Commission in U-18419.

Corporate Staff includes contingency for the Headquarters Energy Center on Line 5, page 1 of 2 of Exhibit A-12, Schedule B5.8, in the amount of \$1,965,000 for 16 months ending 4/30/2019 and \$2,505,000 for 12 months ending 4/30/2020.

These are larger, non-routine projects early in their lifecycle which require contingency to mitigate the risk of cost increases due to unforeseen circumstances. Other than these two exceptions, it is the Company's practice to not include reserves or contingency within the capital projections in the rate case based on previous disallowances.

DTE Electric Company
Case No. U-20162

Auditor:
Request No:
Respondent:
Page:

J. DeCooman
JJD-2.5
M. T. Paul
1 of 1

Request:

5. Please provide a complete list with detailed descriptions of the costs included in Exhibit A-12, schedule B5.1 page 2, column (c) line 30. Please differentiate between actual costs incurred this year through July 31, and costs that are expected to be incurred between August 1, 2018 and December 31, 2018.

Response: Dollars in thousands

	Actuals	Forecast
	YTD 7/31/2018	8/1/2018 - 12/31/2018
Capital Expenditures		
ST Labor - Base Capital	682	504
OT Labor - Base Capital	10	0
Materials	0	0
Outside Services	70817	12113
Other Non-Labor	2040	5592
Total Directs	73549	18208
Benefits, Payroll Tax & REP - Total	386	283
Total Capex	73934	18491

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>K. Gould</u>
Question No.:	<u>KG-1.2</u>
Respondent:	<u>M. B. Leuker</u>
Page:	<u>1 of 1</u>

Question: Please provide the exact amount of utility funded energy efficiency program savings presumed to have affected the forecasted sales figures represented on Exhibit A-15, Schedule E1, Page 1 of 3. Please provide these in a chart form broke out by customer class.

Answer: DTE does not explicitly identify an exact amount of utility funded energy efficiency savings for the forecasted sales figures represented on Exhibit A-15, Schedule E1, Page 1 of 3. However, the Company analyzes the forecast results compared with historical performance to ensure consistency, assure historical trends and future EWR programs are implicitly captured.

Attachments: n/a

2002-2017 Service Area Sales (GWh)

	DTE Electric Forecast	DTE Electric Actual Sales ¹	Percent Diff.
2017			
Residential	14,951	14,982	-0.20%
Commercial	20,013	19,939	0.37%
2016			
Residential	14,870	15,182	-2.10%
Commercial	20,277	20,219	0.29%
2015			
Residential	15,178	15,055	0.81%
Commercial	20,394	20,034	1.77%
2014			
Residential	15,359	15,115	1.59%
Commercial	19,762	19,874	-0.57%
2013			
Residential	15,248	15,248	0.00%
Commercial	19,839	19,801	0.19%
2012			
Residential	14,847	15,062	-1.45%
Commercial	19,384	19,574	-0.98%
2011			
Residential	14,621	15,213	-4.05%
Commercial	19,119	19,799	-3.56%
2010			
Residential	14,966	14,980	-0.10%
Commercial	19,336	19,469	-0.68%
2009			
Residential	15,453	15,218	1.52%
Commercial	20,336	19,941	1.94%
2008			
Residential	15,905	15,466	2.76%
Commercial	20,865	20,080	3.76%
2007			
Residential	16,163	15,808	2.20%
Commercial	20,931	20,687	1.16%
2006			
Residential	16,358	15,717	3.92%
Commercial	21,280	20,394	4.16%
2005			
Residential	16,398	15,851	3.34%
Commercial	21,342	20,303	4.87%
2004			
Residential	15,890	15,744	0.92%
Commercial	20,996	20,721	1.31%
2003			
Residential	14,983	15,465	-3.22%
Commercial	20,355	20,360	-0.02%
2002			
Residential	14,172	14,884	-5.02%
Commercial	19,747	20,011	-1.34%

¹ Actual historical sales are temperature normalized

Michigan Public Service Commission
DTE Electric Company
System Access Contribution (SAC)

Case No.: U-20162
Witness: Kevin S. Krause
Exhibit No.: S-17
Date: 11/7/2018

	(a)	(b)	(c)	(d)	(e)
Line No.	Description	DTE as filed Residential A-16 F9	Consume 1000 kWh more onsite	All generation consumed onsite	All generation exported
1	Average Annual Inflow (kWh)	10,438	9,438	6,064	13,496
2	Average Annual Outflow (kWh)	4,374	3,374		7,432
3	Average Annual Generation (kWh)	7,432	7,432	7,432	7,432
4	Average Annual Total on Site Usage (kWh)	13,496	13,496	13,496	13,496
5	Revenue Requirement (\$ per kWh)	\$ 0.06065	\$ 0.06065	\$ 0.06065	\$ 0.06065
6	Distribution Revenue Requirement per Site Average	\$ 818.53	\$ 818.53	\$ 818.53	\$ 818.53
7	Distribution Revenue Recovered on Inflow	\$ 633.06	\$ 572.41	\$ 367.78	\$ 818.53
8	Annual Distribution Revenue Deficiency	\$ 185.47	\$ 246.12	\$ 450.75	\$ -
9	Monthly Distribution Revenue Deficiency	\$ 15.46	\$ 20.51	\$ 37.56	\$ -
10	Average Installed Nameplate Capacity	6.7	6.7	6.7	6.7
11	System Access Contribution	\$ 2.31	\$ 3.06	\$ 5.61	\$ -

**The Michigan Public Service Commission
DTE Electric Company
Unbundled Cost of Service
TME April 30, 2020 4CP 75-0-25
(thousands of dollars)**

Case No. U-20162
Exhibit S-6
Schedule: F1.1
Witness D. Gottschalk
Page: 1 of 4

Cost of Service Study					
75-0-25					
PRODUCTION COSTS					
	(a)	(b)	(c)	(d)	(e)
	Total Electric	Total Residential	Total Commercial Secondary	Total Primary	E-1 St Lgt D9 OPL E-2 Signals
1 Rate Base	9,501,731	4,328,436	2,341,847	2,809,827	21,620
2 Revenue	3,114,982	1,278,937	771,712	1,053,403	10,931
3 Expenses:					
4 Fuel	1,086,201	437,572	268,636	374,581	5,412
5 Purchased Power	299,594	106,826	63,065	128,696	1,006
6 O & M Expense	654,390	267,489	159,696	224,522	2,683
7 Depreciation	334,079	154,308	82,287	96,804	681
8 Other (Reg Assets, etc)	0	0	0	0	0
9 Remove Reg Assets	0	0	0	0	0
10 Accretion of Loss/ Gain on Sale	0	0	0	0	0
11 Other Taxes	146,609	66,119	36,079	44,054	357
12 Income Taxes	85,670	35,003	23,722	26,844	101
13 Amortizations	-	-	-	-	-
14 Total Expenses	2,606,544	1,067,317	633,486	895,502	10,239
15 Net Oper Income	508,439	211,620	138,226	157,901	692
16 AFUDC & Other	29,548	13,647	7,278	8,562	60
17 Net Adjustments	168	-	41	50	0
18 Adj Net Oper Income	538,154	225,344	145,545	166,513	752
19 Rate of Return	5.66%	5.19%	6.21%	5.93%	3.48%
20 Return @ 5.44637869359454 %	517,500	235,743	127,546	153,034	1,178
21 Income Deficiency	(20,654)	10,399	(17,999)	(13,479)	425
22 Base Revenue Def / (Sufficiency)	(27,876)	14,035	(24,292)	(18,192)	574
23 Additional Rev Req	0	-	-	-	-
24 Total Revenue Def/ (Sufficiency)	(27,876)	14,035	(24,292)	(18,192)	574
25 Revenue Requirement	3,087,107	1,292,972	747,419	1,035,211	11,505
26 Misc Revenue	35,318	26,531	4,952	3,782	52
27 Rev Req Excl Misc Rev & Nuc Decomm	3,051,789	1,266,440	742,468	1,031,429	11,452

The Michigan Public Service Commission
DTE Electric Company
Unbundled Cost of Service
TME April 30, 2020 4CP 75-0-25
(thousands of dollars)

Cost of Service Study

75-0-25

PRODUCTION COSTS

Case No. U-20162
Exhibit S-6
Schedule: F1.1
Witness D. Gottschalk
Page: 2 of 4

	(f) D-1/Other Residential Service	(g) D-1.2 TOU	(h) D-2 Residential Space Ht	(i) Total Residential	(j) D-3/Other General Service	(k) D-3.2 Secondary Schools	(l) D-4 Lg Genl Service	(m) Total Commercial Secondary
1 Rate Base	4,231,513	38,729	58,195	4,328,436	1,832,058	38,048	471,741	2,341,847
2 Revenue	1,245,718	13,021	20,198	1,278,937	596,631	12,994	162,086	771,712
3 Expenses:								
4 Fuel	425,212	4,443	7,917	437,572	205,746	5,070	57,820	268,636
5 Purchased Power	104,069	1,039	1,718	106,826	48,651	1,141	13,272	63,065
6 O & M Expense	260,457	2,631	4,401	267,489	122,985	2,924	33,788	159,696
7 Depreciation	150,928	1,360	2,020	154,308	64,503	1,322	16,462	82,287
8 Other (Reg Assets, etc)	0	0	0	0	0	0	0	0
8 Other (Reg Assets, etc)	0	0	0	0	0	0	0	0
10 Accretion of Loss/ Gain on Sale	0	0	0	0	0	0	0	0
11 Other Taxes	64,618	596	905	66,119	28,185	594	7,300	36,079
12 Income Taxes	34,108	438	457	35,003	18,536	270	4,916	23,722
13 Amortizations	-	-	-	-	-	-	-	-
14 Total Expenses	1,039,392	10,507	17,417	1,067,317	488,607	11,321	133,558	633,486
15 Net Oper Income	206,326	2,514	2,781	211,620	108,024	1,674	28,528	138,226
16 AFUDC & Other	13,348	120	179	13,647	5,705	117	1,456	7,278
17 Net Adjustments	75	1	1	76	32	1	8	41
18 Adj Net Oper Income	219,749	2,635	2,960	225,344	113,762	1,791	29,992	145,545
19 Rate of Return	5.19%	6.80%	5.09%	5.21%	6.21%	4.71%	6.36%	6.21%
20 Return @ 5.44637869359454 %	230,464	2,109	3,170	235,743	99,781	2,072	25,693	127,546
21 Income Deficiency	10,716	(526)	209	10,399	(13,981)	281	(4,299)	(17,999)
22 Base Revenue Def / (Sufficiency)	14,462	(710)	282	14,035	(18,869)	379	(5,803)	(24,292)
23 Additional Rev Req	-	-	-	-	-	-	-	-
24 Total Revenue Def/ (Sufficiency)	14,462	(710)	282	14,035	(18,869)	379	(5,803)	(24,292)
25 Revenue Requirement	1,260,180	12,312	20,480	1,292,972	577,762	13,374	156,283	747,419
26 Misc Revenue	25,979	142	410	26,531	4,218	66	667	4,952
27 Rev Req Excl Misc Rev & Nuc Decomm	1,234,201	12,170	20,070	1,266,440	573,544	13,307	155,616	742,468

The Michigan Public Service Commission
DTE Electric Company
Unbundled Cost of Service
TME April 30, 2020 4CP 75-0-25
(thousands of dollars)

Case No. U-20162
Exhibit S-6
Schedule: F1.1
Witness D. Gottschalk
Page: 3 of 4

		Cost of Service Study					
		75-0-25					
		PRODUCTION COSTS					
	(n) D-11/Other	(o) D-6.2 Primary Schools	(p) D-8 Interrupt Supply	(q) R-1.1/R-1.2 Metal Melt Process Heat	(r) R-10 Interrupt Supply	(s) Total Primary	
	Primary						
1 Rate Base	2,406,789	134,437	99,040	64,841	104,720	2,809,827	
2 Revenue	852,877	40,857	43,364	29,786	86,519	1,053,403	
3 Expenses:							
4 Fuel	315,621	15,759	17,422	12,740	13,040	374,581	
5 Purchased Power	71,823	3,703	3,490	2,452	47,229	128,696	
6 O & M Expense	183,483	9,394	9,108	6,444	16,093	224,522	
7 Depreciation	83,336	4,736	3,308	2,134	3,290	96,804	
8 Other (Reg Assets, etc)	0	0	0	0	0	0	
8 Other (Reg Assets, etc)	0	0	0	0	0	0	
10 Accretion of Loss/ Gain on Sale	0	0	0	0	0	0	
11 Other Taxes	37,474	2,076	1,572	1,038	1,893	44,054	
12 Income Taxes	23,486	673	1,273	739	672	26,844	
13 Amortizations	-	-	-	-	-	-	
14 Total Expenses	715,223	36,341	36,174	25,548	82,216	895,502	
15 Net Oper Income	137,654	4,516	7,190	4,238	4,303	157,901	
16 AFUDC & Other	7,371	419	293	189	291	8,562	
17 Net Adjustments	42	2	2	1	2	50	
18 Adj Net Oper Income	145,068	4,937	7,484	4,428	4,596	8,612	
19 Rate of Return	6.03%	3.67%	7.56%	6.83%	4.39%	0.31%	
20 Return @ 5.44637869359454 %	131,083	7,322	5,394	3,531	5,703	153,034	
21 Income Deficiency	(13,985)	2,385	(2,090)	(897)	1,108	(13,479)	
22 Base Revenue Def / (Sufficiency)	(18,874)	3,219	(2,821)	(1,210)	1,495	(18,192)	
23 Additional Rev Req	-	-	-	-	-	-	
24 Total Revenue Def/ (Sufficiency)	(18,874)	3,219	(2,821)	(1,210)	1,495	(18,192)	
25 Revenue Requirement	834,003	44,075	40,543	28,576	88,013	1,035,211	
26 Misc Revenue	3,043	147	159	109	325	3,782	
27 Rev Req Excl Misc Rev & Nuc Decomm	830,960	43,929	40,385	28,467	87,689	1,031,429	

RETURN

DTE Electric Company
Unbundled Cost of Service
TME April 30, 2020 4CP 75-0-25
(thousands of dollars)

Distribution by Voltage Level

Case No. U-20162
Exhibit S-6
Schedule: F-1.2
Witness D. Gottschalk
Page: 1 of 1

Cost of Service Study

DISTRIBUTION COSTS

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
	Total Electric	Residential Secondary	Commercial Secondary	Primary	- Subtransmission	- Transmission	D-9 OPL Residential	D-9 OPL Commercial	- E-1 St Lght	- E-2 Signals
1 Rate Base	7,458,162	4,429,485	2,012,887	623,474	65,632	49,524	8,235	18,433	245,776	4,715
2 Revenue	1,670,367	1,043,931	430,689	121,060	13,561	12,375	1,484	4,414	42,310	543
3 Expenses:										
4 Fuel	0	-	-	-	-	-	-	-	-	-
5 Purchased Power	0	-	-	-	-	-	-	-	-	-
6 O & M Expense	625,419	433,694	141,417	31,557	4,805	4,911	211	539	8,002	282
7 Depreciation	426,974	260,261	113,777	29,551	3,109	2,213	892	1,881	15,022	267
8 Other (Reg Assets, etc)	0	0	0	0	0	0	0	0	0	0
9 Remove Reg Assets	0	0	0	0	0	0	0	0	0	0
10 Accretion of Loss/ Gain on Sale	0	0	0	0	0	0	0	0	0	0
11 Other Taxes	181,150	109,276	48,093	14,321	1,750	1,381	246	536	5,436	112
12 Income Taxes	60,005	32,911	17,646	6,069	598	594	16	209	1,981	(20)
13 Amortizations	-	-	-	-	-	-	-	-	-	-
14 Total Expenses	1,293,548	836,143	320,934	81,499	10,262	9,100	1,365	3,165	30,441	640
15 Net Oper Income	376,819	207,788	109,755	39,561	3,299	3,275	119	1,248	11,869	(97)
16 AFUDC & Other	0	-	-	-	-	-	-	-	-	-
17 Net Adjustments	129	77	35	11	1	1	0	0	4	0
18 Adj Net Oper Income	376,948	207,865	109,790	39,572	3,300	3,276	119	1,249	11,874	(97)
19 Rate of Return	5.05%	4.69%	5.45%	6.35%	5.03%	6.62%	1.44%	6.77%	4.83%	-2.06%
20 Return @ 5.44637869359454 %	406,200	241,247	109,629	33,957	3,575	2,697	449	1,004	13,386	257
21 Income Deficiency	29,252	33,381	(160)	(5,615)	274	(579)	330	(245)	1,512	354
22 Base Revenue Def / (Sufficiency)	39,479	45,053	(217)	(7,579)	370	(782)	445	(330)	2,041	478
23 Additional Rev Req	0	0	0	0	0	0	0	0	-	-
24 Total Revenue Def/ (Sufficiency)	39,479	45,053	(217)	(7,579)	370	(782)	445	(330)	2,041	478
25 Revenue Requirement	1,709,846	1,088,984	430,472	113,481	13,931	11,594	1,929	4,084	44,351	1,021
26 Misc Revenue	55,027	38,158	8,319	3,031	1,477	3,320	22	72	608	20
27 Base Revenue Requirement	1,654,819	1,050,825	422,154	110,450	12,454	8,273	1,907	4,012	43,743	1,001
Adjusted for Tree Trim Surge										
28 Total Revenue Def/ (Sufficiency)	39,479	45,053	(217)	(7,579)	370	(782)	445	(330)	2,041	478
29 Base Revenue Requirement	1,654,819	1,050,825	422,154	110,450	12,454	8,273	1,907	4,012	43,743	1,001

The Michigan Public Service Commission
DTE Electric Company
Customer Charges by Voltage for Residential and Commercial Secondary
TME April 30, 2020 4CP 75-0-25
(thousands of dollars)

Case No. U-20162
Exhibit: S-6
Schedule: F1.3
Witness: D. Gottschalk
Page: 1 of 1

Line	Account	Residential	Commercial Secondary
	Dist Operation Exp:		
1	586 Meters	\$ 6,207.46	\$ 925.74
2	587 Customer Installs	\$ 249.79	\$ 37.25
	Dist Maintenance Exp:		
3	597 Meters	\$ 0.00	\$ 0.00
	Customer Accounts		
4	901 Supervision	\$ 1,041.02	\$ 109.07
5	902 Meter Read	\$ 1,236.18	\$ 184.36
6	903 Customer Records	\$ 61,310.82	\$ 5,752.37
7	905 Miscellaneous	\$ 106.06	\$ 2.79
	Cust Serv & Inf		
8	907 Supervision	\$ 987.39	\$ 102.26
9	908 Customer Assist	\$ 13,894.57	\$ 1,438.98
10	909 Info & Instr	\$ 0.08	\$ 0.01
11	910 Miscellaneous	\$ 8,511.06	\$ 881.44
	Depreciation Expense		
12	369 Services depreciation expense	\$ 22,894.83	\$ 3,195.21
13	370 Meters depreciation expense	\$ 19,447.66	\$ 2,900.30
	Return on Meters and Services in Rate Base		
14	369 Services	\$ 373,801.52	\$ 51,955.31
15	370 Meters	\$ 388,456.96	\$ 57,932.04
	Less:		
16	Depreciation reserve for services and meters	\$ (278,415.51)	\$ (39,163.92)
17	Weighted average cost of capital (WACC)	5.45%	5.45%
18	Return on Meters and Services	\$ 26,351.92	\$ 3,851.87
	Property Tax		
19	Property Tax on meters and services	\$ 10,164.72	\$ 4,659.13
20	Total Customer Related Cost	\$ 172,403.55	\$ 24,040.77
21	Customers	1,997,944	206,915
22	Cost per Customer per Year	86.29	116.19
23	Cost per Customer per Month	7.19	9.68

Michigan Public Service Commission
DTE Electric Company
Unbundled Cost of Service
TME April 30, 2020 4CP 75-0-25
(\$000)

CAPACITY CHARGE

Case No. U-20162
Exhibit: S-6
Schedule: F1.4
Witness: D. Gottschalk
Page: 1 of 4

Cost of Service Study
75-0-25

PRODUCTION COSTS

(a)	(b)	(c)	(d)	(e)
Total Electric	Total Residential	Total Commercial Secondary	Total Primary	E-1 St Lgt D9 OPL E-2 Signals

CAPACITY COSTS DETERMINATION

1	Net Production Costs Rev. Req. (Exh A-16 Sch F1.1 Line 27)	\$	3,051,789
2	Proj 2018 Enrgy Sales Rev Net of Fuel (Per A-29, Sch S3, L 32)		(584,478)
3	Less Fuel (Exh A-16 Sch F1.1 Line 4)		(1,086,201)
4	Less MISO Energy in PP (Exh A-13 Sch C4 Lines 20-21)		(47,395)
5	Less Other Energy in PP (WPA16PF1 Sch 11.5 Line 14)		(156,542)
6	Less Variable O&M (Exh A-16 Sch F1.5 Page 5 Line 8)		(11,271)
7	Capacity Revenue Requirement	\$	1,165,902

Allocator

8	Sch 200B 4 CP Excl R10	100.0000	49.3976	24.7925	25.7280	0.0819
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Revenue Requirement

9	Capacity Revenue Requirement (Line 7 * Line 8/100)	\$	1,165,902	\$	575,928	\$	289,056	\$	299,963	\$	955
10	Non-Capacity Revenue Requirement (Line 11 less Line 9)		1,885,887		690,513		453,411		731,466		10,498
11	Total Production Revenue Requirement (Exh A-16 Sch F1.1 L 27)	\$	3,051,789	\$	1,266,440	\$	742,468	\$	1,031,429	\$	11,452

Michigan Public Service Commission
DTE Electric Company
Unbundled Cost of Service
TME April 30, 2020 4CP 75-0-25
(\$000)

CAPACITY CHARGE

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**Cost of Service Study
75-0-25**

PRODUCTION COSTS

(f) D-1/Other Residential Service	(g) D-1.2 TOU	(h) D-2 Residential Space Ht	(i) Total Residential	(j) D-3/Other General Service	(k) D-3.2 Secondary Schools	(l) D-4 Lg Genl Service	(m) Total Commercial Secondary
	-						

Allocator

8	Sch 200B 4 CP Excl R10	48.4217	0.4106	0.5653	49.3976	19.6338	0.3657	4.7930	24.7925	-
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Revenue Requirement

9	Capacity Rev Req (P1 Line 7 * Line 8/100)	\$ 564,550	\$ 4,787	\$ 6,591	\$ 575,928	\$ 228,911	\$ 4,264	\$ 55,882	\$ 289,056	
10	Non-Capacity Revenue Requirement (Line	669,651	7,382	13,479	690,513	344,633	9,044	99,734	453,411	
11	Total Production Revenue Requirement (E	\$ 1,234,201	\$ 12,170	\$ 20,070	\$ 1,266,440	\$ 573,544	\$ 13,307	\$ 155,616	\$ 742,468	

Michigan Public Service Commission
DTE Electric Company
Unbundled Cost of Service
TME April 30, 2020 4CP 75-0-25
(\$000)

CAPACITY CHARGE

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Cost of Service Study

75-0-25

PRODUCTION COSTS

(n) D-11/Other Primary	(o) D-6.2 Primary Schools	(p) D-8 Interrupt Supply	(q) R-1.1/R-1.2 Metal Melt Process Heat	(r) R-10 Interrupt Supply	(s) Total Primary
------------------------------	------------------------------------	-----------------------------------	--	------------------------------------	-------------------------

Allocator

8	Sch 200B 4 CP Excl R10	23.1300	1.4081	0.7544	0.4355	-	25.7280	-
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Allocator

9	Capacity Rev Req (P1 Line 7 * Line 8/10)	\$ 269,673	\$ 16,417	\$ 8,796	\$ 5,078	\$ -	\$ 299,963	
10	Non-Capacity Revenue Requirement (Line 9 - Line 8)	<u>561,287</u>	<u>27,512</u>	<u>31,589</u>	<u>23,389</u>	<u>87,689</u>	<u>731,466</u>	
11	Total Production Revenue Requirement	<u>\$ 830,960</u>	<u>\$ 43,929</u>	<u>\$ 40,385</u>	<u>\$ 28,467</u>	<u>\$ 87,689</u>	<u>\$ 1,031,429</u>	

Michigan Public Service Commission
DTE Electric Company
Unbundled Cost of Service
TME April 30, 2020 4CP 75-0-25
(\$000)

CAPACITY CHARGE

Cost of Service Study
75-0-25

PRODUCTION COSTS

(t) (u) (v) (w)

D-9 OPL D-9 OPL
Residential Commercial E-1 St Lght E-2 Signals

Case No. U-20162
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<u>Allocator</u>					
8	Sch 200B 4 CP Excl R10	-	-	-	0.0819
0 <u>Allocator</u>					
9	Capacity Rev Req (P1 Line 7 * Line 8/100)	\$ -	\$ -	\$ -	\$ 955
10	Non-Capacity Revenue Requirement (Line 11 less Line 9)	<u>267</u>	<u>1,059</u>	<u>6,699</u>	<u>2,473</u>
11	Total Production Revenue Requirement (Exh A-16 Sch F1.1 L 27)	<u>\$ 267</u>	<u>\$ 1,059</u>	<u>\$ 6,699</u>	<u>\$ 3,427</u>

DTE Electric Company
Case No. U-20162

Auditor:
Request No:
Respondent:
Page:

D. J. Gottschalk
DJG-3.3
T. D. Johnson
1 of 1

Request:

3. Please provide 5 years of historical data of the number of customers eligible for the RIA and LIA programs, and the number of customers enrolled in each program over that same time frame.

Response:

	2013	2014	2015	2016	2017
Eligible Electric RIA Customers *	130,000	103,000	97,000	86,000	79,000
Actual Electric RIA Customers	70,021	75,698	72,817	66,831	50,871

As there is no 5-year historical data, The Residential Service Special Low Income Pilot Rate (LIA) started in 2016. As per the Order Case No. U-18255, the Company is on track to meet the annual average of 32,000 customers enrolled. All electric only and combination customers enrolled in LSP in 2016 and 2017 received the Electric LIA credit.

*Eligible Electric RIA Customers are estimated numbers based on customers who received state and federal assistance

Michigan Public Service Commission
DTE Electric Company
Staff's Projected Operating Revenue
Projected 12 Month Period Ending Apr. 30, 2020
(\$000)

Case No.: U-20162
 Exhibit: S-6
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 Witness: M. J. Pung
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Line No.	(a) Description	(b) Company Test-year 12 mos. Ending 04/30/20	(c) Staff Projection Adjustments	(d) Staff Test-year 12 mos. Ending 4/30/20	(e) Reference
1	Electric Sales Revenue	3,309,210	(148,237)	3,160,973	
2	Base Fuel and Purchased Power Revenue	1,385,795	-	1,385,795	
3	Electric Sales Revenue (440-449.1, 456.1)	4,695,005	(148,237)	4,546,768	Exh. S-3, Sch. C3, page 2, line 6
4	Sales for Resale (447)	-	-	-	
5	Other Operating Revenues (450-456)	84,006	-	84,006	Detailed below on Lines 9 thru 17
6	Other Revenue Adjustment:				
7	R2 Special Purpose Facilities Rider	6,338	-	6,338	
8	Total Operating Revenue	4,785,349	(148,237)	4,637,113	
9	<u>Other Operating Revenues (450-456)</u>				
10	Late Payment Charges (450)	12,947	-	12,947	
11	Misc Service Charges (451)	9,304	-	9,304	
12	Sale of Water (453)	31	-	31	
13	Electric Property Rental (454)	14,614	-	14,614	
14	Interdept Rent/Shared Asset Rev (455)	43,621	-	43,621	
15	Other Misc Rev (456)	2,770	-	2,770	
16	Transmission of Others Elec (456.1)	720	-	720	
17	Total Misc Operating Revenue	84,006	-	84,006	

Michigan Public Service Commission
DTE Electric Company
Staff's Projected Operating Revenue
Projected 12 Month Period Ending Apr. 30, 2020
(\$000)

Case: U-20162
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Line No.	(a) Description	(b) Test 12 mos. Ending 4/30/20	(c) Reference
1	Total Electric Sales Revenue	4,703,174	1/ 2/
2	Less: Nuclear Surcharge Revenue	33,664	
3	Energy Waste Reduction Surcharge Revenue	97,286	
4	Renewable Program Surcharge Revenue	-	Renewable surcharge rate is zero
5	Low Income Energy Assistance Fund (LIEAF) Surcharge Revenue	<u>25,456</u>	
6	Electric Sales Revenue excluding Surcharges	<u>4,546,768</u>	Line 1 less Lines 2 through 5

1/ Sponsored by Staff Witness M. J. Pung on Exhibit S-6, Schedule F2, Page 2, Line 44, Column (b)

2/ Excludes TRM Sales and Surcharge Revenue

Case No.: U-20162
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Witness: M. J. Pung
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**DTE Electric Company
Case No. U-20162
Staff's Summary Present and Proposed
Revenue by Rate Schedule**

Michigan Public Service Commission
DTE Electric Company
Staff's Summary of Present and Proposed
Revenue by Rate Schedule

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Witness: M. J. Pung
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Total Revenues

Line No.	(a)	(b)	(c)	(d)	(e)
	Residential	Total Present Revenue (\$000's)	Total Proposed Revenue (\$000's)	Total Net Increase/ (Decrease) (\$000's)	Total Net Increase/ (Decrease) (%)
1	D1/D1.6 Residential	\$2,202,636	\$2,257,594	\$54,958	2.5%
2	D1.1 Int. Air	\$44,397	\$45,608	\$1,212	2.7%
3	D1.2 TOD	\$23,803	\$23,574	(\$230)	(1.0%)
4	D1.7 TOD	\$11,151	\$12,222	\$1,071	9.6%
5	D1.8 Dynamic	\$17,939	\$18,409	\$470	2.6%
6	D1.9 Elec. Vehicle	\$504	\$516	\$12	2.4%
7	D2 Elec. Space Heat	\$41,148	\$42,304	\$1,156	2.8%
8	D5 Res. Water Ht.	\$14,698	\$15,138	\$439	3.0%
9	Total Residential	\$2,356,276	\$2,415,364	\$59,088	2.5%
10					
11	Secondary				
12	D1.1 Int. Air	\$702	\$674	(\$28)	(4.0%)
13	D1.7 TOD	\$679	\$686	\$8	1.1%
14	D1.8 Dynamic	\$32	\$31	(\$1)	(4.1%)
15	D 1.9 Elec Vehicle	\$0	\$0	\$0	-
16	D3 Gen. Serv.	\$931,380	\$903,780	(\$27,600)	(3.0%)
17	D3.1 Unmetered	\$8,469	\$8,172	(\$297)	(3.5%)
18	D3.2 Sec. Educ.	\$27,980	\$29,849	\$1,869	6.7%
19	D3.3 Interruptible	\$10,327	\$9,889	(\$438)	(4.2%)
20	D4 Lg. Gen. Serv.	\$244,392	\$246,517	\$2,125	0.9%
21	D5 Com. Wat. Ht.	\$402	\$408	\$6	1.5%
22	E1.1 Eng. St. Ltg.	\$932	\$929	(\$3)	(0.3%)
23	R7 Greenhs. Ltg.	\$208	\$212	\$4	2.0%
24	R8 Space Cond.	\$8,610	\$8,342	(\$268)	(3.1%)
25	Total Secondary	\$1,234,113	\$1,209,490	(\$24,624)	(2.0%)
26					
27	Primary				
28	D11 Prim. Supply	\$969,915	\$944,985	(\$24,930)	(2.6%)
29	D6.2 Pri. Educ.	\$54,129	\$56,662	\$2,532	4.7%
30	D8 Int. Primary	\$51,781	\$48,495	(\$3,286)	(6.3%)
31	D10 El.Schools	\$3,224	\$2,935	(\$289)	(9.0%)
32	R1.1 Alt. Mtl. Melt.	\$3,616	\$3,488	(\$128)	(3.5%)
33	R1.2 El. Pr. Htg.	\$32,933	\$32,083	(\$850)	(2.6%)
34	R3 Standby	\$9,029	\$8,798	(\$231)	(2.6%)
35	R10 Int. Supply	\$93,155	\$94,269	\$1,114	1.2%
36	Total Primary	\$1,217,783	\$1,191,715	(\$26,067)	(2.1%)
37					
38	Other				
39	D9 Protective Ltg.	\$7,388	\$7,562	\$174	2.4%
40	E1 Muni Street Ltg	\$47,916	\$50,834	\$2,919	6.1%
41	E2 Traffic Lights	\$4,383	\$4,497	\$114	2.6%
42	Total Other	\$59,687	\$62,893	\$3,207	5.4%
43					
44	Total All Classes	\$4,867,859	\$4,879,462	\$11,603	0.2%

Michigan Public Service Commission
DTE Electric Company
Staff's Summary of Present and Proposed
Revenue by Rate Schedule

Case No.: U-20162
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Witness: M. J. Pung
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Power Supply Revenues

Line No.	(a) Residential	(b) Power Supply Sales (MWH)	(c) Present Revenue (\$000's)	(d) Increase/ (Decrease) (\$000's)	(e) Proposed Revenue (\$000's)	(f) Capacity Revenue (\$000's)	(g) Non-Capacity Revenue (\$000's)
1	D1/D1.6 Residential	13,765,328	\$1,177,746	\$13,964	\$1,191,710	\$545,114	\$646,597
2	D1.1 Int. Air	321,293	\$21,775	\$258	\$22,034	\$10,079	\$11,955
3	D1.2 TOD	161,650	\$12,879	(\$710)	\$12,170	\$4,787	\$7,382
4	D1.7 TOD	107,048	\$5,377	\$64	\$5,440	\$2,488	\$2,952
5	D1.8 Dynamic	123,219	\$8,823	\$105	\$8,927	\$4,084	\$4,844
6	D1.9 Elec. Vehicle	3,625	\$282	\$3	\$285	\$130	\$155
7	D2 Elec. Space Heat	294,420	\$19,788	\$282	\$20,070	\$6,591	\$13,479
8	D5 Res. Water Ht.	125,084	\$5,736	\$68	\$5,804	\$2,655	\$3,149
9	Total Residential	14,901,667	\$1,252,405	\$14,035	\$1,266,440	\$575,928	\$690,513
10							
11	Secondary						
12	D1.1 Int. Air	6,171	\$425	(\$14)	\$411	\$164	\$247
13	D1.7 TOD	9,266	\$424	(\$13)	\$410	\$164	\$246
14	D1.8 Dynamic	278	\$21	(\$1)	\$20	\$8	\$12
15	D1.9 Elec. Vehicle	0	\$0	\$0	\$0	\$0	\$0
16	D3 Gen. Serv.	7,181,124	\$573,915	(\$18,280)	\$555,636	\$221,763	\$333,872
17	D3.1 Unmetered	76,768	\$5,251	(\$167)	\$5,083	\$2,029	\$3,055
18	D3.2 Sec. Educ.	197,953	\$12,928	\$379	\$13,307	\$4,264	\$9,044
19	D3.3 Interruptible	94,451	\$6,307	(\$201)	\$6,106	\$2,437	\$3,669
20	D4 Lg. Gen. Serv.	2,173,074	\$161,419	(\$5,803)	\$155,616	\$55,882	\$99,734
21	D5 Com. Wat. Ht.	4,844	\$228	(\$7)	\$221	\$88	\$133
22	E1.1 Eng. St. Ltg.	9,804	\$542	(\$17)	\$524	\$209	\$315
23	R7 Greenhs. Ltg.	2,686	\$123	(\$4)	\$119	\$47	\$71
24	R8 Space Cond.	73,929	\$5,179	(\$165)	\$5,014	\$2,001	\$3,013
25	Total Secondary	9,830,349	\$766,760	(\$24,292)	\$742,468	\$289,056	\$453,411
26							
27	Primary						
28	D11 Prim. Supply	12,738,048	\$841,301	(\$18,619)	\$822,682	\$267,722	\$554,959.88
29	D6.2 Pri. Educ.	608,689	\$40,710	\$3,219	\$43,929	\$16,417	\$27,512
30	D8 Int. Primary	713,288	\$43,205	(\$2,821)	\$40,385	\$8,796	\$31,589
31	D10 El.Schools	27,326	\$2,254	(\$50)	\$2,204	\$715	\$1,489
32	R1.1 Alt. Mtl. Melt.	55,770	\$3,238	(\$138)	\$3,099	\$594	\$2,505
33	R1.2 El. Pr. Htg.	464,927	\$26,439	(\$1,072)	\$25,368	\$4,483	\$20,884
34	R3 Standby	133,971	\$6,280	(\$206)	\$6,074	\$1,236	\$4,838
35	R10 Int. Supply	1,717,453	\$86,194	\$1,495	\$87,689	\$0	\$87,688.63
36	Total Primary	16,459,473	\$1,049,621	(\$18,192)	\$1,031,429	\$299,963	\$731,466
37							
38	Other						
39	D9 Protective Ltg.	28,974	\$1,147	\$152	\$1,298	\$0	\$1,298
40	E1 Muni Street Ltg	150,090	\$5,941	\$786	\$6,726	\$0	\$6,726
41	E2 Traffic Lights	56,023	\$3,791	(\$364)	\$3,427	\$955	\$2,473
42	Total Other	235,086	\$10,879	\$574	\$11,452	\$955	\$10,498
43							
44	Total All Classes	<u>41,426,576</u>	<u>\$3,079,665</u>	<u>(\$27,877)</u>	<u>\$3,051,789</u>	<u>\$1,165,902</u>	<u>\$1,885,887</u>

**Michigan Public Service Commission
DTE Electric Company
Staff's Summary of Present and Proposed
Revenue by Rate Schedule**

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Distribution Revenues

Line No.	(a) Residential	(b) Distribution Sales (MWH)	(c) Present Revenue (\$000's)	(d) Increase/ (Decrease) (\$000's)	(e) Proposed Revenue (\$000's)
1	D1/D1.6 Residential	13,765,328	\$1,024,890	\$40,994	\$1,065,884
2	D1.1 Int. Air	321,293	\$22,621	\$953	\$23,575
3	D1.2 TOD	161,650	\$10,924	\$480	\$11,404
4	D1.7 TOD	107,048	\$5,775	\$1,007	\$6,782
5	D1.8 Dynamic	123,219	\$9,116	\$366	\$9,482
6	D1.9 Elec. Vehicle	3,625	\$222	\$9	\$231
7	D2 Elec. Space Heat	294,420	\$21,360	\$874	\$22,234
8	D5 Res. Water Ht.	125,084	\$8,962	\$371	\$9,333
9	Total Residential	14,901,667	\$1,103,871	\$45,053	\$1,148,924
10					
11	Secondary				
12	D1.1 Int. Air	6,171	\$277	(\$15)	\$262
13	D1.7 TOD	9,427	\$255	\$21	\$276
14	D1.8 Dynamic	278	\$11	(\$1)	\$11
15	D1.9 Elec Vehicle	0	\$0	\$0	\$0
16	D3 Gen. Serv.	7,498,396	\$357,465	(\$9,321)	\$348,144
17	D3.1 Unmetered	76,768	\$3,218	(\$130)	\$3,089
18	D3.2 Sec. Educ.	499,134	\$15,052	\$1,490	\$16,542
19	D3.3 Interruptible	100,968	\$4,020	(\$237)	\$3,783
20	D4 Lg. Gen. Serv.	2,506,151	\$82,974	\$7,927	\$90,901
21	D5 Com. Wat. Ht.	4,850	\$174	\$13	\$187
22	E1.1 Eng. St. Ltg.	9,804	\$390	\$14	\$405
23	R7 Greenhs. Ltg.	2,686	\$85	\$8	\$94
24	R8 Space Cond.	75,717	\$3,431	(\$103)	\$3,328
25	Total Secondary	10,790,349	\$467,353	(\$331)	\$467,022
26					
27	Primary				
28	D11 Prim. Supply	16,122,977	\$128,615	(\$6,311)	\$122,303
29	D6.2 Pri. Educ.	1,013,738	\$13,419	(\$686)	\$12,733
30	D8 Int. Primary	845,260	\$8,575	(\$465)	\$8,111
31	D10 El.Schools	36,675	\$969	(\$239)	\$731
32	R1.1 Alt. Mtl. Melt.	55,770	\$378	\$10	\$388
33	R1.2 El. Pr. Htg.	473,628	\$6,494	\$221	\$6,715
34	R3 Standby	127,822	\$2,750	(\$25)	\$2,725
35	R10 Int. Supply	1,717,453	\$6,962	(\$381)	\$6,581
36	Total Primary	20,393,323	\$168,162	(\$7,875)	\$160,286
37					
38	Other				
39	D9 Protective Ltg.	28,974	\$6,241	\$22	\$6,264
40	E1 Muni Street Ltg	150,090	\$41,975	\$2,133	\$44,108
41	E2 Traffic Lights	56,023	\$592	\$478	\$1,069
42	Total Other	235,086	\$48,808	\$2,633	\$51,441
43					
44	Total All Classes	46,320,426	\$1,788,194	\$39,479	\$1,827,673

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**DTE Electric Company
Case No. U-20162
Staff's Present and Proposed
Revenue Calculations**

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Residential Service Rate - D1 Current Structure

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Line No.	(a) Description	(b) Billing Determinants Quantity Units	(c) Present Rate	(d) Present Revenue (\$000)	(e) Proposed Rate	(f) Proposed Revenue (\$000)
	Full Service Power Supply					
1	Power Supply Charges					
2	Non-Capacity Charge	13,527,987 MWh	\$0.04744	641,768	\$0.04697	635,448
3	Capacity Charges:					
4	First 17 KWH/Day	9,195,578 MWh	\$0.03310	304,374	\$0.03452	317,451
5	Excess	4,332,409 MWh	\$0.04878	211,335	\$0.05039	218,301
6	Power Supply Subtotal	13,527,987 MWh	8.56¢	1,157,476		1,171,200
7						
8	PSCR	13,527,987 MWh	\$0.00000	0	\$0.00000	0
9	REPS	1,912,171 Meters	\$0.00000	0	\$0.00000	0
10	Total Full Service Power Supply	13,527,987 MWh	8.56¢	1,157,476	8.66¢	1,171,200
11						
12	Full Service Distribution					
13						
14	Service Charge	1,912,171 Cust.	\$7.50	172,095	\$7.50	172,095
15	Income Assistance	70,000 Cust.	(\$7.50)	(6,300)	(\$7.50)	(6,300)
16	Senior Citizen Provision	99,712 Cust.	(\$3.75)	(4,487)	(\$3.75)	(4,487)
17						
18	Former D1.3 Custs. Distribution Charge	441,428 MWh	\$0.05666	25,011	\$0.05996	26,467
19	Distribution Charge	13,086,559 MWh	\$0.05699	745,803	\$0.05996	784,637
20	Distribution System	13,527,987 MWh	6.89¢	932,123	7.19¢	972,412
21						
22	Nuclear Decomm.	13,527,987 MWh	\$0.000765	10,349	\$0.000765	10,349
23	Energy Waste Reduction	13,527,987 MWh	\$0.004322	58,468	\$0.004322	58,468
24	LIEAF	1,912,171 Cust.	\$0.93	21,340	\$0.93	21,340
25	Distribution Surcharges	13,527,987 MWh	0.67¢	90,157	0.67¢	90,157
26						
27	Total Full Service Distribution		7.56¢	1,022,279	7.85¢	1,062,569
28	Total Full Service D1	13,527,987 MWh	16.11¢	2,179,756	16.51¢	2,233,769
29						
30	Choice					
31						
32	Capacity Charges:					
33	First 17 KWH/Day	0 MWh	\$0.03310	0	\$0.03452	0
34	Excess	0 MWh	\$0.04878	0	\$0.05039	0
35	Capacity Total	0 MWh		0		0
36						
37	Distribution Charges					
38	Service Charge	0 Cust.	\$7.50	0	\$7.50	0
39	Income Assistance	0 Cust.	(\$7.50)	0	(\$7.50)	0
40	Senior Citizen Provision	0 Cust.	(\$3.75)	0	(\$3.75)	0
41						
42	Distribution Charge	0 MWh	\$0.05699	0	\$0.05996	0
43	Distribution System	0 MWh		0		0
44						
45	Nuclear Decomm.	0 MWh	\$0.000765	0	\$0.000765	0
46	Energy Waste Reduction	0 MWh	\$0.004322	0	\$0.004322	0
47	LIEAF	0 Cust.	\$0.93	0	\$0.93	0
48	Distribution Surcharges	0 MWh		0		0
49						
50	Total Choice D1	0 MWh		0		0
51						
52	Total D1	13,527,987 MWh	16.11¢	2,179,756	16.51¢	2,233,769
53	Increase/Decrease (\$)					54,013

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Interruptible Space-Conditioning Service Rate - D1.1 Residential

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Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Revenue (\$000)	(e) Proposed	(f) Revenue (\$000)
	Full Service Power Supply	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
1	Power Supply Charges						
2	Non-Capacity Charge	321,293	MWh	\$0.03764	12,093	\$0.03721	11,955
3	Capacity Charges						
4	Summer Energy	300,005	MWh	\$0.03182	9,546	\$0.03307	9,923
5	Winter Winter	21,288	MWh	\$0.00638	136	\$0.00733	156
6	Power Supply Subtotal	321,293	MWh		21,775		22,034
7							
8	PSCR	321,293	MWh	\$0.00000	0	\$0.00000	0
9	Total Full Service Power Supply	321,293	MWh	6.78¢	21,775	6.86¢	22,034
10							
11	Full-Service Distribution	<u>Quantity</u>	<u>Units</u>				
12		Customers	Months				
13	Service Charge (June-Oct)	274,500	5	\$1.95	2,676	\$1.95	2,676
14							
15	Distribution Charge	321,293	MWh	\$0.05699	18,310	\$0.05996	19,264
16	Distribution System	321,293	MWh	6.53¢	20,987	6.83¢	21,940
17							
18	Nuclear Decomm.	321,293	MWh	\$0.000765	246	\$0.000765	246
19	Energy Waste Reduction	321,293	MWh	\$0.004322	1,389	\$0.004322	1,389
20	Distribution Surcharges	321,293	MWh	0.51¢	1,634	0.51¢	1,634
21							
22	Total Full Service Distribution	321,293	MWh	7.04¢	22,621	7.34¢	23,575
23	Total Full-Service D1.1	321,293	MWh	13.82¢	44,397	14.20¢	45,608
24							
25	Choice	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
26							
27	Capacity Charges						
28	Summer Energy	0	MWh	\$0.03182	0	\$0.03307	0
29	Winter Energy	0	MWh	\$0.00638	0	\$0.00733	0
30	Capacity Total	0	MWh		0		0
31							
32	Distribution Charges						
33		Customers	Months				
34	Service Charge (June-Oct)	0	5	\$1.95	0	\$1.95	0
35							
36	Distribution Energy	0	MWh	\$0.05699	0	\$0.05996	0
37	Distribution System	0	MWh		0		0
38							
39	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
40	Energy Waste Reduction	0	MWh	\$0.004322	0	\$0.004322	0
41	Distribution Surcharges	0	MWh		0		0
42							
43	Total Choice D1.1	0	MWh		0		0
44							
45	Total D1.1	321,293	MWh	13.82¢	44,397	14.20¢	45,608
46	Increase/Decrease (\$)						1,212

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Residential Time of Day Service Rate - D1.2

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
1	Full Service Power Supply						
2	Power Supply Charges	161,650	MWh	\$0.04854	\$7,847	\$0.04567	7,382
3	Non-Capacity Charge						
4	Capacity Charges						
5	Summer:						
6	On-Peak	14,216	MWh	\$0.12626	1,795	\$0.11950	1,699
7	Off-Peak	46,925	MWh	\$0.01031	484	\$0.00994	466
8	Winter:						
9	On-Peak	21,387	MWh	\$0.09913	2,120	\$0.09387	2,008
10	Off-Peak	79,122	MWh	\$0.00801	634	\$0.00777	614
11	Power Supply Subtotal	161,650	MWh		12,879		12,170
12	PSCR	161,650	MWh	\$0.00000	0	\$0.00000	0
13	REPS	8,793	Meters	\$0.00000	0	\$0.00000	0
14	Total Full Service Power Supply	161,650	MWh	7.97¢	12,879	7.53¢	12,170
15							
16	Full Service Distribution	Quantity	Units				
17							
18	Service Charge	8,793	Cust.	\$7.50	791	\$7.50	791
19	Distribution Energy	161,650	MWh	\$0.05699	9,212	\$0.05996	9,692
20	Distribution System	161,650	MWh	6.19¢	10,004	6.49¢	10,484
21							
22	Nuclear Decomm.	161,650	MWh	\$0.000765	124	\$0.000765	124
23	Energy Waste Reduction	161,650	MWh	\$0.004322	699	\$0.004322	699
24	LIEAF	8,793	Cust.	\$0.93	98	\$0.93	98
25	Distribution Surcharges	161,650	MWh	0.57¢	920	0.57¢	920
26							
27	Total Full Service Distribution	161,650	MWh	6.76¢	10,924	7.05¢	11,404
28	Total Full-Service D1.2	161,650	MWh	14.73¢	23,803	14.58¢	23,574
29							
30							
31	Choice	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
32							
33	Capacity Charges						
34	Summer:						
35	On-Peak	0	MWh	\$0.12626	0	\$0.11950	0
36	Off-Peak	0	MWh	\$0.01031	0	\$0.00994	0
37	Winter:						
38	On-Peak	0	MWh	\$0.09913	0	\$0.09387	0
39	Off-Peak	0	MWh	\$0.00801	0	\$0.00777	0
40	Capacity Total	0	MWh		0		0
41							
42	Service Charge	0	Cust.	\$7.50	0	\$7.50	0
43	Distribution Charge	0	MWh	\$0.05699	0	\$0.05996	0
44	Distribution System	0	MWh		0		0
45							
46	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
47	Energy Waste Reduction	0	MWh	\$0.004322	0	\$0.004322	0
48	LIEAF	0	Cust.	\$0.93	0	\$0.93	0
49	Distribution Surcharges	0	MWh		0		0
50							
51	Total Choice D1.2	0	MWh		0		0
52							
53	Total D1.2	161,650	MWh	14.73¢	23,803	14.58¢	23,574
54	Increase/Decrease (\$)						(230)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Residential Service Special Low Income Pilot Rate - D1.6 Current Structure

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Exhibit: S-6
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Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present		(d) Proposed	
		Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
1	Full Service Power Supply						
2	Power Supply Charges						
3	Non-Capacity Charge	237,341	MWh	\$0.04744	11,259	\$0.04697	11,149
4	Capacity Charges						
5	First 17 KWH/Day	163,719	MWh	\$0.03310	5,419	\$0.03452	5,652
6	Excess	73,623	MWh	\$0.04878	3,591	\$0.05039	3,710
7	Power Supply Subtotal	237,341	MWh	8.54¢	20,270	8.64¢	20,510
8	PSCR	237,341	MWh	\$0.00000	0	\$0.00000	0
9	REPS	32,000	Meters	\$0.00000	0	\$0.00000	0
10	Total Full Service Power Supply	237,341	MWh	8.54¢	20,270	8.64¢	20,510
11							
12	Full Service Distribution	Quantity	Units				
13							
14	Service Charge	32,000	Cust.	\$7.50	2,880	\$7.50	2,880
15	Income Assistance	32,000	Cust.	(\$40.00)	(15,360)	(\$40.00)	(15,360)
16							
17	Distribution Charge	237,341	MWh	\$0.05699	13,526	\$0.05996	14,230
18	Distribution System	237,341	MWh	0.44¢	1,046	0.74¢	1,750
19							
20	Nuclear Decomm.	237,341	MWh	\$0.000765	182	\$0.000765	182
21	Energy Waste Reduction	237,341	MWh	\$0.004322	1,026	\$0.004322	1,026
22	LIEAF	32,000	Cust.	\$0.93	357	\$0.93	357
23	Distribution Subtotal	237,341	MWh	0.66¢	1,564	0.66¢	1,564
24							
25	Total Full Service Distribution			1.10¢	2,611	1.40¢	3,315
26	Total Full Service D1.6	237,341	MWh	9.64¢	22,880	10.04¢	23,825
27							
28	Choice	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
29							
30	Capacity Charges						
31	First 17 KWH/Day	0	MWh	\$0.03310	0	\$0.03452	0
32	Excess	0	MWh	\$0.04878	0	\$0.05039	0
33	Total Capacity	0			0		0
34							
35	Service Charge	0	Cust.	\$7.50	0	\$7.50	0
36	Income Assistance	0	Cust.	(\$40.00)	0	(\$40.00)	0
37							
38	Distribution Charge	0	MWh	\$0.05699	0	\$0.05996	0
39	Distribution System	0	MWh		0		0
40							
41	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
42	Energy Waste Reduction	0	MWh	\$0.004322	0	\$0.004322	0
43	LIEAF	0	Cust.	\$0.93	0	\$0.93	0
44	Distribution Subtotal	0	MWh		0		0
45							
46	Total Choice D1.6	0	MWh		0		0
47							
48	Total D1.6	237,341	MWh	9.64¢	22,880	10.04¢	23,825
49	Increase/Decrease (\$)						945

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Geothermal Time of Day Service Rate - Residential D1.7

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Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present		(d) Proposed	
		Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
1	Full Service Power Supply						
2	Power Supply Charges						
3	Non-Capacity Charge	107,048	MWh	\$0.02800	\$2,997.34	\$0.02757	2,952
4	Capacity Charges:						
5	Summer Energy (11 a.m. Peak Start)						
6	On-Peak	5,794	MWh	\$0.10082	\$584.13	\$0.10277	595
7	Off-Peak	15,020	MWh	\$0.01466	\$220.19	\$0.01559	234
8	Winter Energy (11 a.m. Peak Start)						
9	On-Peak	18,307	MWh	\$0.02766	\$506.37	\$0.02875	526
10	Off-Peak	67,928	MWh	\$0.01573	\$1,068.50	\$0.01667	1,133
11	Power Supply Subtotal	107,048	MWh		\$5,376.53		5,440
12	PSCR	107,048	MWh	\$0.00000	0	\$0.00000	0
13	Total Power Supply	107,048	MWh	5.02¢	5,377	5.08¢	5,440
14							
15	Full Service Distribution	Quantity	Units				
16							
17	Service Charge (\$/day)	8,010	Cust.	\$0.067	196	\$0.067	196
18							
19	Distribution Charge	107,048	MWh	\$0.04703	5,034	\$0.05644	6,041
20	Distribution System	107,048	MWh	4.89¢	5,230	5.83¢	6,237
21							
22	Nuclear Decomm.	107,048	MWh	\$0.000765	82	\$0.000765	82
23	Energy Waste Reduction	107,048	MWh	\$0.004322	463	\$0.004322	463
24	Distribution Surcharges	107,048	MWh	0.51¢	545	0.51¢	545
25							
26	Total Full Service Distribution	107,048	MWh	5.39¢	5,775	6.34¢	6,782
27	Total Full-Service D1.7	107,048	MWh	10.42¢	11,151	11.42¢	12,222
28							
29	Choice	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
30							
31	Capacity Charges:						
32	Summer Energy (11 a.m. Peak Start)						
33	On-Peak	0	MWh	\$0.10082	0	\$0.10277	0
34	Off-Peak	0	MWh	\$0.01466	0	\$0.01559	0
35	Winter Energy (11 a.m. Peak Start)						
36	On-Peak	0	MWh	\$0.02766	0	\$0.02875	0
37	Off-Peak	0	MWh	\$0.01573	0	\$0.01667	0
38	Total Capacity	0	MWh		0		0
39							
40	Distribution Charges						
41	Service Charge (\$/day)	0	Cust.	\$0.067	0	\$0.067	0
42							
43	Distribution Charge	0	MWh	\$0.04703	0	\$0.05644	0
44	Distribution System	0	MWh		0		0
45							
46	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
47	Energy Waste Reduction	0	MWh	\$0.004322	0	\$0.004322	0
48	Distribution Surcharges	0	MWh		0		0
49							
50	Total Choice D1.7	0	MWh		0		0
51							
52	Total D1.7	107,048	MWh	10.42¢	11,151	11.42¢	12,222
53	Increase/Decrease (\$)						1,071

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Residential Dynamic Peak Pricing Rate - D1.8

Case No.: U-20162
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Line No.	(a) Description	(b) Billing Determinants	(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
1	Full Service Power Supply					
2	Non-Capacity Charge	123,219 MWh	\$0.04029	4,965	\$0.03931	4,844
3	Capacity Charges:					
4	Off-Peak (11pm-7am)	66,349 MWh	\$0.00711	472	\$0.00866	574
5	Mid-Peak (7pm-11pm, 7am-3pm)	41,927 MWh	\$0.04266	1,789	\$0.04463	1,871
6	On-Peak (3pm-7pm)	14,850 MWh	\$0.10191	1,513	\$0.10459	1,553
7	Critical Peak (3pm-7pm)	93 MWh	\$0.90971	84	\$0.91069	84
8	Power Supply Subtotal	123,219 MWh	\$0.07160	8,823	\$0.07245	8,927
9	PSCR	123,219 MWh	\$0.00000	0	\$0.00000	0
10	REPS	14,500 Cust	\$0.00000	0	\$0.00000	0
11	Total Full Service Power Supply	123,219 MWh	7.16¢	8,823	7.24¢	8,927
12						
13	Full Service Distribution	Quantity Units				
14						
15	Sales Applied to Min.	MWh				
16	Service Charge	14,500 Cust.	\$7.50	1,305	\$7.50	1,305
17						
18	Distribution Charge	123,219 MWh	\$0.05699	7,022	\$0.05996	7,388
19	Distribution System	123,219 MWh	6.76¢	8,327	7.05¢	8,693
20						
21	Nuclear Decomm.	123,219 MWh	\$0.000765	94	\$0.000765	94
22	Energy Waste Reduction	123,219 MWh	\$0.004322	533	\$0.004322	533
23	LIEAF	14,500 cust	\$0.93	162	\$0.93	162
24	Distribution Surcharges	123,219 MWh	0.64¢	789	0.64¢	789
25						
26	Total Full Service Distribution		7.40¢	9,116	7.69¢	9,482
27	Total Full Service D1.8	123,219 MWh	14.56¢	17,939	14.94¢	18,409
28	Increase/Decrease (\$)					470

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Residential Experimental Electric Vehicle Rate - D1.9

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Revenue (\$000)	(e) Proposed	(f) Revenue (\$000)
		Quantity	Units	Rate		Rate	
	Full Service Power Supply						
1	Power Supply Charges						
2	Non-Capacity Charge	2,903	MWh				
3	On-Peak	660	MWh	\$0.08981	59	\$0.08915	59
4	Off-Peak	2,243	MWh	\$0.02245	50	\$0.02228	50
5	Capacity Charge						
6	Option I						
7	On-Peak	660	MWh	\$0.07256	48	\$0.07515	50
8	Off-Peak	2,243	MWh	\$0.01814	41	\$0.01879	42
9		2,903	MWh				
10	Option II						
11	Monthly Flat Fee	150	Vehicles	\$46.39	83	\$46.94	84
12	On-Peak	340	MWh				
13	Off-Peak	383	MWh				
14		722	MWh				
15							
16	PSCR	2,903	MWh	\$0.00000	0	\$0.00000	0
17	Total Full Service Power Supply	3,625	MWh	7.77¢	282	7.86¢	285
18							
19	Full Service Distribution	Quantity	Units				
20							
21	Option I Service Charge (\$/month)	1,803	Cust.	\$1.95	42	\$1.95	42.1940
22							
23	Distribution Charge	2,903	MWh	\$0.05699	165	\$0.05996	174.0423
24	Distribution System	2,903	MWh	7.15¢	208	7.45¢	216
25							
26	Nuclear Decomm.	2,903	MWh	\$0.000765	2	\$0.000765	2
27	Energy Waste Reduction	2,903	MWh	\$0.004322	13	\$0.004322	13
28	Distribution Surcharges	2,903	MWh	0.51¢	15	0.51¢	15
29							
30	Total Full Service Distribution	2,903	MWh	7.66¢	222	7.96¢	231
31	Total Full Service D1.9	3,625	MWh	13.90¢	504	14.23¢	516
32							
33	Choice	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
34							
35	Capacity Charge						
36	Option I						
37	On-Peak	0	MWh	\$0.07256	0	\$0.07515	0
38	Off-Peak	0	MWh	\$0.01814	0	\$0.01879	0
39	Total Capacity	0	MWh		0		0
40							
41	Distribution Charges						
42	Option I Service Charge (\$/month)	0	Cust.	\$1.95	0	\$1.95	0
43							
44	Distribution Charge	0	MWh	\$0.05699	0	\$0.05996	0
45	Distribution System	0	MWh		0		0
46							
47	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
48	Energy Waste Reduction	0	MWh	\$0.004322	0	\$0.004322	0
49	Distribution Surcharges	0	MWh		0		0
50							
51	Total Choice D1.9	0	MWh		0		0
52							
53	Total D1.9	3,625	MWh	13.90¢	504	14.23¢	516
54	Increase/Decrease (\$)						12

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Residential Space Heating Rate - D2

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Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present Rate	(d) Present Revenue (\$000)	(e) Proposed Rate	(f) Proposed Revenue (\$000)
	Full Service Power Supply	<u>Quantity</u>	<u>Units</u>				
1	Power Supply Charges						
2	Non-Capacity Charge	294,420	MWh	\$0.04624	13,614	\$0.04578	13,479
3	Capacity Charges						
4	Summer						
5	First 17 KWH/Day	57,480	MWh	\$0.03429	1,971	\$0.03571	2,053
6	Excess	27,497	MWh	\$0.04997	1,374	\$0.05158	1,418
7	Winter						
8	First 20 KWH/Day	111,813	MWh	\$0.01964	2,196	\$0.02113	2,362
9	Excess	97,629	MWh	\$0.00648	633	\$0.00776	758
10							
11	PSCR	294,420	MWh	\$0.00000	0	\$0.00000	0
12	REPS	30,480	Meters	\$0.00000	0	\$0.00000	0
13	Total Full Service Power Supply	294,420	MWh	6.72¢	19,788	6.82¢	20,070
14							
15	Full Service Distribution	<u>Quantity</u>	<u>Units</u>				
16							
17	Service Charge	30,480	Cust.	\$7.50	2,743	\$7.50	2,743
18							
19	Distribution Charge						
20	Summer	84,977	MWh	\$0.05699	4,843	\$0.05996	5,095
21	Winter	209,443	MWh	\$0.05699	11,936	\$0.05996	12,558
22	Distribution System	294,420	MWh	6.63¢	19,522	6.93¢	20,396
23							
24	Nuclear Decomm.	294,420	MWh	\$0.000765	225	\$0.000765	225
25	Energy Waste Reduction	294,420	MWh	\$0.004322	1,272	\$0.004322	1,272
26	LIEAF	30,480	Cust.	\$0.93	340	\$0.93	340
27	Distribution Surcharges	294,420	MWh	0.62¢	1,838	0.62¢	1,838
28							
29	Total Full Service Distribution	294,420	MWh	7.25¢	21,360	7.55¢	22,234
30	Total Full Service D2	294,420	MWh	13.98¢	41,148	14.37¢	42,304
31							
32	Choice	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
33							
34	Capacity Charges						
35	Summer						
36	First 17 KWH/Day	0	MWh	\$0.03429	0	\$0.03571	0
37	Excess	0	MWh	\$0.04997	0	\$0.05158	0
38	Winter						
39	First 20 KWH/Day	0	MWh	\$0.01964	0	\$0.02113	0
40	Excess	0	MWh	\$0.00648	0	\$0.00776	0
41	Total Capacity				0		0
42							
43	Distribution Charges						
44	Service Charge	0	Cust.	\$7.50	0	\$7.50	0
45							
46	Distribution Charge						
47	Summer	0	MWh	\$0.05699	0	\$0.05996	0
48	Winter	0	MWh	\$0.05699	0	\$0.05996	0
49	Distribution System	0	MWh		0		0
50							
51	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
52	Energy Waste Reduction	0	MWh	\$0.004322	0	\$0.004322	0
53	LIEAF	0	Cust.	\$0.93	0	\$0.93	0
54	Distribution Surcharges	0	MWh		0		0
55							
56	Total Choice D2	0	MWh		0		0
57							
58	Total D2	294,420	MWh	13.98¢	41,148	14.37¢	42,304
59	Increase/Decrease (\$)						1,156

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Water Heating Service Rate - Residential D5

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Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants Quantity Units	(c) Present Rate	(d) Present Revenue (\$000)	(e) Proposed Rate	(f) Proposed Revenue (\$000)
	Full Service Power Supply					
1	Non-Capacity Charge	125,084 MWh	\$0.02533	3,168	\$0.02518	3,149
2	Capacity Charge	125,084 MWh	\$0.02053	2,568	\$0.02123	2,655
3						
4	PSCR	125,084 MWh	\$0.00000	0	\$0.00000	0
5	Total Full Service Power Supply	125,084 MWh	4.59¢	5,736	4.64¢	5,804
6						
7	Full-Service Distribution					
8						
9	Service Charge	51,167 Cust.	\$1.95	1,197	\$1.95	1,197
10						
11	Distribution Charge	125,084 MWh	\$0.05699	7,129	\$0.05996	7,500
12	Distribution System	125,084 MWh	6.66¢	8,326	6.95¢	8,697
13						
14	Nuclear Decomm.	125,084 MWh	\$0.000765	96	\$0.000765	96
15	Energy Waste Reduction	125,084 MWh	\$0.004322	541	\$0.004322	541
16	Distribution Surcharges	125,084 MWh	0.51¢	636	0.51¢	636
17						
18	Total Full Service Distribution	125,084 MWh	7.16¢	8,962	7.46¢	9,333
19	Total Full Service D5	125,084 MWh	11.75¢	14,698	12.10¢	15,138
20						
21	Choice					
22						
23	Capacity Charge	0 MWh	\$0.02053	0	\$0.02123	0
24	Total Capacity	0		0		0
25						
26	Distribution Charges					
27	Service Charge	0 Cust.	\$1.95	0	\$1.95	0
28						
29	Distribution Charge	0 MWh	\$0.05699	0	\$0.05996	0
30	Distribution System	0		0		0
31						
32	Nuclear Decomm.	0 MWh	\$0.000765	0	\$0.000765	0
33	Energy Waste Reduction	0 MWh	\$0.004322	0	\$0.004322	0
34	Distribution Surcharges	0 MWh		0		0
35						
36	Total Choice Distribution D5	0 MWh		0		0
37						
38	Total D5	125,084 MWh	11.75¢	14,698	12.10¢	15,138
39	Increase/Decrease (\$)					439

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Interruptible Space Conditioning Service Rate - Commercial D1.1

Case No.: U-20162
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Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Revenue (\$000)	(e) Proposed	(f) Revenue (\$000)
	Full Service Power Supply	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
1	Capacity						
2	Energy						
3	Summer	4,307	MWh	\$0.03563	153	\$0.03506	151
4	Winter	1,864	MWh	\$0.00763	14	\$0.00706	13
5	Non-capacity energy	6,171		\$0.04166	257	\$0.04004	247
6	Power Supply Subtotal	6,171	MWh		425		411
7							
8	PSCR	6,171	MWh	\$0.00000	0	\$0.00000	0
9	REPS	912	Meters	\$0.00	0	\$0.00	0
10	Total Full Service Power Supply	6,171	MWh	6.88¢	425	6.66¢	411
11							
12	Full Service Distribution						
13							
14	Service Charge (June-Oct)	912	Cust.	\$1.95	9	\$1.95	9
15							
16	Distribution Charge	6,171	MWh	\$0.03865	239	\$0.03625	224
17	Distribution System	6,171	MWh	4.01¢	247	3.77¢	233
18							
19	Nuclear Decomm.	6,171	MWh	\$0.000765	5	\$0.000765	5
20	Energy Waste Reduction	912	Meters	\$1.36	15	\$1.36	15
21	LIEAF	912	Meters	\$0.93	10	\$0.93	10
22	Distribution Surcharges	6,171	MWh	0.48¢	30	0.48¢	30
23							
24	Total Distribution	6,171	MWh	4.49¢	277	4.25¢	262
25	Total Full Service D1.1	6,171	MWh	11.37¢	702	10.92¢	674
26							
27	Choice Distribution	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
28							
29	Capacity						
30	Energy						
31	Summer	0	MWh	\$0.03563	0	\$0.03506	0
32	Winter	0	MWh	\$0.00763	0	\$0.00706	0
33							
34	Service Charge (June-Oct)	0	Cust.	\$1.95	0	\$1.95	0
35							
36	Distribution Charge	0	MWh	\$0.03865	0	\$0.03625	0
37	Distribution System	0	MWh		0		0
38							
39	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
40	Energy Waste Reduction	0	Meters	\$1.36	0	\$1.36	0
41	LIEAF	0	Meters	\$0.93	0	\$0.93	0
42	Distribution Surcharges	0	MWh		0		0
43							
44	Total Choice D1.1	0	MWh		0		0
45							
46	Total D1.1	6,171	MWh	11.37¢	702	10.92¢	674
47	Increase/Decrease (\$)						(28)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Commercial Geothermal Time of Day (D1.7)

Case No.: U-20162
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Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants	(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity Units	Rate	Revenue	Rate	Revenue
	Full Service Power Supply					
		Quantity Units				
	Capacity Charges					
	Energy					
1	Summer (11 a.m. Peak Start)					
2	On-Peak	779 MWh	\$0.02861	22	\$0.02797	22
3	Off-Peak	1,816 MWh	\$0.01461	27	\$0.01397	25
4	Winter (11 a.m. Peak Start)					
5	On-Peak	1,701 MWh	\$0.01811	31	\$0.01747	30
6	Off-Peak	4,970 MWh	\$0.01811	90	\$0.01747	87
7						
8						
9	Non-Capacity Energy	9,266 MWh	\$0.02741	254	\$0.02660	246
10	Power Supply Subtotal	9,266 MWh		424		410
11						
12	PSCR	9,266 MWh	\$0.00000	0	\$0.00000	0
13	REPS	133 Meters	\$0.00	0	\$0.00	0
14	Total Full Service Power Supply	9,266 MWh		4.57¢ 424		4.43¢ 410
15						
16	Full Service Distribution	Quantity Units				
17						
18	Service Charge	133 Cust.	\$0.067	3	\$0.067	3
19						
20	Distribution Charge	9,266 MWh	\$0.02332	216	\$0.02565	238
21	Distribution System	9,266 MWh		2.37¢ 219		2.60¢ 241
22						
23	Nuclear Decomm.	9,266 MWh	\$0.000765	7	\$0.000675	6
24	Energy Waste Reduction	133 Meters	\$14.51	23	\$14.51	23
25	LIEAF	133 Meters	\$0.93	1	\$0.93	1
26	Distribution Surcharges	9,266 MWh		0.34¢ 32		0.33¢ 31
27						
28	Total Distribution	9,266 MWh		2.71¢ 251		2.93¢ 272
29	Total Full Service D1.7	9,266 MWh		7.28¢ 675		7.36¢ 682
30						
31	Choice Distribution	Quantity Units				
32						
33	Capacity Charges					
34	Energy					
35	Summer (11 a.m. Peak Start)					
36	On-Peak	MWh	\$0.02861	0	\$0.02797	0
37	Off-Peak	MWh	\$0.01461	0	\$0.01397	0
38	Winter (11 a.m. Peak Start)					
39	On-Peak	MWh	\$0.01811	0	\$0.01747	0
40	Off-Peak	MWh	\$0.01811	0	\$0.01747	0
41						
42	Service Charge	1 Cust.	\$0.067	0	\$0.067	0
43						
44	Distribution Charge	161 MWh	\$0.02332	4	\$0.02565	4
45	Distribution System	161 MWh		2.35¢ 4		2.58¢ 4
46						
47	Nuclear Decomm.	161 MWh	\$0.000765	0	\$0.000765	0
48	Energy Waste Reduction	1 Meters	\$14.51	0	\$14.51	0
49	LIEAF	1 Meters	\$0.93	0	\$0.93	0
50	Distribution Surcharges	161 MWh		0.19¢ 0		0.19¢ 0
51						
52	Total Choice D1.7	161 MWh		2.54¢ 4		2.77¢ 4
53						
54	Total D1.7	9,427 MWh		7.20¢ 679		7.28¢ 686
55	Increase/Decrease (\$)					8

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Commercial Dynamic Peak Pricing Rate - D1.8

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Exhibit: S-6
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Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
	Full Service Power Supply						
	Capacity						
1	Energy						
2	Off-Peak (11pm-7am)	125	MWh	\$0.00131	0	\$0.00442	1
3	Mid-Peak (7 pm-11pm, 7am-3pm)	129	MWh	\$0.03631	5	\$0.03942	5
4	On-Peak (3 pm- 7 pm)	24	MWh	\$0.09631	2	\$0.09942	2
5	Critical Peak (3pm-7pm)	0	MWh	\$0.90069	0	\$0.85687	0
6							
7	Non-capacity energy	278	MWh	\$0.04931	14	\$0.04382	12.19
8							
9	Power Supply Subtotal	278	MWh		21		20
10							
11	PSCR	278	MWh	\$0.00000	0	\$0.00000	0
12	REPS	1	Cust.	\$0.00	0	\$0.00	0
13	Total Full Service Power Supply	278	MWh	7.53¢	21	7.29¢	20
14							
15	Full Service Distribution	Quantity	Units				
16							
17	Service Charge	1	Cust.	\$11.25	0	\$11.25	0
18							
19	Distribution Charge	278	MWh	\$0.03865	11	\$0.03625	10
20	Distribution System	278	MWh	3.91¢	11	3.67¢	10
21							
22	Nuclear Decomm.	278	MWh	\$0.000765	0	\$0.000765	0
23	Energy Waste Reduction	1	Cust.	\$14.51	0	\$14.51	0
24	LIEAF	1		\$0.93	0	\$0.93	0
25	Distribution Surcharges	278	MWh	0.14¢	0	0.14¢	0
26	Total Full Service D1.1						
27	Total Full Service Distribution	278	MWh	4.06¢	11	3.82¢	11
28	Total Full Service D1.8	278	MWh	11.59¢	32	11.11¢	31
29	Increase/Decrease (\$)						(1)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Commercial Experimental Electric Vehicle Rate - D1.9

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Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Revenue (\$000)	(e) Proposed	(f) Revenue (\$000)
	Full Service Power Supply	Quantity	Units	Rate		Rate	
1	Power Supply Charges						
2	Capacity						
3	Option I						
4	On-Peak	0	MWh	\$0.07256	0	\$0.07515	0
5	Off-Peak	0	MWh	\$0.01814	0	\$0.01879	0
6		0	MWh				
7							
8	Non-capacity energy charge						
	On-Peak	0	MWh	\$0.08981	0	\$0.08915	0
	Off-Peak	0	MWh	\$0.02245	0	\$0.02228	0
9							
10	PSCR	0	MWh	\$0.00000	0	\$0.00000	0
11							
12							
13	Total Full Service Power Supply	0	MWh		0		0
14							
15	Full Service Distribution						
16							
17	Option I Service Charge (\$/month)	0	Cust.	\$1.950	0	\$1.950	0
18							
19	Distribution Charge	0	MWh	\$0.05699	0	\$0.05996	0
20	Distribution System	0	MWh		0		0
21							
22	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
23	Energy Waste Reduction	0	Meters	\$14.510000	0	\$14.510000	0
24	LIEAF	0	Meters	\$0.930000	0	\$0.930000	0
25	Distribution Surcharges	0	MWh		0		0
26							
27	Total Full Service Distribution	0	MWh		0		0
28	Total Full-Service D1.9	0	MWh		0		0
29							
30	Choice Distribution			Rate	Revenue (\$000)	Rate	Revenue (\$000)
31							
32	Capacity						
33	Option I						
34	On-Peak	0	MWh			\$0.07515	0
35	Off-Peak	0	MWh			\$0.01879	0
36		0	MWh				
37	Option I Service Charge (\$/month)	0	Cust.	\$1.95	0	\$1.95	0
38							
39	Distribution Charge	0	MWh	\$0.05699	0	\$0.05996	0
40	Distribution System	0	MWh		0		0
41							
42	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
43	Energy Waste Reduction	0	Meters	\$14.510000	0	\$14.510000	0
44	LIEAF	0	Meters	\$0.930000	0	\$0.930000	0
45	Distribution Subtotal	0	MWh		0		0
46							
47							
48	Total Choice D1.9	0	MWh		0		0
49							
50	Total D1.9	0	MWh		0		0
51	Increase/Decrease (\$)						-

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
General Service Rate - D3

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants	(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
	Full Service Power Supply					
1	Capacity					
2	Energy	7,181,124 MWh	\$0.03214	230,801	\$0.03088	221,763
3						
4	Non-Capacity					
5	Energy	7,181,124	\$0.04778	343,114	\$0.04649	333,872
6						
7	PSCR	7,181,124 MWh	\$0.00000	0	\$0.00000	0
8	REPS	191,238 Meters	\$0.00	0	\$0.00	0
9	Total Full Service Power Supply	7,181,124 MWh	7.99¢	573,915	7.74¢	555,636
10						
11	Full Service Distribution	Quantity Units				
12						
13	Service Charge	191,238 Cust.	\$11.25	25,817	\$15.00	34,423
14						
15	Distribution Charge	7,181,124 MWh	\$0.03865	277,550	\$0.03625	260,293
16	Distribution System	7,181,124 MWh	4.22¢	303,368	4.10¢	294,716
17						
18	Nuclear Decomm.	7,181,124 MWh	\$0.000765	5,494	\$0.000765	5,494
19	Energy Optimization	191,238 Meters	\$14.51	33,298	\$14.51	33,298
20	LIEAF	191,238 Meters	\$0.93	2,134	\$0.93	2,134
21	Distribution Surcharges	7,181,124 MWh	0.57¢	40,926	0.57¢	40,926
22						
23	Total Full Service Distribution	7,181,124 MWh	4.79¢	344,294	4.67¢	335,642
24	Total Full Service D3	7,181,124 MWh	12.79¢	918,209	12.41¢	891,278
25						
26	Choice Distribution	Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
27						
28	Capacity					
29	Energy	0 MWh	0.03214	0	\$0.03088	0
30						
31	Service Charge	2,079 Cust.	\$11.25	281	\$15.00	374
32						
33	Distribution Charge	317,271 MWh	\$0.03865	12,263	\$0.03625	11,500
34	Distribution System	317,271 MWh	3.95¢	12,543	3.74¢	11,874
35						
36	Nuclear Decomm.	317,271 MWh	\$0.000765	243	\$0.000765	243
37	Energy Optimization	2,079 Meters	\$14.51	362	\$14.51	362
38	LIEAF	2,079 Meters	\$0.93	23	\$0.93	23
39	Distribution Surcharges	317,271 MWh	0.20¢	628	0.20¢	628
40						
41	Total Choice D3	317,271 MWh	4.15¢	13,171	3.94¢	12,502
42						
43	Total D3	7,498,396 MWh	12.42¢	931,380	12.05¢	903,780
44	Increase/Decrease (\$)					(27,600)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Unmetered General Service Rate - D3.1

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present		(e) Proposed	
		Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
1	Connected Load	219,336,264	Watts				
2							
3	Capacity						
4	Energy	76,768	MWh	0.04654	3,573	0.02643	2,029
5							
6	Non-capacity energy	76,768	MWh	0.05979	4,590	0.07604	5,837
7							
8	PSCR	76,768	MWh	0.00000	0	0	0
9							
10	Nuclear Decommissioning	76,768		0.000765	0	0.000765	0
11							
12	Energy Waste Reduction	1,758	Meters	14.51	306	14.51	306
13							
14	REPS	1,758	Meters	0.00	0	0.00	0
15							
16	Total D3.1	76,768	MWh		8,469		8,172
	Increase/Decrease (\$)						(297)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Secondary Educational Institute - D3.2

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Revenue (\$000)	(e) Proposed	(f) Revenue (\$000)
	Full Service Power Supply	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
1	Capacity						
2	Energy	197,953	MWh	\$0.01931	3,822	\$0.02154	4,264
3							
4	Non-capacity energy	197,953	MWh	\$0.04600	9,106	\$0.04569	9,044
5							
6	PSCR	197,953	MWh	\$0.00000	0	\$0.00000	0
7	REPS	995	Meters	\$0.00	0	\$0.00	0
8	Total Full Service Power Supply	197,953	MWh	6.53¢	12,928	6.72¢	13,307
9							
10	Full Service Distribution	<u>Quantity</u>	<u>Units</u>				
11							
12	Service Charge	995	Cust.	\$11.25	134	\$15.00	179
13							
14	Distribution Charge	197,953	MWh	\$0.02825	5,592	\$0.03108	6,151
15	Distribution System	197,953	MWh	2.89¢	5,727	3.20¢	6,330
16							
17	Nuclear Decomm.	197,953	MWh	\$0.000765	151	\$0.000765	151
18	Energy Waste Reduction	995	Meters	\$14.51	173	\$14.51	173
19	LIEAF	995	Meters	\$0.93	11	\$0.93	11
20	Distribution Surcharges	197,953	MWh	0.17¢	336	0.17¢	336
21							
22	Total Full Service Distribution	197,953	MWh	3.06¢	6,062	3.37¢	6,666
23	Total Full Service D3.2	197,953	MWh	9.59¢	18,991	10.09¢	19,974
24							
25	Choice Distribution	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
26							
27	Capacity						
28	Energy	0	MWh	\$0.01931	0	\$0.02154	0
29							
30	Service Charge	782	Cust.	\$11.25	106	\$15.00	141
31							
32	Distribution Charge	301,181	MWh	\$0.02825	8,508	\$0.03108	9,359
33	Distribution System	301,181	MWh	2.86¢	8,614	3.15¢	9,500
34							
35	Nuclear Decomm.	301,181	MWh	\$0.000765	230	\$0.000765	230
36	Energy Waste Reduction	782	Meters	\$14.51	136	\$14.51	136
37	LIEAF	782	Meters	\$0.93	9	\$0.93	9
38	Distribution Surcharges	301,181	MWh	0.00¢	375	0.12¢	375
39							
40	Total Choice D3.2	301,181	MWh	2.98¢	8,989	3.28¢	9,875
41							
42	Total D3.2	499,134	MWh	5.61¢	27,980	5.98¢	29,849
43	Increase/Decrease (\$)						1,869

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Interruptible General Service Rate - D3.3

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Revenue (\$000)	(e) Proposed	(f) Revenue (\$000)
	Full Service Power Supply	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
1	Capacity						
2	Energy	94,451	MWh	\$0.02685	2,536	\$0.02580	2,437
3							
4	Non-capacity energy	94,451	MWh	\$0.03992	3,770	\$0.03884	3,669
5							
6	PSCR	94,451	MWh	\$0.00000	0	\$0.00000	0
7	REPS	120	Meters	\$0.00	0	\$0.00	0
8	Total Full Service Power Supply	94,451	MWh	6.68¢	6,307	6.45¢	6,106
9							
10	Full Service Distribution	<u>Quantity</u>	<u>Units</u>				
11							
12	Service Charge	120	Cust.	\$11.25	16	\$15.00	22
13							
14	Distribution Charge	94,451	MWh	\$0.03865	3,651	\$0.03625	3,424
15	Distribution System	94,451	MWh	3.88¢	3,667	3.65¢	3,445
16							
17	Nuclear Decomm.	94,451	MWh	\$0.000765	72	\$0.000765	72
18	Energy Waste Reduction	120	Meters	\$14.51	21	\$14.51	21
19	LIEAF	120	Meters	\$0.93	1	\$0.93	1
20	Distribution Surcharges	94,451	MWh	0.10¢	94	0.10¢	94
21							
22	Full Service Distribution	94,451	MWh	3.98¢	3,761	3.75¢	3,540
23	Total Full Service D3.3	94,451	MWh	10.66¢	10,068	10.21¢	9,645
24							
25	Choice Distribution	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
26							
27	Capacity						
28	Energy	0	MWh	\$0.02685	0	\$0.02580	0
29							
30	Service Charge	7	Cust.	\$11.25	1	\$15.00	1
31							
32	Distribution Charge	6,517	MWh	\$0.03865	252	\$0.03625	236
33	Distribution System	6,517	MWh	3.88¢	253	3.64¢	237
34							
35	Nuclear Decomm.	6,517	MWh	\$0.000765	5	\$0.000765	5
36	Energy Waste Reduction	7	Meters	\$14.510000	1	\$14.510000	1
37	LIEAF	7	Meters	\$0.93	0	\$0.93	0
38	Distribution Surcharges	6,517	MWh	0.10¢	6	0.10¢	6
39							
40	Total Choice D3.3	6,517	MWh	3.98¢	259	3.74¢	244
41							
42	Total D3.3	100,968	MWh	10.23¢	10,327	9.79¢	9,889
43	Increase/Decrease (\$)						(438)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Large General Service Rate - D4

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Revenue (\$000)	(e) Proposed	(f) Revenue (\$000)
	Full Service Power Supply	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
1	Capacity						
2	Demand Charge	5,159,967	kW	\$11.62	59,959	\$10.83	55,882
3	Energy						
4	First 200 Hrs. Use	1,032,901	MWh	\$0.00000	0	\$0.00000	0
5	Excess	1,140,174	MWh	\$0.00000	0	\$0.00000	0
6	Power Supply Subtotal	2,173,074	MWh		59,959		55,882
7							
8	Non-capacity						
9	Demand Charge	5,159,967	kW	2.26	11,662	\$3.07	15,819
10	Energy						
11	First 200 Hrs. Use	1,032,901		0.04657	48,102	\$0.04386	45,306
12	Excess	1,140,174		0.03657	41,696	\$0.03386	38,610
13	PSCR	2,173,074	MWh	\$0.00000	0	\$0.00000	0
14	REPS	8,286	Meters	\$0.00	0	\$0.00	0
15	Total Full Service Power Supply	2,173,074	MWh		7.43¢ 161,419		7.16¢ 155,616
16							
17	Full Service Distribution	Quantity	Units				
18							
19	Service Charge	8,286	Cust.	\$13.67	1,359	\$15.00	1,491
20							
21	Distribution Demand Charge	5,159,967	kW	\$12.95	66,822	\$14.25	73,504
22	Distribution Energy Charge	2,173,074	MWh	\$0.000000	0	\$0.000000	0
23	Distribution Charges	2,173,074	MWh		3.14¢ 68,181		3.45¢ 74,995
24							
25	Nuclear Decomm.	2,173,074	MWh	\$0.000765	1,662	\$0.000765	1,662
26	Energy Waste Reduction	8,286	Meters	\$14.51	1,443	\$14.510000	1,443
27	LIEAF	8,286	Meters	\$0.93	92	\$0.93	92
28	Distribution Surcharges	2,173,074	MWh		0.15¢ 3,198		0.15¢ 3,198
29							
30	Total Full Service Distribution	2,173,074	MWh		3.28¢ 71,378		3.60¢ 78,193
31	Total Full Service D4	2,173,074	MWh		10.71¢ 232,797		10.76¢ 233,809
32							
33	Choice Distribution	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
34							
35	Capacity						
36	Demand Charge	0	kW	\$11.62	0	\$10.83	0
37	Energy						
38	First 200 Hrs. Use	0	MWh	\$0.00000	0	\$0.00000	0
39	Excess	0	MWh	\$0.00000	0	\$0.00000	0
40							
41	Service Charge	1,126	Cust.	\$13.67	185	\$15.00	203
42							
43	Distribution Demand Charge	845,346	kW	\$12.95	10,947	\$14.25	12,042
44	Distribution Energy Charge	333,077	MWh	\$0.00000	0	\$0.00000	0
45	Distribution System	333,077	MWh		3.34¢ 11,132		3.68¢ 12,245
46							
47	Nuclear Decomm.	333,077	MWh	\$0.000765	255	\$0.000765	255
48	Energy Waste Reduction	1,126	Meters	\$14.510000	196	\$14.510000	196
49	LIEAF	1,126	Meters	\$0.93	13	\$0.93	13
50	Distribution Surcharges	333,077	MWh		0.14¢ 463		0.14¢ 463
51							
52	Total Choice D4	333,077	MWh		3.48¢ 11,595		3.82¢ 12,708
53							
54	Total D4	2,506,151	MWh		9.75¢ 244,392		9.84¢ 246,517
55	Increase/Decrease (\$)						2,125

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Water Heating Service Rate - Commercial D5

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Revenue (\$000)	(e) Proposed	(f) Revenue (\$000)
	Full Service Power Supply	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
1	Capacity						
2	Energy	4,844	MWh	\$0.01892	92	\$0.01818	88
3							
4	Non-capacity energy	4,844	MWh	\$0.02813	136	\$0.02737	133
5							
6	PSCR	4,844	MWh	\$0.00000	0	\$0.00000	0
7	REPS	751	Meters	\$0.00	0	\$0.00	0
8	Total Full Service Power Supply	4,844	MWh	4.71¢	228	4.56¢	221
9							
10	Full Service Distribution	<u>Quantity</u>	<u>Units</u>				
11							
12	Service Charge	751	Cust.	\$1.95	18	\$1.95	18
13							
14	Distribution Charge	4,844	MWh	\$0.02719	132	\$0.02991	145
15	Distribution System	4,844	MWh	3.08¢	149	3.35¢	162
16							
17	Nuclear Decomm.	4,844	MWh	\$0.000765	4	\$0.000765	4
18	Energy Waste Reduction	751	Meters	\$1.36	12	\$1.36	12
19	LIEAF	751	Meters	\$0.93	8	\$0.93	8
20	Distribution Surcharges	4,844	MWh	0.50¢	24	0.50¢	24
21							
22	Total Full Service Distribution	4,844	MWh	3.58¢	174	3.86¢	187
23	Total Full Service D5	4,844	MWh	8.29¢	402	8.41¢	407
24							
25	Choice Distribution	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
26							
27	Capacity						
28	Energy	0	MWh	\$0.01892	0	\$0.01818	0
29							
30	Service Charge	3	Cust.	\$1.95	0	\$1.95	0
31							
32	Distribution Charge	5	MWh	\$0.02719	0	\$0.02991	0
33	Distribution System	5	MWh	4.04¢	0	4.31¢	0
34							
35	Nuclear Decomm.	5	MWh	\$0.000765	0	\$0.000765	0
36	Energy Waste Reduction	3	Meters	\$1.36	0	\$1.36	0
37	LIEAF	3	Meters	\$0.93	0	\$0.93	0
38	Distribution Surcharges	5	MWh	1.62¢	0	1.62¢	0
39							
40	Total Choice D5	5	MWh	5.66¢	0	5.93¢	0
41							
42	Total D5	4,850	MWh	8.29¢	402	8.41¢	408
43	Increase/Decrease (\$)						6

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Energy Only Street Lighting E1.1

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Rate	(d) Revenue (\$000)	(e) Rate	(f) Revenue (\$000)
	Full Service Power Supply	Quantity	Units				
1	Capacity						
2	Energy						
3	Secondary	9,767	MWh	\$0.02197	215	\$0.02107	206
4	Dusk to Midnight	37	MWh	\$0.09784	4	\$0.09694	4
5	Primary Energy	0	MWh	\$0.02197	0	\$0.02107	0
6							
7	Non-capacity charge	9,804		\$0.03300	324	\$0.03214	315
8	Power Supply Subtotal	9,804	MWh	5.53¢	542	5.35¢	524
9							
10	PSCR	9,804	MWh	\$0.00000	0	\$0.00000	0
11	REPS	226	Meters	\$0.00	0	\$0.00	0
12	Total Full Service Power Supply	9,804	MWh	5.53¢	542	5.35¢	524
13							
14	Full Service Distribution						
15							
16	Distribution Charge	9,804	MWh	\$0.03478	341	\$0.03625	355
17	Distribution System	9,804	MWh	3.48¢	341	3.62¢	355
18							
19	Nuclear Decomm.	9,804	MWh	\$0.000765	7	\$0.000765	7
20	Energy Waste Reduction	226	Meters	\$14.51	39	\$14.51	39
21	LIEAF	226	Meters	\$0.93	3	\$0.93	3
22	Distribution Surcharges	9,804	MWh	0.50¢	49	0.50¢	49
23							
24	Total Distribution	9,804	MWh	3.98¢	390	4.13¢	405
25	Total Full Service E1.1	9,804	MWh	9.51¢	932	9.48¢	929
26							
27	Choice Distribution	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
28							
29	Capacity						
30	Energy						
31	Secondary	0	MWh	\$0.02197	0	\$0.02107	0
32	Dusk to Midnight	0	MWh	\$0.09784	0	\$0.09694	0
33	Primary Energy	0	MWh	\$0.02197	0	\$0.02107	0
34							
35	Distribution Charge	0	MWh	\$0.03478	0	\$0.03625	0
36	Distribution System	0	MWh		0		0
37							
38	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
39	Energy Waste Reduction		Meters	\$14.51	0	\$14.51	0
40	LIEAF	0	Meters	\$0.93	0	\$0.93	0
41	Distribution Surcharges	0	MWh		0		0
42							
43	Total Choice E1.1	0	MWh		0		0
44							
45	Total E1.1	9,804	MWh	9.51¢	932	9.48¢	929
46	Increase/Decrease (\$)						(3)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Greenhouse Lighting Service Rate - Standard Contract Rider No. R7

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
	Full Service Power Supply						
1	Capacity						
2	Energy	2,686	MWh	\$0.01836	49	\$0.01764	47
3							
4	Non-capacity						
5	Energy	2,686	MWh	\$0.02730	73	\$0.02656	71
6							
7	PSCR	2,686	MWh	\$0.00000	0	\$0.00000	0
8	REPS	8	Meters	\$0.00	0	\$0.00	0
9	Total Full Service Power Supply	2,686	MWh	4.57¢	123	4.42¢	119
10							
11	Full Service Distribution						
12							
13	Service Charge	8	Cust.	\$1.95	0	\$1.95	0
14							
15	Distribution Charge	2,686	MWh	\$0.03043	82	\$0.03347	90
16	Distribution System	2,686	MWh	3.05¢	82	3.35¢	90
17							
18	Nuclear Decomm.	2,686	MWh	\$0.000765	2	\$0.000765	2
19	Energy Waste Reduction	8	Meters	\$14.51	1	\$14.51	1
20	LIEAF	8	Meters	\$0.93	0	\$0.93	0
21	Distribution Surcharges	2,686	MWh	0.13¢	4	0.13¢	4
22							
23	Total Distribution	2,686	MWh	3.18¢	85	3.49¢	94
24	Total Full Service R7	2,686	MWh	7.75¢	208	7.91¢	212
25							
26	Choice Distribution						
27							
28	Capacity						
29	Energy	0	MWh	\$0.01836	0	\$0.01764	0
30							
31	Service Charge	0	Cust.	\$1.95	0	\$1.95	0
32							
33	Distribution Charge	0	MWh	\$0.03043	0	\$0.03347	0
34	Distribution System	0	MWh	0	0	0	0
35							
36	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
37	Energy Waste Reduction	0	Meters	\$14.51	0	\$14.51	0
38	LIEAF	0	Meters	\$0.93	0	\$0.93	0
39	Distribution Surcharges	0	MWh	0	0	0	0
40							
41	Total Choice R7	0	MWh	0	0	0	0
42							
43	Total R7	2,686	MWh	7.75¢	208	7.91¢	212
44	Increase/Decrease (\$)						4

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Commercial Space Conditioning Rate - Standard Contract Rider No. R8

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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	(a)		(b)		(c)		(d)		(e)		(f)	
	Description		Billing Determinants		Present		Proposed		Rate		Revenue	
			Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)				
1	Full Service Power Supply											
2	Capacity											
3	Energy											
4		R8 All KWH- Separate Meter	19,403	MWh	\$0.04940	959	\$0.04871	945				
5		R8a initial Block of D3	1,546	MWh	\$0.03214	50	\$0.03088	48				
6		R8a Excess	315	MWh	\$0.04940	16	\$0.04871	15				
7	<u>Winter Nov-May</u>											
8		R8 First 1000 KWH- Sep Mtr	4,837	MWh	\$0.04940	239	\$0.04871	236				
9		R8 Excess	33,828	MWh	\$0.01563	529	\$0.01494	505				
10		R8a initial Block of D3	2,679	MWh	\$0.03214	86	\$0.03088	83				
11		Excess	11,320	MWh	\$0.01563	177	\$0.01494	169				
12		Non-capacity Charge	73,929	MWh	\$0.04226	3,124	\$0.04075	3,013				
13		Power Supply Subtotal	73,929	MWh		5,179		5,014				
14		PSCR	73,929	MWh	\$0.00000	0	\$0.00000	0				
15		REPS	1,737	Meters	\$0.00	0	\$0.00	0				
16		Total Full Service Power Supply	73,929	MWh		7,014		6,786				
17	Full Service Distribution											
18	<u>Service Charge</u>											
19		R8 Separate Meter	1,116	Cust.	\$11.25	151	\$15.00	201				
20		R8a	621	Cust.	\$11.25	84	\$15.00	112				
21		Distribution Charge	73,929	MWh	\$0.03865	2,857	\$0.03625	2,680				
22		Distribution System	73,929	MWh		4,184		4,054				
23		Nuclear Decomm.	73,929	MWh	\$0.000765	57	\$0.000765	57				
24		Energy Waste Reduction	1,116	Meters	\$14.51	194	\$14.51	194				
25		LIEAF	1,116	Meters	\$0.93	12	\$0.93	12				
26		Distribution Surcharges	73,929	MWh		0,364		0,364				
27		Total Distribution	73,929	MWh		4,544		4,404				
28		Total Full Service R8	73,929	MWh		11,544		11,194				
29	Choice Distribution											
30	<u>Capacity</u>											
31	Energy											
32		R8 All KWH- Separate Meter	0	MWh	\$0.04940	0	\$0.04871	0				
33		R8a initial Block of D3	0	MWh	\$0.03214	0	\$0.03088	0				
34		R8a Excess	0	MWh	\$0.04940	0	\$0.04871	0				
35	<u>Winter Nov-May</u>											
36		R8 First 1000 KWH- Sep Mtr	0	MWh	\$0.04940	0	\$0.04871	0				
37		R8 Excess	0	MWh	\$0.01563	0	\$0.01494	0				
38		R8a initial Block of D3	0	MWh	\$0.03214	0	\$0.03088	0				
39		Excess	0	MWh	\$0.01563	0	\$0.01494	0				
40	<u>Service Charge</u>											
41		R8 Separate Meter	18	Cust.	\$11.25	2	\$15.00	3				
42		R8a	1	Cust.	\$11.25	0	\$15.00	0				
43		Distribution Charge	1,788	MWh	\$0.03865	69	\$0.03625	65				
44		Distribution System	1,788	MWh		4,014		3,824				
45		Nuclear Decomm.	1,788	MWh	\$0.000765	1	\$0.000765	1				
46		Energy Waste Reduction	18	Meters	\$14.51	3	\$14.51	3				
47		LIEAF	19	Meters	\$0.93	0	\$0.93	0				
48		Distribution Surcharges	1,788	MWh		0,264		0,264				
49		Total Choice R8	1,788	MWh		4,274		4,084				
50		Total R8	75,717	MWh		11,374		11,024				
51	Increase/Decrease (\$)							(268)				

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Primary Supply Rate - D11
All Voltages

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants	(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
	Full Service Power Supply					
	Capacity					
1	Power Supply Demand	23,705,447 kW	11.87	281,384	11.55	273,865
2	<u>Voltage Level Discount</u>					
3	Subtransmission	3,169,834 kW	(0.58)	(1,839)	(0.49)	(1,541)
4	Transmission	6,337,749 kW	(0.87)	(5,514)	(0.73)	(4,602)
5						
6	<u>Energy</u>					
7	On-Peak	3,273,946 MWh	0.00000	0		0
8	Off-Peak	9,464,102 MWh	0.00000	0		0
9	Total Energy	12,738,048 MWh				
10						
11	<u>Voltage Level Discount</u>					
12	Subtransmission	1,864,174 MWh	0.00000	0	0.00000	0
13	Transmission	4,163,921 MWh	0.00000	0	0.00000	0
14	Total Capacity	12,738,048 MWh		274,031		267,722
15						
16	Non-Capacity					
17	Power Supply Demand	23,705,447 kW	5.14	121,846	5.46	129,364
18	<u>Voltage Level Adjustment</u>					
19	Subtransmission	3,169,834 kW	(0.25)	(792)	(0.23)	(728)
20	Transmission	6,337,749 kW	(0.38)	(2,408)	(0.34)	(2,174)
21	<u>Energy</u>					
22	On-Peak	3,273,946 MWh	0.04345	142,253	0.04187	137,070
23	Off-Peak	9,464,102 MWh	0.03345	316,574	0.03187	301,591
24	<u>Voltage Level Discount</u>					
25	Subtransmission	1,864,174 MWh	(0.00114)	(2,125)	(0.00114)	(2,129)
26	Transmission	4,163,921 MWh	(0.00194)	(8,078)	(0.00193)	(8,035)
27	Power Supply Subtotal	12,738,048 MWh		841,301		822,682
28						
29	PSCR	12,738,048 MWh	0.00000	0	0.00000	0
30	REPS	2,125 Cust.	0.0	0	0.0	0
31	Total Full Service Power Supply	12,738,048 MWh	6.60¢	841,301	6.46¢	822,682
32						
33	Full Service Distribution	Quantity Units				
34						
35	Service Charge - PV	1,993 Cust.	275	6,578	275	6,578
36	Service Charge - SV, TV	131 Cust.	375	591	375	591
37						
38	<u>Distribution Charges</u>					
39	Primary	17,406,928 kW	3.77	65,624	3.50	60,895
40		6,709,953 MWh				
41	Subtransmission	4,269,529 kW	1.46	6,234	1.51	6,429
42		1,864,174 MWh				
43	Transmission	7,323,875 kW	0.73	5,346	0.68	4,970
44		4,163,921 MWh				
45	<u>Substation Credit</u>					
46	Demand	3,724,493 kW	(0.30)	(1,117)	(0.30)	(1,117)
47	Energy	240,044 MWh	(0.0004)	(96)	(0.0004)	(96)
48	Distribution System	12,738,048 MWh	0.65¢	83,160	0.61¢	78,249
49						
50	Nuclear Decommissioning	12,738,048 MWh	0.000765	9,745	0.000765	9,745
51	Energy Waste Reduction	2,507 Meters	245.0	7,370	245.0	7,370
52	LIEAF	2,507 Meters	0.93	28	0.93	28
53	Distribution Surcharges	12,738,048 MWh	0.13¢	17,142	0.13¢	17,142
54						
55	Total Full Service Distribution	12,738,048 MWh	0.79¢	100,302	0.75¢	95,391
56	Total Full Service D11	12,738,048 MWh	7.39¢	941,603	7.21¢	918,073

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Primary Supply Rate - D11 (Cont'd)
All Voltages

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Rate	(d) Revenue (\$000)	(e) Rate	(f) Revenue (\$000)
57	Choice Distribution	Quantity	Units				
58	Capacity						
59	Power Supply Demand	0	kW	11.87	0	11.55	0
60	<u>Voltage Level Discount</u>						
61	Subtransmission	0	kW	(0.58)	0	(0.49)	0
62	Transmission	0	kW	(0.87)	0	(0.73)	0
63							
64	<u>Energy</u>						
65	On-Peak	0	MWh	0.00000	0	0.00000	0
66	Off-Peak	0	MWh	0.00000	0	0.00000	0
67	Total Energy	0	MWh				
68							
69	<u>Voltage Level Discount</u>						
70	Subtransmission	0	MWh	0.00000	0	0.00000	0
71	Transmission	0	MWh	0.00000	0	0.00000	0
72	Total Capacity	0	MWh		0		0
73							
74	Service Charge - PV	537	Cust.	275	1,770	275	1,770
75	Service Charge - SV, TV	14	Cust.	375	63	375	63
76							
77	<u>Distribution Charges</u>						
78	Primary	5,025,320	kW	3.77	18,945	3.50	17,580
79		2,057,498	MWh				
80	Subtransmission	1,401,837	kW	1.46	2,047	1.51	2,111
81		614,589	MWh				
82	Transmission	1,925,547	kW	0.73	1,406	0.68	1,307
83		712,843	MWh				
84	Substation Credit						
85	Demand	1,469,463	kW	(0.30)	(441)	(0.30)	(441)
86	Energy	5,325	MWh	(0.0004)	(2)	(0.0004)	(2)
87	Distribution System	3,384,929	MWh	0.70¢	23,788	0.66¢	22,388
88							
89	Nuclear Decommissioning	3,384,929	MWh	0.000765	2,589	0.000765	2,589
90	Energy Waste Reduction	656	Meters	245.0	1,928	245.0	1,928
91	LIEAF	656	Meters	0.93	7	0.93	7
92	Distribution Surcharges	3,384,929	MWh	0.13¢	4,524	0.13¢	4,524
93							
94	Total Choice D11	3,384,929	MWh	0.84¢	28,313	0.80¢	26,912
95							
96	Total D11	16,122,977	MWh	6.02¢	969,915	5.86¢	944,985
97	Increase/Decrease (\$)						(24,930)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Primary Educational Institute - D6.2
All Voltages

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants	(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
	Full Service Power Supply					
	Capacity					
1	Power Supply Demand	1,361,322 kW	11.72	15,949	12.28	16,716
2						
3	<u>Voltage Level Adjustment</u>					
4	Subtransmission	578,412 kW		0	(0.52)	(299)
5	Transmission	0 kW		0	(0.77)	0
6						
7	<u>Energy</u>					
8	On-Peak	171,643 MWh	0.00000	0	0.00000	0
9	Off-Peak	437,046 MWh	0.00000	0	0.00000	0
10	Total Energy	608,689 MWh				
11						
12	<u>Voltage Level Discount</u>					
13	Subtransmission	289,479 MWh	0.00000	0	0.00000	0
14	Transmission	0 MWh	0.00000	0	0.00000	0
15	Total Capacity	608,689 MWh		15,949		16,417
16						
17	Non-Capacity					
18	Power Supply Demand	1,361,322 kW	0.58	790	0.00	0
19						
20	<u>Energy</u>					
21	On-Peak	171,643 MWh	0.04215	7,235	0.04808	8,252
22	Off-Peak	437,046 MWh	0.03915	17,110	0.04508	19,701
23	<u>Voltage Level Discount</u>					
24	Subtransmission	289,479 MWh	(0.00129)	(373)	(0.00152)	(441)
25	Transmission	0 MWh	(0.00219)	0		0
26	Power Supply Subtotal	608,689 MWh		40,710		43,929
27						
28	PSCR	608,689 MWh	0.00000	0	0.00000	0
29	REPS	101 Cust.	0.0	0	0.0	0
30	Total Full Service Power Supply	608,689 MWh	6.69¢	40,710	7.22¢	43,929
31						
32	Full Service Distribution	Quantity Units				
33						
34	Service Charge - PV	95 Cust.	275	313	275	313
35	Service Charge - SV, TV	6 Cust.	375	27	375	27
36						
37	<u>Distribution Charges</u>					
38	Primary	1,011,319 kW	3.77	3,813	3.50	3,538
39		319,221 MWh				
40	Subtransmission	719,317 kW	1.46	1,050	1.51	1,083
41		289,479 MWh				
42	Transmission	0 kW	0.73	0	0.68	0
43		0 MWh				
44	<u>Substation Credit</u>					
45	Demand	94,402 kW	(0.30)	(28)	(0.30)	(28)
46	Energy	38,875 MWh	(0.0004)	(16)	(0.0004)	(16)
47	Distribution System	608,689 MWh	0.85¢	5,159	0.81¢	4,917
48						
49	Nuclear Decommissioning	608,689 MWh	0.000765	466	0.000765	466
50	Energy Waste Reduction	144 Meters	245.0	423	245.0	423
51	LIEAF	144 Meters	0.93	2	0.93	2
52	Distribution Surcharges	608,689 MWh	0.15¢	890	0.15¢	890
53						
54	Total Full Service Distribution	608,689 MWh	0.99¢	6,049	0.95¢	5,807
55	Total Full Service D6.2	608,689 MWh	7.68¢	46,759	8.17¢	49,736

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Primary Educational Institute - D6.2 (Cont'd)
All Voltages

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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
56	Choice Distribution						
57	Capacity						
58	Power Supply Demand		kW	11.72	0	12.28	0
59							
60	Energy						
61	On-Peak		MWh	0.00000	0	0.00000	0
62	Off-Peak		MWh	0.00000	0	0.00000	0
63	Total Energy		MWh				
64							
65	Voltage Level Discount						
66	Subtransmission		MWh	0.00000	0	0.00000	0
67	Transmission		MWh	0.00000	0	0.00000	0
68	Total Capacity						0
69							
70	Service Charge - PV	142	Cust.	275	468	275	468
71	Service Charge - SV, TV	0	Cust.	375	0	375	0
72							
73	Distribution Charges						
74	Primary	1,636,007	kW	3.77	6,168	3.50	5,723
75		405,048	MWh				
76	Subtransmission	0	kW	1.46	0	1.51	0
77		0	MWh				
78	Transmission	0	kW	0.73	0	0.68	0
79		0	MWh				
80	Substation Credit						
81	Demand	0	kW	(0.30)	0	(0.30)	0
82	Energy	0	MWh	(0.0004)	0	(0.0004)	0
83	Distribution System	405,048	MWh	1.64¢	6,636	1.53¢	6,191
84							
85	Nuclear Decommissioning	405,048	MWh	0.000765	310	0.000765	310
86	Energy Waste Reduction	144	Meters	245.0	423	245.0	423
87	LIEAF	144	Meters	0.93	2	0.93	2
88	Distribution Surcharges	405,048	MWh	0.18¢	735	0.18¢	735
89							
90	Total Choice D6.2	405,048	MWh	1.82¢	7,370	1.71¢	6,926
91							
92	Total D6.2	1,013,738	MWh	5.34¢	54,129	5.59¢	56,662
93	Increase/Decrease (\$)						2,532

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Interruptible Supply Rate - D8
All Voltages

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Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants	(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
	Full Service Power Supply					
	Capacity					
1	Power Supply Demand	1,332,725 kW	6.67	8,889	4.97	6,625
2	<u>Voltage Level Adjustment</u>					
3	Subtransmission	126,338 kW	(0.32)	(40)	(0.25)	(31)
4	Transmission	128,590 kW	(0.49)	(63)	(0.37)	(47)
5						
6	Product Protection Demand	200,310 kW	11.87	2,378	11.55	2,314
7	<u>Voltage Level Adjustment</u>					
8	Subtransmission	643 kW	(0.58)	(0)	(0.49)	(0)
9	Transmission	89,241 kW	(0.87)	(78)	(0.73)	(65)
10						
11	<u>Energy</u>					
12	On-Peak	189,869 MWh	0.00000	0	0.00000	0
13	Off-Peak	523,419 MWh	0.00000	0	0.00000	0
14	Total Energy	713,288 MWh				
15						
16	<u>Voltage Level Discount</u>					
17	Subtransmission	67,617 MWh	0.00000	0	0.00000	0
18	Transmission	120,109 MWh	0.00000	0	0.00000	0
19	Total Capacity	713,288 MWh		11,086		8,796
20						
21	Non-Capacity					
22	Power Supply Demand	1,332,725 kW	4.31	5,744	4.71	6,271
23	<u>Voltage Level Adjustment</u>					
24	Subtransmission	126,338 kW	(0.21)	(27)	(0.20)	(26)
25	Transmission	128,590 kW	(0.32)	(41)	(0.30)	(39)
26						
27	Product Protection Demand	200,310 kW	5.14	1,030	5.46	1,093
28	<u>Voltage Level Discount</u>					
29	Subtransmission	643 kW	(0.25)	(0)	(0.23)	(0)
30	Transmission	89,241 kW	(0.38)	(34)	(0.34)	(31)
31						
32	<u>Energy</u>					
33	On-Peak	189,869 MWh	0.04345	8,250	0.04187	7,949
34	Off-Peak	523,419 MWh	0.03345	17,508	0.03187	16,680
35	<u>Voltage Level Discount</u>					
36	Subtransmission	67,617 MWh	(0.00114)	(77)	(0.00114)	(77)
37	Transmission	120,109 MWh	(0.00194)	(233)	(0.00193)	(232)
38	Power Supply Subtotal	713,288 MWh		43,205		40,385
39						
40	PSCR	713,288 MWh	0.00000	0	0.00000	0
41	REPS	161 Cust.	0.00	0	0.00	0
42	Total Full Service Power Supply	713,288 MWh	6.06¢	43,205	5.66¢	40,385
43						
44	Full Service Distribution	Quantity Units				
45						
46	Service Charge - PV	156 Cust.	275	514	275	514
47	Service Charge - SV, TV	5 Cust.	375	23	375	23
48						
49	<u>Distribution Charges</u>					
50	Primary	1,480,035 kW	3.77	5,580	3.50	5,178
51		525,562 MWh				
52	Subtransmission	131,960 kW	1.46	193	1.51	199
53		67,617 MWh				
54	Transmission	268,487 kW	0.73	196	0.68	182
55		120,109 MWh				
56	<u>Substation Credit</u>					
57	Demand	282,019 kW	(0.30)	(85)	(0.30)	(85)
58	Energy	0 MWh	(0.0004)	0	(0.0004)	0
59	Distribution System	713,288 MWh	0.90¢	6,420	0.84¢	6,010
60						
61	Nuclear Decommissioning	713,288 MWh	0.000765	546	0.000765	546
62	Energy Waste Reduction	183 Meters	245.0	538	245.0	538
63	LIEAF	183 Meters	0.93	2	0.93	2
64	Distribution Surcharges	713,288	0.15¢	1,086	0.15¢	1,086
65						
66	Total Full Service Distribution	713,288 MWh	1.05¢	7,506	0.99¢	7,096
67	Total Full Service D8	713,288 MWh	7.11¢	50,712	6.66¢	47,481

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Interruptible Supply Rate - D8 (Cont'd)
All Voltages

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Line No.	(a) Description	(b) Billing Determinants Quantity Units	(c) Present Rate	(d) Present Revenue (\$000)	(e) Proposed Rate	(f) Proposed Revenue (\$000)
68	Choice Distribution					
69	Capacity					
70	Power Supply Demand	0 kW	6.67	0	4.97	0
71	<u>Voltage Level Discount</u>					
72	Subtransmission	0 kW	(0.32)	0	(0.25)	0
73	Transmission	0 kW	(0.49)	0	(0.37)	0
74						
75	Product Protection Demand	0 kW	11.87	0	11.55	0
76	<u>Voltage Level Discount</u>					
77	Subtransmission	0 kW	(0.58)	0	(0.49)	0
78	Transmission	0 kW	(0.87)	0	(0.73)	0
79						
80	<u>Energy</u>					
81	On-Peak	0 MWh	0.00000	0	0.00000	0
82	Off-Peak	0 MWh	0.00000	0	0.00000	0
83	Total Energy	0 MWh				
84						
85	<u>Voltage Level Discount</u>					
86	Subtransmission	0 MWh	0.00000	0	0.00000	0
87	Transmission	0 MWh	0.00000	0	0.00000	0
88	Total Capacity	0 MWh				
89						
90	Service Charge - PV	10 Cust.	275	33	275	33
91	Service Charge - SV, TV	2 Cust.	375	9	375	9
92						
93	<u>Distribution Charges</u>					
94	Primary	212,342 kW	3.77	801	3.50	743
95		107,520 MWh				
96	Subtransmission	61,847 kW	1.46	90	1.51	93
97		24,453 MWh				
98	Transmission	0 kW	0.73	0	0.68	0
99		0 MWh				
100	<u>Substation Credit</u>					
101	Demand	0 kW	(0.30)	0	(0.30)	0
102	Energy	0 MWh	(0.0004)	0	(0.0004)	0
103	Distribution System	131,973 MWh	0.71¢	933	0.67¢	878
104						
105	Nuclear Decommissioning	131,973 MWh	0.000765	101	0.000765	101
106	Energy Waste Reduction	12 Meters	245.0	35	245.0	35
107	LIEAF	12 Meters	0.93	0	0.93	0
108	Distribution Surcharges	131,973 MWh	0.10¢	136	0.10¢	136
109						
110	Total Choice D8	131,973 MWh	0.81¢	1,069	0.77¢	1,014
111						
112	Total D8	845,260 MWh	6.13¢	51,781	5.74¢	48,495
113	Increase/Decrease (\$)					(3,286)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
All Electric School Building Rate - D10
Primary Voltage

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Exhibit: S-6
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Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present Rate	(d) Present Revenue (\$000)	(e) Proposed Rate	(f) Proposed Revenue (\$000)
	Full Service Power Supply	<u>Quantity</u>	<u>Units</u>				
1	Capacity						
2	Energy						
3	Energy -- Winter	18,057	MWh	0.02018	364	0.02007	362
4	Energy -- Summer	9,269	MWh	0.03819	354	0.03808	353
5	Total Capacity	27,326	MWh		718		715
6	Non-Capacity						
7	Energy	27,326	MWh	0.05621	1,536	0.05449	1,489
8	Power Supply Subtotal						
9							
10	PSCR	27,326	MWh	0.00000	0	0.00000	0
11	REPS	26	Cust.	0.00	0	0.00	0
12	Total Full Service Power Supply	27,326	MWh	8.25¢	2,254	8.07¢	2,204
13							
14	Full Service Distribution	<u>Quantity</u>	<u>Units</u>				
15							
16	Service Charge	26	Cust.	275	87	275	87
17							
18	<u>Distribution Charges</u>						
19	Primary	27,326	MWh	0.01930	527	0.01279	350
20	Distribution System	27,326	MWh	2.25¢	614	1.60¢	437
21							
22	Nuclear Decommissioning	27,326	MWh	0.000765	21	0.000765	21
23	Energy Waste Reduction	26	Meters	245.0	77	245.0	77
24	LIEAF	26	Meters	0.93	0	0.93	0
25	Distribution Surcharges	27,326	MWh	0.36¢	99	0.36¢	99
26							
27	Total Full Service Distribution	27,326	MWh	2.61¢	713	1.96¢	535
28	Total Full Service D10	27,326	MWh	10.86¢	2,967	10.02¢	2,739
29							
30	Choice Distribution	<u>Quantity</u>	<u>Units</u>	<u>Rate</u>	<u>Revenue (\$000)</u>	<u>Rate</u>	<u>Revenue (\$000)</u>
31	Capacity						
32	Energy						
33	Energy -- Winter	0	MWh	0.02018	0	0.02007	0
34	Energy -- Summer	0	MWh	0.03819	0	0.03808	0
35	Total Capacity	0	MWh				0
36							
37	Service Charge	11	Cust.	275	36	275	36
38							
39	<u>Distribution Charges</u>						
40	Primary	9,349	MWh	0.01930	180	0.01279	120
41	Distribution System	9,349	MWh	2.32¢	217	1.67¢	156
42							
43	Nuclear Decommissioning	9,349	MWh	0.000765	7	0.000765	7
44	Energy Waste Reduction	11	Meters	245.0	32	245.0	32
45	LIEAF	11	Meters	0.93	0	0.93	0
46	Distribution Surcharges	9,349	MWh	0.42¢	40	0.42¢	40
47							
48	Total Choice D10	9,349	MWh	2.74¢	256	2.09¢	196
49							
50	Total D10	36,675	MWh	8.79¢	3,224	8.00¢	2,935
51	Increase/Decrease (\$)						(289)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Alternative Metal Melting Rider - R1.1

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Line No.	(a) Description	(b) Billing Determinants		(c) Present		(d)	(e) Proposed		(f)
		Quantity	Units	Rate	Revenue (\$000)		Rate	Revenue (\$000)	
	Full Service Power Supply								
	Capacity								
1	Energy								
2	Secondary								
3	First 100 Hours Use	2,071	MWh	0.02751	57		0.02340	48	
4	Excess Hours Use	582	MWh	0.01038	6		0.00883	5	
5	Primary								
6	First 100 Hours Use	5,787	MWh	0.02045	118		0.01739	101	
7	Excess Hours Use	510	MWh	0.00747	4		0.00635	3	
8	Subtransmission								
9	First 100 Hours Use	14,477	MWh	0.01996	289		0.01698	246	
10	Excess Hours Use	32,343	MWh	0.00694	224		0.00590	191	
11	Transmission								
12	First 100 Hours Use	0	MWh	0.01693	0		0.01440	0	
13	Excess Hours Use	0	MWh	0.00561	0		0.00477	0	
14	Total Capacity	55,770	MWh		699			594	
15									
16	Non-Capacity								
17	Energy	55,770	MWh	0.04553	2,539		0.04492	2,505	
18	Power Supply Subtotal				3,238			3,099	
19									
20	PSCR	55,770	MWh	0.00000	0		0.00000	0	
21	REPS	17	Cust.	0.00	0		0.00	0	
22	Total Full Service Power Supply	55,770	MWh	5.81¢	3,238		5.56¢	3,099	
23									
24	Full Service Distribution	Quantity	Units	Rate	Revenue (\$000)		Rate	Revenue (\$000)	
25									
26	Distribution Charges								
27	Secondary								
28	First 100 Hours Use	2,071	MWh	0.02442	51		0.02686	56	
29	Excess Hours Use	582	MWh	0.02442	14		0.02686	16	
30	Primary								
31	First 100 Hours Use	5,787	MWh	0.01114	64		0.01141	66	
32	Excess Hours Use	510	MWh	0.01114	6		0.01141	6	
33	Subtransmission								
34	First 100 Hours Use	14,477	MWh	0.00347	50		0.00352	51	
35	Excess Hours Use	32,343	MWh	0.00347	112		0.00352	114	
36	Transmission								
37	First 100 Hours Use	0	MWh	0.00189	0		0.00138	0	
38	Excess Hours Use	0	MWh	0.00189	0		0.00138	0	
39									
40	Substation Credit								
41	Energy	4,002	MWh	(0.00300)	(12)		(0.00300)	(12)	
42	Distribution System	55,770	MWh	0.51¢	285		1.48¢	296	
43									
44	Nuclear Decommissioning	55,770	MWh	0.000765	43		0.000765	43	
45	Energy Optimization	17	Meters	245.0	50		245.00	50	
46	LIEAF	17	Meters	0.93	0		0.93	0	
47	Distribution Surcharges	55,770	MWh	0.17¢	93		0.17¢	93	
48									
49	Total Full Service Distribution	55,770	MWh	0.68¢	378		0.70¢	388	
50	Total Full Service R1.1	55,770	MWh	6.48¢	3,616		6.25¢	3,488	

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Alternative Metal Melting Rider - R1.1 (Cont'd)

Case No.: U-20162
Exhibit: S-6
Schedule: F3
Witness: M. J. Pung
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Line No.	(a) Description	(b) Billing Determinants		(c) Present		(d)	(e) Proposed		(f)
		Quantity	Units	Rate	Revenue		Rate	Revenue	
51	Choice Distribution								
52	Capacity								
53	Energy				(\$000)			(\$000)	
54	Secondary								
55	First 100 Hours Use	0	MWh	0.02751	0		0.02340	0	
56	Excess Hours Use	0	MWh	0.01038	0		0.00883	0	
57	Primary								
58	First 100 Hours Use	0	MWh	0.02045	0		0.01739	0	
59	Excess Hours Use	0	MWh	0.00747	0		0.00635	0	
60	Subtransmission								
61	First 100 Hours Use	0	MWh	0.01996	0		0.01698	0	
62	Excess Hours Use	0	MWh	0.00694	0		0.00590	0	
63	Transmission								
64	First 100 Hours Use	0	MWh	0.01693	0		0.01440	0	
65	Excess Hours Use	0	MWh	0.00561	0		0.00477	0	
66	Total Capacity	0	MWh						0
67									
68	Distribution Charges								
69	Secondary								
70	First 100 Hours Use	0	MWh	0.02442	0		0.02686	0	
71	Excess Hours Use	0	MWh	0.02442	0		0.02686	0	
72	Primary								
73	First 100 Hours Use	0	MWh	0.01114	0		0.01141	0	
74	Excess Hours Use	0	MWh	0.01114	0		0.01141	0	
75	Subtransmission								
76	First 100 Hours Use	0	MWh	0.00347	0		0.00352	0	
77	Excess Hours Use	0	MWh	0.00347	0		0.00352	0	
78	Transmission								
79	First 100 Hours Use	0	MWh	0.00189	0		0.00138	0	
80	Excess Hours Use	0	MWh	0.00189	0		0.00138	0	
81									
82	Substation Credit								
83	Energy	0	MWh	(0.00300)	0		(0.00300)	0	
84	Distribution System	0	MWh		0			0	
85									
86	Nuclear Decommissioning	0	MWh	0.000765	0		0.000765	0	
87	Energy Optimization	0	Meters	245.0	0		245.00	0	
88	LIEAF	0	Meters	0.93	0		0.93	0	
89	Distribution Surcharges	0	MWh		0			0	
90									
91	Total Choice R1.1	0	MWh		0			0	
92									
93	Total R1.1	55,770	MWh	6.48¢	3,616		6.25¢	3,488	
94	Increase/Decrease (\$)							(128)	

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Electric Process Heat Rider - R1.2

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Line No.	(a) Description	(b) Billing Determinants		(c) Present		(d)	(e) Proposed		(f)
		Quantity	Units	Rate	Revenue (\$000)		Rate	Revenue (\$000)	
	Full Service Power Supply								
	Capacity								
1	<u>Energy</u>								
2	Secondary								
3	First 100 Hours Use	18,477	MWh	0.02751	508		0.02340	432	
4	Excess Hours Use	35,008	MWh	0.01038	363		0.00883	309	
5	Primary								
6	First 100 Hours Use	96,530	MWh	0.02045	1,974		0.01739	1,679	
7	Excess Hours Use	263,053	MWh	0.00747	1,965		0.00635	1,671	
8	Subtransmission								
9	First 100 Hours Use	6,819	MWh	0.01996	136		0.01698	116	
10	Excess Hours Use	25,301	MWh	0.00694	176		0.00590	149	
11	Transmission								
12	First 100 Hours Use	3,358	MWh	0.01693	57		0.01440	48	
13	Excess Hours Use	16,381	MWh	0.00561	92		0.00477	78	
14	Total Capacity	464,927	MWh		5,271			4,483	
15									
16	Non-Capacity								
17	Energy	464,927	MWh	0.04553	21,168		0.04492	20,884	
18	Power Supply Subtotal	464,927			26,439			25,368	
19									
20	PSCR	464,927	MWh	0.00000	0		0.00000	0	
21	REPS	192	Cust.	0.00	0		0.00	0	
22	Total Full Service Power Supply	464,927	MWh	5.69¢	26,439		5.46¢	25,368	
23									
24	Full Service Distribution	Quantity	Units						
25									
26	<u>Distribution Charges</u>								
27	Secondary								
28	First 100 Hours Use	18,477	MWh	0.02442	451		0.02686	496	
29	Excess Hours Use	35,008	MWh	0.02442	855		0.02686	940	
30	Primary								
31	First 100 Hours Use	96,530	MWh	0.01114	1,075		0.01141	1,101	
32	Excess Hours Use	263,053	MWh	0.01114	2,930		0.01141	3,001	
33	Subtransmission								
34	First 100 Hours Use	6,819	MWh	0.00347	24		0.00352	24	
35	Excess Hours Use	25,301	MWh	0.00347	88		0.00352	89	
36	Transmission								
37	First 100 Hours Use	3,358	MWh	0.00189	6		0.00138	5	
38	Excess Hours Use	16,381	MWh	0.00189	31		0.00138	23	
39									
40	<u>Substation Credit</u>								
41	Energy	0	MWh	(0.00300)	0		(0.00300)	0	
42	Distribution System	464,927	MWh	1.17¢	5,461		1.22¢	5,680	
43									
44	Nuclear Decommissioning	464,927	MWh	0.000765	356		0.000765	356	
45	Energy Waste Reduction	192	Meters	245.0	563		245.00	563	
46	LIEAF	192	Meters	0.93	2		0.93	2	
47	Distribution Surcharges	464,927	MWh	0.20¢	921		0.20¢	921	
48									
49	Total Full Service Distribution	464,927	MWh	1.37¢	6,381		1.42¢	6,600	
50	Total Full Service R1.2	464,927	MWh	7.06¢	32,821		6.88¢	31,968	

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Electric Process Heat Rider - R1.2 (Cont'd)

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Line No.	(a) Description	(b) Billing Determinants		(c) Present		(e) Proposed	
		Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
51	Choice Distribution						
52	Capacity						
53	Energy						
54	Secondary						
54	First 100 Hours Use	0	MWh	0.02751	0	0.02340	0
55	Excess Hours Use	0	MWh	0.01038	0	0.00883	0
56	Primary						
57	First 100 Hours Use	0	MWh	0.02045	0	0.01739	0
58	Excess Hours Use	0	MWh	0.00747	0	0.00635	0
59	Subtransmission						
60	First 100 Hours Use	0	MWh	0.01996	0	0.01698	0
61	Excess Hours Use	0	MWh	0.00694	0	0.00590	0
62	Transmission						
63	First 100 Hours Use	0	MWh	0.01693	0	0.01440	0
64	Excess Hours Use	0	MWh	0.00561	0	0.00477	0
65	Total Capacity	0	MWh				0
66							
67	Distribution Charges						
68	Secondary						
69	First 100 Hours Use	0	MWh	0.02442	0	0.02686	0
70	Excess Hours Use	0	MWh	0.02442	0	0.02686	0
71	Primary						
72	First 100 Hours Use	2,118	MWh	0.01114	24	0.01141	24
73	Excess Hours Use	6,583	MWh	0.01114	73	0.01141	75
74	Subtransmission						
75	First 100 Hours Use	0	MWh	0.00347	0	0.00352	0
76	Excess Hours Use	0	MWh	0.00347	0	0.00352	0
77	Transmission						
78	First 100 Hours Use	0	MWh	0.00189	0	0.00138	0
79	Excess Hours Use	0	MWh	0.00189	0	0.00138	0
80							
81	Substation Credit						
82	Energy			(0.00300)	0	(0.00300)	0
83	Distribution System	8,701	MWh	1.11¢	97	1.14¢	99
84							
85	Nuclear Decommissioning	8,701	MWh	0.000765	7	0.000765	7
86	Energy Waste Reduction	3	Meters	245.0	9	245.00	9
87	LIEAF	3	Meters	0.93	0	0.93	0
88	Distribution Surcharges	8,701	MWh	0.18¢	16	0.18¢	16
89							
90	Total Choice Distribution R1.2	8,701	MWh	1.29¢	112	1.32¢	115
91							
92	Total R1.2	473,628	MWh	6.95¢	32,933	6.77¢	32,083
93	Increase/Decrease (\$)						(850)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Parallel Operation And Standby Service Rider - R3
All Voltages

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Line No.	(a) Description	(b) Billing Determinants Quantity Units	(c) Present Rate	(d) Present Revenue (\$000)	(e) Proposed Rate	(f) Proposed Revenue (\$000)
1	Full Service Power Supply					
2	Station Power					
3	Capacity					
4	Administrative Charge	6,150 MWh	0.00000	0	0.00000	0
5	Station Power Capacity	6,150 MWh		0		0
6	Non-Capacity					
7	MISO Energy Charge	6,150 MWh	0.02705	166	0.02705	166
8	Net Trans MISO MKT	6,150 MWh	0.00736	45	0.00736	45
9	Administrative Charge	6,150 MWh	0.01531	94	0.01618	99
10	Station Power PS Subtotal	6,150 MWh		306		311
11						
12	Standard R3					
13	Capacity					
14	<u>Power Supply Demand</u>					
15	Generation Reservation Fee	706,071 kW	0.43	304	0.42	294
16	Daily Demand	716,542 kW	1.19	853	1.16	828
17	Maintenance Demand	24,623 kW	0.59	15	0.58	14
18						
19						
20						
21						
22						
23	<u>Energy</u>					
24	Secondary	3,211 MWh	0.03214	103	0.03088	99
25	Primary Total	124,610 MWh	0.00000	0	0.00000	0
26		127,822 MWh				
27						
28						
29						
30						
31	Standard R3 Capacity	127,822 MWh		1,274		1,236
32						
33	Non-Capacity					
34	<u>Power Supply Demand</u>					
35	Generation Reservation Fee	394,471 kW	0.19	73	0.20	78
36	Daily Demand	716,542 kW	0.51	368	0.55	391
37	Maintenance Demand	24,623 kW	0.26	6	0.27	7
38						
39	<u>Energy</u>					
40	Secondary	3,211 MWh	0.04778	153	0.04649	149
41	Primary Total	124,610 MWh	0.04345	5,414	0.04187	5,217
42	Primary Off-Peak Discount	112,758 MWh	(0.010000)	(1,128)	(0.010000)	(1,128)
43	<u>Voltage Level Discount</u>					
44	Subtransmission	34,530 MWh	(0.00114)	(39)	(0.00114)	(39)
45	Transmission	76,535 MWh	(0.00194)	(148)	(0.00193)	(148)
46	Standard R3 PS Subtotal	127,822		5,974		5,763
47						
48	PSCR	127,822 MWh	0.00000	0	0.00000	0
49	REPS	49 Cust.	0.00	0	0.00	0
50	Total Full Service Power Supply	133,971 MWh	4.69¢	6,280	4.53¢	6,074

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Parallel Operation And Standby Service Rider - R3 (Cont'd)
All Voltages

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Line No.	(a) Description	(b) Billing Determinants	(c) Present	(d)	(e) Proposed	(f)
51	Full Service Distribution	Quantity Units				
52	<u>Service Charge</u>					
53	Secondary	19 Cust.	95	22	95	22
54	PV	15 Cust.	275	48	275	48
55	SV, TV	15 Cust.	375	70	375	70
56						
57	<u>Distribution Charges</u>					
58	Secondary	24,916 kW	9.66	241	9.06	226
59		3,211 MWh	0.03865	124	0.03625	116
60	Primary	124,062 kW	3.77	468	3.50	434
61		13,546 MWh				
62	Subtransmission	970,981 kW	1.46	1,418	1.51	1,462
63		34,530 MWh				
64	Transmission	254,741 kW	0.73	186	0.68	173
65		76,535 MWh				
66	<u>Substation Credit</u>					
67	Demand	160,423 kW	(0.30)	(48)	(0.30)	(48)
68	Energy	51,698 MWh	(0.00040)	(21)	(0.00040)	(21)
69	Distribution System	127,822 MWh	1.96¢	2,507	1.94¢	2,482
70						
71	Nuclear Decommissioning	127,822 MWh	0.000765	98	0.000765	98
72	Energy Waste Reduction	49 Cust.	245.0	144	245.0	144
73	LIEAF	49 Meters	0.93	1	0.93	1
74	Distribution Surcharges	127,822 MWh	0.19¢	243	0.19¢	243
75						
76	Total Full Service Distribution	127,822 MWh	2.15¢	2,750	2.13¢	2,725
77	Total Full Service R3	133,971 MWh	6.74¢	9,029	6.57¢	8,798
78	Increase/Decrease (\$)					(231)

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Interruptible Supply Rider - R10
All Voltages

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Line No.	(a) Description	(b) Billing Determinants	(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
1	Full Service Power Supply					
2	Capacity					
3	Administrative Charge	1,717,453 MWh	0.00000	0	0.00000	0
4	Total Capacity	1,717,453 MWh				
5	Non-Capacity					
6	Administrative Charge	1,717,453 MWh	0.01531	26,291	0.01618	27,786
7	MISO Energy Charge	1,717,453 MWh	0.02705	46,457	0.02705	46,457
8	Net Trans MISO MKT	1,717,453 MWh	0.00736	12,640	0.00736	12,640
9	<u>Voltage Level Service Adder</u>					
10	Primary	73,517 MWh	7%	177.082	7%	177.082
11	Subtransmission	180,338 MWh	2%	124.109	2%	124.109
12	Transmission	1,463,598 MWh	1%	503.624	1%	503.624
13	Power Supply Subtotal	1,717,453 MWh		86,194		87,689
14						
15	REPS	0 meters	0.00	0	0.00	0
16	Total Full Service Power Supply	1,717,453 MWh	5.02¢	86,194	5.11¢	87,689
17						
18	Full Service Distribution	Quantity Units				
19						
20	Service Charge - PV	17 Cust.	275	55	275	55
21	Service Charge - SV, TV	44 Cust.	375	198	375	198
22						
23	<u>Distribution Charges</u>					
24	Primary	489,900 kW	3.77	1,847	3.50	1,714
25		73,517 MWh				
26	Subtransmission	459,955 kW	1.46	672	1.51	693
27		180,338 MWh				
28	Transmission	5,230,573 kW	0.73	3,818	0.68	3,549
29		1,463,598 MWh				
30	<u>Substation Credit</u>					
31	Demand	2,739,059 kW	(0.30)	(822)	(0.30)	(822)
32	Energy	301,342 MWh	(0.0004)	(121)	(0.0004)	(121)
33	Distribution System	1,717,453 MWh	0.33¢	5,648	0.31¢	5,267
34						
35	Nuclear Decommissioning	1,717,453 MWh	0.000765	1,314	0.000765	1,314
36	Energy Waste Reduction	0 Meters	245.0	0	245.0	0
37	VHWF	0 Meters	0.93	0	0.93	0
38	Distribution Surcharges	1,717,453 MWh	0.08¢	1,314	0.08¢	1,314
39						
40	Total Full Service Distribution	1,717,453 MWh	0.41¢	6,962	0.38¢	6,581
41	Total Full Service R10	1,717,453 MWh	5.42¢	93,155	5.49¢	94,269

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Interruptible Supply Rider - R10 (Cont'd)
All Voltages

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Line No.	(a) Description	(b) Billing Determinants	(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
42	Choice Distribution					
43	Capacity					
44	Administrative Charge	0 MWh	0.00000		0.00000	0
45	Total Capacity	0 MWh				0
46						
47	Service Charge - PV	0 Cust.	275	0	275	0
48	Service Charge - SV, TV	0 Cust.	375	0	375	0
49						
50	<u>Distribution Charges</u>					
51	Primary	0 kW	3.77	0	3.50	0
52						
53	Subtransmission	0 kW	1.46	0	1.51	0
54						
55	Transmission	0 kW	0.73	0	0.68	0
56						
57	<u>Substation Credit</u>					
58	Demand	0 kW	(0.30)	0	(0.30)	0
59	Energy	0 MWh	(0.0004)	0	(0.0004)	0
60	Distribution System	0 MWh		0		0
61						
62	Nuclear Decommissioning		0.000765	0	0.000765	0
63	Energy Waste Reduction		245.0	0	245.0	0
64	LIEAF	0 Meters	0.93	0	0.93	0
65	Distribution Surcharges			0		0
66						
67	Total Choice Distribution R10	0 MWh		0		0
68						
69	Total R10	1,717,453 MWh	5.42¢	93,155	5.49¢	94,269
70	Increase/Decrease (\$)					1,114

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Outdoor Protective Lighting - D9 Residential

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Line No.	(a) Description	(b) Billing Determinants		(c) Rate	(d) Non-Capacity Energy	(e) Capacity Energy	(f) Revenue	(g) Rate	(h) Non-Capacity Energy	(i) Capacity Energy	(j) Revenue
		Quantity	Units	(\$/luminaire/ mth)	(\$/kWh)	(\$/kWh)	(\$000)	(\$/luminaire/ mth)	(\$/kWh)	(\$/kWh)	(\$000)
1	Overhead										
2	Mercury Vapor										
3	100 W	0	Lamps	12.60	3.96	0.00	0	11.89	4.48	0.00	0
4	175 W	2,502	Lamps	16.01	3.96	0.00	568	15.49	4.48	0.00	564
5	250 W	4	Lamps	19.43	3.96	0.00	1	19.09	4.48	0.00	1
6	400 W	45	Lamps	25.30	3.96	0.00	17	25.26	4.48	0.00	17
7	1,000 W	0	Lamps	59.80	3.96	0.00	0	49.95	4.48	0.00	0
8											
9	High Pressure Sodium Vapor										
10	100 W	3,645	Lamps	11.32	3.96	0.00	577	10.48	4.48	0.00	551
11	150 W	1	Lamps	12.94	3.96	0.00	0	12.26	4.48	0.00	0
12	250 W	523	Lamps	15.93	3.96	0.00	126	15.45	4.48	0.00	127
13	360 W	0	Lamps	20.16	3.96	0.00	0	18.92	4.48	0.00	0
14	400 W	57	Lamps	21.70	3.96	0.00	19	20.18	4.48	0.00	19
15	1,000 W	5	Lamps	34.19	3.96	0.00	3	43.00	4.48	0.00	4
16											
17	Metal Halide										
18	100 W	0	Lamps	13.97	3.96	0.00	0	13.41	4.48	0.00	0
19	150 W	0	Lamps	16.02	3.96	0.00	0	15.58	4.48	0.00	0
20	175 W	0	Lamps	17.05	3.96	0.00	0	16.66	4.48	0.00	0
21	250 W	0	Lamps	20.13	3.96	0.00	0	19.90	4.48	0.00	0
22	320 W	0	Lamps	23.01	3.96	0.00	0	22.93	4.48	0.00	0
23	400 W	0	Lamps	26.29	3.96	0.00	0	26.39	4.48	0.00	0
24	1,000 W	2	Lamps	44.22	3.96	0.00	1	55.02	4.48	0.00	2
25											
26	LED										
27	20 - 29 W	0	Lamps	7.73	3.96	0.00	0	8.18	4.48	0.00	0
28	30 - 39 W	0	Lamps	8.23	3.96	0.00	0	8.78	4.48	0.00	0
29	40 - 49 W	0	Lamps	8.72	3.96	0.00	0	9.38	4.48	0.00	0
30	50 - 59 W	0	Lamps	9.21	3.96	0.00	0	9.98	4.48	0.00	0
31	60 - 69 W	2,608	Lamps	9.70	3.96	0.00	332	10.58	4.48	0.00	363
32	70 - 79 W	1	Lamps	10.19	3.96	0.00	0	11.18	4.48	0.00	0
33	80 - 89 W	0	Lamps	10.68	3.96	0.00	0	11.82	4.48	0.00	0
34	90 - 99 W	0	Lamps	11.18	3.96	0.00	0	12.46	4.48	0.00	0
35	100 - 109 W	0	Lamps	11.67	3.96	0.00	0	13.10	4.48	0.00	0
36	110 - 119 W	0	Lamps	12.16	3.96	0.00	0	13.74	4.48	0.00	0
37	120 - 129 W	0	Lamps	12.65	3.96	0.00	0	14.38	4.48	0.00	0
38	130 - 139 W	49	Lamps	13.14	3.96	0.00	9	15.02	4.48	0.00	10
39	140 - 149 W	0	Lamps	13.58	3.96	0.00	0	15.54	4.48	0.00	0
40	150 - 159 W	0	Lamps	14.01	3.96	0.00	0	16.05	4.48	0.00	0
41	160 - 169 W	0	Lamps	14.45	3.96	0.00	0	16.56	4.48	0.00	0
42	170 - 179 W	0	Lamps	14.88	3.96	0.00	0	17.08	4.48	0.00	0
43	180 - 189 W	0	Lamps	15.32	3.96	0.00	0	17.59	4.48	0.00	0
44	190 - 199 W	0	Lamps	15.75	3.96	0.00	0	18.10	4.48	0.00	0
45	200 - 209 W	0	Lamps	16.19	3.96	0.00	0	18.62	4.48	0.00	0
46	210 - 219 W	0	Lamps	16.62	3.96	0.00	0	19.13	4.48	0.00	0
47	220 - 229 W	0	Lamps	17.06	3.96	0.00	0	19.64	4.48	0.00	0
48	230 - 239 W	0	Lamps	17.49	3.96	0.00	0	20.15	4.48	0.00	0
49	240 - 249 W	0	Lamps	17.93	3.96	0.00	0	20.67	4.48	0.00	0
50	250 - 259 W	0	Lamps	18.36	3.96	0.00	0	21.18	4.48	0.00	0
51	260 - 269 W	0	Lamps	18.80	3.96	0.00	0	21.69	4.48	0.00	0
52	270 - 279 W	0	Lamps	19.23	3.96	0.00	0	22.21	4.48	0.00	0
53	280 - 289 W	19	Lamps	19.67	3.96	0.00	5	22.72	4.48	0.00	6
54	290 - 299 W	0	Lamps	20.10	3.96	0.00	0	23.23	4.48	0.00	0
55	300 - 309 W	0	Lamps	20.53	3.96	0.00	0	23.75	4.48	0.00	0
56	310 - 319 W	0	Lamps	20.97	3.96	0.00	0	24.26	4.48	0.00	0
57	320 - 329 W	0	Lamps	21.40	3.96	0.00	0	24.77	4.48	0.00	0
58	330 - 339 W	0	Lamps	21.84	3.96	0.00	0	25.28	4.48	0.00	0
59	340 - 349 W	0	Lamps	22.27	3.96	0.00	0	25.80	4.48	0.00	0
60	350 - 359 W	0	Lamps	22.71	3.96	0.00	0	26.31	4.48	0.00	0
61	360 - 369 W	0	Lamps	23.14	3.96	0.00	0	26.82	4.48	0.00	0
62	370 - 379 W	0	Lamps	23.58	3.96	0.00	0	27.34	4.48	0.00	0
63	380 - 389 W	0	Lamps	24.01	3.96	0.00	0	27.85	4.48	0.00	0
64	390 - 399 W	0	Lamps	24.45	3.96	0.00	0	28.36	4.48	0.00	0

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Line No.	Description	(b) Billing Determinants		(c) Present				(e)				(f)				(g) Proposed				(i)
				Rate (\$/luminaire/ mth)	Non-Capacity Energy (\$/kWh)	Capacity Energy (\$/kWh)	Revenue (\$000)	Rate (\$/luminaire/ mth)	Non-Capacity Energy (\$/kWh)	Capacity Energy (\$/kWh)	Revenue (\$000)									
		Quantity	Units																	
65	Underground																			
66	Mercury Vapor																			
67	100 W	52	Lamps	29.44	3.96	0.00	19	30.27	4.48	0.00	20									
68	175 W	17	Lamps	31.68	3.96	0.00	7	32.34	4.48	0.00	7									
69	250 W	0	Lamps	34.97	3.96	0.00	0	35.29	4.48	0.00	0									
70	400 W	0	Lamps	40.65	3.96	0.00	0	40.33	4.48	0.00	0									
71	1,000 W	0	Lamps	73.27	3.96	0.00	0	64.33	4.48	0.00	0									
72																				
73	High Pressure Sodium Vapor																			
74	70 W	0	Lamps	28.86	3.96	0.00	0	27.23	4.48	0.00	0									
75	100 W	0	Lamps	29.55	3.96	0.00	0	28.05	4.48	0.00	0									
76	150 W	0	Lamps	30.69	3.96	0.00	0	29.41	4.48	0.00	0									
77	250 W	0	Lamps	32.97	3.96	0.00	0	32.14	4.48	0.00	0									
78	400 W	0	Lamps	36.39	3.96	0.00	0	36.03	4.48	0.00	0									
79	1,000 W	0	Lamps	50.09	3.96	0.00	0	51.62	4.48	0.00	0									
80																				
81	Metal Halide																			
82	100 W	0	Lamps	26.15	3.96	0.00	0	28.05	4.48	0.00	0									
83	150 W	0	Lamps	27.92	3.96	0.00	0	29.41	4.48	0.00	0									
84	175 W	0	Lamps	28.81	3.96	0.00	0	30.09	4.48	0.00	0									
85	250 W	0	Lamps	31.46	3.96	0.00	0	32.14	4.48	0.00	0									
86	400 W	0	Lamps	36.78	3.96	0.00	0	36.03	4.48	0.00	0									
87	1,000 W	0	Lamps	58.03	3.96	0.00	0	51.62	4.48	0.00	0									
88																				
89	LED																			
90	20 - 29 W	0	Lamps	23.36	3.96	0.00	0	25.90	4.48	0.00	0									
91	30 - 39 W	0	Lamps	23.75	3.96	0.00	0	26.33	4.48	0.00	0									
92	40 - 49 W	0	Lamps	24.14	3.96	0.00	0	26.75	4.48	0.00	0									
93	50 - 59 W	0	Lamps	24.52	3.96	0.00	0	27.18	4.48	0.00	0									
94	60 - 69 W	172	Lamps	24.91	3.96	0.00	53	27.61	4.48	0.00	59									
95	70 - 79 W	1	Lamps	25.30	3.96	0.00	0	28.04	4.48	0.00	0									
96	80 - 89 W	0	Lamps	25.69	3.96	0.00	0	28.47	4.48	0.00	0									
97	90 - 99 W	0	Lamps	26.07	3.96	0.00	0	28.90	4.48	0.00	0									
98	100 - 109 W	0	Lamps	26.46	3.96	0.00	0	29.33	4.48	0.00	0									
99	110 - 119 W	0	Lamps	26.85	3.96	0.00	0	29.75	4.48	0.00	0									
100	120 - 129 W	0	Lamps	27.24	3.96	0.00	0	30.18	4.48	0.00	0									
101	130 - 139 W	1	Lamps	27.62	3.96	0.00	0	30.61	4.48	0.00	0									
102	140 - 149 W	0	Lamps	27.98	3.96	0.00	0	31.00	4.48	0.00	0									
103	150 - 159 W	0	Lamps	28.33	3.96	0.00	0	31.39	4.48	0.00	0									
104	160 - 169 W	0	Lamps	28.69	3.96	0.00	0	31.78	4.48	0.00	0									
105	170 - 179 W	0	Lamps	29.04	3.96	0.00	0	32.17	4.48	0.00	0									
106	180 - 189 W	0	Lamps	29.40	3.96	0.00	0	32.57	4.48	0.00	0									
107	190 - 199 W	0	Lamps	29.75	3.96	0.00	0	32.96	4.48	0.00	0									
108	200 - 209 W	0	Lamps	30.11	3.96	0.00	0	33.35	4.48	0.00	0									
109	210 - 219 W	0	Lamps	30.47	3.96	0.00	0	33.74	4.48	0.00	0									
110	220 - 229 W	0	Lamps	30.82	3.96	0.00	0	34.13	4.48	0.00	0									
111	230 - 239 W	0	Lamps	31.18	3.96	0.00	0	34.52	4.48	0.00	0									
112	240 - 249 W	0	Lamps	31.53	3.96	0.00	0	34.91	4.48	0.00	0									
113	250 - 259 W	0	Lamps	31.89	3.96	0.00	0	35.30	4.48	0.00	0									
114	260 - 269 W	0	Lamps	32.24	3.96	0.00	0	35.69	4.48	0.00	0									
115	270 - 279 W	0	Lamps	32.60	3.96	0.00	0	36.08	4.48	0.00	0									
116	280 - 289 W	0	Lamps	32.95	3.96	0.00	0	36.47	4.48	0.00	0									
117	290 - 299 W	0	Lamps	33.31	3.96	0.00	0	36.86	4.48	0.00	0									
118	300 - 309 W	0	Lamps	33.66	3.96	0.00	0	37.25	4.48	0.00	0									
119	310 - 319 W	0	Lamps	34.02	3.96	0.00	0	37.64	4.48	0.00	0									
120	320 - 329 W	0	Lamps	34.37	3.96	0.00	0	38.03	4.48	0.00	0									
121	330 - 339 W	0	Lamps	34.73	3.96	0.00	0	38.43	4.48	0.00	0									
122	340 - 349 W	0	Lamps	35.08	3.96	0.00	0	38.82	4.48	0.00	0									
123	350 - 359 W	0	Lamps	35.44	3.96	0.00	0	39.21	4.48	0.00	0									
124	360 - 369 W	0	Lamps	35.79	3.96	0.00	0	39.60	4.48	0.00	0									
125	370 - 379 W	0	Lamps	36.15	3.96	0.00	0	39.99	4.48	0.00	0									
126	380 - 389 W	0	Lamps	36.50	3.96	0.00	0	40.38	4.48	0.00	0									
127	390 - 399 W	0	Lamps	36.86	3.96	0.00	0	40.77	4.48	0.00	0									
128	Lamp Total	9,704	Lamps				1,740				1,752									
129																				
130	PSCR	6,029	MWh	\$ -			0	\$ -			0									
131																				
132	Additional Light Credit	0	Lamps	-97.92			0	-97.92			0									
133	Post Charge	30	Posts	0.00			0	79.80			2									
134																				
135	Other Charges																			
136																				
137		Number of Poles		\$ /Pole/Year				\$ /Pole/Year												
138	New Poles	1,718	Poles	24.48			42	24.48			42									
139	Subtotal						1,782				1,796									
140	Nuclear Decommissioning	6,029	MWh	0.000765			5	0.000765			5									
141	Subtotal	9,704	Lamps				1,787				1,801									
142																				
143		Investment		Carrying Charge/Year				Carrying Charge/Year												
144	Special Facilities	16,967		-18%			(3)	-18%			(3)									
145	Subtotal	9,704	Lamps				1,784				1,798									
146																				
147	Energy Waste Reduction	6,029	MWh	0.04322			261	0.043220			261									
148	REPS	8,545	Meters	0.00%			0				0									
149	Total Residential D9	6,029	MWh				2,044				2,058									
150	Increase/Decrease (\$)																			

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Outdoor Protective Lighting - D9 Commercial

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Line No.	(a) Description	(b) Billing Determinants		(c) Rate (\$/luminaire/ mth)	(d) Non-Capacity Energy (\$/kWh)	(e) Capacity Energy (\$/kWh)	(f) Revenue (\$000)	(g) Rate (\$/luminaire/ mth)	(h) Non-Capacity Energy (\$/kWh)	(i) Capacity Energy (\$/kWh)	(j) Revenue (\$000)
		Quantity	Units								
1	Overhead										
2	Mercury Vapor										
3	100 W	0	Lamps	12.60	3.96	0.00	0	11.89	4.48	0.00	0
4	175 W	2,419	Lamps	16.01	3.96	0.00	549	15.49	4.48	0.00	545
5	250 W	103	Lamps	19.43	3.96	0.00	29	19.09	4.48	0.00	29
6	400 W	711	Lamps	25.30	3.96	0.00	269	25.26	4.48	0.00	276
7	1,000 W	0	Lamps	59.80	3.96	0.00	0	49.95	4.48	0.00	0
8											
9	High Pressure Sodium Vapor										
10	100 W	2,649	Lamps	11.32	3.96	0.00	419	10.48	4.48	0.00	401
11	150 W	0	Lamps	12.94	3.96	0.00	0	12.26	4.48	0.00	0
12	250 W	5,452	Lamps	15.93	3.96	0.00	1,318	15.45	4.48	0.00	1,324
13	360 W	0	Lamps	20.16	3.96	0.00	0	18.92	4.48	0.00	0
14	400 W	3,021	Lamps	21.70	3.96	0.00	1,020	20.18	4.48	0.00	996
15	1,000 W	90	Lamps	34.19	3.96	0.00	53	43.00	4.48	0.00	65
16											
17	Metal Halide										
18	100 W	0	Lamps	13.97	3.96	0.00	0	13.41	4.48	0.00	0
19	150 W	0	Lamps	16.02	3.96	0.00	0	15.58	4.48	0.00	0
20	175 W	0	Lamps	17.05	3.96	0.00	0	16.66	4.48	0.00	0
21	250 W	4	Lamps	20.13	3.96	0.00	1	19.90	4.48	0.00	1
22	320 W	0	Lamps	23.01	3.96	0.00	0	22.93	4.48	0.00	0
23	400 W	4	Lamps	26.29	3.96	0.00	2	26.39	4.48	0.00	2
24	1,000 W	336	Lamps	44.22	3.96	0.00	237	55.02	4.48	0.00	288
25											
26	LED										
27	20 - 29 W	0	Lamps	7.73	3.96	0.00	0	8.18	4.48	0.00	0
28	30 - 39 W	0	Lamps	8.23	3.96	0.00	0	8.78	4.48	0.00	0
29	40 - 49 W	0	Lamps	8.72	3.96	0.00	0	9.38	4.48	0.00	0
30	50 - 59 W	0	Lamps	9.21	3.96	0.00	0	9.98	4.48	0.00	0
31	60 - 69 W	3,770	Lamps	9.70	3.96	0.00	480	10.58	4.48	0.00	525
32	70 - 79 W	1	Lamps	10.19	3.96	0.00	0	11.18	4.48	0.00	0
33	80 - 89 W	0	Lamps	10.68	3.96	0.00	0	11.82	4.48	0.00	0
34	90 - 99 W	0	Lamps	11.18	3.96	0.00	0	12.46	4.48	0.00	0
35	100 - 109 W	0	Lamps	11.67	3.96	0.00	0	13.10	4.48	0.00	0
36	110 - 119 W	0	Lamps	12.16	3.96	0.00	0	13.74	4.48	0.00	0
37	120 - 129 W	0	Lamps	12.65	3.96	0.00	0	14.38	4.48	0.00	0
38	130 - 139 W	1,115	Lamps	13.14	3.96	0.00	201	15.02	4.48	0.00	229
39	140 - 149 W	0	Lamps	13.58	3.96	0.00	0	15.54	4.48	0.00	0
40	150 - 159 W	0	Lamps	14.01	3.96	0.00	0	16.05	4.48	0.00	0
41	160 - 169 W	0	Lamps	14.45	3.96	0.00	0	16.56	4.48	0.00	0
42	170 - 179 W	0	Lamps	14.88	3.96	0.00	0	17.08	4.48	0.00	0
43	180 - 189 W	0	Lamps	15.32	3.96	0.00	0	17.59	4.48	0.00	0
44	190 - 199 W	0	Lamps	15.75	3.96	0.00	0	18.10	4.48	0.00	0
45	200 - 209 W	0	Lamps	16.19	3.96	0.00	0	18.62	4.48	0.00	0
46	210 - 219 W	14	Lamps	16.62	3.96	0.00	3	19.13	4.48	0.00	4
47	220 - 229 W	0	Lamps	17.06	3.96	0.00	0	19.64	4.48	0.00	0
48	230 - 239 W	0	Lamps	17.49	3.96	0.00	0	20.15	4.48	0.00	0
49	240 - 249 W	0	Lamps	17.93	3.96	0.00	0	20.67	4.48	0.00	0
50	250 - 259 W	0	Lamps	18.36	3.96	0.00	0	21.18	4.48	0.00	0
51	260 - 269 W	0	Lamps	18.80	3.96	0.00	0	21.69	4.48	0.00	0
52	270 - 279 W	0	Lamps	19.23	3.96	0.00	0	22.21	4.48	0.00	0
53	280 - 289 W	609	Lamps	19.67	3.96	0.00	173	22.72	4.48	0.00	199
54	290 - 299 W	30	Lamps	20.10	3.96	0.00	9	23.23	4.48	0.00	10
55	300 - 309 W	0	Lamps	20.53	3.96	0.00	0	23.75	4.48	0.00	0
56	310 - 319 W	0	Lamps	20.97	3.96	0.00	0	24.26	4.48	0.00	0
57	320 - 329 W	0	Lamps	21.40	3.96	0.00	0	24.77	4.48	0.00	0
58	330 - 339 W	0	Lamps	21.84	3.96	0.00	0	25.28	4.48	0.00	0
59	340 - 349 W	0	Lamps	22.27	3.96	0.00	0	25.80	4.48	0.00	0
60	350 - 359 W	0	Lamps	22.71	3.96	0.00	0	26.31	4.48	0.00	0
61	360 - 369 W	0	Lamps	23.14	3.96	0.00	0	26.82	4.48	0.00	0
62	370 - 379 W	0	Lamps	23.58	3.96	0.00	0	27.34	4.48	0.00	0
63	380 - 389 W	0	Lamps	24.01	3.96	0.00	0	27.85	4.48	0.00	0
64	390 - 399 W	0	Lamps	24.45	3.96	0.00	0	28.36	4.48	0.00	0

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No.	Description	(b) Billing Determinants		(c) Present				(e)				(f) Proposed			
				Rate	Non-Capacity		Capacity	Revenue	Rate	Non-Capacity		Capacity	Revenue		
		(\$/luminaire/ mth)	(\$/kWh)		(¢/kWh)	(\$000)	(\$/luminaire/ mth)			(¢/kWh)	(¢/kWh)	(\$000)			
65	Underground	Quantity	Units												
66	Mercury Vapor														
67	100 W	33	Lamps	29.44	3.96	0.00	12	30.27	4.48	0.00	13				
68	175 W	107	Lamps	31.68	3.96	0.00	44	32.34	4.48	0.00	46				
69	250 W	23	Lamps	34.97	3.96	0.00	11	35.29	4.48	0.00	11				
70	400 W	68	Lamps	40.65	3.96	0.00	38	40.33	4.48	0.00	39				
71	1,000 W	0	Lamps	73.27	3.96	0.00	0	64.33	4.48	0.00	0				
72															
73	High Pressure Sodium Vapor														
74	70 W	25	Lamps	27.23	3.96	0.00	9	27.23	4.48	0.00	9				
75	100 W	36	Lamps	29.55	3.96	0.00	14	28.05	4.48	0.00	13				
76	150 W	0	Lamps	30.69	3.96	0.00	0	29.41	4.48	0.00	0				
77	250 W	7	Lamps	32.97	3.96	0.00	3	32.14	4.48	0.00	3				
78	400 W	3	Lamps	36.39	3.96	0.00	2	36.03	4.48	0.00	2				
79	1,000 W	0	Lamps	50.09	3.96	0.00	0	51.62	4.48	0.00	0				
80															
81	Metal Halide														
82	100 W	0	Lamps	26.15	3.96	0.00	0	28.05	4.48	0.00	0				
83	150 W	0	Lamps	27.92	3.96	0.00	0	29.41	4.48	0.00	0				
84	175 W	0	Lamps	28.81	3.96	0.00	0	30.09	4.48	0.00	0				
85	250 W	0	Lamps	31.46	3.96	0.00	0	32.14	4.48	0.00	0				
86	400 W	0	Lamps	36.78	3.96	0.00	0	36.03	4.48	0.00	0				
87	1,000 W	0	Lamps	58.03	3.96	0.00	0	51.62	4.48	0.00	0				
88															
89	LED														
90	20 - 29 W	0	Lamps	23.36	3.96	0.00	0	25.90	4.48	0.00	0				
91	30 - 39 W	48	Lamps	23.75	3.96	0.00	14	26.33	4.48	0.00	15				
92	40 - 49 W	0	Lamps	24.14	3.96	0.00	0	26.75	4.48	0.00	0				
93	50 - 59 W	0	Lamps	24.52	3.96	0.00	0	27.18	4.48	0.00	0				
94	60 - 69 W	313	Lamps	24.91	3.96	0.00	97	27.61	4.48	0.00	108				
95	70 - 79 W	128	Lamps	25.30	3.96	0.00	40	28.04	4.48	0.00	45				
96	80 - 89 W	0	Lamps	25.69	3.96	0.00	0	28.47	4.48	0.00	0				
97	90 - 99 W	0	Lamps	26.07	3.96	0.00	0	28.90	4.48	0.00	0				
98	100 - 109 W	0	Lamps	26.46	3.96	0.00	0	29.33	4.48	0.00	0				
99	110 - 119 W	0	Lamps	26.85	3.96	0.00	0	29.75	4.48	0.00	0				
100	120 - 129 W	0	Lamps	27.24	3.96	0.00	0	30.18	4.48	0.00	0				
101	130 - 139 W	161	Lamps	27.62	3.96	0.00	57	30.61	4.48	0.00	63				
102	140 - 149 W	0	Lamps	27.98	3.96	0.00	0	31.00	4.48	0.00	0				
103	150 - 159 W	0	Lamps	28.33	3.96	0.00	0	31.39	4.48	0.00	0				
104	160 - 169 W	0	Lamps	28.69	3.96	0.00	0	31.78	4.48	0.00	0				
105	170 - 179 W	0	Lamps	29.04	3.96	0.00	0	32.17	4.48	0.00	0				
106	180 - 189 W	0	Lamps	29.40	3.96	0.00	0	32.57	4.48	0.00	0				
107	190 - 199 W	0	Lamps	29.75	3.96	0.00	0	32.96	4.48	0.00	0				
108	200 - 209 W	0	Lamps	30.11	3.96	0.00	0	33.35	4.48	0.00	0				
109	210 - 219 W	0	Lamps	30.47	3.96	0.00	0	33.74	4.48	0.00	0				
110	220 - 229 W	0	Lamps	30.82	3.96	0.00	0	34.13	4.48	0.00	0				
111	230 - 239 W	0	Lamps	31.18	3.96	0.00	0	34.52	4.48	0.00	0				
112	240 - 249 W	0	Lamps	31.53	3.96	0.00	0	34.91	4.48	0.00	0				
113	250 - 259 W	0	Lamps	31.89	3.96	0.00	0	35.30	4.48	0.00	0				
114	260 - 269 W	0	Lamps	32.24	3.96	0.00	0	35.69	4.48	0.00	0				
115	270 - 279 W	0	Lamps	32.60	3.96	0.00	0	36.08	4.48	0.00	0				
116	280 - 289 W	52	Lamps	32.95	3.96	0.00	23	36.47	4.48	0.00	26				
117	290 - 299 W	0	Lamps	33.31	3.96	0.00	0	36.86	4.48	0.00	0				
118	300 - 309 W	0	Lamps	33.66	3.96	0.00	0	37.25	4.48	0.00	0				
119	310 - 319 W	0	Lamps	34.02	3.96	0.00	0	37.64	4.48	0.00	0				
120	320 - 329 W	0	Lamps	34.37	3.96	0.00	0	38.03	4.48	0.00	0				
121	330 - 339 W	0	Lamps	34.73	3.96	0.00	0	38.43	4.48	0.00	0				
122	340 - 349 W	0	Lamps	35.08	3.96	0.00	0	38.82	4.48	0.00	0				
123	350 - 359 W	0	Lamps	35.44	3.96	0.00	0	39.21	4.48	0.00	0				
124	360 - 369 W	0	Lamps	35.79	3.96	0.00	0	39.60	4.48	0.00	0				
125	370 - 379 W	0	Lamps	36.15	3.96	0.00	0	39.99	4.48	0.00	0				
126	380 - 389 W	0	Lamps	36.50	3.96	0.00	0	40.38	4.48	0.00	0				
127	390 - 399 W	0	Lamps	36.86	3.96	0.00	0	40.77	4.48	0.00	0				
128	Lamp Total	21,332	Lamps				5,128				5,285				
129															
130	PSCR	22,944	MWh	\$ -			0	\$ -			0				
131															
132	Additional Light Credit	12	Lamps	-97.92			(1)	-97.92			(1)				
133	Post Charge	39	Posts	0.00			0	79.80			3				
134															
135	Other Charges														
136		Number of Poles		\$ /Pole/Year				\$ /Pole/Year							
137	New Poles	2,738	Poles				67	24.48			67				
138	Subtotal	21,332	Lamps				5,193				5,354				
139															
140	Nuclear Decommissioning			0.000765			18	0.000765			18				
141	Subtotal	21,332	Lamps				5,211				5,371				
142															
143		Investment		Carrying Charge/Year				Carrying Charge/Year							
144	Special Facilities	123,823		-18%			(22)	-18%			(22)				
145	Subtotal	21,332	Lamps				5,189				5,349				
146															
147	Energy Waste Reduction	9,500	Meters	\$ 1.36			155	\$ 1.36			155				
148	REPS	9,500	Meters	0.00%			0	0.00%			0				
149	Total Commercial	22,944	MWh				5,344				5,504				
150	Increase/Decrease (\$)														

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Municipal Street Lighting - E1 Option I - Company Owned Overhead

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Line No.	(a) Description	(b) Billing Determinants	(c) Rate (\$/luminaire/mth)	(d) Non-Capacity Energy (¢/kWh)	(e) Capacity Energy (¢/kWh)	(f) Revenue (\$000)	(g) Rate (\$/luminaire/mth)	(h) Non-Capacity Energy (¢/kWh)	(i) Capacity Energy (¢/kWh)	(j) Revenue (\$000)
		Quantity Units								
1	Overhead									
2	Mercury Vapor									
3	100 W	74 Lamps	13.36	3.96	0.00	13	17.24	4.48	0.00	17
4	175 W	7,618 Lamps	16.30	3.96	0.00	1,756	21.03	4.48	0.00	2,223
5	250 W	497 Lamps	18.50	3.96	0.00	135	24.20	4.48	0.00	172
6	400 W	982 Lamps	24.11	3.96	0.00	358	31.69	4.48	0.00	457
7	1,000 W	13 Lamps	46.91	3.96	0.00	10	62.09	4.48	0.00	12
8										
9	High Pressure Sodium Vapor									
10	70 W	1,425 Lamps	13.21	3.96	0.00	248	12.85	4.48	0.00	245
11	100 W	14,850 Lamps	13.86	3.96	0.00	2,804	14.47	4.48	0.00	2,955
12	150 W	19 Lamps	15.05	3.96	0.00	4	17.10	4.48	0.00	5
13	250 W	7,589 Lamps	17.44	3.96	0.00	1,973	21.91	4.48	0.00	2,431
14	360 W	6 Lamps	21.96	3.96	0.00	2	27.09	4.48	0.00	2
15	400 W	1,443 Lamps	22.14	3.96	0.00	495	29.00	4.48	0.00	628
16	1,000 W	41 Lamps	42.03	3.96	0.00	28	56.00	4.48	0.00	36
17										
18	Metal Halide									
19	70 W	1 Lamps	18.50	3.96	0.00	0	17.04	4.48	0.00	0
20	100 W	1 Lamps	19.35	3.96	0.00	0	18.46	4.48	0.00	0
21	150 W	0 Lamps	21.33	3.96	0.00	0	20.89	4.48	0.00	0
22	175 W	48 Lamps	22.33	3.96	0.00	15	22.11	4.48	0.00	15
23	250 W	12 Lamps	25.15	3.96	0.00	4	27.23	4.48	0.00	5
24	320 W	0 Lamps	28.49	3.96	0.00	0	31.62	4.48	0.00	0
25	400 W	5 Lamps	32.31	3.96	0.00	2	36.64	4.48	0.00	3
26	1,000 W	1 Lamps	55.71	3.96	0.00	1	73.23	4.48	0.00	1
27										
28	De-Energized									
29	Mercury Vapor									
30	100 W	0 Lamps	9.01	3.96	0.00	0	11.47	4.48	0.00	0
31	175 W	1 Lamps	10.74	3.96	0.00	0	14.59	4.48	0.00	0.175
32	250 W	0 Lamps	13.60	3.96	0.00	0	17.35	4.48	0.00	0
33	400 W	0 Lamps	18.21	3.96	0.00	0	23.25	4.48	0.00	0
34	1,000 W	0 Lamps	36.96	3.96	0.00	0	47.23	4.48	0.00	0
35										
36	High Pressure Sodium Vapor									
37	70 W	0 Lamps	8.72	3.96	0.00	0	8.60	4.48	0.00	0
38	100 W	4 Lamps	9.22	3.96	0.00	0	9.95	4.48	0.00	0
39	150 W	0 Lamps	10.69	3.96	0.00	0	12.14	4.48	0.00	0
40	250 W	2 Lamps	11.01	3.96	0.00	0	16.01	4.48	0.00	0
41	360 W	0 Lamps	16.65	3.96	0.00	0	20.19	4.48	0.00	0
42	400 W	0 Lamps	17.15	3.96	0.00	0	21.77	4.48	0.00	0
43	1,000 W	0 Lamps	34.36	3.96	0.00	0	43.95	4.48	0.00	0
44										
45	Dusk-Midnight									
46	Mercury Vapor									
47	100 W	0 Lamps	12.30	3.96	0.00	0	16.18	4.48	0.00	0
48	175 W	0 Lamps	14.44	3.96	0.00	0	19.17	4.48	0.00	0
49	250 W	0 Lamps	15.85	3.96	0.00	0	21.55	4.48	0.00	0
50	400 W	0 Lamps	19.87	3.96	0.00	0	27.45	4.48	0.00	0
51	1,000 W	0 Lamps	36.31	3.96	0.00	0	51.49	4.48	0.00	0
52										
53	High Pressure Sodium Vapor									
54	70 W	0 Lamps	12.15	3.96	0.00	0	12.10	4.48	0.00	0
55	100 W	0 Lamps	12.80	3.96	0.00	0	13.41	4.48	0.00	0
56	150 W	0 Lamps	13.99	3.96	0.00	0	15.51	4.48	0.00	0
57	250 W	2 Lamps	16.38	3.96	0.00	0	19.26	4.48	0.00	1
58	360 W	0 Lamps	20.90	3.96	0.00	0	23.28	4.48	0.00	0
59	400 W	4 Lamps	21.08	3.96	0.00	1	24.76	4.48	0.00	1
60	1,000 W	0 Lamps	40.97	3.96	0.00	0	45.40	4.48	0.00	0

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Line No.	(a) Description	(b) Billing Determinants	(c)	(d) Present	(e)	(f)	(g)	(h) Proposed	(i)		
				Rate (\$/luminaire/ mth)	Non-Capacity Energy (€/kWh)	Capacity Energy (€/kWh)	Revenue (\$000)	Rate (\$/luminaire/ mth)	Non- Capacity Energy (€/kWh)	Capacity Energy (€/kWh)	Revenue (\$000)
		Quantity Units									
61	LED										
62	20 - 29 W	0 Lamps		10.31	3.96	0.00	0	9.85	4.48	0.00	0
63	30 - 39 W	0 Lamps		10.62	3.96	0.00	0	10.57	4.48	0.00	0
64	40 - 49 W	73 Lamps		10.94	3.96	0.00	10	11.29	4.48	0.00	11
65	50 - 59 W	0 Lamps		11.26	3.96	0.00	0	12.01	4.48	0.00	0
66	60 - 69 W	45,078 Lamps		11.58	3.96	0.00	6,749	12.73	4.48	0.00	7,437
67	70 - 79 W	1 Lamps		11.91	3.96	0.00	0	13.46	4.48	0.00	0
68	80 - 89 W	301 Lamps		12.25	3.96	0.00	48	14.23	4.48	0.00	56
69	90 - 99 W	1,533 Lamps		12.58	3.96	0.00	256	15.02	4.48	0.00	304
70	100 - 109 W	88 Lamps		12.94	3.96	0.00	15	15.85	4.48	0.00	18
71	110 - 119 W	0 Lamps		13.33	3.96	0.00	0	16.73	4.48	0.00	0
72	120 - 129 W	57 Lamps		13.72	3.96	0.00	11	17.61	4.48	0.00	13
73	130 - 139 W	12,871 Lamps		14.13	3.96	0.00	2,471	18.25	4.48	0.00	3,146
74	140 - 149 W	1 Lamps		14.42	3.96	0.00	0	18.65	4.48	0.00	0
75	150 - 159 W	401 Lamps		14.71	3.96	0.00	81	19.04	4.48	0.00	103
76	160 - 169 W	107 Lamps		15.01	3.96	0.00	22	19.44	4.48	0.00	28
77	170 - 179 W	0 Lamps		15.32	3.96	0.00	0	19.86	4.48	0.00	0
78	180 - 189 W	0 Lamps		15.63	3.96	0.00	0	20.28	4.48	0.00	0
79	190 - 199 W	0 Lamps		15.94	3.96	0.00	0	20.70	4.48	0.00	0
80	200 - 209 W	29 Lamps		16.25	3.96	0.00	7	21.12	4.48	0.00	8
81	210 - 219 W	0 Lamps		16.59	3.96	0.00	0	21.57	4.48	0.00	0
82	220 - 229 W	0 Lamps		16.93	3.96	0.00	0	22.03	4.48	0.00	0
83	230 - 239 W	0 Lamps		17.27	3.96	0.00	0	22.48	4.48	0.00	0
84	240 - 249 W	0 Lamps		17.61	3.96	0.00	0	22.94	4.48	0.00	0
85	250 - 259 W	6 Lamps		17.95	3.96	0.00	2	23.39	4.48	0.00	2
86	260 - 269 W	0 Lamps		18.29	3.96	0.00	0	23.85	4.48	0.00	0
87	270 - 279 W	0 Lamps		18.63	3.96	0.00	0	24.30	4.48	0.00	0
88	280 - 289 W	396 Lamps		18.97	3.96	0.00	109	24.76	4.48	0.00	139
89	290 - 299 W	0 Lamps		19.34	3.96	0.00	0	25.25	4.48	0.00	0
90	300 - 309 W	15 Lamps		19.71	3.96	0.00	4	25.75	4.48	0.00	5
91	310 - 319 W	0 Lamps		20.10	3.96	0.00	0	26.26	4.48	0.00	0
92	320 - 329 W	4 Lamps		20.48	3.96	0.00	1	26.77	4.48	0.00	2
93	330 - 339 W	0 Lamps		20.86	3.96	0.00	0	27.28	4.48	0.00	0
94	340 - 349 W	0 Lamps		21.25	3.96	0.00	0	27.80	4.48	0.00	0
95	350 - 359 W	0 Lamps		21.63	3.96	0.00	0	28.31	4.48	0.00	0
96	360 - 369 W	0 Lamps		22.02	3.96	0.00	0	28.82	4.48	0.00	0
97	370 - 379 W	0 Lamps		22.40	3.96	0.00	0	29.33	4.48	0.00	0
98	380 - 389 W	0 Lamps		22.79	3.96	0.00	0	29.85	4.48	0.00	0
99	390 - 399 W	0 Lamps		23.17	3.96	0.00	0	30.36	4.48	0.00	0
100	Subtotal	95,599 Lamps					17,637				20,485
101											
102	PSCR	52,390 MWh		0			0	\$ -			0
103											
104	Multiple Lamp Discount	885 Lamps		(\$12.24)			(11)	-12.24			(11)
105	Subtotal	95,599 Lamps					17,626				20,474
106											
107	Nuclear Decomm.	52,390 MWh		0.000765			40	0.000765			40
108	Subtotal	95,599 Lamps					17,666				20,514
109											
110	Energy Optimization	515 Meters		\$ 14.51			90	\$ 14.51			90
111											
112	Total E1 - Option 1	52,390 MWh					17,756				20,603
113	Increase/Decrease (\$)										2,848

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Municipal Street Lighting - E1 Option I - Company Owned Ornamental

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Line No.	(a) Description	(b) Billing Determinants		(c) Rate (\$/luminaire/ mth)	(d) Non-Capacity Energy (¢/kWh)	(e) Capacity Energy (¢/kWh)	(f) Revenue (\$000)	(g) Rate (\$/luminaire/ mth)	(h) Non-Capacity Energy (¢/kWh)	(i) Capacity Energy (¢/kWh)	(j) Revenue (\$000)
		Quantity	Units								
	Co. Owned Ornamental										
1	Mercury Vapor										
2	100 W	9	Lamps	28.56	3.96	0.00	3	27.32	4.48	0.00	3
3	175 W	1,884	Lamps	31.69	3.96	0.00	782	30.38	4.48	0.00	761
4	250 W	3	Lamps	34.53	3.96	0.00	1	35.16	4.48	0.00	1
5	400 W	337	Lamps	40.35	3.96	0.00	188	43.44	4.48	0.00	204
6	1,000 W	9	Lamps	59.21	3.96	0.00	8	77.70	4.48	0.00	10
7											
8	High Pressure Sodium Vapor										
9	70 W	100	Lamps	25.78	3.96	0.00	33	22.94	4.48	0.00	29
10	100 W	24,423	Lamps	26.22	3.96	0.00	8,233	24.30	4.48	0.00	7,742
11	150 W	567	Lamps	27.96	3.96	0.00	209	26.50	4.48	0.00	202
12	250 W	10,900	Lamps	31.73	3.96	0.00	4,703	30.77	4.48	0.00	4,650
13	360 W	4	Lamps	37.62	3.96	0.00	2	35.36	4.48	0.00	2
14	400 W	3,622	Lamps	37.41	3.96	0.00	1,906	36.96	4.48	0.00	1,923
15	1,000 W	4	Lamps	48.86	3.96	0.00	3	64.66	4.48	0.00	4
16											
17	Metal Halide										
18	70 W	195	Lamps	33.32	3.96	0.00	81	26.98	4.48	0.00	66
19	100 W	83	Lamps	34.04	3.96	0.00	36	28.17	4.48	0.00	30
20	150 W	14	Lamps	38.97	3.96	0.00	7	30.21	4.48	0.00	6
21	175 W	642	Lamps	38.87	3.96	0.00	322	31.22	4.48	0.00	266
22	250 W	279	Lamps	43.00	3.96	0.00	158	35.90	4.48	0.00	136
23	320 W	0	Lamps	47.11	3.96	0.00	0	39.94	4.48	0.00	0
24	400 W	610	Lamps	51.82	3.96	0.00	426	44.56	4.48	0.00	379
25	1,000 W	0	Lamps	87.09	3.96	0.00	0	79.16	4.48	0.00	0
26											
27	De-Energized										
28	Mercury Vapor										
29	100 W	0	Lamps	18.13	3.96	0.00	0	17.52	4.48	0.00	0
30	175 W	0	Lamps	20.76	3.96	0.00	0	20.20	4.48	0.00	0
31	250 W	0	Lamps	23.21	3.96	0.00	0	23.92	4.48	0.00	0
32	400 W	0	Lamps	27.95	3.96	0.00	0	30.30	4.48	0.00	0
33	1,000 W	0	Lamps	44.34	3.96	0.00	0	56.59	4.48	0.00	0
34											
35	LED										
36	60 - 69 W	27	Lamps	14.45	3.96	0.00	5	13.20	4.48	0.00	5
37											
38	High Pressure Sodium Vapor										
39	70 W	0	Lamps	16.26	3.96	0.00	0	14.66	4.48	0.00	0
40	100 W	2	Lamps	18.06	3.96	0.00	0	15.85	4.48	0.00	0
41	150 W	0	Lamps	18.44	3.96	0.00	0	17.78	4.48	0.00	0
42	250 W	17	Lamps	21.77	3.96	0.00	4	21.33	4.48	0.00	4
43	360 W	0	Lamps	26.05	3.96	0.00	0	25.15	4.48	0.00	0
44	400 W	0	Lamps	26.31	3.96	0.00	0	26.55	4.48	0.00	0
45	1,000 W	0	Lamps	38.46	3.96	0.00	0	49.15	4.48	0.00	0
46											
47	Dusk-Midnight										
48	Mercury Vapor										
49	100 W	0	Lamps	27.50	3.96	0.00	0	26.26	4.48	0.00	0
50	175 W	0	Lamps	29.84	3.96	0.00	0	28.52	4.48	0.00	0
51	250 W	0	Lamps	31.88	3.96	0.00	0	32.51	4.48	0.00	0
52	400 W	0	Lamps	36.11	3.96	0.00	0	39.20	4.48	0.00	0
53	1,000 W	0	Lamps	48.61	3.96	0.00	0	67.10	4.48	0.00	0
54											
55	High Pressure Sodium Vapor										
56	70 W	0	Lamps	25.04	3.96	0.00	0	22.20	4.48	0.00	0
57	100 W	0	Lamps	25.16	3.96	0.00	0	23.24	4.48	0.00	0
58	150 W	0	Lamps	26.37	3.96	0.00	0	24.91	4.48	0.00	0
59	250 W	0	Lamps	29.06	3.96	0.00	0	28.12	4.48	0.00	0
60	360 W	0	Lamps	33.81	3.96	0.00	0	31.55	4.48	0.00	0
61	400 W	0	Lamps	33.17	3.96	0.00	0	32.72	4.48	0.00	0
62	1,000 W	0	Lamps	38.26	3.96	0.00	0	54.06	4.48	0.00	0

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Line No.	(a) Description	(b) Billing Determinants		(c) Present	(d)	(e)	(f)	(g) Proposed	(h)	(i)	(j)	
					Rate (\$/luminaire/ mth)	Non-Capacity Energy (¢/kWh)	Capacity Energy (¢/kWh)	Revenue (\$000)	Rate (\$/luminaire/ mth)	Non- Capacity Energy (¢/kWh)	Capacity Energy (¢/kWh)	Revenue (\$000)
63	LED	Quantity	Units									
64	20 - 29 W	0	Lamps		22.39	3.96	0.00	0	18.88	4.48	0.00	0
65	30 - 39 W	58	Lamps		22.59	3.96	0.00	16	19.39	4.48	0.00	14
66	40 - 49 W	25	Lamps		22.79	3.96	0.00	7	19.90	4.48	0.00	6
67	50 - 59 W	69	Lamps		22.98	3.96	0.00	20	20.43	4.48	0.00	18
68	60 - 69 W	8,502	Lamps		23.19	3.96	0.00	2,458	20.98	4.48	0.00	2,244
69	70 - 79 W	253	Lamps		23.39	3.96	0.00	74	21.52	4.48	0.00	69
70	80 - 89 W	1,237	Lamps		23.60	3.96	0.00	368	22.09	4.48	0.00	348
71	90 - 99 W	37	Lamps		23.81	3.96	0.00	11	22.67	4.48	0.00	11
72	100 - 109 W	498	Lamps		24.03	3.96	0.00	152	23.28	4.48	0.00	149
73	110 - 119 W	21	Lamps		24.26	3.96	0.00	7	23.90	4.48	0.00	6
74	120 - 129 W	4	Lamps		24.49	3.96	0.00	1	24.56	4.48	0.00	1
75	130 - 139 W	11,553	Lamps		24.74	3.96	0.00	3,689	25.24	4.48	0.00	3,793
76	140 - 149 W	3	Lamps		24.93	3.96	0.00	1	25.74	4.48	0.00	1
77	150 - 159 W	839	Lamps		25.12	3.96	0.00	275	26.24	4.48	0.00	289
78	160 - 169 W	23	Lamps		25.31	3.96	0.00	8	26.75	4.48	0.00	8
79	170 - 179 W	549	Lamps		25.50	3.96	0.00	184	27.27	4.48	0.00	198
80	180 - 189 W	39	Lamps		25.70	3.96	0.00	13	27.79	4.48	0.00	14
81	190 - 199 W	0	Lamps		25.90	3.96	0.00	0	28.32	4.48	0.00	0
82	200 - 209 W	191	Lamps		26.10	3.96	0.00	66	28.85	4.48	0.00	74
83	210 - 219 W	0	Lamps		26.31	3.96	0.00	0	29.42	4.48	0.00	0
84	220 - 229 W	0	Lamps		26.52	3.96	0.00	0	29.98	4.48	0.00	0
85	230 - 239 W	0	Lamps		26.73	3.96	0.00	0	30.54	4.48	0.00	0
86	240 - 249 W	0	Lamps		26.94	3.96	0.00	0	31.10	4.48	0.00	0
87	250 - 259 W	0	Lamps		27.15	3.96	0.00	0	31.67	4.48	0.00	0
88	260 - 269 W	18	Lamps		27.36	3.96	0.00	7	32.23	4.48	0.00	8
89	270 - 279 W	0	Lamps		27.57	3.96	0.00	0	32.83	4.48	0.00	0
90	280 - 289 W	1,013	Lamps		27.78	3.96	0.00	386	33.42	4.48	0.00	461
91	290 - 299 W	0	Lamps		28.01	3.96	0.00	0	34.04	4.48	0.00	0
92	300 - 309 W	234	Lamps		28.23	3.96	0.00	91	34.66	4.48	0.00	111
93	310 - 319 W	0	Lamps		28.45	3.96	0.00	0	35.28	4.48	0.00	0
94	320 - 329 W	0	Lamps		28.67	3.96	0.00	0	35.89	4.48	0.00	0
95	330 - 339 W	0	Lamps		28.90	3.96	0.00	0	36.51	4.48	0.00	0
96	340 - 349 W	0	Lamps		29.12	3.96	0.00	0	37.13	4.48	0.00	0
97	350 - 359 W	0	Lamps		29.34	3.96	0.00	0	37.74	4.48	0.00	0
98	360 - 369 W	0	Lamps		29.56	3.96	0.00	0	38.36	4.48	0.00	0
99	370 - 379 W	0	Lamps		29.79	3.96	0.00	0	38.98	4.48	0.00	0
100	380 - 389 W	0	Lamps		30.01	3.96	0.00	0	39.59	4.48	0.00	0
101	390 - 399 W	0	Lamps		30.23	3.96	0.00	0	40.21	4.48	0.00	0
102	Subtotal	68,897	Lamps					24,943			697.44	24,246
103												
104	PSCR	52,355	MWh		0			0	\$ -			0
105												
106	Post Charge	85			0.00			0	\$79.80			7
107	Long Span Charge	49,529			\$24.48			1,212	\$24.48			1,212
108	Multiple Lamp Discount	1,564			(\$97.92)			(153)	(\$97.92)			(153)
109	Multiple Lamp Discount - Long Span	2,051			(\$122.40)			(251)	(\$122.40)			(251)
110	Two Municipality Discount - Long Span	133			(\$51.20)			(7)	(\$51.20)			(7)
111	Semi-Ornamental Discount	645			(\$21.48)			(14)	(\$21.48)			(14)
112	Multiple Lamp Discount - Semi-Orn.	9			(\$76.56)			(1)	(\$76.56)			(1)
113	Subtotal	68,897	Lamps					25,730				25,040
114												
115	Nuclear Decomm.	52,355	MWh		0.000765			40	0.000765			40
116	Subtotal	68,897	Lamps					25,770				25,080
117												
118	Energy Optimization	309	Meters		\$ 14.51			54	\$ 14.51			54
119												
120	Total E1 - Option 1	52,355	MWh					25,824				25,133
121	Increase/Decrease (\$)											(691)

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Line No.	(a) Description	(b) Billing Determinants		(c) Present				(e)	(f)	(g)	(h) Proposed	(i)	(j)	
					Non-Capacity		Capacity				Non-Capacity		Capacity	
		Quantity	Units	Rate (\$/luminaire/ mth)	Energy (¢/kWh)	Energy (¢/kWh)	Revenue (\$000)			Rate (\$/luminaire/ mth)	Energy (¢/kWh)	Energy (¢/kWh)	Revenue (\$000)	
	Municipally Owned													
1	Mercury Vapor													
2	175 W	1	Lamps	5.23	3.96	0.00	0			6.84	4.48	0.00	0	
3	250 W	0	Lamps	6.77	3.96	0.00	0			7.88	4.48	0.00	0	
4	400 W	40	Lamps	9.84	3.96	0.00	8			13.14	4.48	0.00	10	
5	1,000 W	0	Lamps	22.13	3.96	0.00	0			28.79	4.48	0.00	0	
6														
7	High Pressure Sodium Vapor													
8	70 W	0	Lamps	3.97	3.96	0.00	0			3.97	4.48	0.00	0	
9	100 W	11	Lamps	4.87	3.96	0.00	1			4.87	4.48	0.00	1	
10	250 W	180	Lamps	9.33	3.96	0.00	29			9.33	4.48	0.00	30	
11	360 W	0	Lamps	12.42	3.96	0.00	0			12.42	4.48	0.00	0	
12	400 W	20	Lamps	13.54	3.96	0.00	5			13.54	4.48	0.00	5	
13	1,000 W	0	Lamps	30.36	3.96	0.00	0			30.36	4.48	0.00	0	
14														
15	Metal Halide													
16	70 W	0	Lamps	9.14	3.96	0.00	0			0.00	0.00	0.00	0.00	
17	100 W	0	Lamps	9.36	3.96	0.00	0			0.00	0.00	0.00	0.00	
18	175 W	0	Lamps	11.41	3.96	0.00	0			0.00	0.00	0.00	0.00	
19	250 W	0	Lamps	11.39	3.96	0.00	0			0.00	0.00	0.00	0.00	
20	400 W	0	Lamps	16.16	3.96	0.00	0			0.00	0.00	0.00	0.00	
21	1,000 W	0	Lamps	23.18	3.96	0.00	0			0.00	0.00	0.00	0.00	
22														
23	De-Energized													
24	Mercury Vapor													
25	175 W	0	Lamps	4.89	3.96	0.00	0			6.08	4.48	0.00	0.00	
26	250 W	0	Lamps	6.55	3.96	0.00	0			7.55	4.48	0.00	0.00	
27	400 W	0	Lamps	9.65	3.96	0.00	0			12.12	4.48	0.00	0.00	
28	1,000 W	0	Lamps	22.09	3.96	0.00	0			27.25	4.48	0.00	0.00	
29														
30	High Pressure Sodium Vapor													
31	70 W	0	Lamps	2.67	3.96	0.00	0			3.28	4.48	0.00	0.00	
32	100 W	0	Lamps	3.40	3.96	0.00	0			4.19	4.48	0.00	0.00	
33	250 W	0	Lamps	6.77	3.96	0.00	0			8.47	4.48	0.00	0.00	
34	360 W	0	Lamps	9.06	3.96	0.00	0			11.38	4.48	0.00	0.00	
35	400 W	0	Lamps	9.94	3.96	0.00	0			12.50	4.48	0.00	0.00	
36	1,000 W	0	Lamps	22.59	3.96	0.00	0			28.57	4.48	0.00	0.00	
37														
38	Dusk-Midnight													
39	Mercury Vapor													
40	175 W	0	Lamps	3.38	3.96	0.00	0			4.98	4.48	0.00	0.00	
41	250 W	0	Lamps	4.12	3.96	0.00	0			5.23	4.48	0.00	0.00	
42	400 W	0	Lamps	5.60	3.96	0.00	0			8.90	4.48	0.00	0.00	
43	1,000 W	0	Lamps	11.53	3.96	0.00	0			18.19	4.48	0.00	0.00	
44														
45	High Pressure Sodium Vapor													
46	70 W	0	Lamps	2.40	3.96	0.00	0			3.23	4.48	0.00	0.00	
47	100 W	0	Lamps	2.73	3.96	0.00	0			3.81	4.48	0.00	0.00	
48	250 W	0	Lamps	4.41	3.96	0.00	0			6.68	4.48	0.00	0.00	
49	360 W	0	Lamps	5.49	3.96	0.00	0			8.60	4.48	0.00	0.00	
50	400 W	0	Lamps	5.89	3.96	0.00	0			9.30	4.48	0.00	0.00	
51	1,000 W	0	Lamps	11.82	3.96	0.00	0			19.76	4.48	0.00	0.00	
52	Subtotal	252	Lamps					42.79						46.23
53														
54	PSCR	352	MWh	0				0		\$ -				0
55	Subtotal	252	Lamps											46
56														
57	Nuclear Decommissioning	352	MWh	0.000765				0.27		0.000765				0.27
58	Subtotal	252	Lamps					43.05						46.50
59														
60	Energy Optimization	24	Meters	\$ 8.11				2.34		\$ 8.11				2.34
61														
62	Total E1 - Option II	352	MWh					45						49
63	Increase/Decrease (\$)													

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Municipal Street Lighting - E1 Option III - Energy Only

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Line No.	(a) Description	(b) Billing Determinants	(c)	(d) Present	(e)	(f)	(g)	(h) Proposed	(i)	(j)
				Non-Capacity	Capacity		Non-Capacity	Capacity		
			Dist Energy	Energy	Energy	Revenue	Dist Energy	Energy	Energy	Revenue
			(¢/kWh)	(¢/kWh)	(¢/kWh)	(\$000)	(¢/kWh)	(¢/kWh)	(¢/kWh)	(\$000)
	Energy Only Service	Quantity								
		Load (kW)								
1	Mercury Vapor									
2	100 Watt	15	2	5.49	3.96	0.00	1	6.65	4.48	0.00
3	175 Watt	169	30	5.49	3.96	0.00	14	6.65	4.48	0.00
4	250 Watt	27	7	5.49	3.96	0.00	3	6.65	4.48	0.00
5	400 Watt	257	103	5.49	3.96	0.00	46	6.65	4.48	0.00
6	1,000 Watt	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
7										
8	High Pressure Sodium Vapor									
9	70 Watt	357	25	5.49	3.96	0.00	13	6.65	4.48	0.00
10	100 Watt	8,093	809	5.49	3.96	0.00	433	6.65	4.48	0.00
11	150 Watt	1,837	276	5.49	3.96	0.00	146	6.65	4.48	0.00
12	250 Watt	1,153	288	5.49	3.96	0.00	140	6.65	4.48	0.00
13	310 Watt	28	9	5.49	3.96	0.00	4	6.65	4.48	0.00
14	360 Watt	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
15	400 Watt	616	246	5.49	3.96	0.00	114	6.65	4.48	0.00
16	1,000 Watt	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
17										
18	Metal Halide	0								
19	70 Watt	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
20	100 Watt	79	8	5.49	3.96	0.00	4	6.65	4.48	0.00
21	150 Watt	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
22	175 Watt	135	24	5.49	3.96	0.00	11	6.65	4.48	0.00
23	250 Watt	55	14	5.49	3.96	0.00	7	6.65	4.48	0.00
24	320 Watt	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
25	400 Watt	2	1	5.49	3.96	0.00	0	6.65	4.48	0.00
26	1,000 Watt	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
27	Energy Subtotal	12,823	1,842			936				1,103
28										
29	LED									
30	20 - 29 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
31	30 - 39 W	5,327	186	5.49	3.96	0.00	74	6.65	4.48	0.00
32	40 - 49 W	155	7	5.49	3.96	0.00	3	6.65	4.48	0.00
33	50 - 59 W	1,253	69	5.49	3.96	0.00	27	6.65	4.48	0.00
34	60 - 69 W	710	46	5.49	3.96	0.00	18	6.65	4.48	0.00
35	70 - 79 W	201	15	5.49	3.96	0.00	6	6.65	4.48	0.00
36	80 - 89 W	14,305	1,216	5.49	3.96	0.00	482	6.65	4.48	0.00
37	90 - 99 W	27	3	5.49	3.96	0.00	1	6.65	4.48	0.00
38	100 - 109 W	14,801	1,554	5.49	3.96	0.00	616	6.65	4.48	0.00
39	110 - 119 W	14,780	1,700	5.49	3.96	0.00	674	6.65	4.48	0.00
40	120 - 129 W	607	76	5.49	3.96	0.00	30	6.65	4.48	0.00
41	130 - 139 W	8,009	1,081	5.49	3.96	0.00	429	6.65	4.48	0.00
42	140 - 149 W	4	1	5.49	3.96	0.00	0	6.65	4.48	0.00
43	150 - 159 W	1,457	226	5.49	3.96	0.00	90	6.65	4.48	0.00
44	160 - 169 W	464	77	5.49	3.96	0.00	30	6.65	4.48	0.00
45	170 - 179 W	28	5	5.49	3.96	0.00	2	6.65	4.48	0.00
46	180 - 189 W	64	12	5.49	3.96	0.00	5	6.65	4.48	0.00
47	190 - 199 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
48	200 - 209 W	218	45	5.49	3.96	0.00	18	6.65	4.48	0.00
49	210 - 219 W	3,084	663	5.49	3.96	0.00	263	6.65	4.48	0.00
50	220 - 229 W	269	61	5.49	3.96	0.00	24	6.65	4.48	0.00
51	230 - 239 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00
52	240 - 249 W	8	2	5.49	3.96	0.00	1	6.65	4.48	0.00
53	250 - 259 W	177	45	5.49	3.96	0.00	18	6.65	4.48	0.00
54	260 - 269 W	4,438	1,176	5.49	3.96	0.00	467	6.65	4.48	0.00
55	270 - 279 W	262	72	5.49	3.96	0.00	29	6.65	4.48	0.00

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Municipal Street Lighting - E1 Option III - Energy Only (Cont'd)

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	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	
No.	Description	Billing Determinants		Present				Proposed			
				Non-Capacity		Capacity		Non-			
		Quantity	Load	Dist Energy	Energy	Energy	Revenue	Dist Energy	Capacity	Capacity	
			(kW)	(¢/kWh)	(¢/kWh)	(¢/kWh)	(\$000)	(¢/kWh)	Energy	Energy	
										Revenue	
										(\$000)	
56	Energy Only Service										
56	LED										
57	280 - 289 W	56	16	5.49	3.96	0.00	6	6.65	4.48	0.00	7
58	290 - 299 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
59	300 - 309 W	5	2	5.49	3.96	0.00	1	6.65	4.48	0.00	1
60	310 - 319 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
61	320 - 329 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
62	330 - 339 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
63	340 - 349 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
64	350 - 359 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
65	360 - 369 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
66	370 - 379 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
67	380 - 389 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
68	390 - 399 W	0	0	5.49	3.96	0.00	0	6.65	4.48	0.00	0
69	LED Subtotal	83,532	8,356				3,314				3,905
70											
71	PSCR	44,993	MWh	0			0	\$	-		0
72	Subtotal	83,532					4,250				5,008
73											
74	Nuclear Decommissioning	44,993	MWh	0.000765			34	0.000765			34
75	Subtotal	44,993	MWh				4,284				5,042
76											
77	Energy Optimization	36	Meters	\$	14.51		6.27	\$	14.51		6.27
78											
79	Total E1 - Option III	44,993	MWh				4,290				5,049
80	Increase/Decrease (\$)										758
	Total E1 - Options I, II and III	150,090	MWh				47,916				50,834

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[illegible]

Michigan Public Service Commission
DTE Electric Company
Staff's Calculation of Voltage Level Distribution Charges

Case No.: U-20162
Exhibit: S-6
Schedule: F5
Witness: M. J. Pung
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Line No.	(a) Present Base Delivery Revenue (\$000)	(b) Exh A-16, Sch F-1.2 Line 28 Revenue Def/(Suf) (\$000)	(c) (a) + (b) Target Base Revenue (\$000)	(d) Proposed Service Charge Revenue (\$000)	(e) Substation Credit (\$000)	(f) (c) - (d) - (e) Target Distribution Demand Rev (\$000)	(g) Distribution Demand kW	(h) (f) ÷ (g) Primary Voltage Distribution Charge \$/kW
1	Primary Voltage							
2	Rate							
3	D11	92,918					22,432,248	
4	D6.2	10,761					2,647,327	
5	D8	6,927					1,692,377	
6	D10	831					134,131	
7	R1.1/R1.2	4,173					1,089,391	
8	R3	516					124,062	
9	R10	1,902					489,900	
10	Primary Voltage Total	118,028	(7,579)	110,450	10,366	0	100,084	28,609,435
11								3.50
12	Subtransmission Voltage							
13	Rate							
14	D11	8,363					5,671,366	
15	D6.2	1,033					719,317	
16	D8	307					193,807	
17	R1.1/R1.2	262					182,286	
18	R3	1,426					970,981	
19	R10	692					459,955	
20	Subtransmission Voltage Total	12,083	370	12,454	503	(393)	12,343	8,197,713
21								1.51
22	Transmission Voltage							
23	Rate							
24	D11	5,667					9,249,422	
25	D6.2	0					0	
26	D8	119					268,487	
27	R1.1/R1.2	37					33,577	
28	R3	178					254,741	
29	R10	3,053					5,230,573	
30	Transmission Voltage Total	9,055	(782)	8,273	485	(2,415)	10,204	15,036,800
31								0.68

Michigan Public Service Commission
DTE Electric Company
Staff's Calculation of Nuclear Surcharge

Case No.: U-20162
Exhibit: S-6
Schedule: F6
Witness: M. J. Pung
Page: 1 of 1

Line No.	(a) Description	(b) Amount (\$000)	(c) Source
1	Proposed Nuclear Surcharge Revenue:		
2	Site Security & Radiation Protection	\$ 29,418	Exh A-20, Sch J1, L2
3	Nuclear Decommissioning Funding	2,867	Exh A-20, Sch J1, L3
4	Low Level Radioactive Waste Disposal Funding	4,000	Exh A-20, Sch J1, L4
5	Additional LLRW Disposal Funding Request	2,000	Exh A-20, Sch J1, L5
6	Total Proposed Nuclear Surcharge Revenue	\$ 38,285	Exh A-20, Sch J1, L6
7			
8	Forecast Jurisdictional Sales (MWh)	46,320,426	Exh A-14, Sch F2, Page 4, L44, col(b)
9	Proposed Nuclear Surcharge	0.000827 \$/kWh	L5 ÷ L7

MPSC Case No.: U-20162
Requestor: N. Revere
Question No.: NMR-1.1a
Respondent: P. W. Dennis/J. R. Boladian
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Question: Please provide any updates or revisions to the Company's transition plan for implementing its proposed summer on-peak rate.

- a. Please include updated or revised timelines for the implementation of the proposed summer on-peak rate.

Answer: As discussed by Company Witnesses, Stanczak, Dennis, Johnson, Clinton and Griffin, defaulting all residential customers to a summer on-peak rate is a large undertaking that includes many unknowns. To better understand these unknowns, following the July 6 filing, DTE Electric conducted a series of interviews and preliminary research with industry partners to inform the Company's updated transition plan.

The Company's updated transition plan considered timing and cost associated with the following: 1) Designing, testing and implementing major changes to customer service channels, billing systems, AMI metering, and infrastructure related to Information Technology (IT); 2) Research, development of communication materials and campaigns, and customer engagement related to Corporate Communications, and 3) Contact center and customer experience impacts related to Customer Service.

With the advent of these large-scale changes, the Company recommends a phased pilot approach that will provide the ability to learn and make changes to various business units such as IT, Corporate Communications, and Customer Service, prior to a full implementation. In addition, the Company considers a phased pilot approach as critical to ensuring billing and meter infrastructure is operating appropriately within the summer on-peak rate parameters, minimizing billing exceptions for full implementation, and reducing adverse customer satisfaction impacts.

The Company is proposing timelines for both a "Recommended Plan" and an "Alternative Plan" to consider for transitioning residential customers to a summer on-peak rate. Both updated plans are described below:

Recommended Plan

The Recommended Plan allows for piloting multiple rates so that the Company may have an opportunity to do a more comprehensive assessment of rate designs that make sense for our customers over the long-term and in

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the face of the significant market and technological changes occurring in the electric utility industry. Given the extensive change and effort involved in this rate transition, it is appropriate to assess and anticipate what other changes the Company may need to implement to better serve customers and offer options in addition to the proposed summer on-peak rate. In addition, the Recommended Plan allows for testing multiple messages among different customer groups and researching effective marketing and education.

In this case, planning for phase one would begin in December 2018, and would require 21 months to develop requirements, deploy the potential solutions, and allow for testing. Phase one of the Recommended Plan includes piloting up to 5,000 targeted customers per rate tested. Participants for the pilot will be targeted using the Company's customer segmentation research to ensure wide and varied participation. The pilot implementation would begin in June of 2020 and run through September 2020, after which it would be assessed and findings from the pilot will be implemented into the process for full implementation. Planning for phase two, full implementation, would begin in September 2020. This phase would require 21 months to gather requirements, develop and integrate with the billing system, and test the solutions. Residential customers who do not choose other rate options would be transferred to a new summer on-peak rate on May 30, 2022 on a bill cycle basis.

Alternative Plan

The Company also considered an Alternative Plan that has a shorter timeline but only allows for the testing of one rate structure. As in the Recommended Plan, the Company is proposing to implement a phased approach to test system design changes and study customer behavior. Phase one of the Alternative Plan will include an operational pilot with approximately 100,000 customers. Participants for the initial phase will be targeted using the Company's customer segmentation research to ensure wide and varied participation.

For the Alternative Plan, phase one would begin in October 2018 and requires 22 months to gather requirements, develop and implement the solution in the billing system, and test the billing system. After this preparation period, the pilot implementation would begin in August of 2020. The operational pilot would run through September 2020, after which it would be assessed and findings from the pilot will be implemented into the process for full

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implementation. Assuming a successful initial phase, the remaining residential AMI customers would be transferred to the new summer on-peak rate on June 1, 2021 on a bill cycle basis.

The Alternative Plan only allows for the piloting of a single rate in phase one, whereas, the Recommended Plan allows for piloting multiple rates. Piloting only a single rate results in projected go-live date of June 2021 compared to May 2022 for the Recommended Plan. The Alternative Plan allows for less time and information to study customer behavior due to summer on-peak rate changes and develop solutions to issues identified during the pilot phase.

As proposed in U-20162, the summer on-peak non-capacity rate for both plans would be in affect during the summer months of June through September from 4:00 p.m. through 9:00 p.m., Monday through Friday. The off-peak rate would apply to all other usage.

To adhere to the above proposed timelines, project preparation and requirements gathering will begin prior to receiving a Commission order in this case. Any deviation in the Company's plans may result in a change to the proposed timeline.

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	<u>E. W. Clinton</u>
	<u>T. D. Johnson</u>
	<u>D. J. Griffin</u>
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Question: Please provide any updates or revisions to the Company's transition plan for implementing its proposed summer on-peak rate.

- b. Please include updates or revisions to the costs associated with the implementation of the proposed summer on-peak rate.

Answer: The Recommended Plan includes a forecasted budget of \$53.6M and the Alternative Plan includes a forecasted budget \$44.7M. The higher costs for the Recommended Plan is primarily due to an extended project timeline duration and multiple pilot scenarios. The Company's approach to develop estimated expenses related to IT, Corporate Communications and Customer Service is summarized below:

Information Technology: Estimates for IT related expenses were informed by conversations and competitive benchmarking with Accenture and Consumers Energy regarding the multi-year development of TOU implementation plans. Estimates were also informed using the Company's internal expertise and experience with previous rate change impacts on IT, wherever it was available.

Corporate Communications: Estimates for Corporate Communication related expenses were informed by conversations with PG&E and marketing consultants regarding the multi-year development of California's TOU implementation plans. The scale of expenditure is driven in large part by the need for one-on-one communications, particularly with low-income and at-risk populations that are difficult to reach.

Customer Service: Estimates for Customer Service related expenses involved a bottom-up approach for the specific areas that require investment within the organization. Estimates for each of the specific areas were informed using the Company's internal expertise and experience, wherever it was available.

A breakdown of the estimated project costs for both plans is shown in the following table.

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	Recommended Plan Estimated Costs	Alternative Plan Estimated Costs
INFORMATION TECHNOLOGY		
AMI IT	\$10,500,000	\$7,636,364
AMI Metering	\$1,250,000	\$1,250,000
CR&B	\$17,000,000	\$12,295,455
IT Infrastructure	\$4,500,000	\$3,250,000
Information Technology Capital Expenses	\$33,250,000	\$24,431,819
O&M	\$500,000	\$500,000
Information Technology O&M Expenses	\$500,000	\$500,000
CORPORATE COMMUNICATIONS		
Research	\$210,000	\$210,000
Paid Media	\$2,885,000	\$2,885,000
Production	\$4,540,000	\$4,540,000
Community Engagement	\$527,000	\$527,000
Employee Training & Activation	\$120,000	\$120,000
Corporate Communications O&M Expenses	\$8,282,000	\$8,282,000
CUSTOMER SERVICE		
Contact Center Training	\$650,000	\$650,000
Contact Center Call Volume	\$5,280,000	\$5,280,000
Billing	\$4,000,000	\$4,000,000
Customer Experience	\$1,600,000	\$1,600,000
Customer Service O&M Expenses	\$11,530,000	\$11,530,000
Total O&M	\$20,312,000	\$20,312,000
Total Capital	\$33,250,000	\$24,431,819
Total Estimated Cost	\$53,562,000	\$44,743,819

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Question: Please provide any updates or revisions to the Company's transition plan for implementing its proposed summer on-peak rate.

- c. Please include any research or workpapers upon which the updates or revisions relied.

Answer: Please see the attached document(s) used in updating the Company's transition plan for implementing its proposed summer on-peak rate.

Please refer to the attachment titled "*U-20162 NMR-1.1c-01 – TOU Research and Benchmarking*" for highlights and data points gathered from the Company's phone interviews and preliminary research with industry partners. Based on the Company's research, all other states and/or utilities have utilized pilots in their transition to what are commonly referred to as time of use (TOU) rates. If Michigan were to move forward with a single-phased, mandatory transition to summer on-peak rates for all residential customers currently on D1 rates, this may be the first and only jurisdiction in the country to do so.

The Company also relied upon research conducted by Pacific Gas & Electric (PG&E) in the California TOU Working Group. In summary, the research stated a transition to TOU rates feels very risky to customers, even those who may benefit. Of those customers included in PG&E's initial wave of communications regarding the transition, 40% needed more information to address concerns and 27% were firmly against the transition. Therefore, it is important for a utility to first test and then incorporate lessons learned from its initial pilot research to increase customer understanding and acceptance.

In addition, California IOUs completed an economic and health hardship study after implementing a pilot TOU program to understand the impacts to customers. The study showed that multiple vulnerable customer groups reported greater economic hardship because of the piloted TOU rates. These results lead to the CPUC ruling that IOUs exclude economic vulnerable customers in hot climate regions from being defaulted onto TOU rates in the future. This study demonstrates it is important to get the right customer segments on the right rates and meet other customer needs through potential opt-in rate alternatives. Therefore, it is important the Company analyze and understand impacts to customers for whom a summer on-peak rate is not

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feasible: customers who cannot shift load without significant adverse impacts, customers who should not shift load due to unique health reasons, and customers who should be aware of other rate options.

Please refer to the attached documents detailing the Company's Recommended and Alternative project plans and timelines for implementing a proposed summer on-peak rate.

Attachments:

U-20162 NMR-1.1c-01– TOU Research and Benchmarking
U-20162 NMR-1.1c-02 Project Timeline and Costs – Recommended Plan
U-20162 NMR-1.1c-03 Project Timeline and Costs – Alternative Plan

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Precedent TOU rate transitions

The following are some highlights and data points based on initial phone calls and preliminary research with industry partners.

Company	Mandated vs. Optional	Working Group vs. Case Settlement ¹	Pilot (y/n)	Timeline	Go-Live Date
APS Electric²	APS proposed in 2016	Working Group	Numerous	5 years	May 2018
California IOUs	Mandated in 2015	Working Group	Numerous	5+ years	2020
Maryland IOUs	Mandated pilots 2017	Working Group	Numerous	3+ years	2019 pilot
SMUD	Optional	Unknown	Numerous	8+ years	End of 2019
Xcel Energy	Optional pilot	Working Group	Yes	5+ years	2020 pilot
DTE Energy	Mandated in 2018	Case Settlement	No	1 year	April 2019

Arizona Public Service (APS) Electric Company: 2013-2018 [1]

- Started in 2013 to address rate design issues as result of increased rooftop solar
- Spent 3 years making proposals, seeking input and approval, doing some pilots
- 2016 APS asked to transition all residential customers to TOU + demand rates
- Approximately 50% of APS customers were already on a TOU rate prior to 2018 transition
- 2018 APS transitioned all residential customers to new rate structure
 - Currently 25% of customers remain on a traditional-style rate based on expected big impacts
 - APS programmed IT infrastructure prior to system conversion
 - Meter configuration: Processing is critical path for success (risk of impacting batch process)

California Investor Owned Utilities (PG&E, SDG&E, SCE): 2015-2020

- Investor Owned Utilities have been transitioning since 2015 mandate and will continue to transition until 2020
- Goals: load shift, energy conservation, energy security, grid stability
- Numerous pilot programs have been run, starting with “opt-in” and moving to “default”
- Statewide collaboration through a working group
- Assigned Commissioner Ruling mandated working group use consultant to develop integrated marketing action plan to coordinate and align efforts statewide

Maryland Investor Owned Utilities (Pepco, BGE and Delmarva Power): 2017-2022

- 2017 - the Commission established PC44 which established the Rate Design workgroup who were directed to “develop proposed pilot program(s) for time-varying rates for distribution service for Commission consideration, and also develop a plan for ensuring customer options for time varying rates for generation service.” [3]
- Mandated two-year pilot; dates not finalized although tentative April 2019-April 2021, with evaluation through April 2022 [2]
 - Primary goal - Determine if TOU rates can help lower customer bills by educating customers on how to control their energy usage by sending appropriate price signals to

1. Working Group: Utility(s) work together to propose path forward; Case Settlement: Path forward ordered by regulators
2. APS defaults all “new” customers to TOU. Approximately 25% of existing customers remain on “traditional” volume-based rate

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all market participants; evaluate the impact of TOU rates on low to moderate income customers [2]

- Secondary goal - Test whether TOU rates have the potential to reduce peak demand [2]

Sacramento Municipal Utility District (SMUD): 2011-2019

- Sacramento Municipal Utility District (SMUD) has also been working on transitioning all residential customers to TOU since 2011 [6]
- Goal – to save energy during peak times [4]
- Offered numerous pilots to include TOU rates, Critical Peak Pricing (CPP), TOU with no CPP [4]
- Started with “opt-in” programs with customers that had solar panels [4]
- Seeking to make TOU rate standard for ALL residential customers by end of 2019 [5]

Xcel Energy: 2015-2020

- Xcel Energy filed TOU pilot in 2015 [9]
- TOU pilot approved in May 2018 rate order [7]
- Pilot will roll out in 2020 to ~10,000 customers to assess implementation and education of needs/strategies for TOU rates, analyze customer impacts (particularly low-income), and determine how TOU rates could be applicable to entire Xcel residential class in future [7]
- Goal - Assess implementation and education needs/strategies for TOU rates, analyze impacts to customers (particularly low-income), determine ability of TOU rates to reduce peak demand, inform how TOU rates could be applicable to entire Xcel residential class in future [8]

Why more time is needed to prepare

- Rate Analysis
 - Undertake billing analysis to determine winners and losers from TOU rate
 - Determine appropriate target peak/off-peak pricing ratio
 - Establish rate structure that appropriately charges customers without negatively affecting customer affordability and experience
- Pilot Programs
 - Validate marketing and education
 - Ensure customers understand how to balance their time of usage with their bill
 - Test out IT infrastructure to include billing
- IT Development and Meter Testing
 - Develop IT software for recording and billing TOU rates
 - Determine meter configuration and data warehouse
 - Pilot and test newly developed software
- Marketing, Education, and Internal Training
 - Educate customers to improve engagement and adoption of behavioral modification
 - Educate customers on TOU rate structure (i.e., peak times, pricing ratio)
 - Encourage load shift to maintain customer affordability
 - Research effectiveness of marketing and education
 - Prepare customer service for launch

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Reference Documents

Arizona Public Service (APS) Electric Company

[1]

DTE phone interview with Barbara Lockwood of APS on July 24, 2018

Maryland Investor Owned Utilities

[2]

https://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?filepath=C:\AdminDocket\PublicConferences\PC44\130\PC44TOUPilotMarketingandOutreachPlan_F.pdf

[3]

https://webapp.psc.state.md.us/newIntranet/AdminDocket/NewIndex3_VOpenFile.cfm?ServerFilePath=C%3A%5CAdminDocket%5CPublicConferences%5CPC44%5C66%2Epdf

Sacramento Municipal Utility District (SMUD)

[4]

<https://www.utilitydive.com/news/smud-time-of-use-is-the-future-of-rate-design/397098/>

[5]

<https://www.sacbee.com/news/business/article192076699.html>

[6]

<https://www.bloomberg.com/news/articles/2017-10-17/sacramento-nudges-people-to-use-less-electricity-at-peak-hours>

Xcel Energy

[7]

<http://www.startribune.com/xcel-wins-approval-for-pilot-program-for-rates-varying-by-time-of-day/484219561/>

[8]

<https://www.utilitydive.com/news/has-xcel-minnesota-designed-the-ideal-residential-time-of-use-rate/513235/>

[9]

<https://energynews.us/2018/02/06/midwest/will-customers-delay-laundry-to-save-money-xcel-energy-wants-to-find-out/>

	2018					2019					2020					2021					2022					2023																									
	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5				
	PHASE 1											PHASE 2																			WARRANTY/HYPERCARE																				
Initial Research	7/1	Industry Partner Benchmarking and Analysis										5/19																																							
Information Technology							5/19						2/20	4/20	6/20	9/20	11/20						9/21	12/20	★ Go- Live 5/30/22																										
AMI IT					12/18	Requirements Gathering / Project Preparation					Develop and Deployment					Unit Testing		Integration Testing		Pilot		Requirements gathering		Development, Deployment & Integration w/ CR&B					Unit Testing		Integration Testing			Go Live and Hypercare																	
AMI Metering																							Development					Unit testing		UAT																					
CR&B																							Hardware Install					Testing																							
IT Infrastructure																												3/21		5/21		Unit testing							Int. Testing		UAT										
Customer/Communication																														3/22																					
Corporate Communications																																																			
Research												7/19	Research		9/19							2/21	Research		4/21																										
Paid Media																	10/19	Paid Media & Production					3/20							7/21	Paid Media & Production (Full launch)					2/22															
Production																																																			
Community Engagement																	3/20	Comm. Engage Trng & Activ		6/20												2/22	Comm. Engage Trng & Activ		5/22																
Employee Training & Activation																																																			
Customer Service																																																			
Contact Center																	2/20	Training					6/20										1/23	Training					5/23												
Training																																																			
Call Volume																																																			
Billing																	4/21	Planning		5/21		6/21 Meter Correct		8/21							1/23	Planning					6/23 Manual meter corrections														
Customer Experience																	10/19	Customer Experience					1/20							12/21	Customer Experience					9/22															
** Dates are mm/yy. Start Dates are 1st of month; End Dates are last day of month																																																			

[illegible]

Michigan Public Service Commission
DTE Electric Company
Staff LMP Differential Calculation

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Summer On Peak Average Price	\$ 41.27
All Other Hours Average Price	\$ 28.70
Differential per MWh	\$ 12.57
% Differential	43.78%

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Line No.	(a) Description	(b) Billing Determinants		(c) Present		(d) Proposed	
		Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
1	Full Service Power Supply						
2	Power Supply Charges						
3	Non-Capacity Charges						
4	Non-Capacity Charge	13,527,987	MWh	\$0.04744	641,768	\$0.00000	0
5	Summer On Peak	1,082,239	MWh	\$0.00000	0	\$0.06526	70,625
6	Off Peak	12,445,748	MWh	\$0.00000	0	\$0.04539	564,869
7	Capacity Charges:						
8	Off Peak	12,445,748	MWh	\$0.03310	304,374	\$0.03820	475,380
9	Summer On Peak	1,082,239	MWh	\$0.04878	211,335	\$0.05492	59,437
10	Power Supply Subtotal	13,527,987	MWh	8.56¢	1,157,476		1,170,311
11	PSCR	13,527,987	MWh	\$0.00000	0	\$0.00000	0
12	REPS	1,912,171	Meters	\$0.00000	0	\$0.00000	0
13	Total Full Service Power Supply	13,527,987	MWh	8.56¢	1,157,476	8.65¢	1,170,311
14							
15	Full Service Distribution	Quantity	Units				
16							
17	Service Charge	1,912,171	Cust.	\$7.50	172,095	\$7.50	172,095
18	Income Assistance	70,000	Cust.	(\$7.50)	(6,300)	(\$7.50)	(6,300)
19	Senior Citizen Provision	99,712	Cust.	(\$3.75)	(4,487)	(\$3.75)	(4,487)
20							
21	Former D1.3 Custs. Distribution Charg	441,428	MWh	\$0.05666	25,011	\$0.05996	26,467
22	Distribution Charge	13,086,559	MWh	\$0.05699	745,803	\$0.05996	784,637
23	Distribution System	13,527,987	MWh	6.89¢	932,123	7.19¢	972,412
24							
25	Nuclear Decomm.	13,527,987	MWh	\$0.000765	10,349	\$0.000765	10,349
26	Energy Waste Reduction	13,527,987	MWh	\$0.004322	58,468	\$0.004322	58,468
27	LIEAF	1,912,171	Cust.	\$0.93	21,340	\$0.93	21,340
28	Distribution Surcharges	13,527,987	MWh	0.67¢	90,157	0.67¢	90,157
29							
30	Total Full Service Distribution			7.56¢	1,022,279	7.85¢	1,062,569
31	Total Full Service D1	13,527,987	MWh	16.11¢	2,179,756	16.51¢	2,232,880
32							
33	Choice	Quantity	Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
34							
35	Capacity Charges:						
36	First 17 KWH/Day	0	MWh	\$0.03310	0	\$0.03820	0
37	Excess	0	MWh	\$0.04878	0	\$0.05492	0
38	Capacity Total	0	MWh		0		0
39							
40	Distribution Charges						
41	Service Charge	0	Cust.	\$7.50	0	\$7.50	0
42	Income Assistance	0	Cust.	(\$7.50)	0	(\$7.50)	0
43	Senior Citizen Provision	0	Cust.	(\$3.75)	0	(\$3.75)	0
44							
45	Distribution Charge	0	MWh	\$0.05699	0	\$0.05996	0
46	Distribution System	0	MWh		0		0
47							
48	Nuclear Decomm.	0	MWh	\$0.000765	0	\$0.000765	0
49	Energy Waste Reduction	0	MWh	\$0.004322	0	\$0.004322	0
50	LIEAF	0	Cust.	\$0.93	0	\$0.93	0
51	Distribution Surcharges	0	MWh		0		0
52							
53	Total Choice D1	0	MWh		0		0
54							
55	Total D1	13,527,987	MWh	16.11¢	2,179,756	16.51¢	2,232,880
56	Increase/Decrease (\$)						53,124

Michigan Public Service Commission
DTE Electric Company
Staff's Present and Proposed Revenue Calculations
Residential Service Special Low Income Pilot Rate - D1.6 Non-Capacity Summer On Peak

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Line No.	(a) Description	(b) ling Determinants	(c) Present	(d) Present	(e) Proposed	(f) Proposed
		Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
	Full Service Power Supply					
1	Power Supply Charges					
2	Non-Capacity Charges					
3	Non-Capacity Charge	237,341 MWh	\$0.04744	11,259	\$0.00000	0
4	Summer On Peak	16,614 MWh	\$0.00000	0	\$0.06526	1,084
5	Off Peak	220,728 MWh	\$0.00000	0	\$0.04539	10,018
6	Capacity Charges					
7	First 17 KWH/Day	163,719 MWh	\$0.03310	5,419	\$0.03820	6,253
8	Excess	73,623 MWh	\$0.04878	3,591	\$0.05492	4,043
9	Power Supply Subtotal	237,341 MWh	8.54¢	20,270	9.02¢	21,399
10						
11	PSCR	237,341 MWh	\$0.00000	0	\$0.00000	0
12	REPS	32,000 Meters	\$0.00000	0	\$0.00000	0
13	Total Full Service Power Supply	237,341 MWh	8.54¢	20,270	9.02¢	21,399
14						
15	Full Service Distribution	Quantity Units				
16						
17	Service Charge	32,000 Cust.	\$7.50	2,880	\$7.50	2,880
18	Income Assistance	32,000 Cust.	(\$40.00)	(15,360)	(\$40.00)	(15,360)
19						
20	Distribution Charge	237,341 MWh	\$0.05699	13,526	\$0.05996	14,230
21	Distribution System	237,341 MWh	0.44¢	1,046	0.74¢	1,750
22						
23	Nuclear Decomm.	237,341 MWh	\$0.000765	182	\$0.000765	182
24	Energy Waste Reduction	237,341 MWh	\$0.004322	1,026	\$0.004322	1,026
25	LIEAF	32,000 Cust.	\$0.93	357	\$0.93	357
26	Distribution Subtotal	237,341 MWh	0.66¢	1,564	0.66¢	1,564
27						
28	Total Full Service Distribution		1.10¢	2,611	1.40¢	3,315
29	Total Full Service D1.6	237,341 MWh	9.64¢	22,880	10.41¢	24,714
30						
31	Choice	Quantity Units	Rate	Revenue (\$000)	Rate	Revenue (\$000)
32						
33	Capacity Charges					
34	First 17 KWH/Day	0 MWh	\$0.03310	0	\$0.03820	0
35	Excess	0 MWh	\$0.04878	0	\$0.05492	0
36	Total Capacity	0		0		0
37						
38	Service Charge	0 Cust.	\$7.50	0	\$7.50	0
39	Income Assistance	0 Cust.	(\$40.00)	0	(\$40.00)	0
40						
41	Distribution Charge	0 MWh	\$0.05699	0	\$0.05996	0
42	Distribution System	0 MWh		0		0
43						
44	Nuclear Decomm.	0 MWh	\$0.000765	0	\$0.000765	0
45	Energy Waste Reduction	0 MWh	\$0.004322	0	\$0.004322	0
46	LIEAF	0 Cust.	\$0.93	0	\$0.93	0
47	Distribution Subtotal	0 MWh		0		0
48						
49	Total Choice D1.6	0 MWh		0		0
50						
51	Total D1.6	237,341 MWh	9.64¢	22,880	10.41¢	24,714
52	Increase/Decrease (\$)					1,833

Michigan Public Service Commission
DTE Electric Company
Staff Transmission Unbundling

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Power Supply Revenues

Line No.	(a) Residential	(b) Power Supply Sales (MWH)	(c) Transmission Revenue Requirement (\$000's)	(d) Transmission Rate (\$000's)	(e) Non-Capacity Rate (\$000's)	(f) Non-Capacity Non-Trans Rate (\$000's)
1	D1/D1.6 Residential	13,765,328	\$132,147	\$0.00915	\$0.04697	\$0.03782
2	D1.1 Int. Air	321,293		\$0.00915	\$0.03721	\$0.02806
3	D1.2 TOD	161,650	\$1,273	\$0.00787	\$0.0457	\$0.03779
4	D1.7 TOD	107,048		\$0.00915	\$0.0276	\$0.01843
5	D1.8 Dynamic	123,219		\$0.00915	\$0.0393	\$0.03016
6	D1.9 Elec. Vehicle	3,625		\$0.00915		
	On-Peak				\$0.0891	\$0.08000
	Off-Peak				\$0.0223	\$0.01314
7	D2 Elec. Space Heat	294,420	\$2,297	\$0.00780	\$0.0458	\$0.03798
8	<u>D5 Res. Water Ht.</u>	125,084		\$0.00915	\$0.0252	\$0.01603
9	Total Residential		\$135,716			
10						
11	Secondary					
12	D1.1 Int. Air	6,171		\$0.00787	\$0.04004	\$0.03217
13	D1.7 TOD	9,266		\$0.00787	\$0.02660	\$0.01873
14	D1.8 Dynamic	278		\$0.00787	\$0.04382	\$0.03595
15	D1.9 Elec. Vehicle	0		\$0.00787		
	On-Peak				\$0.08915	\$0.08128
	Off-Peak				\$0.02228	\$0.01442
16	D3 Gen. Serv.	7,181,124	\$58,694	\$0.00787	\$0.04649	\$0.03862
17	D3.1 Unmetered	76,768		\$0.00787	\$0.07604	\$0.06817
18	D3.2 Sec. Educ.	197,953	\$1,304	\$0.00659	\$0.04569	\$0.03910
19	D3.3 Interruptible	94,451		\$0.00787	\$0.03884	\$0.03097
20	D4 Lg. Gen. Serv.	2,173,074	\$15,819			
	Demand	5,160		\$3.07	\$3.07	\$0.00
	First 200				\$0.04386	\$0.04386
	Excess				\$0.03386	\$0.03386
21	D5 Com. Wat. Ht.	4,844		\$0.00787	\$0.02737	\$0.01950
22	E1.1 Eng. St. Ltg.	9,804		\$0.00787	\$0.03214	\$0.02428
23	R7 Greenhs. Ltg.	2,686		\$0.00787	\$0.02656	\$0.01869
24	<u>R8 Space Cond.</u>	73,929		\$0.00787	\$0.04075	\$0.03288
25	Total Secondary		\$75,816			

MPSC Case No.:	<u>U-20162</u>
Requestor:	<u>Staff</u>
Question No.:	<u>STDE-11.1</u>
Respondent:	<u>R. D. Feldmann</u>
Page:	<u>1 of 1</u>

Question: Please refer to pages 2-3 of Company witness Robert D. Feldmann's rebuttal testimony. Please confirm that while seeking competitive solicitations for the construction of the Combined Heat and Power plant (CHP) is not possible as construction has already begun, the Company could seek out requests for information to benchmark construction of a CHP with specifications, location and necessary gas and infrastructure access that match the one currently under construction, from companies with expertise in construction and operation of CHP units.

Answer: Yes, The Company could seek out requests for information to benchmark construction of a CHP with specifications, location and necessary gas and infrastructure access that match the one currently under construction, from companies with expertise in construction and operation of CHP units. However, DTEE's position is that it undertook this proposed benchmarking when it retained HDR to develop a cost estimate for this project.

Attachments: N/A

DTE Electric Company
Case No. U-20162

Auditor:
Request No:
Respondent:
Page:

C. S. Matthews
CSM-8.5
J. L. Robinson
1 of 1

Request:

5. Please provide a further breakdown of the costs included in the \$34 million (2018-2020) to replace the 3300 cell relays.

Response:

There are external contracts to provide network engineering design, project management, and overhead line installation of approximately \$3.5 million, and DTE labor of approximately \$5 million. The material for the project is the largest contributor of almost \$26 million.

DTE Electric Company
Case No. U-20162

Auditor:
Request No:
Respondent:
Page:

C. S. Matthews
CSM-8.7
J. L. Robinson
1 of 1

Request:

7. What is the actual cost of a 4G cell relay?

Response:

We are still in the final stages of development and negotiation with the vendor. The approximate cost will be \$6,000. This does not include installation hardware and labor.

Michigan Public Service Commission
Energy Operations Division
DTE Electric Company
Case No: U-20162 Electric Rate Case

Auditor: Cody S. Matthews
Audit Request No: CSM-10
Date of Request: 12-17-2018
Person Responding: I. M. Dimitry
Date of Response: 12-18-2018
Page: 1 of 2

1. Please break out all costs included in Company Exhibit A-12, Schedule B5.6, page 1, Line 2 by line item.

Response:

The break out of all costs, both historical and projected, associated with the Programmable Communicating Thermostat (PCT) program included in Witness Dimitry's direct testimony, Exhibit A-12, Schedule B5.6, page 1, line 2 is as follows:

	Historical	Projected Bridge Period			Projected Test Year
	12 mos. Ended 12/31/2017	12 mos. Ending 12/31/2018	4 mos. Ending 4/30/2019	16 mos. Ending 4/30/2019	12 mos. Ending 4/30/2020
<i>Materials</i>	12	2,377	890	3,267	1,468
<i>Contractor/Outside Services</i>	1,849	1,830	-	1,830	-
<i>Labor & Overheads</i>	213	393	677	1,069	1,958
Total	2,074	4,600	1,567	6,167	3,426

The *Materials* line includes mostly the cost of purchasing and shipping the equipment (i.e., thermostats), and necessary installation when the customer requests installation assistance from the Company. The *Contractor/Outside Services* line include mainly the investment in the Distributed Energy Resource Management System (DERMS), an essential software capability, widely used in the industry to adequately execute IT integration and program implementation. The Company partnered with Omnetric as the main outside contractor for the implementation of DERMS as a result of a request for proposal. The *Labor & Overheads* line include internal work and associated external support from ICF International to plan and execute the marketing campaigns and outreach efforts to fulfill the customer enrollment and program engagement projections.

As indicated in lines 1 through 14 and Figure 3 in page IMD-12 of Witness Dimitry's direct testimony, the Company forecasted to complete the enrollment of 10,000 customers by the summer of 2019, more specifically by April 30, 2019. Although the Company has revised its interim enrollment forecast as indicated in lines 12 through 24 in page IMD Rebuttal-14 of Witness Dimitry's rebuttal testimony, the Company maintained the projected invested capital expenditures as described in Witness Dimitry's direct testimony. Therefore, the associated

Michigan Public Service Commission
Energy Operations Division
DTE Electric Company
Case No: U-20162 Electric Rate Case

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Date of Response: 12-18-2018
Page: 2 of 2

projected investment to fulfill the initial 10,000-customer enrollment goal was estimated to be \$8.2 Million in total, and is detailed as follows:

	Historical	Projected Bridge Period	Total
	12 mos. Ended 12/31/2017	16 mos. Ending 4/30/2019	1/1/2017 – 4/30/2019
<i>Materials</i>	12	3,267	3,279
<i>Contractor/Outside Services</i>	1,849	1,830	3,679
<i>Labor & Overheads</i>	213	1,069	1,282
Total	2,074	6,167	8,240

As the Commission in Order in Case No. U-18014 already approved \$2.8 Million in capital expenditures for the development of the PCT pilot program, the remaining capital expenditures needed to fulfill the initial 10,000-customer enrollment is estimated to be \$5.4 Million (\$8.2 Million minus \$2.8 Million).

MPSC Case No.:	<u>DTE Electric</u>
Requestor:	<u>M. Edelyn</u>
Question No.:	<u>MLE-11.1a</u>
Respondent:	<u>T. M. Uzenski</u>
Page:	<u>1 of 1</u>

Question: If the Commission is to issue an order in the Company's depreciation case U-18150 before the order in this instant rate case U-20162, please provide the following:

- a. Please provide what the total projected test year depreciation expense in the instant case would be using the depreciation rates approved in U-18150. The Company should also include workpapers which validate those authorized depreciation rates were used to formulate the depreciation expense.

Answer: The total projected test year depreciation expense would be \$883,748,000 using the depreciation rates recently approved in U-18150.

Attachments: *U-20162 MLE-11.1 Depreciation U-18150 Rates.xls*

MPSC Case No.:	<u>DTE Electric</u>
Requestor:	<u>M. Edelyn</u>
Question No.:	<u>MLE-11.1b</u>
Respondent:	<u>T. M. Uzenski</u>
Page:	<u>1 of 1</u>

Question: If the Commission is to issue an order in the Company's depreciation case U-18150 before the order in this instant rate case U-20162, please provide the following:

b. Provide what the difference is between the above answer and the answer provided in Audit Request No. MLE-6.1a.

Answer: As shown in the table below, the resulting depreciation expense is \$110,557,000 higher than depreciation at U-16117 current rates provided in MLE-6.1 and \$65,238,000 lower than the Company's original filing.

<u>Amounts in \$000</u>				Rate Base Impact (simple average)
	Depreciation Expense	Change		
Company Filing (U-18150 Filed Rates)	\$ 948,986			
MLE-6.1 (U-16117 Current Rates)	\$ 773,191	\$ (175,795)		\$ 87,897
MLE-11 (U-18150 Ordered Rates)	\$ 883,748	<u>\$ 110,557</u>		<u>\$ (55,278)</u>
Total Change from Filed Position		\$ (65,238)		\$ 32,619

Attachments: n/a

MPSC Case No.:	<u>DTE Electric</u>
Requestor:	<u>M. Edelyn</u>
Question No.:	<u>MLE-11.1c</u>
Respondent:	<u>T. M. Uzenski</u>
Page:	<u>1 of 1</u>

Question: If the Commission is to issue an order in the Company's depreciation case U-18150 before the order in this instant rate case U-20162, please provide the following:

- c. Provide the corresponding impact on rate base for the projected test year.

Answer: As shown in the table in MLE-11.1b, the corresponding impact on rate base for the projected test year is the simple average of the change in depreciation expense, i.e. \$55,278,000 lower than MLE-6.1 and \$32,619,000 higher than the Company's original filing.

Attachments: *n/a*

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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

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

PROOF OF SERVICE

STATE OF MICHIGAN)
) ss
COUNTY OF EATON)

CHERIE A. RICHIE, being first duly sworn, deposes and says that on
December 21, 2018, she served a true copy of **Michigan Public Service
Commission Staff's Official Exhibits** upon the following parties **via e-mail
only**:

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Cherie A. Richie

Subscribed and sworn to before me
this **21st** day of **December, 2018**.

Emily A. Jefferson, Notary Public
State of Michigan, County of Ingham
Acting in the County of Eaton
My Commission Expires: 1-11-2023