

**BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO**

THE DAYTON POWER AND LIGHT COMPANY

CASE NO. 16-0395-EL-SSO

CASE NO. 16-0397-EL-AAM

CASE NO. 16-0396-EL-ATA

2016 ELECTRIC SECURITY PLAN

**VOLUME 2 OF 8 – TESTIMONY
WITNESSES ADAMS, BROWN, COLLIER,
AND GRANDE-MORAN**

Dayton Power and Light Company

DP&L Case No. 16-0395-EL-SSO

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Vol #	Witness	Description
1	N/A	Application
1	N/A	Tariffs
2	Robert J. Adams	Distribution Investment Rider rate design; typical bill impacts
2	Eric R. Brown	Competitive bidding process; renewable energy in competitive bidding process; competitive bidding prices; Standard Offer Rate design
2	Angelique Collier	Compliance with environmental regulations
2-4	Carlos Grande-Moran	Reliability effects of closure of at-risk generation plants
5	Claire E. Hale	RER rate design; Clean Energy Rider; information sharing and Commission oversight
5	Kevin L. Hall	Distribution Investment Rider
5	David Harrison	Economic impact of closure of generation plants
5	Craig L. Jackson	DP&L's financial statements; DP&L's request for an RER; cost of long-term debt; severability clause; significantly excessive earnings test
6	Robert J. Lee	Competitive Bidding Plan
7	R. Jeffrey Malinak	Financial need of the RER generation plants and DPL Inc.; ESP v. MRO test
7	Eugene T. Meehan	Projected market prices; price effects of closure of at-risk plants
7	Mark E. Miller	DP&L's generation assets; risks facing those assets
8	Roger A. Morin	Reasonable return on equity
8	Nathan C. Parke	Overall rate plan; tariff changes; Reconciliation Rider; Distribution Decoupling Rider
8	Thomas A. Raga	Overview of case filing

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY

CASE NO. 16-0395-EL-SSO
CASE NO. 16-0397-EL-AAM
CASE NO. 16-0396-EL-ATA

DIRECT TESTIMONY OF
ROBERT J. ADAMS

- ☐ **MANAGEMENT POLICIES, PRACTICES, AND ORGANIZATION**
- ☐ **OPERATING INCOME**
- ☐ **RATE BASE**
- ☐ **ALLOCATIONS**
- ☐ **RATE OF RETURN**
- ☒ **RATES AND TARIFFS**
- ☒ **OTHER**

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO
DIRECT TESTIMONY OF
ROBERT J. ADAMS
ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY

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1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Robert J. Adams. My business address is 1065 Woodman Drive, Dayton,
4 OH 45432.

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

6 A. I am employed by The Dayton Power and Light Company ("DP&L" or "Company") as a
7 Rate Analyst III in the Regulatory Operations department.

8 **Q. What are your responsibilities in your current position?**

9 A. I am responsible for assisting in the development, analysis, revision, and administration
10 of the Company's tariff schedules, rate designs, and policies. I have responsibility for
11 regulatory compliance with the electric service and safety standards, load research and
12 sales forecasting for the department.

13 **Q. Will you describe briefly your educational and business background?**

14 A. Yes. I earned a Bachelor of Science degree in Business Economics from Wright State
15 University in April 2006. I have been employed by DP&L since 2006. I am currently
16 pursuing a Master's Degree in Social and Applied Economics at Wright State University.

17 **Q. Have you previously testified before this Commission?**

18 Yes. Most recently, I filed testimony before the Public Utilities Commission of Ohio
19 ("PUCO" or "Commission") in support of DP&L's distribution rate case, docketed in
20 Case Number 15-1830-EL-AIR. Also, I provided testimony in support of the Stipulation
21 on behalf of DP&L before the Commission in Case No. 12-1832-EL-ESS.

1 **II. PURPOSE OF TESTIMONY**

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

3 A. My testimony will support the rate design and proposed tariff for the Distribution
4 Investment Rider (“DIR”), development of the distribution sales forecast and projected
5 bill comparisons that result from the Company’s proposal in this case.

6 **Q. Are you sponsoring any exhibits?**

7 A. Yes. I am sponsoring the following exhibits:

- 8 • Exhibit RJA-1 (DIR Revenue Requirement Methodology)
- 9 • Exhibit RJA-2 (Distribution Sales Forecast)
- 10 • Exhibit RJA-3 (Customer Bills)
- 11 • Exhibit RJA-4 (Typical Bill Comparisons)

12 **III. DISTRIBUTION INVESTMENT RIDER**

13 **Q. Please describe the DIR proposal.**

14 A. As described in Company Witness Hall's testimony, the DIR is a true-up mechanism that
15 is intended to recover the capital carrying costs, associated depreciation, and property tax
16 expense for incremental investments in used and useful distribution property not already
17 included in base rates or other recovery riders. In addition, the DIR will recover specific
18 incremental operation and maintenance expenses.

19 **Q. Can you explain how the DIR will be calculated?**

20 A. Yes. The incremental revenue requirement would be determined by calculating the
21 revenue requirement at a selected date, less the revenue requirement for rate base that is

1 recovered through base rates as of the Company's date certain proposed in Case No. 15-
2 1830-EL-AIR. Exhibit RJA-1 provides an example of this calculation methodology.

3 **Q. How will the Company determine which capital investments to include in the DIR?**

4 A. The Company maintains fixed asset records in various subaccounts of the Federal
5 Energy Regulatory Commission ("FERC") Plant accounts. All jurisdictional capital
6 investments recorded in FERC Plant accounts 360 through 362 and 364 through 372 will
7 be included in this rider, excluding subaccounts pertaining to office buildings, office
8 furniture and equipment, communications equipment, and jurisdictional property for
9 which recovery and a return are provided through another means. In addition, non-
10 unitized completed distribution construction projects recorded in account 106 will be
11 included in the DIR to the extent that such projects are to add or replace asset groups
12 which are included in this rider. The DIR is intended as a mechanism for all distribution
13 upgrades classified in these applicable subaccounts of the FERC Plant accounts.

14 **Q. Is the Company proposing to include general plant accounts in the DIR?**

15 A. No. DP&L is not proposing to include general plant accounts in the DIR.

16 **Q. Is the Company proposing to include incremental Operation and Maintenance**
17 **expense as part of the DIR?**

18 Yes. The operation and maintenance costs associated with the proposed Danger Tree and
19 Workforce Adaptation programs will be included within the Company's DIR. No
20 additional distribution operation and maintenance costs will be included within the DIR.
21 Company Witness Hall supports both programs in testimony.

1 **Q. How does DP&L propose to adjust the DIR over the course of the plan?**

2 A. The Company proposes to adjust the Distribution Investment Rider every six months
3 based on actual used and useful investment.

4 **Q. How will the DIR be charged to customers?**

5 A. Since the charges are related to distribution infrastructure, the DIR will be assessed as a
6 percentage of the base distribution revenue requirement presented in Case No. 15-1830-
7 EL-AIR. This percentage will be applied to the customer's monthly base distribution and
8 customer charges to arrive at the DIR charge.

9 **Q. What procedural timeline do you propose for the DIR?**

10 A. The Company proposes to file the initial true-up of the DIR by April 1, 2017, with rates
11 effective June 1, 2017. In addition, the second true-up filing is proposed to occur
12 October 1, 2017, with rates effective December 1, 2017.

13 **IV. TYPICAL BILL COMPARISONS**

14 **Q. Please explain Exhibit RJA-4.**

15 A. Exhibit RJA-4 is a typical bill comparison that illustrates the effect of the proposed rates
16 on customer bills by tariff class for the term of the Electric Security Plan ("ESP").
17 Exhibit RJA-4 shows the dollar amount and percentage difference for a total bill at
18 various kilowatt hour usage levels.

19 **Q. Can you describe the specific rate impacts that are illustrated on Exhibit RJA-4?**

1 A. Yes. Exhibit RJA-4 measures the estimated impacts on customer bills for the period
2 2017 through 2026. The following components are included in the estimated bill
3 impacts:

- 4 • Reconciliation Rider
- 5 • Standard Offer Rate
- 6 • Reliable Electricity Rider

7 **Q. Can you describe the Adjusted Current Bill as illustrated in column (G) on Exhibit**
8 **RJA-4?**

9 A. Yes. The adjusted current bill accounts for known changes to existing DP&L riders in
10 2016. The changes include the elimination of both the Fuel Rider and the Reconciliation
11 Rider - Nonbypassable. The adjusted current bill also includes Alternative Energy Rider
12 and Competitive Bid True-up rates that are to be effective March 1st, 2016.

13 **Q. Can you describe the Standard Offer Rate Increase / (Decrease) as illustrated in**
14 **column (I) of Exhibit RJA-4 for Period 1?**

15 A. Yes. Column (I) illustrates the incremental impact of the proposed Standard Offer Rate
16 against the Company's current Competitive Bidding Rate and Alternative Energy Rider
17 base rate that is to be effective March 1st, 2016.

18 **Q. Why does the incremental impact in column (I) of Exhibit RJA-4 incorporate the**
19 **Alternative Energy Rider rate?**

20 A. As described in Company Witness Brown's testimony, the Standard Offer Rate is
21 proposed to include the cost of supplying Renewable Energy Credits to meet renewable
22 energy requirements. For this reason, and in order to ascertain an accurate impact of the

Standard Offer Rate on customer bills, the Alternative Energy Rider must be included in this calculation.

Q. Can you describe the Reliable Electricity Rider Increase / (Decrease) as illustrated in column (J) of Exhibit RJA-4 for Period 1?

A. Yes. Column (I) illustrates the incremental impact of the proposed Reliable Electricity Rider against the Company's Service Stability Rider that is currently in effect.

Q. Can you explain why the DIR is not included in the projected rate impacts?

A. Yes. An estimate of the DIR rate impact was not included since its initial true-up will occur at a future date and DP&L does not know what the balances of the respective FERC Plant accounts will be at that time.

Q. Can you describe the rate impact for a typical Residential customer in 2017 as a result of this proceeding?

A. Yes. A typical Residential customer using 1000 kWh per month can expect to experience a bill impact of \$ (0.51) per month, or -.43% increase.

V. DISTRIBUTION SALES FORECAST

Q. Can you describe what is illustrated on Exhibit RJA-2?

A. Yes. Exhibit RJA-2 to my testimony illustrates the Company's distribution sales forecast by tariff class for each year of the ESP.

Q. Describe how the forecasted billing determinants were derived for Exhibit RJA-2.

A. The forecasted billing determinants were derived using five years of historical billing data for the period January 2011 through December 2015. The historical data was used to develop allocators that represent the percentage of total for each respective kWh, kW

1 and kVar rate block. The respective allocators were then applied to the Company's Long
2 Term Forecast Report filed in Case No. 15-663-EL-FOR.

3 **Q. Can you describe what is illustrated on Exhibit RJA-3?**

4 A. Yes. Exhibit RJA-3 to my testimony illustrates the Company's annual customer bills by
5 tariff class for each year of the ESP.

6 **Q. Describe how the customer bills were derived for Exhibit RJA-3.**

7 A. The customer bill totals were derived using 12 months historical data for the period
8 January 2015 through December 2015.

9 **Q. Do you believe the values presented in Exhibit RJA-2 and Exhibit RJA-3 are**
10 **reasonable?**

11 A. Yes. The results presented in Exhibit RJA-2 and Exhibit RJA-3 are based on historical
12 billing data.

13 **VI. CONCLUSION**

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

15 A. Yes. It does.

The Dayton Power and Light Company

Case No. 16-0395-EL-SSO
Distribution Investment Rider
Revenue Requirement Calculation Methodology

Exhibit RJA-1

Page 1 of 1

Line No.	Description	September 30, 2015 ¹	December 31, 2016	Source
(A)	(B)	(C)	(D)	(E)
<u>Rate Base</u>				
1	Gross Distribution Plant	\$ 1,345,230,954	\$ -	Company Estimate
2	Accumulated Depreciation on Distribution Plant	\$ 642,166,933	\$ -	Company Estimate
3	Net Distribution Plant In Service	\$ 703,064,021	\$ -	Line 1 - Line 2
4				
5	Accumulated Deferred Income Taxes on Distribution Plant	\$ (147,941,796)	-	Company Estimate
6				
7	Distribution Rate Base for DIR	\$ 555,122,225	\$ -	Line 3 + Line 5
8				
9	Return on Rate Base (Pre-Tax %)	7.86%	7.86%	Case No. 15-1830-EL-AIR
10	Return on Rate Base (Pre-Tax)	\$ 43,632,607	\$ -	Line 7 * Line 9
11				
12	Incremental Return on Rate Base (Pre Tax)		\$ -	Line 10 Col D - Col C
13	Gross Revenue Conversion Factor		1.5498	Case No. 15-1830-EL-AIR
14				
15	Incremental Return on Rate Base (Post Tax)		\$ -	Line 12 * Line 13
16				
17	<u>Depreciation, Taxes Other than Income and O&M</u>			
18	Depreciation Expense	\$ 40,601,209	\$ -	Company Estimate
19	Property Tax Expense	\$ 44,978,513	\$ -	Company Estimate
20	Incremental O&M	\$ -	\$ -	TBD
21				
22	Total Depreciation, Other Taxes and O&M Before CAT	\$ 85,579,722	-	Sum Lines 18, 19 & 20
23				
24	Incremental Depreciation, Taxes Other than Income and O&M (Pre Tax)		\$ -	Line 22 Col D - Col C
25	Incremental Commercial Activities Tax		1.0026	Case No. 15-1830-EL-AIR
26				
27	Incremental Depreciation, Taxes Other than Income and O&M (Post Tax)		\$ -	Line 24 * Line 25
28				
29	<u>Revenue Requirement</u>			
30	Total DIR Revenue Requirement		\$ -	Line 15 + Line 27
31				
32	Annual Base Distribution Revenue Requirement		\$ 283,172,609	Case No. 15-1830-EL-AIR
33				
34	DIR Percentage of Base Distribution Revenue Requirement		<u>0.0000%</u>	Line 30 / Line 32

¹Company estimates for 9/30/2015 will be updated during initial true-up filing

The Dayton Power and Light Company

Case No. 16-0395-EL-SSO
Distribution Sales Forecast

Exhibit RJA-2

Page 1 of 1

Line	Tariff Class/Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
1	Residential Non-Heating										
2	0-750 kWh	2,396,350,143	2,398,865,947	2,391,452,601	2,378,444,236	2,365,940,534	2,373,482,479	2,383,545,692	2,397,257,854	2,400,529,201	2,400,529,201
3	> 750 kWh	<u>1,145,798,410</u>	<u>1,147,001,324</u>	<u>1,143,456,684</u>	<u>1,137,236,823</u>	<u>1,131,258,264</u>	<u>1,134,864,393</u>	<u>1,139,676,050</u>	<u>1,146,232,426</u>	<u>1,147,796,598</u>	<u>1,147,796,598</u>
4	Total	3,542,148,553	3,545,867,271	3,534,909,285	3,515,681,059	3,497,198,798	3,508,346,872	3,523,221,742	3,543,490,280	3,548,325,799	3,548,325,799
5	Residential Heating										
6	0-750 kWh (S)	345,989,049	346,352,285	345,281,933	343,403,764	341,598,458	342,687,377	344,140,321	346,120,106	346,592,428	346,592,428
7	0-750 kWh (W)	536,635,193	537,198,578	535,538,444	532,625,369	529,825,308	531,514,241	533,767,782	536,838,464	537,571,045	537,571,045
8	> 750 kWh (S)	201,572,803	201,784,424	201,160,839	200,066,619	199,014,851	199,649,253	200,495,737	201,649,157	201,924,331	201,924,331
9	> 750 kWh (W)	<u>764,501,600</u>	<u>765,304,211</u>	<u>762,939,149</u>	<u>758,789,123</u>	<u>754,800,098</u>	<u>757,206,186</u>	<u>760,416,628</u>	<u>764,791,185</u>	<u>765,834,835</u>	<u>765,834,835</u>
10	Total	1,848,698,645	1,850,639,498	1,844,920,365	1,834,884,875	1,825,238,715	1,831,057,057	1,838,820,468	1,849,398,912	1,851,922,639	1,851,922,639
11	Secondary										
12	0-5 kW	2,651,142	2,653,925	2,645,724	2,631,332	2,617,499	2,625,843	2,636,976	2,652,146	2,655,765	2,655,765
13	> 5 kW	10,379,155	10,390,052	10,357,943	10,301,601	10,247,444	10,280,110	10,323,696	10,383,087	10,397,256	10,397,256
14	0-1,500 kWh	506,147,901	506,679,279	505,113,461	502,365,884	499,724,900	501,317,881	503,443,394	506,339,624	507,030,586	507,030,586
15	1,501-125,000 kWh	2,857,901,199	2,860,901,561	2,852,060,363	2,836,546,509	2,821,634,521	2,830,629,090	2,842,630,536	2,858,983,742	2,862,885,168	2,862,885,168
16	> 125,000 kWh	639,241,240	639,912,346	637,934,790	634,464,728	631,129,288	633,141,149	635,825,573	639,483,377	640,356,029	640,356,029
17	Secondary-Max Charge										
18	0-5 kW	186,303	186,498	185,922	184,911	183,938	184,525	185,307	186,373	186,628	186,628
19	> 5 kW	815,285	816,141	813,619	809,194	804,940	807,505	810,929	815,594	816,707	816,707
20	0-1,500 kWh	26,754,464	26,782,552	26,699,785	26,554,550	26,414,951	26,499,154	26,611,506	26,764,598	26,801,122	26,801,122
21	1,501-125,000 kWh	13,623,777	13,638,080	13,595,933	13,521,978	13,450,892	13,493,769	13,550,981	13,628,937	13,647,536	13,647,536
22	> 125,000 kWh	0	0	0	0	0	0	0	0	0	0
23	Primary										
24	All kW	6,060,996	6,067,360	6,048,609	6,015,708	5,984,083	6,003,158	6,028,611	6,063,292	6,071,566	6,071,566
25	All kWh	2,844,019,169	2,847,004,957	2,838,206,703	2,822,768,207	2,807,928,653	2,816,879,531	2,828,822,682	2,845,096,453	2,848,978,929	2,848,978,929
26	All kVar	3,569,902	3,573,650	3,562,606	3,543,227	3,524,600	3,535,835	3,550,827	3,571,254	3,576,127	3,576,127
27	Primary-Max Charge										
28	All kW	99,018	99,122	98,816	98,278	97,762	98,073	98,489	99,056	99,191	99,191
29	All kWh	3,758,822	3,762,768	3,751,140	3,730,736	3,711,123	3,722,953	3,738,737	3,760,246	3,765,377	3,765,377
30	All kVar	81,786	81,871	81,618	81,175	80,748	81,005	81,349	81,817	81,928	81,928
31	Primary Substation										
32	All kW	1,117,795	1,118,968	1,115,510	1,109,443	1,103,610	1,107,128	1,111,822	1,118,218	1,119,744	1,119,744
33	All kWh	640,739,483	641,412,162	639,429,971	635,951,776	632,608,518	634,625,094	637,315,811	640,982,188	641,856,885	641,856,885
34	All kVar	628,474	629,134	627,189	623,778	620,498	622,476	625,116	628,712	629,570	629,570
35	High Voltage										
36	All kW	1,853,880	1,855,826	1,850,091	1,840,028	1,830,354	1,836,189	1,843,974	1,854,582	1,857,113	1,857,113
37	All kWh	971,373,227	972,393,021	969,387,982	964,114,972	959,046,530	962,103,698	966,182,875	971,741,172	973,067,230	973,067,230
38	All kVar	803,611	804,455	801,969	797,606	793,413	795,942	799,317	803,915	805,012	805,012
39	School-Secondary										
40	0-5 kW	5,026	5,032	5,016	4,989	4,963	4,978	5,000	5,028	5,035	5,035
41	> 5 kW	97,867	97,970	97,667	97,136	96,625	96,933	97,344	97,904	98,037	98,037
42	0-1,500 kWh	1,498,096	1,499,669	1,495,034	1,486,902	1,479,085	1,483,800	1,490,091	1,498,663	1,500,708	1,500,708
43	1,501-125,000 kWh	34,329,210	34,365,250	34,259,049	34,072,696	33,893,573	34,001,616	34,145,778	34,342,213	34,389,077	34,389,077
44	> 125,000 kWh	556,642	557,226	555,504	552,482	549,578	551,330	553,667	556,852	557,612	557,612
45	School-Primary										
46	All kW	39,944	39,986	39,863	39,646	39,437	39,563	39,731	39,959	40,014	40,014
47	All kWh	15,348,509	15,364,623	15,317,140	15,233,823	15,153,737	15,202,043	15,266,497	15,354,323	15,375,276	15,375,276
48	All kVar	23,714	23,739	23,665	23,537	23,413	23,488	23,587	23,723	23,755	23,755
49	Street Lighting										
50	All kWh	55,270,421	55,328,447	55,157,462	54,857,432	54,569,041	54,742,992	54,975,094	55,291,357	55,366,809	55,366,809
51	Private Outdoor Lighting (kWh)										
52	9500 L HP Sod.	477,059	477,560	476,084	473,494	471,005	472,506	474,510	477,240	477,891	477,891
53	28000 L HP Sod.	762,861	763,661	761,301	757,160	753,180	755,581	758,784	763,150	764,191	764,191
54	7000 L Merc. Vapor	20,448,028	20,469,495	20,406,237	20,295,237	20,188,543	20,252,898	20,338,768	20,455,773	20,483,688	20,483,688
55	21000 L Merc. Vapor	8,093,009	8,101,506	8,076,469	8,032,537	7,990,309	8,015,780	8,049,766	8,096,075	8,107,123	8,107,123
56	2500 L Incandescent	4,087	4,092	4,079	4,057	4,036	4,048	4,066	4,089	4,095	4,095
57	7000 L Fluorescent	10,640	10,651	10,618	10,561	10,505	10,539	10,583	10,644	10,659	10,659
58	4000 L PT Merc.	<u>349,929</u>	<u>350,296</u>	<u>349,214</u>	<u>347,314</u>	<u>345,488</u>	<u>346,589</u>	<u>348,059</u>	<u>350,061</u>	<u>350,539</u>	<u>350,539</u>
59	Total	30,145,613	30,177,261	30,084,002	29,920,360	29,763,066	29,857,941	29,984,536	30,157,032	30,198,186	30,198,186
60											
61	Total kWh¹	14,031,554,971	14,046,285,971	14,002,877,969	13,926,708,969	13,853,494,969	13,897,655,970	13,956,579,968	14,036,869,969	14,056,024,968	14,056,024,968
62	Total kW	23,306,412.8	23,330,881.0	23,258,780.3	23,132,263.6	23,010,655.1	23,084,006.6	23,181,879.3	23,315,241.0	23,347,057.5	23,347,057.5
63	Total kVar	5,107,486.0	5,112,848.1	5,097,047.6	5,069,322.1	5,042,672.2	5,058,746.8	5,080,195.1	5,109,420.7	5,116,393.1	5,116,393.1

¹Total kWh taken from PUCO FORM FE-D1, column (6) in Case No. 15-663-EL-FOR

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Customer Bills
For the Twelve Months Ended December 31, 2015

Exhibit RJ-3

Page 1 of 1

Line No.	Description	January 2015 - December 2015	Source:
(A)	(B)	(C)	(D)
1	Residential Non-Heating	4,187,319	Company Records
2			
3	Residential Heating	1,344,371	Company Records
4			
5	Secondary	692,732	Company Records
6	Secondary-Max Charge	35,123	Company Records
7			
8	Primary	5,513	Company Records
9	Primary - Max Charge	233	Company Records
10			
11	Primary Substation	96	Company Records
12			
13	High Voltage	108	Company Records
14			
15	School		
16	Secondary	1,032	Company Records
17	Primary	120	Company Records
18			
19	Streetlighting	2,656	Company Records
20			
21	Private Outdoor Lighting - Lamps		
22	9500 L High Pressure Sodium	12,190	Company Records
23	28000 L High Pressure Sodium	7,919	Company Records
24	7000 L Mercury Vapor	271,702	Company Records
25	21000 L Mercury Vapor	52,371	Company Records
26	2500 L Incandescent	64	Company Records
27	7000 L Fluorescent	161	Company Records
28	4000 L PT Mercury	8,110	Company Records
29			
30	Private Outdoor Lighting - Bills	226,038	Company Records

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Residential

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill	Fuel Rider Elimination Increase / (Decrease)	RR-N Elimination Increase / (Decrease)	Adjusted Current Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	0.0	50	\$10.69	(\$0.59)	\$0.04	\$10.14	\$1.30	(\$0.28)	\$0.03	\$1.05	10.36%
2	0.0	100	\$17.15	(\$1.18)	\$0.07	\$16.04	\$1.30	(\$0.57)	\$0.08	\$0.81	5.05%
3	0.0	200	\$30.05	(\$2.35)	\$0.14	\$27.84	\$1.30	(\$1.13)	\$0.14	\$0.31	1.11%
4	0.0	400	\$55.82	(\$4.70)	\$0.29	\$51.41	\$1.30	(\$2.25)	\$0.30	(\$0.65)	-1.26%
5	0.0	500	\$68.73	(\$5.88)	\$0.36	\$63.21	\$1.30	(\$2.82)	\$0.36	(\$1.16)	-1.84%
6	0.0	750	\$100.97	(\$8.82)	\$0.54	\$92.69	\$1.30	(\$4.22)	\$0.55	(\$2.37)	-2.56%
7	0.0	1,000	\$130.11	(\$11.76)	\$0.72	\$119.07	\$1.30	(\$3.02)	\$1.21	(\$0.51)	-0.43%
8	0.0	1,200	\$153.42	(\$14.11)	\$0.86	\$140.17	\$1.30	(\$2.06)	\$1.74	\$0.98	0.70%
9	0.0	1,400	\$176.75	(\$16.46)	\$1.00	\$161.29	\$1.30	(\$1.10)	\$2.26	\$2.46	1.53%
10	0.0	1,500	\$188.41	(\$17.64)	\$1.07	\$171.84	\$1.30	(\$0.60)	\$2.53	\$3.23	1.88%
11	0.0	2,000	\$246.73	(\$23.52)	\$1.43	\$224.64	\$1.30	\$1.80	\$3.84	\$6.94	3.09%
12	0.0	2,500	\$304.79	(\$29.40)	\$1.79	\$277.18	\$1.30	\$4.21	\$5.16	\$10.67	3.85%
13	0.0	3,000	\$362.83	(\$35.28)	\$2.15	\$329.70	\$1.30	\$6.63	\$6.49	\$14.42	4.37%
14	0.0	4,000	\$478.96	(\$47.04)	\$2.87	\$434.79	\$1.30	\$11.45	\$9.12	\$21.87	5.03%
15	0.0	5,000	\$595.11	(\$58.80)	\$3.58	\$539.89	\$1.30	\$16.27	\$11.76	\$29.33	5.43%
16	0.0	7,500	\$885.45	(\$88.20)	\$5.37	\$802.62	\$1.30	\$28.32	\$18.35	\$47.97	5.98%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Residential Heating (Winter)

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill (D)	Fuel Rider Elimination Increase / (Decrease) (E)	RR-N Elimination Increase / (Decrease) (F)	Adjusted Current Bill (G) = (D) + (E) + (F)	Reconciliation Rider Increase / (Decrease) (H)	Standard Offer Rate Increase / (Decrease) (I)	Reliable Electricity Rider (Increase / (Decrease) (J)	Total Increase / (Decrease) (K) = (H) + (I) + (J)	Percent Increase / (Decrease) (L) = (K) / (G)
(A)	(B)	(C)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	0.0	50	\$10.69	(\$0.59)	\$0.04	\$10.14	\$1.30	(\$0.75)	(\$0.05)	\$0.50	4.93%
2	0.0	100	\$17.15	(\$1.18)	\$0.07	\$16.04	\$1.30	(\$1.51)	(\$0.09)	(\$0.30)	-1.87%
3	0.0	200	\$30.05	(\$2.35)	\$0.14	\$27.84	\$1.30	(\$3.01)	(\$0.19)	(\$1.90)	-6.82%
4	0.0	400	\$55.82	(\$4.70)	\$0.29	\$51.41	\$1.30	(\$6.01)	(\$0.38)	(\$5.09)	-9.90%
5	0.0	500	\$68.73	(\$5.88)	\$0.36	\$63.21	\$1.30	(\$7.52)	(\$0.48)	(\$6.70)	-10.60%
6	0.0	750	\$100.97	(\$8.82)	\$0.54	\$92.69	\$1.30	(\$11.28)	(\$0.72)	(\$10.70)	-11.54%
7	0.0	1,000	\$124.62	(\$11.76)	\$0.72	\$113.58	\$1.30	(\$7.79)	\$0.37	(\$6.12)	-5.39%
8	0.0	1,200	\$143.54	(\$14.11)	\$0.86	\$130.29	\$1.30	(\$4.99)	\$1.23	(\$2.46)	-1.89%
9	0.0	1,400	\$162.49	(\$16.46)	\$1.00	\$147.03	\$1.30	(\$2.20)	\$2.09	\$1.19	0.81%
10	0.0	1,500	\$171.96	(\$17.64)	\$1.07	\$155.39	\$1.30	(\$0.80)	\$2.52	\$3.02	1.94%
11	0.0	2,000	\$219.30	(\$23.52)	\$1.43	\$197.21	\$1.30	\$6.19	\$4.68	\$12.17	6.17%
12	0.0	2,500	\$266.39	(\$29.40)	\$1.79	\$238.78	\$1.30	\$13.17	\$6.85	\$21.32	8.93%
13	0.0	3,000	\$313.47	(\$35.28)	\$2.15	\$280.34	\$1.30	\$20.17	\$9.01	\$30.48	10.87%
14	0.0	4,000	\$407.67	(\$47.04)	\$2.87	\$363.50	\$1.30	\$34.13	\$13.32	\$48.75	13.41%
15	0.0	5,000	\$501.87	(\$58.80)	\$3.58	\$446.65	\$1.30	\$48.12	\$17.65	\$67.07	15.02%
16	0.0	7,500	\$737.36	(\$88.20)	\$5.37	\$654.53	\$1.30	\$83.05	\$28.46	\$112.81	17.24%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Residential Heating (Summer)

Exhibit RJ4-4
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Line	Level of Demand	Level of Usage	Current Bill	Fuel Rider Elimination Increase / (Decrease)	RR-N Elimination Increase / (Decrease)	Adjusted Current Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B) (kW)	(C) (kWh)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	0.0	50	\$10.69	(\$0.59)	\$0.04	\$10.14	\$1.30	(\$0.28)	\$0.03	\$1.05	10.36%
2	0.0	100	\$17.15	(\$1.18)	\$0.07	\$16.04	\$1.30	(\$0.57)	\$0.08	\$0.81	5.05%
3	0.0	200	\$30.05	(\$2.35)	\$0.14	\$27.84	\$1.30	(\$1.13)	\$0.14	\$0.31	1.11%
4	0.0	400	\$55.82	(\$4.70)	\$0.29	\$51.41	\$1.30	(\$2.25)	\$0.30	(\$0.65)	-1.26%
5	0.0	500	\$68.73	(\$5.88)	\$0.36	\$63.21	\$1.30	(\$2.82)	\$0.36	(\$1.16)	-1.84%
6	0.0	750	\$100.97	(\$8.82)	\$0.54	\$92.69	\$1.30	(\$4.22)	\$0.55	(\$2.37)	-2.56%
7	0.0	1,000	\$130.11	(\$11.76)	\$0.72	\$119.07	\$1.30	(\$3.02)	\$1.21	(\$0.51)	-0.43%
8	0.0	1,200	\$153.42	(\$14.11)	\$0.86	\$140.17	\$1.30	(\$2.06)	\$1.74	\$0.98	0.70%
9	0.0	1,400	\$176.75	(\$16.46)	\$1.00	\$161.29	\$1.30	(\$1.10)	\$2.26	\$2.46	1.53%
10	0.0	1,500	\$188.41	(\$17.64)	\$1.07	\$171.84	\$1.30	(\$0.60)	\$2.53	\$3.23	1.88%
11	0.0	2,000	\$246.73	(\$23.52)	\$1.43	\$224.64	\$1.30	\$1.80	\$3.84	\$6.94	3.09%
12	0.0	2,500	\$304.79	(\$29.40)	\$1.79	\$277.18	\$1.30	\$4.21	\$5.16	\$10.67	3.85%
13	0.0	3,000	\$362.83	(\$35.28)	\$2.15	\$329.70	\$1.30	\$6.63	\$6.49	\$14.42	4.37%
14	0.0	4,000	\$478.96	(\$47.04)	\$2.87	\$434.79	\$1.30	\$11.45	\$9.12	\$21.87	5.03%
15	0.0	5,000	\$595.11	(\$58.80)	\$3.58	\$539.89	\$1.30	\$16.27	\$11.76	\$29.33	5.43%
16	0.0	7,500	\$885.45	(\$88.20)	\$5.37	\$802.62	\$1.30	\$28.32	\$18.35	\$47.97	5.98%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Secondary Unmetered

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill (D)	Fuel Rider Elimination Increase / (Decrease) (E)	RR-N Elimination Increase / (Decrease) (F)	Adjusted Current Bill (G) = (D) + (E) + (F)	Reconciliation Rider Increase / (Decrease) (H)	Standard Offer Rate Increase / (Decrease) (I)	Reliable Electricity Rider (Increase / (Decrease) (J)	Total Increase / (Decrease) (K) = (H) + (I) + (J)	Percent Increase / (Decrease) (L) = (K) / (G)
(A)	(B)	(C)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	5.0	50	\$13.51	(\$0.59)	\$0.04	\$12.96	\$4.67	(\$1.15)	\$5.44	\$8.96	69.14%
2	5.0	100	\$20.39	(\$1.18)	\$0.07	\$19.28	\$4.67	(\$2.32)	\$5.24	\$7.59	39.37%
3	5.0	150	\$27.22	(\$1.76)	\$0.11	\$25.57	\$4.67	(\$3.47)	\$5.03	\$6.23	24.36%
4	5.0	200	\$34.08	(\$2.35)	\$0.14	\$31.87	\$4.67	(\$4.62)	\$4.82	\$4.87	15.28%
5	5.0	300	\$47.78	(\$3.53)	\$0.21	\$44.46	\$4.67	(\$6.93)	\$4.42	\$2.16	4.86%
6	5.0	400	\$61.47	(\$4.70)	\$0.29	\$57.06	\$4.67	(\$9.23)	\$4.00	(\$0.56)	-0.98%
7	5.0	500	\$75.20	(\$5.88)	\$0.36	\$69.68	\$4.67	(\$11.55)	\$3.59	(\$3.29)	-4.72%
8	5.0	600	\$88.91	(\$7.06)	\$0.43	\$82.28	\$4.67	(\$13.86)	\$3.17	(\$6.02)	-7.32%
9	5.0	800	\$116.30	(\$9.41)	\$0.57	\$107.46	\$4.67	(\$18.47)	\$2.34	(\$11.46)	-10.66%
10	5.0	1,000	\$143.70	(\$11.76)	\$0.72	\$132.66	\$4.67	(\$23.09)	\$1.52	(\$16.90)	-12.74%
11	5.0	1,200	\$171.12	(\$14.11)	\$0.86	\$157.87	\$4.67	(\$27.71)	\$0.69	(\$22.35)	-14.16%
12	5.0	1,400	\$198.51	(\$16.46)	\$1.00	\$183.05	\$4.67	(\$32.34)	(\$0.12)	(\$27.79)	-15.18%
13	5.0	1,600	\$219.26	(\$18.82)	\$1.15	\$201.59	\$4.67	(\$32.75)	(\$0.39)	(\$28.47)	-14.12%
14	5.0	2,000	\$247.35	(\$23.52)	\$1.43	\$225.26	\$4.67	(\$25.21)	\$0.24	(\$20.30)	-9.01%
15	5.0	2,200	\$261.28	(\$25.87)	\$1.58	\$236.99	\$4.67	(\$21.44)	\$0.55	(\$16.22)	-6.84%
16	5.0	2,400	\$275.22	(\$28.22)	\$1.72	\$248.72	\$4.67	(\$17.66)	\$0.86	(\$12.13)	-4.88%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Secondary Single Phase

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill (D)	Fuel Rider Elimination Increase / (Decrease) (E)	RR-N Elimination Increase / (Decrease) (F)	Adjusted Current Bill (G) = (D) + (E) + (F)	Reconciliation Rider Increase / (Decrease) (H)	Standard Offer Rate Increase / (Decrease) (I)	Reliable Electricity Rider (Increase / (Decrease) (J)	Total Increase / (Decrease) (K) = (H) + (I) + (J)	Percent Increase / (Decrease) (L) = (K) / (G)
(A)	(B)	(C)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	5	750	\$111.44	(\$8.82)	\$0.54	\$103.16	\$4.67	(\$17.32)	\$2.55	(\$10.10)	-9.79%
2	5	1,500	\$214.23	(\$17.64)	\$1.07	\$197.66	\$4.67	(\$34.63)	(\$0.54)	(\$30.50)	-15.43%
3	10	1,500	\$268.49	(\$17.64)	\$1.07	\$251.92	\$4.67	(\$55.97)	(\$0.94)	(\$52.24)	-20.74%
4	25	5,000	\$675.60	(\$58.80)	\$3.58	\$620.38	\$4.67	(\$54.00)	\$3.33	(\$46.00)	-7.41%
5	25	7,500	\$849.96	(\$88.20)	\$5.37	\$767.13	\$4.67	(\$6.87)	\$7.23	\$5.03	0.66%
6	25	10,000	\$1,024.30	(\$117.60)	\$7.16	\$913.86	\$4.67	\$40.28	\$11.15	\$56.10	6.14%
7	50	15,000	\$1,644.32	(\$176.40)	\$10.74	\$1,478.66	\$4.67	\$27.88	\$16.96	\$49.51	3.35%
8	50	25,000	\$2,336.09	(\$294.00)	\$17.91	\$2,060.00	\$4.67	\$216.45	\$32.59	\$253.71	12.32%
9	200	50,000	\$5,693.56	(\$588.01)	\$35.82	\$5,141.37	\$4.67	\$47.64	\$59.68	\$111.99	2.18%
10	200	100,000	\$9,152.53	(\$1,176.01)	\$71.63	\$8,048.15	\$4.67	\$990.53	\$137.83	\$1,133.03	14.08%
11	300	125,000	\$11,967.29	(\$1,470.01)	\$89.54	\$10,586.82	\$4.67	\$1,035.14	\$168.90	\$1,208.71	11.42%
12	500	200,000	\$18,920.88	(\$2,352.02)	\$143.26	\$16,712.12	\$4.67	\$1,951.01	\$320.42	\$2,276.10	13.62%
13	1,000	300,000	\$30,724.62	(\$3,528.03)	\$214.89	\$27,411.48	\$4.67	\$2,176.24	\$503.77	\$2,684.68	9.79%
14	1,000	500,000	\$43,479.28	(\$5,880.05)	\$358.15	\$37,957.38	\$4.67	\$6,894.98	\$950.51	\$7,850.16	20.68%
15	2,500	750,000	\$75,701.86	(\$8,820.08)	\$537.23	\$67,419.01	\$4.67	\$6,390.99	\$1,388.88	\$7,784.54	11.55%
16	2,500	1,000,000	\$91,290.70	(\$11,760.10)	\$716.30	\$80,246.90	\$4.67	\$12,289.42	\$1,947.30	\$14,241.39	17.75%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Secondary Three Phase

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill (D)	Fuel Rider Elimination Increase / (Decrease) (E)	RR-N Elimination Increase / (Decrease) (F)	Adjusted Current Bill (G) = (D) + (E) + (F)	Reconciliation Rider Increase / (Decrease) (H)	Standard Offer Rate Increase / (Decrease) (I)	Reliable Electricity Rider (Increase / (Decrease) (J)	Total Increase / (Decrease) (K) = (H) + (I) + (J)	Percent Increase / (Decrease) (L) = (K) / (G)
(A)	(B)	(C)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	5	500	\$84.53	(\$5.88)	\$0.36	\$79.01	\$4.67	(\$11.55)	\$3.59	(\$3.29)	-4.16%
2	5	1,500	\$221.57	(\$17.64)	\$1.07	\$205.00	\$4.67	(\$34.63)	(\$0.54)	(\$30.50)	-14.88%
3	10	1,500	\$275.83	(\$17.64)	\$1.07	\$259.26	\$4.67	(\$55.97)	(\$0.94)	(\$52.24)	-20.15%
4	25	5,000	\$682.94	(\$58.80)	\$3.58	\$627.72	\$4.67	(\$54.00)	\$3.33	(\$46.00)	-7.33%
5	25	7,500	\$857.30	(\$88.20)	\$5.37	\$774.47	\$4.67	(\$6.87)	\$7.23	\$5.03	0.65%
6	25	10,000	\$1,031.64	(\$117.60)	\$7.16	\$921.20	\$4.67	\$40.28	\$11.15	\$56.10	6.09%
7	50	25,000	\$2,343.43	(\$294.00)	\$17.91	\$2,067.34	\$4.67	\$216.45	\$32.59	\$253.71	12.27%
8	200	50,000	\$5,700.90	(\$588.01)	\$35.82	\$5,148.71	\$4.67	\$47.64	\$59.68	\$111.99	2.18%
9	200	125,000	\$10,889.35	(\$1,470.01)	\$89.54	\$9,508.88	\$4.67	\$1,461.97	\$176.91	\$1,643.55	17.28%
10	500	200,000	\$18,928.22	(\$2,352.02)	\$143.26	\$16,719.46	\$4.67	\$1,951.01	\$320.42	\$2,276.10	13.61%
11	1,000	300,000	\$30,731.96	(\$3,528.03)	\$214.89	\$27,418.82	\$4.67	\$2,176.24	\$503.77	\$2,684.68	9.79%
12	1,000	500,000	\$43,486.62	(\$5,880.05)	\$358.15	\$37,964.72	\$4.67	\$6,894.98	\$950.51	\$7,850.16	20.68%
13	2,500	750,000	\$75,709.20	(\$8,820.08)	\$537.23	\$67,426.35	\$4.67	\$6,390.99	\$1,388.88	\$7,784.54	11.55%
14	2,500	1,000,000	\$91,298.04	(\$11,760.10)	\$716.30	\$80,254.24	\$4.67	\$12,289.42	\$1,947.30	\$14,241.39	17.75%
15	5,000	1,500,000	\$149,255.49	(\$17,640.15)	\$1,074.45	\$132,689.79	\$4.67	\$13,415.58	\$2,864.06	\$16,284.31	12.27%
16	5,000	2,000,000	\$180,080.89	(\$23,520.20)	\$1,432.60	\$157,993.29	\$4.67	\$25,212.43	\$3,980.91	\$29,198.01	18.48%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Primary Service

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill (D)	Fuel Rider Elimination Increase / (Decrease) (E)	RR-N Elimination Increase / (Decrease) (F)	Adjusted Current Bill (G) = (D) + (E) + (F)	Reconciliation Rider Increase / (Decrease) (H)	Standard Offer Rate Increase / (Decrease) (I)	Reliable Electricity Rider (Increase / (Decrease) (J)	Total Increase / (Decrease) (K) = (H) + (I) + (J)	Percent Increase / (Decrease) (L) = (K) / (G)
(A)	(B)	(C)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	5	1,000	\$211.32	(\$11.45)	\$0.72	\$200.59	\$4.67	(\$7.50)	\$1.78	(\$1.05)	-0.52%
2	5	2,500	\$324.06	(\$28.62)	\$1.79	\$297.23	\$4.67	\$6.85	\$2.70	\$14.22	4.78%
3	10	5,000	\$552.20	(\$57.25)	\$3.58	\$498.53	\$4.67	\$13.72	\$5.39	\$23.78	4.77%
4	25	7,500	\$862.48	(\$85.87)	\$5.37	\$781.98	\$4.67	(\$13.59)	\$10.42	\$1.50	0.19%
5	25	10,000	\$1,049.58	(\$114.49)	\$7.16	\$942.25	\$4.67	\$10.36	\$11.95	\$26.98	2.86%
6	50	20,000	\$2,000.42	(\$228.99)	\$14.33	\$1,785.76	\$4.67	\$20.71	\$23.91	\$49.29	2.76%
7	50	30,000	\$2,743.26	(\$343.48)	\$21.49	\$2,421.27	\$4.67	\$116.46	\$30.02	\$151.15	6.24%
8	200	50,000	\$5,460.28	(\$572.47)	\$35.82	\$4,923.63	\$4.67	(\$204.40)	\$77.26	(\$122.47)	-2.49%
9	200	75,000	\$7,317.37	(\$858.71)	\$53.72	\$6,512.38	\$4.67	\$34.98	\$92.55	\$132.20	2.03%
10	200	100,000	\$9,174.46	(\$1,144.94)	\$71.63	\$8,101.15	\$4.67	\$274.34	\$107.83	\$386.84	4.78%
11	500	250,000	\$22,779.69	(\$2,862.35)	\$179.08	\$20,096.42	\$4.67	\$685.85	\$269.57	\$960.09	4.78%
12	1,000	500,000	\$45,454.94	(\$5,724.70)	\$358.15	\$40,088.39	\$4.67	\$1,371.72	\$539.15	\$1,915.54	4.78%
13	2,500	1,000,000	\$94,555.43	(\$11,449.40)	\$716.30	\$83,822.33	\$4.67	\$1,035.62	\$1,195.04	\$2,235.33	2.67%
14	5,000	2,500,000	\$223,319.26	(\$28,623.50)	\$1,790.75	\$196,486.51	\$4.67	\$6,858.59	\$2,695.74	\$9,559.00	4.86%
15	10,000	5,000,000	\$444,766.18	(\$57,247.00)	\$3,581.50	\$391,100.68	\$4.67	\$13,717.17	\$5,391.48	\$19,113.32	4.89%
16	25,000	7,500,000	\$748,298.94	(\$85,870.50)	\$5,372.25	\$667,800.69	\$4.67	(\$13,580.57)	\$10,422.19	(\$3,153.71)	-0.47%
17	25,000	10,000,000	\$928,702.94	(\$114,494.00)	\$7,163.00	\$821,371.94	\$4.67	\$10,356.18	\$11,950.44	\$22,311.29	2.72%
18	50,000	15,000,000	\$1,494,725.49	(\$171,741.00)	\$10,744.50	\$1,333,728.99	\$4.67	(\$27,161.13)	\$20,844.39	(\$6,312.07)	-0.47%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Primary Substation

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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill (D)	Fuel Rider Elimination Increase / (Decrease) (E)	RR-N Elimination Increase / (Decrease) (F)	Adjusted Current Bill (G) = (D) + (E) + (F)	Reconciliation Rider Increase / (Decrease) (H)	Standard Offer Rate Increase / (Decrease) (I)	Reliable Electricity Rider (Increase / (Decrease) (J)	Total Increase / (Decrease) (K) = (H) + (I) + (J)	Percent Increase / (Decrease) (L) = (K) / (G)
(A)	(B)	(C)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	3,000	1,000,000	\$95,941.39	(\$11,326.90)	\$716.30	\$85,330.79	\$4.67	(\$2,993.40)	\$1,321.03	(\$1,667.70)	-1.95%
2	5,000	2,000,000	\$182,413.83	(\$22,653.80)	\$1,432.60	\$161,192.63	\$4.67	(\$1,965.79)	\$2,385.64	\$424.52	0.26%
3	5,000	3,000,000	\$253,843.13	(\$33,980.70)	\$2,148.90	\$222,011.33	\$4.67	\$7,103.81	\$2,937.44	\$10,045.92	4.52%
4	10,000	4,000,000	\$362,880.29	(\$45,307.60)	\$2,865.20	\$320,437.89	\$4.67	(\$3,931.59)	\$4,771.28	\$844.36	0.26%
5	10,000	5,000,000	\$434,309.59	(\$56,634.50)	\$3,581.50	\$381,256.59	\$4.67	\$5,138.01	\$5,323.08	\$10,465.76	2.75%
6	15,000	6,000,000	\$543,346.76	(\$67,961.40)	\$4,297.80	\$479,683.16	\$4.67	(\$5,897.38)	\$7,156.92	\$1,264.21	0.26%
7	15,000	7,000,000	\$614,776.06	(\$79,288.30)	\$5,014.10	\$540,501.86	\$4.67	\$3,172.22	\$7,708.72	\$10,885.61	2.01%
8	15,000	8,000,000	\$686,205.36	(\$90,615.20)	\$5,730.40	\$601,320.56	\$4.67	\$12,241.82	\$8,260.52	\$20,507.01	3.41%
9	25,000	9,000,000	\$832,850.42	(\$101,942.10)	\$6,446.70	\$737,355.02	\$4.67	(\$18,898.57)	\$11,376.40	(\$7,517.50)	-1.02%
10	25,000	10,000,000	\$904,279.72	(\$113,269.00)	\$7,163.00	\$798,173.72	\$4.67	(\$9,828.97)	\$11,928.20	\$2,103.90	0.26%
11	30,000	12,500,000	\$1,120,460.83	(\$141,586.25)	\$8,953.75	\$987,828.33	\$4.67	(\$7,259.96)	\$14,589.75	\$7,334.46	0.74%
12	30,000	15,000,000	\$1,299,034.08	(\$169,903.50)	\$10,744.50	\$1,139,875.08	\$4.67	\$15,414.04	\$15,969.25	\$31,387.96	2.75%
13	50,000	17,500,000	\$1,628,038.79	(\$198,220.75)	\$12,535.25	\$1,442,353.29	\$4.67	(\$42,331.93)	\$22,476.91	(\$19,850.35)	-1.38%
14	50,000	20,000,000	\$1,806,612.04	(\$226,538.00)	\$14,326.00	\$1,594,400.04	\$4.67	(\$19,657.93)	\$23,856.41	\$4,203.15	0.26%
15	50,000	25,000,000	\$2,163,758.54	(\$283,172.50)	\$17,907.50	\$1,898,493.54	\$4.67	\$25,690.07	\$26,615.41	\$52,310.15	2.76%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
High Voltage Service

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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill (D)	Fuel Rider Elimination Increase / (Decrease) (E)	RR-N Elimination Increase / (Decrease) (F)	Adjusted Current Bill (G) = (D) + (E) + (F)	Reconciliation Rider Increase / (Decrease) (H)	Standard Offer Rate Increase / (Decrease) (I)	Reliable Electricity Rider (Increase / (Decrease) (J)	Total Increase / (Decrease) (K) = (H) + (I) + (J)	Percent Increase / (Decrease) (L) = (K) / (G)
(A)	(B)	(C)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	1,000	500,000	\$44,192.20	(\$5,663.45)	\$358.15	\$38,886.90	\$4.67	\$736.42	\$545.90	\$1,286.99	3.31%
2	2,000	1,000,000	\$87,750.61	(\$11,326.90)	\$716.30	\$77,140.01	\$4.67	\$1,472.83	\$1,091.81	\$2,569.31	3.33%
3	3,000	1,500,000	\$130,602.29	(\$16,990.35)	\$1,074.45	\$114,686.39	\$4.67	\$2,209.25	\$1,637.71	\$3,851.63	3.36%
4	3,500	2,000,000	\$169,644.30	(\$22,653.80)	\$1,432.60	\$148,423.10	\$4.67	\$5,087.96	\$2,052.84	\$7,145.47	4.81%
5	5,000	2,500,000	\$216,305.55	(\$28,317.25)	\$1,790.75	\$189,779.05	\$4.67	\$3,682.08	\$2,729.52	\$6,416.27	3.38%
6	7,500	3,000,000	\$270,585.96	(\$33,980.70)	\$2,148.90	\$238,754.16	\$4.67	(\$2,008.38)	\$3,667.75	\$1,664.04	0.70%
7	7,500	4,000,000	\$341,050.86	(\$45,307.60)	\$2,865.20	\$298,608.46	\$4.67	\$8,033.62	\$4,236.45	\$12,274.74	4.11%
8	10,000	5,000,000	\$430,563.73	(\$56,634.50)	\$3,581.50	\$377,510.73	\$4.67	\$7,364.16	\$5,459.04	\$12,827.87	3.40%
9	10,000	6,000,000	\$501,028.63	(\$67,961.40)	\$4,297.80	\$437,365.03	\$4.67	\$17,406.16	\$6,027.74	\$23,438.57	5.36%
10	12,500	7,000,000	\$590,541.48	(\$79,288.30)	\$5,014.10	\$516,267.28	\$4.67	\$16,736.71	\$7,250.33	\$23,991.71	4.65%
11	12,500	8,000,000	\$661,006.38	(\$90,615.20)	\$5,730.40	\$576,121.58	\$4.67	\$26,778.71	\$7,819.03	\$34,602.41	6.01%
12	15,000	9,000,000	\$750,519.26	(\$101,942.10)	\$6,446.70	\$655,023.86	\$4.67	\$26,109.25	\$9,041.61	\$35,155.53	5.37%
13	20,000	10,000,000	\$859,080.09	(\$113,269.00)	\$7,163.00	\$752,974.09	\$4.67	\$14,728.33	\$10,918.08	\$25,651.08	3.41%
14	40,000	20,000,000	\$1,716,112.87	(\$226,538.00)	\$14,326.00	\$1,503,900.87	\$4.67	\$29,456.66	\$21,836.15	\$51,297.48	3.41%
15	60,000	30,000,000	\$2,573,145.60	(\$339,807.00)	\$21,489.00	\$2,254,827.60	\$4.67	\$44,184.99	\$32,754.24	\$76,943.90	3.41%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Private Outdoor Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill (D)	Fuel Rider Elimination Increase / (Decrease) (E)	RR-N Elimination Increase / (Decrease) (F)	Adjusted Current Bill (G) = (D) + (E) + (F)	Reconciliation Rider Increase / (Decrease) (H)	Standard Offer Rate Increase / (Decrease) (I)	Reliable Electricity Rider (Increase / (Decrease) (J)	Total Increase / (Decrease) (K) = (H) + (I) + (J)	Percent Increase / (Decrease) (L) = (K) / (G)
1	7000										
2	Mercury	75	\$11.52	(\$0.88)	\$0.05	\$10.69	\$0.52	\$0.92	\$0.04	\$1.48	13.84%
3	21000										
4	Mercury	154	\$23.63	(\$1.81)	\$0.11	\$21.93	\$0.52	\$1.89	\$0.12	\$2.53	11.54%
5	2500										
6	Incandescent	64	\$9.91	(\$0.75)	\$0.05	\$9.21	\$0.52	\$0.78	(\$0.04)	\$1.26	13.68%
7	7000										
8	Fluorescent	66	\$10.34	(\$0.78)	\$0.05	\$9.61	\$0.52	\$0.81	(\$0.15)	\$1.18	12.28%
9	4000										
10	Mercury	43	\$7.09	(\$0.51)	\$0.03	\$6.61	\$0.52	\$0.53	(\$0.44)	\$0.61	9.23%
11	9500										
12	High Pressure Sodium	39	\$8.80	(\$0.46)	\$0.03	\$8.37	\$0.52	\$0.47	\$0.02	\$1.01	12.07%
13	28000										
14	High Pressure Sodium	96	\$13.84	(\$1.13)	\$0.07	\$12.78	\$0.52	\$1.18	\$0.07	\$1.77	13.85%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 1
2017
Street Lighting

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	Current Bill (D)	Fuel Rider Elimination Increase / (Decrease) (E)	RR-N Elimination Increase / (Decrease) (F)	Adjusted Current Bill (G) = (D) + (E) + (F)	Reconciliation Rider Increase / (Decrease) (H)	Standard Offer Rate Increase / (Decrease) (I)	Reliable Electricity Rider (Increase / (Decrease) (J)	Total Increase / (Decrease) (K) = (H) + (I) + (J)	Percent Increase / (Decrease) (L) = (K) / (G)
(A)	(B)	(C)	(D)	(E)	(F)	(G) = (D) + (E) + (F)	(H)	(I)	(J)	(K) = (H) + (I) + (J)	(L) = (K) / (G)
1	0	50	\$6.41	(\$0.59)	\$0.04	\$5.86	\$4.67	\$0.60	\$0.02	\$5.29	90.27%
2	0	100	\$10.82	(\$1.18)	\$0.07	\$9.71	\$4.67	\$1.19	\$0.05	\$5.91	60.87%
3	0	200	\$19.62	(\$2.35)	\$0.14	\$17.41	\$4.67	\$2.40	\$0.09	\$7.16	41.13%
4	0	400	\$37.25	(\$4.70)	\$0.29	\$32.84	\$4.67	\$4.80	\$0.18	\$9.65	29.38%
5	0	500	\$46.08	(\$5.88)	\$0.36	\$40.56	\$4.67	\$6.00	\$0.23	\$10.90	26.87%
6	0	750	\$68.11	(\$8.82)	\$0.54	\$59.83	\$4.67	\$9.00	\$0.34	\$14.01	23.42%
7	0	1,000	\$90.13	(\$11.76)	\$0.72	\$79.09	\$4.67	\$12.00	\$0.46	\$17.13	21.66%
8	0	1,200	\$107.75	(\$14.11)	\$0.86	\$94.50	\$4.67	\$14.40	\$0.55	\$19.62	20.76%
9	0	1,400	\$125.38	(\$16.46)	\$1.00	\$109.92	\$4.67	\$16.79	\$0.64	\$22.10	20.11%
10	0	1,600	\$143.02	(\$18.82)	\$1.15	\$125.35	\$4.67	\$19.20	\$0.73	\$24.60	19.63%
11	0	2,000	\$178.28	(\$23.52)	\$1.43	\$156.19	\$4.67	\$24.00	\$0.92	\$29.59	18.94%
12	0	2,500	\$222.12	(\$29.40)	\$1.79	\$194.51	\$4.67	\$30.00	\$1.15	\$35.82	18.42%
13	0	3,000	\$265.95	(\$35.28)	\$2.15	\$232.82	\$4.67	\$36.00	\$1.38	\$42.05	18.06%
14	0	4,000	\$353.61	(\$47.04)	\$2.87	\$309.44	\$4.67	\$48.00	\$1.83	\$54.50	17.61%
15	0	5,000	\$441.30	(\$58.80)	\$3.58	\$386.08	\$4.67	\$60.00	\$2.29	\$66.96	17.34%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 2
2018
Residential

Exhibit RJA-4

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Line	Level of Demand (kW)	Level of Usage (kWh)	2017 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$9.89	\$0.00	\$0.19	(\$0.10)	\$0.09	0.91%
2	0.0	100	\$15.55	\$0.00	\$0.38	(\$0.22)	\$0.16	1.03%
3	0.0	200	\$26.85	\$0.00	\$0.75	(\$0.43)	\$0.32	1.19%
4	0.0	400	\$49.46	\$0.00	\$1.50	(\$0.87)	\$0.63	1.27%
5	0.0	500	\$60.75	\$0.00	\$1.88	(\$1.08)	\$0.80	1.32%
6	0.0	750	\$89.02	\$0.00	\$2.81	(\$1.62)	\$1.19	1.34%
7	0.0	1,000	\$117.26	\$0.00	\$3.75	(\$2.17)	\$1.58	1.35%
8	0.0	1,200	\$139.85	\$0.00	\$4.50	(\$2.60)	\$1.90	1.36%
9	0.0	1,400	\$162.45	\$0.00	\$5.25	(\$3.02)	\$2.23	1.37%
10	0.0	1,500	\$173.77	\$0.00	\$5.62	(\$3.24)	\$2.38	1.37%
11	0.0	2,000	\$230.28	\$0.00	\$7.49	(\$4.32)	\$3.17	1.38%
12	0.0	2,500	\$286.55	\$0.00	\$9.37	(\$5.40)	\$3.97	1.39%
13	0.0	3,000	\$342.82	\$0.00	\$11.24	(\$6.49)	\$4.75	1.39%
14	0.0	4,000	\$455.36	\$0.00	\$14.98	(\$8.64)	\$6.34	1.39%
15	0.0	5,000	\$567.92	\$0.00	\$18.74	(\$10.81)	\$7.93	1.40%
16	0.0	7,500	\$849.29	\$0.00	\$28.10	(\$16.21)	\$11.89	1.40%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 2
2018
Residential Heating (Winter)

Exhibit RJA-4
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Line	Level of Demand	Level of Usage	2017 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$9.34	\$0.00	\$0.16	(\$0.09)	\$0.07	0.75%
2	0.0	100	\$14.44	\$0.00	\$0.32	(\$0.19)	\$0.13	0.90%
3	0.0	200	\$24.64	\$0.00	\$0.64	(\$0.37)	\$0.27	1.10%
4	0.0	400	\$45.02	\$0.00	\$1.27	(\$0.73)	\$0.54	1.20%
5	0.0	500	\$55.21	\$0.00	\$1.58	(\$0.92)	\$0.66	1.20%
6	0.0	750	\$80.69	\$0.00	\$2.38	(\$1.37)	\$1.01	1.25%
7	0.0	1,000	\$106.16	\$0.00	\$3.18	(\$1.84)	\$1.34	1.26%
8	0.0	1,200	\$126.53	\$0.00	\$3.81	(\$2.20)	\$1.61	1.27%
9	0.0	1,400	\$146.92	\$0.00	\$4.44	(\$2.57)	\$1.87	1.27%
10	0.0	1,500	\$157.11	\$0.00	\$4.76	(\$2.74)	\$2.02	1.29%
11	0.0	2,000	\$208.08	\$0.00	\$6.35	(\$3.66)	\$2.69	1.29%
12	0.0	2,500	\$258.80	\$0.00	\$7.94	(\$4.58)	\$3.36	1.30%
13	0.0	3,000	\$309.52	\$0.00	\$9.52	(\$5.50)	\$4.02	1.30%
14	0.0	4,000	\$410.95	\$0.00	\$12.70	(\$7.32)	\$5.38	1.31%
15	0.0	5,000	\$512.42	\$0.00	\$15.87	(\$9.16)	\$6.71	1.31%
16	0.0	7,500	\$766.04	\$0.00	\$23.81	(\$13.74)	\$10.07	1.31%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 2
2018
Residential Heating (Summer)

Exhibit RJA-4
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Line	Level of Demand	Level of Usage	2017 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$9.89	\$0.00	\$0.19	(\$0.10)	\$0.09	0.91%
2	0.0	100	\$15.55	\$0.00	\$0.38	(\$0.22)	\$0.16	1.03%
3	0.0	200	\$26.85	\$0.00	\$0.75	(\$0.43)	\$0.32	1.19%
4	0.0	400	\$49.46	\$0.00	\$1.50	(\$0.87)	\$0.63	1.27%
5	0.0	500	\$60.75	\$0.00	\$1.88	(\$1.08)	\$0.80	1.32%
6	0.0	750	\$89.02	\$0.00	\$2.81	(\$1.62)	\$1.19	1.34%
7	0.0	1,000	\$117.26	\$0.00	\$3.75	(\$2.17)	\$1.58	1.35%
8	0.0	1,200	\$139.85	\$0.00	\$4.50	(\$2.60)	\$1.90	1.36%
9	0.0	1,400	\$162.45	\$0.00	\$5.25	(\$3.02)	\$2.23	1.37%
10	0.0	1,500	\$173.77	\$0.00	\$5.62	(\$3.24)	\$2.38	1.37%
11	0.0	2,000	\$230.28	\$0.00	\$7.49	(\$4.32)	\$3.17	1.38%
12	0.0	2,500	\$286.55	\$0.00	\$9.37	(\$5.40)	\$3.97	1.39%
13	0.0	3,000	\$342.82	\$0.00	\$11.24	(\$6.49)	\$4.75	1.39%
14	0.0	4,000	\$455.36	\$0.00	\$14.98	(\$8.64)	\$6.34	1.39%
15	0.0	5,000	\$567.92	\$0.00	\$18.74	(\$10.81)	\$7.93	1.40%
16	0.0	7,500	\$849.29	\$0.00	\$28.10	(\$16.21)	\$11.89	1.40%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 2
2018
Secondary Unmetered

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Line	Level of Demand (kW)	Level of Usage (kWh)	2017 Projected Bill (D) = Period 1 Col (G) + (K) - (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	5.0	50	\$17.25	\$0.00	\$0.19	(\$1.16)	(\$0.97)	-5.62%
2	5.0	100	\$22.20	\$0.00	\$0.38	(\$1.22)	(\$0.84)	-3.78%
3	5.0	150	\$27.13	\$0.00	\$0.57	(\$1.27)	(\$0.70)	-2.58%
4	5.0	200	\$32.07	\$0.00	\$0.75	(\$1.33)	(\$0.58)	-1.81%
5	5.0	300	\$41.95	\$0.00	\$1.12	(\$1.46)	(\$0.34)	-0.81%
6	5.0	400	\$51.83	\$0.00	\$1.50	(\$1.57)	(\$0.07)	-0.14%
7	5.0	500	\$61.72	\$0.00	\$1.88	(\$1.69)	\$0.19	0.31%
8	5.0	600	\$71.59	\$0.00	\$2.25	(\$1.80)	\$0.45	0.63%
9	5.0	800	\$91.33	\$0.00	\$3.00	(\$2.04)	\$0.96	1.05%
10	5.0	1,000	\$111.09	\$0.00	\$3.75	(\$2.28)	\$1.47	1.32%
11	5.0	1,200	\$130.85	\$0.00	\$4.50	(\$2.51)	\$1.99	1.52%
12	5.0	1,400	\$150.59	\$0.00	\$5.25	(\$2.75)	\$2.50	1.66%
13	5.0	1,600	\$168.45	\$0.00	\$5.99	(\$2.98)	\$3.01	1.79%
14	5.0	2,000	\$200.29	\$0.00	\$7.49	(\$3.46)	\$4.03	2.01%
15	5.0	2,200	\$216.10	\$0.00	\$8.25	(\$3.69)	\$4.56	2.11%
16	5.0	2,400	\$231.92	\$0.00	\$8.99	(\$3.92)	\$5.07	2.19%

The Dayton Power and Light Company
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2018
Secondary Single Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2017 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	750	\$88.39	\$0.00	\$2.81	(\$1.98)	\$0.83	0.94%
2	5	1,500	\$162.49	\$0.00	\$5.62	(\$2.87)	\$2.75	1.69%
3	10	1,500	\$195.01	\$0.00	\$5.62	(\$3.97)	\$1.65	0.85%
4	25	5,000	\$569.71	\$0.00	\$18.74	(\$11.40)	\$7.34	1.29%
5	25	7,500	\$767.49	\$0.00	\$28.10	(\$14.33)	\$13.77	1.79%
6	25	10,000	\$965.29	\$0.00	\$37.47	(\$17.28)	\$20.19	2.09%
7	50	15,000	\$1,523.50	\$0.00	\$56.20	(\$28.68)	\$27.52	1.81%
8	50	25,000	\$2,309.04	\$0.00	\$93.67	(\$40.43)	\$53.24	2.31%
9	200	50,000	\$5,248.69	\$0.00	\$187.34	(\$102.96)	\$84.38	1.61%
10	200	100,000	\$9,176.51	\$0.00	\$374.68	(\$161.74)	\$212.94	2.32%
11	300	125,000	\$11,790.86	\$0.00	\$468.35	(\$213.21)	\$255.14	2.16%
12	500	200,000	\$18,983.55	\$0.00	\$749.36	(\$345.56)	\$403.80	2.13%
13	1,000	300,000	\$30,091.49	\$0.00	\$1,124.04	(\$573.56)	\$550.48	1.83%
14	1,000	500,000	\$45,802.87	\$0.00	\$1,873.40	(\$808.70)	\$1,064.70	2.32%
15	2,500	750,000	\$75,198.88	\$0.00	\$2,810.10	(\$1,433.88)	\$1,376.22	1.83%
16	2,500	1,000,000	\$94,483.62	\$0.00	\$3,746.80	(\$1,727.80)	\$2,019.00	2.14%

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Secondary Three Phase

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Line	Level of Demand	Level of Usage	2017 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	500	\$71.05	\$0.00	\$1.88	(\$1.69)	\$0.19	0.27%
2	5	1,500	\$169.83	\$0.00	\$5.62	(\$2.87)	\$2.75	1.62%
3	10	1,500	\$202.35	\$0.00	\$5.62	(\$3.97)	\$1.65	0.82%
4	25	5,000	\$577.05	\$0.00	\$18.74	(\$11.40)	\$7.34	1.27%
5	25	7,500	\$774.83	\$0.00	\$28.10	(\$14.33)	\$13.77	1.78%
6	25	10,000	\$972.63	\$0.00	\$37.47	(\$17.28)	\$20.19	2.08%
7	50	25,000	\$2,316.38	\$0.00	\$93.67	(\$40.43)	\$53.24	2.30%
8	200	50,000	\$5,256.03	\$0.00	\$187.34	(\$102.96)	\$84.38	1.61%
9	200	125,000	\$11,147.76	\$0.00	\$468.35	(\$191.13)	\$277.22	2.49%
10	500	200,000	\$18,990.89	\$0.00	\$749.36	(\$345.56)	\$403.80	2.13%
11	1,000	300,000	\$30,098.83	\$0.00	\$1,124.04	(\$573.56)	\$550.48	1.83%
12	1,000	500,000	\$45,810.21	\$0.00	\$1,873.40	(\$808.70)	\$1,064.70	2.32%
13	2,500	750,000	\$75,206.22	\$0.00	\$2,810.10	(\$1,433.88)	\$1,376.22	1.83%
14	2,500	1,000,000	\$94,490.96	\$0.00	\$3,746.80	(\$1,727.80)	\$2,019.00	2.14%
15	5,000	1,500,000	\$148,969.43	\$0.00	\$5,620.20	(\$2,867.76)	\$2,752.44	1.85%
16	5,000	2,000,000	\$187,186.63	\$0.00	\$7,493.60	(\$3,455.61)	\$4,037.99	2.16%

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Electric Security Plan
Typical Bill Comparison - Period 2
2018
Primary Service

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Line	Level of Demand (kW)	Level of Usage (kWh)	2017 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	1,000	\$194.87	\$0.00	\$3.65	(\$2.39)	\$1.26	0.65%
2	5	2,500	\$306.78	\$0.00	\$9.13	(\$3.56)	\$5.57	1.82%
3	10	5,000	\$517.64	\$0.00	\$18.25	(\$7.14)	\$11.11	2.15%
4	25	7,500	\$778.81	\$0.00	\$27.38	(\$13.94)	\$13.44	1.73%
5	25	10,000	\$964.56	\$0.00	\$36.50	(\$15.89)	\$20.61	2.14%
6	50	20,000	\$1,830.38	\$0.00	\$73.01	(\$31.79)	\$41.22	2.25%
7	50	30,000	\$2,567.75	\$0.00	\$109.52	(\$39.60)	\$69.92	2.72%
8	200	50,000	\$4,796.49	\$0.00	\$182.53	(\$103.72)	\$78.81	1.64%
9	200	75,000	\$6,639.91	\$0.00	\$273.79	(\$123.26)	\$150.53	2.27%
10	200	100,000	\$8,483.32	\$0.00	\$365.06	(\$142.80)	\$222.26	2.62%
11	500	250,000	\$21,051.84	\$0.00	\$912.65	(\$356.98)	\$555.67	2.64%
12	1,000	500,000	\$41,999.26	\$0.00	\$1,825.30	(\$713.96)	\$1,111.34	2.65%
13	2,500	1,000,000	\$86,052.99	\$0.00	\$3,650.60	(\$1,589.52)	\$2,061.08	2.40%
14	5,000	2,500,000	\$206,040.84	\$0.00	\$9,126.50	(\$3,569.80)	\$5,556.70	2.70%
15	10,000	5,000,000	\$410,209.33	\$0.00	\$18,253.00	(\$7,139.60)	\$11,113.40	2.71%
16	25,000	7,500,000	\$664,642.31	\$0.00	\$27,379.50	(\$13,941.49)	\$13,438.01	2.02%
17	25,000	10,000,000	\$843,678.56	\$0.00	\$36,506.00	(\$15,895.24)	\$20,610.76	2.44%
18	50,000	15,000,000	\$1,327,412.25	\$0.00	\$54,759.00	(\$27,882.98)	\$26,876.02	2.02%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 2
2018
Primary Substation

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Line	Level of Demand	Level of Usage	2017 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	3,000	1,000,000	\$83,658.42	\$0.00	\$3,612.70	(\$1,777.28)	\$1,835.42	2.19%
2	5,000	2,000,000	\$161,612.48	\$0.00	\$7,225.40	(\$3,209.60)	\$4,015.80	2.48%
3	5,000	3,000,000	\$232,052.58	\$0.00	\$10,838.10	(\$3,952.00)	\$6,886.10	2.97%
4	10,000	4,000,000	\$321,277.58	\$0.00	\$14,450.80	(\$6,419.20)	\$8,031.60	2.50%
5	10,000	5,000,000	\$391,717.68	\$0.00	\$18,063.50	(\$7,161.60)	\$10,901.90	2.78%
6	15,000	6,000,000	\$480,942.70	\$0.00	\$21,676.20	(\$9,628.80)	\$12,047.40	2.50%
7	15,000	7,000,000	\$551,382.80	\$0.00	\$25,288.90	(\$10,371.20)	\$14,917.70	2.71%
8	15,000	8,000,000	\$621,822.90	\$0.00	\$28,901.60	(\$11,113.60)	\$17,788.00	2.86%
9	25,000	9,000,000	\$729,832.85	\$0.00	\$32,514.30	(\$15,305.59)	\$17,208.71	2.36%
10	25,000	10,000,000	\$800,272.95	\$0.00	\$36,127.00	(\$16,047.99)	\$20,079.01	2.51%
11	30,000	12,500,000	\$995,158.12	\$0.00	\$45,158.75	(\$19,628.79)	\$25,529.96	2.57%
12	30,000	15,000,000	\$1,171,258.37	\$0.00	\$54,190.50	(\$21,484.79)	\$32,705.71	2.79%
13	50,000	17,500,000	\$1,422,498.27	\$0.00	\$63,222.25	(\$30,239.98)	\$32,982.27	2.32%
14	50,000	20,000,000	\$1,598,598.52	\$0.00	\$72,254.00	(\$32,095.98)	\$40,158.02	2.51%
15	50,000	25,000,000	\$1,950,799.02	\$0.00	\$90,317.50	(\$35,807.98)	\$54,509.52	2.79%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 2
2018
High Voltage Service

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Line	Level of Demand (kW)	Level of Usage (kWh)	2017 Projected Bill (D) = Period 1 Col (G) + (K) - (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	1,000	500,000	\$40,169.22	\$0.00	\$1,806.35	(\$734.43)	\$1,071.92	2.67%
2	2,000	1,000,000	\$79,704.65	\$0.00	\$3,612.70	(\$1,468.86)	\$2,143.84	2.69%
3	3,000	1,500,000	\$118,533.35	\$0.00	\$5,419.05	(\$2,203.30)	\$3,215.75	2.71%
4	3,500	2,000,000	\$155,563.90	\$0.00	\$7,225.40	(\$2,761.79)	\$4,463.61	2.87%
5	5,000	2,500,000	\$196,190.65	\$0.00	\$9,031.75	(\$3,672.16)	\$5,359.59	2.73%
6	7,500	3,000,000	\$240,413.53	\$0.00	\$10,838.10	(\$4,934.41)	\$5,903.69	2.46%
7	7,500	4,000,000	\$310,878.53	\$0.00	\$14,450.80	(\$5,699.51)	\$8,751.29	2.82%
8	10,000	5,000,000	\$390,333.93	\$0.00	\$18,063.50	(\$7,344.33)	\$10,719.17	2.75%
9	10,000	6,000,000	\$460,798.93	\$0.00	\$21,676.20	(\$8,109.43)	\$13,566.77	2.94%
10	12,500	7,000,000	\$540,254.32	\$0.00	\$25,288.90	(\$9,754.23)	\$15,534.67	2.88%
11	12,500	8,000,000	\$610,719.32	\$0.00	\$28,901.60	(\$10,519.33)	\$18,382.27	3.01%
12	15,000	9,000,000	\$690,174.72	\$0.00	\$32,514.30	(\$12,164.14)	\$20,350.16	2.95%
13	20,000	10,000,000	\$778,620.50	\$0.00	\$36,127.00	(\$14,688.65)	\$21,438.35	2.75%
14	40,000	20,000,000	\$1,555,193.68	\$0.00	\$72,254.00	(\$29,377.30)	\$42,876.70	2.76%
15	60,000	30,000,000	\$2,331,766.83	\$0.00	\$108,381.00	(\$44,065.95)	\$64,315.05	2.76%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 2
2018
Private Outdoor Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2017 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	7000							
2	Mercury	75	\$11.65	\$0.00	\$0.28	(\$0.05)	\$0.23	1.97%
3	21000							
4	Mercury	154	\$23.94	\$0.00	\$0.58	(\$0.10)	\$0.48	2.01%
5	2500							
6	Incandescent	64	\$9.95	\$0.00	\$0.24	(\$0.04)	\$0.20	2.01%
7	7000							
8	Fluorescent	66	\$10.27	\$0.00	\$0.25	(\$0.04)	\$0.21	2.04%
9	4000							
10	Mercury	43	\$6.70	\$0.00	\$0.16	(\$0.03)	\$0.13	1.94%
11	9500							
12	High Pressure Sodium	39	\$8.86	\$0.00	\$0.15	(\$0.03)	\$0.12	1.35%
13	28000							
14	High Pressure Sodium	96	\$14.03	\$0.00	\$0.36	(\$0.06)	\$0.30	2.14%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 2
2018
Street Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2017 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 1 Col (G) + (K) - (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0	50	\$6.48	\$0.00	\$0.19	(\$0.03)	\$0.16	2.47%
2	0	100	\$10.95	\$0.00	\$0.38	(\$0.07)	\$0.31	2.83%
3	0	200	\$19.90	\$0.00	\$0.75	(\$0.12)	\$0.63	3.17%
4	0	400	\$37.82	\$0.00	\$1.50	(\$0.24)	\$1.26	3.33%
5	0	500	\$46.79	\$0.00	\$1.88	(\$0.31)	\$1.57	3.36%
6	0	750	\$69.17	\$0.00	\$2.81	(\$0.46)	\$2.35	3.40%
7	0	1,000	\$91.55	\$0.00	\$3.75	(\$0.62)	\$3.13	3.42%
8	0	1,200	\$109.45	\$0.00	\$4.50	(\$0.74)	\$3.76	3.44%
9	0	1,400	\$127.35	\$0.00	\$5.25	(\$0.86)	\$4.39	3.45%
10	0	1,600	\$145.28	\$0.00	\$5.99	(\$0.98)	\$5.01	3.45%
11	0	2,000	\$181.11	\$0.00	\$7.49	(\$1.24)	\$6.25	3.45%
12	0	2,500	\$225.66	\$0.00	\$9.37	(\$1.55)	\$7.82	3.47%
13	0	3,000	\$270.20	\$0.00	\$11.24	(\$1.86)	\$9.38	3.47%
14	0	4,000	\$359.27	\$0.00	\$14.98	(\$2.46)	\$12.52	3.48%
15	0	5,000	\$448.37	\$0.00	\$18.74	(\$3.08)	\$15.66	3.49%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 3
2019
Residential

Exhibit RJ4-4

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Line	Level of Demand (kW)	Level of Usage (kWh)	2018 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 2 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$9.98	\$0.00	\$0.25	(\$0.16)	\$0.09	0.90%
2	0.0	100	\$15.71	\$0.00	\$0.50	(\$0.30)	\$0.20	1.27%
3	0.0	200	\$27.17	\$0.00	\$1.01	(\$0.61)	\$0.40	1.47%
4	0.0	400	\$50.09	\$0.00	\$2.01	(\$1.22)	\$0.79	1.58%
5	0.0	500	\$61.55	\$0.00	\$2.51	(\$1.52)	\$0.99	1.61%
6	0.0	750	\$90.21	\$0.00	\$3.76	(\$2.29)	\$1.47	1.63%
7	0.0	1,000	\$118.84	\$0.00	\$5.02	(\$3.04)	\$1.98	1.67%
8	0.0	1,200	\$141.75	\$0.00	\$6.02	(\$3.65)	\$2.37	1.67%
9	0.0	1,400	\$164.68	\$0.00	\$7.03	(\$4.27)	\$2.76	1.68%
10	0.0	1,500	\$176.15	\$0.00	\$7.53	(\$4.57)	\$2.96	1.68%
11	0.0	2,000	\$233.45	\$0.00	\$10.04	(\$6.09)	\$3.95	1.69%
12	0.0	2,500	\$290.52	\$0.00	\$12.55	(\$7.61)	\$4.94	1.70%
13	0.0	3,000	\$347.57	\$0.00	\$15.07	(\$9.13)	\$5.94	1.71%
14	0.0	4,000	\$461.70	\$0.00	\$20.09	(\$12.19)	\$7.90	1.71%
15	0.0	5,000	\$575.85	\$0.00	\$25.10	(\$15.23)	\$9.87	1.71%
16	0.0	7,500	\$861.18	\$0.00	\$37.66	(\$22.84)	\$14.82	1.72%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 3
2019
Residential Heating (Winter)

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Line	Level of Demand	Level of Usage	2018 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 2 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$9.41	\$0.00	\$0.21	(\$0.13)	\$0.08	0.85%
2	0.0	100	\$14.57	\$0.00	\$0.42	(\$0.25)	\$0.17	1.17%
3	0.0	200	\$24.91	\$0.00	\$0.85	(\$0.52)	\$0.33	1.32%
4	0.0	400	\$45.56	\$0.00	\$1.70	(\$1.03)	\$0.67	1.47%
5	0.0	500	\$55.87	\$0.00	\$2.13	(\$1.29)	\$0.84	1.50%
6	0.0	750	\$81.70	\$0.00	\$3.19	(\$1.94)	\$1.25	1.53%
7	0.0	1,000	\$107.50	\$0.00	\$4.25	(\$2.58)	\$1.67	1.55%
8	0.0	1,200	\$128.14	\$0.00	\$5.10	(\$3.09)	\$2.01	1.57%
9	0.0	1,400	\$148.79	\$0.00	\$5.96	(\$3.61)	\$2.35	1.58%
10	0.0	1,500	\$159.13	\$0.00	\$6.38	(\$3.87)	\$2.51	1.58%
11	0.0	2,000	\$210.77	\$0.00	\$8.50	(\$5.16)	\$3.34	1.58%
12	0.0	2,500	\$262.16	\$0.00	\$10.64	(\$6.45)	\$4.19	1.60%
13	0.0	3,000	\$313.54	\$0.00	\$12.77	(\$7.74)	\$5.03	1.60%
14	0.0	4,000	\$416.33	\$0.00	\$17.02	(\$10.32)	\$6.70	1.61%
15	0.0	5,000	\$519.13	\$0.00	\$21.27	(\$12.90)	\$8.37	1.61%
16	0.0	7,500	\$776.11	\$0.00	\$31.91	(\$19.35)	\$12.56	1.62%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 3
2019
Residential Heating (Summer)

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	2018 Projected Bill (D) = Period 2 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	0.0	50	\$9.98	\$0.00	\$0.25	(\$0.16)	\$0.09	0.90%
2	0.0	100	\$15.71	\$0.00	\$0.50	(\$0.30)	\$0.20	1.27%
3	0.0	200	\$27.17	\$0.00	\$1.01	(\$0.61)	\$0.40	1.47%
4	0.0	400	\$50.09	\$0.00	\$2.01	(\$1.22)	\$0.79	1.58%
5	0.0	500	\$61.55	\$0.00	\$2.51	(\$1.52)	\$0.99	1.61%
6	0.0	750	\$90.21	\$0.00	\$3.76	(\$2.29)	\$1.47	1.63%
7	0.0	1,000	\$118.84	\$0.00	\$5.02	(\$3.04)	\$1.98	1.67%
8	0.0	1,200	\$141.75	\$0.00	\$6.02	(\$3.65)	\$2.37	1.67%
9	0.0	1,400	\$164.68	\$0.00	\$7.03	(\$4.27)	\$2.76	1.68%
10	0.0	1,500	\$176.15	\$0.00	\$7.53	(\$4.57)	\$2.96	1.68%
11	0.0	2,000	\$233.45	\$0.00	\$10.04	(\$6.09)	\$3.95	1.69%
12	0.0	2,500	\$290.52	\$0.00	\$12.55	(\$7.61)	\$4.94	1.70%
13	0.0	3,000	\$347.57	\$0.00	\$15.07	(\$9.13)	\$5.94	1.71%
14	0.0	4,000	\$461.70	\$0.00	\$20.09	(\$12.19)	\$7.90	1.71%
15	0.0	5,000	\$575.85	\$0.00	\$25.10	(\$15.23)	\$9.87	1.71%
16	0.0	7,500	\$861.18	\$0.00	\$37.66	(\$22.84)	\$14.82	1.72%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 3
2019
Secondary Unmetered

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Line	Level of Demand (kW)	Level of Usage (kWh)	2018 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 2 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5.0	50	\$16.28	\$0.00	\$0.25	(\$1.64)	(\$1.39)	-8.54%
2	5.0	100	\$21.36	\$0.00	\$0.50	(\$1.72)	(\$1.22)	-5.71%
3	5.0	150	\$26.43	\$0.00	\$0.75	(\$1.81)	(\$1.06)	-4.01%
4	5.0	200	\$31.49	\$0.00	\$1.01	(\$1.89)	(\$0.88)	-2.79%
5	5.0	300	\$41.61	\$0.00	\$1.51	(\$2.05)	(\$0.54)	-1.30%
6	5.0	400	\$51.76	\$0.00	\$2.01	(\$2.23)	(\$0.22)	-0.43%
7	5.0	500	\$61.91	\$0.00	\$2.51	(\$2.39)	\$0.12	0.19%
8	5.0	600	\$72.04	\$0.00	\$3.02	(\$2.56)	\$0.46	0.64%
9	5.0	800	\$92.29	\$0.00	\$4.01	(\$2.88)	\$1.13	1.22%
10	5.0	1,000	\$112.56	\$0.00	\$5.02	(\$3.21)	\$1.81	1.61%
11	5.0	1,200	\$132.84	\$0.00	\$6.02	(\$3.55)	\$2.47	1.86%
12	5.0	1,400	\$153.09	\$0.00	\$7.03	(\$3.88)	\$3.15	2.06%
13	5.0	1,600	\$171.46	\$0.00	\$8.04	(\$4.21)	\$3.83	2.23%
14	5.0	2,000	\$204.32	\$0.00	\$10.04	(\$4.87)	\$5.17	2.53%
15	5.0	2,200	\$220.66	\$0.00	\$11.04	(\$5.20)	\$5.84	2.65%
16	5.0	2,400	\$236.99	\$0.00	\$12.05	(\$5.53)	\$6.52	2.75%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 3
2019
Secondary Single Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2018 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 2 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	750	\$89.22	\$0.00	\$3.76	(\$2.80)	\$0.96	1.08%
2	5	1,500	\$165.24	\$0.00	\$7.53	(\$4.04)	\$3.49	2.11%
3	10	1,500	\$196.66	\$0.00	\$7.53	(\$5.60)	\$1.93	0.98%
4	25	5,000	\$577.05	\$0.00	\$25.10	(\$16.06)	\$9.04	1.57%
5	25	7,500	\$781.26	\$0.00	\$37.66	(\$20.20)	\$17.46	2.23%
6	25	10,000	\$985.48	\$0.00	\$50.21	(\$24.34)	\$25.87	2.63%
7	50	15,000	\$1,551.02	\$0.00	\$75.31	(\$40.40)	\$34.91	2.25%
8	50	25,000	\$2,362.28	\$0.00	\$125.52	(\$56.97)	\$68.55	2.90%
9	200	50,000	\$5,333.07	\$0.00	\$251.04	(\$145.02)	\$106.02	1.99%
10	200	100,000	\$9,389.45	\$0.00	\$502.07	(\$227.83)	\$274.24	2.92%
11	300	125,000	\$12,046.00	\$0.00	\$627.59	(\$300.35)	\$327.24	2.72%
12	500	200,000	\$19,387.35	\$0.00	\$1,004.14	(\$486.77)	\$517.37	2.67%
13	1,000	300,000	\$30,641.97	\$0.00	\$1,506.21	(\$807.91)	\$698.30	2.28%
14	1,000	500,000	\$46,867.57	\$0.00	\$2,510.35	(\$1,139.13)	\$1,371.22	2.93%
15	2,500	750,000	\$76,575.10	\$0.00	\$3,765.53	(\$2,019.79)	\$1,745.74	2.28%
16	2,500	1,000,000	\$96,502.62	\$0.00	\$5,020.70	(\$2,433.82)	\$2,586.88	2.68%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 3
2019
Secondary Three Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2018 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 2 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	500	\$71.24	\$0.00	\$2.51	(\$2.39)	\$0.12	0.17%
2	5	1,500	\$172.58	\$0.00	\$7.53	(\$4.04)	\$3.49	2.02%
3	10	1,500	\$204.00	\$0.00	\$7.53	(\$5.60)	\$1.93	0.95%
4	25	5,000	\$584.39	\$0.00	\$25.10	(\$16.06)	\$9.04	1.55%
5	25	7,500	\$788.60	\$0.00	\$37.66	(\$20.20)	\$17.46	2.21%
6	25	10,000	\$992.82	\$0.00	\$50.21	(\$24.34)	\$25.87	2.61%
7	50	25,000	\$2,369.62	\$0.00	\$125.52	(\$56.97)	\$68.55	2.89%
8	200	50,000	\$5,340.41	\$0.00	\$251.04	(\$145.02)	\$106.02	1.99%
9	200	125,000	\$11,424.98	\$0.00	\$627.59	(\$269.24)	\$358.35	3.14%
10	500	200,000	\$19,394.69	\$0.00	\$1,004.14	(\$486.77)	\$517.37	2.67%
11	1,000	300,000	\$30,649.31	\$0.00	\$1,506.21	(\$807.91)	\$698.30	2.28%
12	1,000	500,000	\$46,874.91	\$0.00	\$2,510.35	(\$1,139.13)	\$1,371.22	2.93%
13	2,500	750,000	\$76,582.44	\$0.00	\$3,765.53	(\$2,019.79)	\$1,745.74	2.28%
14	2,500	1,000,000	\$96,509.96	\$0.00	\$5,020.70	(\$2,433.82)	\$2,586.88	2.68%
15	5,000	1,500,000	\$151,721.87	\$0.00	\$7,531.05	(\$4,039.57)	\$3,491.48	2.30%
16	5,000	2,000,000	\$191,224.62	\$0.00	\$10,041.40	(\$4,867.62)	\$5,173.78	2.71%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 3
2019
Primary Service

Exhibit RJ4-4
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Line	Level of Demand	Level of Usage	2018 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 2 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	1,000	\$196.13	\$0.00	\$4.89	(\$3.38)	\$1.51	0.77%
2	5	2,500	\$312.35	\$0.00	\$12.23	(\$5.04)	\$7.19	2.30%
3	10	5,000	\$528.75	\$0.00	\$24.46	(\$10.05)	\$14.41	2.73%
4	25	7,500	\$792.25	\$0.00	\$36.69	(\$19.64)	\$17.05	2.15%
5	25	10,000	\$985.17	\$0.00	\$48.92	(\$22.39)	\$26.53	2.69%
6	50	20,000	\$1,871.60	\$0.00	\$97.83	(\$44.79)	\$53.04	2.83%
7	50	30,000	\$2,637.67	\$0.00	\$146.76	(\$55.80)	\$90.96	3.45%
8	200	50,000	\$4,875.30	\$0.00	\$244.59	(\$146.09)	\$98.50	2.02%
9	200	75,000	\$6,790.44	\$0.00	\$366.89	(\$173.61)	\$193.28	2.85%
10	200	100,000	\$8,705.58	\$0.00	\$489.18	(\$201.13)	\$288.05	3.31%
11	500	250,000	\$21,607.51	\$0.00	\$1,222.95	(\$502.84)	\$720.11	3.33%
12	1,000	500,000	\$43,110.60	\$0.00	\$2,445.90	(\$1,005.69)	\$1,440.21	3.34%
13	2,500	1,000,000	\$88,114.07	\$0.00	\$4,891.80	(\$2,239.01)	\$2,652.79	3.01%
14	5,000	2,500,000	\$211,597.54	\$0.00	\$12,229.50	(\$5,028.42)	\$7,201.08	3.40%
15	10,000	5,000,000	\$421,322.73	\$0.00	\$24,459.00	(\$10,056.84)	\$14,402.16	3.42%
16	25,000	7,500,000	\$678,080.32	\$0.00	\$36,688.50	(\$19,638.10)	\$17,050.40	2.51%
17	25,000	10,000,000	\$864,289.32	\$0.00	\$48,918.00	(\$22,390.10)	\$26,527.90	3.07%
18	50,000	15,000,000	\$1,354,288.27	\$0.00	\$73,377.00	(\$39,276.20)	\$34,100.80	2.52%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 3
2019
Primary Substation

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Line	Level of Demand	Level of Usage	2018 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 2 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	3,000	1,000,000	\$85,493.84	\$0.00	\$4,840.90	(\$2,503.47)	\$2,337.43	2.73%
2	5,000	2,000,000	\$165,628.28	\$0.00	\$9,681.80	(\$4,521.01)	\$5,160.79	3.12%
3	5,000	3,000,000	\$238,938.68	\$0.00	\$14,522.70	(\$5,566.71)	\$8,955.99	3.75%
4	10,000	4,000,000	\$329,309.18	\$0.00	\$19,363.60	(\$9,042.02)	\$10,321.58	3.13%
5	10,000	5,000,000	\$402,619.58	\$0.00	\$24,204.50	(\$10,087.72)	\$14,116.78	3.51%
6	15,000	6,000,000	\$492,990.10	\$0.00	\$29,045.40	(\$13,563.03)	\$15,482.37	3.14%
7	15,000	7,000,000	\$566,300.50	\$0.00	\$33,886.30	(\$14,608.73)	\$19,277.57	3.40%
8	15,000	8,000,000	\$639,610.90	\$0.00	\$38,727.20	(\$15,654.43)	\$23,072.77	3.61%
9	25,000	9,000,000	\$747,041.56	\$0.00	\$43,568.10	(\$21,559.36)	\$22,008.74	2.95%
10	25,000	10,000,000	\$820,351.96	\$0.00	\$48,409.00	(\$22,605.06)	\$25,803.94	3.15%
11	30,000	12,500,000	\$1,020,688.08	\$0.00	\$60,511.25	(\$27,648.92)	\$32,862.33	3.22%
12	30,000	15,000,000	\$1,203,964.08	\$0.00	\$72,613.50	(\$30,263.17)	\$42,350.33	3.52%
13	50,000	17,500,000	\$1,455,480.54	\$0.00	\$84,715.75	(\$42,595.86)	\$42,119.89	2.89%
14	50,000	20,000,000	\$1,638,756.54	\$0.00	\$96,818.00	(\$45,210.11)	\$51,607.89	3.15%
15	50,000	25,000,000	\$2,005,308.54	\$0.00	\$121,022.50	(\$50,438.61)	\$70,583.89	3.52%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 3
2019
High Voltage Service

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Line	Level of Demand	Level of Usage	2018 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 2 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	1,000	500,000	\$41,241.14	\$0.00	\$2,420.45	(\$1,034.58)	\$1,385.87	3.36%
2	2,000	1,000,000	\$81,848.49	\$0.00	\$4,840.90	(\$2,069.15)	\$2,771.75	3.39%
3	3,000	1,500,000	\$121,749.10	\$0.00	\$7,261.35	(\$3,103.72)	\$4,157.63	3.41%
4	3,500	2,000,000	\$160,027.51	\$0.00	\$9,681.80	(\$3,890.45)	\$5,791.35	3.62%
5	5,000	2,500,000	\$201,550.24	\$0.00	\$12,102.25	(\$5,172.87)	\$6,929.38	3.44%
6	7,500	3,000,000	\$246,317.22	\$0.00	\$14,522.70	(\$6,950.96)	\$7,571.74	3.07%
7	7,500	4,000,000	\$319,629.82	\$0.00	\$19,363.60	(\$8,028.76)	\$11,334.84	3.55%
8	10,000	5,000,000	\$401,053.10	\$0.00	\$24,204.50	(\$10,345.74)	\$13,858.76	3.46%
9	10,000	6,000,000	\$474,365.70	\$0.00	\$29,045.40	(\$11,423.54)	\$17,621.86	3.71%
10	12,500	7,000,000	\$555,788.99	\$0.00	\$33,886.30	(\$13,740.52)	\$20,145.78	3.62%
11	12,500	8,000,000	\$629,101.59	\$0.00	\$38,727.20	(\$14,818.32)	\$23,908.88	3.80%
12	15,000	9,000,000	\$710,524.88	\$0.00	\$43,568.10	(\$17,135.30)	\$26,432.80	3.72%
13	20,000	10,000,000	\$800,058.85	\$0.00	\$48,409.00	(\$20,691.47)	\$27,717.53	3.46%
14	40,000	20,000,000	\$1,598,070.38	\$0.00	\$96,818.00	(\$41,382.94)	\$55,435.06	3.47%
15	60,000	30,000,000	\$2,396,081.88	\$0.00	\$145,227.00	(\$62,074.43)	\$83,152.57	3.47%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 3
2019
Private Outdoor Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2018 Projected Bill (D) = Period 2 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	7000							
2	Mercury	75	\$11.88	\$0.00	\$0.38	(\$0.07)	\$0.31	2.61%
3	21000							
4	Mercury	154	\$24.42	\$0.00	\$0.77	(\$0.14)	\$0.63	2.58%
5	2500							
6	Incandescent	64	\$10.15	\$0.00	\$0.32	(\$0.06)	\$0.26	2.56%
7	7000							
8	Fluorescent	66	\$10.48	\$0.00	\$0.33	(\$0.06)	\$0.27	2.58%
9	4000							
10	Mercury	43	\$6.83	\$0.00	\$0.22	(\$0.04)	\$0.18	2.64%
11	9500							
12	High Pressure Sodium	39	\$8.98	\$0.00	\$0.20	(\$0.04)	\$0.16	1.78%
13	28000							
14	High Pressure Sodium	96	\$14.33	\$0.00	\$0.48	(\$0.09)	\$0.39	2.72%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 3
2019
Street Lighting

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Line	Level of Demand	Level of Usage	2018 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 2 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0	50	\$6.64	\$0.00	\$0.25	(\$0.05)	\$0.20	3.01%
2	0	100	\$11.26	\$0.00	\$0.50	(\$0.08)	\$0.42	3.73%
3	0	200	\$20.53	\$0.00	\$1.01	(\$0.18)	\$0.83	4.04%
4	0	400	\$39.08	\$0.00	\$2.01	(\$0.35)	\$1.66	4.25%
5	0	500	\$48.36	\$0.00	\$2.51	(\$0.43)	\$2.08	4.30%
6	0	750	\$71.52	\$0.00	\$3.76	(\$0.66)	\$3.10	4.33%
7	0	1,000	\$94.68	\$0.00	\$5.02	(\$0.87)	\$4.15	4.38%
8	0	1,200	\$113.21	\$0.00	\$6.02	(\$1.04)	\$4.98	4.40%
9	0	1,400	\$131.74	\$0.00	\$7.03	(\$1.22)	\$5.81	4.41%
10	0	1,600	\$150.29	\$0.00	\$8.04	(\$1.39)	\$6.65	4.42%
11	0	2,000	\$187.36	\$0.00	\$10.04	(\$1.74)	\$8.30	4.43%
12	0	2,500	\$233.48	\$0.00	\$12.55	(\$2.17)	\$10.38	4.45%
13	0	3,000	\$279.58	\$0.00	\$15.07	(\$2.60)	\$12.47	4.46%
14	0	4,000	\$371.79	\$0.00	\$20.09	(\$3.48)	\$16.61	4.47%
15	0	5,000	\$464.03	\$0.00	\$25.10	(\$4.35)	\$20.75	4.47%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 4
2020
Residential

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Line	Level of Demand (kW)	Level of Usage (kWh)	2019 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 3 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.07	\$0.00	\$0.42	(\$0.23)	\$0.19	1.89%
2	0.0	100	\$15.91	\$0.00	\$0.84	(\$0.47)	\$0.37	2.33%
3	0.0	200	\$27.57	\$0.00	\$1.67	(\$0.93)	\$0.74	2.68%
4	0.0	400	\$50.88	\$0.00	\$3.35	(\$1.87)	\$1.48	2.91%
5	0.0	500	\$62.54	\$0.00	\$4.19	(\$2.34)	\$1.85	2.96%
6	0.0	750	\$91.68	\$0.00	\$6.29	(\$3.50)	\$2.79	3.04%
7	0.0	1,000	\$120.82	\$0.00	\$8.38	(\$4.68)	\$3.70	3.06%
8	0.0	1,200	\$144.12	\$0.00	\$10.06	(\$5.61)	\$4.45	3.09%
9	0.0	1,400	\$167.44	\$0.00	\$11.73	(\$6.54)	\$5.19	3.10%
10	0.0	1,500	\$179.11	\$0.00	\$12.57	(\$7.01)	\$5.56	3.10%
11	0.0	2,000	\$237.40	\$0.00	\$16.76	(\$9.35)	\$7.41	3.12%
12	0.0	2,500	\$295.46	\$0.00	\$20.95	(\$11.69)	\$9.26	3.13%
13	0.0	3,000	\$353.51	\$0.00	\$25.13	(\$14.03)	\$11.10	3.14%
14	0.0	4,000	\$469.60	\$0.00	\$33.52	(\$18.70)	\$14.82	3.16%
15	0.0	5,000	\$585.72	\$0.00	\$41.90	(\$23.37)	\$18.53	3.16%
16	0.0	7,500	\$876.00	\$0.00	\$62.85	(\$35.06)	\$27.79	3.17%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 4
2020
Residential Heating (Winter)

Exhibit RJA-4
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Line	Level of Demand	Level of Usage	2019 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 3 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$9.49	\$0.00	\$0.36	(\$0.20)	\$0.16	1.69%
2	0.0	100	\$14.74	\$0.00	\$0.71	(\$0.40)	\$0.31	2.10%
3	0.0	200	\$25.24	\$0.00	\$1.42	(\$0.79)	\$0.63	2.50%
4	0.0	400	\$46.23	\$0.00	\$2.84	(\$1.59)	\$1.25	2.70%
5	0.0	500	\$56.71	\$0.00	\$3.55	(\$1.98)	\$1.57	2.77%
6	0.0	750	\$82.95	\$0.00	\$5.33	(\$2.97)	\$2.36	2.85%
7	0.0	1,000	\$109.17	\$0.00	\$7.10	(\$3.96)	\$3.14	2.88%
8	0.0	1,200	\$130.15	\$0.00	\$8.52	(\$4.76)	\$3.76	2.89%
9	0.0	1,400	\$151.14	\$0.00	\$9.94	(\$5.55)	\$4.39	2.90%
10	0.0	1,500	\$161.64	\$0.00	\$10.65	(\$5.95)	\$4.70	2.91%
11	0.0	2,000	\$214.11	\$0.00	\$14.20	(\$7.92)	\$6.28	2.93%
12	0.0	2,500	\$266.35	\$0.00	\$17.75	(\$9.90)	\$7.85	2.95%
13	0.0	3,000	\$318.57	\$0.00	\$21.30	(\$11.88)	\$9.42	2.96%
14	0.0	4,000	\$423.03	\$0.00	\$28.40	(\$15.85)	\$12.55	2.97%
15	0.0	5,000	\$527.50	\$0.00	\$35.50	(\$19.81)	\$15.69	2.97%
16	0.0	7,500	\$788.67	\$0.00	\$53.25	(\$29.71)	\$23.54	2.98%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 4
2020
Residential Heating (Summer)

Exhibit RJA-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	2019 Projected Bill (D) = Period 3 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	0.0	50	\$10.07	\$0.00	\$0.42	(\$0.23)	\$0.19	1.89%
2	0.0	100	\$15.91	\$0.00	\$0.84	(\$0.47)	\$0.37	2.33%
3	0.0	200	\$27.57	\$0.00	\$1.67	(\$0.93)	\$0.74	2.68%
4	0.0	400	\$50.88	\$0.00	\$3.35	(\$1.87)	\$1.48	2.91%
5	0.0	500	\$62.54	\$0.00	\$4.19	(\$2.34)	\$1.85	2.96%
6	0.0	750	\$91.68	\$0.00	\$6.29	(\$3.50)	\$2.79	3.04%
7	0.0	1,000	\$120.82	\$0.00	\$8.38	(\$4.68)	\$3.70	3.06%
8	0.0	1,200	\$144.12	\$0.00	\$10.06	(\$5.61)	\$4.45	3.09%
9	0.0	1,400	\$167.44	\$0.00	\$11.73	(\$6.54)	\$5.19	3.10%
10	0.0	1,500	\$179.11	\$0.00	\$12.57	(\$7.01)	\$5.56	3.10%
11	0.0	2,000	\$237.40	\$0.00	\$16.76	(\$9.35)	\$7.41	3.12%
12	0.0	2,500	\$295.46	\$0.00	\$20.95	(\$11.69)	\$9.26	3.13%
13	0.0	3,000	\$353.51	\$0.00	\$25.13	(\$14.03)	\$11.10	3.14%
14	0.0	4,000	\$469.60	\$0.00	\$33.52	(\$18.70)	\$14.82	3.16%
15	0.0	5,000	\$585.72	\$0.00	\$41.90	(\$23.37)	\$18.53	3.16%
16	0.0	7,500	\$876.00	\$0.00	\$62.85	(\$35.06)	\$27.79	3.17%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 4
2020
Secondary Unmetered

Exhibit RJA-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	2019 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 3 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5.0	50	\$14.89	\$0.00	\$0.42	(\$2.52)	(\$2.10)	-14.10%
2	5.0	100	\$20.14	\$0.00	\$0.84	(\$2.65)	(\$1.81)	-8.99%
3	5.0	150	\$25.37	\$0.00	\$1.26	(\$2.77)	(\$1.51)	-5.95%
4	5.0	200	\$30.61	\$0.00	\$1.67	(\$2.90)	(\$1.23)	-4.02%
5	5.0	300	\$41.07	\$0.00	\$2.51	(\$3.16)	(\$0.65)	-1.58%
6	5.0	400	\$51.54	\$0.00	\$3.35	(\$3.40)	(\$0.05)	-0.10%
7	5.0	500	\$62.03	\$0.00	\$4.19	(\$3.66)	\$0.53	0.85%
8	5.0	600	\$72.50	\$0.00	\$5.02	(\$3.91)	\$1.11	1.53%
9	5.0	800	\$93.42	\$0.00	\$6.71	(\$4.43)	\$2.28	2.44%
10	5.0	1,000	\$114.37	\$0.00	\$8.38	(\$4.94)	\$3.44	3.01%
11	5.0	1,200	\$135.31	\$0.00	\$10.06	(\$5.44)	\$4.62	3.41%
12	5.0	1,400	\$156.24	\$0.00	\$11.73	(\$5.95)	\$5.78	3.70%
13	5.0	1,600	\$175.29	\$0.00	\$13.40	(\$6.46)	\$6.94	3.96%
14	5.0	2,000	\$209.49	\$0.00	\$16.76	(\$7.47)	\$9.29	4.43%
15	5.0	2,200	\$226.50	\$0.00	\$18.44	(\$7.98)	\$10.46	4.62%
16	5.0	2,400	\$243.51	\$0.00	\$20.11	(\$8.50)	\$11.61	4.77%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 4
2020
Secondary Single Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2019 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 3 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	750	\$90.18	\$0.00	\$6.29	(\$4.30)	\$1.99	2.21%
2	5	1,500	\$168.73	\$0.00	\$12.57	(\$6.20)	\$6.37	3.78%
3	10	1,500	\$198.59	\$0.00	\$12.57	(\$8.58)	\$3.99	2.01%
4	25	5,000	\$586.09	\$0.00	\$41.90	(\$24.65)	\$17.25	2.94%
5	25	7,500	\$798.72	\$0.00	\$62.85	(\$31.01)	\$31.84	3.99%
6	25	10,000	\$1,011.35	\$0.00	\$83.80	(\$37.36)	\$46.44	4.59%
7	50	15,000	\$1,585.93	\$0.00	\$125.69	(\$62.02)	\$63.67	4.01%
8	50	25,000	\$2,430.83	\$0.00	\$209.49	(\$87.44)	\$122.05	5.02%
9	200	50,000	\$5,439.09	\$0.00	\$418.98	(\$222.64)	\$196.34	3.61%
10	200	100,000	\$9,663.69	\$0.00	\$837.97	(\$349.76)	\$488.21	5.05%
11	300	125,000	\$12,373.24	\$0.00	\$1,047.46	(\$461.08)	\$586.38	4.74%
12	500	200,000	\$19,904.72	\$0.00	\$1,675.94	(\$747.29)	\$928.65	4.67%
13	1,000	300,000	\$31,340.27	\$0.00	\$2,513.91	(\$1,240.33)	\$1,273.58	4.06%
14	1,000	500,000	\$48,238.79	\$0.00	\$4,189.85	(\$1,748.83)	\$2,441.02	5.06%
15	2,500	750,000	\$78,320.84	\$0.00	\$6,284.77	(\$3,100.84)	\$3,183.93	4.07%
16	2,500	1,000,000	\$99,089.50	\$0.00	\$8,379.70	(\$3,736.46)	\$4,643.24	4.69%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 4
2020
Secondary Three Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2019 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 3 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	500	\$71.36	\$0.00	\$4.19	(\$3.66)	\$0.53	0.74%
2	5	1,500	\$176.07	\$0.00	\$12.57	(\$6.20)	\$6.37	3.62%
3	10	1,500	\$205.93	\$0.00	\$12.57	(\$8.58)	\$3.99	1.94%
4	25	5,000	\$593.43	\$0.00	\$41.90	(\$24.65)	\$17.25	2.91%
5	25	7,500	\$806.06	\$0.00	\$62.85	(\$31.01)	\$31.84	3.95%
6	25	10,000	\$1,018.69	\$0.00	\$83.80	(\$37.36)	\$46.44	4.56%
7	50	25,000	\$2,438.17	\$0.00	\$209.49	(\$87.44)	\$122.05	5.01%
8	200	50,000	\$5,446.43	\$0.00	\$418.98	(\$222.64)	\$196.34	3.60%
9	200	125,000	\$11,783.33	\$0.00	\$1,047.46	(\$413.32)	\$634.14	5.38%
10	500	200,000	\$19,912.06	\$0.00	\$1,675.94	(\$747.29)	\$928.65	4.66%
11	1,000	300,000	\$31,347.61	\$0.00	\$2,513.91	(\$1,240.33)	\$1,273.58	4.06%
12	1,000	500,000	\$48,246.13	\$0.00	\$4,189.85	(\$1,748.83)	\$2,441.02	5.06%
13	2,500	750,000	\$78,328.18	\$0.00	\$6,284.77	(\$3,100.84)	\$3,183.93	4.06%
14	2,500	1,000,000	\$99,096.84	\$0.00	\$8,379.70	(\$3,736.46)	\$4,643.24	4.69%
15	5,000	1,500,000	\$155,213.35	\$0.00	\$12,569.55	(\$6,201.67)	\$6,367.88	4.10%
16	5,000	2,000,000	\$196,398.40	\$0.00	\$16,759.40	(\$7,472.92)	\$9,286.48	4.73%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 4
2020
Primary Service

Exhibit RJ4-4
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Line	Level of Demand	Level of Usage	2019 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 3 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	1,000	\$197.64	\$0.00	\$8.17	(\$5.19)	\$2.98	1.51%
2	5	2,500	\$319.54	\$0.00	\$20.41	(\$7.72)	\$12.69	3.97%
3	10	5,000	\$543.16	\$0.00	\$40.82	(\$15.44)	\$25.38	4.67%
4	25	7,500	\$809.30	\$0.00	\$61.24	(\$30.15)	\$31.09	3.84%
5	25	10,000	\$1,011.70	\$0.00	\$81.65	(\$34.38)	\$47.27	4.67%
6	50	20,000	\$1,924.64	\$0.00	\$163.29	(\$68.73)	\$94.56	4.91%
7	50	30,000	\$2,728.63	\$0.00	\$244.93	(\$85.64)	\$159.29	5.84%
8	200	50,000	\$4,973.80	\$0.00	\$408.23	(\$224.30)	\$183.93	3.70%
9	200	75,000	\$6,983.72	\$0.00	\$612.33	(\$266.54)	\$345.79	4.95%
10	200	100,000	\$8,993.63	\$0.00	\$816.45	(\$308.79)	\$507.66	5.64%
11	500	250,000	\$22,327.62	\$0.00	\$2,041.13	(\$771.96)	\$1,269.17	5.68%
12	1,000	500,000	\$44,550.81	\$0.00	\$4,082.25	(\$1,543.91)	\$2,538.34	5.70%
13	2,500	1,000,000	\$90,766.86	\$0.00	\$8,164.50	(\$3,437.31)	\$4,727.19	5.21%
14	5,000	2,500,000	\$218,798.62	\$0.00	\$20,411.25	(\$7,719.55)	\$12,691.70	5.80%
15	10,000	5,000,000	\$435,724.89	\$0.00	\$40,822.50	(\$15,439.11)	\$25,383.39	5.83%
16	25,000	7,500,000	\$695,130.72	\$0.00	\$61,233.75	(\$30,148.27)	\$31,085.48	4.47%
17	25,000	10,000,000	\$890,817.22	\$0.00	\$81,645.00	(\$34,373.02)	\$47,271.98	5.31%
18	50,000	15,000,000	\$1,388,389.07	\$0.00	\$122,467.50	(\$60,296.56)	\$62,170.94	4.48%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 4
2020
Primary Substation

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Line	Level of Demand	Level of Usage	2019 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 3 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	3,000	1,000,000	\$87,831.27	\$0.00	\$8,079.70	(\$3,843.49)	\$4,236.21	4.82%
2	5,000	2,000,000	\$170,789.07	\$0.00	\$16,159.40	(\$6,940.99)	\$9,218.41	5.40%
3	5,000	3,000,000	\$247,894.67	\$0.00	\$24,239.10	(\$8,546.49)	\$15,692.61	6.33%
4	10,000	4,000,000	\$339,630.76	\$0.00	\$32,318.80	(\$13,881.97)	\$18,436.83	5.43%
5	10,000	5,000,000	\$416,736.36	\$0.00	\$40,398.50	(\$15,487.47)	\$24,911.03	5.98%
6	15,000	6,000,000	\$508,472.47	\$0.00	\$48,478.20	(\$20,822.96)	\$27,655.24	5.44%
7	15,000	7,000,000	\$585,578.07	\$0.00	\$56,557.90	(\$22,428.46)	\$34,129.44	5.83%
8	15,000	8,000,000	\$662,683.67	\$0.00	\$64,637.60	(\$24,033.96)	\$40,603.64	6.13%
9	25,000	9,000,000	\$769,050.30	\$0.00	\$72,717.30	(\$33,099.43)	\$39,617.87	5.15%
10	25,000	10,000,000	\$846,155.90	\$0.00	\$80,797.00	(\$34,704.93)	\$46,092.07	5.45%
11	30,000	12,500,000	\$1,053,550.41	\$0.00	\$100,996.25	(\$42,448.67)	\$58,547.58	5.56%
12	30,000	15,000,000	\$1,246,314.41	\$0.00	\$121,195.50	(\$46,462.42)	\$74,733.08	6.00%
13	50,000	17,500,000	\$1,497,600.43	\$0.00	\$141,394.75	(\$65,396.12)	\$75,998.63	5.07%
14	50,000	20,000,000	\$1,690,364.43	\$0.00	\$161,594.00	(\$69,409.87)	\$92,184.13	5.45%
15	50,000	25,000,000	\$2,075,892.43	\$0.00	\$201,992.50	(\$77,437.37)	\$124,555.13	6.00%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 4
2020
High Voltage Service

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Line	Level of Demand (kW)	Level of Usage (kWh)	2019 Projected Bill (D) = Period 3 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 3 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	1,000	500,000	\$42,627.01	\$0.00	\$4,039.85	(\$1,588.26)	\$2,451.59	5.75%
2	2,000	1,000,000	\$84,620.24	\$0.00	\$8,079.70	(\$3,176.54)	\$4,903.16	5.79%
3	3,000	1,500,000	\$125,906.73	\$0.00	\$12,119.55	(\$4,764.80)	\$7,354.75	5.84%
4	3,500	2,000,000	\$165,818.86	\$0.00	\$16,159.40	(\$5,972.59)	\$10,186.81	6.14%
5	5,000	2,500,000	\$208,479.62	\$0.00	\$20,199.25	(\$7,941.34)	\$12,257.91	5.88%
6	7,500	3,000,000	\$253,888.96	\$0.00	\$24,239.10	(\$10,671.06)	\$13,568.04	5.34%
7	7,500	4,000,000	\$330,964.66	\$0.00	\$32,318.80	(\$12,325.66)	\$19,993.14	6.04%
8	10,000	5,000,000	\$414,911.86	\$0.00	\$40,398.50	(\$15,882.68)	\$24,515.82	5.91%
9	10,000	6,000,000	\$491,987.56	\$0.00	\$48,478.20	(\$17,537.28)	\$30,940.92	6.29%
10	12,500	7,000,000	\$575,934.77	\$0.00	\$56,557.90	(\$21,094.31)	\$35,463.59	6.16%
11	12,500	8,000,000	\$653,010.47	\$0.00	\$64,637.60	(\$22,748.91)	\$41,888.69	6.41%
12	15,000	9,000,000	\$736,957.68	\$0.00	\$72,717.30	(\$26,305.93)	\$46,411.37	6.30%
13	20,000	10,000,000	\$827,776.38	\$0.00	\$80,797.00	(\$31,765.37)	\$49,031.63	5.92%
14	40,000	20,000,000	\$1,653,505.44	\$0.00	\$161,594.00	(\$63,530.73)	\$98,063.27	5.93%
15	60,000	30,000,000	\$2,479,234.45	\$0.00	\$242,391.00	(\$95,296.09)	\$147,094.91	5.93%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 4
2020
Private Outdoor Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2019 Projected Bill (D) = Period 3 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	7000							
2	Mercury	75	\$12.19	\$0.00	\$0.63	(\$0.11)	\$0.52	4.27%
3	21000							
4	Mercury	154	\$25.05	\$0.00	\$1.29	(\$0.22)	\$1.07	4.27%
5	2500							
6	Incandescent	64	\$10.41	\$0.00	\$0.54	(\$0.09)	\$0.45	4.32%
7	7000							
8	Fluorescent	66	\$10.75	\$0.00	\$0.55	(\$0.09)	\$0.46	4.28%
9	4000							
10	Mercury	43	\$7.01	\$0.00	\$0.36	(\$0.06)	\$0.30	4.28%
11	9500							
12	High Pressure Sodium	39	\$9.14	\$0.00	\$0.33	(\$0.06)	\$0.27	2.95%
13	28000							
14	High Pressure Sodium	96	\$14.72	\$0.00	\$0.80	(\$0.14)	\$0.66	4.48%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 4
2020
Street Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2019 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 3 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0	50	\$6.84	\$0.00	\$0.42	(\$0.06)	\$0.36	5.26%
2	0	100	\$11.68	\$0.00	\$0.84	(\$0.14)	\$0.70	5.99%
3	0	200	\$21.36	\$0.00	\$1.67	(\$0.26)	\$1.41	6.60%
4	0	400	\$40.74	\$0.00	\$3.35	(\$0.53)	\$2.82	6.92%
5	0	500	\$50.44	\$0.00	\$4.19	(\$0.67)	\$3.52	6.98%
6	0	750	\$74.62	\$0.00	\$6.29	(\$1.00)	\$5.29	7.09%
7	0	1,000	\$98.83	\$0.00	\$8.38	(\$1.33)	\$7.05	7.13%
8	0	1,200	\$118.19	\$0.00	\$10.06	(\$1.60)	\$8.46	7.16%
9	0	1,400	\$137.55	\$0.00	\$11.73	(\$1.87)	\$9.86	7.17%
10	0	1,600	\$156.94	\$0.00	\$13.40	(\$2.14)	\$11.26	7.17%
11	0	2,000	\$195.66	\$0.00	\$16.76	(\$2.66)	\$14.10	7.21%
12	0	2,500	\$243.86	\$0.00	\$20.95	(\$3.34)	\$17.61	7.22%
13	0	3,000	\$292.05	\$0.00	\$25.13	(\$4.01)	\$21.12	7.23%
14	0	4,000	\$388.40	\$0.00	\$33.52	(\$5.34)	\$28.18	7.26%
15	0	5,000	\$484.78	\$0.00	\$41.90	(\$6.67)	\$35.23	7.27%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 5
2021
Residential

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Line	Level of Demand (kW)	Level of Usage (kWh)	2020 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 4 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.26	\$0.00	\$0.37	(\$0.29)	\$0.08	0.78%
2	0.0	100	\$16.28	\$0.00	\$0.75	(\$0.58)	\$0.17	1.04%
3	0.0	200	\$28.31	\$0.00	\$1.51	(\$1.16)	\$0.35	1.24%
4	0.0	400	\$52.36	\$0.00	\$3.00	(\$2.30)	\$0.70	1.34%
5	0.0	500	\$64.39	\$0.00	\$3.75	(\$2.88)	\$0.87	1.35%
6	0.0	750	\$94.47	\$0.00	\$5.63	(\$4.33)	\$1.30	1.38%
7	0.0	1,000	\$124.52	\$0.00	\$7.51	(\$5.77)	\$1.74	1.40%
8	0.0	1,200	\$148.57	\$0.00	\$9.00	(\$6.92)	\$2.08	1.40%
9	0.0	1,400	\$172.63	\$0.00	\$10.51	(\$8.08)	\$2.43	1.41%
10	0.0	1,500	\$184.67	\$0.00	\$11.25	(\$8.66)	\$2.59	1.40%
11	0.0	2,000	\$244.81	\$0.00	\$15.01	(\$11.54)	\$3.47	1.42%
12	0.0	2,500	\$304.72	\$0.00	\$18.76	(\$14.43)	\$4.33	1.42%
13	0.0	3,000	\$364.61	\$0.00	\$22.52	(\$17.31)	\$5.21	1.43%
14	0.0	4,000	\$484.42	\$0.00	\$30.02	(\$23.08)	\$6.94	1.43%
15	0.0	5,000	\$604.25	\$0.00	\$37.52	(\$28.86)	\$8.66	1.43%
16	0.0	7,500	\$903.79	\$0.00	\$56.28	(\$43.28)	\$13.00	1.44%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 5
2021
Residential Heating (Winter)

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Line	Level of Demand	Level of Usage	2020 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 4 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$9.65	\$0.00	\$0.32	(\$0.24)	\$0.08	0.83%
2	0.0	100	\$15.05	\$0.00	\$0.64	(\$0.49)	\$0.15	1.00%
3	0.0	200	\$25.87	\$0.00	\$1.27	(\$0.98)	\$0.29	1.12%
4	0.0	400	\$47.48	\$0.00	\$2.54	(\$1.95)	\$0.59	1.24%
5	0.0	500	\$58.28	\$0.00	\$3.18	(\$2.44)	\$0.74	1.27%
6	0.0	750	\$85.31	\$0.00	\$4.77	(\$3.67)	\$1.10	1.29%
7	0.0	1,000	\$112.31	\$0.00	\$6.36	(\$4.89)	\$1.47	1.31%
8	0.0	1,200	\$133.91	\$0.00	\$7.63	(\$5.86)	\$1.77	1.32%
9	0.0	1,400	\$155.53	\$0.00	\$8.90	(\$6.84)	\$2.06	1.32%
10	0.0	1,500	\$166.34	\$0.00	\$9.54	(\$7.33)	\$2.21	1.33%
11	0.0	2,000	\$220.39	\$0.00	\$12.72	(\$9.78)	\$2.94	1.33%
12	0.0	2,500	\$274.20	\$0.00	\$15.89	(\$12.23)	\$3.66	1.33%
13	0.0	3,000	\$327.99	\$0.00	\$19.07	(\$14.67)	\$4.40	1.34%
14	0.0	4,000	\$435.58	\$0.00	\$25.43	(\$19.56)	\$5.87	1.35%
15	0.0	5,000	\$543.19	\$0.00	\$31.79	(\$24.44)	\$7.35	1.35%
16	0.0	7,500	\$812.21	\$0.00	\$47.69	(\$36.67)	\$11.02	1.36%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 5
2021
Residential Heating (Summer)

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Line	Level of Demand (kW)	Level of Usage (kWh)	2020 Projected Bill (D) = Period 4 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	0.0	50	\$10.26	\$0.00	\$0.37	(\$0.29)	\$0.08	0.78%
2	0.0	100	\$16.28	\$0.00	\$0.75	(\$0.58)	\$0.17	1.04%
3	0.0	200	\$28.31	\$0.00	\$1.51	(\$1.16)	\$0.35	1.24%
4	0.0	400	\$52.36	\$0.00	\$3.00	(\$2.30)	\$0.70	1.34%
5	0.0	500	\$64.39	\$0.00	\$3.75	(\$2.88)	\$0.87	1.35%
6	0.0	750	\$94.47	\$0.00	\$5.63	(\$4.33)	\$1.30	1.38%
7	0.0	1,000	\$124.52	\$0.00	\$7.51	(\$5.77)	\$1.74	1.40%
8	0.0	1,200	\$148.57	\$0.00	\$9.00	(\$6.92)	\$2.08	1.40%
9	0.0	1,400	\$172.63	\$0.00	\$10.51	(\$8.08)	\$2.43	1.41%
10	0.0	1,500	\$184.67	\$0.00	\$11.25	(\$8.66)	\$2.59	1.40%
11	0.0	2,000	\$244.81	\$0.00	\$15.01	(\$11.54)	\$3.47	1.42%
12	0.0	2,500	\$304.72	\$0.00	\$18.76	(\$14.43)	\$4.33	1.42%
13	0.0	3,000	\$364.61	\$0.00	\$22.52	(\$17.31)	\$5.21	1.43%
14	0.0	4,000	\$484.42	\$0.00	\$30.02	(\$23.08)	\$6.94	1.43%
15	0.0	5,000	\$604.25	\$0.00	\$37.52	(\$28.86)	\$8.66	1.43%
16	0.0	7,500	\$903.79	\$0.00	\$56.28	(\$43.28)	\$13.00	1.44%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 5
2021
Secondary Unmetered

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Line	Level of Demand (kW)	Level of Usage (kWh)	2020 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 4 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5.0	50	\$12.79	\$0.00	\$0.37	(\$3.09)	(\$2.72)	-21.27%
2	5.0	100	\$18.33	\$0.00	\$0.75	(\$3.25)	(\$2.50)	-13.64%
3	5.0	150	\$23.86	\$0.00	\$1.12	(\$3.41)	(\$2.29)	-9.60%
4	5.0	200	\$29.38	\$0.00	\$1.51	(\$3.57)	(\$2.06)	-7.01%
5	5.0	300	\$40.42	\$0.00	\$2.25	(\$3.88)	(\$1.63)	-4.03%
6	5.0	400	\$51.49	\$0.00	\$3.00	(\$4.20)	(\$1.20)	-2.33%
7	5.0	500	\$62.56	\$0.00	\$3.75	(\$4.51)	(\$0.76)	-1.21%
8	5.0	600	\$73.61	\$0.00	\$4.51	(\$4.83)	(\$0.32)	-0.43%
9	5.0	800	\$95.70	\$0.00	\$6.00	(\$5.45)	\$0.55	0.57%
10	5.0	1,000	\$117.81	\$0.00	\$7.51	(\$6.07)	\$1.44	1.22%
11	5.0	1,200	\$139.93	\$0.00	\$9.00	(\$6.70)	\$2.30	1.64%
12	5.0	1,400	\$162.02	\$0.00	\$10.51	(\$7.33)	\$3.18	1.96%
13	5.0	1,600	\$182.23	\$0.00	\$12.01	(\$7.96)	\$4.05	2.22%
14	5.0	2,000	\$218.78	\$0.00	\$15.01	(\$9.22)	\$5.79	2.65%
15	5.0	2,200	\$236.96	\$0.00	\$16.51	(\$9.85)	\$6.66	2.81%
16	5.0	2,400	\$255.12	\$0.00	\$18.01	(\$10.47)	\$7.54	2.96%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 5
2021
Secondary Single Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2020 Projected Bill (D) = Period 4 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 4 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	750	\$92.17	\$0.00	\$5.63	(\$5.29)	\$0.34	0.37%
2	5	1,500	\$175.10	\$0.00	\$11.25	(\$7.65)	\$3.60	2.06%
3	10	1,500	\$202.58	\$0.00	\$11.25	(\$10.61)	\$0.64	0.32%
4	25	5,000	\$603.34	\$0.00	\$37.52	(\$30.43)	\$7.09	1.18%
5	25	7,500	\$830.56	\$0.00	\$56.28	(\$38.28)	\$18.00	2.17%
6	25	10,000	\$1,057.79	\$0.00	\$75.04	(\$46.13)	\$28.91	2.73%
7	50	15,000	\$1,649.60	\$0.00	\$112.57	(\$76.54)	\$36.03	2.18%
8	50	25,000	\$2,552.88	\$0.00	\$187.62	(\$107.93)	\$79.69	3.12%
9	200	50,000	\$5,635.43	\$0.00	\$375.24	(\$274.82)	\$100.42	1.78%
10	200	100,000	\$10,151.90	\$0.00	\$750.47	(\$431.73)	\$318.74	3.14%
11	300	125,000	\$12,959.62	\$0.00	\$938.09	(\$569.14)	\$368.95	2.85%
12	500	200,000	\$20,833.37	\$0.00	\$1,500.94	(\$922.40)	\$578.54	2.78%
13	1,000	300,000	\$32,613.85	\$0.00	\$2,251.41	(\$1,530.98)	\$720.43	2.21%
14	1,000	500,000	\$50,679.81	\$0.00	\$3,752.35	(\$2,158.64)	\$1,593.71	3.14%
15	2,500	750,000	\$81,504.77	\$0.00	\$5,628.53	(\$3,827.44)	\$1,801.09	2.21%
16	2,500	1,000,000	\$103,732.74	\$0.00	\$7,504.70	(\$4,612.01)	\$2,892.69	2.79%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 5
2021
Secondary Three Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2020 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 4 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	500	\$71.89	\$0.00	\$3.75	(\$4.51)	(\$0.76)	-1.06%
2	5	1,500	\$182.44	\$0.00	\$11.25	(\$7.65)	\$3.60	1.97%
3	10	1,500	\$209.92	\$0.00	\$11.25	(\$10.61)	\$0.64	0.30%
4	25	5,000	\$610.68	\$0.00	\$37.52	(\$30.43)	\$7.09	1.16%
5	25	7,500	\$837.90	\$0.00	\$56.28	(\$38.28)	\$18.00	2.15%
6	25	10,000	\$1,065.13	\$0.00	\$75.04	(\$46.13)	\$28.91	2.71%
7	50	25,000	\$2,560.22	\$0.00	\$187.62	(\$107.93)	\$79.69	3.11%
8	200	50,000	\$5,642.77	\$0.00	\$375.24	(\$274.82)	\$100.42	1.78%
9	200	125,000	\$12,417.47	\$0.00	\$938.09	(\$510.19)	\$427.90	3.45%
10	500	200,000	\$20,840.71	\$0.00	\$1,500.94	(\$922.40)	\$578.54	2.78%
11	1,000	300,000	\$32,621.19	\$0.00	\$2,251.41	(\$1,530.98)	\$720.43	2.21%
12	1,000	500,000	\$50,687.15	\$0.00	\$3,752.35	(\$2,158.64)	\$1,593.71	3.14%
13	2,500	750,000	\$81,512.11	\$0.00	\$5,628.53	(\$3,827.44)	\$1,801.09	2.21%
14	2,500	1,000,000	\$103,740.08	\$0.00	\$7,504.70	(\$4,612.01)	\$2,892.69	2.79%
15	5,000	1,500,000	\$161,581.23	\$0.00	\$11,257.05	(\$7,654.88)	\$3,602.17	2.23%
16	5,000	2,000,000	\$205,684.88	\$0.00	\$15,009.40	(\$9,224.03)	\$5,785.37	2.81%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 5
2021
Primary Service

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Line	Level of Demand	Level of Usage	2020 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 4 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	1,000	\$200.62	\$0.00	\$7.31	(\$6.40)	\$0.91	0.45%
2	5	2,500	\$332.23	\$0.00	\$18.28	(\$9.53)	\$8.75	2.63%
3	10	5,000	\$568.54	\$0.00	\$36.56	(\$19.06)	\$17.50	3.08%
4	25	7,500	\$840.39	\$0.00	\$54.83	(\$37.22)	\$17.61	2.10%
5	25	10,000	\$1,058.97	\$0.00	\$73.12	(\$42.43)	\$30.69	2.90%
6	50	20,000	\$2,019.20	\$0.00	\$146.24	(\$84.86)	\$61.38	3.04%
7	50	30,000	\$2,887.92	\$0.00	\$219.36	(\$105.72)	\$113.64	3.94%
8	200	50,000	\$5,157.73	\$0.00	\$365.59	(\$276.84)	\$88.75	1.72%
9	200	75,000	\$7,329.51	\$0.00	\$548.40	(\$329.00)	\$219.40	2.99%
10	200	100,000	\$9,501.29	\$0.00	\$731.19	(\$381.14)	\$350.05	3.68%
11	500	250,000	\$23,596.79	\$0.00	\$1,827.97	(\$952.87)	\$875.10	3.71%
12	1,000	500,000	\$47,089.15	\$0.00	\$3,655.95	(\$1,905.73)	\$1,750.22	3.72%
13	2,500	1,000,000	\$95,494.05	\$0.00	\$7,311.90	(\$4,242.84)	\$3,069.06	3.21%
14	5,000	2,500,000	\$231,490.32	\$0.00	\$18,279.75	(\$9,528.68)	\$8,751.07	3.78%
15	10,000	5,000,000	\$461,108.28	\$0.00	\$36,559.50	(\$19,057.36)	\$17,502.14	3.80%
16	25,000	7,500,000	\$726,216.20	\$0.00	\$54,839.25	(\$37,213.40)	\$17,625.85	2.43%
17	25,000	10,000,000	\$938,089.20	\$0.00	\$73,119.00	(\$42,428.40)	\$30,690.60	3.27%
18	50,000	15,000,000	\$1,450,560.01	\$0.00	\$109,678.50	(\$74,426.78)	\$35,251.72	2.43%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 5
2021
Primary Substation

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Line	Level of Demand	Level of Usage	2020 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 4 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	3,000	1,000,000	\$92,067.48	\$0.00	\$45,211.60	(\$4,744.08)	\$40,467.52	43.95%
2	5,000	2,000,000	\$180,007.48	\$0.00	\$14,472.00	(\$8,567.36)	\$5,904.64	3.28%
3	5,000	3,000,000	\$263,587.28	\$0.00	\$21,708.00	(\$10,549.06)	\$11,158.94	4.23%
4	10,000	4,000,000	\$358,067.59	\$0.00	\$28,944.00	(\$17,134.73)	\$11,809.27	3.30%
5	10,000	5,000,000	\$441,647.39	\$0.00	\$36,180.00	(\$19,116.43)	\$17,063.57	3.86%
6	15,000	6,000,000	\$536,127.71	\$0.00	\$43,416.00	(\$25,702.09)	\$17,713.91	3.30%
7	15,000	7,000,000	\$619,707.51	\$0.00	\$50,652.00	(\$27,683.79)	\$22,968.21	3.71%
8	15,000	8,000,000	\$703,287.31	\$0.00	\$57,888.00	(\$29,665.49)	\$28,222.51	4.01%
9	25,000	9,000,000	\$808,668.17	\$0.00	\$65,124.00	(\$40,855.13)	\$24,268.87	3.00%
10	25,000	10,000,000	\$892,247.97	\$0.00	\$72,360.00	(\$42,836.83)	\$29,523.17	3.31%
11	30,000	12,500,000	\$1,112,097.99	\$0.00	\$90,450.00	(\$52,395.04)	\$38,054.96	3.42%
12	30,000	15,000,000	\$1,321,047.49	\$0.00	\$108,540.00	(\$57,349.29)	\$51,190.71	3.88%
13	50,000	17,500,000	\$1,573,599.06	\$0.00	\$126,630.00	(\$80,719.40)	\$45,910.60	2.92%
14	50,000	20,000,000	\$1,782,548.56	\$0.00	\$144,720.00	(\$85,673.65)	\$59,046.35	3.31%
15	50,000	25,000,000	\$2,200,447.56	\$0.00	\$180,900.00	(\$95,582.15)	\$85,317.85	3.88%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 5
2021
High Voltage Service

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Line	Level of Demand (kW)	Level of Usage (kWh)	2020 Projected Bill (D) = Period 4 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 4 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	1,000	500,000	\$45,078.60	\$0.00	\$3,618.00	(\$1,960.43)	\$1,657.57	3.68%
2	2,000	1,000,000	\$89,523.40	\$0.00	\$7,236.00	(\$3,920.84)	\$3,315.16	3.70%
3	3,000	1,500,000	\$133,261.48	\$0.00	\$10,854.00	(\$5,881.27)	\$4,972.73	3.73%
4	3,500	2,000,000	\$176,005.67	\$0.00	\$14,472.00	(\$7,372.05)	\$7,099.95	4.03%
5	5,000	2,500,000	\$220,737.53	\$0.00	\$18,090.00	(\$9,802.11)	\$8,287.89	3.75%
6	7,500	3,000,000	\$267,457.00	\$0.00	\$21,708.00	(\$13,171.44)	\$8,536.56	3.19%
7	7,500	4,000,000	\$350,957.80	\$0.00	\$28,944.00	(\$15,213.74)	\$13,730.26	3.91%
8	10,000	5,000,000	\$439,427.68	\$0.00	\$36,180.00	(\$19,604.21)	\$16,575.79	3.77%
9	10,000	6,000,000	\$522,928.48	\$0.00	\$43,416.00	(\$21,646.51)	\$21,769.49	4.16%
10	12,500	7,000,000	\$611,398.36	\$0.00	\$50,652.00	(\$26,036.99)	\$24,615.01	4.03%
11	12,500	8,000,000	\$694,899.16	\$0.00	\$57,888.00	(\$28,079.29)	\$29,808.71	4.29%
12	15,000	9,000,000	\$783,369.05	\$0.00	\$65,124.00	(\$32,469.77)	\$32,654.23	4.17%
13	20,000	10,000,000	\$876,808.01	\$0.00	\$72,360.00	(\$39,208.43)	\$33,151.57	3.78%
14	40,000	20,000,000	\$1,751,568.71	\$0.00	\$144,720.00	(\$78,416.87)	\$66,303.13	3.79%
15	60,000	30,000,000	\$2,626,329.36	\$0.00	\$217,080.00	(\$117,625.29)	\$99,454.71	3.79%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 5
2021
Private Outdoor Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2020 Projected Bill (D) = Period 4 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	7000							
2	Mercury	75	\$12.71	\$0.00	\$0.56	(\$0.13)	\$0.43	3.38%
3	21000							
4	Mercury	154	\$26.12	\$0.00	\$1.16	(\$0.27)	\$0.89	3.41%
5	2500							
6	Incandescent	64	\$10.86	\$0.00	\$0.48	(\$0.11)	\$0.37	3.41%
7	7000							
8	Fluorescent	66	\$11.21	\$0.00	\$0.50	(\$0.12)	\$0.38	3.39%
9	4000							
10	Mercury	43	\$7.31	\$0.00	\$0.32	(\$0.08)	\$0.24	3.28%
11	9500							
12	High Pressure Sodium	39	\$9.41	\$0.00	\$0.29	(\$0.07)	\$0.22	2.34%
13	28000							
14	High Pressure Sodium	96	\$15.38	\$0.00	\$0.72	(\$0.17)	\$0.55	3.58%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 5
2021
Street Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2020 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 4 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0	50	\$7.20	\$0.00	\$0.37	(\$0.09)	\$0.28	3.89%
2	0	100	\$12.38	\$0.00	\$0.75	(\$0.16)	\$0.59	4.77%
3	0	200	\$22.77	\$0.00	\$1.51	(\$0.33)	\$1.18	5.18%
4	0	400	\$43.56	\$0.00	\$3.00	(\$0.66)	\$2.34	5.37%
5	0	500	\$53.96	\$0.00	\$3.75	(\$0.82)	\$2.93	5.43%
6	0	750	\$79.91	\$0.00	\$5.63	(\$1.23)	\$4.40	5.51%
7	0	1,000	\$105.88	\$0.00	\$7.51	(\$1.65)	\$5.86	5.53%
8	0	1,200	\$126.65	\$0.00	\$9.00	(\$1.98)	\$7.02	5.54%
9	0	1,400	\$147.41	\$0.00	\$10.51	(\$2.30)	\$8.21	5.57%
10	0	1,600	\$168.20	\$0.00	\$12.01	(\$2.64)	\$9.37	5.57%
11	0	2,000	\$209.76	\$0.00	\$15.01	(\$3.30)	\$11.71	5.58%
12	0	2,500	\$261.47	\$0.00	\$18.76	(\$4.11)	\$14.65	5.60%
13	0	3,000	\$313.17	\$0.00	\$22.52	(\$4.94)	\$17.58	5.61%
14	0	4,000	\$416.58	\$0.00	\$30.02	(\$6.59)	\$23.43	5.62%
15	0	5,000	\$520.01	\$0.00	\$37.52	(\$8.24)	\$29.28	5.63%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 6
2022
Residential

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Line	Level of Demand (kW)	Level of Usage (kWh)	2021 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.34	\$0.00	\$0.37	(\$0.17)	\$0.20	1.93%
2	0.0	100	\$16.45	\$0.00	\$0.73	(\$0.34)	\$0.39	2.37%
3	0.0	200	\$28.66	\$0.00	\$1.45	(\$0.68)	\$0.77	2.69%
4	0.0	400	\$53.06	\$0.00	\$2.92	(\$1.37)	\$1.55	2.92%
5	0.0	500	\$65.26	\$0.00	\$3.64	(\$1.71)	\$1.93	2.96%
6	0.0	750	\$95.77	\$0.00	\$5.46	(\$2.55)	\$2.91	3.04%
7	0.0	1,000	\$126.26	\$0.00	\$7.29	(\$3.40)	\$3.89	3.08%
8	0.0	1,200	\$150.65	\$0.00	\$8.75	(\$4.09)	\$4.66	3.09%
9	0.0	1,400	\$175.06	\$0.00	\$10.20	(\$4.77)	\$5.43	3.10%
10	0.0	1,500	\$187.26	\$0.00	\$10.94	(\$5.11)	\$5.83	3.11%
11	0.0	2,000	\$248.28	\$0.00	\$14.58	(\$6.82)	\$7.76	3.13%
12	0.0	2,500	\$309.05	\$0.00	\$18.22	(\$8.51)	\$9.71	3.14%
13	0.0	3,000	\$369.82	\$0.00	\$21.87	(\$10.22)	\$11.65	3.15%
14	0.0	4,000	\$491.36	\$0.00	\$29.15	(\$13.62)	\$15.53	3.16%
15	0.0	5,000	\$612.91	\$0.00	\$36.45	(\$17.02)	\$19.43	3.17%
16	0.0	7,500	\$916.79	\$0.00	\$54.67	(\$25.54)	\$29.13	3.18%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 6
2022
Residential Heating (Winter)

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Line	Level of Demand	Level of Usage	2021 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$9.73	\$0.00	\$0.30	(\$0.15)	\$0.15	1.54%
2	0.0	100	\$15.20	\$0.00	\$0.62	(\$0.29)	\$0.33	2.17%
3	0.0	200	\$26.16	\$0.00	\$1.24	(\$0.57)	\$0.67	2.56%
4	0.0	400	\$48.07	\$0.00	\$2.47	(\$1.16)	\$1.31	2.73%
5	0.0	500	\$59.02	\$0.00	\$3.09	(\$1.45)	\$1.64	2.78%
6	0.0	750	\$86.41	\$0.00	\$4.63	(\$2.16)	\$2.47	2.86%
7	0.0	1,000	\$113.78	\$0.00	\$6.18	(\$2.88)	\$3.30	2.90%
8	0.0	1,200	\$135.68	\$0.00	\$7.41	(\$3.47)	\$3.94	2.90%
9	0.0	1,400	\$157.59	\$0.00	\$8.65	(\$4.04)	\$4.61	2.93%
10	0.0	1,500	\$168.55	\$0.00	\$9.26	(\$4.33)	\$4.93	2.92%
11	0.0	2,000	\$223.33	\$0.00	\$12.35	(\$5.77)	\$6.58	2.95%
12	0.0	2,500	\$277.86	\$0.00	\$15.44	(\$7.21)	\$8.23	2.96%
13	0.0	3,000	\$332.39	\$0.00	\$18.53	(\$8.66)	\$9.87	2.97%
14	0.0	4,000	\$441.45	\$0.00	\$24.71	(\$11.54)	\$13.17	2.98%
15	0.0	5,000	\$550.54	\$0.00	\$30.88	(\$14.43)	\$16.45	2.99%
16	0.0	7,500	\$823.23	\$0.00	\$46.31	(\$21.64)	\$24.67	3.00%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 6
2022
Residential Heating (Summer)

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Line	Level of Demand	Level of Usage	2021 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.34	\$0.00	\$0.37	(\$0.17)	\$0.20	1.93%
2	0.0	100	\$16.45	\$0.00	\$0.73	(\$0.34)	\$0.39	2.37%
3	0.0	200	\$28.66	\$0.00	\$1.45	(\$0.68)	\$0.77	2.69%
4	0.0	400	\$53.06	\$0.00	\$2.92	(\$1.37)	\$1.55	2.92%
5	0.0	500	\$65.26	\$0.00	\$3.64	(\$1.71)	\$1.93	2.96%
6	0.0	750	\$95.77	\$0.00	\$5.46	(\$2.55)	\$2.91	3.04%
7	0.0	1,000	\$126.26	\$0.00	\$7.29	(\$3.40)	\$3.89	3.08%
8	0.0	1,200	\$150.65	\$0.00	\$8.75	(\$4.09)	\$4.66	3.09%
9	0.0	1,400	\$175.06	\$0.00	\$10.20	(\$4.77)	\$5.43	3.10%
10	0.0	1,500	\$187.26	\$0.00	\$10.94	(\$5.11)	\$5.83	3.11%
11	0.0	2,000	\$248.28	\$0.00	\$14.58	(\$6.82)	\$7.76	3.13%
12	0.0	2,500	\$309.05	\$0.00	\$18.22	(\$8.51)	\$9.71	3.14%
13	0.0	3,000	\$369.82	\$0.00	\$21.87	(\$10.22)	\$11.65	3.15%
14	0.0	4,000	\$491.36	\$0.00	\$29.15	(\$13.62)	\$15.53	3.16%
15	0.0	5,000	\$612.91	\$0.00	\$36.45	(\$17.02)	\$19.43	3.17%
16	0.0	7,500	\$916.79	\$0.00	\$54.67	(\$25.54)	\$29.13	3.18%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 6
2022
Secondary Unmetered

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Line	Level of Demand (kW)	Level of Usage (kWh)	2021 Projected Bill (D) = Period 5 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5.0	50	\$10.07	\$0.00	\$0.37	(\$1.84)	(\$1.47)	-14.60%
2	5.0	100	\$15.83	\$0.00	\$0.73	(\$1.92)	(\$1.19)	-7.52%
3	5.0	150	\$21.57	\$0.00	\$1.09	(\$2.02)	(\$0.93)	-4.31%
4	5.0	200	\$27.32	\$0.00	\$1.45	(\$2.11)	(\$0.66)	-2.42%
5	5.0	300	\$38.79	\$0.00	\$2.19	(\$2.29)	(\$0.10)	-0.26%
6	5.0	400	\$50.29	\$0.00	\$2.92	(\$2.48)	\$0.44	0.87%
7	5.0	500	\$61.80	\$0.00	\$3.64	(\$2.66)	\$0.98	1.59%
8	5.0	600	\$73.29	\$0.00	\$4.37	(\$2.85)	\$1.52	2.07%
9	5.0	800	\$96.25	\$0.00	\$5.83	(\$3.22)	\$2.61	2.71%
10	5.0	1,000	\$119.25	\$0.00	\$7.29	(\$3.60)	\$3.69	3.09%
11	5.0	1,200	\$142.23	\$0.00	\$8.75	(\$3.97)	\$4.78	3.36%
12	5.0	1,400	\$165.20	\$0.00	\$10.20	(\$4.34)	\$5.86	3.55%
13	5.0	1,600	\$186.28	\$0.00	\$11.66	(\$4.70)	\$6.96	3.74%
14	5.0	2,000	\$224.57	\$0.00	\$14.58	(\$5.44)	\$9.14	4.07%
15	5.0	2,200	\$243.62	\$0.00	\$16.03	(\$5.81)	\$10.22	4.20%
16	5.0	2,400	\$262.66	\$0.00	\$17.50	(\$6.18)	\$11.32	4.31%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 6
2022
Secondary Single Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2021 Projected Bill (D) = Period 5 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	750	\$92.51	\$0.00	\$5.46	(\$3.13)	\$2.33	2.52%
2	5	1,500	\$178.70	\$0.00	\$10.94	(\$4.52)	\$6.42	3.59%
3	10	1,500	\$203.22	\$0.00	\$10.94	(\$6.25)	\$4.69	2.31%
4	25	5,000	\$610.43	\$0.00	\$36.45	(\$17.95)	\$18.50	3.03%
5	25	7,500	\$848.56	\$0.00	\$54.67	(\$22.58)	\$32.09	3.78%
6	25	10,000	\$1,086.70	\$0.00	\$72.89	(\$27.21)	\$45.68	4.20%
7	50	15,000	\$1,685.63	\$0.00	\$109.34	(\$45.17)	\$64.17	3.81%
8	50	25,000	\$2,632.57	\$0.00	\$182.22	(\$63.68)	\$118.54	4.50%
9	200	50,000	\$5,735.85	\$0.00	\$364.43	(\$162.16)	\$202.27	3.53%
10	200	100,000	\$10,470.64	\$0.00	\$728.87	(\$254.75)	\$474.12	4.53%
11	300	125,000	\$13,328.57	\$0.00	\$911.09	(\$335.82)	\$575.27	4.32%
12	500	200,000	\$21,411.91	\$0.00	\$1,457.74	(\$544.28)	\$913.46	4.27%
13	1,000	300,000	\$33,334.28	\$0.00	\$2,186.61	(\$903.38)	\$1,283.23	3.85%
14	1,000	500,000	\$52,273.52	\$0.00	\$3,644.35	(\$1,273.74)	\$2,370.61	4.54%
15	2,500	750,000	\$83,305.86	\$0.00	\$5,466.52	(\$2,258.46)	\$3,208.06	3.85%
16	2,500	1,000,000	\$106,625.43	\$0.00	\$7,288.70	(\$2,721.41)	\$4,567.29	4.28%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 6
2022
Secondary Three Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2021 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	500	\$71.13	\$0.00	\$3.64	(\$2.66)	\$0.98	1.38%
2	5	1,500	\$186.04	\$0.00	\$10.94	(\$4.52)	\$6.42	3.45%
3	10	1,500	\$210.56	\$0.00	\$10.94	(\$6.25)	\$4.69	2.23%
4	25	5,000	\$617.77	\$0.00	\$36.45	(\$17.95)	\$18.50	2.99%
5	25	7,500	\$855.90	\$0.00	\$54.67	(\$22.58)	\$32.09	3.75%
6	25	10,000	\$1,094.04	\$0.00	\$72.89	(\$27.21)	\$45.68	4.18%
7	50	25,000	\$2,639.91	\$0.00	\$182.22	(\$63.68)	\$118.54	4.49%
8	200	50,000	\$5,743.19	\$0.00	\$364.43	(\$162.16)	\$202.27	3.52%
9	200	125,000	\$12,845.37	\$0.00	\$911.09	(\$301.04)	\$610.05	4.75%
10	500	200,000	\$21,419.25	\$0.00	\$1,457.74	(\$544.28)	\$913.46	4.26%
11	1,000	300,000	\$33,341.62	\$0.00	\$2,186.61	(\$903.38)	\$1,283.23	3.85%
12	1,000	500,000	\$52,280.86	\$0.00	\$3,644.35	(\$1,273.74)	\$2,370.61	4.53%
13	2,500	750,000	\$83,313.20	\$0.00	\$5,466.52	(\$2,258.46)	\$3,208.06	3.85%
14	2,500	1,000,000	\$106,632.77	\$0.00	\$7,288.70	(\$2,721.41)	\$4,567.29	4.28%
15	5,000	1,500,000	\$165,183.40	\$0.00	\$10,933.05	(\$4,516.92)	\$6,416.13	3.88%
16	5,000	2,000,000	\$211,470.25	\$0.00	\$14,577.40	(\$5,442.82)	\$9,134.58	4.32%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 6
2022
Primary Service

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Line	Level of Demand	Level of Usage	2021 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	1,000	\$201.53	\$0.00	\$7.10	(\$3.77)	\$3.33	1.65%
2	5	2,500	\$340.98	\$0.00	\$17.76	(\$5.61)	\$12.15	3.56%
3	10	5,000	\$586.04	\$0.00	\$35.51	(\$11.25)	\$24.26	4.14%
4	25	7,500	\$858.00	\$0.00	\$53.27	(\$21.95)	\$31.32	3.65%
5	25	10,000	\$1,089.66	\$0.00	\$71.01	(\$25.03)	\$45.98	4.22%
6	50	20,000	\$2,080.58	\$0.00	\$142.03	(\$50.07)	\$91.96	4.42%
7	50	30,000	\$3,001.56	\$0.00	\$213.04	(\$62.37)	\$150.67	5.02%
8	200	50,000	\$5,246.48	\$0.00	\$355.08	(\$163.36)	\$191.72	3.65%
9	200	75,000	\$7,548.91	\$0.00	\$532.61	(\$194.13)	\$338.48	4.48%
10	200	100,000	\$9,851.34	\$0.00	\$710.15	(\$224.90)	\$485.25	4.93%
11	500	250,000	\$24,471.89	\$0.00	\$1,775.38	(\$562.24)	\$1,213.14	4.96%
12	1,000	500,000	\$48,839.37	\$0.00	\$3,550.75	(\$1,124.49)	\$2,426.26	4.97%
13	2,500	1,000,000	\$98,563.11	\$0.00	\$7,101.50	(\$2,503.50)	\$4,598.00	4.67%
14	5,000	2,500,000	\$240,241.39	\$0.00	\$17,753.75	(\$5,622.41)	\$12,131.34	5.05%
15	10,000	5,000,000	\$478,610.42	\$0.00	\$35,507.50	(\$11,244.81)	\$24,262.69	5.07%
16	25,000	7,500,000	\$743,842.05	\$0.00	\$53,261.25	(\$21,958.02)	\$31,303.23	4.21%
17	25,000	10,000,000	\$968,779.80	\$0.00	\$71,015.00	(\$25,035.02)	\$45,979.98	4.75%
18	50,000	15,000,000	\$1,485,811.73	\$0.00	\$106,522.50	(\$43,916.05)	\$62,606.45	4.21%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 6
2022
Primary Substation

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Line	Level of Demand	Level of Usage	2021 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	3,000	1,000,000	\$132,535.00	\$0.00	\$7,027.70	(\$2,799.32)	\$4,228.38	3.19%
2	5,000	2,000,000	\$185,912.12	\$0.00	\$14,055.40	(\$5,055.30)	\$9,000.10	4.84%
3	5,000	3,000,000	\$274,746.22	\$0.00	\$21,083.10	(\$6,224.60)	\$14,858.50	5.41%
4	10,000	4,000,000	\$369,876.86	\$0.00	\$28,110.80	(\$10,110.59)	\$18,000.21	4.87%
5	10,000	5,000,000	\$458,710.96	\$0.00	\$35,138.50	(\$11,279.89)	\$23,858.61	5.20%
6	15,000	6,000,000	\$553,841.62	\$0.00	\$42,166.20	(\$15,165.89)	\$27,000.31	4.88%
7	15,000	7,000,000	\$642,675.72	\$0.00	\$49,193.90	(\$16,335.19)	\$32,858.71	5.11%
8	15,000	8,000,000	\$731,509.82	\$0.00	\$56,221.60	(\$17,504.49)	\$38,717.11	5.29%
9	25,000	9,000,000	\$832,937.04	\$0.00	\$63,249.30	(\$24,107.18)	\$39,142.12	4.70%
10	25,000	10,000,000	\$921,771.14	\$0.00	\$70,277.00	(\$25,276.48)	\$45,000.52	4.88%
11	30,000	12,500,000	\$1,150,152.95	\$0.00	\$87,846.25	(\$30,916.42)	\$56,929.83	4.95%
12	30,000	15,000,000	\$1,372,238.20	\$0.00	\$105,415.50	(\$33,839.67)	\$71,575.83	5.22%
13	50,000	17,500,000	\$1,619,509.66	\$0.00	\$122,984.75	(\$47,629.71)	\$75,355.04	4.65%
14	50,000	20,000,000	\$1,841,594.91	\$0.00	\$140,554.00	(\$50,552.96)	\$90,001.04	4.89%
15	50,000	25,000,000	\$2,285,765.41	\$0.00	\$175,692.50	(\$56,399.46)	\$119,293.04	5.22%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 6
2022
High Voltage Service

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Line	Level of Demand (kW)	Level of Usage (kWh)	2021 Projected Bill (D) = Period 5 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	1,000	500,000	\$46,736.17	\$0.00	\$3,513.85	(\$1,156.79)	\$2,357.06	5.04%
2	2,000	1,000,000	\$92,838.56	\$0.00	\$7,027.70	(\$2,313.59)	\$4,714.11	5.08%
3	3,000	1,500,000	\$138,234.21	\$0.00	\$10,541.55	(\$3,470.38)	\$7,071.17	5.12%
4	3,500	2,000,000	\$183,105.62	\$0.00	\$14,055.40	(\$4,350.05)	\$9,705.35	5.30%
5	5,000	2,500,000	\$229,025.42	\$0.00	\$17,569.25	(\$5,783.96)	\$11,785.29	5.15%
6	7,500	3,000,000	\$275,993.56	\$0.00	\$21,083.10	(\$7,772.12)	\$13,310.98	4.82%
7	7,500	4,000,000	\$364,688.06	\$0.00	\$28,110.80	(\$8,977.22)	\$19,133.58	5.25%
8	10,000	5,000,000	\$456,003.47	\$0.00	\$35,138.50	(\$11,567.94)	\$23,570.56	5.17%
9	10,000	6,000,000	\$544,697.97	\$0.00	\$42,166.20	(\$12,773.04)	\$29,393.16	5.40%
10	12,500	7,000,000	\$636,013.37	\$0.00	\$49,193.90	(\$15,363.74)	\$33,830.16	5.32%
11	12,500	8,000,000	\$724,707.87	\$0.00	\$56,221.60	(\$16,568.84)	\$39,652.76	5.47%
12	15,000	9,000,000	\$816,023.28	\$0.00	\$63,249.30	(\$19,159.55)	\$44,089.75	5.40%
13	20,000	10,000,000	\$909,959.58	\$0.00	\$70,277.00	(\$23,135.86)	\$47,141.14	5.18%
14	40,000	20,000,000	\$1,817,871.84	\$0.00	\$140,554.00	(\$46,271.72)	\$94,282.28	5.19%
15	60,000	30,000,000	\$2,725,784.07	\$0.00	\$210,831.00	(\$69,407.59)	\$141,423.41	5.19%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 6
2022
Private Outdoor Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2021 Projected Bill (D) = Period 5 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	7000							
2	Mercury	75	\$13.14	\$0.00	\$0.55	(\$0.08)	\$0.47	3.58%
3	21000							
4	Mercury	154	\$27.01	\$0.00	\$1.12	(\$0.16)	\$0.96	3.55%
5	2500							
6	Incandescent	64	\$11.23	\$0.00	\$0.47	(\$0.07)	\$0.40	3.56%
7	7000							
8	Fluorescent	66	\$11.59	\$0.00	\$0.48	(\$0.07)	\$0.41	3.54%
9	4000							
10	Mercury	43	\$7.55	\$0.00	\$0.31	(\$0.04)	\$0.27	3.58%
11	9500							
12	High Pressure Sodium	39	\$9.63	\$0.00	\$0.28	(\$0.04)	\$0.24	2.49%
13	28000							
14	High Pressure Sodium	96	\$15.93	\$0.00	\$0.70	(\$0.10)	\$0.60	3.77%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 6
2022
Street Lighting

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Line	Level of Demand	Level of Usage	2021 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 5 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0	50	\$7.48	\$0.00	\$0.37	(\$0.04)	\$0.33	4.41%
2	0	100	\$12.97	\$0.00	\$0.73	(\$0.10)	\$0.63	4.86%
3	0	200	\$23.95	\$0.00	\$1.45	(\$0.20)	\$1.25	5.22%
4	0	400	\$45.90	\$0.00	\$2.92	(\$0.39)	\$2.53	5.51%
5	0	500	\$56.89	\$0.00	\$3.64	(\$0.49)	\$3.15	5.54%
6	0	750	\$84.31	\$0.00	\$5.46	(\$0.73)	\$4.73	5.61%
7	0	1,000	\$111.74	\$0.00	\$7.29	(\$0.97)	\$6.32	5.66%
8	0	1,200	\$133.67	\$0.00	\$8.75	(\$1.17)	\$7.58	5.67%
9	0	1,400	\$155.62	\$0.00	\$10.20	(\$1.36)	\$8.84	5.68%
10	0	1,600	\$177.57	\$0.00	\$11.66	(\$1.55)	\$10.11	5.69%
11	0	2,000	\$221.47	\$0.00	\$14.58	(\$1.94)	\$12.64	5.71%
12	0	2,500	\$276.12	\$0.00	\$18.22	(\$2.43)	\$15.79	5.72%
13	0	3,000	\$330.75	\$0.00	\$21.87	(\$2.91)	\$18.96	5.73%
14	0	4,000	\$440.01	\$0.00	\$29.15	(\$3.89)	\$25.26	5.74%
15	0	5,000	\$549.29	\$0.00	\$36.45	(\$4.86)	\$31.59	5.75%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 7
2023
Residential

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Line	Level of Demand (kW)	Level of Usage (kWh)	2022 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 6 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.54	\$0.00	\$0.35	(\$0.20)	\$0.15	1.42%
2	0.0	100	\$16.84	\$0.00	\$0.70	(\$0.41)	\$0.29	1.72%
3	0.0	200	\$29.43	\$0.00	\$1.41	(\$0.81)	\$0.60	2.04%
4	0.0	400	\$54.61	\$0.00	\$2.81	(\$1.63)	\$1.18	2.16%
5	0.0	500	\$67.19	\$0.00	\$3.52	(\$2.03)	\$1.49	2.22%
6	0.0	750	\$98.68	\$0.00	\$5.28	(\$3.06)	\$2.22	2.25%
7	0.0	1,000	\$130.15	\$0.00	\$7.02	(\$4.07)	\$2.95	2.27%
8	0.0	1,200	\$155.31	\$0.00	\$8.43	(\$4.89)	\$3.54	2.28%
9	0.0	1,400	\$180.49	\$0.00	\$9.84	(\$5.70)	\$4.14	2.29%
10	0.0	1,500	\$193.09	\$0.00	\$10.54	(\$6.10)	\$4.44	2.30%
11	0.0	2,000	\$256.04	\$0.00	\$14.06	(\$8.14)	\$5.92	2.31%
12	0.0	2,500	\$318.76	\$0.00	\$17.57	(\$10.18)	\$7.39	2.32%
13	0.0	3,000	\$381.47	\$0.00	\$21.08	(\$12.21)	\$8.87	2.33%
14	0.0	4,000	\$506.89	\$0.00	\$28.12	(\$16.28)	\$11.84	2.34%
15	0.0	5,000	\$632.34	\$0.00	\$35.14	(\$20.36)	\$14.78	2.34%
16	0.0	7,500	\$945.92	\$0.00	\$52.71	(\$30.53)	\$22.18	2.34%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 7
2023
Residential Heating (Winter)

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Line	Level of Demand	Level of Usage	2022 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 6 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$9.88	\$0.00	\$0.30	(\$0.17)	\$0.13	1.32%
2	0.0	100	\$15.53	\$0.00	\$0.59	(\$0.34)	\$0.25	1.61%
3	0.0	200	\$26.83	\$0.00	\$1.19	(\$0.69)	\$0.50	1.86%
4	0.0	400	\$49.38	\$0.00	\$2.38	(\$1.38)	\$1.00	2.03%
5	0.0	500	\$60.66	\$0.00	\$2.98	(\$1.72)	\$1.26	2.08%
6	0.0	750	\$88.88	\$0.00	\$4.46	(\$2.59)	\$1.87	2.10%
7	0.0	1,000	\$117.08	\$0.00	\$5.95	(\$3.45)	\$2.50	2.14%
8	0.0	1,200	\$139.62	\$0.00	\$7.15	(\$4.14)	\$3.01	2.16%
9	0.0	1,400	\$162.20	\$0.00	\$8.33	(\$4.83)	\$3.50	2.16%
10	0.0	1,500	\$173.48	\$0.00	\$8.94	(\$5.17)	\$3.77	2.17%
11	0.0	2,000	\$229.91	\$0.00	\$11.91	(\$6.90)	\$5.01	2.18%
12	0.0	2,500	\$286.09	\$0.00	\$14.89	(\$8.62)	\$6.27	2.19%
13	0.0	3,000	\$342.26	\$0.00	\$17.87	(\$10.34)	\$7.53	2.20%
14	0.0	4,000	\$454.62	\$0.00	\$23.82	(\$13.79)	\$10.03	2.21%
15	0.0	5,000	\$566.99	\$0.00	\$29.78	(\$17.24)	\$12.54	2.21%
16	0.0	7,500	\$847.90	\$0.00	\$44.67	(\$25.87)	\$18.80	2.22%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 7
2023
Residential Heating (Summer)

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Line	Level of Demand (kW)	Level of Usage (kWh)	2022 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 6 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.54	\$0.00	\$0.35	(\$0.20)	\$0.15	1.42%
2	0.0	100	\$16.84	\$0.00	\$0.70	(\$0.41)	\$0.29	1.72%
3	0.0	200	\$29.43	\$0.00	\$1.41	(\$0.81)	\$0.60	2.04%
4	0.0	400	\$54.61	\$0.00	\$2.81	(\$1.63)	\$1.18	2.16%
5	0.0	500	\$67.19	\$0.00	\$3.52	(\$2.03)	\$1.49	2.22%
6	0.0	750	\$98.68	\$0.00	\$5.28	(\$3.06)	\$2.22	2.25%
7	0.0	1,000	\$130.15	\$0.00	\$7.02	(\$4.07)	\$2.95	2.27%
8	0.0	1,200	\$155.31	\$0.00	\$8.43	(\$4.89)	\$3.54	2.28%
9	0.0	1,400	\$180.49	\$0.00	\$9.84	(\$5.70)	\$4.14	2.29%
10	0.0	1,500	\$193.09	\$0.00	\$10.54	(\$6.10)	\$4.44	2.30%
11	0.0	2,000	\$256.04	\$0.00	\$14.06	(\$8.14)	\$5.92	2.31%
12	0.0	2,500	\$318.76	\$0.00	\$17.57	(\$10.18)	\$7.39	2.32%
13	0.0	3,000	\$381.47	\$0.00	\$21.08	(\$12.21)	\$8.87	2.33%
14	0.0	4,000	\$506.89	\$0.00	\$28.12	(\$16.28)	\$11.84	2.34%
15	0.0	5,000	\$632.34	\$0.00	\$35.14	(\$20.36)	\$14.78	2.34%
16	0.0	7,500	\$945.92	\$0.00	\$52.71	(\$30.53)	\$22.18	2.34%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 7
2023
Secondary Unmetered

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Line	Level of Demand (kW)	Level of Usage (kWh)	2022 Projected Bill (D) = Period 6 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	5.0	50	\$8.60	\$0.00	\$0.35	(\$2.19)	(\$1.84)	-21.40%
2	5.0	100	\$14.64	\$0.00	\$0.70	(\$2.31)	(\$1.61)	-11.00%
3	5.0	150	\$20.64	\$0.00	\$1.06	(\$2.41)	(\$1.35)	-6.54%
4	5.0	200	\$26.66	\$0.00	\$1.41	(\$2.52)	(\$1.11)	-4.16%
5	5.0	300	\$38.69	\$0.00	\$2.11	(\$2.75)	(\$0.64)	-1.65%
6	5.0	400	\$50.73	\$0.00	\$2.81	(\$2.96)	(\$0.15)	-0.30%
7	5.0	500	\$62.78	\$0.00	\$3.52	(\$3.19)	\$0.33	0.53%
8	5.0	600	\$74.81	\$0.00	\$4.22	(\$3.41)	\$0.81	1.08%
9	5.0	800	\$98.86	\$0.00	\$5.63	(\$3.85)	\$1.78	1.80%
10	5.0	1,000	\$122.94	\$0.00	\$7.02	(\$4.29)	\$2.73	2.22%
11	5.0	1,200	\$147.01	\$0.00	\$8.43	(\$4.73)	\$3.70	2.52%
12	5.0	1,400	\$171.06	\$0.00	\$9.84	(\$5.17)	\$4.67	2.73%
13	5.0	1,600	\$193.24	\$0.00	\$11.25	(\$5.63)	\$5.62	2.91%
14	5.0	2,000	\$233.71	\$0.00	\$14.06	(\$6.51)	\$7.55	3.23%
15	5.0	2,200	\$253.84	\$0.00	\$15.47	(\$6.95)	\$8.52	3.36%
16	5.0	2,400	\$273.98	\$0.00	\$16.87	(\$7.39)	\$9.48	3.46%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 7
2023
Secondary Single Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2022 Projected Bill (D) = Period 6 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 6 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	750	\$94.84	\$0.00	\$5.28	(\$3.74)	\$1.54	1.62%
2	5	1,500	\$185.12	\$0.00	\$10.54	(\$5.40)	\$5.14	2.78%
3	10	1,500	\$207.91	\$0.00	\$10.54	(\$7.48)	\$3.06	1.47%
4	25	5,000	\$628.93	\$0.00	\$35.14	(\$21.47)	\$13.67	2.17%
5	25	7,500	\$880.65	\$0.00	\$52.71	(\$27.00)	\$25.71	2.92%
6	25	10,000	\$1,132.38	\$0.00	\$70.29	(\$32.53)	\$37.76	3.33%
7	50	15,000	\$1,749.80	\$0.00	\$105.43	(\$53.99)	\$51.44	2.94%
8	50	25,000	\$2,751.11	\$0.00	\$175.72	(\$76.14)	\$99.58	3.62%
9	200	50,000	\$5,938.12	\$0.00	\$351.45	(\$193.84)	\$157.61	2.65%
10	200	100,000	\$10,944.76	\$0.00	\$702.89	(\$304.53)	\$398.36	3.64%
11	300	125,000	\$13,903.84	\$0.00	\$878.61	(\$401.46)	\$477.15	3.43%
12	500	200,000	\$22,325.37	\$0.00	\$1,405.78	(\$650.64)	\$755.14	3.38%
13	1,000	300,000	\$34,617.51	\$0.00	\$2,108.67	(\$1,079.92)	\$1,028.75	2.97%
14	1,000	500,000	\$54,644.13	\$0.00	\$3,514.45	(\$1,522.66)	\$1,991.79	3.65%
15	2,500	750,000	\$86,513.92	\$0.00	\$5,271.68	(\$2,699.78)	\$2,571.90	2.97%
16	2,500	1,000,000	\$111,192.72	\$0.00	\$7,028.90	(\$3,253.21)	\$3,775.69	3.40%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 7
2023
Secondary Three Phase

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Line	Level of Demand	Level of Usage	2022 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 6 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	500	\$72.11	\$0.00	\$3.52	(\$3.19)	\$0.33	0.46%
2	5	1,500	\$192.46	\$0.00	\$10.54	(\$5.40)	\$5.14	2.67%
3	10	1,500	\$215.25	\$0.00	\$10.54	(\$7.48)	\$3.06	1.42%
4	25	5,000	\$636.27	\$0.00	\$35.14	(\$21.47)	\$13.67	2.15%
5	25	7,500	\$887.99	\$0.00	\$52.71	(\$27.00)	\$25.71	2.90%
6	25	10,000	\$1,139.72	\$0.00	\$70.29	(\$32.53)	\$37.76	3.31%
7	50	25,000	\$2,758.45	\$0.00	\$175.72	(\$76.14)	\$99.58	3.61%
8	200	50,000	\$5,945.46	\$0.00	\$351.45	(\$193.84)	\$157.61	2.65%
9	200	125,000	\$13,455.42	\$0.00	\$878.61	(\$359.88)	\$518.73	3.86%
10	500	200,000	\$22,332.71	\$0.00	\$1,405.78	(\$650.64)	\$755.14	3.38%
11	1,000	300,000	\$34,624.85	\$0.00	\$2,108.67	(\$1,079.92)	\$1,028.75	2.97%
12	1,000	500,000	\$54,651.47	\$0.00	\$3,514.45	(\$1,522.66)	\$1,991.79	3.64%
13	2,500	750,000	\$86,521.26	\$0.00	\$5,271.68	(\$2,699.78)	\$2,571.90	2.97%
14	2,500	1,000,000	\$111,200.06	\$0.00	\$7,028.90	(\$3,253.21)	\$3,775.69	3.40%
15	5,000	1,500,000	\$171,599.53	\$0.00	\$10,543.35	(\$5,399.57)	\$5,143.78	3.00%
16	5,000	2,000,000	\$220,604.83	\$0.00	\$14,057.80	(\$6,506.42)	\$7,551.38	3.42%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 7
2023
Primary Service

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Line	Level of Demand	Level of Usage	2022 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 6 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	1,000	\$204.86	\$0.00	\$6.85	(\$4.52)	\$2.33	1.14%
2	5	2,500	\$353.13	\$0.00	\$17.12	(\$6.73)	\$10.39	2.94%
3	10	5,000	\$610.30	\$0.00	\$34.24	(\$13.43)	\$20.81	3.41%
4	25	7,500	\$889.32	\$0.00	\$51.36	(\$26.25)	\$25.11	2.82%
5	25	10,000	\$1,135.64	\$0.00	\$68.49	(\$29.93)	\$38.56	3.40%
6	50	20,000	\$2,172.54	\$0.00	\$136.97	(\$59.86)	\$77.11	3.55%
7	50	30,000	\$3,152.23	\$0.00	\$205.46	(\$74.57)	\$130.89	4.15%
8	200	50,000	\$5,438.20	\$0.00	\$342.42	(\$195.28)	\$147.14	2.71%
9	200	75,000	\$7,887.39	\$0.00	\$513.63	(\$232.06)	\$281.57	3.57%
10	200	100,000	\$10,336.59	\$0.00	\$684.84	(\$268.85)	\$415.99	4.02%
11	500	250,000	\$25,685.03	\$0.00	\$1,712.10	(\$672.12)	\$1,039.98	4.05%
12	1,000	500,000	\$51,265.63	\$0.00	\$3,424.20	(\$1,344.24)	\$2,079.96	4.06%
13	2,500	1,000,000	\$103,161.11	\$0.00	\$6,848.40	(\$2,992.76)	\$3,855.64	3.74%
14	5,000	2,500,000	\$252,372.73	\$0.00	\$17,121.00	(\$6,721.23)	\$10,399.77	4.12%
15	10,000	5,000,000	\$502,873.11	\$0.00	\$34,242.00	(\$13,442.46)	\$20,799.54	4.14%
16	25,000	7,500,000	\$775,145.28	\$0.00	\$51,363.00	(\$26,249.15)	\$25,113.85	3.24%
17	25,000	10,000,000	\$1,014,759.78	\$0.00	\$68,484.00	(\$29,927.65)	\$38,556.35	3.80%
18	50,000	15,000,000	\$1,548,418.18	\$0.00	\$102,726.00	(\$52,498.30)	\$50,227.70	3.24%

The Dayton Power and Light Company
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2023
Primary Substation

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Line	Level of Demand	Level of Usage	2022 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 6 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	3,000	1,000,000	\$136,763.38	\$0.00	\$6,777.20	(\$3,346.29)	\$3,430.91	2.51%
2	5,000	2,000,000	\$194,912.22	\$0.00	\$13,554.40	(\$6,043.09)	\$7,511.31	3.85%
3	5,000	3,000,000	\$289,604.72	\$0.00	\$20,331.60	(\$7,440.89)	\$12,890.71	4.45%
4	10,000	4,000,000	\$387,877.07	\$0.00	\$27,108.80	(\$12,086.18)	\$15,022.62	3.87%
5	10,000	5,000,000	\$482,569.57	\$0.00	\$33,886.00	(\$13,483.98)	\$20,402.02	4.23%
6	15,000	6,000,000	\$580,841.93	\$0.00	\$40,663.20	(\$18,129.27)	\$22,533.93	3.88%
7	15,000	7,000,000	\$675,534.43	\$0.00	\$47,440.40	(\$19,527.07)	\$27,913.33	4.13%
8	15,000	8,000,000	\$770,226.93	\$0.00	\$54,217.60	(\$20,924.87)	\$33,292.73	4.32%
9	25,000	9,000,000	\$872,079.16	\$0.00	\$60,994.80	(\$28,817.64)	\$32,177.16	3.69%
10	25,000	10,000,000	\$966,771.66	\$0.00	\$67,772.00	(\$30,215.44)	\$37,556.56	3.88%
11	30,000	12,500,000	\$1,207,082.78	\$0.00	\$84,715.00	(\$36,957.44)	\$47,757.56	3.96%
12	30,000	15,000,000	\$1,443,814.03	\$0.00	\$101,658.00	(\$40,451.94)	\$61,206.06	4.24%
13	50,000	17,500,000	\$1,694,864.70	\$0.00	\$118,601.00	(\$56,936.40)	\$61,664.60	3.64%
14	50,000	20,000,000	\$1,931,595.95	\$0.00	\$135,544.00	(\$60,430.90)	\$75,113.10	3.89%
15	50,000	25,000,000	\$2,405,058.45	\$0.00	\$169,430.00	(\$67,419.90)	\$102,010.10	4.24%

The Dayton Power and Light Company
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Electric Security Plan
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2023
High Voltage Service

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Line	Level of Demand	Level of Usage	2022 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 6 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	1,000	500,000	\$49,093.23	\$0.00	\$3,388.60	(\$1,382.83)	\$2,005.77	4.09%
2	2,000	1,000,000	\$97,552.67	\$0.00	\$6,777.20	(\$2,765.66)	\$4,011.54	4.11%
3	3,000	1,500,000	\$145,305.38	\$0.00	\$10,165.80	(\$4,148.49)	\$6,017.31	4.14%
4	3,500	2,000,000	\$192,810.97	\$0.00	\$13,554.40	(\$5,200.07)	\$8,354.33	4.33%
5	5,000	2,500,000	\$240,810.71	\$0.00	\$16,943.00	(\$6,914.16)	\$10,028.84	4.16%
6	7,500	3,000,000	\$289,304.54	\$0.00	\$20,331.60	(\$9,290.79)	\$11,040.81	3.82%
7	7,500	4,000,000	\$383,821.64	\$0.00	\$27,108.80	(\$10,731.39)	\$16,377.41	4.27%
8	10,000	5,000,000	\$479,574.03	\$0.00	\$33,886.00	(\$13,828.32)	\$20,057.68	4.18%
9	10,000	6,000,000	\$574,091.13	\$0.00	\$40,663.20	(\$15,268.92)	\$25,394.28	4.42%
10	12,500	7,000,000	\$669,843.53	\$0.00	\$47,440.40	(\$18,365.85)	\$29,074.55	4.34%
11	12,500	8,000,000	\$764,360.63	\$0.00	\$54,217.60	(\$19,806.45)	\$34,411.15	4.50%
12	15,000	9,000,000	\$860,113.03	\$0.00	\$60,994.80	(\$22,903.38)	\$38,091.42	4.43%
13	20,000	10,000,000	\$957,100.72	\$0.00	\$67,772.00	(\$27,656.64)	\$40,115.36	4.19%
14	40,000	20,000,000	\$1,912,154.12	\$0.00	\$135,544.00	(\$55,313.28)	\$80,230.72	4.20%
15	60,000	30,000,000	\$2,867,207.48	\$0.00	\$203,316.00	(\$82,969.93)	\$120,346.07	4.20%

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Electric Security Plan
Typical Bill Comparison - Period 7
2023
Private Outdoor Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2022 Projected Bill (D) = Period 6 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	7000							
2	Mercury	75	\$13.61	\$0.00	\$0.53	(\$0.09)	\$0.44	3.23%
3	21000							
4	Mercury	154	\$27.97	\$0.00	\$1.08	(\$0.19)	\$0.89	3.18%
5	2500							
6	Incandescent	64	\$11.63	\$0.00	\$0.45	(\$0.08)	\$0.37	3.18%
7	7000							
8	Fluorescent	66	\$12.00	\$0.00	\$0.46	(\$0.08)	\$0.38	3.17%
9	4000							
10	Mercury	43	\$7.82	\$0.00	\$0.30	(\$0.05)	\$0.25	3.20%
11	9500							
12	High Pressure Sodium	39	\$9.87	\$0.00	\$0.27	(\$0.05)	\$0.22	2.23%
13	28000							
14	High Pressure Sodium	96	\$16.53	\$0.00	\$0.67	(\$0.12)	\$0.55	3.33%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 7
2023
Street Lighting

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Line	Level of Demand	Level of Usage	2022 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 6 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0	50	\$7.81	\$0.00	\$0.35	(\$0.06)	\$0.29	3.71%
2	0	100	\$13.60	\$0.00	\$0.70	(\$0.11)	\$0.59	4.34%
3	0	200	\$25.20	\$0.00	\$1.41	(\$0.23)	\$1.18	4.68%
4	0	400	\$48.43	\$0.00	\$2.81	(\$0.47)	\$2.34	4.83%
5	0	500	\$60.04	\$0.00	\$3.52	(\$0.58)	\$2.94	4.90%
6	0	750	\$89.04	\$0.00	\$5.28	(\$0.87)	\$4.41	4.95%
7	0	1,000	\$118.06	\$0.00	\$7.02	(\$1.16)	\$5.86	4.96%
8	0	1,200	\$141.25	\$0.00	\$8.43	(\$1.39)	\$7.04	4.98%
9	0	1,400	\$164.46	\$0.00	\$9.84	(\$1.63)	\$8.21	4.99%
10	0	1,600	\$187.68	\$0.00	\$11.25	(\$1.86)	\$9.39	5.00%
11	0	2,000	\$234.11	\$0.00	\$14.06	(\$2.33)	\$11.73	5.01%
12	0	2,500	\$291.91	\$0.00	\$17.57	(\$2.91)	\$14.66	5.02%
13	0	3,000	\$349.71	\$0.00	\$21.08	(\$3.49)	\$17.59	5.03%
14	0	4,000	\$465.27	\$0.00	\$28.12	(\$4.64)	\$23.48	5.05%
15	0	5,000	\$580.88	\$0.00	\$35.14	(\$5.81)	\$29.33	5.05%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 8
2024
Residential

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Line	Level of Demand (kW)	Level of Usage (kWh)	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.69	\$0.00	\$0.31	(\$0.28)	\$0.03	0.28%
2	0.0	100	\$17.13	\$0.00	\$0.61	(\$0.54)	\$0.07	0.41%
3	0.0	200	\$30.03	\$0.00	\$1.23	(\$1.09)	\$0.14	0.47%
4	0.0	400	\$55.79	\$0.00	\$2.45	(\$2.17)	\$0.28	0.50%
5	0.0	500	\$68.68	\$0.00	\$3.06	(\$2.72)	\$0.34	0.50%
6	0.0	750	\$100.90	\$0.00	\$4.60	(\$4.08)	\$0.52	0.52%
7	0.0	1,000	\$133.10	\$0.00	\$6.14	(\$5.45)	\$0.69	0.52%
8	0.0	1,200	\$158.85	\$0.00	\$7.36	(\$6.53)	\$0.83	0.52%
9	0.0	1,400	\$184.63	\$0.00	\$8.59	(\$7.62)	\$0.97	0.53%
10	0.0	1,500	\$197.53	\$0.00	\$9.20	(\$8.17)	\$1.03	0.52%
11	0.0	2,000	\$261.96	\$0.00	\$12.27	(\$10.88)	\$1.39	0.53%
12	0.0	2,500	\$326.15	\$0.00	\$15.34	(\$13.61)	\$1.73	0.53%
13	0.0	3,000	\$390.34	\$0.00	\$18.40	(\$16.33)	\$2.07	0.53%
14	0.0	4,000	\$518.73	\$0.00	\$24.53	(\$21.78)	\$2.75	0.53%
15	0.0	5,000	\$647.12	\$0.00	\$30.67	(\$27.22)	\$3.45	0.53%
16	0.0	7,500	\$968.10	\$0.00	\$46.01	(\$40.83)	\$5.18	0.54%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 8
2024
Residential Heating (Winter)

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Line	Level of Demand	Level of Usage	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.01	\$0.00	\$0.26	(\$0.23)	\$0.03	0.30%
2	0.0	100	\$15.78	\$0.00	\$0.52	(\$0.46)	\$0.06	0.38%
3	0.0	200	\$27.33	\$0.00	\$1.04	(\$0.93)	\$0.11	0.40%
4	0.0	400	\$50.38	\$0.00	\$2.08	(\$1.84)	\$0.24	0.48%
5	0.0	500	\$61.92	\$0.00	\$2.59	(\$2.31)	\$0.28	0.45%
6	0.0	750	\$90.75	\$0.00	\$3.90	(\$3.46)	\$0.44	0.48%
7	0.0	1,000	\$119.58	\$0.00	\$5.20	(\$4.61)	\$0.59	0.49%
8	0.0	1,200	\$142.63	\$0.00	\$6.24	(\$5.53)	\$0.71	0.50%
9	0.0	1,400	\$165.70	\$0.00	\$7.28	(\$6.46)	\$0.82	0.49%
10	0.0	1,500	\$177.25	\$0.00	\$7.79	(\$6.92)	\$0.87	0.49%
11	0.0	2,000	\$234.92	\$0.00	\$10.40	(\$9.23)	\$1.17	0.50%
12	0.0	2,500	\$292.36	\$0.00	\$12.99	(\$11.53)	\$1.46	0.50%
13	0.0	3,000	\$349.79	\$0.00	\$15.59	(\$13.84)	\$1.75	0.50%
14	0.0	4,000	\$464.65	\$0.00	\$20.79	(\$18.45)	\$2.34	0.50%
15	0.0	5,000	\$579.53	\$0.00	\$25.99	(\$23.07)	\$2.92	0.50%
16	0.0	7,500	\$866.70	\$0.00	\$38.98	(\$34.59)	\$4.39	0.51%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 8
2024
Residential Heating (Summer)

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Line	Level of Demand	Level of Usage	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.69	\$0.00	\$0.31	(\$0.28)	\$0.03	0.28%
2	0.0	100	\$17.13	\$0.00	\$0.61	(\$0.54)	\$0.07	0.41%
3	0.0	200	\$30.03	\$0.00	\$1.23	(\$1.09)	\$0.14	0.47%
4	0.0	400	\$55.79	\$0.00	\$2.45	(\$2.17)	\$0.28	0.50%
5	0.0	500	\$68.68	\$0.00	\$3.06	(\$2.72)	\$0.34	0.50%
6	0.0	750	\$100.90	\$0.00	\$4.60	(\$4.08)	\$0.52	0.52%
7	0.0	1,000	\$133.10	\$0.00	\$6.14	(\$5.45)	\$0.69	0.52%
8	0.0	1,200	\$158.85	\$0.00	\$7.36	(\$6.53)	\$0.83	0.52%
9	0.0	1,400	\$184.63	\$0.00	\$8.59	(\$7.62)	\$0.97	0.53%
10	0.0	1,500	\$197.53	\$0.00	\$9.20	(\$8.17)	\$1.03	0.52%
11	0.0	2,000	\$261.96	\$0.00	\$12.27	(\$10.88)	\$1.39	0.53%
12	0.0	2,500	\$326.15	\$0.00	\$15.34	(\$13.61)	\$1.73	0.53%
13	0.0	3,000	\$390.34	\$0.00	\$18.40	(\$16.33)	\$2.07	0.53%
14	0.0	4,000	\$518.73	\$0.00	\$24.53	(\$21.78)	\$2.75	0.53%
15	0.0	5,000	\$647.12	\$0.00	\$30.67	(\$27.22)	\$3.45	0.53%
16	0.0	7,500	\$968.10	\$0.00	\$46.01	(\$40.83)	\$5.18	0.54%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 8
2024
Secondary Unmetered

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Line	Level of Demand (kW)	Level of Usage (kWh)	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5.0	50	\$6.76	\$0.00	\$0.31	(\$2.93)	(\$2.62)	-38.76%
2	5.0	100	\$13.03	\$0.00	\$0.61	(\$3.07)	(\$2.46)	-18.88%
3	5.0	150	\$19.29	\$0.00	\$0.92	(\$3.23)	(\$2.31)	-11.98%
4	5.0	200	\$25.55	\$0.00	\$1.23	(\$3.37)	(\$2.14)	-8.38%
5	5.0	300	\$38.05	\$0.00	\$1.84	(\$3.67)	(\$1.83)	-4.81%
6	5.0	400	\$50.58	\$0.00	\$2.45	(\$3.97)	(\$1.52)	-3.01%
7	5.0	500	\$63.11	\$0.00	\$3.06	(\$4.26)	(\$1.20)	-1.90%
8	5.0	600	\$75.62	\$0.00	\$3.68	(\$4.55)	(\$0.87)	-1.15%
9	5.0	800	\$100.64	\$0.00	\$4.90	(\$5.15)	(\$0.25)	-0.25%
10	5.0	1,000	\$125.67	\$0.00	\$6.14	(\$5.74)	\$0.40	0.32%
11	5.0	1,200	\$150.71	\$0.00	\$7.36	(\$6.33)	\$1.03	0.68%
12	5.0	1,400	\$175.73	\$0.00	\$8.59	(\$6.93)	\$1.66	0.94%
13	5.0	1,600	\$198.86	\$0.00	\$9.81	(\$7.51)	\$2.30	1.16%
14	5.0	2,000	\$241.26	\$0.00	\$12.27	(\$8.70)	\$3.57	1.48%
15	5.0	2,200	\$262.36	\$0.00	\$13.49	(\$9.30)	\$4.19	1.60%
16	5.0	2,400	\$283.46	\$0.00	\$14.72	(\$9.89)	\$4.83	1.70%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 8
2024
Secondary Single Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	750	\$96.38	\$0.00	\$4.60	(\$5.00)	(\$0.40)	-0.42%
2	5	1,500	\$190.26	\$0.00	\$9.20	(\$7.22)	\$1.98	1.04%
3	10	1,500	\$210.97	\$0.00	\$9.20	(\$10.00)	(\$0.80)	-0.38%
4	25	5,000	\$642.60	\$0.00	\$30.67	(\$28.70)	\$1.97	0.31%
5	25	7,500	\$906.36	\$0.00	\$46.01	(\$36.11)	\$9.90	1.09%
6	25	10,000	\$1,170.14	\$0.00	\$61.34	(\$43.51)	\$17.83	1.52%
7	50	15,000	\$1,801.24	\$0.00	\$92.01	(\$72.22)	\$19.79	1.10%
8	50	25,000	\$2,850.69	\$0.00	\$153.35	(\$101.82)	\$51.53	1.81%
9	200	50,000	\$6,095.73	\$0.00	\$306.69	(\$259.25)	\$47.44	0.78%
10	200	100,000	\$11,343.12	\$0.00	\$613.39	(\$407.28)	\$206.11	1.82%
11	300	125,000	\$14,380.99	\$0.00	\$766.74	(\$536.91)	\$229.83	1.60%
12	500	200,000	\$23,080.51	\$0.00	\$1,226.78	(\$870.18)	\$356.60	1.55%
13	1,000	300,000	\$35,646.26	\$0.00	\$1,840.17	(\$1,444.30)	\$395.87	1.11%
14	1,000	500,000	\$56,635.92	\$0.00	\$3,066.95	(\$2,036.42)	\$1,030.53	1.82%
15	2,500	750,000	\$89,085.82	\$0.00	\$4,600.42	(\$3,610.75)	\$989.67	1.11%
16	2,500	1,000,000	\$114,968.41	\$0.00	\$6,133.90	(\$4,350.90)	\$1,783.00	1.55%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 8
2024
Secondary Three Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	500	\$72.44	\$0.00	\$3.06	(\$4.26)	(\$1.20)	-1.66%
2	5	1,500	\$197.60	\$0.00	\$9.20	(\$7.22)	\$1.98	1.00%
3	10	1,500	\$218.31	\$0.00	\$9.20	(\$10.00)	(\$0.80)	-0.37%
4	25	5,000	\$649.94	\$0.00	\$30.67	(\$28.70)	\$1.97	0.30%
5	25	7,500	\$913.70	\$0.00	\$46.01	(\$36.11)	\$9.90	1.08%
6	25	10,000	\$1,177.48	\$0.00	\$61.34	(\$43.51)	\$17.83	1.51%
7	50	25,000	\$2,858.03	\$0.00	\$153.35	(\$101.82)	\$51.53	1.80%
8	200	50,000	\$6,103.07	\$0.00	\$306.69	(\$259.25)	\$47.44	0.78%
9	200	125,000	\$13,974.15	\$0.00	\$766.74	(\$481.29)	\$285.45	2.04%
10	500	200,000	\$23,087.85	\$0.00	\$1,226.78	(\$870.18)	\$356.60	1.54%
11	1,000	300,000	\$35,653.60	\$0.00	\$1,840.17	(\$1,444.30)	\$395.87	1.11%
12	1,000	500,000	\$56,643.26	\$0.00	\$3,066.95	(\$2,036.42)	\$1,030.53	1.82%
13	2,500	750,000	\$89,093.16	\$0.00	\$4,600.42	(\$3,610.75)	\$989.67	1.11%
14	2,500	1,000,000	\$114,975.75	\$0.00	\$6,133.90	(\$4,350.90)	\$1,783.00	1.55%
15	5,000	1,500,000	\$176,743.31	\$0.00	\$9,200.85	(\$7,221.51)	\$1,979.34	1.12%
16	5,000	2,000,000	\$228,156.21	\$0.00	\$12,267.80	(\$8,701.81)	\$3,565.99	1.56%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 8
2024
Primary Service

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Line	Level of Demand (kW)	Level of Usage (kWh)	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	1,000	\$207.19	\$0.00	\$5.98	(\$6.04)	(\$0.06)	-0.03%
2	5	2,500	\$363.52	\$0.00	\$14.94	(\$8.99)	\$5.95	1.64%
3	10	5,000	\$631.11	\$0.00	\$29.88	(\$17.98)	\$11.90	1.89%
4	25	7,500	\$914.43	\$0.00	\$44.82	(\$35.10)	\$9.72	1.06%
5	25	10,000	\$1,174.20	\$0.00	\$59.76	(\$40.02)	\$19.74	1.68%
6	50	20,000	\$2,249.65	\$0.00	\$119.53	(\$80.06)	\$39.47	1.75%
7	50	30,000	\$3,283.12	\$0.00	\$179.29	(\$99.74)	\$79.55	2.42%
8	200	50,000	\$5,585.34	\$0.00	\$298.82	(\$261.18)	\$37.64	0.67%
9	200	75,000	\$8,168.96	\$0.00	\$448.23	(\$310.37)	\$137.86	1.69%
10	200	100,000	\$10,752.58	\$0.00	\$597.64	(\$359.57)	\$238.07	2.21%
11	500	250,000	\$26,725.01	\$0.00	\$1,494.10	(\$898.93)	\$595.17	2.23%
12	1,000	500,000	\$53,345.59	\$0.00	\$2,988.20	(\$1,797.85)	\$1,190.35	2.23%
13	2,500	1,000,000	\$107,016.75	\$0.00	\$5,976.40	(\$4,002.66)	\$1,973.74	1.84%
14	5,000	2,500,000	\$262,772.50	\$0.00	\$14,941.00	(\$8,989.26)	\$5,951.74	2.26%
15	10,000	5,000,000	\$523,672.65	\$0.00	\$29,882.00	(\$17,978.53)	\$11,903.47	2.27%
16	25,000	7,500,000	\$800,259.13	\$0.00	\$44,823.00	(\$35,106.82)	\$9,716.18	1.21%
17	25,000	10,000,000	\$1,053,316.13	\$0.00	\$59,764.00	(\$40,026.57)	\$19,737.43	1.87%
18	50,000	15,000,000	\$1,598,645.88	\$0.00	\$89,646.00	(\$70,213.65)	\$19,432.35	1.22%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 8
2024
Primary Substation

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Line	Level of Demand	Level of Usage	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	3,000	1,000,000	\$140,194.29	\$0.00	\$5,914.30	(\$4,475.52)	\$1,438.78	1.03%
2	5,000	2,000,000	\$202,423.53	\$0.00	\$11,828.60	(\$8,082.37)	\$3,746.23	1.85%
3	5,000	3,000,000	\$302,495.43	\$0.00	\$17,742.90	(\$9,951.87)	\$7,791.03	2.58%
4	10,000	4,000,000	\$402,899.69	\$0.00	\$23,657.20	(\$16,164.74)	\$7,492.46	1.86%
5	10,000	5,000,000	\$502,971.59	\$0.00	\$29,571.50	(\$18,034.24)	\$11,537.26	2.29%
6	15,000	6,000,000	\$603,375.86	\$0.00	\$35,485.80	(\$24,247.11)	\$11,238.69	1.86%
7	15,000	7,000,000	\$703,447.76	\$0.00	\$41,400.10	(\$26,116.61)	\$15,283.49	2.17%
8	15,000	8,000,000	\$803,519.66	\$0.00	\$47,314.40	(\$27,986.11)	\$19,328.29	2.41%
9	25,000	9,000,000	\$904,256.32	\$0.00	\$53,228.70	(\$38,542.36)	\$14,686.34	1.62%
10	25,000	10,000,000	\$1,004,328.22	\$0.00	\$59,143.00	(\$40,411.86)	\$18,731.14	1.87%
11	30,000	12,500,000	\$1,254,840.34	\$0.00	\$73,928.75	(\$49,428.97)	\$24,499.78	1.95%
12	30,000	15,000,000	\$1,505,020.09	\$0.00	\$88,714.50	(\$54,102.72)	\$34,611.78	2.30%
13	50,000	17,500,000	\$1,756,529.30	\$0.00	\$103,500.25	(\$76,149.95)	\$27,350.30	1.56%
14	50,000	20,000,000	\$2,006,709.05	\$0.00	\$118,286.00	(\$80,823.70)	\$37,462.30	1.87%
15	50,000	25,000,000	\$2,507,068.55	\$0.00	\$147,857.50	(\$90,171.20)	\$57,686.30	2.30%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 8
2024
High Voltage Service

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Line	Level of Demand	Level of Usage	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	1,000	500,000	\$51,099.00	\$0.00	\$2,957.15	(\$1,849.46)	\$1,107.69	2.17%
2	2,000	1,000,000	\$101,564.21	\$0.00	\$5,914.30	(\$3,698.92)	\$2,215.38	2.18%
3	3,000	1,500,000	\$151,322.69	\$0.00	\$8,871.45	(\$5,548.37)	\$3,323.08	2.20%
4	3,500	2,000,000	\$201,165.30	\$0.00	\$11,828.60	(\$6,954.77)	\$4,873.83	2.42%
5	5,000	2,500,000	\$250,839.55	\$0.00	\$14,785.75	(\$9,247.29)	\$5,538.46	2.21%
6	7,500	3,000,000	\$300,345.35	\$0.00	\$17,742.90	(\$12,425.90)	\$5,317.00	1.77%
7	7,500	4,000,000	\$400,199.05	\$0.00	\$23,657.20	(\$14,352.60)	\$9,304.60	2.32%
8	10,000	5,000,000	\$499,631.71	\$0.00	\$29,571.50	(\$18,494.57)	\$11,076.93	2.22%
9	10,000	6,000,000	\$599,485.41	\$0.00	\$35,485.80	(\$20,421.27)	\$15,064.53	2.51%
10	12,500	7,000,000	\$698,918.08	\$0.00	\$41,400.10	(\$24,563.24)	\$16,836.86	2.41%
11	12,500	8,000,000	\$798,771.78	\$0.00	\$47,314.40	(\$26,489.94)	\$20,824.46	2.61%
12	15,000	9,000,000	\$898,204.45	\$0.00	\$53,228.70	(\$30,631.90)	\$22,596.80	2.52%
13	20,000	10,000,000	\$997,216.08	\$0.00	\$59,143.00	(\$36,989.14)	\$22,153.86	2.22%
14	40,000	20,000,000	\$1,992,384.84	\$0.00	\$118,286.00	(\$73,978.28)	\$44,307.72	2.22%
15	60,000	30,000,000	\$2,987,553.55	\$0.00	\$177,429.00	(\$110,967.41)	\$66,461.59	2.22%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 8
2024
Private Outdoor Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2023 Projected Bill (D) = Period 7 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	7000							
2	Mercury	75	\$14.05	\$0.00	\$0.46	(\$0.12)	\$0.34	2.42%
3	21000							
4	Mercury	154	\$28.86	\$0.00	\$0.94	(\$0.26)	\$0.68	2.36%
5	2500							
6	Incandescent	64	\$12.00	\$0.00	\$0.39	(\$0.11)	\$0.28	2.33%
7	7000							
8	Fluorescent	66	\$12.38	\$0.00	\$0.40	(\$0.11)	\$0.29	2.34%
9	4000							
10	Mercury	43	\$8.07	\$0.00	\$0.26	(\$0.07)	\$0.19	2.35%
11	9500							
12	High Pressure Sodium	39	\$10.09	\$0.00	\$0.24	(\$0.06)	\$0.18	1.78%
13	28000							
14	High Pressure Sodium	96	\$17.08	\$0.00	\$0.59	(\$0.16)	\$0.43	2.52%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 8
2024
Street Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2023 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 7 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0	50	\$8.10	\$0.00	\$0.31	(\$0.08)	\$0.23	2.84%
2	0	100	\$14.19	\$0.00	\$0.61	(\$0.16)	\$0.45	3.17%
3	0	200	\$26.38	\$0.00	\$1.23	(\$0.31)	\$0.92	3.49%
4	0	400	\$50.77	\$0.00	\$2.45	(\$0.62)	\$1.83	3.60%
5	0	500	\$62.98	\$0.00	\$3.06	(\$0.78)	\$2.28	3.62%
6	0	750	\$93.45	\$0.00	\$4.60	(\$1.17)	\$3.43	3.67%
7	0	1,000	\$123.92	\$0.00	\$6.14	(\$1.56)	\$4.58	3.70%
8	0	1,200	\$148.29	\$0.00	\$7.36	(\$1.87)	\$5.49	3.70%
9	0	1,400	\$172.67	\$0.00	\$8.59	(\$2.18)	\$6.41	3.71%
10	0	1,600	\$197.07	\$0.00	\$9.81	(\$2.49)	\$7.32	3.71%
11	0	2,000	\$245.84	\$0.00	\$12.27	(\$3.10)	\$9.17	3.73%
12	0	2,500	\$306.57	\$0.00	\$15.34	(\$3.88)	\$11.46	3.74%
13	0	3,000	\$367.30	\$0.00	\$18.40	(\$4.66)	\$13.74	3.74%
14	0	4,000	\$488.75	\$0.00	\$24.53	(\$6.22)	\$18.31	3.75%
15	0	5,000	\$610.21	\$0.00	\$30.67	(\$7.77)	\$22.90	3.75%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
Residential

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Line	Level of Demand (kW)	Level of Usage (kWh)	2024 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.72	\$0.00	\$0.26	\$0.37	\$0.63	5.88%
2	0.0	100	\$17.20	\$0.00	\$0.54	\$0.74	\$1.28	7.44%
3	0.0	200	\$30.17	\$0.00	\$1.07	\$1.47	\$2.54	8.42%
4	0.0	400	\$56.07	\$0.00	\$2.15	\$2.94	\$5.09	9.08%
5	0.0	500	\$69.02	\$0.00	\$2.69	\$3.68	\$6.37	9.23%
6	0.0	750	\$101.42	\$0.00	\$4.02	\$5.53	\$9.55	9.42%
7	0.0	1,000	\$133.79	\$0.00	\$5.36	\$7.37	\$12.73	9.51%
8	0.0	1,200	\$159.68	\$0.00	\$6.44	\$8.84	\$15.28	9.57%
9	0.0	1,400	\$185.60	\$0.00	\$7.51	\$10.32	\$17.83	9.61%
10	0.0	1,500	\$198.56	\$0.00	\$8.05	\$11.05	\$19.10	9.62%
11	0.0	2,000	\$263.35	\$0.00	\$10.73	\$14.73	\$25.46	9.67%
12	0.0	2,500	\$327.88	\$0.00	\$13.42	\$18.42	\$31.84	9.71%
13	0.0	3,000	\$392.41	\$0.00	\$16.10	\$22.10	\$38.20	9.73%
14	0.0	4,000	\$521.48	\$0.00	\$21.47	\$29.47	\$50.94	9.77%
15	0.0	5,000	\$650.57	\$0.00	\$26.83	\$36.85	\$63.68	9.79%
16	0.0	7,500	\$973.28	\$0.00	\$40.25	\$55.26	\$95.51	9.81%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
Residential Heating (Winter)

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Line	Level of Demand	Level of Usage	2024 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.04	\$0.00	\$0.23	\$0.31	\$0.54	5.38%
2	0.0	100	\$15.84	\$0.00	\$0.46	\$0.62	\$1.08	6.82%
3	0.0	200	\$27.44	\$0.00	\$0.91	\$1.25	\$2.16	7.87%
4	0.0	400	\$50.62	\$0.00	\$1.82	\$2.49	\$4.31	8.51%
5	0.0	500	\$62.20	\$0.00	\$2.28	\$3.12	\$5.40	8.68%
6	0.0	750	\$91.19	\$0.00	\$3.41	\$4.69	\$8.10	8.88%
7	0.0	1,000	\$120.17	\$0.00	\$4.55	\$6.24	\$10.79	8.98%
8	0.0	1,200	\$143.34	\$0.00	\$5.45	\$7.49	\$12.94	9.03%
9	0.0	1,400	\$166.52	\$0.00	\$6.37	\$8.74	\$15.11	9.07%
10	0.0	1,500	\$178.12	\$0.00	\$6.82	\$9.36	\$16.18	9.08%
11	0.0	2,000	\$236.09	\$0.00	\$9.09	\$12.49	\$21.58	9.14%
12	0.0	2,500	\$293.82	\$0.00	\$11.37	\$15.60	\$26.97	9.18%
13	0.0	3,000	\$351.54	\$0.00	\$13.64	\$18.73	\$32.37	9.21%
14	0.0	4,000	\$466.99	\$0.00	\$18.19	\$24.97	\$43.16	9.24%
15	0.0	5,000	\$582.45	\$0.00	\$22.73	\$31.22	\$53.95	9.26%
16	0.0	7,500	\$871.09	\$0.00	\$34.10	\$46.82	\$80.92	9.29%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
Residential Heating (Summer)

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Line	Level of Demand (kW)	Level of Usage (kWh)	2024 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.72	\$0.00	\$0.26	\$0.37	\$0.63	5.88%
2	0.0	100	\$17.20	\$0.00	\$0.54	\$0.74	\$1.28	7.44%
3	0.0	200	\$30.17	\$0.00	\$1.07	\$1.47	\$2.54	8.42%
4	0.0	400	\$56.07	\$0.00	\$2.15	\$2.94	\$5.09	9.08%
5	0.0	500	\$69.02	\$0.00	\$2.69	\$3.68	\$6.37	9.23%
6	0.0	750	\$101.42	\$0.00	\$4.02	\$5.53	\$9.55	9.42%
7	0.0	1,000	\$133.79	\$0.00	\$5.36	\$7.37	\$12.73	9.51%
8	0.0	1,200	\$159.68	\$0.00	\$6.44	\$8.84	\$15.28	9.57%
9	0.0	1,400	\$185.60	\$0.00	\$7.51	\$10.32	\$17.83	9.61%
10	0.0	1,500	\$198.56	\$0.00	\$8.05	\$11.05	\$19.10	9.62%
11	0.0	2,000	\$263.35	\$0.00	\$10.73	\$14.73	\$25.46	9.67%
12	0.0	2,500	\$327.88	\$0.00	\$13.42	\$18.42	\$31.84	9.71%
13	0.0	3,000	\$392.41	\$0.00	\$16.10	\$22.10	\$38.20	9.73%
14	0.0	4,000	\$521.48	\$0.00	\$21.47	\$29.47	\$50.94	9.77%
15	0.0	5,000	\$650.57	\$0.00	\$26.83	\$36.85	\$63.68	9.79%
16	0.0	7,500	\$973.28	\$0.00	\$40.25	\$55.26	\$95.51	9.81%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
Secondary Unmetered

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Line	Level of Demand (kW)	Level of Usage (kWh)	2024 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5.0	50	\$4.14	\$0.00	\$0.26	\$3.96	\$4.22	101.93%
2	5.0	100	\$10.57	\$0.00	\$0.54	\$4.16	\$4.70	44.47%
3	5.0	150	\$16.98	\$0.00	\$0.80	\$4.36	\$5.16	30.39%
4	5.0	200	\$23.41	\$0.00	\$1.07	\$4.56	\$5.63	24.05%
5	5.0	300	\$36.22	\$0.00	\$1.61	\$4.97	\$6.58	18.17%
6	5.0	400	\$49.06	\$0.00	\$2.15	\$5.36	\$7.51	15.31%
7	5.0	500	\$61.91	\$0.00	\$2.69	\$5.76	\$8.45	13.65%
8	5.0	600	\$74.75	\$0.00	\$3.22	\$6.16	\$9.38	12.55%
9	5.0	800	\$100.39	\$0.00	\$4.30	\$6.97	\$11.27	11.23%
10	5.0	1,000	\$126.07	\$0.00	\$5.36	\$7.77	\$13.13	10.41%
11	5.0	1,200	\$151.74	\$0.00	\$6.44	\$8.56	\$15.00	9.89%
12	5.0	1,400	\$177.39	\$0.00	\$7.51	\$9.37	\$16.88	9.52%
13	5.0	1,600	\$201.16	\$0.00	\$8.59	\$10.17	\$18.76	9.33%
14	5.0	2,000	\$244.83	\$0.00	\$10.73	\$11.77	\$22.50	9.19%
15	5.0	2,200	\$266.55	\$0.00	\$11.81	\$12.58	\$24.39	9.15%
16	5.0	2,400	\$288.29	\$0.00	\$12.88	\$13.38	\$26.26	9.11%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
Secondary Single Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2024 Projected Bill (D) = Period 8 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	750	\$95.98	\$0.00	\$4.02	\$6.76	\$10.78	11.23%
2	5	1,500	\$192.24	\$0.00	\$8.05	\$9.77	\$17.82	9.27%
3	10	1,500	\$210.17	\$0.00	\$8.05	\$13.53	\$21.58	10.27%
4	25	5,000	\$644.57	\$0.00	\$26.83	\$38.85	\$65.68	10.19%
5	25	7,500	\$916.26	\$0.00	\$40.25	\$48.88	\$89.13	9.73%
6	25	10,000	\$1,187.97	\$0.00	\$53.66	\$58.89	\$112.55	9.47%
7	50	15,000	\$1,821.03	\$0.00	\$80.50	\$97.74	\$178.24	9.79%
8	50	25,000	\$2,902.22	\$0.00	\$134.16	\$137.81	\$271.97	9.37%
9	200	50,000	\$6,143.17	\$0.00	\$268.33	\$350.88	\$619.21	10.08%
10	200	100,000	\$11,549.23	\$0.00	\$536.66	\$551.23	\$1,087.89	9.42%
11	300	125,000	\$14,610.82	\$0.00	\$670.82	\$726.67	\$1,397.49	9.56%
12	500	200,000	\$23,437.11	\$0.00	\$1,073.32	\$1,177.73	\$2,251.05	9.60%
13	1,000	300,000	\$36,042.13	\$0.00	\$1,609.98	\$1,954.78	\$3,564.76	9.89%
14	1,000	500,000	\$57,666.45	\$0.00	\$2,683.30	\$2,756.18	\$5,439.48	9.43%
15	2,500	750,000	\$90,075.49	\$0.00	\$4,024.95	\$4,886.94	\$8,911.89	9.89%
16	2,500	1,000,000	\$116,751.41	\$0.00	\$5,366.60	\$5,888.69	\$11,255.29	9.64%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
Secondary Three Phase

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Line	Level of Demand (kW)	Level of Usage (kWh)	2024 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	500	\$71.24	\$0.00	\$2.69	\$5.76	\$8.45	11.86%
2	5	1,500	\$199.58	\$0.00	\$8.05	\$9.77	\$17.82	8.93%
3	10	1,500	\$217.51	\$0.00	\$8.05	\$13.53	\$21.58	9.92%
4	25	5,000	\$651.91	\$0.00	\$26.83	\$38.85	\$65.68	10.08%
5	25	7,500	\$923.60	\$0.00	\$40.25	\$48.88	\$89.13	9.65%
6	25	10,000	\$1,195.31	\$0.00	\$53.66	\$58.89	\$112.55	9.42%
7	50	25,000	\$2,909.56	\$0.00	\$134.16	\$137.81	\$271.97	9.35%
8	200	50,000	\$6,150.51	\$0.00	\$268.33	\$350.88	\$619.21	10.07%
9	200	125,000	\$14,259.60	\$0.00	\$670.82	\$651.40	\$1,322.22	9.27%
10	500	200,000	\$23,444.45	\$0.00	\$1,073.32	\$1,177.73	\$2,251.05	9.60%
11	1,000	300,000	\$36,049.47	\$0.00	\$1,609.98	\$1,954.78	\$3,564.76	9.89%
12	1,000	500,000	\$57,673.79	\$0.00	\$2,683.30	\$2,756.18	\$5,439.48	9.43%
13	2,500	750,000	\$90,082.83	\$0.00	\$4,024.95	\$4,886.94	\$8,911.89	9.89%
14	2,500	1,000,000	\$116,758.75	\$0.00	\$5,366.60	\$5,888.69	\$11,255.29	9.64%
15	5,000	1,500,000	\$178,722.65	\$0.00	\$8,049.90	\$9,773.90	\$17,823.80	9.97%
16	5,000	2,000,000	\$231,722.20	\$0.00	\$10,733.20	\$11,777.40	\$22,510.60	9.71%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
Primary Service

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Line	Level of Demand (kW)	Level of Usage (kWh)	2024 Projected Bill (D) = Period 8 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	1,000	\$207.13	\$0.00	\$5.23	\$8.18	\$13.41	6.47%
2	5	2,500	\$369.47	\$0.00	\$13.07	\$12.17	\$25.24	6.83%
3	10	5,000	\$643.01	\$0.00	\$26.15	\$24.33	\$50.48	7.85%
4	25	7,500	\$924.15	\$0.00	\$39.22	\$47.51	\$86.73	9.38%
5	25	10,000	\$1,193.94	\$0.00	\$52.29	\$54.17	\$106.46	8.92%
6	50	20,000	\$2,289.12	\$0.00	\$104.57	\$108.35	\$212.92	9.30%
7	50	30,000	\$3,362.67	\$0.00	\$156.86	\$134.98	\$291.84	8.68%
8	200	50,000	\$5,622.98	\$0.00	\$261.44	\$353.49	\$614.93	10.94%
9	200	75,000	\$8,306.82	\$0.00	\$392.16	\$420.07	\$812.23	9.78%
10	200	100,000	\$10,990.65	\$0.00	\$522.88	\$486.66	\$1,009.54	9.19%
11	500	250,000	\$27,320.18	\$0.00	\$1,307.20	\$1,216.63	\$2,523.83	9.24%
12	1,000	500,000	\$54,535.94	\$0.00	\$2,614.40	\$2,433.27	\$5,047.67	9.26%
13	2,500	1,000,000	\$108,990.49	\$0.00	\$5,228.80	\$5,417.33	\$10,646.13	9.77%
14	5,000	2,500,000	\$268,724.24	\$0.00	\$13,072.00	\$12,166.36	\$25,238.36	9.39%
15	10,000	5,000,000	\$535,576.12	\$0.00	\$26,144.00	\$24,332.73	\$50,476.73	9.42%
16	25,000	7,500,000	\$809,975.31	\$0.00	\$39,216.00	\$47,514.81	\$86,730.81	10.71%
17	25,000	10,000,000	\$1,073,053.56	\$0.00	\$52,288.00	\$54,173.31	\$106,461.31	9.92%
18	50,000	15,000,000	\$1,618,078.23	\$0.00	\$78,432.00	\$95,029.64	\$173,461.64	10.72%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
Primary Substation

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Line	Level of Demand	Level of Usage	2024 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	3,000	1,000,000	\$141,633.07	\$0.00	\$5,174.50	\$6,057.31	\$11,231.81	7.93%
2	5,000	2,000,000	\$206,169.76	\$0.00	\$10,349.00	\$10,938.92	\$21,287.92	10.33%
3	5,000	3,000,000	\$310,286.46	\$0.00	\$15,523.50	\$13,469.12	\$28,992.62	9.34%
4	10,000	4,000,000	\$410,392.15	\$0.00	\$20,698.00	\$21,877.82	\$42,575.82	10.37%
5	10,000	5,000,000	\$514,508.85	\$0.00	\$25,872.50	\$24,408.02	\$50,280.52	9.77%
6	15,000	6,000,000	\$614,614.55	\$0.00	\$31,047.00	\$32,816.74	\$63,863.74	10.39%
7	15,000	7,000,000	\$718,731.25	\$0.00	\$36,221.50	\$35,346.94	\$71,568.44	9.96%
8	15,000	8,000,000	\$822,847.95	\$0.00	\$41,396.00	\$37,877.14	\$79,273.14	9.63%
9	25,000	9,000,000	\$918,942.66	\$0.00	\$46,570.50	\$52,164.37	\$98,734.87	10.74%
10	25,000	10,000,000	\$1,023,059.36	\$0.00	\$51,745.00	\$54,694.57	\$106,439.57	10.40%
11	30,000	12,500,000	\$1,279,340.12	\$0.00	\$64,681.25	\$66,898.58	\$131,579.83	10.28%
12	30,000	15,000,000	\$1,539,631.87	\$0.00	\$77,617.50	\$73,224.08	\$150,841.58	9.80%
13	50,000	17,500,000	\$1,783,879.60	\$0.00	\$90,553.75	\$103,063.63	\$193,617.38	10.85%
14	50,000	20,000,000	\$2,044,171.35	\$0.00	\$103,490.00	\$109,389.13	\$212,879.13	10.41%
15	50,000	25,000,000	\$2,564,754.85	\$0.00	\$129,362.50	\$122,040.13	\$251,402.63	9.80%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
High Voltage Service

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Line	Level of Demand (kW)	Level of Usage (kWh)	2024 Projected Bill (D) = Period 8 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	1,000	500,000	\$52,206.69	\$0.00	\$2,587.25	\$2,503.15	\$5,090.40	9.75%
2	2,000	1,000,000	\$103,779.59	\$0.00	\$5,174.50	\$5,006.30	\$10,180.80	9.81%
3	3,000	1,500,000	\$154,645.77	\$0.00	\$7,761.75	\$7,509.44	\$15,271.19	9.87%
4	3,500	2,000,000	\$206,039.13	\$0.00	\$10,349.00	\$9,412.94	\$19,761.94	9.59%
5	5,000	2,500,000	\$256,378.01	\$0.00	\$12,936.25	\$12,515.74	\$25,451.99	9.93%
6	7,500	3,000,000	\$305,662.35	\$0.00	\$15,523.50	\$16,817.82	\$32,341.32	10.58%
7	7,500	4,000,000	\$409,503.65	\$0.00	\$20,698.00	\$19,425.52	\$40,123.52	9.80%
8	10,000	5,000,000	\$510,708.64	\$0.00	\$25,872.50	\$25,031.47	\$50,903.97	9.97%
9	10,000	6,000,000	\$614,549.94	\$0.00	\$31,047.00	\$27,639.17	\$58,686.17	9.55%
10	12,500	7,000,000	\$715,754.94	\$0.00	\$36,221.50	\$33,245.11	\$69,466.61	9.71%
11	12,500	8,000,000	\$819,596.24	\$0.00	\$41,396.00	\$35,852.81	\$77,248.81	9.43%
12	15,000	9,000,000	\$920,801.25	\$0.00	\$46,570.50	\$41,458.75	\$88,029.25	9.56%
13	20,000	10,000,000	\$1,019,369.94	\$0.00	\$51,745.00	\$50,062.94	\$101,807.94	9.99%
14	40,000	20,000,000	\$2,036,692.56	\$0.00	\$103,490.00	\$100,125.87	\$203,615.87	10.00%
15	60,000	30,000,000	\$3,054,015.14	\$0.00	\$155,235.00	\$150,188.81	\$305,423.81	10.00%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 9
2025
Private Outdoor Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2024 Projected Bill (D) = Period 8 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	7000							
2	Mercury	75	\$14.39	\$0.00	\$0.40	\$0.17	\$0.57	3.96%
3	21000							
4	Mercury	154	\$29.54	\$0.00	\$0.83	\$0.35	\$1.18	3.99%
5	2500							
6	Incandescent	64	\$12.28	\$0.00	\$0.34	\$0.14	\$0.48	3.91%
7	7000							
8	Fluorescent	66	\$12.67	\$0.00	\$0.35	\$0.15	\$0.50	3.95%
9	4000							
10	Mercury	43	\$8.26	\$0.00	\$0.23	\$0.10	\$0.33	4.00%
11	9500							
12	High Pressure Sodium	39	\$10.27	\$0.00	\$0.21	\$0.09	\$0.30	2.92%
13	28000							
14	High Pressure Sodium	96	\$17.51	\$0.00	\$0.52	\$0.22	\$0.74	4.23%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 9
2025
Street Lighting

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Line	Level of Demand (kW)	Level of Usage (kWh)	2024 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 8 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0	50	\$8.33	\$0.00	\$0.26	\$0.11	\$0.37	4.44%
2	0	100	\$14.64	\$0.00	\$0.54	\$0.21	\$0.75	5.12%
3	0	200	\$27.30	\$0.00	\$1.07	\$0.42	\$1.49	5.46%
4	0	400	\$52.60	\$0.00	\$2.15	\$0.84	\$2.99	5.68%
5	0	500	\$65.26	\$0.00	\$2.69	\$1.05	\$3.74	5.73%
6	0	750	\$96.88	\$0.00	\$4.02	\$1.58	\$5.60	5.78%
7	0	1,000	\$128.50	\$0.00	\$5.36	\$2.11	\$7.47	5.81%
8	0	1,200	\$153.78	\$0.00	\$6.44	\$2.53	\$8.97	5.83%
9	0	1,400	\$179.08	\$0.00	\$7.51	\$2.95	\$10.46	5.84%
10	0	1,600	\$204.39	\$0.00	\$8.59	\$3.37	\$11.96	5.85%
11	0	2,000	\$255.01	\$0.00	\$10.73	\$4.20	\$14.93	5.85%
12	0	2,500	\$318.03	\$0.00	\$13.42	\$5.25	\$18.67	5.87%
13	0	3,000	\$381.04	\$0.00	\$16.10	\$6.31	\$22.41	5.88%
14	0	4,000	\$507.06	\$0.00	\$21.47	\$8.41	\$29.88	5.89%
15	0	5,000	\$633.11	\$0.00	\$26.83	\$10.52	\$37.35	5.90%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 10
2026
Residential

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Line	Level of Demand (kW)	Level of Usage (kWh)	2025 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$11.35	\$0.00	\$0.24	(\$0.16)	\$0.08	0.70%
2	0.0	100	\$18.48	\$0.00	\$0.47	(\$0.32)	\$0.15	0.81%
3	0.0	200	\$32.71	\$0.00	\$0.95	(\$0.64)	\$0.31	0.95%
4	0.0	400	\$61.16	\$0.00	\$1.90	(\$1.27)	\$0.63	1.03%
5	0.0	500	\$75.39	\$0.00	\$2.37	(\$1.60)	\$0.77	1.02%
6	0.0	750	\$110.97	\$0.00	\$3.57	(\$2.40)	\$1.17	1.05%
7	0.0	1,000	\$146.52	\$0.00	\$4.76	(\$3.19)	\$1.57	1.07%
8	0.0	1,200	\$174.96	\$0.00	\$5.71	(\$3.83)	\$1.88	1.07%
9	0.0	1,400	\$203.43	\$0.00	\$6.66	(\$4.48)	\$2.18	1.07%
10	0.0	1,500	\$217.66	\$0.00	\$7.13	(\$4.79)	\$2.34	1.08%
11	0.0	2,000	\$288.81	\$0.00	\$9.51	(\$6.39)	\$3.12	1.08%
12	0.0	2,500	\$359.72	\$0.00	\$11.88	(\$7.99)	\$3.89	1.08%
13	0.0	3,000	\$430.61	\$0.00	\$14.27	(\$9.58)	\$4.69	1.09%
14	0.0	4,000	\$572.42	\$0.00	\$19.02	(\$12.78)	\$6.24	1.09%
15	0.0	5,000	\$714.25	\$0.00	\$23.78	(\$15.98)	\$7.80	1.09%
16	0.0	7,500	\$1,068.79	\$0.00	\$35.66	(\$23.97)	\$11.69	1.09%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 10
2026
Residential Heating (Winter)

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Line	Level of Demand	Level of Usage	2025 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$10.58	\$0.00	\$0.20	(\$0.13)	\$0.07	0.66%
2	0.0	100	\$16.92	\$0.00	\$0.40	(\$0.27)	\$0.13	0.77%
3	0.0	200	\$29.60	\$0.00	\$0.80	(\$0.54)	\$0.26	0.88%
4	0.0	400	\$54.93	\$0.00	\$1.61	(\$1.08)	\$0.53	0.96%
5	0.0	500	\$67.60	\$0.00	\$2.01	(\$1.35)	\$0.66	0.98%
6	0.0	750	\$99.29	\$0.00	\$3.02	(\$2.03)	\$0.99	1.00%
7	0.0	1,000	\$130.96	\$0.00	\$4.02	(\$2.71)	\$1.31	1.00%
8	0.0	1,200	\$156.28	\$0.00	\$4.84	(\$3.25)	\$1.59	1.02%
9	0.0	1,400	\$181.63	\$0.00	\$5.64	(\$3.79)	\$1.85	1.02%
10	0.0	1,500	\$194.30	\$0.00	\$6.05	(\$4.06)	\$1.99	1.02%
11	0.0	2,000	\$257.67	\$0.00	\$8.06	(\$5.42)	\$2.64	1.02%
12	0.0	2,500	\$320.79	\$0.00	\$10.07	(\$6.77)	\$3.30	1.03%
13	0.0	3,000	\$383.91	\$0.00	\$12.08	(\$8.13)	\$3.95	1.03%
14	0.0	4,000	\$510.15	\$0.00	\$16.11	(\$10.83)	\$5.28	1.03%
15	0.0	5,000	\$636.40	\$0.00	\$20.14	(\$13.54)	\$6.60	1.04%
16	0.0	7,500	\$952.01	\$0.00	\$30.22	(\$20.31)	\$9.91	1.04%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 10
2026
Residential Heating (Summer)

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Line	Level of Demand (kW)	Level of Usage (kWh)	2025 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0.0	50	\$11.35	\$0.00	\$0.24	(\$0.16)	\$0.08	0.70%
2	0.0	100	\$18.48	\$0.00	\$0.47	(\$0.32)	\$0.15	0.81%
3	0.0	200	\$32.71	\$0.00	\$0.95	(\$0.64)	\$0.31	0.95%
4	0.0	400	\$61.16	\$0.00	\$1.90	(\$1.27)	\$0.63	1.03%
5	0.0	500	\$75.39	\$0.00	\$2.37	(\$1.60)	\$0.77	1.02%
6	0.0	750	\$110.97	\$0.00	\$3.57	(\$2.40)	\$1.17	1.05%
7	0.0	1,000	\$146.52	\$0.00	\$4.76	(\$3.19)	\$1.57	1.07%
8	0.0	1,200	\$174.96	\$0.00	\$5.71	(\$3.83)	\$1.88	1.07%
9	0.0	1,400	\$203.43	\$0.00	\$6.66	(\$4.48)	\$2.18	1.07%
10	0.0	1,500	\$217.66	\$0.00	\$7.13	(\$4.79)	\$2.34	1.08%
11	0.0	2,000	\$288.81	\$0.00	\$9.51	(\$6.39)	\$3.12	1.08%
12	0.0	2,500	\$359.72	\$0.00	\$11.88	(\$7.99)	\$3.89	1.08%
13	0.0	3,000	\$430.61	\$0.00	\$14.27	(\$9.58)	\$4.69	1.09%
14	0.0	4,000	\$572.42	\$0.00	\$19.02	(\$12.78)	\$6.24	1.09%
15	0.0	5,000	\$714.25	\$0.00	\$23.78	(\$15.98)	\$7.80	1.09%
16	0.0	7,500	\$1,068.79	\$0.00	\$35.66	(\$23.97)	\$11.69	1.09%

The Dayton Power and Light Company
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Electric Security Plan
Typical Bill Comparison - Period 10
2026
Secondary Unmetered

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Line	Level of Demand (kW)	Level of Usage (kWh)	2025 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5.0	50	\$8.36	\$0.00	\$0.24	(\$1.71)	(\$1.47)	-17.58%
2	5.0	100	\$15.27	\$0.00	\$0.47	(\$1.81)	(\$1.34)	-8.78%
3	5.0	150	\$22.14	\$0.00	\$0.72	(\$1.89)	(\$1.17)	-5.28%
4	5.0	200	\$29.04	\$0.00	\$0.95	(\$1.98)	(\$1.03)	-3.55%
5	5.0	300	\$42.80	\$0.00	\$1.42	(\$2.16)	(\$0.74)	-1.73%
6	5.0	400	\$56.57	\$0.00	\$1.90	(\$2.32)	(\$0.42)	-0.74%
7	5.0	500	\$70.36	\$0.00	\$2.37	(\$2.50)	(\$0.13)	-0.18%
8	5.0	600	\$84.13	\$0.00	\$2.85	(\$2.67)	\$0.18	0.21%
9	5.0	800	\$111.66	\$0.00	\$3.80	(\$3.02)	\$0.78	0.70%
10	5.0	1,000	\$139.20	\$0.00	\$4.76	(\$3.37)	\$1.39	1.00%
11	5.0	1,200	\$166.74	\$0.00	\$5.71	(\$3.71)	\$2.00	1.20%
12	5.0	1,400	\$194.27	\$0.00	\$6.66	(\$4.06)	\$2.60	1.34%
13	5.0	1,600	\$219.92	\$0.00	\$7.61	(\$4.41)	\$3.20	1.46%
14	5.0	2,000	\$267.33	\$0.00	\$9.51	(\$5.10)	\$4.41	1.65%
15	5.0	2,200	\$290.94	\$0.00	\$10.46	(\$5.45)	\$5.01	1.72%
16	5.0	2,400	\$314.55	\$0.00	\$11.41	(\$5.80)	\$5.61	1.78%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 10
2026
Secondary Single Phase

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	2025 Projected Bill (D) = Period 9 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	750	\$106.76	\$0.00	\$3.57	(\$2.93)	\$0.64	0.60%
2	5	1,500	\$210.06	\$0.00	\$7.13	(\$4.24)	\$2.89	1.38%
3	10	1,500	\$231.75	\$0.00	\$7.13	(\$5.87)	\$1.26	0.54%
4	25	5,000	\$710.25	\$0.00	\$23.78	(\$16.85)	\$6.93	0.98%
5	25	7,500	\$1,005.39	\$0.00	\$35.66	(\$21.20)	\$14.46	1.44%
6	25	10,000	\$1,300.52	\$0.00	\$47.55	(\$25.54)	\$22.01	1.69%
7	50	15,000	\$1,999.27	\$0.00	\$71.32	(\$42.40)	\$28.92	1.45%
8	50	25,000	\$3,174.19	\$0.00	\$118.87	(\$59.78)	\$59.09	1.86%
9	200	50,000	\$6,762.38	\$0.00	\$237.73	(\$152.19)	\$85.54	1.26%
10	200	100,000	\$12,637.12	\$0.00	\$475.46	(\$239.09)	\$236.37	1.87%
11	300	125,000	\$16,008.31	\$0.00	\$594.33	(\$315.19)	\$279.14	1.74%
12	500	200,000	\$25,688.16	\$0.00	\$950.92	(\$510.83)	\$440.09	1.71%
13	1,000	300,000	\$39,606.89	\$0.00	\$1,426.38	(\$847.87)	\$578.51	1.46%
14	1,000	500,000	\$63,105.93	\$0.00	\$2,377.30	(\$1,195.47)	\$1,181.83	1.87%
15	2,500	750,000	\$98,987.38	\$0.00	\$3,565.95	(\$2,119.68)	\$1,446.27	1.46%
16	2,500	1,000,000	\$128,006.70	\$0.00	\$4,754.60	(\$2,554.18)	\$2,200.42	1.72%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 10
2026
Secondary Three Phase

Exhibit RJ4-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	2025 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	500	\$79.69	\$0.00	\$2.37	(\$2.50)	(\$0.13)	-0.16%
2	5	1,500	\$217.40	\$0.00	\$7.13	(\$4.24)	\$2.89	1.33%
3	10	1,500	\$239.09	\$0.00	\$7.13	(\$5.87)	\$1.26	0.53%
4	25	5,000	\$717.59	\$0.00	\$23.78	(\$16.85)	\$6.93	0.97%
5	25	7,500	\$1,012.73	\$0.00	\$35.66	(\$21.20)	\$14.46	1.43%
6	25	10,000	\$1,307.86	\$0.00	\$47.55	(\$25.54)	\$22.01	1.68%
7	50	25,000	\$3,181.53	\$0.00	\$118.87	(\$59.78)	\$59.09	1.86%
8	200	50,000	\$6,769.72	\$0.00	\$237.73	(\$152.19)	\$85.54	1.26%
9	200	125,000	\$15,581.82	\$0.00	\$594.33	(\$282.54)	\$311.79	2.00%
10	500	200,000	\$25,695.50	\$0.00	\$950.92	(\$510.83)	\$440.09	1.71%
11	1,000	300,000	\$39,614.23	\$0.00	\$1,426.38	(\$847.87)	\$578.51	1.46%
12	1,000	500,000	\$63,113.27	\$0.00	\$2,377.30	(\$1,195.47)	\$1,181.83	1.87%
13	2,500	750,000	\$98,994.72	\$0.00	\$3,565.95	(\$2,119.68)	\$1,446.27	1.46%
14	2,500	1,000,000	\$128,014.04	\$0.00	\$4,754.60	(\$2,554.18)	\$2,200.42	1.72%
15	5,000	1,500,000	\$196,546.45	\$0.00	\$7,131.90	(\$4,239.36)	\$2,892.54	1.47%
16	5,000	2,000,000	\$254,232.80	\$0.00	\$9,509.20	(\$5,108.36)	\$4,400.84	1.73%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 10
2026
Primary Service

Exhibit RJA-4
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Line	Level of Demand	Level of Usage	2025 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	5	1,000	\$220.54	\$0.00	\$4.63	(\$3.55)	\$1.08	0.49%
2	5	2,500	\$394.71	\$0.00	\$11.58	(\$5.28)	\$6.30	1.60%
3	10	5,000	\$693.49	\$0.00	\$23.16	(\$10.56)	\$12.60	1.82%
4	25	7,500	\$1,010.88	\$0.00	\$34.74	(\$20.61)	\$14.13	1.40%
5	25	10,000	\$1,300.40	\$0.00	\$46.32	(\$23.50)	\$22.82	1.75%
6	50	20,000	\$2,502.04	\$0.00	\$92.65	(\$46.99)	\$45.66	1.82%
7	50	30,000	\$3,654.51	\$0.00	\$138.97	(\$58.54)	\$80.43	2.20%
8	200	50,000	\$6,237.91	\$0.00	\$231.62	(\$153.32)	\$78.30	1.26%
9	200	75,000	\$9,119.05	\$0.00	\$347.43	(\$182.20)	\$165.23	1.81%
10	200	100,000	\$12,000.19	\$0.00	\$463.24	(\$211.08)	\$252.16	2.10%
11	500	250,000	\$29,844.01	\$0.00	\$1,158.10	(\$527.70)	\$630.40	2.11%
12	1,000	500,000	\$59,583.61	\$0.00	\$2,316.20	(\$1,055.40)	\$1,260.80	2.12%
13	2,500	1,000,000	\$119,636.62	\$0.00	\$4,632.40	(\$2,349.71)	\$2,282.69	1.91%
14	5,000	2,500,000	\$293,962.60	\$0.00	\$11,581.00	(\$5,277.01)	\$6,303.99	2.14%
15	10,000	5,000,000	\$586,052.85	\$0.00	\$23,162.00	(\$10,554.03)	\$12,607.97	2.15%
16	25,000	7,500,000	\$896,706.12	\$0.00	\$34,743.00	(\$20,609.07)	\$14,133.93	1.58%
17	25,000	10,000,000	\$1,179,514.87	\$0.00	\$46,324.00	(\$23,497.07)	\$22,826.93	1.94%
18	50,000	15,000,000	\$1,791,539.87	\$0.00	\$69,486.00	(\$41,218.15)	\$28,267.85	1.58%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 10
2026
Primary Substation

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Line	Level of Demand	Level of Usage	2025 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	3,000	1,000,000	\$152,864.88	\$0.00	\$4,584.30	(\$2,627.27)	\$1,957.03	1.28%
2	5,000	2,000,000	\$227,457.68	\$0.00	\$9,168.60	(\$4,744.59)	\$4,424.01	1.94%
3	5,000	3,000,000	\$339,279.08	\$0.00	\$13,752.90	(\$5,841.99)	\$7,910.91	2.33%
4	10,000	4,000,000	\$452,967.97	\$0.00	\$18,337.20	(\$9,489.16)	\$8,848.04	1.95%
5	10,000	5,000,000	\$564,789.37	\$0.00	\$22,921.50	(\$10,586.56)	\$12,334.94	2.18%
6	15,000	6,000,000	\$678,478.29	\$0.00	\$27,505.80	(\$14,233.75)	\$13,272.05	1.96%
7	15,000	7,000,000	\$790,299.69	\$0.00	\$32,090.10	(\$15,331.15)	\$16,758.95	2.12%
8	15,000	8,000,000	\$902,121.09	\$0.00	\$36,674.40	(\$16,428.55)	\$20,245.85	2.24%
9	25,000	9,000,000	\$1,017,677.53	\$0.00	\$41,258.70	(\$22,625.51)	\$18,633.19	1.83%
10	25,000	10,000,000	\$1,129,498.93	\$0.00	\$45,843.00	(\$23,722.91)	\$22,120.09	1.96%
11	30,000	12,500,000	\$1,410,919.95	\$0.00	\$57,303.75	(\$29,016.20)	\$28,287.55	2.00%
12	30,000	15,000,000	\$1,690,473.45	\$0.00	\$68,764.50	(\$31,759.70)	\$37,004.80	2.19%
13	50,000	17,500,000	\$1,977,496.98	\$0.00	\$80,225.25	(\$44,702.33)	\$35,522.92	1.80%
14	50,000	20,000,000	\$2,257,050.48	\$0.00	\$91,686.00	(\$47,445.83)	\$44,240.17	1.96%
15	50,000	25,000,000	\$2,816,157.48	\$0.00	\$114,607.50	(\$52,932.83)	\$61,674.67	2.19%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 10
2026
High Voltage Service

Exhibit RJ4-4
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Line	Level of Demand	Level of Usage	2025 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
	(kW)	(kWh)						
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	1,000	500,000	\$57,297.09	\$0.00	\$2,292.15	(\$1,085.74)	\$1,206.41	2.11%
2	2,000	1,000,000	\$113,960.39	\$0.00	\$4,584.30	(\$2,171.48)	\$2,412.82	2.12%
3	3,000	1,500,000	\$169,916.96	\$0.00	\$6,876.45	(\$3,257.22)	\$3,619.23	2.13%
4	3,500	2,000,000	\$225,801.07	\$0.00	\$9,168.60	(\$4,082.87)	\$5,085.73	2.25%
5	5,000	2,500,000	\$281,830.00	\$0.00	\$11,460.75	(\$5,428.71)	\$6,032.04	2.14%
6	7,500	3,000,000	\$338,003.67	\$0.00	\$13,752.90	(\$7,294.72)	\$6,458.18	1.91%
7	7,500	4,000,000	\$449,627.17	\$0.00	\$18,337.20	(\$8,425.82)	\$9,911.38	2.20%
8	10,000	5,000,000	\$561,612.61	\$0.00	\$22,921.50	(\$10,857.40)	\$12,064.10	2.15%
9	10,000	6,000,000	\$673,236.11	\$0.00	\$27,505.80	(\$11,988.50)	\$15,517.30	2.30%
10	12,500	7,000,000	\$785,221.55	\$0.00	\$32,090.10	(\$14,420.08)	\$17,670.02	2.25%
11	12,500	8,000,000	\$896,845.05	\$0.00	\$36,674.40	(\$15,551.18)	\$21,123.22	2.36%
12	15,000	9,000,000	\$1,008,830.50	\$0.00	\$41,258.70	(\$17,982.76)	\$23,275.94	2.31%
13	20,000	10,000,000	\$1,121,177.88	\$0.00	\$45,843.00	(\$21,714.81)	\$24,128.19	2.15%
14	40,000	20,000,000	\$2,240,308.43	\$0.00	\$91,686.00	(\$43,429.61)	\$48,256.39	2.15%
15	60,000	30,000,000	\$3,359,438.95	\$0.00	\$137,529.00	(\$65,144.43)	\$72,384.57	2.15%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 10
2026
Private Outdoor Lighting

Exhibit RJA-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	2025 Projected Bill (D) = Period 9 Col (D) + (H)	Reconciliation Rider Increase / (Decrease) (E)	Standard Offer Rate Increase / (Decrease) (F)	Reliable Electricity Rider (Increase / (Decrease) (G)	Total Increase / (Decrease) (H) = (E) + (F) + (G)	Percent Increase / (Decrease) (I) = (H) / (D)
1	7000							
2	Mercury	75	\$14.96	\$0.00	\$0.36	(\$0.07)	\$0.29	1.94%
3	21000							
4	Mercury	154	\$30.72	\$0.00	\$0.73	(\$0.15)	\$0.58	1.89%
5	2500							
6	Incandescent	64	\$12.76	\$0.00	\$0.30	(\$0.06)	\$0.24	1.88%
7	7000							
8	Fluorescent	66	\$13.17	\$0.00	\$0.31	(\$0.06)	\$0.25	1.90%
9	4000							
10	Mercury	43	\$8.59	\$0.00	\$0.20	(\$0.04)	\$0.16	1.86%
11	9500							
12	High Pressure Sodium	39	\$10.57	\$0.00	\$0.19	(\$0.04)	\$0.15	1.42%
13	28000							
14	High Pressure Sodium	96	\$18.25	\$0.00	\$0.46	(\$0.09)	\$0.37	2.03%

Note: Current and proposed bills included monthly charge for 1 fixture

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Electric Security Plan
Typical Bill Comparison - Period 10
2026
Street Lighting

Exhibit RJA-4
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Line	Level of Demand (kW)	Level of Usage (kWh)	2025 Projected Bill	Reconciliation Rider Increase / (Decrease)	Standard Offer Rate Increase / (Decrease)	Reliable Electricity Rider (Increase / (Decrease)	Total Increase / (Decrease)	Percent Increase / (Decrease)
(A)	(B)	(C)	(D) = Period 9 Col (D) + (H)	(E)	(F)	(G)	(H) = (E) + (F) + (G)	(I) = (H) / (D)
1	0	50	\$8.70	\$0.00	\$0.24	(\$0.05)	\$0.19	2.18%
2	0	100	\$15.39	\$0.00	\$0.47	(\$0.09)	\$0.38	2.47%
3	0	200	\$28.79	\$0.00	\$0.95	(\$0.18)	\$0.77	2.67%
4	0	400	\$55.59	\$0.00	\$1.90	(\$0.36)	\$1.54	2.77%
5	0	500	\$69.00	\$0.00	\$2.37	(\$0.45)	\$1.92	2.78%
6	0	750	\$102.48	\$0.00	\$3.57	(\$0.68)	\$2.89	2.82%
7	0	1,000	\$135.97	\$0.00	\$4.76	(\$0.92)	\$3.84	2.82%
8	0	1,200	\$162.75	\$0.00	\$5.71	(\$1.10)	\$4.61	2.83%
9	0	1,400	\$189.54	\$0.00	\$6.66	(\$1.28)	\$5.38	2.84%
10	0	1,600	\$216.35	\$0.00	\$7.61	(\$1.46)	\$6.15	2.84%
11	0	2,000	\$269.94	\$0.00	\$9.51	(\$1.82)	\$7.69	2.85%
12	0	2,500	\$336.70	\$0.00	\$11.88	(\$2.28)	\$9.60	2.85%
13	0	3,000	\$403.45	\$0.00	\$14.27	(\$2.74)	\$11.53	2.86%
14	0	4,000	\$536.94	\$0.00	\$19.02	(\$3.65)	\$15.37	2.86%
15	0	5,000	\$670.46	\$0.00	\$23.78	(\$4.56)	\$19.22	2.87%

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY

CASE NO. 16-0395-EL-SSO
CASE NO. 16-0397-EL-AAM
CASE NO. 16-0396-EL-ATA

DIRECT TESTIMONY OF
ERIC R. BROWN

- ☐ **MANAGEMENT POLICIES, PRACTICES, AND ORGANIZATION**
- ☐ **OPERATING INCOME**
- ☐ **RATE BASE**
- ☐ **ALLOCATIONS**
- ☐ **RATE OF RETURN**
- ☒ **RATES AND TARIFFS**
- ☐ **OTHER**

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

DIRECT TESTIMONY OF
ERIC R. BROWN

ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY

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1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Eric R. Brown. My business address is 1065 Woodman Drive, Dayton, Ohio
4 45432.

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

6 A. I am employed by The Dayton Power and Light Company ("DP&L" or "Dayton" or the
7 "Company") as a Rate Analyst in the Regulatory Operations department.

8 **Q. Will you describe briefly your educational and business background?**

9 A. I received a Bachelor of Business Administration degree from the University of Hawaii at
10 Hilo in 2008. I am currently pursuing a Master of Business Administration degree from
11 Cleveland State University, and I plan to graduate in May 2016. I have been employed
12 by DP&L in the Regulatory Operations department since 2009.

13 **Q. Have you previously provided testimony before the Public Utilities Commission of**
14 **Ohio ("PUCO" or the "Commission")?**

15 A. Yes. I have sponsored testimony before the PUCO in the Company's Competitive Bid
16 True-Up ("CBT") Rider Case No. 14-563-EL-RDR and the Company's Significantly
17 Excessive Earnings Test Case No. 15-928-EL-UNC.

18 **Q. What are your responsibilities in your current position?**

19 A. In my current position, I am responsible for assisting in the development, analysis,
20 revision, and administration of the Company's tariff schedules, rate designs, and policies.
21 I have responsibility for the CBT Rider, Competitive Bidding Rate ("CB Rate"), and the

Company's Competitive Bidding Process ("CBP"). I am one of the liaisons for the Company to the Auction Manager, Auction Consultant, and Commission Staff regarding the Company's CBP auctions.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of this testimony?

A. The purpose of my testimony is to describe briefly the CBP that the Company is proposing under this Electric Security Plan ("ESP"), to outline how DP&L plans to comply with the renewable energy requirements set forth in Ohio Revised Code ("ORC") §4928.64, to support and explain the methodology used to derive projected results of competitive bidding set forth in Ohio Administrative Code ("OAC") § 4901:1-35-03(B)(2)(b), to support the methodology of the Standard Offer Rate and rate design, and the elimination of the Alternative Energy Rider ("AER") and the CBT Rider.

Q. Are you sponsoring any Exhibits?

A. Yes. I am sponsoring:

- Exhibit ERB-1 (Proxy DP&L Auction Results)
- Exhibit ERB-2 (Standard Offer Rate)
- Exhibit ERB-3 (CB, CBT Flow Chart)
- Exhibit ERB-4 (Standard Offer Rate Flow Chart)

III. COMPETITIVE BIDDING PROCESS

Q. Briefly describe the CBP that DP&L is proposing under this ESP.

1 A. The Company is proposing a CBP schedule that will serve 100% of its Standard Service
2 Offer (“SSO”) load for the time period of June 1, 2017 to December 31, 2026. Two
3 auctions will be conducted for procurement in the first period, June 1, 2017 to May 31,
4 2018. One auction will be held per year thereafter with varying product lengths of 7, 12,
5 19, 24, 31, 36, and 43 months being offered, for a total of eleven auctions in the ESP.
6 The 12-month delivery periods will align with the PJM calendar, with a delivery period
7 beginning on June 1st of each year and ending on May 31st of the following year, with an
8 exception in the final period which will be June 1, 2026 to December 31, 2026.

9 DP&L has chosen Charles River Associates (“CRA”) as its auction manager. However,
10 the Commission has the right to choose a different auction manager at any time during
11 this CBP schedule if certain guidelines are not met or an auction is not in compliance
12 with any federal, state, or auction parameters. The Commission also has the right to
13 modify and alter load caps or any other feature of the CBP process for future auctions as
14 the Commission deems necessary based upon its continuing review of the CBP process,
15 including its review of the reports on the auction provided to the Commission by the
16 independent auction manager, the Commission's consultant, the Company, and Staff.
17 The Company’s CBP plan is subject to modification during the ESP period as the
18 Commission deems necessary and after consultation with the Company, auction manager,
19 and the Commission’s auction consultant.

20 DP&L’s proposed CBP plan is described in more detail by Company Witness Lee of
21 Charles River Associates.

1 **IV. RENEWABLE ENERGY**

2 **Q. Does DP&L plan to include a renewable energy requirement component in the**
3 **generation-related services that must be provided by the winning bidder?**

4 A. Yes. DP&L plans to require winning bidders to supply Renewable Energy Credits
5 (“RECs”) to meet the Company’s renewable energy requirements contained in ORC
6 §4928.64.

7 **Q. Can you explain how that process will work?**

8 A. Yes. Each winning CBP supplier will be responsible for providing PUCO-certified RECs
9 that meet the requirements of ORC §4928.64 for the supplier’s portion of the Standard
10 Service Offer (“SSO”) load obligation in DP&L’s service territory. DP&L will require
11 each CBP supplier to provide RECs by February 10th of every year in an amount
12 sufficient to cover its obligation in the previous calendar year (January 1st to December
13 31st). For example, a CBP supplier providing SSO supply from June 1, 2017 to May 31,
14 2018 will need to provide enough RECs by February 10, 2018 to cover its obligation
15 from June 1, 2017 to December 31, 2017. That same CBP supplier, if it no longer serves
16 SSO load after May 31, 2018, will need to provide enough RECs by February 10, 2019 to
17 cover its 2018 obligation (January 1, 2018 to May 31, 2018). A CBP supplier may
18 choose to deliver RECs monthly in the year it is supplying power, or in a lump sum by
19 February 10th of the following year. The REC requirement in each year will be a stated
20 percentage multiplied by the load, in MWhs, being served by the supplier in each
21 delivery year. The percentage(s) for each calendar year will be included in the CBP
22 Master SSO Supply Agreement. Each supplier will be responsible for procuring the

1 RECs and transferring the RECs to a DP&L-specified Generation Attribute Tracking
2 System (“GATS”) account. DP&L will continue to be responsible for retiring the RECs
3 for each respective year and annually reporting compliance to the PUCO.

4 **Q. What will happen if the CBP suppliers do not deliver RECs to meet the ORC**
5 **§4928.64 requirements?**

6 A. DP&L will have the right to net damages or replacement costs from suppliers for non-
7 delivery of RECs. This process will be outlined in the CBP Master SSO Supply
8 Agreement. In addition, compliance payments listed under ORC §4928.64(C)(2) will not
9 be accepted in lieu of providing RECs to the Company.

10 **Q. Please explain how the Company is proposing to recover the cost of complying with**
11 **the ORC §4928.64 renewable energy requirements starting June 1, 2017 under this**
12 **ESP filing?**

13 A. DP&L is proposing to recover the cost of complying with the ORC §4928.64 renewable
14 energy requirements by including these costs in the auction product, and therefore as part
15 of the CBP supplier's energy bid price. The result is that the cost will be included in the
16 Standard Offer Rate that will be assessed to all DP&L SSO customers.

17 **Q. Please explain why it is reasonable to include RECs in the CBP auction product?**

18 A. There are several reasons why this approach is reasonable. The Ohio renewable energy
19 requirements are generation-related costs directly associated with providing generation
20 service to retail customers in Ohio. Beginning in 2016, DP&L is no longer supplying
21 generation for SSO load. Since CBP auction winners are supplying 100% of SSO load, it

1 is reasonable and appropriate to include the renewable energy requirement as a
2 component of the bid product. Moreover, inclusion of RECs is reasonable because RECs
3 are procured through an open market process, just as all other products being offered as
4 part of the bid.

5 **Q. Are there other reasons that renewable requirements should be included as part of**
6 **the competitive bid?**

7 A. Yes. First, by requiring auction suppliers to meet this requirement, REC purchases will
8 be driven by the market. Since this requirement will be included in the auction bid price,
9 suppliers have a significant interest and incentive to purchase RECs at the lowest possible
10 price, driving SSO prices down. Second, renewable energy requirements are an Ohio
11 requirement imposed on suppliers of retail generation. At the time of its initial SSO
12 filing in 2012, DP&L had a need to continue to participate in the REC market because the
13 Company was still supplying generation for a portion of the SSO load. Beginning in
14 2016, that is no longer the case because 100% of the SSO load will be provided by the
15 competitive bid winners. Therefore it is reasonable that CBP auction winners should
16 meet renewable energy requirements for the tranches they serve, just as Competitive
17 Retail Electric Service (“CRES”) providers in Ohio must meet them for their load.

18 **Q. Do any other states operate their default supply auctions in a similar way?**

19 A. Pennsylvania electric default service auctions contain a renewable energy compliance
20 requirement as part of the bid product. Many of the same auction suppliers that bid and
21 serve load in Pennsylvania electric default service auctions also bid and win tranches to
22 serve load in auctions for Ohio SSO service. This is not a new or complex requirement,

1 as auction bidders are familiar with this concept and have been procuring RECs for SSO
2 load for several years in Pennsylvania.

3 **Q. Will the Company continue to charge the AER to recover the cost of complying with**
4 **ORC §4928.64?**

5 A. No. DP&L proposes to terminate the AER once the related regulatory asset balance is
6 fully recovered, as DP&L will no longer be independently procuring RECs to meet its
7 ORC §4928.64 renewable energy requirements. Beginning June 1, 2017 the renewable
8 compliance costs will be reflected in the Standard Offer Rate.

9 **V. AUCTION PRICE**

10 **Q. Did you develop proxy auction prices used to project retail rates in the Standard**
11 **Offer Rate?**

12 A. Yes. To assist in preparing the projected retail rate effect of the Company's ESP plan, I
13 developed proxy auction prices throughout the duration of the ESP. These proxy auction
14 prices were then used to develop rates for the Company's Standard Offer Rate found in
15 Exhibit ERB-2. These proxy auction prices are derived from the actual auction results
16 from recent Ohio utility SSO auctions, which were then adjusted to reflect an equivalent
17 proxy market-based auction price for a CBP in the Dayton zone.

18 **Q. Please explain the methodology you used in developing these proxy market-based**
19 **auction prices for the CBP.**

20 A. By way of background, the SSO auction supply contract commonly used in Ohio creates
21 a complex fixed-price full requirements product which transfers certain risks to the
22 winning auction supplier. These risks include variables such as forward market price

1 volatility, day ahead and real time Locational Marginal Pricing (“LMP”) price volatility,
2 unknown correlations between fuel and power prices, customer energy usage variations,
3 customer switching risks, capacity cost recovery risk, and ancillary services price risk.
4 When a supplier decides to participate in an SSO supply auction, it assigns a value to
5 these various risks and prices those risks into its estimate of the overall cost to serve the
6 SSO Load. Each supplier prices risks differently, based upon institutional beliefs, risk
7 appetite and modeling techniques. These values will affect the price that the suppliers
8 will be willing to bid in the SSO supply auction. Since pricing methodologies employed
9 by suppliers vary, DP&L looked to the results of actual supply auctions that have taken
10 place in the most recent Ohio utility SSO auctions to derive a reasonable publicly-
11 available indication of the market’s assessment of these risk factors within Ohio.

12 **Q. Did DP&L make adjustments to the Ohio utility SSO auction results?**

13 A. Yes. Starting with the winning prices in each SSO auction, DP&L removed known
14 fixed-cost components and the locational energy price differences between the products
15 being solicited in each auction, which left a cost to serve SSO auctions in Ohio at a
16 common point which could be used in projecting auction clearing prices in a DP&L CBP.
17 Specifically, for Ohio, this common pricing point is the PJM AEP-Dayton Hub. PJM
18 RPM capacity prices are currently known through May 2018 delivery. This RPM
19 capacity value was removed from the auction clearing price. The remaining price was
20 translated to the common PJM AEP-Dayton Hub by removing the locational energy price
21 difference between the Ohio utility load zones. Using publicly available average PJM
22 day-ahead LMP price differences between the delivery load zone and AEP-Dayton Hub
23 as a proxy, the locational difference was removed, leaving a common cost to supply SSO

1 auctions in Ohio at the AEP-Dayton Hub. I next divided this cost to supply by the
2 forward AEP-Dayton prices for a wholesale block over an equivalent time frame and on
3 the same day as the auctions. This calculation yielded a ratio between market projections
4 and actual auction results. This ratio was then applied to AEP-Dayton forward curves
5 that are being provided and supported by Company Witness Meehan to project proxy
6 auction clearing prices.

7 **Q. What were the results of these calculations?**

8 A. This methodology produced fairly consistent results, with an average SSO Auction to
9 AEP-Dayton Hub Scaling Factor ("Scaling Factor"), of 1.258 times the AD Hub
10 wholesale block supply.

11 **Q. What does the average scaling factor represent?**

12 A. This average scaling factor represents a projection that the cost market participants would
13 impute for the cost above a flat block product to deliver supply under an SSO auction
14 contract, factoring in the risks I described earlier.

15 **Q. How are forecasted auction prices calculated?**

16 A. Forward price curves for each of the auction periods and a cost to supply were projected
17 to calculate what the market would currently place on DP&L's auctions at AEP-Dayton
18 hub. Using the average scaling factor, actual and proxy PJM RPM capacity prices, and
19 including proxy cost to supply renewable resources per Ohio Alternative Energy
20 requirements, a final proxy DP&L CBP auction clearing price was estimated for each
21 auction period.

22 **Q. Does this calculation appear in any exhibits that you are sponsoring?**

23 A. Yes. A more detailed explanation is included in Exhibit ERB-1.

1 **Q. Is that methodology reasonable?**

2 A. Yes, the methodology is reasonable because it represents an unbiased measure of the
3 market's view of the costs and risks of supplying SSO auction load in a CBP, based upon
4 publicly available information. A competitive supplier bidding in the CBP individually
5 would make its own assessments of these costs and risks, choose one or more pricing
6 methodologies to account for them, and adjust the bids it submits in the CBP based on its
7 discretion. Any attempt to imply a particular set of assumptions and pricing methodology
8 would be too subjective and speculative. The methodology that I have employed for
9 purposes of projected proxy future auction clearing prices in the CBP in this filing is
10 reasonable because it is based on the results of the recent Ohio utility SSO auctions,
11 which is the confluence of all of the auction participants' assessments regarding pricing.
12 Given that each auction has had multiple winning bidders, the projections represent
13 unbiased supplier views regarding the value of the various costs and risks of supplying
14 SSO load, as reflected by the market's collective view in assessing these costs and risk
15 premiums.

16 **VI. STANDARD OFFER RATE**

17 **Q. What does the Company propose with regard to its Standard Offer Rate?**

18 A. First, DP&L is proposing to combine the functions of its current CB Rate and CBT Rider
19 into one tariff, the Standard Offer Rate. The Standard Offer Rate will be the tariff
20 representing DP&L's retail generation charge as a result of its CBP auctions. The
21 Standard Offer Rate will also include any over- or under-recovery of supply costs
22 associated with the CBP and recovery of costs to administer and implement the auction
23 that were previously recovered through the CBT Rider.

1 Second, DP&L is proposing to transition to an all-energy rate design for all tariff classes.
2 This design will better align the cost recovery from SSO customers with how the energy
3 is procured for those customers through the CBP as power is procured from winning
4 auction suppliers on a \$/MWh basis. DP&L will continue to make a heating discount
5 available during winter months for residential heating customers.

6 Third, DP&L is proposing to include a cash working capital component to be in the rate
7 derived from the resulting CBP auction clearing prices. A cash working capital
8 component is appropriate to compensate the Company for the revenue lag and expense
9 leads associated with providing SSO service.

10 **Q. Why is DP&L eliminating the demand component of the competitive bidding rate?**

11 A. DP&L pays SSO auction suppliers on a \$/MWh basis based on delivery to serve SSO
12 load. Recovery of those costs from SSO customers should be on the same basis.
13 Potential bidders must factor into their bids the price of PJM capacity based on what they
14 expect the tranche profile to require. They do not bid on or serve individual consumers
15 or certain customer demand profiles. Historical load data provided to potential bidders
16 for the purpose of bidding is based on energy delivered. Establishing the Standard Offer
17 Rate on a \$/kWh basis will better align the cost recovery from SSO customers with how
18 the cost to procure that energy is assessed by winning auction suppliers on a \$/MWh
19 basis and will minimize true-up variations.

20 **Q. How did you calculate the cash working capital component of the Standard Offer**
21 **Rate?**

1 A. I used the revenue calculation and payment lags from DP&L Case No. 15-1830-EL-AIR
2 and applied them to the estimated average daily cost of generation supply to arrive at
3 cash working capital. I multiplied cost of capital by cash working capital to calculate the
4 revenue requirement for cash working capital. I divided this requirement by sales,
5 resulting in the cash working capital component of the Standard Offer Rate.

6 **Q. How will the Standard Offer Rate be administered under this ESP?**

7 A. The Standard Offer Rate will be updated on an annual basis. DP&L's annual filing will
8 include the rate change as a result of the CBP auctions, but will also include a true-up for
9 the previous 12 months over/under recovery and recovery of costs to administer and
10 implement the auction.

11 To summarize, the Standard Offer Rate will include: 1) auction supply costs, 2)
12 administrative costs, 3) reconciliation costs, and 4) cash working capital. Auction supply
13 costs will compensate auction winners for delivery to serve SSO load. Administrative
14 costs include CBP auction costs, CBP consultant fees, PUCO consultant fees, audit costs,
15 and supplier default costs (if any). Reconciliation costs are any over- or under-recovery
16 of auction supply costs and administrative costs. Cash working capital is required to
17 compensate the Company for the revenue lag and expense leads associated with
18 providing SSO service.

19 DP&L will then adjust the Standard Offer Rate for the commercial activities tax
20 ("CAT"), and will adjust it for distribution losses based on tariff class. The rates will be

1 on a standalone Standard Offer Rate (Tariff Sheet No. G10), and charged on a \$ per kWh
2 basis for all SSO load based on tariff class.

3 **Q. How will DP&L charge generation rates for the period January 1, 2017 to May 31,**
4 **2017?**

5 A. DP&L is proposing that the ESP period begin on January 1, 2017. However, the
6 Company's current auction schedule ends on May 31, 2017, with the proposed auction
7 schedule beginning delivery on June 1, 2017. During this five-month overlap period,
8 DP&L is proposing to implement the Standard Offer Rate proposed in this case,
9 including the associated rate design, in place of the CB Rate and CBT Rider. The
10 Standard Offer Rate for this five-month period will be calculated using the current
11 tranche-weighted average auction price of winning bids found in PUCO Case No. 13-
12 2120-EL-UNC, including any projected over/under recovery in the current CBT Rider.
13 Thus, the CB and the CBT Rider will be terminated on December 31, 2016. DP&L will
14 continue the current AER during this interim five-month period. Starting on June 1,
15 2017, the Standard Offer Rate will begin in its proposed form as found in this ESP and
16 the AER will be terminated.

17 **Q. How is the residential heating (winter) rate calculated?**

18 A. As stated above, DP&L will continue to make a heating discount available during winter
19 months for residential heating customers. All residential customers, non-heating and
20 heating, will be charged the same rate for all kWh during the summer months.
21 Residential heating customers will be charged a discounted rate for all kWh during the
22 winter months. A discount of 15.27% to the Standard Offer Rate will be applied to the

1 winter usage of residential heating customers. The calculation of this percentage is
2 performed on Exhibit ERB-2.13.

3 Winter months continue to be the billing months of January, February, March, April,
4 May, November, and December.

5 **Q. Why is a 15.27% heating discount appropriate for the Standard Offer Rate**
6 **component?**

7 A. A 15.27% heating discount is appropriate because it matches what the Company is
8 currently providing for that component. By keeping the discount at 15.27%, residential
9 heating customers will not experience significant rate shifts due to increasing, decreasing,
10 or eliminating the discount. Likewise, other tariff classes will not experience any
11 significant cost shifting nor changes to tariff class cost allocations.

12 **Q. What are the benefits of the Standard Offer Rate proposal?**

13 A. The proposed Standard Offer Rate will offer several benefits over the current construct.
14 First, the proposed Standard Offer Rate will be easier for the Company to administer, for
15 the PUCO to audit, and for intervenor groups and customers to review and understand.
16 Currently, costs of procuring power through the CBP auction and costs to administer the
17 auction are recovered in separate tariffs. Combining the functions of both tariffs into the
18 Standard Offer Rate will make the tariff easier to administer and audit. Exhibit ERB-3
19 shows how the CB Rate and CBT Rider are currently administered. Exhibit ERB-4
20 shows the Company's proposal regarding the Standard Offer Rate.

1 The Standard Offer Rate will also benefit customers. If the renewable energy
2 requirement is included in the auction price, as DP&L proposes, then the current AER
3 would be eliminated and the Standard Offer Rate would be the only SSO generation
4 charge beginning June 2017. Thus, the Standard Offer Rate will be equal to the Price-to-
5 Compare (“PTC”), creating a bill that is more understandable for customers. Also, given
6 that the Standard Offer Rate will be the PTC, and the Standard Offer Rate is updated
7 annually, the PTC will be known and constant for 12-month periods. This modification
8 provides rate stability, transparency, and predictability for all customers due to the fact
9 that they can more easily compare equivalent CRES offers. Customers, both SSO and
10 shopping, will know the SSO price they can expect to pay for the next 12 months for their
11 generation service and make an informed decision.

12 Given that the CBT Rider was trued-up on a seasonal quarterly basis, eliminating it and
13 including its functions in the Standard Offer Rate will avoid seasonal variances that are
14 inherent in quarterly true-up schedules. This adjustment has the effect of smoothing out
15 the generation rate and eliminating potential rate shifts based on weather-related factors.

16 **VII. SCHEDULES AND WORKPAPERS**

17 **Q. What is shown on Exhibit ERB-1?**

18 A. Exhibit ERB-1 shows proxy DP&L auction results for each term for the proposed ESP
19 period.

20 **Q. What is shown on Exhibit ERB-1.1?**

1 A. Exhibit ERB-1.1 is the formulation of proxy DP&L CBP auction clearing prices using
2 forward curves and renewable cost forecasts. Page 4 shows the summary of the DP&L
3 forecasted energy price for each term.

4 **Q. What is shown on Exhibit ERB-1.2?**

5 A. Exhibit ERB-1.2 is a list of scaling factors by each Ohio electric utility to produce an
6 average scaling factor.

7 **Q. What is shown on Exhibits ERB-1.3, ERB-1.4, ERB-1.5, and ERB-1.6?**

8 A. Exhibits ERB-1.3, ERB-1.4, ERB-1.5, and ERB-1.6 is the formulation of the auction
9 price/market price ratio for each Ohio utility's SSO auction. Line 1 on Page 2 is the
10 auction clearing prices for each auction. Line 3 is the auction capacity value calculated
11 on Page 1 for each delivery period. Line 4 is the auction non-capacity value, calculated
12 by subtracting Line 3 from Line 1. Line 6 is the energy price by zone after applying the
13 DA basis from the AEP-Dayton Hub. Line 8 is the auction price/market price ratio,
14 calculated by dividing Line 6 by Line 7.

15 **Q. What is shown on Exhibit ERB-2?**

16 A. Exhibit ERB-2 is a summary of the forecasted Standard Offer Rates for the entire ESP
17 period, broken down by each 12-month period, by tariff class.

18 **Q. What is shown on Exhibits ERB-2.1 through ERB-2.10?**

19 A. Exhibits ERB-2.1 through ERB-2.10 show the calculation of the Standard Offer Rate,
20 including conversion from auction price, reconciliation component, cash working capital
21 component, and residential heating (winter) discount for each period. Line 1 is

1 distribution loss factors based on tariff class. Line 3 is historical SSO kWh based on
2 2015 sales by tariff class. Line 8 is the Standard Offer Rate per MWh, which is the sum
3 of the auction price of the relevant auction(s), the reconciliation component, and the cash
4 working capital component. Line 11 is the Standard Offer Rate per MWh by tariff class.
5 It is the product of the tariff loss factor (Line 1) times the Standard Offer Rate per MWh
6 (Line 8) times the adjustment for Commercial Activity Tax (Line 10). Line 13 is the
7 Standard Offer rate represented in kWh. Line 15 is Standard Offer Revenue, calculated
8 by multiplying the Standard Offer Rate (Line 13) by the forecasted SSO kWh (Line 3).

9 The Residential Heat (Winter) rate (Line 18) is applied the winter discount factor (Line
10 19) which results in the Residential Heat (Winter) rate (Line 21) that will apply to all
11 residential heating customer usage during winter months. Line 25 is the difference of the
12 original Residential Heat (Winter) revenue (Line 15) and the Residential Heat (Winter)
13 revenue after discount (Line 23). This amount is spread across the remaining tariff
14 classes using an allocation (Line 29) of the total SSO kWh, resulting in final Standard
15 Offer Rates (Line 33). Line 35 is Standard Offer Revenue with the heating discount,
16 calculated adding Line 15 and Line 31.

17 Line 38 is the difference of the Residential Heat (Summer) rate (Line 36) and the
18 Residential Heat (Winter) rate (Line 37), divided by Line 36. This verifies the 15.27%
19 winter discount.

20 **Q. What is shown on Exhibit ERB-2.11?**

1 A. Exhibit ERB-2.11 shows the calculation of cash working capital for each period. Line 1
2 is the estimated generation supply cost, derived from Exhibits ERB-2.1 through ERB-
3 2.10. Line 3 is the estimated average daily cost of that generation supply, which is Line 1
4 divided by the number of days in the period. Revenue collection lag and expense lead
5 (Lines 5 and 6) were calculated in DP&L Case No. 15-1830-EL-AIR. Net Lag days
6 (Line 8) is the difference between Line 5 and Line 6. The estimated average daily cost
7 multiplied by the net lag in days arrives at the cash working capital. This amount is
8 multiplied by the cost of capital (Line 12) to get the revenue requirement for cash
9 working capital (Line 14). The component of cash working capital for the Standard Offer
10 Rate (Line 18) is the revenue requirement for cash working capital (Line 14) divided by
11 the estimated sales for the year (Line 16).

12 **Q. What is shown on Exhibit ERB-2.12?**

13 A. Exhibit ERB-2.12 is the calculation of the reconciliation component. This function was
14 previously performed in the CBT Rider, but the Company is proposing to incorporate it
15 into the Standard Offer Rate as described above. The reconciliation threshold has been
16 eliminated. Column C is the cost paid to auction suppliers for their delivery to serve SSO
17 load. Column D is the cost to administer the auction. Column E are the revenues
18 received through the Standard Offer Rate. Column F is the sum of Columns C through E.
19 Column G is the previous month's year-to-date ("YTD") total plus the current months
20 over/under recovery. Lines 1 through 12 are the previous 12 months actual data. Lines
21 13 through 24 are a 12 month forecast for the upcoming period. Total over/under

1 recovery (Line 26) is divided by forecasted SSO sales to reach the forecasted
2 reconciliation rate to be assessed on all tariff classes.

3 **Q. What is shown on Exhibit ERB-2.13?**

4 A. Exhibit ERB-2.13 is the calculation of the discount applied to the Residential Heating
5 (Winter) tariff class under the CB Rate.

6 Column D is 2015 kWh SSO sales by Residential and Residential Heating tariff classes
7 by usage block. Column D is CB Rates effective January 1, 2016 for Residential and
8 Residential Heating tariff classes by usage block. Column G is the revenue for
9 Residential and Residential Heating tariff classes by usage block and is calculated by
10 multiplying Column D by Column F. Column H is calculated by dividing Column G by
11 Column D. Line 12 is the calculation of the winter discount percentage. It is equal to
12 Column H, Line 4 minus Column H, Line 10, and dividing that by Column H, Line 4.

13 **VIII. CONCLUSION**

14 **Q. Please summarize your testimony.**

15 A. The Company's CBP plan, Standard Offer Rate proposal, and proxy auction results are
16 all reasonable and should be approved.

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

18 A. Yes, it does.

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Proxy DP&L Auction Results

Exhibit ERB-1

Page 1 of 2

Line	Delivery Start Date	Delivery End Date	Proxy Auction Price for the Term (\$/MWh)	Number of Tranches to be Auctioned
(A)	(B)	(C)	(D)	(E)
			Exhibit ERB-1.1, Page 4, Col (H)	Exhibit ERB-1.1, Page 4, Col (I)
1	6/1/2017	5/31/2018	\$54.09	33
2	6/1/2017	5/31/2019	\$57.07	33
3	6/1/2017	5/31/2020	\$59.97	34
4	6/1/2018	5/31/2020	\$62.92	16
5	6/1/2018	5/31/2021	\$66.20	17
6	6/1/2019	5/31/2021	\$69.27	16
7	6/1/2019	5/31/2022	\$72.89	17
8	6/1/2020	5/31/2021	\$72.76	16
9	6/1/2020	5/31/2022	\$76.46	17
10	6/1/2020	5/31/2023	\$79.92	17
11	6/1/2021	5/31/2022	\$80.17	16
12	6/1/2021	5/31/2023	\$83.51	16
13	6/1/2021	5/31/2024	\$86.70	17
14	6/1/2022	5/31/2023	\$86.84	16
15	6/1/2022	5/31/2024	\$89.96	17
16	6/1/2022	5/31/2025	\$92.77	17
17	6/1/2023	5/31/2024	\$93.09	16
18	6/1/2023	5/31/2025	\$95.73	16
19	6/1/2023	12/31/2026	\$100.88	17
20	6/1/2024	5/31/2025	\$98.38	16
21	6/1/2024	5/31/2026	\$101.18	17
22	6/1/2024	12/31/2026	\$103.89	17
23	6/1/2025	5/31/2026	\$103.99	24
24	6/1/2025	12/31/2026	\$107.37	25
25	6/1/2026	12/31/2026	\$113.16	41

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Proxy DP&L Auction Results

Exhibit ERB-1

Page 2 of 2

Line	Delivery Start Date	Delivery End Date	Proxy Auction Price for the Term
			(\$/MWh)
(A)	(B)	(C)	(D) *
1	6/1/2017	5/31/2018	\$57.07
2	6/1/2018	5/31/2019	\$60.54
3	6/1/2019	5/31/2020	\$65.19
4	6/1/2020	5/31/2021	\$72.95
5	6/1/2021	5/31/2022	\$79.90
6	6/1/2022	5/31/2023	\$86.65
7	6/1/2023	5/31/2024	\$93.16
8	6/1/2024	5/31/2025	\$98.84
9	6/1/2025	5/31/2026	\$103.81
10	6/1/2026	12/31/2026	\$108.05

* The Proxy Auction Price for each delivery date is calculated by weighting the auction price for each term shown on page 1 by the respective number of tranches for that term.

The Dayton Power and Light Company
Case No. 16-XXXX-EL-SSO
Proxy DP&L CBP Auction Clearing Prices

Exhibit ERB-1.1
Page 1 of 4

Line	Delivery Month	Corporate Forecast			NERC Hours			Days in Month	RPM Price (\$/MW-day)	RPM (\$/MWh @ 50% LF)	Renewables (\$/MWh)
		On	Off	ATC	On	Off	Total				
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
				$\frac{(E) = [(C)*(F) + (D)*(G)]}{(F) + (G)}$							
							$(H) = (F) + (G)$	$(I) = (H)/24$	<u>PJM and Corporate Forecast</u>	$(K) = (I)*(J)/[(H)*50\%]$	<u>Corporate Forecast</u>
1	6/1/2017				352	368	720	30			
2	7/1/2017				320	424	744	31			
3	8/1/2017				368	376	744	31			
4	9/1/2017				320	400	720	30			
5	10/1/2017				352	392	744	31			
6	11/1/2017				336	385	721	30			
7	12/1/2017				320	424	744	31			
8	1/1/2018				352	392	744	31			
9	2/1/2018				320	352	672	28			
10	3/1/2018				352	391	743	31			
11	4/1/2018				336	384	720	30			
12	5/1/2018				352	392	744	31			
13	6/1/2018				336	384	720	30			
14	7/1/2018				336	408	744	31			
15	8/1/2018				368	376	744	31			
16	9/1/2018				304	416	720	30			
17	10/1/2018				368	376	744	31			
18	11/1/2018				336	385	721	30			
19	12/1/2018				320	424	744	31			
20	1/1/2019				352	392	744	31			
21	2/1/2019				320	352	672	28			
22	3/1/2019				336	407	743	31			
23	4/1/2019				352	368	720	30			
24	5/1/2019				352	392	744	31			
25	6/1/2019				320	400	720	30			
26	7/1/2019				352	392	744	31			
27	8/1/2019				352	392	744	31			
28	9/1/2019				320	400	720	30			
29	10/1/2019				368	376	744	31			
30	11/1/2019				320	401	721	30			
31	12/1/2019				336	408	744	31			
32	1/1/2020				352	392	744	31			
33	2/1/2020				320	376	696	29			
34	3/1/2020				352	391	743	31			
35	4/1/2020				352	368	720	30			
36	5/1/2020				320	424	744	31			
37	6/1/2020				352	368	720	30			
38	7/1/2020				368	376	744	31			
39	8/1/2020				336	408	744	31			

The Dayton Power and Light Company
Case No. 16-XXXX-EL-SSO
Proxy DP&L CBP Auction Clearing Prices

Exhibit ERB-1.1

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Line	Delivery Month	Corporate Forecast			NERC Hours			Days in Month	RPM Price (\$/MW-day)	RPM (\$/MWh @ 50% LF)	Renewables (\$/MWh)
		On	Off	ATC	On	Off	Total				
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
				$\frac{(E) = [(C)*(F) + (D)*(G)]}{[(F) + (G)]}$			$(H) = (F) + (G)$	$(I) = (H)/24$	<u>PJM and Corporate Forecast</u>	$(K) = (I)*(J)/[(H)*50\%]$	<u>Corporate Forecast</u>
1	9/1/2020				336	384	720	30			
2	10/1/2020				352	392	744	31			
3	11/1/2020				320	401	721	30			
4	12/1/2020				352	392	744	31			
5	1/1/2021				320	424	744	31			
6	2/1/2021				320	352	672	28			
7	3/1/2021				368	375	743	31			
8	4/1/2021				352	368	720	30			
9	5/1/2021				320	424	744	31			
10	6/1/2021				352	368	720	30			
11	7/1/2021				336	408	744	31			
12	8/1/2021				352	392	744	31			
13	9/1/2021				336	384	720	30			
14	10/1/2021				336	408	744	31			
15	11/1/2021				336	385	721	30			
16	12/1/2021				368	376	744	31			
17	1/1/2022				336	408	744	31			
18	2/1/2022				320	352	672	28			
19	3/1/2022				368	375	743	31			
20	4/1/2022				336	384	720	30			
21	5/1/2022				336	408	744	31			
22	6/1/2022				352	368	720	30			
23	7/1/2022				320	424	744	31			
24	8/1/2022				368	376	744	31			
25	9/1/2022				336	384	720	30			
26	10/1/2022				336	408	744	31			
27	11/1/2022				336	385	721	30			
28	12/1/2022				336	408	744	31			
29	1/1/2023				336	408	744	31			
30	2/1/2023				320	352	672	28			
31	3/1/2023				368	375	743	31			
32	4/1/2023				320	400	720	30			
33	5/1/2023				352	392	744	31			
34	6/1/2023				352	368	720	30			
35	7/1/2023				320	424	744	31			
36	8/1/2023				368	376	744	31			
37	9/1/2023				320	400	720	30			
38	10/1/2023				352	392	744	31			
39	11/1/2023				336	385	721	30			
40	12/1/2023				320	424	744	31			

The Dayton Power and Light Company
Case No. 16-XXXX-EL-SSO
Proxy DP&L CBP Auction Clearing Prices

Exhibit ERB-1.1

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Line	Delivery Month	Corporate Forecast			NERC Hours			Days in Month	RPM Price (\$/MW-day)	RPM (\$/MWh @ 50% LF)	Renewables (\$/MWh)
		On	Off	ATC	On	Off	Total				
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L) *
				$\frac{(E) = [(C)*(F) + (D)*(G)] / [(F) + (G)]$			$(H) = (F) + (G)$	$(I) = (H)/24$	<u>PJM and Corporate Forecast</u>	$(K) = (I)*(J) / [(H)*50\%]$	<u>Corporate Forecast</u>
1	1/1/2024				352	392	744	31			
2	2/1/2024				336	360	696	29			
3	3/1/2024				336	407	743	31			
4	4/1/2024				352	368	720	30			
5	5/1/2024				352	392	744	31			
6	6/1/2024				320	400	720	30			
7	7/1/2024				352	392	744	31			
8	8/1/2024				352	392	744	31			
9	9/1/2024				320	400	720	30			
10	10/1/2024				368	376	744	31			
11	11/1/2024				320	401	721	30			
12	12/1/2024				336	408	744	31			
13	1/1/2025				352	392	744	31			
14	2/1/2025				320	352	672	28			
15	3/1/2025				336	407	743	31			
16	4/1/2025				352	368	720	30			
17	5/1/2025				336	408	744	31			
18	6/1/2025				336	384	720	30			
19	7/1/2025				352	392	744	31			
20	8/1/2025				336	408	744	31			
21	9/1/2025				336	384	720	30			
22	10/1/2025				368	376	744	31			
23	11/1/2025				304	417	721	30			
24	12/1/2025				352	392	744	31			
25	1/1/2026				336	408	744	31			
26	2/1/2026				320	352	672	28			
27	3/1/2026				352	391	743	31			
28	4/1/2026				352	368	720	30			
29	5/1/2026				320	424	744	31			
30	6/1/2026				352	368	720	30			
31	7/1/2026				368	376	744	31			
32	8/1/2026				336	408	744	31			
33	9/1/2026				336	384	720	30			
34	10/1/2026				352	392	744	31			
35	11/1/2026				320	401	721	30			
36	12/1/2026				352	392	744	31			

The Dayton Power and Light Company
Case No. 16-XXXX-EL-SSO
Summary of Proxy DP&L CBP Auction Terms

Exhibit ERB-1.1

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Auction Date			AD Hub Energy Price (\$/MWh)	Scaling Factor	RPM (\$/MWh @ 50% LF)	Renewables (\$/MWh)	DP&L Forecasted Energy Price (\$/MWh)	# of Tranches
Line	Start	End						
(A)	(B)	(C)	(D) *	(E)	(F) **	(G)***	(H) ****	(I)
				<u>Exhibit ERB-1.2,</u> <u>Line 25, Col (D)</u>		<u>(H) = [(D)*(E)] + (F) + (G)</u>		
1	6/1/2017	5/31/2018		1.258			\$54.09	33
2	6/1/2017	5/31/2019		1.258			\$57.07	33
3	6/1/2017	5/31/2020		1.258			\$59.97	34
4	6/1/2018	5/31/2020		1.258			\$62.92	16
5	6/1/2018	5/31/2021		1.258			\$66.20	17
6	6/1/2019	5/31/2021		1.258			\$69.27	16
7	6/1/2019	5/31/2022		1.258			\$72.89	17
8	6/1/2020	5/31/2021		1.258			\$72.76	16
9	6/1/2020	5/31/2022		1.258			\$76.46	17
10	6/1/2020	5/31/2023		1.258			\$79.92	17
11	6/1/2021	5/31/2022		1.258			\$80.17	16
12	6/1/2021	5/31/2023		1.258			\$83.51	16
13	6/1/2021	5/31/2024		1.258			\$86.70	17
14	6/1/2022	5/31/2023		1.258			\$86.84	16
15	6/1/2022	5/31/2024		1.258			\$89.96	17
16	6/1/2022	5/31/2025		1.258			\$92.77	17
17	6/1/2023	5/31/2024		1.258			\$93.09	16
18	6/1/2023	5/31/2025		1.258			\$95.73	16
19	6/1/2023	12/31/2026		1.258			\$100.88	17
20	6/1/2024	5/31/2025		1.258			\$98.38	16
21	6/1/2024	5/31/2026		1.258			\$101.18	17
22	6/1/2024	12/31/2026		1.258			\$103.89	17
23	6/1/2025	5/31/2026		1.258			\$103.99	24
24	6/1/2025	12/31/2026		1.258			\$107.37	25
25	6/1/2026	12/31/2026		1.258			\$113.16	41

- 26
- 27 * Col (D) price for each delivery period is calculated by multiplying Col (E) by Col (I) for each delivery month of the period and dividing by the sum of Col (I) for the period on pages 1-3.
- 28 ** Col (F) price for each delivery period is calculated by multiplying Col (I) by Col (K) for each delivery month of the period and dividing by the sum of Col (I) for the period on pages 1-3.
- 29 *** Col (G) price for each delivery period is calculated by multiplying Col (I) by Col (L) for each delivery month of the period and dividing by the sum of Col (I) for the period on pages 1-3.

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Auction Scaling Factors

Exhibit ERB-1.2

Page 1 of 1

Line	Company	Auction Date	Scaling Factors	Source
(A)	(B)	(C)	(D)	(E)
1	First Energy	1/22/2013	1.261	Exhibit ERB-1.3, Line 8, Col (C)
2	First Energy	10/22/2013	1.149	Exhibit ERB-1.3, Line 8, Col (D)
3	First Energy	10/22/2013	1.203	Exhibit ERB-1.3, Line 8, Col (E)
4	First Energy	1/28/2014	1.243	Exhibit ERB-1.3, Line 8, Col (F)
5	First Energy	1/28/2014	1.438	Exhibit ERB-1.3, Line 8, Col (G)
6	First Energy	10/14/2014	1.245	Exhibit ERB-1.3, Line 8, Col (H)
7	First Energy	1/27/2015	1.227	Exhibit ERB-1.3, Line 8, Col (I)
8	Duke Energy Ohio	5/21/2013	1.183	Exhibit ERB-1.4, Line 8, Col (C)
9	Duke Energy Ohio	11/12/2013	1.197	Exhibit ERB-1.4, Line 8, Col (D)
10	Duke Energy Ohio	5/14/2015	1.306	Exhibit ERB-1.4, Line 8, Col (E)
11	Duke Energy Ohio	5/14/2015	1.377	Exhibit ERB-1.4, Line 8, Col (F)
12	Duke Energy Ohio	5/14/2015	1.411	Exhibit ERB-1.4, Line 8, Col (G)
13	Duke Energy Ohio	11/16/2015	1.225	Exhibit ERB-1.4, Line 8, Col (H)
14	AEP Ohio	4/28/2015	1.170	Exhibit ERB-1.5, Line 8, Col (C)
15	AEP Ohio	4/28/2015	1.256	Exhibit ERB-1.5, Line 8, Col (D)
16	AEP Ohio	4/28/2015	1.296	Exhibit ERB-1.5, Line 8, Col (E)
17	AEP Ohio	5/12/2015	1.184	Exhibit ERB-1.5, Line 8, Col (F)
18	AEP Ohio	5/12/2015	1.266	Exhibit ERB-1.5, Line 8, Col (G)
19	AEP Ohio	5/12/2015	1.301	Exhibit ERB-1.5, Line 8, Col (H)
20	AEP Ohio	11/3/2015	1.166	Exhibit ERB-1.5, Line 8, Col (I)
21	Dayton Power and Light	10/28/2013	1.172	Exhibit ERB-1.6, Line 8, Col (C)
22	Dayton Power and Light	9/23/2014	1.386	Exhibit ERB-1.6, Line 8, Col (D)
23	Dayton Power and Light	9/28/2015	1.265	Exhibit ERB-1.6, Line 8, Col (E)
24				
25	Average Scaling Factor		1.258	Average of Lines 1 thru 23

Exhibit ERB-1.3
Page 1 of 2

* ATC = (on peak prices * on peak hours + off peak prices * off peak hours) / total hours

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
First Energy Auction Results

Exhibit ERB-1.3
Page 2 of 2

Line	Description	1/22/2013 Auction Results	10/22/2013 Auction Results	10/22/2013 Auction Results	1/28/2014 Auction Results	1/28/2014 Auction Results	10/14/2014 Auction Results	1/27/2015 Auction Results	Source
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
1	Auction Results	\$59.17	\$50.91	\$59.99	\$55.83	\$68.31	\$73.82	\$69.18	Case No. 12-2742-EL-UNC
2	Delivery Period	6/13 - 5/16	6/14 - 5/15	6/14 - 5/16	6/14 - 5/15	6/14 - 5/16	6/15 - 5/16	6/15 - 5/16	Case No. 12-2742-EL-UNC
3	Auction Capacity Value *	\$12.53	\$10.68	\$17.68	\$10.77	\$17.73	\$24.70	\$24.70	Col (U) * Col (W) / Sum Col (U)
4	Auction Non-Capacity Value	\$46.64	\$40.23	\$42.31	\$45.06	\$50.58	\$49.12	\$44.48	Line 1 - Line 3
5	ATSI DA LMP Basis from AD Hub **	\$0.88	\$1.35	\$1.35	\$1.53	\$1.53	\$2.73	\$2.28	See Note Below
6	Capacity and Basis Removed	\$45.76	\$38.88	\$40.96	\$43.53	\$49.05	\$46.38	\$42.19	Line 4 - Line 5
7	AD Hub Market Price	\$36.27	\$33.85	\$34.06	\$35.02	\$34.12	\$37.26	\$34.39	Pg 1, Line 39-42, Cols (E) and (H) and (K) and (N) and (Q)
8	Auction Price/Market Price Ratio	1.261	1.149	1.203	1.243	1.438	1.245	1.227	Line 6 / Line 7

* For Column (C): Col (W) * Col (U) / Sum Col (U)

* For Columns (D) and (E): Col (Y) * Col (U) / Sum Col (U)

* For Columns (F) and (G): Col (AA) * Col (U) / Sum Col (U)

* For Column (H) and (I): Col (CC) * Col (U) / Sum Col (U)

** Line 5 is the average of the difference in PJM DA LMPs for the 12-month period before the auction date

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Duke Energy Ohio Auction Results

Exhibit ERB-1.4
Page 1 of 2

AD Hub Prices on Auction Date:																	NERC Hours		RPM Price (\$/MW-day) at 5/21/2013	RPM (\$/MWh @ 50% LF)	RPM Price (\$/MW-day) at 11/12/2013	RPM (\$/MWh @ 50% LF)	RPM Price (\$/MW-day) at 5/14/2015	RPM (\$/MWh @ 50% LF)	RPM Price (\$/MW-day) at 11/16/2015	RPM (\$/MWh @ 50% LF)	
5/21/2013			11/12/2013			5/14/2015			11/16/2015																		
Line	Delivery Month	On	Off	ATC*	On	Off	ATC*	On	Off	ATC*	On	Off	ATC*	On	Off	Total	Days in Month	(Q) (P)	(R)	(S)	(T) = (S)*(R) / [(Q)*50%]	(U)	(V) = (U)*(R) / [(Q)*50%]	(W)	(X) = (W)*(R) / [(Q)*50%]	(Y)	(Z) = (Y)*(R) / [(Q)*50%]
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q) = (O) + (P)	(R) = (Q)/24										
1	6/1/2014	\$46.19	\$28.75	\$36.89	\$39.69	\$26.53	\$32.67							336	384	720	30		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
2	7/1/2014	\$56.44	\$31.00	\$43.04	\$52.32	\$28.43	\$39.73							352	392	744	31		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
3	8/1/2014	\$53.01	\$31.00	\$40.94	\$45.73	\$28.27	\$36.16							336	408	744	31		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
4	9/1/2014	\$42.38	\$28.58	\$35.02	\$36.74	\$26.58	\$31.32							336	384	720	30		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
5	10/1/2014	\$40.64	\$29.15	\$34.83	\$34.44	\$27.18	\$30.77							368	376	744	31		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
6	11/1/2014	\$39.64	\$30.15	\$34.15	\$36.47	\$28.27	\$31.73							304	417	721	30		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
7	12/1/2014	\$38.89	\$31.60	\$35.05	\$37.47	\$30.50	\$33.80							352	392	744	31		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
8	1/1/2015	\$45.81	\$34.74	\$39.74	\$39.50	\$31.50	\$35.11							336	408	744	31		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
9	2/1/2015	\$45.81	\$34.74	\$40.01	\$39.50	\$31.50	\$35.31							320	352	672	28		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
10	3/1/2015	\$42.48	\$30.85	\$36.36	\$37.39	\$29.06	\$33.01							352	391	743	31		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
11	4/1/2015	\$42.48	\$30.85	\$36.54	\$37.39	\$29.06	\$33.13							352	368	720	30		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
12	5/1/2015	\$42.33	\$28.66	\$34.54	\$36.59	\$26.47	\$30.82							320	424	744	31		\$128.17	\$10.68	\$128.17	\$10.68	\$128.38	\$10.70	\$128.38	\$10.70	
13	6/1/2015							\$41.23	\$27.22	\$34.07				352	368	720	30		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
14	7/1/2015							\$52.88	\$31.23	\$41.94				368	376	744	31		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
15	8/1/2015							\$45.44	\$28.94	\$36.39				336	408	744	31		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
16	9/1/2015							\$38.51	\$27.27	\$32.52				336	384	720	30		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
17	10/1/2015							\$38.32	\$27.87	\$32.81				352	392	744	31		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
18	11/1/2015							\$38.42	\$28.62	\$32.97				320	401	721	30		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
19	12/1/2015							\$41.04	\$31.86	\$36.20				352	392	744	31		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
20	1/1/2016							\$54.86	\$43.46	\$48.36				320	424	744	31		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
21	2/1/2016							\$48.09	\$38.94	\$43.36				336	360	696	29		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
22	3/1/2016							\$39.99	\$34.32	\$37.13				368	375	743	31		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
23	4/1/2016							\$36.93	\$28.98	\$32.69				336	384	720	30		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
24	5/1/2016							\$39.20	\$26.88	\$32.44				336	408	744	31		\$134.62	\$11.22	\$135.72	\$11.31	\$135.81	\$11.32	\$135.81	\$11.32	
25	6/1/2016							\$41.08	\$26.88	\$33.82	\$38.44	\$24.44	\$31.28	352	368	720	30			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
26	7/1/2016							\$51.59	\$28.48	\$38.42	\$44.81	\$25.81	\$33.98	320	424	744	31			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
27	8/1/2016							\$44.46	\$27.89	\$36.09	\$40.29	\$25.16	\$32.64	368	376	744	31			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
28	9/1/2016							\$37.38	\$26.43	\$31.54	\$34.70	\$24.45	\$29.23	336	384	720	30			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
29	10/1/2016							\$36.69	\$26.74	\$31.23	\$33.54	\$25.96	\$29.38	336	408	744	31			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
30	11/1/2016							\$37.15	\$26.79	\$31.62	\$33.99	\$26.72	\$30.11	336	385	721	30			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
31	12/1/2016							\$38.66	\$30.95	\$34.43	\$34.84	\$28.59	\$31.41	336	408	744	31			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
32	1/1/2017							\$53.42	\$43.27	\$47.85	\$41.80	\$36.25	\$38.76	336	408	744	31			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
33	2/1/2017							\$49.58	\$39.13	\$44.11	\$39.40	\$32.65	\$35.86	320	352	672	28			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
34	3/1/2017							\$40.25	\$33.70	\$36.94	\$38.52	\$32.09	\$35.27	368	375	743	31			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
35	4/1/2017							\$35.75	\$29.60	\$32.33	\$36.38	\$28.41	\$31.95	320	400	720	30			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
36	5/1/2017							\$39.54	\$25.28	\$32.03	\$37.01	\$22.97	\$29.61	352	392	744	31			\$59.37	\$4.95	\$59.38	\$4.95	\$98.29	\$8.19		
37	6/1/2017							\$41.80	\$25.19	\$33.31	\$37.89	\$22.87	\$30.21	352	368	720	30					\$119.81	\$9.98	\$149.02	\$12.42		
38	7/1/2017							\$49.34	\$27.98	\$37.17	\$45.66	\$25.66	\$34.26	320	424	744	31					\$119.81	\$9.98	\$149.02	\$12.42		
39	8/1/2017							\$43.66	\$27.52	\$35.50	\$40.44	\$25.24	\$32.76	368	376	744	31					\$119.81	\$9.98	\$149.02	\$12.42		
40	9/1/2017							\$37.95	\$25.53	\$31.05	\$34.15	\$22.97	\$27.94	320	400	720	30					\$119.81	\$9.98	\$149.02	\$12.42		
41	10/1/2017							\$35.12	\$26.67	\$30.67	\$33.19	\$24.52	\$28.62	352	392	744	31					\$119.81	\$9.98	\$149.02	\$12.42		
42	11/1/2017							\$35.02	\$27.22	\$30.85	\$33.91	\$25.14	\$29.23	336	385	721	30					\$119.81	\$9.98	\$149.02	\$12.42		
43	12/1/2017							\$39.36	\$29.21	\$33.58	\$36.25	\$28.65	\$31.92	320	424	744	31					\$119.81	\$9.98	\$149.02	\$12.42		
44	1/1/2018							\$56.64	\$42.80	\$49.35	\$44.03	\$38.50	\$41.12	352	392	744	31					\$119.81	\$9.98	\$149.02	\$12.42		
45	2/1/2018							\$52.36	\$39.60	\$45.68	\$40.34	\$35.75	\$37.94	320	352	672	28					\$119.81	\$9.98	\$149.02	\$12.42		
46	3/1/2018							\$42.07	\$33.50	\$37.56	\$38.68	\$28.65	\$33.40	352	391	743	31					\$119.81	\$9.98	\$149.02	\$12.42		
47	4/1/2018							\$34.80	\$29.35	\$31.89	\$32.07	\$25.10	\$28.35	336	384	720											

* ATC = (on peak prices * on peak hours + off peak prices * off peak hours) / total hours

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Duke Energy Ohio Auction Results

Exhibit ERB-1.4

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Line	Description	5/21/2013 Auction Results	11/12/2013 Auction Results	5/14/2015 Auction Results	5/14/2015 Auction Results	5/14/2015 Auction Results	11/16/2015 Auction Results	Source
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
1	Auction Results	\$54.16	\$50.11	\$58.79	\$57.60	\$59.17	\$49.86	Case Nos. 11-6000-EL-UNC, 15-6000-EL-UNC
2	Delivery Period	6/14 - 5/15	6/14 - 5/15	6/15 - 5/16	6/15 - 5/17	6/15 - 5/18	6/16 - 5/18	Case Nos. 11-6000-EL-UNC, 15-6000-EL-UNC
3	Auction Capacity Value *	\$10.68	\$10.68	\$11.32	\$8.14	\$8.75	\$10.30	See Note Below
4	Auction Non-Capacity Value	\$43.48	\$39.43	\$47.47	\$49.46	\$50.42	\$39.56	Line 1 - Line 3
5	DEOK DA LMP Basis from AD Hub **	-\$0.60	-\$0.83	-\$0.53	-\$0.53	-\$0.53	\$0.12	See Note Below
6	Capacity and Basis Removed	\$44.08	\$40.26	\$48.00	\$49.99	\$50.94	\$39.44	Line 4 - Line 5
7	AD Hub Market Price	\$37.25	\$33.63	\$36.74	\$36.29	\$36.09	\$32.20	Pg 1, Lines 51-55, Cols (E) and (H) and (K) and (N)
8	Auction Price/Market Price Ratio	1.183	1.197	1.306	1.377	1.411	1.225	Line 6 / Line 7

* For Column (C): Col (T) * Col (R) / Sum Col (R)

* For Column (D): Col (V) * Col (R) / Sum Col (R)

* For Columns (E) through (G) : Col (X) * Col (R) / Sum Col (R)

* For Column (H): Col (Y) * Col (R) / Sum Col (R)

** Line 5 is the average of the difference in PJM DA LMPs for the 12-month period before the auction date

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
AEP Ohio Auction Results

Exhibit ERB-1.5
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		AD Hub Prices on Auction Date:												Days in Month	RPM Price (\$/MW-day)	RPM (\$/MWh @ 50% LF) At	RPM Price (\$/MW-day) At	RPM (\$/MWh @ 50% LF)
		4/28/2015			5/12/2015			11/3/2015			NERC Hours				At 4/28/2015, 5/12/2015		11/3/2015	
Line	Delivery Month	On	Off	ATC*	On	Off	ATC*	On	Off	ATC*	On	Off	Total					
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)
													(N) = (L) + (M)	(O) = (N)/24	PJM	(Q) = (P)*(O) / [(N)*50%]	PJM	(S) = (R)*(O) / [(N)*50%]
1	6/1/2015	\$39.81	\$26.39	\$32.95	\$41.45	\$27.29	\$34.21				352	368	720	30	\$135.81	\$11.32	\$135.81	\$11.32
2	7/1/2015	\$50.84	\$30.73	\$40.68	\$53.90	\$31.36	\$42.51				368	376	744	31	\$135.81	\$11.32	\$135.81	\$11.32
3	8/1/2015	\$43.34	\$27.94	\$34.89	\$45.72	\$29.06	\$36.58				336	408	744	31	\$135.81	\$11.32	\$135.81	\$11.32
4	9/1/2015	\$37.28	\$26.11	\$31.32	\$38.69	\$26.93	\$32.42				336	384	720	30	\$135.81	\$11.32	\$135.81	\$11.32
5	10/1/2015	\$36.63	\$27.11	\$31.61	\$38.20	\$27.42	\$32.52				352	392	744	31	\$135.81	\$11.32	\$135.81	\$11.32
6	11/1/2015	\$36.58	\$27.91	\$31.76	\$38.15	\$28.26	\$32.65				320	401	721	30	\$135.81	\$11.32	\$135.81	\$11.32
7	12/1/2015	\$38.88	\$31.21	\$34.84	\$40.92	\$31.42	\$35.91				352	392	744	31	\$135.81	\$11.32	\$135.81	\$11.32
8	1/1/2016	\$53.89	\$42.77	\$47.55	\$54.37	\$43.38	\$48.11				320	424	744	31	\$135.81	\$11.32	\$135.81	\$11.32
9	2/1/2016	\$47.21	\$38.30	\$42.60	\$47.66	\$38.87	\$43.11				336	360	696	29	\$135.81	\$11.32	\$135.81	\$11.32
10	3/1/2016	\$39.77	\$33.16	\$36.43	\$39.98	\$34.10	\$37.01				368	375	743	31	\$135.81	\$11.32	\$135.81	\$11.32
11	4/1/2016	\$36.48	\$28.11	\$32.02	\$36.87	\$28.83	\$32.58				336	384	720	30	\$135.81	\$11.32	\$135.81	\$11.32
12	5/1/2016	\$38.38	\$26.50	\$31.87	\$39.10	\$26.75	\$32.33				336	408	744	31	\$135.81	\$11.32	\$135.81	\$11.32
13	6/1/2016	\$40.40	\$26.50	\$33.30	\$41.00	\$26.63	\$33.66	\$38.01	\$24.08	\$30.89	352	368	720	30	\$59.38	\$4.95	\$98.29	\$8.19
14	7/1/2016	\$50.64	\$28.55	\$38.05	\$51.72	\$28.48	\$38.48	\$44.49	\$25.55	\$33.70	320	424	744	31	\$59.38	\$4.95	\$98.29	\$8.19
15	8/1/2016	\$43.61	\$27.95	\$35.70	\$44.58	\$27.89	\$36.15	\$39.56	\$24.90	\$32.15	368	376	744	31	\$59.38	\$4.95	\$98.29	\$8.19
16	9/1/2016	\$36.93	\$26.25	\$31.23	\$37.50	\$26.43	\$31.60	\$34.35	\$24.20	\$28.94	336	384	720	30	\$59.38	\$4.95	\$98.29	\$8.19
17	10/1/2016	\$36.13	\$26.50	\$30.85	\$36.69	\$26.67	\$31.20	\$33.39	\$25.35	\$28.98	336	408	744	31	\$59.38	\$4.95	\$98.29	\$8.19
18	11/1/2016	\$36.68	\$26.55	\$31.27	\$37.44	\$26.72	\$31.72	\$33.99	\$26.10	\$29.78	336	385	721	30	\$59.38	\$4.95	\$98.29	\$8.19
19	12/1/2016	\$37.88	\$30.69	\$33.94	\$38.19	\$30.87	\$34.18	\$34.74	\$27.95	\$31.02	336	408	744	31	\$59.38	\$4.95	\$98.29	\$8.19
20	1/1/2017	\$52.72	\$42.28	\$46.99	\$53.43	\$43.11	\$47.77	\$41.21	\$36.60	\$38.68	336	408	744	31	\$59.38	\$4.95	\$98.29	\$8.19
21	2/1/2017	\$48.88	\$38.22	\$43.30	\$49.57	\$38.99	\$44.03	\$38.79	\$32.90	\$35.70	320	352	672	28	\$59.38	\$4.95	\$98.29	\$8.19
22	3/1/2017	\$40.46	\$34.01	\$37.20	\$40.24	\$33.70	\$36.94	\$37.92	\$29.72	\$33.78	368	375	743	31	\$59.38	\$4.95	\$98.29	\$8.19
23	4/1/2017	\$35.94	\$29.79	\$32.52	\$35.76	\$29.60	\$32.34	\$35.33	\$26.28	\$30.30	320	400	720	30	\$59.38	\$4.95	\$98.29	\$8.19
24	5/1/2017	\$38.35	\$24.82	\$31.22	\$39.31	\$25.35	\$31.95	\$37.61	\$25.05	\$30.99	352	392	744	31	\$59.38	\$4.95	\$98.29	\$8.19
25	6/1/2017	\$40.79	\$24.72	\$32.58	\$41.55	\$25.25	\$33.22	\$38.36	\$24.95	\$31.51	352	368	720	30	\$119.81	\$9.98	\$149.02	\$12.42
26	7/1/2017	\$49.39	\$28.33	\$37.39	\$49.57	\$27.98	\$37.27	\$45.86	\$24.70	\$33.80	320	424	744	31	\$119.81	\$9.98	\$149.02	\$12.42
27	8/1/2017	\$43.61	\$27.87	\$35.66	\$43.83	\$27.52	\$35.59	\$40.64	\$24.30	\$32.38	368	376	744	31	\$119.81	\$9.98	\$149.02	\$12.42
28	9/1/2017	\$36.86	\$25.06	\$30.30	\$37.74	\$25.60	\$31.00	\$34.38	\$25.10	\$29.22	320	400	720	30	\$119.81	\$9.98	\$149.02	\$12.42
29	10/1/2017	\$35.25	\$27.05	\$30.93	\$35.12	\$26.67	\$30.67	\$32.36	\$23.47	\$27.68	352	392	744	31	\$119.81	\$9.98	\$149.02	\$12.42
30	11/1/2017	\$35.15	\$27.61	\$31.12	\$35.02	\$27.22	\$30.85	\$32.76	\$24.06	\$28.11	336	385	721	30	\$119.81	\$9.98	\$149.02	\$12.42
31	12/1/2017	\$39.40	\$29.65	\$33.84	\$39.36	\$29.21	\$33.58	\$35.37	\$27.46	\$30.86	320	424	744	31	\$119.81	\$9.98	\$149.02	\$12.42
32	1/1/2018	\$56.41	\$43.10	\$49.40	\$56.65	\$42.80	\$49.35	\$43.44	\$38.80	\$41.00	352	392	744	31	\$119.81	\$9.98	\$149.02	\$12.42
33	2/1/2018	\$52.19	\$39.90	\$45.75	\$52.35	\$39.60	\$45.67	\$39.88	\$36.05	\$37.87	320	352	672	28	\$119.81	\$9.98	\$149.02	\$12.42
34	3/1/2018	\$42.09	\$33.45	\$37.54	\$42.09	\$33.50	\$37.57	\$38.41	\$28.80	\$33.35	352	391	743	31	\$119.81	\$9.98	\$149.02	\$12.42
35	4/1/2018	\$34.80	\$29.25	\$31.84	\$34.81	\$29.35	\$31.90	\$31.80	\$25.25	\$28.31	336	384	720	30	\$119.81	\$9.98	\$149.02	\$12.42
36	5/1/2018	\$38.42	\$26.50	\$32.14	\$38.40	\$26.60	\$32.18	\$33.07	\$22.95	\$27.74	352	392	744	31	\$119.81	\$9.98	\$149.02	\$12.42
37																		
38	Delivery Periods																	
39	6/15 - 5/16	\$41.58	\$30.55	\$35.71	\$42.92	\$31.16	\$36.67											
40	6/15 - 5/17	\$41.54	\$30.35	\$35.57	\$42.50	\$30.75	\$36.24											
41	6/15 - 5/18	\$41.70	\$30.28	\$35.61	\$42.39	\$30.51	\$36.06											
42	6/16 - 5/18							\$37.32	\$27.24	\$31.93								

* ATC = (on peak prices * on peak hours + off peak prices * off peak hours) / total hours

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
AEP Ohio Auction Results

Exhibit ERB-1.5

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Line	Description	4/28/2015 Auction Results	4/28/2015 Auction Results	4/28/2015 Auction Results	5/12/2015 Auction Results	5/12/2015 Auction Results	5/12/2015 Auction Results	11/3/2015 Auction Results	Source
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
1	Auction Results	\$53.79	\$53.51	\$55.58	\$55.42	\$54.70	\$56.35	\$48.29	Case No. 15-792-EL-UNC
2	Delivery Period	6/15 - 5/16	6/15 - 5/17	6/15 - 5/18	6/15 - 5/16	6/15 - 5/17	6/15 - 5/18	6/16 - 5/18	Case No. 15-792-EL-UNC
3	Auction Capacity Value *	\$11.32	\$8.14	\$8.75	\$11.32	\$8.14	\$8.75	\$10.30	See Note Below
4	Auction Non-Capacity Value	\$42.47	\$45.37	\$46.83	\$44.10	\$46.56	\$47.60	\$37.99	Line 1 - Line 3
5	AEP Ohio DA LMP Basis from AD Hub **	\$0.68	\$0.68	\$0.68	\$0.69	\$0.69	\$0.69	\$0.75	See Note Below
6	Capacity and Basis Removed	\$41.80	\$44.70	\$46.15	\$43.41	\$45.87	\$46.91	\$37.23	Line 4 - Line 5
7	AD Hub Market Price	\$35.71	\$35.57	\$35.61	\$36.67	\$36.24	\$36.06	\$31.93	Pg 1, Lines 39-42, Cols (E) and (H) and (K)
8	Auction Price/Market Price Ratio	1.170	1.256	1.296	1.184	1.266	1.301	1.166	Line 6 / Line 7

* For Columns (C) through (H): Col (Q) * Col (O) / Sum Col (O)

* For Column (I): Col (S) * Col (O) / Sum Col (O)

** Line 5 is the average of the difference in PJM DA LMPs for the 12-month period before the auction date

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Dayton Power and Light Auction Results

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AD Hub Prices on Auction Date:													NERC Hours		RPM Price (\$/MW-day) at 10/28/2013	RPM (\$/MWh @ 50% LF)	RPM Price (\$/MW-day) at 9/23/2014	RPM (\$/MWh @ 50% LF)	RPM Price (\$/MW-day) at 9/28/2015	RPM (\$/MWh @ 50% LF)	
10/28/2013			9/23/2014			9/28/2015															
Line	Delivery Month	On	Off	ATC*	On	Off	ATC*	On	Off	ATC*	On	Off	Total	Days in Month							
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)	(U)	
													(N) = (L) + (M)	(O) = (N)/24	PJM	(Q) = (P)*(O) / [(N)*50%]	PJM	(S) = (R)*(O) / [(N)*50%]	PJM	(U) = (T)*(O) / [(N)*50%]	
1	1/1/2014	\$40.10	\$33.05	\$36.99							416	328	744	31	\$28.45	\$2.37					
2	2/1/2014	\$38.72	\$32.00	\$35.84							384	288	672	28	\$28.45	\$2.37					
3	3/1/2014	\$38.36	\$30.48	\$34.89							416	327	743	31	\$28.45	\$2.37					
4	4/1/2014	\$37.46	\$28.85	\$33.82							416	304	720	30	\$28.45	\$2.37					
5	5/1/2014	\$37.50	\$26.59	\$32.69							416	328	744	31	\$28.45	\$2.37					
6	6/1/2014	\$39.58	\$26.60	\$32.66							336	384	720	30	\$129.28	\$10.77					
7	7/1/2014	\$51.22	\$28.41	\$39.20							352	392	744	31	\$129.28	\$10.77					
8	8/1/2014	\$45.83	\$28.26	\$36.19							336	408	744	31	\$129.28	\$10.77					
9	9/1/2014	\$37.09	\$26.31	\$31.34							336	384	720	30	\$129.28	\$10.77					
10	10/1/2014	\$35.33	\$27.47	\$31.36							368	376	744	31	\$129.28	\$10.77					
11	11/1/2014	\$37.36	\$28.66	\$32.33							304	417	721	30	\$129.28	\$10.77					
12	12/1/2014	\$37.85	\$30.60	\$34.03							352	392	744	31	\$129.28	\$10.77					
13	1/1/2015	\$40.19	\$31.79	\$35.58	\$59.47	\$41.60	\$49.67				336	408	744	31	\$129.28	\$10.77	\$128.38	\$10.70			
14	2/1/2015	\$40.19	\$31.79	\$35.79	\$51.43	\$37.63	\$44.20				320	352	672	28	\$129.28	\$10.77	\$128.38	\$10.70			
15	3/1/2015	\$37.95	\$29.37	\$33.43	\$46.11	\$34.24	\$39.86				352	391	743	31	\$129.28	\$10.77	\$128.38	\$10.70			
16	4/1/2015	\$37.95	\$29.37	\$33.56	\$41.64	\$29.86	\$35.62				352	368	720	30	\$129.28	\$10.77	\$128.38	\$10.70			
17	5/1/2015	\$37.70	\$26.70	\$31.43	\$41.85	\$27.28	\$33.55				320	424	744	31	\$129.28	\$10.77	\$128.38	\$10.70			
18	6/1/2015	\$41.39	\$26.55	\$33.81	\$43.55	\$26.75	\$34.96				352	368	720	30	\$135.72	\$11.31	\$135.79	\$11.32			
19	7/1/2015	\$49.78	\$29.72	\$39.64	\$56.62	\$29.21	\$42.77				368	376	744	31	\$135.72	\$11.31	\$135.79	\$11.32			
20	8/1/2015	\$49.78	\$29.72	\$38.78	\$47.15	\$28.31	\$36.82				336	408	744	31	\$135.72	\$11.31	\$135.79	\$11.32			
21	9/1/2015	\$37.95	\$27.39	\$32.32	\$39.55	\$26.25	\$32.46				336	384	720	30	\$135.72	\$11.31	\$135.79	\$11.32			
22	10/1/2015	\$35.80	\$27.69	\$31.53	\$37.79	\$27.01	\$32.11				352	392	744	31	\$135.72	\$11.31	\$135.79	\$11.32			
23	11/1/2015	\$37.10	\$29.17	\$32.69	\$38.79	\$26.91	\$32.18				320	401	721	30	\$135.72	\$11.31	\$135.79	\$11.32			
24	12/1/2015	\$38.44	\$31.15	\$34.60	\$41.74	\$32.04	\$36.63				352	392	744	31	\$135.72	\$11.31	\$135.79	\$11.32			
25	1/1/2016	\$40.31	\$33.09	\$36.20	\$56.10	\$43.20	\$48.75	\$48.11	\$38.72	\$42.76	320	424	744	31	\$135.72	\$11.31	\$135.79	\$11.32	\$135.81	\$11.32	
26	2/1/2016	\$40.31	\$33.09	\$36.58	\$50.15	\$39.32	\$44.55	\$43.99	\$34.78	\$39.23	336	360	696	29	\$135.72	\$11.31	\$135.79	\$11.32	\$135.81	\$11.32	
27	3/1/2016	\$37.11	\$29.83	\$33.44	\$42.84	\$35.38	\$39.07	\$39.80	\$34.54	\$37.15	368	375	743	31	\$135.72	\$11.31	\$135.79	\$11.32	\$135.81	\$11.32	
28	4/1/2016	\$37.11	\$29.83	\$33.23	\$38.76	\$31.04	\$34.64	\$37.95	\$28.71	\$33.02	336	384	720	30	\$135.72	\$11.31	\$135.79	\$11.32	\$135.81	\$11.32	
29	5/1/2016	\$38.56	\$26.77	\$32.09	\$40.73	\$27.26	\$33.34	\$39.94	\$26.40	\$32.51	336	408	744	31	\$135.72	\$11.31	\$135.79	\$11.32	\$135.81	\$11.32	
30	6/1/2016	\$41.61	\$26.96	\$34.12	\$43.88	\$26.36	\$34.93	\$39.64	\$25.53	\$32.43	352	368	720	30	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01	
31	7/1/2016	\$51.85	\$29.53	\$39.13	\$54.40	\$28.10	\$39.41	\$48.20	\$27.25	\$36.26	320	424	744	31	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01	
32	8/1/2016	\$51.85	\$29.53	\$40.57	\$47.60	\$27.46	\$37.42	\$40.55	\$25.50	\$32.94	368	376	744	31	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01	
33	9/1/2016	\$38.26	\$26.77	\$32.13	\$38.63	\$24.57	\$31.13	\$36.00	\$25.00	\$30.13	336	384	720	30	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01	
34	10/1/2016	\$36.16	\$29.43	\$32.47	\$37.29	\$27.06	\$31.68	\$35.75	\$26.06	\$30.44	336	408	744	31	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01	
35	11/1/2016	\$36.56	\$29.43	\$32.75	\$37.34	\$27.91	\$32.30	\$36.15	\$26.71	\$31.11	336	385	721	30	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01	
36	12/1/2016	\$38.21	\$29.43	\$33.40	\$41.55	\$30.55	\$35.52	\$37.00	\$28.61	\$32.40	336	408	744	31	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01	
37	1/1/2017	\$41.63	\$34.07	**	\$37.49	\$57.33	\$45.25	\$50.71	\$47.31	\$39.46	\$43.01	336	408	744	31	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01
38	2/1/2017	\$41.63	\$34.18	**	\$37.73	\$52.84	\$40.83	\$46.55	\$44.25	\$35.58	\$39.71	320	352	672	28	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01
39	3/1/2017	\$38.32	\$30.41	**	\$34.33	\$44.89	\$34.93	\$39.86	\$39.38	\$31.13	\$35.22	368	375	743	31	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01
40	4/1/2017	\$38.32	\$30.16	**	\$33.79	\$37.64	\$30.66	\$33.76	\$34.40	\$27.56	\$30.60	320	400	720	30	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01
41	5/1/2017	\$39.52	\$28.29	**	\$33.60	\$41.34	\$26.84	\$33.70	\$37.37	\$24.41	\$30.54	352	392	744	31	\$59.37	\$4.95	\$59.38	\$4.95	\$60.13	\$5.01
42																					
43	Delivery Periods																				
44	1/14 - 5/17	\$40.17	\$29.45	\$34.57																	
45	1/15 - 5/17				\$45.11	\$31.49	\$37.84														
46	1/16 - 5/17							\$40.29	\$29.75	\$34.66											

* ATC = (on peak prices * on peak hours + off peak prices * off peak hours) / total hours

** Column (D), Lines 37 through 41 are estimates (Actual data not available from public source)

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Dayton Power and Light Auction Results

Exhibit ERB-1.6

Page 2 of 2

Line	Description	10/28/2013 Auction Results	9/23/2014 Auction Results	9/28/2015 Auction Results	Source
(A)	(B)	(C)	(D)	(E)	(F)
1	Auction Results	\$49.32	\$62.08	\$51.49	Case Nos. 13-2120-EL-UNC
2	Delivery Period	1/14 - 5/17	1/15 - 5/17	1/16 - 5/17	Case Nos. 13-2120-EL-UNC
3	Auction Capacity Value *	\$8.21	\$8.57	\$6.86	See Note Below
4	Auction Non-Capacity Value	\$41.11	\$53.51	\$44.63	Line 1 - Line 3
5	DAY DA LMP Basis from AD Hub **	\$0.58	\$1.04	\$0.78	See Note Below
6	Capacity and Basis Removed	\$40.53	\$52.47	\$43.84	Line 4 - Line 5
7	AD Hub Market Price	\$34.57	\$37.84	\$34.66	Pg 1, Lines 44-46, Cols (E) and (H) and (K) and (N)
8	Auction Price/Market Price Ratio	1.172	1.386	1.265	Line 6 / Line 7

* For Column (C): Col (Q) * Col (O) / Sum Col (O)

* For Column (D): Col (S) * Col (O) / Sum Col (O)

* For Columns (E): Col (U) * Col (O) / Sum Col (O)

** Line 5 is the average of the difference in PJM DA LMPs for the 12-month period before the auction date

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Forecasted Standard Offer Rates (per kWh)

Exhibit ERB-2
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
<u>Line</u>	<u>Period</u>	<u>Residential</u>	<u>Residential Heat</u> <u>(Summer)</u>	<u>Residential Heat</u> <u>(Winter)</u>	<u>Secondary</u>	<u>Primary</u>	<u>Primary</u> <u>Substation</u>	<u>High Voltage</u>	<u>Private Outdoor</u> <u>Lighting</u>	<u>Street Lighting</u>	<u>Source</u>
1	June 2017 - May 2018	\$0.0616244	\$0.0616244	\$0.0522137	\$0.0616244	\$0.0600418	\$0.0594179	\$0.0594179	\$0.0616244	\$0.0616244	Exhibit ERB-2.1, Line 33
2											
3	June 2018 - May 2019 *	\$0.0653712	\$0.0653712	\$0.0553883	\$0.0653712	\$0.0636924	\$0.0630306	\$0.0630306	\$0.0653712	\$0.0653712	Exhibit ERB-2.2, Line 33
4											
5	June 2019 - May 2020 *	\$0.0703919	\$0.0703919	\$0.0596423	\$0.0703919	\$0.0685842	\$0.0678715	\$0.0678715	\$0.0703919	\$0.0703919	Exhibit ERB-2.3, Line 33
6											
7	June 2020 - May 2021 *	\$0.0787716	\$0.0787716	\$0.0667423	\$0.0787716	\$0.0767487	\$0.0759512	\$0.0759512	\$0.0787716	\$0.0787716	Exhibit ERB-2.4, Line 33
8											
9	June 2021 - May 2022 *	\$0.0862763	\$0.0862763	\$0.0731009	\$0.0862763	\$0.0840606	\$0.0831872	\$0.0831872	\$0.0862763	\$0.0862763	Exhibit ERB-2.5, Line 33
10											
11	June 2022 - May 2023 *	\$0.0935650	\$0.0935650	\$0.0792766	\$0.0935650	\$0.0911621	\$0.0902149	\$0.0902149	\$0.0935650	\$0.0935650	Exhibit ERB-2.6, Line 33
12											
13	June 2023 - May 2024 *	\$0.1005939	\$0.1005939	\$0.0852321	\$0.1005939	\$0.0980105	\$0.0969921	\$0.0969921	\$0.1005939	\$0.1005939	Exhibit ERB-2.7, Line 33
14											
15	June 2024 - May 2025 *	\$0.1067278	\$0.1067278	\$0.0904293	\$0.1067278	\$0.1039869	\$0.1029064	\$0.1029064	\$0.1067278	\$0.1067278	Exhibit ERB-2.8, Line 33
16											
17	June 2025 - May 2026 *	\$0.1120944	\$0.1120944	\$0.0949763	\$0.1120944	\$0.1092157	\$0.1080809	\$0.1080809	\$0.1120944	\$0.1120944	Exhibit ERB-2.9, Line 33
18											
19	June 2026 - December 2026 *	\$0.1168490	\$0.1168490	\$0.0990049	\$0.1168490	\$0.1138481	\$0.1126652	\$0.1126652	\$0.1168490	\$0.1168490	Exhibit ERB-2.10, Line 33

* Forecast only - subject to change upon subsequent annual filings

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 1 (June 2017 - May 2018)

Exhibit ERB-2.1
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,746,525,226	295,103,722	720,413,890	658,346,741	54,024,707	10,488,754	427,266,960	15,109,952	1,313,510	3,928,593,462	2015 SSO sales
4												
5	Auction Price	\$57.07										Exhibit ERB-1, Page 2, Line 1
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	Cash Working Capital Component	\$0.12										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$57.19										Line 5 + Line 6 + Line 7
9												
10	Adjustment for Commercial Activity Tax (CAT)	1.0026										
11	Standard Offer Rate per MWh, by tariff class	\$59.90	\$59.90	\$59.90	\$59.90	\$58.32	\$57.69	\$57.69	\$59.90	\$59.90		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.0598987	\$0.0598987	\$0.0598987	\$0.0598987	\$0.0583161	\$0.0576922	\$0.0576922	\$0.0598987	\$0.0598987		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$104,614,591	\$17,676,329	\$43,151,855	\$39,434,114	\$3,150,510	\$605,119	\$24,649,971	\$905,066	\$78,678	\$234,266,234	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.0598987										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0077										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0522137										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$37,615,475										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$5,536,380										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	3,208,179,572										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$3,013,992	\$509,263		\$1,136,114	\$93,231	\$18,101	\$737,338	\$26,075	\$2,267		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.0616244	\$0.0616244	\$0.0522137	\$0.0616244	\$0.0600418	\$0.0594179	\$0.0594179	\$0.0616244	\$0.0616244		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discoun	\$107,628,583	\$18,185,592	\$37,615,475	\$40,570,228	\$3,243,741	\$623,220	\$25,387,309	\$931,142	\$80,944	\$234,266,234	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.0616244										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0522137										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 2 (June 2018 - May 2019)

Exhibit ERB-2.2
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,746,525,226	295,103,722	720,413,890	658,346,741	54,024,707	10,488,754	427,266,960	15,109,952	1,313,510	3,928,593,462	2015 SSO sales
4												
5	Auction Price	\$60.54										Exhibit ERB-1, Page 2, Line 2
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	Cash Working Capital Component	\$0.13										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$60.67										Line 5 + Line 6 + Line 7
9												
10	Adjustment for Commercial Activity Tax (CAT)	1.0026										
11	Standard Offer Rate per MWh, by tariff class	\$63.54	\$63.54	\$63.54	\$63.54	\$61.86	\$61.20	\$61.20	\$63.54	\$63.54		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.0635406	\$0.0635406	\$0.0635406	\$0.0635406	\$0.0618618	\$0.0612000	\$0.0612000	\$0.0635406	\$0.0635406		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$110,975,261	\$18,751,068	\$45,775,531	\$41,831,747	\$3,342,066	\$641,912	\$26,148,738	\$960,095	\$83,461	\$248,509,878	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.0635406										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0082										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0553883										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$39,902,501										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$5,873,030										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	3,208,179,572										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$3,197,263	\$540,229		\$1,205,198	\$98,900	\$19,201	\$782,173	\$27,661	\$2,405		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.0653712	\$0.0653712	\$0.0553883	\$0.0653712	\$0.0636924	\$0.0630306	\$0.0630306	\$0.0653712	\$0.0653712		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discoun	\$114,172,524	\$19,291,297	\$39,902,501	\$43,036,944	\$3,440,966	\$661,113	\$26,930,911	\$987,756	\$85,866	\$248,509,878	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.0653712										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0553883										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 3 (June 2019 - May 2020)

Exhibit ERB-2.3
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,746,525,226	295,103,722	720,413,890	658,346,741	54,024,707	10,488,754	427,266,960	15,109,952	1,313,510	3,928,593,462	2015 SSO sales
4												
5	Auction Price	\$65.19										Exhibit ERB-1, Page 2, Line 3
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	Cash Working Capital Component	\$0.14										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$65.33										Line 5 + Line 6 + Line 7
9												
10	Adjustment for Commercial Activity Tax (CAT)	1.0026										
11	Standard Offer Rate per MWh, by tariff class	\$68.42	\$68.42	\$68.42	\$68.42	\$66.61	\$65.90	\$65.90	\$68.42	\$68.42		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.0684207	\$0.0684207	\$0.0684207	\$0.0684207	\$0.0666130	\$0.0659003	\$0.0659003	\$0.0684207	\$0.0684207		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$119,498,479	\$20,191,203	\$49,291,223	\$45,044,545	\$3,598,748	\$691,212	\$28,157,021	\$1,033,833	\$89,871	\$267,596,135	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.0684207										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0088										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0596423										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$42,967,141										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$6,324,082										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	3,208,179,572										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$3,442,815	\$581,719		\$1,297,757	\$106,495	\$20,676	\$842,244	\$29,785	\$2,589		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.0703919	\$0.0703919	\$0.0596423	\$0.0703919	\$0.0685842	\$0.0678715	\$0.0678715	\$0.0703919	\$0.0703919		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discoun	\$122,941,293	\$20,772,923	\$42,967,141	\$46,342,302	\$3,705,243	\$711,888	\$28,999,265	\$1,063,619	\$92,461	\$267,596,135	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.0703919										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0596423										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 4 (June 2020 - May 2021)

Exhibit ERB-2.4
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,746,525,226	295,103,722	720,413,890	658,346,741	54,024,707	10,488,754	427,266,960	15,109,952	1,313,510	3,928,593,462	2015 SSO sales
4												
5	Auction Price	\$72.95										Exhibit ERB-1, Page 2, Line 4
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	Cash Working Capital Component	\$0.16										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$73.11										Line 5 + Line 6 + Line 7
9												
10	Adjustment for Commercial Activity Tax (CAT)	1.0026										
11	Standard Offer Rate per MWh, by tariff class	\$76.57	\$76.57	\$76.57	\$76.57	\$74.54	\$73.75	\$73.75	\$76.57	\$76.57		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.0765657	\$0.0765657	\$0.0765657	\$0.0765657	\$0.0745428	\$0.0737453	\$0.0737453	\$0.0765657	\$0.0765657		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$133,723,926	\$22,594,823	\$55,158,994	\$50,406,779	\$4,027,153	\$773,496	\$31,508,930	\$1,156,904	\$100,570	\$299,451,576	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.0765657										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0098										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0667423										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$48,082,080										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$7,076,914										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	3,208,179,572										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$3,852,655	\$650,968		\$1,452,245	\$119,173	\$23,137	\$942,507	\$33,331	\$2,897		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.0787716	\$0.0787716	\$0.0667423	\$0.0787716	\$0.0767487	\$0.0759512	\$0.0759512	\$0.0787716	\$0.0787716		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discoun	\$137,576,581	\$23,245,791	\$48,082,080	\$51,859,024	\$4,146,326	\$796,633	\$32,451,437	\$1,190,235	\$103,467	\$299,451,576	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.0787716										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0667423										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 5 (June 2021 - May 2022)

Exhibit ERB-2.5
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,746,525,226	295,103,722	720,413,890	658,346,741	54,024,707	10,488,754	427,266,960	15,109,952	1,313,510	3,928,593,462	2015 SSO sales
4												
5	Auction Price	\$79.90										Exhibit ERB-1, Page 2, Line 5
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	<u>Cash Working Capital Component</u>	<u>\$0.17</u>										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$80.07										Line 5 + Line 6 + Line 7
9												
10	<u>Adjustment for Commercial Activity Tax (CAT)</u>	<u>1.0026</u>										
11	Standard Offer Rate per MWh, by tariff class	\$83.86	\$83.86	\$83.86	\$83.86	\$81.64	\$80.77	\$80.77	\$83.86	\$83.86		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.0838602	\$0.0838602	\$0.0838602	\$0.0838602	\$0.0816445	\$0.0807711	\$0.0807711	\$0.0838602	\$0.0838602		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$146,463,955	\$24,747,457	\$60,414,053	\$55,209,089	\$4,410,820	\$847,188	\$34,510,822	\$1,267,124	\$110,151	\$327,980,660	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.0838602										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0108										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0731009										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$52,662,904										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$7,751,149										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	3,208,179,572										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$4,219,707	\$712,988		\$1,590,604	\$130,527	\$25,341	\$1,032,302	\$36,507	\$3,174		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.0862763	\$0.0862763	\$0.0731009	\$0.0862763	\$0.0840606	\$0.0831872	\$0.0831872	\$0.0862763	\$0.0862763		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discount	\$150,683,662	\$25,460,445	\$52,662,904	\$56,799,693	\$4,541,347	\$872,530	\$35,543,124	\$1,303,630	\$113,325	\$327,980,660	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.0862763										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0731009										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 6 (June 2022 - May 2023)

Exhibit ERB-2.6
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,746,525,226	295,103,722	720,413,890	658,346,741	54,024,707	10,488,754	427,266,960	15,109,952	1,313,510	3,928,593,462	2015 SSO sales
4												
5	Auction Price	\$86.65										Exhibit ERB-1, Page 2, Line 6
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	Cash Working Capital Component	\$0.19										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$86.84										Line 5 + Line 6 + Line 7
9												
10	Adjustment for Commercial Activity Tax (CAT)	1.0026										
11	Standard Offer Rate per MWh, by tariff class	\$90.94	\$90.94	\$90.94	\$90.94	\$88.54	\$87.59	\$87.59	\$90.94	\$90.94		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.0909448	\$0.0909448	\$0.0909448	\$0.0909448	\$0.0885419	\$0.0875947	\$0.0875947	\$0.0909448	\$0.0909448		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$158,837,387	\$26,838,149	\$65,517,897	\$59,873,213	\$4,783,450	\$918,759	\$37,426,321	\$1,374,172	\$119,457	\$355,688,805	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.0909448										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0117										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0792766										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$57,111,964										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$8,405,933										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	3,208,179,572										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$4,576,170	\$773,218		\$1,724,972	\$141,553	\$27,482	\$1,119,506	\$39,590	\$3,442		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.0935650	\$0.0935650	\$0.0792766	\$0.0935650	\$0.0911621	\$0.0902149	\$0.0902149	\$0.0935650	\$0.0935650		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discoun	\$163,413,557	\$27,611,367	\$57,111,964	\$61,598,184	\$4,925,003	\$946,241	\$38,545,828	\$1,413,762	\$122,899	\$355,688,805	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.0935650										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0792766										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 7 (June 2023 - May 2024)

Exhibit ERB-2.7
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,746,525,226	295,103,722	720,413,890	658,346,741	54,024,707	10,488,754	427,266,960	15,109,952	1,313,510	3,928,593,462	2015 SSO sales
4												
5	Auction Price	\$93.16										Exhibit ERB-1, Page 2, Line 7
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	Cash Working Capital Component	\$0.20										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$93.36										Line 5 + Line 6 + Line 7
9												
10	Adjustment for Commercial Activity Tax (CAT)	1.0026										
11	Standard Offer Rate per MWh, by tariff class	\$97.78	\$97.78	\$97.78	\$97.78	\$95.19	\$94.18	\$94.18	\$97.78	\$97.78		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.0977769	\$0.0977769	\$0.0977769	\$0.0977769	\$0.0951935	\$0.0941751	\$0.0941751	\$0.0977769	\$0.0977769		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$170,769,822	\$28,854,327	\$70,439,837	\$64,371,103	\$5,142,801	\$987,779	\$40,237,909	\$1,477,404	\$128,431	\$382,409,414	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.0977769										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0125										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0852321										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$61,402,389										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$9,037,448										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	3,208,179,572										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$4,919,965	\$831,308		\$1,854,564	\$152,188	\$29,547	\$1,203,612	\$42,565	\$3,700		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.1005939	\$0.1005939	\$0.0852321	\$0.1005939	\$0.0980105	\$0.0969921	\$0.0969921	\$0.1005939	\$0.1005939		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discoun	\$175,689,787	\$29,685,635	\$61,402,389	\$66,225,667	\$5,294,989	\$1,017,326	\$41,441,521	\$1,519,969	\$132,131	\$382,409,414	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.1005939										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0852321										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 8 (June 2024 - May 2025)

Exhibit ERB-2.8
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,746,525,226	295,103,722	720,413,890	658,346,741	54,024,707	10,488,754	427,266,960	15,109,952	1,313,510	3,928,593,462	2015 SSO sales
4												
5	Auction Price	\$98.84										Exhibit ERB-1, Page 2, Line 8
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	Cash Working Capital Component	\$0.21										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$99.05										Line 5 + Line 6 + Line 7
9												
10	Adjustment for Commercial Activity Tax (CAT)	1.0026										
11	Standard Offer Rate per MWh, by tariff class	\$103.74	\$103.74	\$103.74	\$103.74	\$101.00	\$99.92	\$99.92	\$103.74	\$103.74		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.1037390	\$0.1037390	\$0.1037390	\$0.1037390	\$0.1009981	\$0.0999176	\$0.0999176	\$0.1037390	\$0.1037390		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$181,182,780	\$30,613,765	\$74,735,017	\$68,296,233	\$5,456,393	\$1,048,011	\$42,691,489	\$1,567,491	\$136,262	\$405,727,441	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.1037390										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0133										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0904293										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$65,146,524										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$9,588,493										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	3,208,179,572										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$5,219,952	\$881,995		\$1,967,643	\$161,467	\$31,348	\$1,277,000	\$45,160	\$3,926		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.1067278	\$0.1067278	\$0.0904293	\$0.1067278	\$0.1039869	\$0.1029064	\$0.1029064	\$0.1067278	\$0.1067278		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discoun	\$186,402,733	\$31,495,760	\$65,146,524	\$70,263,876	\$5,617,860	\$1,079,360	\$43,968,489	\$1,612,651	\$140,188	\$405,727,441	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.1067278										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0904293										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 9 (June 2025 - May 2026)

Exhibit ERB-2.9
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,746,525,226	295,103,722	720,413,890	658,346,741	54,024,707	10,488,754	427,266,960	15,109,952	1,313,510	3,928,593,462	2015 SSO sales
4												
5	Auction Price	\$103.81										Exhibit ERB-1, Page 2, Line 9
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	Cash Working Capital Component	\$0.22										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$104.03										Line 5 + Line 6 + Line 7
9												
10	Adjustment for Commercial Activity Tax (CAT)	1.0026										
11	Standard Offer Rate per MWh, by tariff class	\$108.96	\$108.96	\$108.96	\$108.96	\$106.08	\$104.94	\$104.94	\$108.96	\$108.96		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.1089553	\$0.1089553	\$0.1089553	\$0.1089553	\$0.1060766	\$0.1049418	\$0.1049418	\$0.1089553	\$0.1089553		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$190,293,180	\$32,153,115	\$78,492,912	\$71,730,367	\$5,730,757	\$1,100,709	\$44,838,164	\$1,646,309	\$143,114	\$426,128,626	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.1089553										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0140										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0949763										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$68,422,246										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$10,070,666										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	3,208,179,572										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$5,482,446	\$926,348		\$2,066,589	\$169,587	\$32,925	\$1,341,216	\$47,431	\$4,123		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.1120944	\$0.1120944	\$0.0949763	\$0.1120944	\$0.1092157	\$0.1080809	\$0.1080809	\$0.1120944	\$0.1120944		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discoun	\$195,775,626	\$33,079,463	\$68,422,246	\$73,796,956	\$5,900,344	\$1,133,634	\$46,179,380	\$1,693,740	\$147,237	\$426,128,626	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.1120944										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0949763										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of the Standard Offer Rate
Period 10 (June 2026 - December 2026)

Exhibit ERB-2.10
Page 1 of 1

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Line	Description	Residential	Residential Heat (Summer)	Residential Heat (Winter)	Secondary	Primary	Primary Substation	High Voltage	Private Outdoor Lighting	Street Lighting	Total	Source
1	Distribution Loss Factor - Energy	1.04461	1.04461	1.04461	1.04461	1.01701	1.00613	1.00613	1.04461	1.04461		DP&L's 2015 Loss Study
2												
3	Forecasted SSO Billing Determinants (kWh)	1,018,806,382	172,143,838	420,241,436	384,035,599	31,514,412	6,118,440	249,239,060	8,814,139	766,214	2,291,679,520	2015 SSO sales (at 7 months)
4												
5	Auction Price	\$108.05										Exhibit ERB-1, Page 2, Line 10
6	Reconciliation Component *	\$0.00										Exhibit ERB-2.12, Line 30 * 1,000
7	<u>Cash Working Capital Component</u>	<u>\$0.39</u>										Exhibit ERB-2.11, Line 18 * 1,000
8	Standard Offer Rate per MWh	\$108.44										Line 5 + Line 6 + Line 7
9												
10	<u>Adjustment for Commercial Activity Tax (CAT)</u>	<u>1.0026</u>										
11	Standard Offer Rate per MWh, by tariff class	\$113.58	\$113.58	\$113.58	\$113.58	\$110.58	\$109.39	\$109.39	\$113.58	\$113.58		Line 1 * Line 8 * Line 10
12												
13	Standard Offer Rate	\$0.1135768	\$0.1135768	\$0.1135768	\$0.1135768	\$0.1105759	\$0.1093930	\$0.1093930	\$0.1135768	\$0.1135768		Line 11 / 1000
14												
15	Standard Offer Rate Revenue	\$115,712,769	\$19,551,546	\$47,729,678	\$43,617,534	\$3,484,735	\$669,314	\$27,265,008	\$1,001,082	\$87,024	\$259,118,690	Line 3 * Line 13
16												
17												
18	Standard Offer Rate - Residential Heat (Winter)	\$0.1135768										Column (E), Line 13
19	Winter Discount Factor	12.83%										
20	Discount kWh	\$0.0146										Line 18 * Line 19
21	Standard Offer Rate - Residential Heat (Winter) - after discount	\$0.0990049										Line 18 - Line 20
22												
23	Residential Heat (Winter) Standard Offer Rate Revenue - after discount	\$41,605,961										(Column (E), Line 3) * Line 21
24												
25	Residential Heating Discount Amount	\$6,123,717										(Column (E), Line 15) - Line 23
26												
27	Total SSO kWh less Residential Heat (Winter) kWh	1,871,438,084										Line 5, Column (L) - Column (E)
28												
29	% of Total SSO kWh	54.440%	9.198%		20.521%	1.684%	0.327%	13.318%	0.471%	0.041%		Line 3 / Line 27
30												
31	Heating Discount Adder	\$3,333,737	\$563,289		\$1,256,641	\$103,121	\$20,021	\$815,560	\$28,842	\$2,507		Line 25 * Line 29
32												
33	Standard Offer Rate with Heating Discount	\$0.1168490	\$0.1168490	\$0.0990049	\$0.1168490	\$0.1138481	\$0.1126652	\$0.1126652	\$0.1168490	\$0.1168490		Line 35 / Line 3
34												
35	Standard Offer Rate Revenue with Heating Discoun	\$119,046,505	\$20,114,835	\$41,605,961	\$44,874,175	\$3,587,856	\$689,335	\$28,080,568	\$1,029,923	\$89,531	\$259,118,690	Line 15 + Line 31
36	Residential Heat (Summer) Rate	\$0.1168490										Column (D), Line 33
37	Residential Heat (Winter) Rate	\$0.0990049										Column (E), Line 33
38	Winter Discount Percentage	15.27%										(Line 36 - Line 37) / Line 36

* DP&L is not forecasting any over/under recovery under Reconciliation Component; illustration of component placement only

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Cash Working Capital (CWC)

Exhibit ERB-2.11
Page 1 of 1

<u>Line</u>	<u>Description</u>	<u>June 2017 to May 2018</u>	<u>June 2018 to May 2019 *</u>	<u>June 2019 to May 2020 *</u>	<u>June 2020 to May 2021 *</u>	<u>June 2021 to May 2022 *</u>	<u>June 2022 to May 2023 *</u>	<u>June 2023 to May 2024 *</u>	<u>June 2024 to May 2025 *</u>	<u>June 2025 to May 2026 *</u>	<u>June 2026 to Dec. 2026 *</u>	<u>Source</u>
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
1	Estimated Generation Supply Cost	\$ 234,266,234	\$ 248,509,878	\$ 267,596,135	\$ 299,451,576	\$ 327,980,660	\$ 355,688,805	\$ 382,409,414	\$ 405,727,441	\$ 426,128,626	\$ 259,118,690	Exhibits ERB-2.1 to ERB-2.10, Column L, Line 35
2												
3	Estimated Average Daily Cost	\$ 641,825	\$ 680,849	\$ 731,136.98	\$ 820,415	\$ 898,577	\$ 974,490	\$ 1,044,834.46	\$ 1,111,582	\$ 1,167,476	\$ 1,210,835	Line 1 / number of days in the period
4												
5	Revenue Collection Lag (days)	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	PUCO Case No. 15-1830-EL-AIR, WP B-5.1a, Line 1
6	Expense Leads (days)	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	PUCO Case No. 15-1830-EL-AIR
7												
8	Net Lag (days)	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	Line 5 - Line 6
9												
10	CWC	\$ 6,097,340	\$ 6,468,065	\$ 6,945,801	\$ 7,793,945	\$ 8,536,483	\$ 9,257,654	\$ 9,925,927	\$ 10,560,029	\$ 11,091,019	\$ 11,502,933	Line 3 * Line 8
11												
12	Cost of Capital	7.86%	7.86%	7.86%	7.86%	7.86%	7.86%	7.86%	7.86%	7.86%	7.86%	PUCO Case No. 15-1830-EL-AIR, Schedule D-1a, Line 7
13												
14	Revenue Requirement for CWC	\$ 479,251	\$ 508,390	\$ 545,940	\$ 612,604	\$ 670,968	\$ 727,652	\$ 780,178	\$ 830,018	\$ 871,754	\$ 904,130	Line 10 * Line 12
15												
16	Estimated Sales (kWh)	3,928,593,462	3,928,593,462	3,928,593,462	3,928,593,462	3,928,593,462	3,928,593,462	3,928,593,462	3,928,593,462	3,928,593,462	2,291,679,520	Exhibits ERB-2.1 to ERB-2.10, Column L, Line 5
17												
18	Rate for CWC	\$ 0.0001220	\$ 0.0001294	\$ 0.0001390	\$ 0.0001559	\$ 0.0001708	\$ 0.0001852	\$ 0.0001986	\$ 0.0002113	\$ 0.0002219	\$ 0.0003945	Line 14 / Line 16

* Forecast only - subject to change upon subsequent annual filings

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Standard Offer Rate Reconciliation
**** For Illustration Purposes Only ****

Exhibit ERB-2.12

Page 1 of 1

<u>Line</u> (A)	<u>Description</u> (B)	<u>Auction Supply</u> <u>Charges</u> (C)	<u>Auction Cost</u> <u>Charges</u> (D)	<u>Standard Offer</u> <u>Rate Revenues</u> (E)	<u>(Over)/Under</u> (F)	<u>YTD</u> ¹ (G)	<u>Source</u> (H)
1	June 2016	\$11,849,539	\$51,634	(\$12,543,710)	(\$642,537)	(\$642,537)	Internal Data
2	July 2016	\$12,619,668	\$48,523	(\$12,504,330)	\$163,861	(\$478,676)	Internal Data
3	August 2016	\$12,951,043	\$51,957	(\$11,692,184)	\$1,310,816	\$832,140	Internal Data
4	September 2016	\$12,219,362	\$51,417	(\$12,858,405)	(\$587,626)	\$244,514	Internal Data
5	October 2016	\$11,588,093	\$48,300	(\$12,402,062)	(\$765,669)	(\$521,155)	Internal Data
6	November 2016	\$12,632,855	\$49,317	(\$12,910,270)	(\$228,098)	(\$749,253)	Internal Data
7	December 2016	\$12,456,448	\$50,241	(\$11,464,949)	\$1,041,740	\$292,487	Internal Data
8	January 2017	\$12,075,091	\$48,573	(\$12,185,408)	(\$61,744)	\$230,743	Internal Data
9	February 2017	\$11,359,263	\$51,736	(\$12,221,922)	(\$810,923)	(\$580,180)	Internal Data
10	March 2017	\$12,827,049	\$48,343	(\$11,554,462)	\$1,320,930	\$740,750	Internal Data
11	April 2017	\$11,924,985	\$51,904	(\$11,742,975)	\$233,914	\$974,664	Internal Data
12	May 2017	\$11,798,293	\$50,067	(\$12,459,929)	(\$611,569)	\$363,095	Internal Data
13	June 2017	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
14	July 2017	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
15	August 2017	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
16	September 2017	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
17	October 2017	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
18	November 2017	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
19	December 2017	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
20	January 2018	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
21	February 2018	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
22	March 2018	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
23	April 2018	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
24	May 2018	\$12,000,000	\$50,125	(\$12,050,125)	\$0	\$363,095	Corporate Forecast
25							
26	Total (Over)/Under recovery					\$363,095	Line 24
27							
28	Forecasted SSO Sales (kWh)					3,928,593,462	Exhibit ERB-2.1, Column L, Line 3
29							
30	Forecasted Reconciliation Rate					\$0.0000924	Line 26 / Line 28

¹ YTD = current month Total + previous month YTD total

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Residential Heating (Winter) Discount Calculation

Exhibit ERB-2.13

Page 1 of 1

Line	Tariff	Description	2015 kWh SSO	CB Rate	Revenue	Average Rate	Winter Discount %
(A)	(B)	(C)	Sales	(as of 1/1/2016)	(F)	(G)	(H)
			(D)	(E)	Column D * Column E	Column F / Column D	(Column G, Line 4 - Column G, Line 10) / Column G, Line 4
1	Residential						
2		0-750 kWh	1,204,377,083	\$ 0.0670061	\$ 80,700,611		
3		> 750 kWh	542,148,143	\$ 0.0565484	\$ 30,657,610		
4		Total	1,746,525,226		\$ 111,358,221	\$ 0.0637599	
5							
6	Residential Heating						
7		0-750 kWh	497,902,409	\$ 0.0670061	\$ 33,362,499		
8		> 750 kWh (S)	99,034,160	\$ 0.0565484	\$ 5,600,223		
9		> 750 kWh (W)	418,581,043	\$ 0.0379838	\$ 15,899,299		
10		Total	1,015,517,612		\$ 54,862,021	\$ 0.0540237	
11							
12					Winter discount %		15.27%

The Dayton Power and Light Company
Case No. 16-0395-EL-SSO
Standard Offer Rate
Calculation of Private Outdoor Lighting Charges

Exhibit ERB-2.14

Page 1 of 1

Line	Description	kWh/Fixture	Standard Offer Rate	Standard Offer Rate Charge/Fixture/Month
			\$/kWh	\$/Fixture/Month
(A)	(B)	(C)	(D)	(E)
				(E) = (C) * (D)
1	Private Outdoor Lighting			
2	9,500 Lumens High Pressure Sodium	39	\$ 0.0616244	\$ 2.4033516
3	28,000 Lumens High Pressure Sodium	96	\$ 0.0616244	\$ 5.9159424
4	7,000 Lumens Mercury	75	\$ 0.0616244	\$ 4.6218300
5	21,000 Lumens Mercury	154	\$ 0.0616244	\$ 9.4901576
6	2,500 Lumens Incandescent	64	\$ 0.0616244	\$ 3.9439616
7	7,000 Lumens Fluorescent	66	\$ 0.0616244	\$ 4.0672104
8	4,000 Lumens PT Mercury	43	\$ 0.0616244	\$ 2.6498492

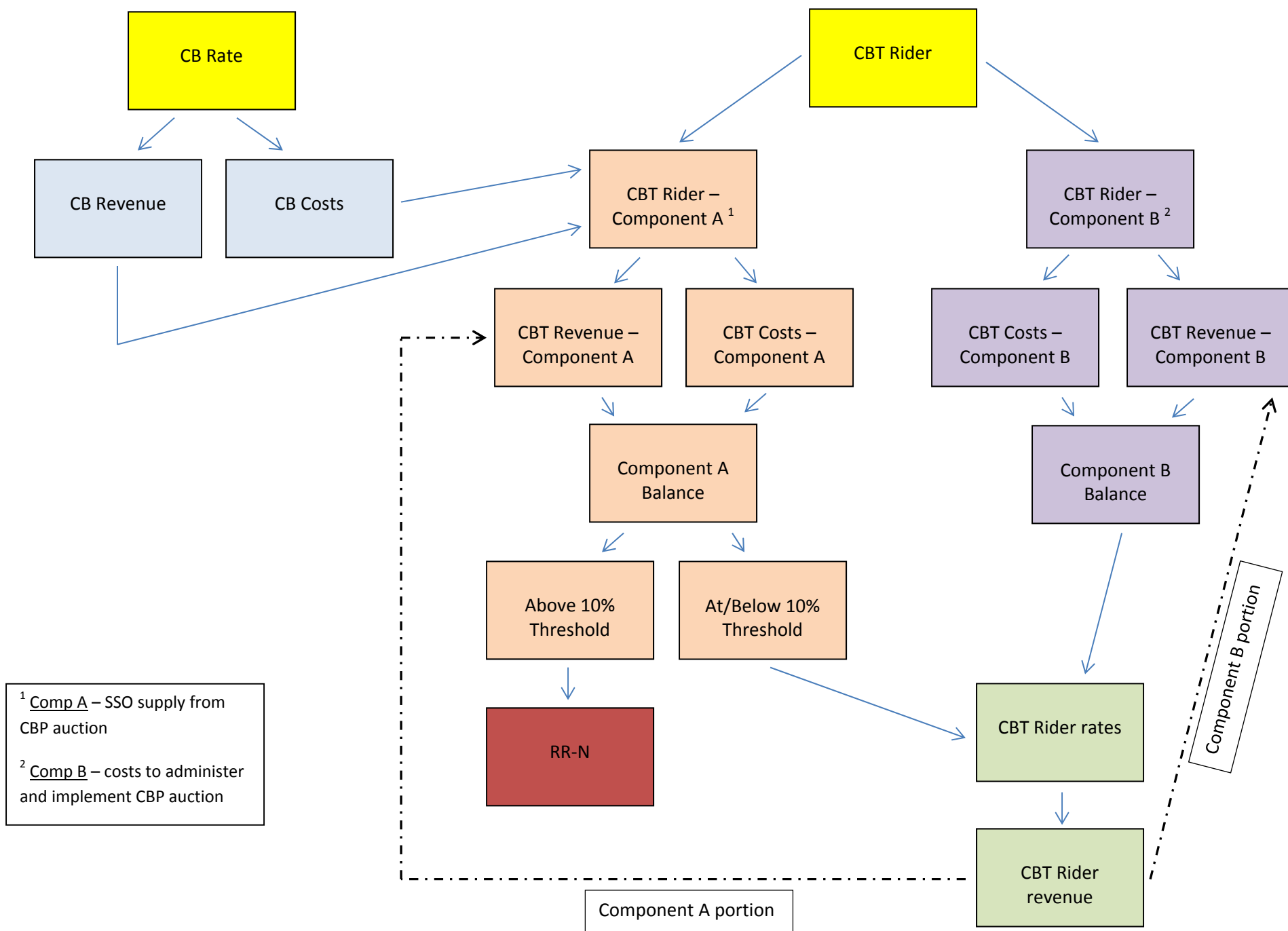
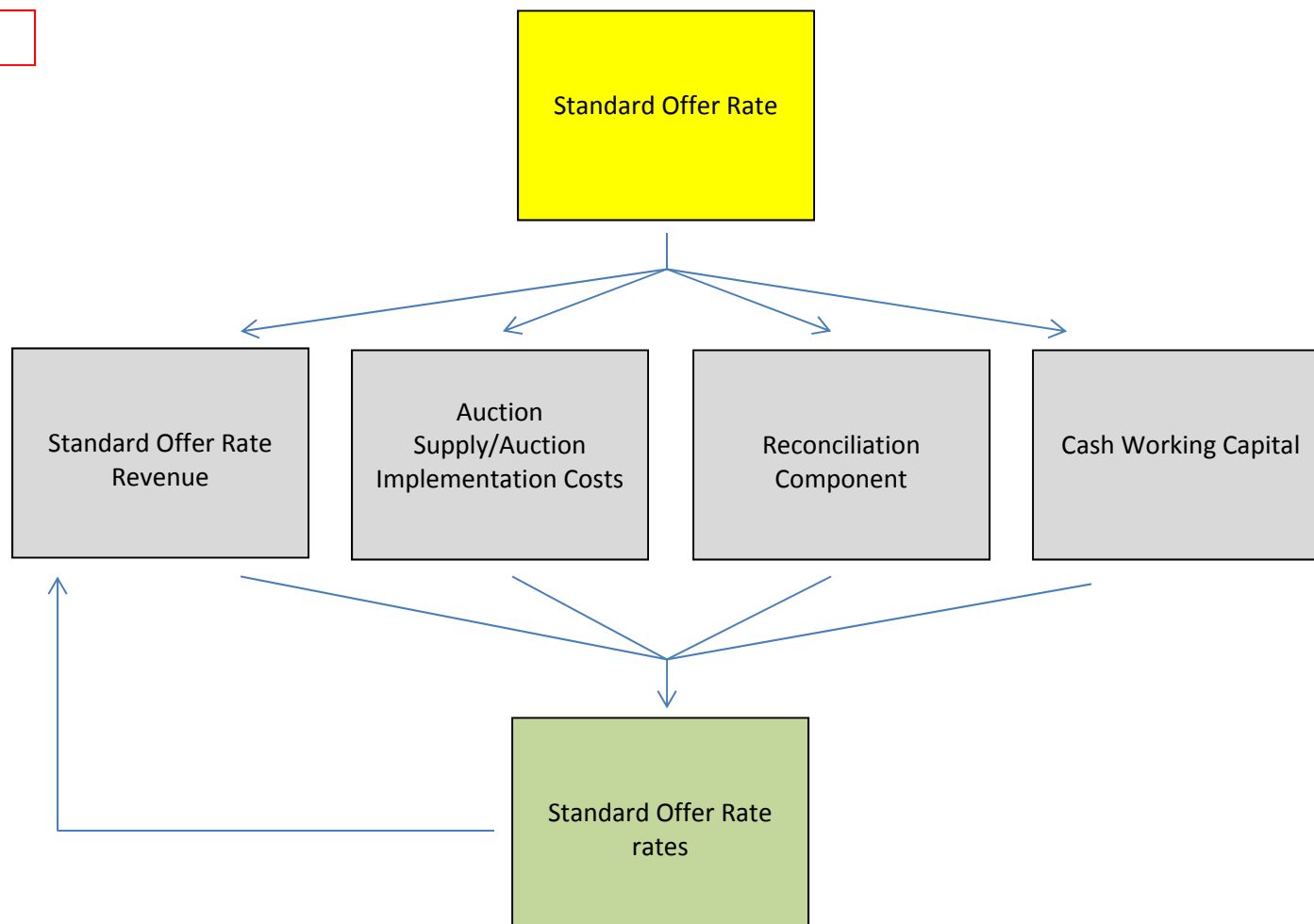


Exhibit ERB-4



BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY

CASE NO. 16-0395-EL-SSO
CASE NO. 16-0397-EL-AAM
CASE NO. 16-0396-EL-ATA

DIRECT TESTIMONY
OF ANGELIQUE COLLIER

- ☐ **MANAGEMENT POLICIES, PRACTICES, AND ORGANIZATION**
- ☐ **OPERATING INCOME**
- ☐ **RATE BASE**
- ☐ **ALLOCATIONS**
- ☐ **RATE OF RETURN**
- ☐ **RATES AND TARIFFS**
- ☒ **OTHER**

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO
DIRECT TESTIMONY OF
ANGELIQUE COLLIER
ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY

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II.	COMPLIANCE WITH EXISTING AND PENDING ENVIRONMENTAL REGULATIONS.....	3
III.	CONCLUSION	10

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Angelique Collier. My business address is One Monument Circle,
Indianapolis, Indiana 46204.

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

A. I am employed by AES US Services, LLC ("AES Services") as Director of
Environmental Policy.

Q. How long have you been in your present position?

A. I assumed my present position in September 2013. I began employment with
Indianapolis Power & Light Company ("IPL") on May 5, 2008. During my tenure with
IPL, I worked as an Environmental Coordinator and as a Senior Environmental
Coordinator within IPL's corporate offices. My primary focus was interpreting and
applying upcoming and new environmental regulations, and obtaining air and water
permits.

Q. What are your responsibilities in your current position?

A. In my current position, I am responsible for ensuring compliance with all environmental
regulatory programs at AES's US generating plants and within AES's power delivery
operations. In this capacity, I monitor and participate in the development of regulations
at the federal, state, and local levels. Furthermore, I provide environmental support by
applying for and obtaining environmental permits for new and existing operations or
overseeing these processes. Finally, I participate in and oversee the processes associated
with developing written procedures and policies, conducting employee training, and

1 conducting audits to help ensure compliance with permit requirements and environmental
2 regulations.

3 **Q. Will you describe briefly your educational and business background?**

4 A. I obtained a Bachelor of Science Degree in Physics, with a specialty in Atmospheric
5 Science, from Purdue University in West Lafayette, Indiana in 2001. In addition, I
6 obtained a Master of Science Degree in Environmental Pollution Control from the
7 Pennsylvania State University in State College, Pennsylvania in 2002. Prior to joining
8 IPL, I worked for four years with the air permitting agencies in Indiana. I worked for two
9 years at the Indianapolis Office of Environmental Services as an air permit writer, where
10 I drafted, amended, modified and renewed air permits for industries in Marion County. I
11 then worked for two years at the Indiana Department of Environmental Management
12 (“IDEM”) as a Senior Environmental Manager, providing guidance and assistance as a
13 mentor to permit writers, including review of permits for industries in Indiana. Finally, I
14 worked for an environmental consulting firm where I assisted clients in various industry
15 sectors in obtaining environmental permits and complying with permit requirements and
16 environmental regulations.

17 **Q. What is the purpose of this testimony?**

18 A. The purpose of this testimony is to describe how The Dayton Power and Light Company
19 (“DP&L”) coal-fired electric generating units (“EGUs”), Stuart Units 1-4, Killen Unit 2,
20 Zimmer Unit 1, Miami Fort Units 7 and 8, and Conesville Unit 4 are compliant with all
21 applicable environmental regulations and to describe the plan for complying with
22 pending environmental regulations, which are final and awaiting action by the state or the

1 Company. In my testimony, I will refer to the DP&L EGUs that will be transferred to the
2 Ohio Genco collectively as the “Plants.”

3 **Q. Please summarize your conclusions.**

4 A. The Plants are in compliance with all currently applicable environmental regulations and
5 have plans to comply with pending environmental regulations. The Plants and other coal-
6 fired EGUs are subject to a number of new environmental regulations, which have been
7 finalized by the United States Environmental Protection Agency (“EPA”). These rules
8 include National Ambient Air Quality Standards (“NAAQS”), Cooling Water Intake
9 Structures Rule (“316(b)”), federal Effluent Limitation Guidelines (“ELG”) for Steam
10 Electric Generating Stations, Coal Combustion Residuals (“CCR”) Rule, Cross State Air
11 Pollution Rule (“CSAPR”), and the Clean Power Plan (“CPP”).

12 There are also environmental regulations that have not yet been finalized that may affect
13 the Plants in the future. Environmental regulations which may become final in the future
14 include revisions to CSAPR and a State or Federal Implementation Plan (“SIP” or “FIP”)
15 to implement the CPP in Ohio.

16 **II. COMPLIANCE WITH EXISTING AND PENDING ENVIRONMENTAL**
17 **REGULATIONS**

18 **Q. Please describe NAAQS.**

19 A. The EPA is required under the CAA to set NAAQS for air pollutants that endanger public
20 health or welfare. There are several NAAQS, but only three directly affect coal-fired
21 power plants: sulfur dioxide (“SO₂”), ozone, and fine particulate matter (“PM_{2.5}”).

1 NAAQS do not directly limit emissions from utilities, but states must develop SIPs to
2 achieve emissions reductions to address each NAAQS.

3 First, as it relates to SO₂, the EPA added a new one-hour standard for SO₂ of 75 parts per
4 billion (“ppb”) in June 2010. This short-term standard is more stringent than prior
5 standards and could require additional SO₂ reductions in any area that is designated as not
6 meeting the standard (known as a non-attainment area).

7 Second, on January 15, 2013, the EPA issued a final rule lowering the annual PM_{2.5}
8 NAAQS from 15 micrograms per cubic meter (“µg/m³”) to 12 µg/m³.

9 Third, on October 26, 2015, the EPA published the final revised ozone NAAQS,
10 lowering the standard from 75 ppb to 70 ppb. Although ozone is not directly emitted by
11 power plants, it forms in the atmosphere as a result of chemical reactions involving
12 nitrogen oxides (“NO_x”) and volatile organic compounds in the presence of sunlight.

13 **Q. How does DP&L plan to comply with the NAAQS requirements?**

14 A. The areas in which the Plants operate have been designated as attainment or
15 unclassifiable for SO₂ and PM_{2.5}. Therefore, the Plants will not require any further
16 reductions to SO₂ or PM_{2.5} emissions as a result of the SO₂ or PM_{2.5} NAAQS at this time.

17 Area designations for the revised ozone standard are expected to be based on 2014-2016
18 air quality data and finalized in October 2017. Attainment with a SIP would then be
19 expected between 2020 and 2037 depending on the severity of the nonattainment area, if
20 any. All of the units at the Plants are equipped with selective catalytic reduction (“SCR”)
21 for NO_x control.

1 **Q. Please describe Section 316(b).**

2 A. Section 316(b) of the Clean Water Act requires that the location, design, construction and
3 capacity of cooling water intake structures achieve the best technology available (“BTA”)
4 for minimizing adverse environmental impact. Specifically, the 316(b) Rule is intended
5 to reduce the impact to aquatic organisms from impingement and entrainment due to the
6 withdrawal of cooling water by facilities. In August 2014, the EPA published a final rule
7 that set requirements that establish the BTA to minimize such impact.

8 **Q. How does DP&L plan to comply with Section 316(b) requirements?**

9 A. Stuart Unit 4, Killen Unit 2, Zimmer Unit 1, Miami Fort Units 7 and 8, and Conesville
10 Unit 4 are already equipped with closed cycle cooling systems. Therefore, no material
11 impact is expected.

12 Stuart Units 1-3 are equipped with once-through cooling systems. The result of the rule
13 could be the requirement of closed cycle cooling systems if that is determined to be BTA.
14 Alternatively, less costly controls, such as modified travelling screens and fish handling
15 and return systems, could be required. This requirement will be dependent upon Ohio
16 EPA's determination for the particular BTA for the generating station. Required studies
17 and sampling at Stuart is currently underway and will inform Ohio EPA's determination
18 for BTA. The requirement for closed cycle cooling systems could take effect after 2020
19 once the required studies have been completed and submitted to Ohio EPA.

20 **Q. Please describe the recent revisions to the ELG Rule.**

21 A. The EPA published final revisions to the ELG Rule on November 3, 2015. The ELG
22 regulations require dry fly ash handling, dry or closed loop bottom ash handling, and

1 apply numerical limits on FGD Wastewater. Several other process wastewaters are
2 regulated by the ELG Rule, but those aspects of the rule are expected to have little to no
3 impact on the DP&L Plants.

4 **Q. How does DP&L plan to comply with the revisions to the ELG Rule?**

5 A. As it relates to fly ash, Conesville, Miami Fort, and Zimmer already handle fly ash on a
6 dry basis. However, Stuart and Killen will require installation of dry fly ash handling
7 systems as a result of the ELG requirements.

8 As it relates to bottom ash, Zimmer already handles bottom ash on a dry basis. However,
9 Conesville, Miami Fort, Stuart, and Killen will require installation of dry bottom ash
10 handling or closed loop systems.

11 As it relates to FGD Wastewater, Zimmer, Conesville, Miami Fort, Stuart, and Killen
12 may require FGD Wastewater treatment systems to comply.

13 Compliance is expected to be required as soon as possible beginning November 1, 2018,
14 but no later than December 31, 2023.

15 **Q. Please describe the Coal Combustion Residuals Rule.**

16 A. Utilities generate ash and other CCRs from the burning of coal and associated activities.
17 Some of the CCRs are beneficially used in products such as concrete and wallboard while
18 some are generally treated in on-site ash ponds or disposed in on-site landfills. On April
19 17, 2015, EPA published the final CCR Rule, which regulates CCRs as non-hazardous
20 waste under Subtitle D of the Resource Conservation and Recovery Act ("RCRA"). The
21 CCR Rule requires demonstration of certain location and structural criteria in addition to
22 groundwater monitoring to demonstrate that an adverse impact to groundwater does not

1 occur as a result of pond or landfill operation. Failure to make such demonstrations
2 would result in the requirement to close existing active ponds within five years, with
3 some potential for extensions, as needed, or in the case of a landfill, corrective action.
4 The CCR Rule also requires more frequent inspection requirements, posting of
5 information to a publicly accessible website, identification markers of CCR
6 impoundments, and groundwater monitoring.

7 **Q. How does DP&L plan to comply with the revisions to the CCR Rule?**

8 A. The Plants currently comply with certain requirements that became effective on October
9 19, 2015, including establishment of a publicly accessible website, identification of CCR
10 impoundments, and fugitive dust control plans. The Plants will comply with additional
11 requirements as the specific compliance dates approach, including, for example,
12 documentation of design criteria in October 2016, groundwater monitoring in October
13 2017, and demonstration of location restrictions in October 2018.

14 It is possible that, based on assessments required by the CCR Rule, DP&L would be
15 required to close ponds. However, the closure of ponds will likely be required as a result
16 of ELG because closure of the ponds will be triggered once they are no longer actively
17 being used to receive wastewaters.

18 **Q. Please describe the Cross State Air Pollution Rule.**

19 A. The CSAPR was finalized in July 2011 and mandated additional cuts in SO₂ and NO_x
20 emissions in two phases. CSAPR is a modified cap-and-trade rule with unlimited trading
21 of allowances within individual states, but limited interstate trading. Prior to the CSAPR
22 becoming effective the rule was stayed, and ultimately vacated. On April 29, 2014, the
23 Supreme Court upheld CSAPR, remanding the Rule to the U.S. Court of Appeals for the

1 District of Columbia Circuit ("D.C. Circuit"), which lifted the stay on October 23, 2014.
2 On November 21, 2014, the EPA released a Notice of Data Availability ("NODA") that
3 addressed allocations of emission allowances to certain units for compliance with the
4 CSAPR. These allowance allocations reflected the changes to CSAPR made in
5 subsequent rulemakings as well as "re-vintaging" of previously recorded allowances to
6 account for the impact of the tolling of the CSAPR deadlines pursuant to an order issued
7 by the D.C. Circuit. In effect, CSAPR Phase I became effective on January 1, 2015, and
8 CSAPR Phase II will become effective on January 1, 2017.

9 Finally, on November 17, 2015, the EPA signed the proposed CSAPR Update Rule to
10 address interstate air quality impacts with respect to the 2008 ozone NAAQS. This
11 proposed rule could potentially require further reductions to seasonal NO_x emissions to
12 address the revised 2008 ozone NAAQS.

13 **Q. How does DP&L plan to comply with CSAPR?**

14 A. The Plants will comply with CSAPR through operation of existing SO₂ and NO_x controls
15 and purchasing of allowances on the open market, as needed. No additional capital
16 expenditures are expected to be required.

17 **Q. Please describe the Clean Power Plan.**

18 A. On June 18, 2014, the EPA published its proposed CPP, which establishes the proposed
19 Best System of Emissions Reductions available for existing sources in accordance with
20 Section 111(d) of the Clean Air Act. On October 23, 2015, the EPA published the final
21 CPP concurrent with a proposed FIP, which also serves as a model plan for States. States
22 are expected to submit their SIPs to the EPA by September 6, 2016. Alternatively, States

1 may request, by September 6, 2016, an extension for submittal of their SIPs for two
2 additional years, until September 6, 2018. The EPA will implement a FIP for states that
3 do not submit an approvable SIP.

4 The final CPP establishes subcategory-specific rate-based (lbs CO₂/MWh) standards for
5 carbon intensity for which States must develop plans in order to achieve the applicable
6 compliance dates. States may adopt the rate-based form of the subcategory-specific goal
7 or an equivalent state-specific, rate-based goal. Alternatively, states may apply a state-
8 specific, mass-based (tons CO₂) goal. States also have the option of including new
9 sources within their goal and applying an alternative state mass-based goal. Interim
10 compliance targets are required on average over 2022-2029, with final compliance targets
11 required beginning in 2030. The EPA based reductions on "building blocks," or
12 measures of reduction, which include heat rate improvements for existing coal-fired
13 EGUs, and substituting generation from carbon-intensive affected EGUs with generation
14 from existing (construction began prior to January 8, 2014) natural gas combined cycle
15 units and renewables. States may include some or all of these measures to varying
16 degrees in their state regulations or they may use other measures, like demand side
17 energy efficiency.

18 The EPA established a subcategory-specific limit for affected steam generating units
19 averaging 1,534 lbs CO₂/MWh during the interim period with a final limit of 1,305 lbs
20 CO₂/MWh. For Ohio, the EPA established an alternate interim goal of 1,383 lbs
21 CO₂/MWh and a final goal of 1,190 lbs CO₂/MWh. The EPA based these standards on
22 the "building blocks" previously mentioned. Specifically, the EPA first used a basis of a
23 4.3 percent heat rate improvement of the coal-fired units. Second, the EPA based the

standards on an increase in dispatch of existing natural gas combined cycle units to a 75% capacity factor in 2030. Third, the EPA based the standards on re-dispatch to new renewables. The EPA did not base the standards on demand side energy efficiency measures, though these measures may be used for compliance in a SIP.

Since publication of the CPP, several legal challenges and motions requesting a stay of the rule have been filed. On February 9, 2016, the U. S. Supreme Court issued orders staying the implementation of the CPP pending resolution of challenges to the rule.

Q. Can you describe environmental compliance for the OVEC units?

A. Yes, it is my understanding that the units currently comply with all applicable environmental standards. DP&L is not the operator of those units, there are many owners, and DP&L is a minority owner; DP&L thus has little ability to influence whether and how the OVEC units will comply with future environmental regulations.

III. CONCLUSION

Q. Please summarize your testimony.

A. In summary, the Plants are in compliance with all applicable environmental regulations and have plans to comply with pending environmental regulations. The Plants are subject to a number of new environmental regulations and may become subject to additional pending regulations in the future.

There are also other environmental regulations that have not yet been finalized that may impact our Plants in the future. We will develop compliance plans for these rules once final, but we cannot speculate as to the final form or potential impact of those regulations

1 at this time. Environmental regulations which may become final in the future include
2 revisions to CSAPR and a SIP or FIP to implement the CPP in Ohio.

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

4 **A. Yes.**

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY

CASE NO. 16-0395-EL-SSO
CASE NO. 16-0397-EL-AAM
CASE NO. 16-0396-EL-ATA

DIRECT TESTIMONY
OF CARLOS GRANDE-MORAN

- ☐ **MANAGEMENT POLICIES, PRACTICES, AND ORGANIZATION**
- ☐ **OPERATING INCOME**
- ☐ **RATE BASE**
- ☐ **ALLOCATIONS**
- ☐ **RATE OF RETURN**
- ☐ **RATES AND TARIFFS**
- ☒ **OTHER**

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO
DIRECT TESTIMONY OF
CARLOS GRANDE-MORAN
ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY

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1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Carlos Grande-Moran. I am employed by Siemens Power Technologies
4 International (“Siemens PTI”), a Consulting Services Company of Siemens Industry, Inc.
5 I am currently a Principal Consultant for Siemens PTI. My business address is 400 State
6 Street, Schenectady, New York 12301-1058

7 **Q. Please describe your education and professional background.**

8 A. I received an undergraduate degree in Electrical and Mechanical Engineering in
9 November of 1974 from Universidad de El Salvador, and a Master of Engineering
10 Degree in Electrical Engineering in December of 1976 from Iowa State University. I also
11 received a Master of Engineering Degree in System Engineering in December 1977 from
12 The University of Virginia, and a PhD Degree in Electrical Engineering in August 1982
13 from Iowa State University. I was employed by The University of Texas – El Paso from
14 1982 to 1988 as an Assistant Professor of Electrical Engineering. In 1988, I joined Harris
15 Corporation in Melbourne, Florida as a Principal Engineer to design power system
16 applications for Energy Control Centers. In 1990, I joined General Electric’s Power
17 Systems Consulting Group in Schenectady, New York as a Principal Engineer to perform
18 consulting and research work in Electric Power Systems Dynamics and Controls and then
19 joined the GE’s Generator Engineering Department as a Principal Engineer for the
20 electrical and mechanical design of synchronous generators used in the electrical power
21 industry. In 2000, I joined Power Technologies Inc. (now known as Siemens PTI) as an
22 Executive Consultant to provide consulting services in Power System Planning and

1 Operations, Power System Dynamics and design of applications for the power system
2 software tool that is the standard tool for analysis in the USA's Eastern Interconnection,
3 PSS[®]E. In 2010, I was promoted to the Principal Consultant position as one of the
4 leading consultants in Power Systems Planning and Operations and Power System
5 Dynamics.

6 **Q. What are your primary areas of responsibility?**

7 A. As a Principal Consultant, I am responsible for consulting services as a leading
8 professional expert in Power System Planning and Operations and Power System
9 Dynamics; Research and Development of software applications, tools and methodologies
10 for the analysis of electric power systems; mentoring of junior engineers; and technical
11 assistance to the Siemens PTI commercial software business.

12 **II. PURPOSE OF TESTIMONY**

13 **Q. What is the purpose of this testimony?**

14 A. The purpose of my testimony is to address the effect of The Dayton Power and Light
15 Company's ("DP&L") generating plants on grid reliability, including supply diversity.
16 My testimony describes the results of a transmission planning impact study, which
17 identifies the required transmission upgrades that would be needed if a group of
18 generating units co-owned by DP&L were retired.

19 **Q. Can you summarize your conclusions?**

20 A. Yes. If the DP&L plants were to close, then I conclude that the closures would cause
21 various thermal and voltage violations. I conclude that it would cost \$112 million to

1 implement the necessary transmission upgrades to rectify those issues. I further conclude
2 that even after those transmission upgrades, the closure of the plants would create
3 significant frequency and reliability issues.

4 **Q. Please define or explain the concepts or terms that you will be using in your**
5 **testimony.**

6 A. The concepts or terms that I will be using include:

7 1. Frequency: For an oscillating or time varying current, frequency is
8 the number of complete cycles per second in alternating current flowing in
9 a given direction. The standard unit of frequency is hertz, abbreviated Hz.
10 If a current completes one cycle per second, then the frequency is 1 Hz; 60
11 cycles per second equals 60 Hz, which is the standard alternating current
12 utility frequency in the U.S.

13 2. Synchronizing power: The power developed in a
14 synchronous machine that keeps it in synchronism with the AC supply
15 system to which it is connected.

16 3. Frequency control: The mechanism to maintain the system
17 frequency at 60 Hz.

18 4. Voltage regulation: The control mechanism to maintain system
19 voltages within prescribed operating limits.

20 5. Reactive power: The component of power that, averaged over a
21 complete cycle of the AC waveform, results in net transfer of energy in
22 one direction is known as active power (sometimes also called real

power). The component of power due to stored energy, which returns to the source in each cycle and that does not produce work, is known as reactive power.

6. Dynamic resources: Resources that can vary output in response to system conditions.

7. Thermal overloads: When a given transmission facility exceeds its rated capacity.

Q. Can you identify and describe the exhibits to your testimony?

A. Yes. The exhibits to my testimony are:

- Exhibit CGM-1, which is a copy of my curriculum vitae and describes my background and experience.
- Exhibit CGM-2, which is a system impact study of DP&L-owned generating units deactivation to assess PJM's electric network reliability. The study includes a contingency analysis of three scenarios:

1. A benchmark scenario, 2019 RTEP load flow base case provided by PJM, with all generating units considered for deactivation in service.
2. Scenario 1: a modified 2019 RTEP load flow case with all generating units considered for deactivation not in service.
3. Scenario 2: a modified 2019 RTEP load flow case with all generating units considered for deactivation not in service and generation in the operating areas of First Energy and Duke Energy Ohio & Kentucky used in the replacement of generation from the deactivated units.

- Exhibit CGM-3, which is Appendix A of the report provided as Exhibit CGM-2.
- Exhibit CGM-4, which is Appendix B of the report provided as Exhibit CGM-2.

III. TRANSMISSION PLANNING IMPACT STUDY

Q. What generating units are assumed to retire for the purpose of Siemens PTI's system impact study?

A. The system impact study (Exhibit CGM-2) assessed the effect of retiring the Stuart, Killen, Zimmer, Clifty Creek, Kyger Creek Stations, Conesville unit 4 and Miami Fort units 7 and 8. Two scenarios were evaluated to provide replacement generation for the retired units. In one scenario, replacement power was obtained from the following sources: Allegheny Power (“AP”), American Electric Power (“AEP”), Commonwealth Edison (“CE”), Pennsylvania Electric Company (“PENELEC”), Pennsylvania Power and Light (“PPL”), Potomac Electric Power (“PEPCO”), and Dominion Virginia Power (“DVP”). In the second scenario, AP and PENELEC were replaced with the control areas of the Duke Energy Ohio & Kentucky (“DEO&K”) and First Energy (“FE”).

Q. How did you conduct the analysis?

A. I modeled the two dispatch scenarios described above. In both scenarios, generation facilities, with signed facility study agreements, were modeled based on the PJM interconnection queue. Renewable generating resources were modeled at 13% of their declared generation capacity output and conventional generating resources were modeled at 90% of their generation capacity to account for their associated equivalent forced outage rate (“EFOR”). The analysis was performed on PJM’s 2019 Regional

1 Transmission Expansion Plan (“RTEP”) Case using Siemens PTI PSS[®]E software. PJM
2 Interconnection, LLC (“PJM”) is the regional transmission organization (“RTO”) with
3 operational control of the power system affected by the generation retirement. It should
4 be noted that transmission upgrades approved by PJM in 2012 are modeled as being in-
5 service.

6 **Q. Can you describe the Siemens PTI PSS[®]E software that you used?**

7 A. Yes. Siemens PTI PSS[®]E software is the power system analysis tool approved by the
8 North American Electric Reliability Corporation (“NERC”) as the standard for power
9 system planning in the United States and Canadian power grids. In addition, Siemens
10 PTI PSS[®]E is the standard tool for power system analysis and planning for the European
11 Network of Transmission System Operators (“ENTSO-e”). This engineering tool is used
12 to perform analysis of either small or large interconnected power grids in normal (steady
13 state), balanced and unbalanced faulted states and dynamic simulation of small and large
14 disturbances in power systems.

15 **Q. What assumptions were used to assess the effect of the generation retirement on the**
16 **transmission system?**

17 A. I used the same assumptions utilized by the PJM RTO. Specifically, I used the same load
18 flow models, operational limits and contingency analysis employed by PJM to evaluate
19 the reliability performance of the regional transmission system and, in this case, to
20 analyze the effect of the loss of the DP&L generating units. Load flow analysis was used
21 to identify transmission overloads in post-contingency scenarios resulting from the
22 application of single, double, multiple, bus and tower contingency lists provided by PJM.

1 The 2019 RTEP Case was also used to assess voltage performance under the same
2 contingency scenarios. DP&L and PJM planning criteria, which are based on the NERC
3 planning standards, were employed for determining reliability violations that will require
4 mitigation.

5 **Q. Can you summarize the conclusions from Exhibit CGM-2?**

6 A. Yes. Siemens PTI's conclusion is that thermal overloads and voltage violations will
7 occur in the operating areas of DP&L, DEO&K, AEP, OVEC, and FE following the
8 retirement of the generating units. The majority of thermal overloads will occur in
9 DEO&K with a small number in DP&L, FE, OVEC and AEP. Also, there will be an
10 adverse effect on primary system frequency response since an estimated inertial energy of
11 33.815 GJ and significant synchronized reserves will be lost as a result of the
12 deactivation of the conventional base-load generation considered in this evaluation.

13 **Q. What causes the thermal violations observed in Exhibit CGM-2?**

14 A. The thermal violations observed in the DEO&K area are caused by two factors, a
15 significant increase in power imports replacing the loss of generation capacity (about
16 50% of the installed capacity) and the large local demand in the DEO&K area. In short,
17 the absence of the DP&L generating units means that additional power needs to be
18 imported from other areas (American Electric Power, First Energy, Pennsylvania Power
19 and Light, Commonwealth Edison and Dominion Virginia Power) containing available
20 generation capacity in order to serve customer demand, and this causes existing facilities
21 to overload, in violation of the NERC reliability standards.

1 **Q. What does Exhibit CGM-2 show?**

2 A. In general, the thermal overloads observed in the analysis are indicative of the broad
3 adverse impact of the retirement of these units on the regional transmission system. The
4 low voltage conditions observed in post-contingency scenarios in AEP indicate the
5 resulting effect of the loss of reactive resources available from the retired generating
6 units.

7 **Q. Are there transmission solutions to mitigate the effects on the electric system caused**
8 **by the retirements of these generating units?**

9 A. Yes. Transmission upgrades can be used to mitigate the effect on the system caused by
10 the generating units considered for retirement. By upgrading the transmission system,
11 remaining available generation from within and outside Ohio can help to supply future
12 forecasted load in DP&L and neighboring areas. My testimony provides an analysis of
13 the transmission upgrades and associated costs that will be required if the generating
14 units selected for deactivation were retired.

15 **Q. What transmission upgrades would be necessary to mitigate the effect of the**
16 **generating unit retirements?**

17 A. To mitigate these retirements, transmission upgrades in DEO&K, FE and AEP would be
18 required in their 138 kV networks. The transmission upgrades would include the
19 construction of three (3) 138 kV lines, one (1) 345/138 kV substation and the upgrade of
20 six (6) 138/69 kV substations. In addition, adjustment of regional generation power
21 output would be required to ensure no thermal overloads would occur.

1 **Q. How did you determine the necessary transmission upgrades?**

2 A. Transmissions upgrades were determined by first identifying where the overloaded
3 transmission elements are located. Once the overload has been identified, then various
4 solution options with a minimum number of transmission elements were tested until the
5 thermal overloads were reduced below the transmission elements' ratings.

6 **Q. What is the estimated cost of the transmission upgrades?**

7 A. The estimated cost required for the minimum upgrades is \$112 million. That estimate is
8 based on 10 transmission upgrades that are required to mitigate the thermal overloads. In
9 addition, three 138 kV transmission lines (73 miles) are necessary, plus one new 345/148
10 kV substation and 6 new 138/69 kV transformers need to be installed. The costs are
11 explained in my report, but they will be approximately \$112 million to establish
12 minimum upgrades. The cost of these upgrades will be allocated to customers based on
13 PJM's Tariff.

14 **IV. FREQUENCY, RELIABILITY AND OTHER MATTERS**

15 **Q. Would closure of the DP&L co-owned units create frequency issues?**

16 A. Yes. As described in the Siemens PTI Report, the loss of primary frequency response
17 capability (inertial and system governing responses) resulting from the retirement of the
18 DP&L co-owned generating units, which have large inertias and active speed governors,
19 would have a negative effect on the ability of balancing authorities (PJM) to maintain
20 interconnection frequency and hence ensure the reliability and security of the electric grid.
21 These units provide not only high-quality primary frequency response services, but also

1 frequency regulation services (supplementary frequency response or automatic generation
2 control) to the electric power system. Thus, these units can inject or absorb active power into
3 the grid in a matter of milliseconds (inertial energy) to seconds (governing response) and
4 minutes (automatic generation control) in response to large frequency deviations. Closure of
5 the DP&L co-owned units would require mitigation measures to compensate for the role they
6 play; however, the mitigating measures would not be able to provide the same quality in
7 supporting grid reliability that the units currently provide.

8 **Q. Would the transmission upgrades that you identify eliminate reliability risks**
9 **associated with the closure of those plants?**

10 A. No. The power plants being considered for deactivation are large coal-fired plants that
11 provide base-load power and significant primary frequency response (inertial speed
12 governing driven energy) which are important to system reliability. Closure of these
13 plants would force a greater reliance on existing natural gas-fired plants. Natural gas
14 cannot be stored in large quantities, and there are limits on how much can be delivered
15 through existing gas pipelines. The reliability risks associated with closing the plants
16 would be particularly significant if an extreme cold weather event such as a Polar Vortex
17 were to occur, since gas used for generating electricity will be diverted to residential,
18 commercial and industrial heating purposes. The continued operation of DP&L's coal-
19 fired plants would thus promote reliability and fuel diversity.

20 **Q. Are there other benefits provided by the coal-fired units?**

21 A. Yes. In addition to the frequency support that conventional resources provide,
22 conventional resources also provide dynamic reactive support of local voltages and

1 stability; these are very important, as demonstrated by the fact that PJM's tariff provides
2 that DP&L is paid \$6.69 million per year for providing this service. FERC/NERC cannot
3 order parties to build conventional generating capacity, which provides frequency
4 support, and dynamic reactive support for local voltages; therefore, it is important to
5 preserve existing resources from the point of view of electric grid reliability.

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

7 **A.** Yes it does.



PTI Consulting

Carlos Grande-Moran

Principal Consultant



Career Highlights

Dr. Grande-Moran is an expert engineering professional with 40+ years of experience in analysis, development, design, functional specifications, documentation, planning, and operations problems related to electric power systems. He has worked extensively for world-renowned power systems manufacturing (GE - Power System Consulting Services and Generator Engineering, and Harris Corporation - Controls Division) and been involved in black start studies of large metropolitan and interconnected networks, torsional impact and subsynchronous resonance in industrial and large power systems, evaluation of frequency response, automatic underfrequency load shedding and automatic generation control dynamic impacts on system

frequency, integration of renewable generation resources in conventional power systems, and the design and manufacture of large and medium size turbine-generators. This experience, when combined with his work for consulting service companies, electric utilities, as well as Universities in the United States and overseas, makes him uniquely suited to his position as Principal Consultant at Siemens PTI.

Experience

Since joining (what is now) Siemens PTI in 2000, Dr. Grande-Moran has been a project manager and/or technical contributor on a variety of analytical consulting projects in the US, Central and South America, the Middle East and other locations. In this role, Dr. Grande-Moran has been responsible for all aspects of analysis, operation, and planning related to steady-state and dynamic performance of electric power systems. He has worked extensively in power restoration studies and black start studies. His experience covers generation, transmission and industrial power systems. He has been involved with all aspects of power systems planning and operations in both centralized and competitive wholesale markets for electricity. He is familiar with the relationship among key players in conventional and decentralized energy markets, such as independent system operators, regional transmission owners, generator owners and regulatory agencies. He has instructed power system engineers serving the electric power system worldwide.

Early in his career, Dr. Grande-Moran was at Harris Controls Division (1988-1990), where he designed advanced power system applications for their Energy Management Systems. These included on-line load flow, security and contingency analysis, state estimation, energy accounting, unit commitment and economical generation dispatch.

Dr. Grande-Moran then joined GE's Power Systems Energy Consultants Group, as a Senior Application Engineer in their systems dynamics and controls working group. During his tenure there (1990-1996), he designed advanced power system software applications for energy management systems and power system analysis, and power systems dynamics and control. He worked in the analysis, control and mitigation of subsynchronous resonance phenomena in electric power systems; in the analysis of torsional mechanical responses to electrical transient events for combustion, fossil fueled and nuclear turbine-generating units; in the design and analysis of the first thyristor-controlled series capacitors damping controller; and in the

application of flexible alternating current transmission systems (FACTS). Additionally, he designed software and hardware for subsynchronous resonance protective digital relays. It was during these years that he completed GE's Turbine Design Course.

Dr. Grande-Moran then moved to GE's Generator Engineering group (1996 -2000). There he was involved in the analysis and design of static excitation systems, and the design and retrofiting of medium and large size synchronous generators. While in this group, he completed GE's Generator Design Advanced Course.

Dr. Grande-Moran has instructed power system engineering students for much of his career. He has taught at the Universidad Nacional de El Salvador, the Universidad Catolica de El Salvador, Iowa State University, and the University of Texas at El Paso. He was an instructor for GE's prestigious Power Systems & Energy Course (PSEC). Now at Siemens PTI he is an instructor for several courses in the areas of steady-state performance of power systems, and generation dynamics and controls.

Areas of Expertise

- Power Systems Dynamics
- Power Systems Operations
- Black Start Studies
- Feasibility Impact Studies
- Reliability Impact Studies
- Generation
- Power System Restoration Studies
- Education/Training
- Small Signal Stability Analysis
- FACTS Applications
- Load Flow
- Load Forecasting
- Dynamic Model Development
- Short Circuit Analysis
- Power System Stabilizer Tuning
- Switching Surge Studies
- Subsynchronous Resonance
- System Planning
- Transmission Systems Design
- Synchronous Machine Design
- Machine Parameter Derivation
- Industrial Power Systems
- Power Plant Operation

Education

- GE's Generator Design Advanced Course
Schenectady, NY, 1996
- GE's Turbine Design Course,
Schenectady, NY, 1994
- PhD, Electric Power Systems, Iowa State University,
Ames, IA, 1982
- ME, Systems Engineering, University of Virginia,
Charlottesville, VA, 1977
- ME, Electric Power Systems, Iowa State University,
Ames, IA, 1976
- Diploma Engineer Mechanical and Electrical
Engineering, Universidad de El Salvador, El Salvador,
1974

Professional Memberships and Activities

- Senior Member of the IEEE and its Power & Energy Society
- Reviewer of Papers Submitted to *IEEE Transactions on Power Delivery* and *IEEE Transactions on Power Systems*
- Member of CIGRE

Languages

- English
- Spanish
- Portuguese
- Italian
- French

Publications

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9. "A Comprehensive Approach for Sub-synchronous Resonance Screening Analysis using Frequency Scanning Technique," 2003 IEEE Bologna Power Tech Conference, Bologna, Italy, June 2003, Paper BPT03-41 (co-author: M. Elfayoumy).
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11. "Torsional System Parameter Identification of Turbine-Generator Sets," Power Engineering Society, IEEE PAS Winter Power Meeting, February 1997 (co-author: M.D. Brown).
12. "Coherency-Based Low Order Models for Shaft Systems of Turbine-Generator Sets," Power Engineering Society, IEEE PAS Winter Power Meeting, February 1997 (co-author: M.D. Brown).
13. "FACTS and SSR - Focus on TCSC Application and Mitigation of SSR Problems," in *Proceedings of the Second International Conference on FACTS*, EPRI, Boston, MA, 1992, vol. 2 (co-authors: C.E. Bowler and D.H. Baker).
14. "Series Faults in Six-Phase Electric Power Systems," *Electric Research Journal*, vol. 13, no. 2, December 1987.
15. "Computation of Sequence Capacitance of Power Transmission lines by A Capacitive Reactance Method," 19th North American Power Symposium 1987, IEEE Power Engineering Society, University of Alberta, Edmonton, Alberta, Canada, October 22-23, 1987 (co-author: A. Ghosh).
16. "On the Use of the Compensation Theorem for the Analysis of Faulted Power Systems," 11th National Engineering Symposium of the Mexican-American Engineering Society, El Paso, Texas, October 15-18, 1987.
17. "A Sensitivity Based Slow Coherency Method," in *Proc. of 11th International Conference on Research, Development and Applications in Electrical and Electronic Engineering*, IEEE Power Engineering Society, vol. 18, no. 10, Cuernavaca, Mexico, 1983.
18. "Reduced Order Modeling in Multimachine Power Systems," Ph.D. dissertation, Dept. Elect. Eng., Iowa State University, Ames, Iowa, 1982.

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Siemens PTI Report Number: R008-16

***System Impact Study of The Dayton
Power and Light Company-Owned
Generating Units Deactivation on
PJM's Electric Network Reliability***

Prepared for

**The Dayton Power and Light
Company**

Submitted by:
Carlos Grande-Moran, Ph.D.
Principal Consultant

February 15, 2016

62OT-001285

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Legal Notice

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Executive Summary

Siemens Power Technologies International (Siemens PTI) was contracted by The Dayton Power and Light Company (DP&L) to perform a system reliability study to evaluate the effect on regional system reliability caused by the potential deactivation of twenty (20) coal-fired generating units, plus associated diesels and combustion turbines. The generating units considered in this study are:

1. Stuart and Killen Generating Stations. The Stuart Station includes 4 coal-fired generating units and a diesel unit with a combined nameplate rating 2725 MVA and maximum MW output of 2328 MW. The Killen Station includes 1 coal-fired generating unit and a combustion turbine with a combined nameplate rating of 767.7 MVA and maximum MW output of 630 MW.
2. Zimmer Generating Station. The Zimmer Station includes 1 coal-fired generating unit with a nameplate rating 1755 MVA and maximum MW output of 1300 MW.
3. Miami Fort Generating Station. The Miami Fort Station includes 2 coal-fired generating units with a combined nameplate rating of 1253 MVA and maximum MW output of 1020 MW.
4. Conesville Power Plant. The Conesville Plant includes the coal-fired unit #4 with a nameplate rating of 935 MVA and maximum MW output of 780 MW.
5. Clifty Creek Power Plant and Kyger Creek Generating Station. The Clifty Creek Plant includes 6 coal-fired generating units, and Kyger Creek Station includes 5 coal-fired generating units. Those plants have a combined nameplate rating of 2398MVA and maximum MW output of 2169 MW.

The main objective of the system impact study is to assess the effect on power system reliability due to the deactivation of the above generation on both steady state operation and system primary frequency response. The purpose of the steady state operation analysis was to determine potential thermal overloads of transmission elements and voltage changes that violate PJM's criteria. The purpose of the system primary frequency response analysis was to determine the effect on the initial rate of change and deviation in the system frequency caused by large imbalances between on-line generation and demand (system load).

The results of the steady state analysis and system frequency response evaluation from the system impact study on generating unit retirements in the DP&L and neighboring areas show the following:

1. Two redispatch scenarios were identified to provide the replacement generation for the deactivated units. The redispatch scenario which exhibits the lower number of thermal overloads and voltage violations after applying all contingencies considered in this study was selected for determining the required transmission upgrades. This redispatch scenario includes available generation from Allegheny Power, First Energy, American Electric Power, Duke Energy Ohio & Kentucky, Commonwealth Energy, Pennsylvania Power and Light and Dominion Virginia Power that replaces the power from the retired generation.

Executive Summary

2. All thermal overloads occurred in the 138 kV networks of DEO&K, FE, OVEC and AEP.
3. All voltage violations occurred in the 138 kV networks of DP&L, and AEP
4. Transmission upgrades and redispatch of generation in the affected areas would be required to mitigate thermal overloads. To mitigate voltage violations, adjustment of taps in voltage regulating transformers and adjustment of reactive power resources would be required.
5. At least 10 transmission upgrades would be required to mitigate the thermal overloads, including three (3) new 138 kV transmission lines for a total of 73 miles, one new 345/138 kV substation and 6 new 138/69 kV transformers to be installed in existing 138/69 kV substations. The total estimated cost for the required transmission upgrades is \$112 million.
6. The system inertial response would be adversely affected by the generating unit retirements. This would also have an adverse effect on the operation of the underfrequency load shedding system (UFLS) of the affected areas.
7. In addition to the frequency support that conventional resources provide, conventional resources also provide dynamic reactive support of local voltages and stability; these are very important, but not directly quantifiable.

FERC/NERC cannot order building conventional generating capacity, which provides frequency support, and dynamic reactive support for local voltages; therefore, it is important to preserve existing resources.

Section

1

Introduction

Siemens PTI contracted with DP&L to perform a system reliability study to evaluate the effect on regional system reliability caused by the potential deactivation of twenty (20) coal-fired generating units, plus associated diesels and combustion turbines. The generating units considered in this study are:

1. Stuart and Killen Generating Stations. The Stuart Station includes 4 coal-fired generating units and a diesel unit with a combined nameplate rating of 2725 MVA and maximum MW output of 2328 MW. The Killen Station includes 1 coal-fired generating unit and a combustion turbine with a combined nameplate rating of 767.7 MVA and maximum MW output of 630 MW.
2. Zimmer Generating Station. The Zimmer Station includes 1 coal-fired cross-compound generating unit with a nameplate rating of 1755 MVA and maximum MW output of 1300 MW.
3. Miami Fort Generating Station. The Miami Fort Station includes 2 coal-fired generating units with a combined nameplate rating of 1253 MVA and maximum MW output of 1020 MW.
4. Conesville Power Plant. The Conesville Plant includes the coal-fired unit #4 with a nameplate rating of 935 MVA and maximum MW output of 780 MW.
5. Clifty Creek Power Plant and Kyger Creek Generating Station. The Clifty Creek Plant includes 6 coal-fired generating units, and Kyger Creek Station includes 5 coal-fired generating units. Those plants have a combined nameplate rating of 2398MVA and maximum MW output of 2169 MW.

The main objective of the system impact study is to assess the effect on power system reliability due to the deactivation of the above generation on both steady state operation and system primary frequency response.

Analysis of the power system steady state operation identified transmission facilities that will require upgrades due to thermal overloads or voltage magnitude violations resulting from the loss of a single or multiple transmission components, per the NERC reliability standards (transmission lines, transmission towers, bus bars at transmission substations and power transformers) or by re-dispatch of available spinning and non-spinning reserves that will replace the loss of generation output provided by the selected power plants to be retired. A high-level cost estimate is provided for any new transmission facility and/or required upgrade of existing facilities that adversely affect branch power flows, transmission system voltages and system stability.

Introduction

The system primary frequency response analysis evaluated the system governing response of the PJM generating units to the loss of large generating units or plants with and without all the selected generating units considered in the study deactivated. Generating units in the Eastern Interconnection with spinning reserve and a dead-band smaller than the resulting frequency decay and all frequency sensitive loads connected to the system contribute to the system governing response. The loss of inertial kinetic energy caused by the deactivation of conventional generating units with heavy inertia would adversely affect the inertial response and the nadir of the frequency decay. This effect is studied in this analysis.

Section

2

Steady State Analysis

The steady state analysis for the deactivation of generation in the PJM operating area, which is co-owned by DP&L, consists of a load flow AC contingency analysis based on the PJM RTEP 2019 load flow base case. This load flow base case was provided by PJM Interconnection Regional Transmission Operator (RTO). The PJM RTEP 2019 load flow base case includes all generating units selected for deactivation in service. A total of twenty coal-fired units are deactivated in the load flow base case to create two operating scenarios in which generation in the following operating areas is re-dispatched to absorb the retired generation:

- Case 1- Dispatch 1: American Electric Power (AEP- Area 205), Allegheny Power (AP- Area 201), Commonwealth Edison (CE- Area 222), Potomac Electric Power Company (PEPCO- Area 233), Pennsylvania Power and Light (PL- Area 229), Dominion (DVP- Area 345), and PENELEC Co. (Area 226)
- Case 2- Dispatch 2: Duke Energy Ohio & Kentucky (DEO&K– Area 212), American Electric Power (AEP), Commonwealth Edison (CE), Potomac Electric Power Company (PEPCO), Pennsylvania Power and Light (PL), Dominion (DVP), and First Energy (FE- Area 202).

The main difference between Dispatch 1 and Dispatch 2 is the inclusion in Dispatch 2 of generation in FE and DEO&K and their effect on branch flows in the DEO&K operating area. Conventional generation was dispatched at 90% of its maximum output power capability (Pmax) to account for the generating units' equivalent forced outage rate (EFOR), and renewable resources (wind, solar, energy storage and biomass) were dispatched at 13% of their declared generation capacity.

The total MW output in the load flow base case to be retired is 7979.37 MW. The total re-dispatch MW output is 7980.85 MW in the Dispatch 1 case and 7993.9 in the Dispatch 2 case. The small MW mismatch between the deactivated generation and the re-dispatched generation in cases 1 and 2 was transferred to the load flow slack generation.

Siemens PTI (SPTI) commercial grade software PSS[®]E version 32.2.2 was used for the steady state analysis. The purpose of the load flow analysis is to identify all thermal loading and bus voltage magnitude violations under normal operating conditions and contingency conditions. The load flow analyses were performed using the solution options provided in Table 1.1 below. In addition to the solution options given in Table 1.1, generation reactive power capability limits were also enforced.

The solution method used for the load flow and AC contingency analysis was the fast decoupled Newton-Raphson method (FDNS.) The bus power mismatch tolerance for active

Steady State Analysis

and reactive power was 0.1 MW/Mvar for the pre-contingency scenario solutions and 3.0 MW/Mvar for the post-contingency scenario solutions.

Table 1.1 Solution Options for Load Flow (LF) and AC Contingency Analysis (ACC)

Case	Transformer Taps	Phase Shifters	DC Taps	Switchable Shunts	Area Interchange
Normal Operating Conditions	Stepping	Regulating	Regulating	Regulating	Disabled
Contingency Conditions	Stepping	Fixed at pre-contingency angle	Regulating	Regulating	Disabled

The AC contingency analysis was performed using the *.con file provided by PJM with the list of transmission components outages that are critical to PJM's study area reliability. Table 1.2 includes the type and number of contingencies used in this analysis. The list of contingencies used in the study is provided in Appendix A, section A2 of this report.

Table 1.2 Contingency List for AC Contingency Analysis

Con File	Contingencies	Number of Contingencies
2019_RTEP_Summer_Single_04172014.con	Single/Double/multiple	2175
2019_RTEP_Summer_Bus_04172014.con	Bus	252
2019_RTEP_Summer_Tower_04172014.con	Tower	425

The control areas where transmission elements were monitored for single, double and multiple transmission element outages include AEP, OVEC, DP&L, DEO&K and EKPC. For bus and tower contingencies the monitored control areas include all the aforementioned areas plus FE.

The screening criteria for thermal loading violations used in this study (PJM's Manual 03: Transmission Operations – 12/01/2015) are as follows:

- A branch power flow exceeding 98% of its rate A (continuous rating) for pre-contingency scenarios and 98% of its rate B (emergency rating) for post-contingency scenarios.

The screening criteria for bus voltage violation used in this study (PJM's Manual 03: Transmission Operations – 12/01/2015) are as follows:

- For networks operating at 765 kV: high limit (1.05 per unit), normal low limit (0.95 per unit), emergency low limit (0.92 per unit)
- For networks operating at 500 kV: high limit (1.10 per unit), normal low limit (0.92 per unit), emergency low limit (0.97 per unit)

- For networks operating at 345 kV: high limit (1.05 per unit), normal low limit (0.95 per unit), emergency low limit (0.92 per unit)
- For networks operating at 138 kV: high limit (1.05 per unit), normal low limit (0.95 per unit), emergency low limit (0.92 per unit)

The screening of the normal (pre-contingency) operating scenario load flow results for thermal loading and voltage violations yields the following results shown in Tables 1.3, 1.4 and 1.5.

Steady State Analysis

Table 1.3 PJM RTEP 2019 Base Case Thermal Loading and Voltage Violations

BUS# X-- NAME --X BASKV	AREA	BUS# X-- NAME --X BASKV	AREA	CKT	LOADING	RATING	PERCENT
235428 01WINDSR 138.00	201	243131 05TILTON 138.00*	205	1	217.2	205	106.0%

BUS#	X-- NAME --X	BASKV	AREA	V(PU)	V(KV)
253017	09CROWN	138	209	1.0512	145.07
242520	05J.FERR	500	205	1.0543	527.16

Table 1.4 Dispatch 1 Base Case Scenario Thermal Loading and Voltage Violations

BUS# X-- NAME --X BASKV	AREA	BUS# X-- NAME --X BASKV	AREA	CKT	LOADING	RATING	PERCENT
243045 05MUSKNG 138.00*	205	243062 05NMUSKG 138.00	205	1	224.4	223	100.6%
250057 08M.FORT 138.00*	212	250131 08WILEY2 138.00	212	1	202.6	198	102.3%
250057 08M.FORT 138.00	212	250151 08HEBTAP 138.00*	212	1	237.3	238	99.7%

BUS#	X-- NAME --X	BASKV	AREA	V(PU)	V(KV)
253017	09CROWN	138	209	1.0508	145.01
250094	08RMNTN1	138	212	0.9496	131.04
250095	08RMNTN2	138	212	0.9496	131.04
242520	05J.FERR	500	205	1.0589	529.43

Table 1.5 Dispatch 2 Base Case Scenario Thermal Loading and Voltage Violations

BUS# X-- NAME --X BASKV	AREA	BUS# X-- NAME --X BASKV	AREA	CKT	LOADING	RATING	PERCENT
235428 01WINDSR 138.00	201	243131 05TILTON 138.00*	205	1	214.5	205	104.6%
250057 08M.FORT 138.00*	212	250131 08WILEY2 138.00	212	1	195	198	98.5%

BUS#	X-- NAME --X	BASKV	AREA	V(PU)	V(KV)
253002	09AIRWAY	138	209	1.0517	145.14
253078	09SUGRCK	138	209	1.0513	145.08
253017	09CROWN	138	209	1.0524	145.23
242520	05J.FERR	500	205	1.0577	528.86

The thermal loading and voltage violations in the normal operating (pre-contingency) scenarios are marginal, i.e., a small percentage off PJM's operational limits. These violations can be easily removed by re-dispatching nearby generation and/or by adjusting taps in regulating transformers and switching in reactive compensating shunt devices.

2.1 Contingency Analysis Results

Contingency analysis (ACC) was performed using the contingency list provided by PJM and the PJM 2019 RTEP base case scenario (Benchmark case -all selected units for deactivation in service), the Dispatch 1 and Dispatch 2 base case scenarios (all selected units for deactivation out of service.)

The results from screening for thermal loading violations and description of contingencies causing these violations is presented in Tables 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 1.12, 1.13, 1.14, 1.15, 1.16, and 1.17.

Steady State Analysis

Table 1.6 Benchmark/Dispatch 1 Base Case Scenarios Thermal Loading Violations – Single, Double/ Multiple Contingencies

MONITORED ELEMENT	Area	RATE	With the Plants		Impact	CONTINGENCY
			In-service	Deactivated		
			%	%	%	
242644 05FREMO1 138.00 242873 FREMONT- 69.000 1	205 AEP	67	122.5	125.9	2.7%	5957_B2_TOR1
243026 05KAMMR1 138.00 243049 05NATRIU 138.00 1	205 AEP	205	84.9	100.4	15.4%	5213_B2_TOR7
243106 05SOMERT 138.00 245017 SOMERTON 69.000 1	205 AEP	70	110.4	111.1	0.6%	7707_B2_TOR7
243161 05ZANESV 138.00 245423 ZANESVIL 69.000 1	205 AEP	90	111.3	113.1	1.6%	5163_B2_TOR7
248000 06CLIFTY 345.00 324114 7TRIMBLE 345.00 1	206 OVEC	1370	81.5	99.5	18.1%	363_B2_TOR16
248013 06PIERCE 345.00 250143 08PRCE18 138.00 18	206 OVEC	489	74.8	107.8	30.6%	876_B2
249988 08BKJ135 138.00 250086 08PIERCE 138.00 1	212 DEO&K	498	61.6	102.7	40.0%	876_B2
249989 08BKJ246 138.00 250143 08PRCE18 138.00 1	212 DEO&K	498	74.6	109.1	31.6%	876_B2
250010 08D.CRK2 138.00 251944 08D.CRK1 10.000 1	212 DEO&K	115	81.5	102.6	20.6%	B2 FOSTER-PA
250016 08EBNZR5 138.00 250057 08M.FORT 138.00 1	212 DEO&K	266	66	98.8	33.2%	2811_B2_TOR2
250057 08M.FORT 138.00 250131 08WILEY2 138.00 1	212 DEO&K	198	81.7	114.9	28.9%	876_B2
250057 08M.FORT 138.00 250131 08WILEY2 138.00 1	212 DEO&K	198	68.7	114	39.7%	2811_B2_TOR2
250057 08M.FORT 138.00 250151 08HEBTAP 138.00 1	212 DEO&K	238	84.8	111.5	23.9%	B2 MIAMI FT-
250057 08M.FORT 138.00 250151 08HEBTAP 138.00 1	212 DEO&K	238	69.2	110.7	37.5%	2811_B2_TOR2

Table 1.7 Benchmark/Dispatch 1 Base Case Scenarios Contingency Description

Contingency Labels	Contingency Descriptions
5957_B2_TOR1	OPEN BRANCH FROM BUS 243671 [05BEAVR1 138.00] TO BUS 242645 [05FREMO2 138.00] CKT 1 OPEN BRANCH FROM BUS 242644 [05FREMO1 138.00] TO BUS 242645 [05FREMO2 138.00] CKT Z1 OPEN BRANCH FROM BUS 242645 [05FREMO2 138.00] TO BUS 242873 [FREMONT- 69.000] CKT 2 OPEN BRANCH FROM BUS 242645 [05FREMO2 138.00] TO BUS 244234 [FREMNT-L 12.000] CKT 1
5213_B2_TOR7	OPEN BRANCH FROM BUS 243012 [05G WASH 138.00] TO BUS 243026 [05KAMMR1 138.00] CKT 1
7707_B2_TOR7	OPEN BRANCH FROM BUS 243026 [05KAMMR1 138.00] TO BUS 243143 [05WBELLA 138.00] CKT 1 OPEN BRANCH FROM BUS 243143 [05WBELLA 138.00] TO BUS 245101 [W BELAIR 69.000] CKT 1 OPEN BRANCH FROM BUS 245082 [BELLAI 69.000] TO BUS 245101 [W BELAIR 69.000] CKT 1 OPEN BRANCH FROM BUS 245093 [NEFFS 69.000] TO BUS 245101 [W BELAIR 69.000] CKT 1
5163_B2_TOR7	OPEN BRANCH FROM BUS 242998 [05EPOINT 138.00] TO BUS 243001 [05EZANEV 138.00] CKT 1 OPEN BRANCH FROM BUS 243070 [05OHIOCT 138.00] CKT 1 OPEN BRANCH FROM BUS 243001 [05EZANEV 138.00] TO BUS 243074 [05PHILO 138.00] CKT 1 OPEN BRANCH FROM BUS 243001 [05EZANEV 138.00] TO BUS 245394 [EZANES 1 69.000] CKT 1 OPEN BRANCH FROM BUS 243001 [05EZANEV 138.00] TO BUS 245395 [EZANES 2 69.000] CKT 1 OPEN BRANCH FROM BUS 242998 [05EPOINT 138.00] TO BUS 245426 [E.POINT 12.000] CKT Z1 OPEN BRANCH FROM BUS 245394 [EZANES 1 69.000] TO BUS 245399 [LINDEN A 69.000] CKT 1 OPEN BRANCH FROM BUS 245394 [EZANES 1 69.000] TO BUS 245408 [OAKLAND 69.000] CKT 1 OPEN BRANCH FROM BUS 245395 [EZANES 2 69.000] TO BUS 245402 [MOXAHALS 69.000] CKT 1

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Contingency Labels	Contingency Descriptions
363_B2_TOR16	OPEN BRANCH FROM BUS 243208 [05JEFRSO 765.00] TO BUS 243209 [05ROCKPT 765.00] CKT 1
876_B2	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1
876_B2	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1
876_B2	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1
B2 FOSTER-PA	OPEN LINE FROM BUS 250085 [08PARK2 138.00] TO BUS 252294 [PARK 2 12.470] CKT 1 OPEN LINE FROM BUS 250085 [08PARK2 138.00] TO BUS 250084 [08PARK1 138.00] CKT Z1 OPEN LINE FROM BUS 250084 [08PARK1 138.00] TO BUS 252293 [PARK 1 12.470] CKT 1 OPEN LINE FROM BUS 249987 [08BETHNY 138.00] TO BUS 249987 [08BETHNY 138.00] TO BUS 250098 [08SHAKER 138.00] CKT 1 OPEN LINE FROM BUS 249987 [08BETHNY 138.00] TO BUS 252079 [BETHANY3 12.470] CKT 3 OPEN LINE FROM BUS 249987 [08BETHNY 138.00] TO BUS 252081 [BETHNY 1 12.470] CKT 1 OPEN LINE FROM BUS 249987 [08BETHNY 138.00] TO BUS 252082 [BETHNY 2 12.470] CKT 1
2811_B2_TOR2	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 OPEN BRANCH FROM BUS 248000 [06CLIFTY 345.00] TO BUS 248001 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1
876_B2	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1
2811_B2_TOR2	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 OPEN BRANCH FROM BUS 248000 [06CLIFTY 345.00] TO BUS 248001 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1
B2 MIAMI FT-	OPEN LINE FROM BUS 250060 [08MDWAY1 138.00] TO BUS 251811 [MIDWAY 1 34.500] CKT 1 OPEN LINE FROM BUS 250060 [08MDWAY1 138.00] TO BUS 250057 [08M.FORT 138.00] CKT 1 OPEN LINE FROM BUS 250048 [08KLEMN1 138.00] TO BUS 250049 [08KLEMN2 138.00] CKT Z1 OPEN LINE FROM BUS 250048 [08KLEMN1 138.00] TO BUS 252210 [KLEEMN 1 12.470] CKT 1 OPEN LINE FROM BUS 250049 [08KLEMN2 138.00] TO BUS 252211 [KLEEMN 2 12.470] CKT 1 OPEN LINE FROM BUS 250049 [08KLEMN2 138.00] TO BUS 250037 [08GLNVW2 138.00] CKT 1
2811_B2_TOR2	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 OPEN BRANCH FROM BUS 248000 [06CLIFTY 345.00] TO BUS 248001 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1

Table 1.8 Benchmark/Dispatch 2 Base Case Scenarios Thermal Loading Violations – Single, Double/ Multiple Contingencies

MONITORED ELEMENT	Area	RATE	With the Plants		Impact	CONTINGENCY
			In-service	Deactivated		
			%	%	%	
242644 05FREMO1 138.00 242873 FREMONT- 69.000 1	205 AEP	67	122.5	125.1	2.1%	5957_B2_TOR1
243026 05KAMMR1 138.00 243049 05NATRIU 138.00 1	205 AEP	205	84.9	98.7	14.0%	5213_B2_TOR7
243106 05SOMERT 138.00 245017 SOMERTON 69.000 1	205 AEP	70	110.4	112.2	1.6%	7707_B2_TOR7
243161 05ZANESV 138.00 245423 ZANESVIL 69.000 1	205 AEP	90	111.3	113.2	1.7%	5163_B2_TOR7
248000 06CLIFTY 345.00 324114 7TRIMBLE 345.00 1	206 OVEC	1370	81.5	98.4	17.2%	363_B2_TOR16

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MONITORED ELEMENT	Area	RATE	With the Plants		Impact	CONTINGENCY
			In-service	Deactivated		
			%	%	%	
250010 08D.CRK2 138.00 251944 08D.CRK1 10.000 1	212 DEO&K	115	93.8	105.1	10.8%	876_B2
250010 08D.CRK2 138.00 251944 08D.CRK1 10.000 1	212 DEO&K	115	88.9	104	14.5%	B2 ZIMMER-SP
250057 08M.FORT 138.00 250131 08WILEY2 138.00 1	212 DEO&K	198	81.7	110.9	26.3%	876_B2
250057 08M.FORT 138.00 250131 08WILEY2 138.00 1	212 DEO&K	198	68.7	108.9	36.9%	2811_B2_TOR2
250057 08M.FORT 138.00 250151 08HEBTAP 138.00 1	212 DEO&K	238	84.8	103.9	18.4%	B2 MIAMI FT-
250057 08M.FORT 138.00 250151 08HEBTAP 138.00 1	212 DEO&K	238	69.2	102.7	32.6%	2811_B2_TOR2

Table 1.9 Benchmark/Dispatch 2 Base Case Scenarios Contingency Description

Contingency Labels	Contingency Descriptions
5957_B2_TOR1	OPEN BRANCH FROM BUS 243671 [05BEAVR1 138.00] TO BUS 242645 [05FREMO2 138.00] CKT 1 [05FREMO1 138.00] TO BUS 242645 [05FREMO2 138.00] CKT Z1 [FREMO2- 69.000] CKT 2 OPEN BRANCH FROM BUS 242645 [05FREMO2 138.00] TO BUS 244234 [FREMO2-L 12.000] CKT 1
5213_B2_TOR7	OPEN BRANCH FROM BUS 243012 [05G WASH 138.00] TO BUS 243026 [05KAMMR1 138.00] CKT 1
7707_B2_TOR7	OPEN BRANCH FROM BUS 243026 [05KAMMR1 138.00] TO BUS 243143 [05WBELLA 138.00] CKT 1 [05WBELLA 138.00] TO BUS 245101 [W BELAIR 69.000] CKT 1 OPEN BRANCH FROM BUS 245082 [BELLAI 69.000] TO BUS 245101 [W BELAIR 69.000] CKT 1 OPEN BRANCH FROM BUS 245093 [NEFFS 69.000] TO BUS 245101 [W BELAIR 69.000] CKT 1
5163_B2_TOR7	OPEN BRANCH FROM BUS 242998 [05EPOINT 138.00] TO BUS 243001 [05EZANEV 138.00] CKT 1 OPEN BRANCH FROM BUS 243001 [05EZANEV 138.00] TO BUS 243074 [05PHILO 138.00] CKT 1 OPEN BRANCH FROM BUS 243001 [05EZANEV 138.00] TO BUS 245394 [EZANES 1 69.000] CKT 1 OPEN BRANCH FROM BUS 243001 [05EZANEV 138.00] TO BUS 245395 [EZANES 2 69.000] CKT 1 OPEN BRANCH FROM BUS 242998 [05EPOINT 138.00] TO BUS 245426 [E.POINT 12.000] CKT Z1 OPEN BRANCH FROM BUS 245394 [EZANES 1 69.000] TO BUS 245399 [LINDEN A 69.000] CKT 1 OPEN BRANCH FROM BUS 245394 [EZANES 1 69.000] TO BUS 245408 [OAKLAND 69.000] CKT 1 OPEN BRANCH FROM BUS 245395 [EZANES 2 69.000] TO BUS 245402 [MOXAHALS 69.000] CKT 1
363_B2_TOR16	OPEN BRANCH FROM BUS 243208 [05JEFRSO 765.00] TO BUS 243209 [05ROCKPT 765.00] CKT 1
876_B2	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1
B2 ZIMMER-SP	OPEN BRANCH FROM BUS 249577 [08ZIMER 345.00] TO BUS 249581 [08MELDAL 345.00] CKT 1
876_B2	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1
2811_B2_TOR2	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 OPEN BRANCH FROM BUS 248000 [06CLIFTY 345.00] TO BUS 248001 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1
B2 MIAMI FT-	OPEN LINE FROM BUS 250060 [08MDWAY1 138.00] TO BUS 251811 [MIDWAY 1 34.500] CKT 1 OPEN LINE FROM BUS 250060 [08MDWAY1 138.00] TO BUS 250057 [08M.FORT 138.00] CKT 1 OPEN LINE FROM BUS 250048 [08KLEMN1 138.00] TO BUS 250049 [08KLEMN2 138.00] CKT Z1 OPEN LINE FROM BUS 250048 [08KLEMN1 138.00] TO BUS 252210 [KLEMN 1 12.470] CKT 1 OPEN LINE FROM BUS 250048 [08KLEMN1 138.00] TO BUS 252212 [KLEMN 3 12.470] CKT 1 OPEN LINE FROM BUS 250049 [08KLEMN2 138.00] TO BUS 252211 [KLEMN 2 12.470] CKT 1 OPEN LINE FROM

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Contingency Labels	Contingency Descriptions
	BUS 250049 [08KLEMN2 138.00] TO BUS 250037 [08GLNVW2 138.00] CKT 1
2811_B2_TOR2	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1

Table 1.10 Benchmark/Dispatch 1 Base Case Scenarios Thermal Loading Violations – Bus Contingencies

MONITORED ELEMENT	Area	RATE	With the Plants		Impact	CONTINGENCY
			In-service	Deactivated		
			%	%	%	
239100 02SEVILL 138.00 239604 SEVILLE 69.000 1	202 FE	81	114.5	119.5	4.2%	C1-BUS-SR006
248009 06CLIFTY 138.00 250057 08M.FORT 138.00 1	206 OVEC	129	83.7	103.1	18.8%	2812_C1_05TA
250016 08EBNZR5 138.00 250057 08M.FORT 138.00 1	212 DEO&K	266	66	98.8	33.2%	2811_C1_05TA
250057 08M.FORT 138.00 250131 08WILEY2 138.00 1	212 DEO&K	198	68.7	114	39.7%	2811_C1_05TA
250057 08M.FORT 138.00 250151 08HEBTAP 138.00 1	212 DEO&K	238	69.2	110.7	37.5%	2811_C1_05TA

Table 1.11 Benchmark/Dispatch 1 Base Case Scenarios Contingency Description

Contingency Labels	Contingency Descriptions
C1-BUS-SR006	DISCONNECT BRANCH FROM BUS 238586 [02BRKSID 138.00] TO BUS 238587 [02BRKSID 69.000] CKT 3 [02BRKSID 138.00] TO BUS 238587 [02BRKSID 69.000] CKT 4 [02BRKSID 69.000] CKT 5 DISCONNECT BRANCH FROM BUS 243024 [05HOWARD 138.00] TO BUS 238586 [02BRKSID 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238906 [02LNGVEW 138.00] TO BUS 238586 [02BRKSID 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 239076 [02ROSS 138.00] TO BUS 238586 [02BRKSID 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 239216 [02TROY 138.00] TO BUS 238586 [02BRKSID 138.00] CKT 1
2812_C1_05TA	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 249568 [08M.FTHS 345.00] CKT 1 [05TANNER 345.00] TO BUS 243382 [05TANNER 138.00] CKT 5 OPEN BRANCH FROM BUS 249568 [08M.FTHS 345.00] TO BUS 250057 [08M.FORT 138.00] CKT 10 OPEN BRANCH FROM BUS 249568 [08M.FTHS 345.00] TO BUS 250057 [08M.FORT 138.00] CKT 9
2811_C1_05TA	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1
2811_C1_05TA	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1

Steady State Analysis

Contingency Labels	Contingency Descriptions
2811_C1_05TA	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 OPEN BRANCH FROM BUS 248000 [06CLIFTY 345.00] TO BUS 248001 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1

Table 1.12 Benchmark/Dispatch 2 Base Case Scenarios Thermal Loading Violations – Bus Contingencies

MONITORED ELEMENT	Area	RATE	With the Plants		Impact	CONTINGENCY
			In-service	Deactivated		
			%	%	%	
239100 02SEVILL 138.00 239604 SEVILLE 69.000 1	202 FE	81	114.5	117.6	2.6%	C1-BUS-SR006
250010 08D.CRK2 138.00 251944 08D.CRK1 10.000 1	212 DEO&K	115	97.1	103	5.7%	6923_C1_05CO
250010 08D.CRK2 138.00 251944 08D.CRK1 10.000 1	212 DEO&K	115	89.1	101.5	12.2%	2811_C1_05TA
250057 08M.FORT 138.00 250131 08WILEY2 138.00 1	212 DEO&K	198	68.7	108.9	36.9%	2811_C1_05TA
250057 08M.FORT 138.00 250151 08HEBTAP 138.00 1	212 DEO&K	238	69.2	102.7	32.6%	2811_C1_05TA

Table 1.13 Benchmark/Dispatch 2 Base Case Scenarios Contingency Description

Contingency Labels	Contingency Descriptions
C1-BUS-SR006	DISCONNECT BRANCH FROM BUS 238586 [02BRKSID 138.00] TO BUS 238587 [02BRKSID 69.000] CKT 3 DISCONNECT BRANCH FROM BUS 238586 [02BRKSID 138.00] TO BUS 238587 [02BRKSID 69.000] CKT 4 DISCONNECT BRANCH FROM BUS 238586 [02BRKSID 138.00] TO BUS 238587 [02BRKSID 69.000] CKT 5 DISCONNECT BRANCH FROM BUS 243024 [05HOWARD 138.00] TO BUS 238586 [02BRKSID 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238906 [02LNGVIEW 138.00] TO BUS 238586 [02BRKSID 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 239076 [02ROSS 138.00] TO BUS 238586 [02BRKSID 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 239216 [02TROY 138.00] TO BUS 238586 [02BRKSID 138.00] CKT 1
6923_C1_05CO	OPEN BRANCH FROM BUS 243262 [05COLLCO 138.00] TO BUS 243282 [05DREWER 138.00] CKT 1 OPEN BRANCH FROM BUS 243262 [05COLLCO 138.00] TO BUS 243364 [05RICHMO 138.00] CKT 1 OPEN BRANCH FROM BUS 243262 [05COLLCO 138.00] TO BUS 250001 [08COLINV 138.00] CKT 1
2811_C1_05TA	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 OPEN BRANCH FROM BUS 248000 [06CLIFTY 345.00] TO BUS 248001 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1
2811_C1_05TA	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 OPEN BRANCH FROM BUS 248000 [06CLIFTY 345.00] TO BUS 248001 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1
2811_C1_05TA	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 248001 [06DEARB1 345.00] CKT Z1 OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 OPEN BRANCH FROM BUS 248000 [06CLIFTY 345.00] TO BUS 248001 [06DEARB1 345.00] CKT 1 OPEN BRANCH FROM BUS 248001 [06DEARB1 345.00] TO BUS 248013 [06PIERCE 345.00] CKT 1

Steady State Analysis

Table 1.14 Benchmark/Dispatch 1 Base Case Scenarios Thermal Loading Violations – Tower Contingencies

MONITORED ELEMENT	Area	RATE	With the Plants		Impact	CONTINGENCY
			In-service	Deactivated		
			%	%	%	
238620 02CL Q12 138.00 238627 02CLINTO 11.500 2	202 FE	45	99.5	103	3.4%	C5-TWL-NR007
242644 05FREMO1 138.00 242873 FREMONT- 69.000 1	205 AEP	67	154.4	161.9	4.6%	8344
243250 05BENTON 138.00 243365 05RIVRSD 138.00 1	205 AEP	167	89.9	107.5	16.4%	7250
243250 05BENTON 138.00 243365 05RIVRSD 138.00 2	205 AEP	167	83.3	101.8	18.2%	7251
243278 05DESOTO 138.00 243319 05JAY 138.00 1	205 AEP	302	93.5	99.3	5.8%	8000
248009 06CLIFTY 138.00 250057 08M.FORT 138.00 1	206 OVEC	129	84	109.4	23.2%	C5 4504MFTAN
248013 06PIERCE 345.00 250143 08PRCE18 138.00 18	206 OVEC	489	76.2	108.3	29.6%	491
249988 08BKJ135 138.00 250086 08PIERCE 138.00 1	212 DEO&K	498	60	102	41.2%	491
249989 08BKJ246 138.00 250143 08PRCE18 138.00 1	212 DEO&K	498	76	109.7	30.7%	491
250007 08CRSNT1 138.00 250124 08WENDEA 138.00 1	212 DEO&K	268	65.9	103	36.0%	C5 4514MFTER
250010 08D.CRK2 138.00 251944 08D.CRK1 10.000 1	212 DEO&K	115	82.1	103.4	20.6%	C5 CIRCUIT54
250016 08EBNZR5 138.00 250057 08M.FORT 138.00 1	212 DEO&K	266	82.3	107.9	23.7%	C5 4514MFTER
250057 08M.FORT 138.00 250131 08WILEY2 138.00 1	212 DEO&K	198	89	126.7	29.8%	C5 4514MFTER
250057 08M.FORT 138.00 250151 08HEBTAP 138.00 1	212 DEO&K	238	95.1	124	23.3%	C5 CIRCUIT16

Table 1.15 Benchmark/Dispatch 1 Base Case Scenarios Contingency Description

Contingency Labels	Contingency Descriptions
C5-TWL-NR007	DISCONNECT BRANCH FROM BUS 238739 [02FWLSQ1 138.00] TO BUS 238699 [02ENQ-12 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238719 [02FMCQ12 138.00] TO BUS 238725 [02FMQ12H 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238807 [02HMLQ12 138.00] TO BUS 239261 [02HUMM-1 36.000] TO BUS 239270 [02HUMM-1 11.500] CKT 5DISCONNECT BRANCH FROM BUS 238807 [02HMLQ12 138.00] TO BUS 238760 [02GMC 11.500] CKT 2 DISCONNECT BRANCH FROM BUS 238733 [02FOXQ12 138.00] TO BUS 239033 [02PDBQ12 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238741 [02FWLSQ3 138.00] TO BUS 238720 [02FMCQ13 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238720 [02FMCQ13 138.00] TO BUS 238726 [02FMQ13H 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238808 [02HMLQ13 138.00] TO BUS 239261 [02HUMM-1 36.000] TO BUS 239270 [02HUMM-1 11.500] CKT 3DISCONNECT BRANCH FROM BUS 238808 [02HMLQ13 138.00] TO BUS 238760 [02GMC 11.500] CKT 3 OPEN LINE FROM BUS 238734 [02FOXQ13 138.00] TO BUS 238808 [02HMLQ13 138.00] CKT 1 OPEN LINE FROM BUS 238734 [02FOXQ13 138.00] TO BUS 238621 [02CL Q13 138.00] CKT 1 OPEN LINE FROM BUS 238734 [02FOXQ13 138.00] TO BUS 238731 [02FOX 345.00] CKT 3 OPEN LINE FROM BUS 238808 [02HMLQ13 138.00] TO BUS 238720 [02FMCQ13 138.00] CKT 1 OPEN LINE FROM BUS 239033 [02PDBQ12 138.00] TO BUS 238807 [02HMLQ12 138.00] CKT 1 OPEN LINE FROM BUS 238807 [02HMLQ12 138.00] TO BUS 238719 [02FMCQ12 138.00] CKT 1 OPEN LINE FROM BUS 238719 [02FMCQ12 138.00] TO BUS 238699 [02ENQ-12 138.00] CKT 1 OPEN LINE FROM BUS 238725 [02FMQ12H 138.00] TO BUS 238723 [02FMCSYN 13.200] CKT EQ OPEN LINE FROM BUS 238726 [02FMQ13H 138.00] TO BUS 238723 [02FMCSYN 13.200] CKT EQ SET BUS 238809 [02HMLQ14 138.00] LOAD TO 30.9 MW

Steady State Analysis

Contingency Labels	Contingency Descriptions
8344	OPEN BRANCH FROM BUS 243671 [05BEAVR1 138.00] TO BUS 242645 [05FREMO2 138.00] CKT 1 [05CLNCHR 138.00] TO BUS 243899 [05LOCKHA 138.00] CKT 1 [05LOCKHA 138.00] CKT 1 OPEN BRANCH FROM BUS 242644 [05FREMO1 138.00] TO BUS 242645 [05FREMO2 138.00] CKT Z1 OPEN BRANCH FROM BUS 242645 [05FREMO2 138.00] TO BUS 242873 [FREMONT- 69.000] CKT 2 [05FREMO2 138.00] TO BUS 244234 [FREMNT-L 12.000] CKT 1 OPEN BRANCH FROM BUS 242605 [05DORTON 138.00] TO BUS 243899
7250	OPEN BRANCH FROM BUS 243250 [05BENTON 138.00] TO BUS 243365 [05RIVRSD 138.00] CKT 2 138.00] TO BUS 243396 [05WESTST 138.00] CKT 1 CKT 1 OPEN BRANCH FROM BUS 247134 [05EWATRV 138.00] TO BUS 243307 [05HARTFO 138.00] OPEN BRANCH FROM BUS 247134 [05EWATRV 138.00] TO BUS 243396 [05WESTST 138.00] CKT 1 BUS 247134 [05EWATRV 138.00] TO BUS 247135 [EWATRV L 12.000] CKT Z1 OPEN BRANCH FROM BUS 243396 [05WESTST 138.00] TO BUS 246497 [WEST ST 12.000] CKT 1
7251	OPEN BRANCH FROM BUS 243250 [05BENTON 138.00] TO BUS 243271 [05CRYSTA 138.00] CKT 1 [05BENTON 138.00] TO BUS 243365 [05RIVRSD 138.00] CKT 1 [05HICKOR 138.00] CKT 1 OPEN BRANCH FROM BUS 243271 [05CRYSTA 138.00] TO BUS 246440 [CRYSTL L 12.000] CKT 1 OPEN BRANCH FROM BUS 243250 [05BENTON 138.00] TO BUS 243308
8000	OPEN BRANCH FROM BUS 246124 [HILLCREQ 999.00] TO BUS 243309 [05HILLCR 138.00] CKT 1 999.00] TO BUS 246242 [HILLCRES 69.000] CKT 1 CKT 1 OPEN BRANCH FROM BUS 243242 [05ALLEN 138.00] TO BUS 243334 [05MAGLEY 138.00] CKT 1 BUS 243242 [05ALLEN 138.00] TO BUS 243391 [05WAYNET 138.00] CKT 1 243391 [05WAYNET 138.00] CKT 1 OPEN BRANCH FROM BUS 243309 [05HILLCR 138.00] TO BUS 246123 [HILLCR L 12.000] CKT 2 OPEN BRANCH FROM BUS 243391 [05WAYNET 138.00] TO BUS 246167 [WAYNET L 12.000] CKT 1 [FERGUSON 69.000] TO BUS 246242 [HILLCRES 69.000] CKT 1 [KINNERK8 69.000] CKT 1 OPEN BRANCH FROM BUS 246125 [HILLCRES 34.500] TO BUS 246150 [PETTIT 34.500] CKT 1 OPEN BRANCH FROM BUS 246124 [HILLCREQ 999.00] TO BUS 246125 [HILLCRES 34.500]
C5 4504MFTAN	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 249568 [08M.FTHS 345.00] CKT 1 345.00] TO BUS 250057 [08M.FORT 138.00] CKT 10 CKT 9 OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 OPEN BRANCH FROM BUS 249568 [08M.FTHS 345.00] TO BUS 250057 [08M.FORT 138.00]
491	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1 345.00] TO BUS 249577 [08ZIMER 345.00] CKT 1 OPEN BRANCH FROM BUS 249570 [08P.UNON
491	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1 345.00] TO BUS 249577 [08ZIMER 345.00] CKT 1 OPEN BRANCH FROM BUS 249570 [08P.UNON
491	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1 345.00] TO BUS 249577 [08ZIMER 345.00] CKT 1 OPEN BRANCH FROM BUS 249570 [08P.UNON
C5 4514MFTER	OPEN BRANCH FROM BUS 249567 [08M.FORT 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1 OPEN BRANCH FROM BUS 249565 [08EBEND
C5 CIRCUIT54	OPEN BRANCH FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250076 [08MTGRY2 138.00] CKT Z1 [08FOSTER 138.00] TO BUS 250075 [08MTGRY1 138.00] CKT 1 [08RMNTN1 138.00] CKT 1 LINE FROM BUS 250157 [08CORNTN 138.00] TO BUS 250082 [08P.UN1 138.00] CKT 1 BUS 250100 [08SMRSD1 138.00] CKT 1 OPEN LINE FROM BUS 250004 [08CRNEL1 138.00] TO BUS 251804 [CORNELL3 34.500] CKT 1 138.00] TO BUS 252117 [CORNELL1 12.470] CKT 1 OPEN LINE FROM BUS 250005 [08CRNEL4 138.00] TO BUS 252118 [CORNELL4 12.470] CKT 1 OPEN BRANCH FROM BUS 250029 [08MTGRY2 138.00] TO BUS 250094 [08CRNEL1 138.00] CKT 1 OPEN LINE FROM BUS 250157 [08CORNTN 138.00] TO BUS 250005 [08CRNEL4 138.00] CKT Z1 OPEN LINE FROM BUS 250004 [08CRNEL1 138.00] TO BUS 251804 [CORNELL3 34.500] CKT 1 OPEN LINE FROM BUS 250004 [08CRNEL1 138.00] TO BUS 252118 [CORNELL4 12.470] CKT 1
C5 4514MFTER	OPEN BRANCH FROM BUS 249567 [08M.FORT 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1 OPEN BRANCH FROM BUS 249565 [08EBEND
C5 4514MFTER	OPEN BRANCH FROM BUS 249567 [08M.FORT 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1 OPEN BRANCH FROM BUS 249565 [08EBEND

Steady State Analysis

Contingency Labels	Contingency Descriptions
C5 CIRCUIT16	OPEN BRANCH FROM BUS 250057 [08M.FORT 138.00] TO BUS 250071 [08MRGAN2 138.00] CKT 1 [08MRGAN1 138.00] TO BUS 250071 [08MRGAN2 138.00] CKT Z1 [08WILEY2 138.00] CKT 1 OPEN BRANCH FROM BUS 250070 OPEN BRANCH FROM BUS 250057 [08M.FORT 138.00] TO BUS 250131

Table 1.16 Benchmark/Dispatch 2 Base Case Scenarios Thermal Loading Violations – Tower Contingencies

MONITORED ELEMENT	Area	RATE	With the Plants		Impact	CONTINGENCY
			In-service	Deactivated		
			%	%	%	
238552 02AVON 138.00 238646 02CW TP3 138.00 1	202 FE	316	97.6	101.9	4.2%	C5-TWL-NR001
238915 02LRN Q2 138.00 239728 02BLKRV R 138.00 1	202 FE	270	108.7	129.1	15.8%	C5-TWL-NR054
239004 02NFLDQ4 138.00 239234 02NRTF-B 36.000 4	202 FE	65	102	102	0.0%	C5-TWL-NR033
242644 05FREMO1 138.00 242873 FREMONT- 69.000 1	205 AEP	67	154.4	160.5	3.8%	8344
243212 05BENTON 345.00 243250 05BENTON 138.00 1	205 AEP	564	55.7	99.2	43.9%	7027
243250 05BENTON 138.00 243365 05RIVRSD 138.00 1	205 AEP	167	89.9	110.3	18.5%	7250
243250 05BENTON 138.00 243365 05RIVRSD 138.00 2	205 AEP	167	83.3	105	20.7%	7251
243278 05DESOTO 138.00 243319 05JAY 138.00 1	205 AEP	302	93.5	98.5	5.1%	8000
248009 06CLIFTY 138.00 250057 08M.FORT 138.00 1	206 OVEC	129	84	103.4	18.8%	C5 4504MFTAN
249988 08BKJ135 138.00 251935 08BCKJD3 18.000 1	212 DEO&K	135	0	107.4	100.0%	C5 4541ZIMME
250010 08D.CRK2 138.00 251944 08D.CRK1 10.000 1	212 DEO&K	115	103.6	105.1	1.4%	491
250016 08EBNZR5 138.00 250057 08M.FORT 138.00 1	212 DEO&K	266	82.3	102.4	19.6%	C5 4514MFTER
250057 08M.FORT 138.00 250131 08WILEY2 138.00 1	212 DEO&K	198	89	120.5	26.1%	C5 4514MFTER
250057 08M.FORT 138.00 250151 08HEBTAP 138.00 1	212 DEO&K	238	95.1	116.5	18.4%	C5 CIRCUIT16

Table 1.17 Benchmark/Dispatch 2 Base Case Scenarios Contingency Description

Contingency Labels	Contingency Descriptions
C5-TWL-NR001	DISCONNECT BRANCH FROM BUS 238552 [02AVON 138.00] TO BUS 238645 [02CW TP1 138.00] CKT 1 [02DS Q-1 138.00] TO BUS 238655 [02DAWS-1 36.000] CKT 1 [02FWLSQ1 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238552 [02AVON 138.00] TO BUS 238546 [02ASQ-11 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 239262 [02HUMM-2 36.000] TO BUS 238806 [02HMLQ11 138.00] TO BUS 239271 [02HUMM-2 11.500] CKT 2 DISCONNECT BRANCH FROM BUS 238732 [02FOXQ11 138.00] TO BUS 239032 [02PDBQ11 138.00] CKT 1 OPEN LINE FROM BUS 239032 [02PDBQ11 138.00] TO BUS 238806 [02HMLQ11 138.00] CKT 1 OPEN LINE FROM BUS 238806 [02HMLQ11 138.00] TO BUS 238698 [02ENQ-11 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238665 [02CY Q-1 138.00] TO BUS 238739

Steady State Analysis

Contingency Labels	Contingency Descriptions
	OPEN LINE FROM BUS 238698 [02ENQ-11 138.00] TO BUS 238743 [02FWQ-11 138.00] CKT 1 TO BUS 238546 [02ASQ-11 138.00] CKT 1 OPEN LINE FROM BUS 238701 [02ERQ-11 138.00] TO BUS 238656 [02DBQ-11 138.00] CKT 1 TO BUS 239251 [02GEQUTZ 138.00] CKT 1 OPEN LINE FROM BUS 238541 [02AS Q-1 138.00] TO BUS 238645 [02CW TP1 138.00] CKT 1 TO BUS 238643 [02CW Q-1 138.00] CKT 1 OPEN LINE FROM BUS 238671 [02DW Q-1 138.00] TO BUS 238665 [02DS Q-1 138.00] CKT 1 OPEN LINE FROM BUS 238743 [02FWQ-11 138.00] TO BUS 238701 [02ERQ-11 138.00] CKT 1 OPEN LINE FROM BUS 238656 [02DBQ-11 138.00] TO BUS 238541 [02AS Q-1 138.00] CKT 1 OPEN LINE FROM BUS 238645 [02CW TP1 138.00] TO BUS 238671 [02DW Q-1 138.00] CKT 1 SET BUS 238657 [02DBQ-14 138.00] LOAD TO 32.2 MW
C5-TWL-NR054	DISCONNECT BRANCH FROM BUS 238551 [02AVON 345.00] TO BUS 239725 [02LAKEAVE 345.00] CKT 1F 238551 [02AVON 345.00] TO BUS 239725 [02LAKEAVE 345.00] CKT 2F DISCONNECT BRANCH FROM BUS
C5-TWL-NR033	DISCONNECT BRANCH FROM BUS 239001 [02NFLDQ1 138.00] TO BUS 238840 [02JNPRQ1 138.00] CKT 1 239012 [02NRTF-A 36.000] TO BUS 239001 [02NFLDQ1 138.00] CKT 1 239050 [02PV Q2 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238841 [02JNPRQ2 138.00] TO BUS 238815 [02IKQ-15 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238841 [02JNPRQ2 138.00] TO BUS 239002 [02NFLDQ2 138.00] CKT 1 DISCONNECT BRANCH FROM BUS
8344	OPEN BRANCH FROM BUS 243671 [05BEAVR1 138.00] TO BUS 242645 [05FREMO2 138.00] CKT 1 [05CLNCHR 138.00] TO BUS 243899 [05LOCKHA 138.00] CKT 1 [05LOCKHA 138.00] CKT 1 OPEN BRANCH FROM BUS 242644 [05FREMO1 138.00] TO BUS 242645 [05FREMO2 138.00] CKT Z1 OPEN BRANCH FROM BUS 242645 [05FREMO2 138.00] TO BUS 242873 [FREMONT- 69.000] CKT 2 [05FREMO2 138.00] TO BUS 244234 [FREMNT-L 12.000] CKT 1 OPEN BRANCH FROM BUS 242605 OPEN BRANCH FROM BUS 243685 [05DORTON 138.00] TO BUS 243899 OPEN BRANCH FROM BUS 242645
7027	OPEN BRANCH FROM BUS 243212 [05BENTON 345.00] TO BUS 243215 [05COOK 345.00] CKT 1 345.00] TO BUS 247502 [T-094 345.00] CKT 2 OPEN BRANCH FROM BUS 243215 [05COOK
7250	OPEN BRANCH FROM BUS 243250 [05BENTON 138.00] TO BUS 243365 [05RIVRSD 138.00] CKT 2 138.00] TO BUS 243396 [05WESTST 138.00] CKT 1 CKT 1 OPEN BRANCH FROM BUS 247134 [05EWATRV 138.00] TO BUS 243307 [05HARTFO 138.00] OPEN BRANCH FROM BUS 247134 [05EWATRV 138.00] TO BUS 247135 [EWATRV L 12.000] CKT Z1 OPEN BRANCH FROM BUS 243396 [05WESTST 138.00] TO BUS 246497 [WEST ST 12.000] CKT 1 OPEN BRANCH FROM BUS 243250 [05BENTON 138.00] TO BUS 243307 [05HARTFO 138.00] OPEN BRANCH FROM BUS 243396 [05WESTST 138.00] TO BUS
7251	OPEN BRANCH FROM BUS 243250 [05BENTON 138.00] TO BUS 243271 [05CRYSTA 138.00] CKT 1 [05BENTON 138.00] TO BUS 243365 [05RIVRSD 138.00] CKT 1 [05HICKOR 138.00] CKT 1 OPEN BRANCH FROM BUS 243271 [05CRYSTA 138.00] TO BUS 246440 [CRYSTL L 12.000] CKT 1 OPEN BRANCH FROM BUS 243250 OPEN BRANCH FROM BUS 243271 [05CRYSTA 138.00] TO BUS 243308 OPEN BRANCH FROM BUS 246124 [HILLCREQ 999.00] TO BUS 246125 [HILLCRES 34.500] CKT 1 OPEN BRANCH FROM BUS 243242 [05ALLEN 138.00] TO BUS 243334 [05MAGLEY 138.00] CKT 1 OPEN BRANCH FROM BUS 243242 [05ALLEN 138.00] TO BUS 243391 [05WAYNET 138.00] CKT 1 OPEN BRANCH FROM BUS 243309 [05HILLCR 138.00] TO BUS 246123 [HILLCR L 12.000] CKT 2 OPEN BRANCH FROM BUS 243391 [05WAYNET 138.00] TO BUS 246167 [WAYNET L 12.000] CKT 1 [FERGUSON 69.000] TO BUS 246242 [HILLCRES 69.000] CKT 1 OPEN BRANCH FROM BUS 246242 [HILLCRES 69.000] TO BUS 246246 [05BENTON 138.00] TO BUS 243365 [05RIVRSD 138.00] CKT 1 OPEN BRANCH FROM BUS 243271 [05CRYSTA 138.00] TO BUS 246440 [CRYSTL L 12.000] CKT 1 OPEN BRANCH FROM BUS 246124 [HILLCREQ 999.00] TO BUS 246125 [HILLCRES 34.500] CKT 1 OPEN BRANCH FROM BUS 243242 [05ALLEN 138.00] TO BUS 243334 [05MAGLEY 138.00] CKT 1 OPEN BRANCH FROM BUS 243242 [05ALLEN 138.00] TO BUS 243391 [05WAYNET 138.00] CKT 1 OPEN BRANCH FROM BUS 243309 [05HILLCR 138.00] TO BUS 246123 [HILLCR L 12.000] CKT 2 OPEN BRANCH FROM BUS 243391 [05WAYNET 138.00] TO BUS 246167 [WAYNET L 12.000] CKT 1 OPEN BRANCH FROM BUS 246242 [HILLCRES 69.000] TO BUS 246246 OPEN BRANCH FROM BUS 246125 [HILLCRES 34.500] TO BUS 246150 [PETTIT 34.500] CKT 1
8000	OPEN BRANCH FROM BUS 246124 [HILLCREQ 999.00] TO BUS 243309 [05HILLCR 138.00] CKT 1 999.00] TO BUS 246242 [HILLCRES 69.000] CKT 1 OPEN BRANCH FROM BUS 243242 [05ALLEN 138.00] TO BUS 243334 [05MAGLEY 138.00] CKT 1 OPEN BRANCH FROM BUS 243242 [05ALLEN 138.00] TO BUS 243391 [05WAYNET 138.00] CKT 1 OPEN BRANCH FROM BUS 243309 [05HILLCR 138.00] TO BUS 246123 [HILLCR L 12.000] CKT 2 OPEN BRANCH FROM BUS 243391 [05WAYNET 138.00] TO BUS 246167 [WAYNET L 12.000] CKT 1 [FERGUSON 69.000] TO BUS 246242 [HILLCRES 69.000] CKT 1 OPEN BRANCH FROM BUS 246242 [HILLCRES 69.000] TO BUS 246246 [05BENTON 138.00] TO BUS 243365 [05RIVRSD 138.00] CKT 1 OPEN BRANCH FROM BUS 243271 [05CRYSTA 138.00] TO BUS 246440 [CRYSTL L 12.000] CKT 1 OPEN BRANCH FROM BUS 246124 [HILLCREQ 999.00] TO BUS 246125 [HILLCRES 34.500] CKT 1 OPEN BRANCH FROM BUS 243242 [05ALLEN 138.00] TO BUS 243334 [05MAGLEY 138.00] CKT 1 OPEN BRANCH FROM BUS 243242 [05ALLEN 138.00] TO BUS 243391 [05WAYNET 138.00] CKT 1 OPEN BRANCH FROM BUS 243309 [05HILLCR 138.00] TO BUS 246123 [HILLCR L 12.000] CKT 2 OPEN BRANCH FROM BUS 243391 [05WAYNET 138.00] TO BUS 246167 [WAYNET L 12.000] CKT 1 OPEN BRANCH FROM BUS 246242 [HILLCRES 69.000] TO BUS 246246 OPEN BRANCH FROM BUS 246125 [HILLCRES 34.500] TO BUS 246150 [PETTIT 34.500] CKT 1
C5 4504MFTAN	OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 249568 [08M.FTHS 345.00] CKT 1 345.00] TO BUS 250057 [08M.FORT 138.00] CKT 10 CKT 9 OPEN BRANCH FROM BUS 243233 [05TANNER 345.00] TO BUS 249565 [08EBEND 345.00] CKT 1 OPEN BRANCH FROM BUS 249568 [08M.FTHS 345.00] TO BUS 250057 [08M.FORT 138.00] OPEN BRANCH FROM BUS 249565 [08EBEND 345.00] CKT 1
C5 4541ZIMME	OPEN BRANCH FROM BUS 249581 [08MELDAL 345.00] TO BUS 249577 [08ZIMER 345.00] CKT 1 345.00] TO BUS 342838 [7SPURLOCK 345.00] CKT 1 OPEN BRANCH FROM BUS 253077 [09STUART
491	OPEN BRANCH FROM BUS 248013 [06PIERCE 345.00] TO BUS 249566 [08FOSTER 345.00] CKT 1 345.00] TO BUS 249577 [08ZIMER 345.00] CKT 1 OPEN BRANCH FROM BUS 249570 [08P.UNON

Steady State Analysis

Contingency Labels	Contingency Descriptions
C5 4514MFTER	OPEN BRANCH FROM BUS 249567 [08M.FORT 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1 OPEN BRANCH FROM BUS 249565 [08EBEND 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1
C5 4514MFTER	OPEN BRANCH FROM BUS 249567 [08M.FORT 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1 OPEN BRANCH FROM BUS 249565 [08EBEND 345.00] TO BUS 249575 [08TERMNL 345.00] CKT 1
C5 CIRCUIT16	OPEN BRANCH FROM BUS 250057 [08M.FORT 138.00] TO BUS 250071 [08MRGAN2 138.00] CKT 1 OPEN BRANCH FROM BUS 250070 [08MRGAN1 138.00] TO BUS 250071 [08MRGAN2 138.00] CKT Z1 OPEN BRANCH FROM BUS 250057 [08M.FORT 138.00] TO BUS 250131 [08WILEY2 138.00] CKT 1

Steady State Analysis

The thermal loading violations in the tables above represent the worst violation for the contingency listed in the companion table under Contingency Description. What this means is that any transmission upgrade to remove these thermal loading violations will also correct all other contingencies that overload these monitored elements at a level below what is presented in these tables. Thus, all of these conditions that may cause an overload are resolved.

Now, the screening for bus voltage violations and description of contingencies causing these violations is presented in Tables 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.28, and 1.29

Steady State Analysis

Table 1.18 Benchmark/Dispatch 1 Base Case Scenarios Voltage Violations – Single, Double/ Multiple Contingencies

Bus	Area	With the Plants				Impact	CONTINGENCY
		In-service		Deactivated			
		VCONT (PU)	VINIT (PU)	VCONT (PU)	VINIT (PU)	(PU)	
243374 05SELWOO 138.00	205 AEP	0.914	1.001	0.908	1.004	-0.006	05SELWDZ-05S
253017 09CROWN 138.00	209 DAY	1.051	1.051	1.051	1.051	-0.0005	5589 B2_TOR2
250025 08FLDMN1 138.00	212 DEO&K	0.934	0.963	0.918	0.952	-0.016	B2 FOSTER-MO
250026 08FLDMN2 138.00	212 DEO&K	0.934	0.963	0.918	0.952	-0.016	B2 FOSTER-MO
250094 08RMNTN1 138.00	212 DEO&K	0.922	0.959	0.906	0.950	-0.016	B2 FOSTER-MO
250095 08RMNTN2 138.00	212 DEO&K	0.922	0.959	0.906	0.950	-0.016	B2 FOSTER-MO
250142 08WARDSC 138.00	212 DEO&K	0.927	0.960	0.911	0.950	-0.016	B2 FOSTER-MO

Table 1.19 Benchmark/Dispatch 1 Base Case Scenarios Contingency Description

Contingency Labels	Contingency Descriptions
05SELWDZ-05S	DISCONNECT BRANCH FROM BUS 246771 [05SELWDZ 138.00] TO BUS 243374 [05SELWOO 138.00] CKT 1
5589_B2_TOR2	OPEN BRANCH FROM BUS 243278 [05DESOTO 138.00] TO BUS 243337 [05MAYFIE 138.00] CKT 1
B2 FOSTER-MO	OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250076 [08MTGRY2 138.00] CKT Z1 TO BUS 252259 [MNTGMRY1 12.470] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 252264 [MONTGRY3 12.500] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250029 [08FOSTER 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 250094 [08RMNTN1 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 252260 [MNTGMRY2 12.470] CKT 1
B2 FOSTER-MO	OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250076 [08MTGRY2 138.00] CKT Z1 TO BUS 252259 [MNTGMRY1 12.470] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 252264 [MONTGRY3 12.500] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250029 [08FOSTER 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 250094 [08RMNTN1 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 252260 [MNTGMRY2 12.470] CKT 1
B2 FOSTER-MO	OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250076 [08MTGRY2 138.00] CKT Z1 TO BUS 252259 [MNTGMRY1 12.470] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 252264 [MONTGRY3 12.500] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250029 [08FOSTER 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 250094 [08RMNTN1 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 252260 [MNTGMRY2 12.470] CKT 1
B2 FOSTER-MO	OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250076 [08MTGRY2 138.00] CKT Z1 TO BUS 252259 [MNTGMRY1 12.470] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 252264 [MONTGRY3 12.500] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250029 [08FOSTER 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 250094 [08RMNTN1 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 252260 [MNTGMRY2 12.470] CKT 1

Steady State Analysis

Contingency Labels	Contingency Descriptions
B2 FOSTER-MO	OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250076 [08MTGRY2 138.00] CKT Z1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 252259 [MNTGMRY1 12.470] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 252264 [MONTGRY3 12.500] CKT 1 OPEN LINE FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250029 [08FOSTER 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 250094 [08RMNTN1 138.00] CKT 1 OPEN LINE FROM BUS 250076 [08MTGRY2 138.00] TO BUS 252260 [MNTGMRY2 12.470] CKT 1

Table 1.20 Benchmark/Dispatch 2 Base Case Scenarios Voltage Violations – Single, Double/ Multiple Contingencies

Bus	Area	With the Plants				Impact	CONTINGENCY
		In-service		Deactivated			
		VCONT (PU)	VINIT (PU)	VCONT (PU)	VINIT (PU)	(PU)	
243374 05SELWOO 138.00	205 AEP	0.914	1.001	0.908	1.006	-0.006	05SELWDZ-05S
253002 09AIRWAY 138.00	209 DAY	1.044	1.046	1.052	1.052	0.008	764_B2_TOR92
253007 09BELLBR 138.00	209 DAY	1.049	1.047	1.053	1.050	0.004	OUTAGE_03A
253012 09CENTER 138.00	209 DAY	1.049	1.040	1.053	1.041	0.004	DAY_11
253017 09CROWN 138.00	209 DAY	1.067	1.051	1.075	1.052	0.007	OUTAGE_50A
253024 09ESIDNY 138.00	209 DAY	1.042	1.034	1.052	1.041	0.009	895_B2
253026 09GREENE 138.00	209 DAY	1.048	1.046	1.052	1.049	0.004	DAY_11
253029 09GRNVIL 138.00	209 DAY	1.047	1.003	1.054	1.007	0.007	253028 09GRN
253034 09HEMPST 138.00	209 DAY	1.047	1.039	1.052	1.041	0.004	DAY_11
253046 09MIAMI 138.00	209 DAY	1.044	1.042	1.050	1.048	0.006	OUTAGE_18A
253055 09NORMAN 138.00	209 DAY	1.050	1.038	1.054	1.040	0.004	DAY_11
253068 09SHELBY 138.00	209 DAY	1.046	1.037	1.055	1.044	0.009	895_B2
253078 09SUGRCK 138.00	209 DAY	1.048	1.049	1.051	1.051	0.004	764_B2_TOR92
253107 09ALPHA 138.00	209 DAY	1.047	1.046	1.051	1.049	0.004	899_B3
253112 09TAP822 138.00	209 DAY	1.050	1.041	1.054	1.042	0.004	DAY_11

Table 1.21 Benchmark/Dispatch 2 Base Case Scenarios Contingency

Contingency Labels	Contingency Descriptions
05SELWDZ-05S	DISCONNECT BRANCH FROM BUS 246771 [05SELWDZ 138.00] TO BUS 243374 [05SELWOO 138.00] CKT 1
764_B2_TOR92	OPEN BRANCH FROM BUS 242938 [05MARQUI 345.00] TO BUS 253038 [09KILLEN 345.00] CKT 1
OUTAGE_03A	DISCONNECT BRANCH FROM BUS 253057 [09OHH 138.00] TO BUS 253078 [09SUGRCK 138.00] CKT 1

Steady State Analysis

Contingency Labels	Contingency Descriptions
DAY_11	OPEN BRANCH FROM BUS 253055 [09NORMAN 138.00] TO BUS 253054 [09NORMAN 69.000] CKT 1
OUTAGE_50A	DISCONNECT BRANCH FROM BUS 253057 [09OHH 138.00] TO BUS 253017 [09CROWN 138.00] CKT 1
895_B2	OPEN BRANCH FROM BUS 253047 [09MIAMI 345.00] TO BUS 253069 [09SHELBY 345.00] CKT 1
DAY_11	OPEN BRANCH FROM BUS 253055 [09NORMAN 138.00] TO BUS 253054 [09NORMAN 69.000] CKT 1
253028_09GRN	REMOVE MACHINE 1 FROM BUS 253028 [09GRNVIL 69.000] REMOVE MACHINE 2 FROM BUS 253028 [09GRNVIL 69.000] REMOVE MACHINE 3 FROM BUS 253028 [09GRNVIL 69.000] REMOVE MACHINE 4 FROM BUS 253028 [09GRNVIL 69.000]
DAY_11	OPEN BRANCH FROM BUS 253055 [09NORMAN 138.00] TO BUS 253054 [09NORMAN 69.000] CKT 1
OUTAGE_18A	DISCONNECT BRANCH FROM BUS 253046 [09MIAMI 138.00] TO BUS 253056 [09NORTH 138.00] CKT 1
DAY_11	OPEN BRANCH FROM BUS 253055 [09NORMAN 138.00] TO BUS 253054 [09NORMAN 69.000] CKT 1
895_B2	OPEN BRANCH FROM BUS 253047 [09MIAMI 345.00] TO BUS 253069 [09SHELBY 345.00] CKT 1
764_B2_TOR92	OPEN BRANCH FROM BUS 242938 [05MARQUI 345.00] TO BUS 253038 [09KILLEN 345.00] CKT 1
899_B3	OPEN BRANCH FROM BUS 253029 [09GRNVIL 138.00] TO BUS 253028 [09GRNVIL 69.000] CKT 1
DAY_11	OPEN BRANCH FROM BUS 253055 [09NORMAN 138.00] TO BUS 253054 [09NORMAN 69.000] CKT 1

Table 1.22 Benchmark/Dispatch 1 Base Case Scenarios Voltage Violations – Bus Contingencies

Bus	Area	With the Plants				Impact	CONTINGENCY
		In-service		Deactivated			
		VCONT (PU)	VINIT (PU)	VCONT (PU)	VINIT (PU)	(PU)	
None							

Table 1.24 Benchmark/Dispatch 2 Base Case Scenarios Voltage Violations – Bus Contingencies

Bus	Area	With the Plants				Impact	CONTINGENCY
		In-service		Deactivated			
		VCONT (PU)	VINIT (PU)	VCONT (PU)	VINIT (PU)	(PU)	
253002 09AIRWAY 138.00	209 DAY	1.046	1.046	1.052	1.052	0.007	8106_C1_05HI
253007 09BELLBR 138.00	209 DAY	1.049	1.047	1.052	1.050	0.003	6924_C1_05CO
253017 09CROWN 138.00	209 DAY	1.051	1.051	1.052	1.052	0.001	7595_C1_05WY
253078 09SUGRCK 138.00	209 DAY	1.050	1.049	1.053	1.051	0.003	8106_C1_05HI
253107 09ALPHA 138.00	209 DAY	1.047	1.046	1.050	1.049	0.004	6924_C1_05CO

Table 1.25 Benchmark/Dispatch 2 Base Case Scenarios Contingency Description

Steady State Analysis

Contingency Labels	Contingency Descriptions
8106_C1_05HI	OPEN BRANCH FROM BUS 243019 [05HILLSB 138.00] TO BUS 253111 [09MIDDLE 138.00] CKT 1 OPEN BRANCH FROM BUS 253111 [09MIDDLE 138.00] TO BUS 253057 [09OHH 138.00] CKT 1
6924_C1_05CO	OPEN BRANCH FROM BUS 243259 [05CNTRVL 138.00] TO BUS 243262 [05COLLCO 138.00] CKT 1 OPEN BRANCH FROM BUS 243262 [05COLLCO 138.00] TO BUS 243310 [05HODGIN 138.00] CKT 1 OPEN BRANCH FROM BUS 243262 [05COLLCO 138.00] TO BUS 246963 [05WESLEZ 138.00] CKT 1 OPEN BRANCH FROM BUS 243262 [05COLLCO 138.00] TO BUS 250106 [08TODHJT 138.00] CKT 1
7595_C1_05WY	OPEN BRANCH FROM BUS 244179 [WYTHE1EQ 999.00] TO BUS 242858 [05WYTHE1 138.00] CKT 1 OPEN BRANCH FROM BUS 244179 [WYTHE1EQ 999.00] TO BUS 244176 [WYTHE 1 69.000] CKT 1 OPEN BRANCH FROM BUS 244179 [WYTHE1EQ 999.00] TO BUS 244175 [WYTHE 1 34.500] CKT 1 OPEN BRANCH FROM BUS 242684 [05J.FERR 138.00] TO BUS 242760 [05PROGPK 138.00] CKT 1 OPEN BRANCH FROM BUS 242760 [05PROGPK 138.00] TO BUS 242858 [05WYTHE1 138.00] CKT 1 OPEN BRANCH FROM BUS 242858 [05WYTHE1 138.00] TO BUS 242859 [05WYTHE2 138.00] CKT Z1 OPEN BRANCH FROM BUS 242858 [05WYTHE1 138.00] TO BUS 244174 [WYTHE L 34.500] CKT 1 OPEN BRANCH FROM BUS 244158 [BLAND 69.000] TO BUS 244176 [WYTHE 1 69.000] CKT 1 OPEN BRANCH FROM BUS 244162 [BYLLESBY 69.000] TO BUS 244176 [WYTHE 1 69.000] CKT 1 OPEN BRANCH FROM BUS 244164 [CLIFFVIE 69.000] TO BUS 244176 [WYTHE 1 69.000] CKT 1 OPEN BRANCH FROM BUS 244172 [LEEHIGHW 34.500] TO BUS 244175 [WYTHE 1 34.500] CKT 1
8106_C1_05HI	OPEN BRANCH FROM BUS 243019 [05HILLSB 138.00] TO BUS 253111 [09MIDDLE 138.00] CKT 1 OPEN BRANCH FROM BUS 253111 [09MIDDLE 138.00] TO BUS 253057 [09OHH 138.00] CKT 1
6924_C1_05CO	OPEN BRANCH FROM BUS 243259 [05CNTRVL 138.00] TO BUS 243262 [05COLLCO 138.00] CKT 1 OPEN BRANCH FROM BUS 243262 [05COLLCO 138.00] TO BUS 243310 [05HODGIN 138.00] CKT 1 OPEN BRANCH FROM BUS 243262 [05COLLCO 138.00] TO BUS 246963 [05WESLEZ 138.00] CKT 1 OPEN BRANCH FROM BUS 243262 [05COLLCO 138.00] TO BUS 250106 [08TODHJT 138.00] CKT 1

Table 1.26 Benchmark/Dispatch 1 Base Case Scenarios Voltage Violations – Tower Contingencies

Bus	Area	With the Plants				Impact	CONTINGENCY
		In-service		Deactivated			
		VCONT (PU)	VINIT (PU)	VCONT (PU)	VINIT (PU)	(PU)	
242666 05HAZELH 138.00	205 AEP	1.042	0.997	1.104	1.002	0.062	416
242679 05INGSTR 138.00	205 AEP	1.042	0.997	1.104	1.002	0.062	416
242721 05MORGAN 138.00	205 AEP	1.023	0.996	1.081	1.002	0.058	416
253017 09CROWN 138.00	209 DAY	1.051	1.051	1.051	1.051	0.000	416
250025 08FLDMN1 138.00	212 DEO&K	0.934	0.963	0.918	0.952	-0.016	C5 CIRCUIT54
250026 08FLDMN2 138.00	212 DEO&K	0.934	0.963	0.918	0.952	-0.016	C5 CIRCUIT54
250094 08RMNTN1 138.00	212 DEO&K	0.922	0.959	0.905	0.950	-0.016	C5 CIRCUIT54
250095 08RMNTN2 138.00	212 DEO&K	0.922	0.959	0.905	0.950	-0.016	C5 CIRCUIT54
250142 08WARDSC 138.00	212 DEO&K	0.927	0.960	0.911	0.950	-0.016	C5 CIRCUIT54

Table 1.27 Benchmark/Dispatch 1 Base Case Scenarios Contingency Description

Steady State Analysis

[illegible]

Steady State Analysis

Contingency Labels	Contingency Descriptions
C5 CIRCUIT54	OPEN BRANCH FROM BUS 250075 [08MTGRY1 138.00] TO BUS 250076 [08MTGRY2 138.00] CKT Z1 OPEN BRANCH FROM BUS 250029 [08FOSTER 138.00] TO BUS 250075 [08MTGRY1 138.00] CKT 1 OPEN BRANCH FROM BUS 250076 [08MTGRY2 138.00] TO BUS 250094 [08RMNTN1 138.00] CKT 1 OPEN LINE FROM BUS 250157 [08CORNTN 138.00] TO BUS 250004 [08CRNEL1 138.00] CKT 1 OPEN LINE FROM BUS 250157 [08CORNTN 138.00] TO BUS 250100 [08SMRSD1 138.00] CKT 1 OPEN LINE FROM BUS 250004 [08CRNEL1 138.00] TO BUS 250005 [08CRNEL4 138.00] CKT Z1 OPEN LINE FROM BUS 250004 [08CRNEL1 138.00] TO BUS 252117 [CORNELL1 12.470] CKT 1 OPEN LINE FROM BUS 250005 [08CRNEL4 138.00] TO BUS 252118 [CORNELL4 12.470] CKT 1

Table 1.28 Benchmark/Dispatch 2 Base Case Scenarios Thermal Loading Violations – Tower Contingencies

Bus	Area	With the Plants				Impact	CONTINGENCY
		In-service		Deactivated			
		VCONT (PU)	VINIT (PU)	VCONT (PU)	VINIT (PU)	(PU)	
253002 09AIRWAY 138.00	209 DAY	1.045	1.046	1.052	1.052	0.008	638
253007 09BELLBR 138.00	209 DAY	1.046	1.047	1.050	1.050	0.004	638
253017 09CROWN 138.00	209 DAY	1.051	1.051	1.052	1.052	0.001	7592
253026 09GREENE 138.00	209 DAY	1.048	1.046	1.052	1.049	0.003	C5-TWL-SR065
253078 09SUGRCK 138.00	209 DAY	1.048	1.049	1.052	1.051	0.004	638
253107 09ALPHA 138.00	209 DAY	1.048	1.046	1.051	1.049	0.003	C5-TWL-SR065

Table 1.29 Benchmark/Dispatch 2 Base Case Scenarios Contingency Description

Contingency Labels	Contingency Descriptions
638	OPEN BRANCH FROM BUS 242528 [05SPORN 345.00] TO BUS 248005 [06KYGER 345.00] CKT 1 OPEN BRANCH FROM BUS 242528 [05SPORN 345.00] TO BUS 248005 [06KYGER 345.00] CKT 2
638	OPEN BRANCH FROM BUS 242528 [05SPORN 345.00] TO BUS 248005 [06KYGER 345.00] CKT 1 OPEN BRANCH FROM BUS 242528 [05SPORN 345.00] TO BUS 248005 [06KYGER 345.00] CKT 2
7592	OPEN BRANCH FROM BUS 242684 [05J.FERR 138.00] TO BUS 242760 [05PROGPK 138.00] CKT 1 OPEN BRANCH FROM BUS 242684 [05J.FERR 138.00] TO BUS 242859 [05WYTHE2 138.00] CKT 1
C5-TWL-SR065	DISCONNECT BRANCH FROM BUS 238623 [02CLARK 138.00] TO BUS 253026 [09GREENE 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238703 [02ESPRNG 138.00] TO BUS 238529 [02AIRPK+ 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238529 [02AIRPK+ 138.00] TO BUS 238623 [02CLARK 138.00] CKT 1 REDUCE BUS 238529 [02AIRPK+ 138.00] LOAD BY 100 PERCENT
638	OPEN BRANCH FROM BUS 242528 [05SPORN 345.00] TO BUS 248005 [06KYGER 345.00] CKT 1 OPEN BRANCH FROM BUS 242528 [05SPORN 345.00] TO BUS 248005 [06KYGER 345.00] CKT 2
C5-TWL-SR065	DISCONNECT BRANCH FROM BUS 238623 [02CLARK 138.00] TO BUS 253026 [09GREENE 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238703 [02ESPRNG 138.00] TO BUS 238529 [02AIRPK+ 138.00] CKT 1 DISCONNECT BRANCH FROM BUS 238529 [02AIRPK+ 138.00] TO BUS 238623 [02CLARK 138.00] CKT 1 REDUCE BUS 238529 [02AIRPK+ 138.00] LOAD BY 100 PERCENT

The voltage violations in the tables above represent the worst violation for the contingency listed in the companion table under Contingency Description. What this means is that any regulating transformer tap adjustment and switching in of additional reactive shunt compensation to remove these voltage violations will also take care of all other contingencies that cause a voltage violation on these monitored system buses at an impact level below what is presented in these tables. Thus, these voltage solutions should solve all conditions that may cause a voltage violation.

Appendix A includes the listing of the subsystem description data file *.sub, contingency description data file *.con and monitored element description data file *.mon used in the AC contingency analysis performed for the Benchmark and Dispatches 1 and 2 used in this analysis.

2.2 Results of the AC Contingency Analysis

Tables 1.6 through 1.29 indicate that thermal loading violations in the post-contingency state for the Dispatch 2 scenario results in a slightly lower number of violations than in the Dispatch 1 scenario. Thus, the transmission upgrades that can take care of these violations will use the results obtained with the Dispatch 2 base case scenario.

No thermal loading violations were found in the DP&L operating region due to single, multiple bus or tower contingencies. The control areas that are adversely affected by the deactivation of generation are DEO&K, AEP, OVEC and FE. The DEO&K 138 kV network shows the largest number of thermal loading violations, and the 138 kV network in AEP, OVEC and FE show a small number of thermal loading violations.

Transmission line thermal overloads are relieved with transmission upgrades that include a combination of a new 345/138 kV transformer substation and the building of several 138 kV transmission lines and re-dispatch of generation for thermal overloads observed in the DEO&K's 138 kV network.

Transformer overloads are observed in 345/138 kV and 138/69 kV transformers. These overloads can be relieved with transmission upgrades that include the addition of an identical transformer operating in parallel with the existing transformers.

The list of transmission upgrades includes:

1. 6 new 138/69 kV substations;
2. 1 new 345/138 kV substation; and
3. 3 new 138 kV overhead transmission lines. Two short lines with a combined estimated length of 3.0 miles and one line of an estimated length of 70 miles.

The preliminary estimated cost of all these transmission upgrades is as follows:

1. Total estimated cost for the 138/69 kV substations: \$48M. The estimated cost per substation used in the calculation is \$8 million.
2. Total estimated cost for the 345/138 kV substation: \$13 million. The estimated cost per substation used in the calculation is \$13 million.

Steady State Analysis

3. Total estimated cost to construct the 138 kV overhead transmission lines: \$51 million.
The estimated cost per mile used in the calculation is \$0.7 million/mile.

Thus, the total cost for all transmission upgrades is \$112 million.

The estimated total cost of for the 138 kV lines includes the cost for conductors, right of way, towers, shield wires, insulators and other materials. The dollar figure was obtained from PJM's 2011 Interconnection Training Program. Since the cost estimate is based on 2011 figures, it is conservative.

The estimated total cost for the 345/138 kV and 138/69 kV substations includes a three phase autotransformer, three circuit breakers for the high voltage winding, three circuit breakers for the low voltage winding, the control house, relays, etc. The estimates were provided by DP&L.

Section

3

System Frequency Response Evaluation

3.1 Background

Frequency

In 2011, the Department of Energy issued a report on frequency instability problems in North America. That report stated: "Alternating current power transmission and distribution systems in the United States operate at a nominal (target) frequency of 60 Hz. Large deviations from this frequency can cause network instability, and even small deviations can adversely affect sensitive end-use devices. Frequency deviations commonly result from a mismatch between energy supply and demand on a power network. If supply is insufficient to meet demand, the system frequency will decrease; if supply exceeds demand, frequency will increase." Frequency Instability Problems in North American Interconnections, U.S. Department of Energy (May 1, 2011) ("DOE Report, Executive Summary"), p. 5 (copy attached at Ex.1, Appendix B).

Causes of Frequency Decline

"Over the past decade, the North American Electric Reliability Corporation (NERC) has observed an increase in frequency stability problems. For example, *frequency response* in the Eastern Interconnection has deteriorated significantly over this period, so that progressively smaller power disturbances are able to induce significant frequency deviations." DOE Report, Executive Summary, p. 5. The most significant contributing factor is the interconnection's moment of inertia. "The moment of inertia, or rotational inertia, is the rotational analog to mass. Power systems with multiple smaller turbine generators on-line (i.e., a primarily distributed generation system) have less rotational inertia than systems with fewer but larger turbine generators (i.e., a more centralized generation system), giving the

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System Frequency Response Evaluation

more distributed system less kinetic energy immediately available to mitigate frequency changes. Furthermore, as more non-rotating (photovoltaic, fuel cell) and slowly rotating (wind) generators come on line, the kinetic energy per unit of generating capacity available to the overall power system to stabilize frequency decreases." DOE Report, Executive Summary, p. 5.

The generator units are bidding power and price in the ancillary services market, but they do not bid technical characteristics. The ancillary market is cleared such that minimum cost service is provided, but this does not ensure that the power supplied for ancillary services has the optimal technical characteristics. Consequently, selecting providers of ancillary services in this manner does not necessarily ensure that the system will respond to disturbances as desired.

"While the technical implementation of frequency control is directly responsible for an interconnection's frequency stability, the policy, i.e., the standards and regulations have both direct and indirect effects on the ability to implement the technical control." DOE Report, Executive Summary at 26.

Recent private investment has been "in smaller, more distributed generation, which tends to provide fewer frequency stability benefits than larger plants. The higher reliability of smaller distributed units is not counterbalanced by the possible detrimental effects on grid frequency stability. The ideal system component for effecting primary control is a (or a limited number of) large baseload unit(s) with a considerable moment of inertia in order to absorb and arrest the perturbation to the overall power system. Such a need is best served by coal-fired power plants, since other operational constraints keep nuclear plants from accepting primary governor control." DOE Report, Executive Summary at p. 6.

NERC Report

In December 2015, a NERC task force issued a report, highlighting this issue. The report states "that the North American Bulk Power System (BPS) is undergoing a significant change in the mix of generation resources and the subsequent transmission expansion. Driven by a combination of factors, the rate of this transformation in certain regions is impacting planning and operating of the BPS. For example, environmental regulations are contributing to the acceleration of a significant amount of conventional coal-fired generation retirements while renewable portfolio standards and other factors are driving the development of Variable Energy Resources (VERs). This has resulted in new generation being primarily natural gas fired and an increase in the penetration of wind and solar resources. At the same time, load participation in system operations is increasing through demand response and distributed generation. These changes in the generation resource mix and technologies are altering the operational characteristics of the grid and will challenge system planners and operators to maintain reliability, thereby raising issues that need to be further examined. More specifically:

- **Impact of Retirements:** Conventional units such as coal plants provide frequency support services as a function of their large spinning generators and governor control settings along with reactive support for voltage control. Power system operators use these services to plan and operate reliably under a variety of system conditions, generally without the concern of having too few of these services available.
 - **Replacement Resources:** As the generation resource mix evolves, the reliability of the electric grid depends on the operating characteristics of the replacement resources. Gas-fired
-

conventional units, Variable Energy Resources, energy storage, and other resources are equipped to provide similar reliability services; however, the functionality may not always be installed or made available due to costs or market rules. The controllability of new generator and load resources to maintain the balance between load and generation, especially during ramping periods, is necessary to ensure reliability.

• **Resource Capability and Characteristics:** The reliability of the BPS depends on the operating characteristics of the replacement resources. Merely having available generation capacity does not equate to having the necessary reliability services or ramping capability to balance generation and load. It is essential for the electric grid to have resources with the capability to provide sufficient amounts of these services and maintain system balance." Essential Reliability Services Task Force Measures Framework Report, NERC (December 2015), p. iv ("NERC Report") (copy attached at Ex.2, Appendix B).

NERC further concluded: "**Frequency** - The frequency within an interconnection will immediately fall upon the loss of a major element, requiring a very fast response from some resources to slow the rate of fall, a fast increase in power output (or decrease in power consumption) to stop the fall and stabilize the frequency, then a more prolonged contribution of additional power (or reduced load) to compensate for the lost units and bring system frequency back to the normal level. The task force recommends measures to track the minimum frequency and frequency response following the observed contingency events, track and project the levels of conventional synchronous inertia for each balancing area and the interconnection as a whole, and track and project the initial frequency deviation in the first half-second following the largest contingency event for each interconnection.

Rotating turbine generators and motors that are synchronously connected to the system store kinetic energy that, during contingency events, is released to the system (also called inertial response). Inertial response provides an important contribution to reliability in the initial moments following a generation or load trip event: determining the rate of change of frequency. In response to a sudden loss of generation, kinetic energy will automatically be extracted from the rotating synchronized machines on the interconnection, causing the machines to slow down and frequency to decline. The amount of inertia depends on the number and size of generators and motors synchronized to the system, and it determines the rate of frequency decline. Greater inertia reduces the initial rate of change of frequency, giving more time for primary frequency response to fully deploy and arrest frequency decay above under-frequency load shed set points.

Ramping – Ramping is related to frequency, but more in an “operations as usual” sense rather than after an event. Changes in the amount of non-dispatchable resources, system constraints, load behaviors and the generation mix can impact the ramp rates needed to keep the system in balance and restore system frequency back to its nominal operating value (60 Hz).

Voltage – Voltage must be controlled to protect the system and move power where it is needed. This control tends to be more local in nature, such as at individual transmission substations, in sub-areas of lower voltage transmission nodes and the distribution system. Ensuring sufficient voltage control and “stiffness” of the system is important both for normal operations and for events impacting normal operations (i.e., disturbances)." NERC Report, pp. v-vi.

"The ability to control the production and absorption of reactive power for the purposes of maintaining desired voltages is critical to the reliable and efficient operation of the power system. Unlike frequency response, which primarily pertains to large regions, voltage issues tend to be local and generally require responses from generators at the appropriate locations or remedial actions such as the installation of static or dynamic reactive resources, addition of series compensation, use of reliability out-of-merit resources, etc." NERC Report, p. 16.

3.2 Evaluation of System Frequency Response

The effect on frequency response due to the retirement of the selected coal-fired generation considered in this study was evaluated. The system frequency includes the inertial and governing system response. The inertial response is the initial response of the system to a MW imbalance between system generation and load. The power system uses the kinetic energy stored in the generating unit rotor inertias (generator + prime mover + rotating excitation systems) to make up for the mismatch between generation and load. Larger system inertia will lead to a smaller rate at which system frequency deviates from its steady state operating value (60.0 Hz). Thus, reducing system inertia results in system frequency changing at a faster rate and a larger min/max value before the system governing response reverses its trend.

The total kinetic energy loss due to the retirement of the selected generation considered in this study is estimated at 33.815 GJ. This rotating kinetic energy can be expressed in terms of an equivalent inertia constant equal to 3.44 MW-s/ MVA of total nameplate rating of the deactivated generation which amounts to 9834 MVA.

MVA (one million Volt-Ampere) is a measure of apparent power in alternating current systems and is used to indicate the ability of synchronous generators to carry load without overheating and damaging the insulation of their stator and field windings, and because manufacturers of this equipment does not know in advance the power factor at which it will be operated synchronous generators are rated in MVA not in MW. MW (one million W) is a measure of the active power in alternating current systems and is used to indicate the ability of synchronous generators to deliver energy that produces useful work. In a power plant, the MW capacity is specified by the prime mover (i.e., turbine) MW rating. Thus, the maximum MW output supplied by a synchronous generator is limited by the prime mover rating.

The system governing response includes the damping effect of the frequency sensitive connected load and the response of the prime movers' speed governor operating on a droop control mode. In low frequency system events, speed governor response is observed only in those generating units with an operating speed governor and available spinning reserve. In high frequency system events, speed governor response is observed in all generating units with an operating speed governor regardless of whether spinning reserve is available or not.

Two operating scenarios, summer peak and spring light load, were studied. PJM provided two dynamic simulations set-ups 2019 Summer Peak and 2019 Spring Light Load with all generating units selected for deactivation on line. These base case scenarios were modified to create two base cases where all selected generation to be deactivated is off-line. Thus, four operating scenarios were used for the analysis, 2019 Summer Peak and 2019 Spring Light load with and without the generating units considered for retirement in the study.

The dynamic simulation tool used in the analysis was the Siemens PTI PSS[®]E version 32.2. The step size used for the numerical integration employed in the dynamic simulation was $\frac{1}{4}$

of cycle (0.0041667 s). The simulation option "Network frequency dependence" was enabled to account for the dependency of the connected load to changes in system frequency, i.e., load governing effect. Generating units output variables such as rotor angle, active and reactive power output, prime mover mechanical power, rotor speed deviation and network buses voltage and frequency deviation were specified in the dynamic data set-ups to evaluate the primary frequency response of the PJM's on-line generation to large active power imbalance events.

3.3 Results of System Frequency Response Analysis

The system frequency response was evaluated by means of a large active power imbalance caused by the tripping of a large generating unit. The tripping of generation causes a drop in frequency driven by the imbalance between system generation and load. Since immediately after the loss of generation system load exceeds on-line generation, the energy to bring about a balance between these two quantities comes from the inertial energy stored in the rotors of the on-line generation. Thus, the initial rate of decay in frequency is dependent on the inertia available in the network. The smaller the inertia, the steeper the rate of change and hence the deeper the nadir (its lowest point) of the system frequency response will be.

Five cases, where on-line generation is tripped, were selected to perform this evaluation. The five cases are listed below.

1. Unit #1 at the D. C. Cook Power Plant (AEP - Area 205, nameplate rating 1280 MVA.) Dispatched at 987.5 MW in Summer Peak and 935.7 MW in Spring Light Load Scenarios.
2. Unit #2 at the East Bend Power Plant (DEO&K – Area 212, nameplate rating 818 MVA.) Dispatched at 581 MW in Summer Peak and 510 MW in Spring Light Load Scenarios.
3. Unit #1 at the Davis-Besse Power Plant (FE – Area 202, nameplate rating 1068 MVA.) Dispatched at 867 MW in Summer Peak and 851 MW in Spring Light Load Scenarios.
4. Unit #2 at the Byron Power Plant (CE – Area 222, nameplate rating 1361 MVA.) Dispatched at 1160 MW in Summer Peak and 1200 MW in Spring Light Load Scenarios.
5. Units #1 and #2 at the Harrison Power Station (AP – Area 201, combined nameplate rating 1580 MVA.) Dispatched at 1272 MW in Summer Peak and 1081 MW in Spring Light Load Scenarios.

In all 5 cases, there is no loss of synchronism for all on-line generating units in the study area. Thus, the system is rotor angle stable for all large power imbalance events selected for this assessment.

The case that results in the lowest system frequency nadir, Case #5, is shown in Figure 3.1 below. This case is for the 2019 Summer Peak scenario with and without the generating units considered to be retired in the study. The nadir takes place at a frequency of 59.977 Hz (frequency drop of about 23 mHz) at the 500 kV bus CRNBRY in FE with all units considered for retirement out of service. Also, the initial rate of decay is steeper for the scenario with the

System Frequency Response Evaluation

deactivated units not in service. Thus, deactivation of the generating units considered in this study has an adverse effect on the system frequency response, particularly its inertial response. However, the overall frequency response, as observed in the Eastern Interconnection, is within the range of expected normal performance. It must be emphasized though that the steady state droop in most of the turbine/governor dynamic models used in this evaluation tends to be overstated. This means that dynamic simulations using these models will show a more aggressive response than what it is expected to be found in field recordings of similar events.

System Frequency Response Evaluation



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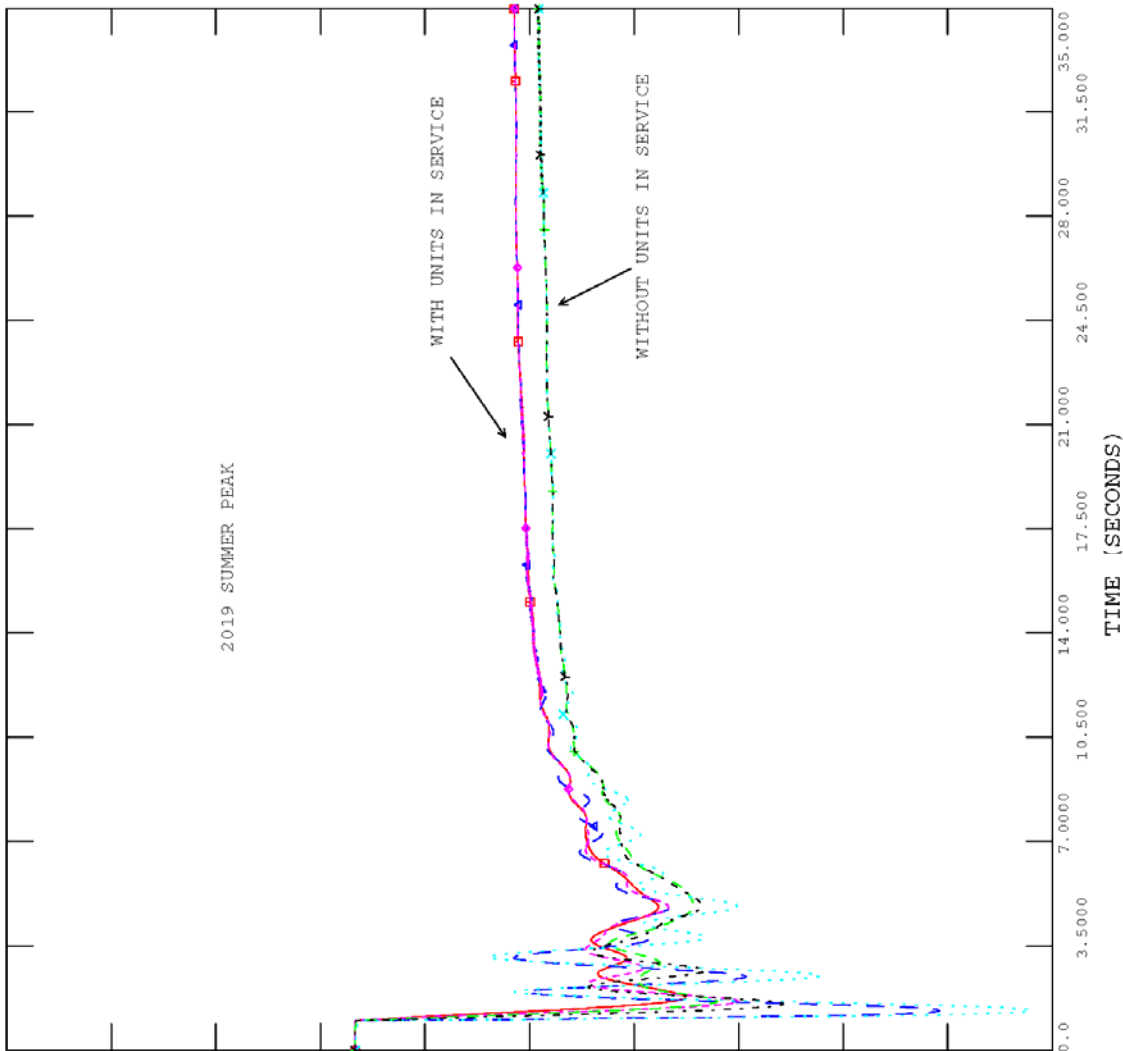


Figure 3.1 Bus Frequency in Hz - Loss of Harrison Units #1 and #2 – 2019 Summer Peak Scenario

Use of renewable energy resources such as wind and solar will not improve significantly the system frequency response since they do not contribute to the total inertial energy required to

System Frequency Response Evaluation

arrest the decline in frequency caused by under-frequency events. Its impact is mostly on the Under-frequency Load Shedding Protection System (UFLS) settings which are used as a second line of defense against large active power imbalances in power systems.

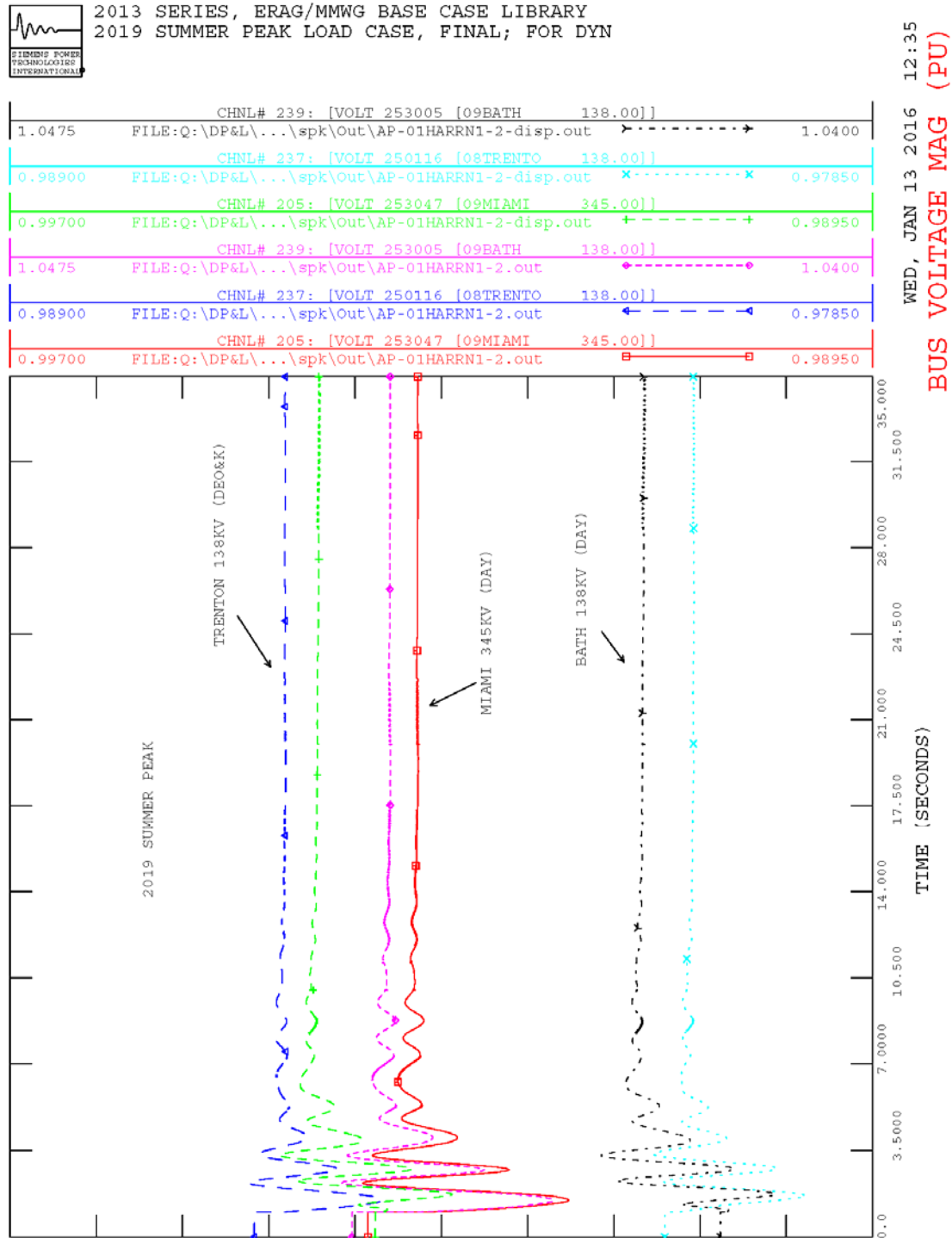


Figure 3.2 Bus Voltage Magnitude in Per Unit - Loss of Harrison Units #1 and #2 – 2019 Summer Peak Scenario

Figure 3.2 shows the voltage profile at various buses in the 345 kV and 138 kV networks of the study area following the loss of the Harrison units #1 and #2. Voltage recovers in about 10 seconds after the inception of the event and it settles to a new steady state value. Similar results are observed in all five cases for both operating scenarios, 2019 Summer Peak and 2019 Spring Light Load. Thus, voltage recovery response to under-frequency events is within expected emergency operational performance.

The loss of primary frequency response capability (inertial and system governing responses) resulting from the retirement of generating units with large inertias and active speed governors has a negative effect on the ability of balancing authorities to maintain interconnection frequency and hence ensure the reliability and security of the electric grid.

Section

4

Conclusions

The results of the steady state analysis and system frequency response evaluation from the system impact study on generating unit retirements in the DP&L and neighboring areas show the following:

1. The operating scenario Dispatch 2 was selected for determining the required transmission upgrades because it exhibits the lower number of thermal overloads and voltage violations after applying all contingencies considered in this study. This redispatch scenario includes available generation from Allegheny Power, First Energy, American Electric Power, Duke Energy Ohio & Kentucky, Commonwealth Energy, Pennsylvania Power and Light and Dominion Virginia Power that replaces the power from the retired generation.
2. All thermal overloads occurred in the 138 kV networks of DEO&K, FE, OVEC and AEP.
3. All voltage violations occurred in the 138 kV networks of DAY, and AEP
4. Transmission upgrades and redispatch of generation in the affected areas would be required to mitigate thermal overloads. To mitigate voltage violations, adjustment of taps in voltage regulating transformers and adjustment of reactive power resources would be required.
5. At least 10 transmission upgrades would be required to mitigate the thermal overloads, including three (3) new 138 kV transmission lines for a total of 73 miles, one new 345/138 kV substation and 6 new 138/69 kV transformers to be installed in existing 138/69 kV substations. The total estimated cost for the required transmission upgrades is \$112 million.
6. The system inertial response would be adversely affected by the generating unit retirements. This also has an adverse effect on the operation of the underfrequency load shedding system (UFLS) of the affected areas.
7. In addition to the frequency support that conventional resources provide, conventional resources also provide dynamic reactive support of local voltages and stability; these are very important, but not directly quantifiable.

FERC/NERC cannot order building conventional generating capacity, which provides frequency support, and dynamic reactive support for local voltages; therefore, it is important to preserve existing resources.

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Case No(s). 16-0395-EL-SSO, 16-0396-EL-ATA, 16-0397-EL-AAM

Summary: Application Application of The Dayton Power and Light Company for Approval of Its Electric Security Plan (Volume 2 of 8 - Testimony - Witnesses Adams, Brown, Collier, and Grande-Moran electronically filed by Mr. Charles J. Faruki on behalf of The Dayton Power and Light Company