

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY

CASE NO. 18-1875-EL-GRD

18-1876-EL-WVR

18-1877-EL-AAM

Distribution Modernization Plan

**SCHEDULES
AND
WORKPAPERS**

Order Case No. 15-1830-EL-AIR

Line 28 / Line 31

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Grid Modernization R&D Asset Summary

Data: Actual			Schedule A	
Type of Filing: Original			Page 2 of 4	
Work Paper Reference No(s): None			Witness Responsible: Robert J. Adams	
Line No.	Major Program	Description	Balance at 10/31/2018	Source
(A)	(B)	(C)	(D)	(E)
1		Grid Modernization R&D Asset Balance	\$11,977,233	Balance at 10/31/2018
2		Consultant Costs	\$7,926,940	Balance at 10/31/2018
3		Other Expense	\$4,050,292	Balance at 10/31/2018

The Dayton Power and Light Company
Case No. 18-____-EL-GRD
Grid Modernization Rider
Grid Modernization R&D Asset Summary

Data: Actual		Witness Responsible: Robert J. Adams									Schedule A
Type of Filing: Original											Page 3 of 4
Work Paper Reference No(s): None											
Line	No.	Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Source	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)		
1	Grid Modernization R&D Asset (Consultant)	\$7,926,940	\$6,794,520	\$5,662,100	\$4,529,680	\$3,397,260	\$2,264,840	\$1,132,420	Schedule A-4, Pg 1 Line 2		
2	Amorization Term										
3	Depreciation Expense	\$1,132,420	\$1,132,420	\$1,132,420	\$1,132,420	\$1,132,420	\$1,132,420	\$1,132,420	Line 1 / Line 2		
4	After Tax ROR	8.58%	8.58%	8.58%	8.58%	8.58%	8.58%	8.58%	Schedule A-4, Line 1		
5	CAT	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	Company Records		
6											
7	Revenue Requirement (Consultant)	\$1,815,496	\$1,718,334	\$1,621,173	\$1,524,011	\$1,426,849	\$1,329,688	\$1,232,526	Line 1 + Line 3		
8											
9	GridMod R&D Asset (Other)	\$4,050,292	\$3,471,679	\$2,893,066	\$2,314,453	\$1,735,840	\$1,157,226	\$578,613	Schedule A-4, Pg 1 Line 3		
10	Annual Expense	\$578,613	\$578,613	\$578,613	\$578,613	\$578,613	\$578,613	\$578,613	Line 9 / Line 2		
11	CAT	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	<u>1.0026</u>	Company Records		
12									Line 10 * Line 11		
13	Revenue Requirement (Other)	\$580,118	\$580,118	\$580,118	\$580,118	\$580,118	\$580,118	\$580,118			
14											
15	Total Revenue Requirement	\$2,395,613	\$2,298,452	\$2,201,290	\$2,104,128	\$2,006,967	\$1,909,805	\$1,812,644	Line 7 + Line 13		

The Dayton Power and Light Company

Case No. 18-1875-EL-GRD

Distribution Modernization Plan

Rate of Return Calculation

Schedule A

Page 4 of 4

Witness Responsible: Robert J. Adams

Line No.	Description (B)	Total (C)	Cost (D)	Weighted Cost (E)	Source (F)
1	Common Equity	47.52%	9.99%	4.75%	Stipulation Case No. 15-1830-EL-AIR
2					
3	Long-Term Debt	52.48%	4.80%	2.52%	Stipulation Case No. 15-1830-EL-AIR
4				7.27%	Sum lines 1-3
5					
6	Effective Tax Rate			21.31%	Company Records
7	Commercial Activities Tax (CAT)			0.26%	Company Records
8					
9	Rate of Return (Pre Tax)			8.56%	[(Line 1) / (1 - Line 6)] + Line 3
10	Rate of Return (Pre Tax with CAT)			8.58%	Line 9 * (1 / 1 - Line 7)

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Customer Impacts

Schedule E													
Page 1 of 2													
Witness Responsible: Robert J. Adams													
Line No.	Level of Demand (kW)	Level of Usage (kWh)	Year 1		Year 2		Year 3		Year 4		Year 5		(M)
			(S)	(%)	(S)	(%)	(S)	(%)	(S)	(%)	(S)	(%)	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	
Class Description													
1 Residential													
2	0	500	\$1.23	2.03%	\$2.12	3.42%	\$2.17	3.39%	\$1.19	1.80%	\$0.79	1.17%	
3	0	750	\$1.61	1.85%	\$2.79	3.15%	\$2.84	3.10%	\$1.57	1.66%	\$1.04	1.08%	
4	0	1,000	\$1.99	1.77%	\$3.46	3.02%	\$3.51	2.98%	\$1.95	1.61%	\$1.28	1.04%	
5	0	1,500	\$2.76	1.69%	\$4.78	2.88%	\$4.86	2.85%	\$2.70	1.54%	\$1.78	1.00%	
6	0	2,500	\$4.29	1.62%	\$7.44	2.77%	\$7.57	2.74%	\$4.19	1.48%	\$2.76	0.96%	
7	0	5,000	\$8.13	1.58%	\$14.06	2.68%	\$14.34	2.66%	\$7.93	1.44%	\$5.23	0.93%	
8 Secondary Single Phase													
9	5	750	\$2.30	2.22%	\$3.99	3.77%	\$4.06	3.70%	\$2.25	1.98%	\$1.48	1.27%	
10	10	1,500	\$3.50	1.84%	\$6.07	3.13%	\$6.18	3.09%	\$3.43	1.66%	\$2.25	1.07%	
11	25	5,000	\$7.11	1.42%	\$12.31	2.42%	\$12.54	2.40%	\$6.95	1.30%	\$4.58	0.85%	
12	50	15,000	\$13.12	1.03%	\$22.72	1.77%	\$23.15	1.77%	\$12.82	0.97%	\$8.45	0.63%	
13 Secondary Three Phase													
14	5	1,500	\$2.90	1.63%	\$5.01	2.78%	\$5.11	2.76%	\$2.83	1.49%	\$1.86	0.96%	
15	25	5,000	\$7.71	1.51%	\$13.34	2.57%	\$13.59	2.55%	\$7.52	1.38%	\$4.96	0.90%	
16	50	25,000	\$13.72	0.72%	\$23.75	1.25%	\$24.19	1.25%	\$13.40	0.69%	\$8.83	0.45%	
17	200	125,000	\$49.78	0.56%	\$86.21	0.96%	\$87.80	0.97%	\$48.63	0.53%	\$32.05	0.35%	
18	500	200,000	\$121.92	0.81%	\$211.11	1.38%	\$215.02	1.39%	\$119.10	0.76%	\$78.49	0.50%	
19 Primary													
20	50	20,000	\$23.71	1.36%	\$41.06	2.33%	\$41.82	2.32%	\$23.17	1.26%	\$15.26	0.82%	
21	200	75,000	\$47.10	0.80%	\$81.55	1.38%	\$83.06	1.39%	\$46.01	0.76%	\$30.32	0.50%	
22	500	250,000	\$93.86	0.52%	\$162.52	0.90%	\$165.54	0.91%	\$91.69	0.50%	\$60.43	0.33%	
23	2500	1,000,000	\$405.61	0.55%	\$702.35	0.95%	\$715.36	0.96%	\$396.24	0.52%	\$261.13	0.34%	
24	10000	5,000,000	\$1,574.70	0.45%	\$2,726.68	0.77%	\$2,777.22	0.78%	\$1,538.29	0.43%	\$1,013.80	0.28%	
25 Primary Substation													
26	3000	1,000,000	\$171.35	0.23%	\$296.71	0.40%	\$302.20	0.40%	\$167.40	0.22%	\$110.31	0.15%	
27	5000	3,000,000	\$265.27	0.13%	\$459.33	0.23%	\$467.85	0.23%	\$259.14	0.13%	\$170.78	0.08%	
28	10000	5,000,000	\$500.07	0.14%	\$865.90	0.25%	\$881.95	0.25%	\$488.51	0.14%	\$321.94	0.09%	
29	25000	10,000,000	\$1,204.46	0.17%	\$2,085.61	0.29%	\$2,124.25	0.30%	\$1,176.62	0.16%	\$775.44	0.11%	
30	50000	25,000,000	\$2,378.45	0.14%	\$4,118.44	0.24%	\$4,194.76	0.24%	\$2,323.47	0.13%	\$1,531.26	0.09%	
31 High Voltage													
32	1000	500,000	\$73.91	0.22%	\$127.98	0.37%	\$130.35	0.38%	\$72.20	0.21%	\$47.59	0.14%	
33	5000	2,500,000	\$73.91	0.04%	\$127.98	0.08%	\$130.35	0.08%	\$72.20	0.04%	\$47.59	0.03%	
34	20000	10,000,000	\$73.91	0.01%	\$127.98	0.02%	\$130.35	0.02%	\$72.20	0.01%	\$47.59	0.01%	
35	60000	30,000,000	\$73.91	0.00%	\$127.98	0.01%	\$130.35	0.01%	\$72.20	0.00%	\$47.59	0.00%	
36 Street Lighting													
37	0	50	\$0.62	4.10%	\$1.06	6.73%	\$1.09	6.49%	\$0.60	3.35%	\$0.39	2.11%	
38	0	500	\$1.07	2.10%	\$1.84	3.53%	\$1.88	3.49%	\$1.05	1.88%	\$0.68	1.20%	
39	0	2,000	\$2.57	1.51%	\$4.45	2.57%	\$4.53	2.55%	\$2.51	1.38%	\$1.65	0.89%	
40	0	5,000	\$5.57	1.36%	\$9.66	2.33%	\$9.83	2.32%	\$5.44	1.26%	\$3.59	0.82%	
41 Private Outdoor Lighting													
42	3600 Lumen LED	1 Lamp	\$0.67	5.56%	\$1.16	9.11%	\$1.18	8.50%	\$0.65	4.31%	\$0.43	2.74%	
43	8400 Lumen LED	1 Lamp	\$0.67	5.04%	\$1.16	8.30%	\$1.18	7.80%	\$0.65	3.99%	\$0.43	2.54%	

The Dayton Power and Light Company

Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Customer Impacts

Schedule E Page 2 of 2 Witness Responsible: Robert J. Adams																						
Line No.	Level of Demand (kW)	Level of Usage (kWh)	Year 6				Year 7				Year 8				Year 9				Year 10			
			(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)						
Class Description																						
1 Residential																						
2	0	500				\$0.68	1.00%	(\$0.05)	-0.07%	(\$0.45)	-0.65%	(\$1.02)	-1.48%	(\$0.79)	-1.16%							
3	0	750				\$0.89	0.92%	(\$0.07)	-0.07%	(\$0.59)	-0.60%	(\$1.33)	-1.36%	(\$1.05)	-1.09%							
4	0	1,000				\$1.10	0.88%	(\$0.08)	-0.06%	(\$0.73)	-0.58%	(\$1.65)	-1.31%	(\$1.30)	-1.05%							
5	0	1,500				\$1.52	0.84%	(\$0.11)	-0.06%	(\$1.01)	-0.56%	(\$2.29)	-1.26%	(\$1.79)	-1.00%							
6	0	2,500				\$2.37	0.82%	(\$0.17)	-0.06%	(\$1.57)	-0.54%	(\$3.56)	-1.22%	(\$2.79)	-0.97%							
7	0	5,000				\$4.49	0.79%	(\$0.32)	-0.06%	(\$2.99)	-0.52%	(\$6.73)	-1.18%	(\$5.29)	-0.94%							
8 Secondary Single Phase																						
9	5	750				\$1.27	1.08%	(\$0.09)	-0.08%	(\$0.85)	-0.72%	(\$1.91)	-1.61%	(\$1.49)	-1.27%							
10	10	1,500				\$1.94	0.92%	(\$0.14)	-0.07%	(\$1.29)	-0.60%	(\$2.90)	-1.36%	(\$2.28)	-1.08%							
11	25	5,000				\$3.92	0.72%	(\$0.28)	-0.05%	(\$2.61)	-0.48%	(\$5.89)	-1.07%	(\$4.63)	-0.85%							
12	50	15,000				\$7.23	0.54%	(\$0.51)	-0.04%	(\$4.83)	-0.36%	(\$10.86)	-0.80%	(\$8.54)	-0.63%							
13 Secondary Three Phase																						
14	5	1,500				\$1.60	0.82%	(\$0.11)	-0.06%	(\$1.07)	-0.54%	(\$2.40)	-1.22%	(\$1.88)	-0.97%							
15	25	5,000				\$4.25	0.76%	(\$0.30)	-0.05%	(\$2.83)	-0.50%	(\$6.38)	-1.13%	(\$5.01)	-0.90%							
16	50	25,000				\$7.56	0.38%	(\$0.53)	-0.03%	(\$3.05)	-0.25%	(\$11.36)	-0.57%	(\$8.92)	-0.45%							
17	200	125,000				\$27.46	0.30%	(\$1.96)	-0.02%	(\$18.30)	-0.20%	(\$41.22)	-0.45%	(\$32.39)	-0.35%							
18	500	200,000				\$67.23	0.42%	(\$4.78)	-0.03%	(\$44.82)	-0.28%	(\$100.96)	-0.63%	(\$79.31)	-0.50%							
19 Primary																						
20	50	20,000				\$13.08	0.69%	(\$0.93)	-0.05%	(\$8.72)	-0.46%	(\$19.63)	-1.04%	(\$15.43)	-0.82%							
21	200	75,000				\$25.97	0.42%	(\$1.85)	-0.03%	(\$17.31)	-0.28%	(\$39.00)	-0.63%	(\$30.64)	-0.50%							
22	500	250,000				\$51.76	0.28%	(\$3.68)	-0.02%	(\$34.51)	-0.19%	(\$77.72)	-0.42%	(\$61.06)	-0.33%							
23	2500	1,000,000				\$223.69	0.29%	(\$15.91)	-0.02%	(\$149.11)	-0.19%	(\$335.90)	-0.44%	(\$263.85)	-0.35%							
24	10000	5,000,000				\$868.41	0.24%	(\$61.79)	-0.02%	(\$578.86)	-0.16%	(\$1,304.07)	-0.36%	(\$1,024.33)	-0.28%							
25 Primary Substation																						
26	3000	1,000,000				\$94.50	0.12%	(\$6.72)	-0.01%	(\$62.99)	-0.08%	(\$141.91)	-0.19%	(\$111.46)	-0.15%							
27	5000	3,000,000				\$146.29	0.07%	(\$10.41)	-0.01%	(\$97.51)	-0.05%	(\$219.68)	-0.11%	(\$172.56)	-0.08%							
28	10000	5,000,000				\$275.78	0.08%	(\$19.62)	-0.01%	(\$183.83)	-0.05%	(\$414.12)	-0.12%	(\$325.30)	-0.09%							
29	25000	10,000,000				\$664.24	0.09%	(\$47.27)	-0.01%	(\$442.76)	-0.06%	(\$997.46)	-0.14%	(\$783.50)	-0.11%							
30	50000	25,000,000				\$1,311.67	0.08%	(\$93.32)	-0.01%	(\$874.34)	-0.05%	(\$1,969.68)	-0.11%	(\$1,547.17)	-0.09%							
31 High Voltage																						
32	1000	500,000				\$40.76	0.12%	(\$2.90)	-0.01%	(\$27.17)	-0.08%	(\$61.21)	-0.18%	(\$48.08)	-0.14%							
33	5000	2,500,000				\$40.76	0.02%	(\$2.90)	0.00%	(\$27.17)	-0.02%	(\$61.21)	-0.04%	(\$48.08)	-0.03%							
34	20000	10,000,000				\$40.76	0.01%	(\$2.90)	0.00%	(\$27.17)	0.00%	(\$61.21)	-0.01%	(\$48.08)	-0.01%							
35	60000	30,000,000				\$40.76	0.00%	(\$2.90)	0.00%	(\$27.17)	0.00%	(\$61.21)	0.00%	(\$48.08)	0.00%							
36 Street Lighting																						
37	0	50				\$0.34	1.80%	(\$0.02)	-0.10%	(\$0.23)	-1.20%	(\$0.51)	-2.66%	(\$0.40)	-2.14%							
38	0	500				\$0.59	1.03%	(\$0.04)	-0.07%	(\$0.39)	-0.67%	(\$0.89)	-1.53%	(\$0.69)	-1.21%							
39	0	2,000				\$1.42	0.76%	(\$0.10)	-0.05%	(\$0.95)	-0.51%	(\$2.12)	-1.13%	(\$1.68)	-0.91%							
40	0	5,000				\$3.08	0.70%	(\$0.22)	-0.05%	(\$2.05)	-0.46%	(\$4.62)	-1.04%	(\$3.62)	-0.82%							
41 Private Outdoor Lighting																						
42	3600 Lumen LED	1 Lamp				\$0.37	2.29%	(\$0.03)	-0.18%	(\$0.24)	-1.46%	(\$0.56)	-3.40%	(\$0.43)	-2.70%							
43	8400 Lumen LED	1 Lamp				\$0.37	2.13%	(\$0.03)	-0.17%	(\$0.24)	-1.35%	(\$0.56)	-3.16%	(\$0.43)	-2.50%							

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Advanced Meter Infrastructure (AMI) Capital

Data: Forecasted
Type of Filing: Original
Work Paper Reference Not(s):

WP-1.1

Page 1 of 2

Witness Responsible: Kathryn Storm

Line No.	Description	FERC Account	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Yr Total	Source
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
1	Summary of AMI Investment													
2	Residential AMI Meters		0	23,176	110,084	110,084	110,084	110,084	0	0	0	0	463,511	DP&L Estimate
3	C&I AMI Meters		0	2,052	9,749	9,749	9,749	9,749	0	0	0	0	41,047	DP&L Estimate
4	Polyphase C&I AMI Meters		0	836	3,970	3,970	3,970	3,970	0	0	0	0	16,717	DP&L Estimate
5	Other C&I Meters		0	17	79	79	79	79	0	0	0	0	334	DP&L Estimate
6	Cost per Residential AMI Meter (Hardware)		\$0	\$82	\$82	\$82	\$82	\$82	\$0	\$0	\$0	\$0	\$0	Estimate based on Vendor Quote
7	Total Residential Meter Hardware Costs		\$0	\$1,900,395	\$9,026,877	\$9,026,877	\$9,026,877	\$9,026,877	\$0	\$0	\$0	\$0	\$38,007,902	Line 2 * Line 6
8	Cost per C&I AMI Meter (Hardware)		\$0	\$169	\$169	\$169	\$169	\$169	\$0	\$0	\$0	\$0	\$0	Estimate based on Vendor Quote
9	Total C&I Meter Hardware Costs		\$0	\$347,048	\$1,648,477	\$1,648,477	\$1,648,477	\$1,648,477	\$0	\$0	\$0	\$0	\$6,940,957	Line 3 * Line 8
10	Installation Cost per Residential Meter		\$0	\$20	\$20	\$20	\$20	\$20	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
11	Total Residential C&I Meter Install Costs		\$0	\$506,072	\$2,403,840	\$2,403,840	\$2,403,840	\$2,403,840	\$0	\$0	\$0	\$0	\$10,121,433	(Line 2 + Line 3) * Line 10
12	Cost Per Polyphase C&I AMI Meter (Hardware)		\$0	\$225	\$225	\$225	\$225	\$225	\$0	\$0	\$0	\$0	\$0	Estimate based on Vendor Quote
13	Total Power Quality Meter Hardware Costs		\$0	\$188,066	\$893,315	\$893,315	\$893,315	\$893,315	\$0	\$0	\$0	\$0	\$3,761,325	Line 4 * Line 12
14	Installation Cost per Polyphase C&I & Other Meter		\$0	\$124	\$124	\$124	\$124	\$124	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
15	Total Polyphase C&I AMI Meter Installation Cost		\$0	\$103,361	\$490,966	\$490,966	\$490,966	\$490,966	\$0	\$0	\$0	\$0	\$2,067,224	Line 4 * Line 14
16	Cost Per Other Meter (Hardware)		\$0	\$225	\$225	\$225	\$225	\$225	\$0	\$0	\$0	\$0	\$0	Estimate based on Vendor Quote
17	Total Other Meter Hardware Costs		\$0	\$3,758	\$17,848	\$17,848	\$17,848	\$17,848	\$0	\$0	\$0	\$0	\$75,150	Line 5 * Line 16
18	Total Other Meter Installed Costs		\$0	\$2,065	\$9,809	\$9,809	\$9,809	\$9,809	\$0	\$0	\$0	\$0	\$41,302	Line 5 * Line 14
19	Total AMI Head End Hardware/Software	362-7	\$578,000	\$489,984	\$500,176	\$510,579	\$521,199	\$532,040	\$543,107	\$554,403	\$565,935	\$577,706	\$5,173,130	Estimate based on Vendor Quote
20	Total AMI Field Equipment Cost	362-7	\$2,691,780	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,691,780	Estimate based on Vendor Quote
21														
22	Total AMI Meter Investment		\$3,069,780	\$3,540,749	\$14,991,308	\$15,001,712	\$15,012,332	\$15,023,173	\$543,107	\$554,403	\$565,935	\$577,706	\$68,880,204	Sum Lines 7,9,11,13,15,17,18,20,21
23														
24	Outsourced Consulting and Engineering Costs		\$0	\$895,584	\$1,241,807	\$1,267,637	\$1,294,004	\$1,160,692	\$0	\$0	\$0	\$0	\$5,859,723	DP&L Estimate
25														
26	AMI AFUDC Costs	362-7	\$239,443	\$38,219	\$39,014	\$39,825	\$40,654	\$41,499	\$42,362	\$43,243	\$44,143	\$45,061	\$613,463	DP&L Estimate
27														
28	Smart Meter AFUDC Costs	370	\$0	\$0	\$0	\$1,229,184	\$1,231,241	\$1,220,842	\$0	\$0	\$0	\$0	\$3,681,267	DP&L Estimate
29														
30	Smart Meter Cost of Existing Equipment		\$0	\$965,432	\$4,585,802	\$4,585,802	\$4,585,802	\$4,585,802	\$0	\$0	\$0	\$0	\$19,308,641	
31														
32	Total Incremental AMI Investment	370	\$3,309,223	\$4,474,551	\$16,272,129	\$17,538,358	\$17,578,229	\$17,446,206	\$585,469	\$597,647	\$610,078	\$622,768	\$79,034,657	Line 23 + Line 25 + Line 27 + Line 28

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Advanced Meter Infrastructure (AMI) O&M

Data: Forecasted

Type of Filing: Original

Work Paper Reference No(s):

WP-1.1
Page 2 of 2
Witness Responsible: Kathryn Storm

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr. Total Sum (D)-(M) (N)	Source (O)
1	Summary of AMI O&M Costs													
2	Annual Software Maintenance Fee of AMI Head-End	921	\$0	\$97,997	\$100,035	\$102,116	\$104,240	\$106,408	\$108,621	\$110,881	\$113,187	\$115,541	\$959,026	DP&L Estimate
3	Annual Infrastructure O&M Costs	592 & 597	\$134,589	\$137,388	\$140,246	\$143,163	\$146,141	\$149,181	\$152,284	\$155,451	\$158,685	\$161,985	\$1,479,114	DP&L Estimate
4	Total Equipment Maintenance		\$134,589	\$235,385	\$240,281	\$245,279	\$250,381	\$255,589	\$260,905	\$266,332	\$271,872	\$277,527	\$2,438,140	Line 2 + Line 3
5														
6	Increased Call Center Costs	903												
7	Additional calls due to AMI/Smart Meters	903	0	5,216	24,776	24,776	24,776	24,776	0	0	0	0	0	DP&L Estimate
8	Cost per call		\$5.00	\$5.10	\$5.21	\$5.32	\$5.43	\$5.54	\$5.66	\$5.78	\$5.90	\$6.02	\$6.02	Company Records
9	Total additional Call Center Costs		\$0	\$26,623	\$129,089	\$131,774	\$134,515	\$137,313	\$0	\$0	\$0	\$0	\$559,315	Line 7 * Line 8
10														
11	Total AMI O&M		\$134,589	\$262,008	\$369,370	\$377,053	\$384,896	\$392,902	\$260,905	\$266,332	\$271,872	\$277,527	\$2,997,454	Line 4 + Line 9

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Meter Data Management System (MDMS) Capital and O&M

Data: Forecasted

Type of Filing: Original

Work Paper Reference No(s):

WP-1.2

Page 1 of 1

Witness Responsible: Kathryn Storm

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of MDMS Capital Costs													
2	Solution Implementation Costs													
3	Hardware Costs	362	\$ 2,283,537	\$ 5,960,565	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,694,101	DP&L Estimate
4	Software Costs	303	\$ 200,000	\$ 612,480	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 812,480	DP&L Estimate
5	AFUDC		\$ 400,000	\$ 1,224,960	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,624,960	DP&L Estimate
6	Total MDMS Capital Costs	362 / 303	\$ 112,458	\$ 537,810	\$ 667,744	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,318,011	DP&L Estimate
7			\$ 2,995,995	\$ 8,335,814	\$ 1,117,744	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,449,553	Sum of lines 2-5
8	Summary of MDMS O&M Costs													
9	Hardware & Software Maintenance		\$ -	\$ -	\$ 129,876	\$ 132,577	\$ 135,335	\$ 138,150	\$ 141,023	\$ 143,956	\$ 146,951	\$ 150,007	\$ 1,117,874	DP&L Estimate
10	Maintenance Labor (DP&L only)		\$ -	\$ -	\$ 416,813	\$ 425,483	\$ 434,333	\$ 443,367	\$ 452,589	\$ 462,003	\$ 471,612	\$ 481,422	\$ 3,587,622	DP&L Estimate
11	Total MDMS O&M Costs	935	\$ -	\$ -	\$ 546,689	\$ 558,060	\$ 569,667	\$ 581,517	\$ 593,612	\$ 605,959	\$ 618,563	\$ 631,429	\$ 4,705,496	Sum of lines 9-10

The Dayton Power and Light Company
Case No. 18-187S-EL-GRD
Distribution Modernization Plan
Customer Service System (CIS) Replacement Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-1.3
Page 1 of 1
Witness Responsible: Antonio Narvaez

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of CIS Capital Costs													
2	CSS Modifications	303	\$ 1,113,637	\$ 1,805,477	\$ 777,230	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,696,344	DP&L Estimate
3	CIS Replacement - Software Selection	303	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000	DP&L Estimate
4	CIS Replacement - SI Selection	303	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000	DP&L Estimate
5	CIS Replacement - BI Selection	303	\$ -	\$ 1,020,800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,020,800	DP&L Estimate
6	CIS Replacement - Hardware/Infrastructure (\$)	362	\$ 2,107,776	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,107,776	DP&L Estimate
7	CIS Replacement - Upfront Software Licensing (\$)	303	\$ 3,161,664	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,161,664	DP&L Estimate
8	CIS Replacement - Internal Labor - Capital Costs	303	\$ 6,118,800	\$ 3,958,458	\$ 83,154	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,160,412	DP&L Estimate
9	CIS Replacement - External Labor - Capital Costs	303	\$ 15,212,205	\$ 15,219,849	\$ 1,719,323	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 32,151,376	DP&L Estimate
10	Total CIS Capital Costs	362 / 303	\$ 29,714,082	\$ 22,004,584	\$ 2,579,707	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 54,298,373	Sum of lines 2-9
11	Summary of CIS O&M Costs													
12	CIS Replacement - Ongoing Licensing		\$ -	\$ 710,034	\$ 724,803	\$ 739,878	\$ 755,268	\$ 770,977	\$ 787,014	\$ 803,384	\$ 820,094	\$ 837,152	\$ 6,948,604	DP&L Estimate
13	Ongoing Labor - Operations & Maintenance		\$ -	\$ -	\$ 521,016	\$ 1,063,707	\$ 1,085,832	\$ 1,108,417	\$ 1,131,472	\$ 1,155,007	\$ 1,179,031	\$ 1,203,555	\$ 8,448,038	DP&L Estimate
14	Total CIS O&M Costs	935	\$ -	\$ 710,034	\$ 1,245,819	\$ 1,803,585	\$ 1,841,100	\$ 1,879,395	\$ 1,918,486	\$ 1,958,391	\$ 1,999,125	\$ 2,040,707	\$ 15,396,642	Sum of lines 13-14

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Meter Asset Management System (MAMS) Capital and O&M

Data Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-1.4
Page 1 of 1
Witness Responsible: Kathryn Storm

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of MAMS Capital Costs													
2	Solution Implementation Costs	303	\$ 752,828	\$ 768,487	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,521,316	DP&L Estimate
3	Total MAMS Capital Costs		\$ 752,828	\$ 768,487	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,521,316	Line 2
4														
5	Summary of MAMS O&M Costs													
6	Software Maintenance		\$ -	\$ -	\$ 104,203	\$ 106,371	\$ 108,583	\$ 110,842	\$ 113,147	\$ 115,501	\$ 117,903	\$ 120,356	\$ 896,905	DP&L Estimate
7	Total MAMS O&M Costs	935	\$ -	\$ -	\$ 104,203	\$ 106,371	\$ 108,583	\$ 110,842	\$ 113,147	\$ 115,501	\$ 117,903	\$ 120,356	\$ 896,905	Line 6

WP-2.1
Page 1 of 2
Witness Responsible: Don Gebel

Line No.	Description	FERC Account	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Yr. Total Sum (D)-(M)	Source
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
1	Summary of DA Infrastructure Investment													
2	Number of Pole Upgrades and Installations		0	0	156	168	156	160	188	0	0	0	828	DP&L Estimate
3	Cost per Pole Upgrade and Installation		\$0	\$0	\$2,605	\$2,659	\$2,715	\$2,771	\$2,829	\$0	\$0	\$0	\$0	DP&L Estimate
4	Total Cost of Pole Upgrades and Installations	364	\$0	\$0	\$406,393	\$446,757	\$423,474	\$443,367	\$531,792	\$0	\$0	\$0	\$2,251,783	Line 2 * Line 3
5														
6	Number of Smart Switches (Reclosers) Deployed		0	0	109	108	108	108	107	0	0	0	540	DP&L Estimate
7														DP&L Estimate
8	Cost per Smart Switch (Recloser)		\$0	\$0	\$77,110	\$78,714	\$80,352	\$82,023	\$83,729	\$0	\$0	\$0	\$0	DP&L Estimate
9	Total DA Smart Switches (Reclosers) Cost	365	\$0	\$0	\$8,405,035	\$8,501,146	\$8,677,970	\$8,858,471	\$8,958,999	\$0	\$0	\$0	\$43,401,620	Line 6 * Line 8
10														
11	DA Smart Switches (Reclosers) - Combined Underground & Overhead		0	0	39	42	39	40	47	0	0	0	207	DP&L Estimate
12														DP&L Estimate
13	Cost per Smart Switch (Recloser)	365	\$0	\$0	\$11,462	\$11,701	\$11,944	\$12,193	\$12,446	\$0	\$0	\$0	\$0	DP&L Estimate
14	Total DA Smart Switches (Reclosers) - Combined Underground & Overhead		\$0	\$0	\$447,032	\$491,433	\$465,822	\$487,704	\$584,971	\$0	\$0	\$0	\$2,476,961	Line 11 * Line 13
15														
16	Number of Cap Banks Deployed		0	0	117	126	117	120	141	0	0	0	0	DP&L Estimate
17														DP&L Estimate
18	Cost per installed Capacitor Bank Control		\$0	\$0	\$24,741	\$25,256	\$25,781	\$26,317	\$26,865	\$0	\$0	\$0	\$0	DP&L Estimate
19	Total Cost of Capacitor Bank Controls	368	\$0	\$0	\$2,894,695	\$3,182,205	\$3,016,366	\$3,158,058	\$3,787,901	\$0	\$0	\$0	\$16,039,226	Line 16 * Line 18
20														
21	Voltage Regulator Banks Deployed		0.0	0.0	12.5	12.4	12.4	12.4	12.3	0.0	0.0	0.0	0.0	DP&L Estimate
22														DP&L Estimate
23	Cost per Voltage Regulator Bank		\$0	\$0	\$47,934	\$48,931	\$49,948	\$50,987	\$52,048	\$0	\$0	\$0	\$0	DP&L Estimate
24	Total Cost of Voltage Regulator Controls	368	\$0	\$0	\$600,846	\$607,717	\$620,358	\$633,261	\$640,447	\$0	\$0	\$0	\$3,102,629	Line 21 * Line 23
25														
26	Number of Single Phase Sensors Deployed		0	0	351	378	351	360	423	0	0	0	1,863	DP&L Estimate
27	Cost per Single Phase Sensor		\$0	\$0	\$1,563	\$1,596	\$1,629	\$1,663	\$1,697	\$0	\$0	\$0	\$0	DP&L Estimate
28	Total Cost of Single Phase Sensors	365	\$0	\$0	\$548,630	\$603,122	\$571,691	\$598,545	\$717,919	\$0	\$0	\$0	\$3,039,907	Line 26 * Line 27
29														
30	DA Cost of Existing Equipment (Net of Salvage Value)	368	\$0	\$0	\$208,777	\$205,839	\$174,553	\$163,042	\$173,916	\$0	\$0	\$0	\$926,127	DP&L Estimate
31														
32	Total DA Infrastructure Capital		\$0	\$0	\$13,302,631	\$13,832,379	\$13,775,681	\$14,179,407	\$15,222,030	\$0	\$0	\$0	\$70,312,127	Sum Lines 4, 9, 14, 19, 24, 28
33														
34														
35	Total Capitalized DA Investment with Cost of Existing Equipment		\$0	\$0	\$13,511,409	\$14,038,218	\$13,950,234	\$14,342,448	\$15,395,946	\$0	\$0	\$0	\$71,238,254	Line 30 + Line 32
*Capital Implementation Labor accounted for as combined effort under Substation Automation														

Line No.	Description	FERC Account	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D-M)	Source
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
1	DA O&M Summary													
2	Total DA Smart Switches (Relocators)		\$0	\$0	\$8,405,035	\$8,501,146	\$8,677,970	\$8,858,471	\$8,989,999	\$0	\$0	\$0	\$43,401,620	Pg. 1 Line 9
3	Total DA Smart Switches (Relocators) - Combined Underground & Overhead		\$0	\$0	\$4,471,032	\$4,591,433	\$4,652,822	\$4,827,704	\$5,084,971	\$0	\$0	\$0	\$24,719,940	Pg. 1 Line 9
4	Total Cost of Capacitor Bank Controls		\$0	\$0	\$2,894,695	\$3,182,205	\$3,016,366	\$3,158,038	\$3,787,901	\$0	\$0	\$0	\$16,039,226	Pg. 1 Line 10
5	Total Cost of Voltage Regulator Controls		\$0	\$0	\$607,717	\$620,358	\$633,261	\$640,441	\$640,441	\$0	\$0	\$0	\$3,035,629	Pg. 1 Line 24
6	Total DA Single Phase Sensor Cost		\$0	\$0	\$548,630	\$603,122	\$571,691	\$598,545	\$717,919	\$0	\$0	\$0	\$3,039,907	Pg. 1 Line 28
7	Total DA Equipment Costs		\$0	\$0	\$12,896,239	\$13,385,622	\$13,352,206	\$13,736,040	\$14,690,238	\$0	\$0	\$0	\$68,060,344	Sum Lines 2-6
8														
9	Cumulative DA Investment		\$0	\$0	\$12,896,239	\$26,281,861	\$39,634,067	\$53,370,106	\$68,060,344	\$68,060,344	\$68,060,344	\$68,060,344	\$680,060,344	Cumulative (D) through (M) of Line 7
10	Maintenance Cost (% of Cumulative Capital)		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	DP&E Estimate
11	Total DA Device Maintenance Costs	598	\$0	\$0	\$257,925	\$525,637	\$792,681	\$1,067,402	\$1,361,207	\$1,361,207	\$1,361,207	\$1,361,207	\$6,722,666	Line 9 * Line 10

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Type of Filing: Original
Work Paper Refer

WP-2.2
Page 1 of 1
Witness Responsible: Don Gebel

[illegible]

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Advanced Distribution Management System (ADMS) Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-2.3
Page 1 of 1
Witness Responsible: Don Gebble

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of ADMS Capital Costs													
2	Solution Implementation Costs		\$2,654,874	\$5,441,721	\$7,460,593	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,557,189	DP&L Estimate
3	Hardware Purchases	362	\$60,000	\$755,392	\$1,083,714	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,899,106	DP&L Estimate
4	Software Purchases	303	\$609,000	\$3,429,888	\$5,267,475	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,306,363	DP&L Estimate
5	AFUDC		\$144,770	\$909,388	\$1,676,159	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,730,317	DP&L Estimate
6	Total ADMS Capital Costs	362 / 303	\$3,468,645	\$10,536,389	\$15,487,941	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29,492,975	Sum of lines 2-5
7														
8	Summary of ADMS O&M Costs													
9	Hardware Maintenance		\$0	\$0	\$0	\$67,198	\$67,322	\$128,722	\$131,399	\$134,132	\$136,922	\$139,770	\$805,466	DP&L Estimate
10	Software Maintenance		\$0	\$0	\$622,302	\$744,382	\$759,865	\$775,670	\$791,804	\$808,274	\$825,086	\$842,248	\$6,169,632	DP&L Estimate
11	Maintenance Labor (DP&L)		\$0	\$0	\$0	\$1,799,217	\$1,836,640	\$1,874,842	\$1,913,839	\$1,953,647	\$1,994,283	\$2,035,764	\$13,408,232	DP&L Estimate
12	Total ADMS O&M Costs	935	\$0	\$0	\$622,302	\$2,610,796	\$2,663,827	\$2,779,235	\$2,837,043	\$2,896,053	\$2,956,291	\$3,017,782	\$20,383,329	Sum of lines 9-11

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Conservation Voltage Reduction (CVR) and Volt/VAR Optimization (VVO) Capital and O&M

Data: Forecasted

Type of Filing: Original

Work Paper Reference No(s):

WP-2.4

Page 1 of 1

Witness Responsible: Don Gebble

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of CVR/VVO Capital Costs													
2	Solution Implementation Costs		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
3	Hardware Deployment Labor	362	\$0	\$0	\$0	\$0	\$0	\$605,728	\$618,327	\$631,188	\$644,317	\$657,719	\$3,157,279	DP&L Estimate
4	Software Deployment (Module of ADMS)	303	\$0	\$0	\$0	\$0	\$0	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$1,500,000	DP&L Estimate
5	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
6	Total CVR/VVO IT Capital Costs	362 / 303	\$0	\$0	\$0	\$0	\$0	\$905,728	\$918,327	\$931,188	\$944,317	\$957,719	\$4,657,279	DP&L Estimate
7														Sum of lines 2-5
8	CVR/VVO Capacitor Banks													
9	Number of Cap Banks Deployed		0	0	0	0	0	52	52	52	52	52		DP&L Estimate
10	Cost per Cap Bank		\$0	\$0	\$0	\$0	\$0	\$26,317	\$26,865	\$27,423	\$27,994	\$28,576		DP&L Estimate
11	Total DA Capacitor Banks Cost	368	\$0	\$0	\$0	\$0	\$0	\$1,373,755	\$1,402,329	\$1,431,498	\$1,461,273	\$1,491,668	\$7,160,523	Line 9 * Line 10
12														
13	CVR/VVO Voltage Regulator Banks and Controls (with Communication Modules)													
14	Number of Controls Deployed		0	0	0	0	0	17	17	17	17	17		DP&L Estimate
15	Cost per Control		\$0	\$0	\$0	\$0	\$0	\$12,193	\$12,446	\$12,705	\$12,969	\$13,239		DP&L Estimate
16	Total CVR/VVO Controls Cost		\$0	\$0	\$0	\$0	\$0	\$212,151	\$216,564	\$221,068	\$225,667	\$230,360	\$1,105,810	Line 14 * Line 15
17	Voltage Regulator Banks Deployed		0	0	0	0	0	5	5	5	5	5		DP&L Estimate
18	Cost per Voltage Regulator Bank		\$0	\$0	\$0	\$0	\$0	\$50,987	\$52,048	\$53,130	\$54,235	\$55,364		DP&L Estimate
19	Total CVR/VVO Voltage Regulator Bank Cost		\$0	\$0	\$0	\$0	\$0	\$266,153	\$271,689	\$277,340	\$283,109	\$288,998	\$1,387,289	Line 17 * Line 18
20														
21	Total Voltage Regulator Banks and Controls Cost	368	\$0	\$0	\$0	\$0	\$0	\$478,304	\$488,253	\$498,409	\$508,776	\$519,358	\$2,493,099	Line 16 + Line 19
22														
23	Total CVR/VVO Capital Costs		\$0	\$0	\$0	\$0	\$0	\$2,757,788	\$2,808,909	\$2,861,095	\$2,914,366	\$2,968,744	\$14,310,902	Line 6 + Line 11 + Line 21
24														
25	Summary of CVR/VVO O&M Costs													
26	Solution Implementation Costs		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
27	Hardware Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
28	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$45,000	\$90,000	\$135,000	\$180,000	\$450,000	DP&L Estimate
29	Maintenance Labor (DP&L)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
30	Total CVR/VVO O&M Costs	935	\$0	\$0	\$0	\$0	\$0	\$0	\$45,000	\$90,000	\$135,000	\$180,000	\$450,000	Sum of lines 26-29

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Enterprise Asset Management (EAM) Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-2.5
Page 1 of 1
Witness Responsible: Kathryn Storm

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of EAM Capital Costs													
2	EAM Software Implementation Costs		\$260,000	\$1,531,200	\$1,563,049	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,354,249	DP&L Estimate
3	Hardware Costs - Ruggedized Laptops	362	\$1,350,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,350,000	DP&L Estimate
4	EAM Phase 2 Software Implementation Costs	303	\$0	\$510,400	\$521,016	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,031,416	DP&L Estimate
5	EAM Licensing		\$1,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000,000	DP&L Estimate
6	AFUDC		\$203,580	\$159,245	\$162,557	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$525,382	DP&L Estimate
7	Total EAM Capital Costs	362 / 303	\$2,813,580	\$2,200,845	\$2,246,622	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,261,047	Sum of lines 2-6
8														
9	Summary of EAM O&M Costs													
10	EAM Software Licensing Fee		\$95,000	\$301,136	\$307,400	\$313,794	\$320,320	\$326,983	\$333,784	\$340,727	\$347,814	\$355,049	\$3,042,007	DP&L Estimate
11	EAM Phase 2 Software Support		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
12	EAM Software Maintenance		\$0	\$0	\$0	\$101,052	\$103,154	\$105,300	\$107,490	\$109,726	\$112,008	\$114,338	\$753,067	DP&L Estimate
13	Ongoing Support Labor (DP&L Only)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
14	Total EAM O&M Costs	935	\$95,000	\$301,136	\$307,400	\$414,846	\$423,474	\$432,283	\$441,274	\$450,453	\$459,822	\$469,386	\$3,795,074	Sum of lines 10-13

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s):

Type of Filing: Original

Work Paper Reference No(s):

Page 1 of 1

Witness Responsible: Don Gebele

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The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Mobile Workforce Management System Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s):

WP-2.7
Page 1 of 1
Witness Responsible: Don Gebele

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of MWFM Capital Costs													
2	Hardware & Software Deployment Costs - Internal		\$479,666	\$0	\$0	\$874,267	\$892,451	\$0	\$0	\$0	\$0	\$0	\$2,246,384	DP&L Estimate
3	Hardware Costs (Field Devices & System Servers)	362	\$270,000	\$0	\$0	\$744,595	\$760,082	\$0	\$0	\$0	\$0	\$0	\$1,774,677	DP&L Estimate
4	Software Costs - MWFM System	303	\$200,000	\$0	\$0	\$425,483	\$434,333	\$0	\$0	\$0	\$0	\$0	\$1,059,816	DP&L Estimate
5	Software Implementation Costs - Vendor		\$0	\$0	\$0	\$638,224	\$651,499	\$0	\$0	\$0	\$0	\$0	\$1,289,723	DP&L Estimate
6	AFUDC		\$74,074	\$0	\$0	\$209,240	\$213,593	\$0	\$0	\$0	\$0	\$0	\$496,907	Sum of lines 2-6
7	Total MWFM Capital Costs	362 / 303	\$1,023,740	\$0	\$0	\$2,891,809	\$2,951,958	\$0	\$0	\$0	\$0	\$0	\$6,867,507	
8														
9	Summary of MWFM O&M Costs													
10	Post Deployment Labor		\$0	\$0	\$0	\$0	\$0	\$152,325	\$155,493	\$158,728	\$162,029	\$165,399	\$793,974	DP&L Estimate
11	Hardware Maintenance & Data - Field Devices		\$36,000	\$36,468	\$36,946	\$114,020	\$193,694	\$196,235	\$198,828	\$201,476	\$204,179	\$206,937	\$1,424,782	DP&L Estimate
12	Software Maintenance		\$40,000	\$40,832	\$41,681	\$133,066	\$230,156	\$234,944	\$239,830	\$244,819	\$249,911	\$255,109	\$1,710,349	DP&L Estimate
13	Total MWFM O&M Costs	935	\$76,000	\$77,300	\$78,627	\$247,086	\$423,850	\$583,503	\$594,152	\$605,022	\$616,119	\$627,446	\$3,929,105	Sum of lines 10-12

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Customer Education O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-3.1
Page 1 of 1
Witness Responsible: Tom Tatham

Line No.	Description	FERC Account	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Yr Total Sum (D)-(M)	Source
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
1	Summary of Customer Education O&M Costs													
2	Pre-Deployment Costs (Content Development)		\$700,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$700,000	DP&L Estimate
3	Ongoing Communication		\$0	\$1,117,776	\$1,163,429	\$1,064,239	\$916,442	\$935,504	\$0	\$0	\$0	\$0	\$5,197,391	DP&L Estimate
4	External Agency Support		\$575,000	\$280,720	\$286,559	\$611,631	\$298,604	\$304,815	\$0	\$0	\$0	\$0	\$2,357,329	DP&L Estimate
5	Labor & Training (DP&L)		\$62,318	\$63,615	\$64,938	\$66,289	\$67,667	\$69,075	\$0	\$0	\$0	\$0	\$393,901	DP&L Estimate
6	Total Customer Education O&M Costs	909	\$1,337,318	\$1,462,111	\$1,514,926	\$1,742,159	\$1,282,713	\$1,309,394	\$0	\$0	\$0	\$0	\$8,648,621	Sum of lines 2-5

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Customer ePortal / Mobile App Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-3.2
Page 1 of 1
Witness Responsible: Tom Tatham

Line No.	Description (B)	PERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr. Total Sum (D)-(M) (N)	Source (O)
1	Summary of Customer ePortal / Mobile App Capital Costs													
2	Initial Deployment - 3rd Party System (Portal App) and CRES Updates		\$0	\$1,531,200	\$1,250,439	\$159,556	\$162,875	\$0	\$0	\$0	\$0	\$0	\$3,104,070	DP&L Estimate
3	Enhancements to CRES Portal		\$0	\$0	\$0	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$250,000	DP&L Estimate
4	CRES Portal - TOU Integration		\$0	\$0	\$152,137	\$19,413	\$19,816	\$0	\$0	\$0	\$0	\$0	\$377,662	DP&L Estimate
5	Content Management System - Deployment		\$0	\$186,296	\$79,902	\$10,195	\$10,408	\$0	\$0	\$0	\$0	\$0	\$198,347	DP&L Estimate
6	Content Management System - Labor		\$0	\$97,842	\$0	\$0	\$0	\$2,216,835	\$2,262,945	\$0	\$0	\$0	\$4,479,779	DP&L Estimate
7	3rd Party Distribution Planning Portal Enhancements		\$0	\$459,098	\$843,564	\$908,950	\$976,691	\$997,006	\$1,017,744	\$1,038,913	\$1,060,522	\$1,082,581	\$8,385,068	DP&L Estimate
8	Software License (SaaS) Cost	303	\$0	\$2,274,436	\$2,326,042	\$1,398,114	\$1,169,789	\$3,213,841	\$5,280,688	\$1,038,913	\$1,060,522	\$1,082,581	\$16,844,926	Sum of lines 2-8
9	Total Customer ePortal / Mobile App Capital		\$0											
10														
11	Summary of Customer ePortal / Mobile App O&M Costs													
12	Annual License Fee		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
13	Hardware Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
14	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
15	Maintenance Labor (DP&L only) - Content Management System		\$0	\$17,864	\$32,824	\$35,368	\$38,004	\$38,795	\$39,602	\$40,425	\$41,266	\$42,124	\$326,272	DP&L Estimate
16	Total Customer ePortal / Mobile App O&M	935	\$0	\$17,864	\$32,824	\$35,368	\$38,004	\$38,795	\$39,602	\$40,425	\$41,266	\$42,124	\$326,272	Sum of lines 12-15

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Time of Use (TOU) Rate Structures Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s):

WP-3.3
Page 1 of 1
Witness Responsible: Tom Tatham

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of TOU Capital Costs													
2	Solution Implementation Costs		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
3	Hardware Purchases	362	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
4	Software Purchases	303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
5	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
6	Total TOU Capital Costs	362 / 303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Sum of lines 2-5
7														
8	Summary of TOU O&M Costs													
9	Pre-Deployment Costs ²		\$0	\$75,000	\$50,000	\$10,000	\$10,000	\$0	\$0	\$0	\$0	\$0	\$145,000	DP&L Estimate
10	Hardware Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
11	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
12	Maintenance Labor (DP&L)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
13	Total TOU O&M Costs	935	\$0	\$75,000	\$50,000	\$10,000	\$10,000	\$0	\$0	\$0	\$0	\$0	\$145,000	Sum of lines 9-12

²O&M cost reflects TOU-specific market research/focus groups

The Dayton Power and Light Company
Case No. 18-1875-EL-CRD
Distribution Modernization Plan
Prepay Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-3.4
Page 1 of 1
Witness Responsible: Tom Tatham

Line No.	Description	FERC Account	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Yr Total	Source
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
1	Summary of Prepay Capital Costs													
2	Solution Implementation Costs		\$0	\$0	\$0	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$250,000	DP&L Estimate
3	Hardware Purchases	362	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
4	Software Purchases	303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
5	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
6	Total Prepay Capital Costs	362 / 303	\$0	\$0	\$0	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$250,000	Sum of lines 2-5
7														
8	Summary of Prepay O&M Costs													
9	Focus Group Cost		\$50,000	\$50,000	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$150,000	DP&L Estimate
10	Maintenance Labor (3rd party)		\$0	\$0	\$0	\$0	\$0	\$10,000	\$69,738	\$134,650	\$168,718	\$168,718	\$551,844	DP&L Estimate
11	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
12	Maintenance Labor (DP&L)		\$0	\$0	\$0	\$0	\$0	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$1,400,000	DP&L Estimate
13	Total Prepay O&M Costs	935	\$50,000	\$50,000	\$50,000	\$0	\$0	\$290,000	\$349,738	\$414,650	\$448,718	\$448,718	\$2,101,844	Sum of lines 8-11

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Customer Service Functions (IVR, Chat, and Phone) Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-3.5
Page 1 of 1
Witness Responsible: Tom Tatham

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of Customer Service Functions Capital Costs													
2	Solution Implementation Costs		\$0	\$838,179	\$855,613	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,693,792	DP&L Estimate
3	Hardware Purchases	362	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
4	Hardware & Software Purchases	362 / 303	\$0	\$944,240	\$963,880	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,908,120	DP&L Estimate
5	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
6	Total Customer Service Functions Capital Costs	362 / 303	\$0	\$1,782,419	\$1,819,493	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,601,912	Sum of lines 2-5
7														
8	Summary of Customer Service Functions O&M Costs													
9	Solution Implementation Costs		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
10	Hardware Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
11	Software Maintenance		\$0	\$0	\$68,904	\$139,241	\$139,241	\$139,241	\$139,241	\$139,241	\$139,241	\$139,241	\$1,043,592	DP&L Estimate
12	Maintenance Labor (DP&L)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
13	Total Customer Service Functions O&M Costs	935	\$0	\$0	\$68,904	\$139,241	\$139,241	\$139,241	\$139,241	\$139,241	\$139,241	\$139,241	\$1,043,592	Sum of lines 9-11

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Customer Relationship Management (CRM) Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-3.6
Page 1 of 1
Witness Responsible: Tom Tatham

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr. Total Sum (D)-(M) (N)	Source (O)
1	Summary of CRM Capital Costs													
2	Solution Implementation Costs													
3	Hardware Purchases	362	\$0	\$1,777,902	\$1,814,883	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,592,785	DP&L Estimate
4	Software Purchases	303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
5	Software License (SaaS) Cost		\$0	\$0	\$0	\$893,514	\$912,099	\$931,071	\$950,437	\$970,206	\$990,386	\$1,010,986	\$6,658,698	DP&L Estimate
6	Total CRM Capital Costs	362 / 303	\$0	\$1,777,902	\$1,814,883	\$893,514	\$912,099	\$931,071	\$950,437	\$970,206	\$990,386	\$1,010,986	\$10,251,484	Sum of lines 2-5
7														
8	Summary of CRM O&M Costs													
9	Ongoing Labor		\$0	\$0	\$0	\$146,181	\$149,221	\$152,325	\$155,493	\$158,728	\$162,029	\$165,399	\$1,089,376	DP&L Estimate
10														
11	Total CRM O&M	935	\$0	\$0	\$0	\$146,181	\$149,221	\$152,325	\$155,493	\$158,728	\$162,029	\$165,399	\$1,089,376	Line 9

The Dayton Power and Light Company
Case No. 18-1875-EL-CRD
Distribution Modernization Plan
Distributed Energy Resources Management (DERM) Capital and O&M

Data Forecasted
Type of Filing: Original
Work Paper Reference No(s):

WP-4.1
Page 1 of 1
Witness Responsible: Kevin Hall

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of DERM Capital Costs													
2	Solution Implementation Costs		\$0	\$0	\$0	\$363,541	\$0	\$0	\$0	\$0	\$0	\$0	\$363,541	DP&L Estimate
3	Hardware Purchases	362	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
4	Hardware & Software Purchases	362 / 303	\$0	\$0	\$0	\$212,741	\$0	\$0	\$0	\$0	\$0	\$0	\$212,741	DP&L Estimate
5	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
6	Total DERM Capital Costs	362 / 303	\$0	\$0	\$0	\$576,283	\$0	\$0	\$0	\$0	\$0	\$0	\$576,283	Sum of lines 2-5
7														
8	Summary of DERM O&M Costs													
9	Post-Deployment Labor		\$0	\$0	\$0	\$66,289	\$67,667	\$69,075	\$70,512	\$71,978	\$73,475	\$75,004	\$493,999	DP&L Estimate
10	Software Maintenance		\$0	\$0	\$0	\$0	\$27,146	\$27,710	\$28,287	\$28,875	\$29,476	\$30,089	\$171,583	DP&L Estimate
11	Maintenance Labor (DP&L)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
12	Total DERM O&M Costs	592	\$0	\$0	\$0	\$66,289	\$94,813	\$96,785	\$98,798	\$100,853	\$102,951	\$105,093	\$665,582	Sum of lines 9-11

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Smart Community Demonstration Projects Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s):

WP-4.2
Page 1 of 1
Witness Responsible: Kevin Hall

Line No. (A)	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of Smart Community Demonstration Projects Capital Costs													
2	Community Solar Demonstration (Initial Demonstration and Expansion)	344	\$0	\$0	\$0	\$1,680,657	\$4,840,246	\$0	\$0	\$0	\$0	\$0	\$6,520,903	DP&L Estimate
3	Microgrid Demonstration	363	\$0	\$0	\$1,875,659	\$1,914,672	\$1,954,498	\$0	\$0	\$0	\$0	\$0	\$5,744,829	DP&L Estimate
4	Battery Storage (Initial Demonstration and Expansion)	363	\$0	\$0	\$0	\$2,169,962	\$13,693,365	\$0	\$0	\$0	\$0	\$0	\$15,863,327	DP&L Estimate
5	Total Smart Community Demonstration Projects Capital Costs	363/344	\$0	\$0	\$1,875,659	\$5,765,292	\$20,488,108	\$0	\$0	\$0	\$0	\$0	\$28,129,059	Sum of lines 2-4
6														
7	Summary of Smart Community Demonstration Projects O&M Costs													
8	Community Solar Demonstration (Initial Demonstration and Expansion)		\$0	\$0	\$0	\$8,939	\$44,528	\$72,279	\$73,782	\$75,317	\$76,883	\$78,483	\$430,210	DP&L Estimate
9	Battery Storage (Initial Demonstration and Expansion)		\$0	\$0	\$0	\$17,312	\$146,858	\$263,748	\$269,234	\$274,834	\$280,550	\$286,386	\$1,538,921	DP&L Estimate
10	Maintenance Labor (DP&L only)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
11	Total Smart Community Demonstration Projects O&M Costs	935	\$0	\$0	\$0	\$26,250	\$191,386	\$336,027	\$343,016	\$350,151	\$357,434	\$364,868	\$1,969,132	Sum of lines 8-10

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
EV Charging Infrastructure Capital and O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s):

WP-4.3
Page 1 of 1
Witness Responsible: Kevin Hall

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of EV Charging Infrastructure Capital Costs													
2	Solution Implementation Costs		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
3	Hardware Purchases 362		\$0	\$1,659,515	\$1,694,032	\$1,729,268	\$0	\$0	\$0	\$0	\$0	\$0	\$5,082,815	DP&L Estimate
4	Software Purchases 303		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
5	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
6	Total EV Charging Infrastructure Capital Costs 362 / 303		\$0	\$1,659,515	\$1,694,032	\$1,729,268	\$0	\$0	\$0	\$0	\$0	\$0	\$5,082,815	Sum of lines 2-5
7														
8	Summary of EV Charging Infrastructure O&M Costs													
9	Additional O&M Costs		\$0	\$0	\$158,000	\$208,000	\$258,000	\$291,920	\$297,992	\$304,190	\$310,517	\$316,976	\$2,145,595	DP&L Estimate
10	Hardware Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
11	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
12	Maintenance Labor (DP&L)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
13	Total EV Charging Infrastructure O&M Costs 592		\$0	\$0	\$158,000	\$208,000	\$258,000	\$291,920	\$297,992	\$304,190	\$310,517	\$316,976	\$2,145,595	Sum of lines 9-12

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Telecommunications Capital

Date: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-5
Page 1 of 2
Witness Responsible: Don Gebble

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr. Total Sum (D)-(M) (N)	Source (O)
Summary of Telecom Capital Investment														
1	Microwave Radio Upgrade													
2	Number of Radios		6	8	8	8	8	8	8	8	0	0	0	DP&L Estimate
3	Installed Cost per Radio		\$112,500	\$114,840	\$117,229	\$119,667	\$122,156	\$124,697	\$127,291	\$0	\$0	\$0	\$0	Vendor Quote
4	Total Microwave Radio Upgrade Cost	362-7	\$618,750	\$947,430	\$967,137	\$987,253	\$1,007,788	\$1,028,750	\$1,050,148	\$0	\$0	\$0	\$6,607,255	Line 2 * Line 3
5														
6	Router Replacement Cost													
7	Number of Routers		6	8	8	8	8	8	8	8	0	0	0	DP&L Estimate
8	Installed Cost per Router		\$22,500	\$22,968	\$23,446	\$23,933	\$24,431	\$24,939	\$25,458	\$0	\$0	\$0	\$0	Vendor Quote
9	Total Router Replacement Cost	362-7	\$123,750	\$189,486	\$195,427	\$197,451	\$201,558	\$205,750	\$210,050	\$0	\$0	\$0	\$1,321,451	Line 7 * Line 8
10														
11	Unlicensed Broadband to Substation													
12	Number of Substations to Receive Broadband		8	12	12	12	12	12	12	12	0	0	0	DP&L Estimate
13	Cost per Link		\$103,300	\$105,449	\$107,642	\$109,881	\$112,166	\$114,500	\$116,881	\$0	\$0	\$0	\$0	Vendor Quote
14	Cost per 120' Tower		\$100,000	\$102,080	\$104,203	\$106,371	\$108,583	\$110,842	\$113,147	\$0	\$0	\$0	\$0	Vendor Quote
15	Total Cost per Link	364	\$814,866	\$1,247,722	\$1,273,675	\$1,300,168	\$1,327,211	\$1,354,817	\$1,382,997	\$0	\$0	\$0	\$0	Line 12 * Line 13
16	Total Cost per 120' Tower		\$788,834	\$1,207,863	\$1,232,987	\$1,258,653	\$1,284,812	\$1,311,536	\$1,338,816	\$0	\$0	\$0	\$0	Line 12 * Line 14
17	Total Unlicensed Broadband to Substation Cost	362-7 / 364	\$1,603,700	\$2,455,585	\$2,506,662	\$2,558,800	\$2,612,023	\$2,666,553	\$2,721,813	\$0	\$0	\$0	\$17,124,937	Line 15 + Line 16
18														
19	Discrete Fiber Projects													
20	Discrete Fiber Project Cost	362-7	\$173,681	\$265,940	\$271,471	\$277,118	\$282,882	\$288,766	\$294,772	\$0	\$0	\$0	\$1,854,630	DP&L Estimate
21														
22	JMUX Replacement													
23	Total JMUX Replacement Cost	362-7	\$157,500	\$241,164	\$246,180	\$251,301	\$256,528	\$261,864	\$267,310	\$0	\$0	\$0	\$1,681,847	DP&L Estimate
24														
25	DA/SA/CVR/VVO Telecom Requirements													
26	Number of DA Base Stations		1.2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0.0	0.0	0.0	DP&L Estimate
27	Cost per DA Base Station		\$18,000	\$18,374	\$18,757	\$19,147	\$19,545	\$19,952	\$20,367	\$0	\$0	\$0	\$0	Vendor Quote
28	DA Base Station Cost		\$21,600	\$33,074	\$33,762	\$34,464	\$35,181	\$35,913	\$36,660	\$0	\$0	\$0	\$230,653	Line 26 * Line 27
29	Number of Remote DA Base Stations		1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	DP&L Estimate
30	Cost per Remote DA Base Station		\$6,000	\$6,125	\$6,252	\$6,382	\$6,515	\$6,651	\$6,789	\$0	\$0	\$0	\$0	Vendor Quote
31	DA Base Station Cost		\$6,000	\$9,187	\$9,378	\$9,573	\$9,772	\$9,976	\$10,185	\$0	\$0	\$0	\$64,070	Line 29 * Line 30
32	Total DA/SA/CVR/VVO Telecom Cost	362-7	\$27,600	\$42,261	\$43,140	\$44,037	\$44,953	\$45,888	\$46,843	\$0	\$0	\$0	\$294,724	Line 28 + Line 31
33														
34	Initial Deployment - Labor	362-7	\$2,293,553	\$1,980,260	\$1,944,157	\$1,984,595	\$1,965,937	\$2,089,045	\$2,132,497	\$0	\$0	\$0	\$14,390,027	DP&L Estimate
35														
36														
37	Total Telecom Capital Investment		\$4,998,516	\$6,122,127	\$6,172,174	\$6,300,555	\$6,371,669	\$6,586,416	\$6,723,414	\$0	\$0	\$0	\$43,274,871	Sum Lines 4, 9, 17, 20, 23, 32, 34

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Telecommunication O&M

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s):

WP-5
Page 2 of 2
Witness Responsible: Don Gebele

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Telecom O&M Summary													
2	Increased Maintenance Cost	598	\$0	\$0	\$0	\$0	\$0	\$0	\$306,061	\$312,427	\$318,926	\$325,559	\$1,262,973	DP&L Estimate
3														
4	License Cost	598	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29,969	\$29,969	DP&L Estimate
5														
6	Maintenance Labor (DP&L Only)	598	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$589,129	\$601,382	\$613,891	\$1,804,402	DP&L Estimate
7														
8														
9	Total Telecom O&M	598	\$0	\$0	\$0	\$0	\$0	\$0	\$306,061	\$901,556	\$920,308	\$969,419	\$3,097,344	Sum Lines 2, 4, 6

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Physical & Cyber Security Capital and O&M

Data: Forecasted

Type of Filing: Original

Work Paper Reference No(s):

WP-6

Page 1 of 1

Witness Responsible: Jeff Fuller

Line	No.	Description (B)	PERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1		Summary of Physical Security Capital Costs													
2		Solution Implementation Costs		\$68,077	\$69,493	\$70,939	\$72,414	\$73,920	\$75,458	\$0	\$0	\$0	\$0	\$430,302	DP&L Estimate
3	362	Hardware Purchases		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
4	303	Software Purchases		\$588,833	\$601,081	\$613,584	\$626,346	\$639,374	\$652,673	\$0	\$0	\$0	\$0	\$3,721,891	DP&L Estimate
5		Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
6		Total Physical Security Capital Costs	362 / 303	\$656,911	\$670,574	\$684,522	\$698,760	\$713,295	\$728,131	\$0	\$0	\$0	\$0	\$4,152,193	Sum of lines 2-5
7															
8		Summary of Cyber Security Capital Costs													
9		Hardware & Software Costs	362	\$435,917	\$444,984	\$454,239	\$463,688	\$473,332	\$483,178	\$0	\$0	\$0	\$0	\$2,755,337	DP&L Estimate
10		Solution Implementation Costs	303	\$1,371,835	\$1,400,369	\$1,429,496	\$265,154	\$270,669	\$276,299	\$0	\$0	\$0	\$0	\$5,013,822	DP&L Estimate
11		Total Cyber Security Capital Costs		\$1,807,751	\$1,845,353	\$1,883,736	\$728,842	\$744,002	\$759,477	\$0	\$0	\$0	\$0	\$7,769,160	Sum Lines 9-10
12															
13		Total Physical & Cyber Security Capital Costs		\$2,464,662	\$2,515,927	\$2,568,258	\$1,427,602	\$1,457,296	\$1,487,608	\$0	\$0	\$0	\$0	\$11,921,353	Line 6 + Line 11
14															
15		Summary of Physical Security O&M Costs													
16		Solution Implementation Costs		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
17		Hardware Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
18		Software Maintenance		\$49,467	\$100,991	\$154,638	\$210,472	\$268,562	\$328,978	\$335,821	\$342,806	\$349,936	\$357,215	\$2,498,887	DP&L Estimate
19		Maintenance Labor (DP&L)		\$0	\$0	\$0	\$0	\$0	\$0	\$231,083	\$235,889	\$240,796	\$245,804	\$953,571	DP&L Estimate
20		Total Physical Security O&M Costs	935	\$49,467	\$100,991	\$154,638	\$210,472	\$268,562	\$328,978	\$566,904	\$578,695	\$590,732	\$603,019	\$3,452,458	Sum of lines 16-19
21															
22		Summary of Cyber Security O&M Costs													
23															
24		Maintenance Labor (DP&L only)		\$0	\$0	\$0	\$0	\$0	\$0	\$282,046	\$287,913	\$293,901	\$300,015	\$1,163,875	DP&L Estimate
25		System Maintenance Costs		\$26,925	\$54,970	\$84,170	\$114,561	\$146,180	\$179,065	\$182,789	\$186,591	\$190,472	\$194,434	\$1,360,159	DP&L Estimate
26		Total Cyber Security O&M Costs	935	\$26,925	\$54,970	\$84,170	\$114,561	\$146,180	\$179,065	\$464,836	\$474,504	\$484,374	\$494,449	\$2,524,034	Sum Lines 24-25
27															
28		Total Physical & Cyber Security O&M Costs		\$76,392	\$155,961	\$238,808	\$325,033	\$414,743	\$508,043	\$1,031,739	\$1,053,199	\$1,075,106	\$1,097,468	\$5,976,492	Line 20 + Line 26

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Program and Change Management (PM & CM) Capital and O&M

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Page 1 of 1
Witness Responsible: Kevin Hall

Line No	Description (B)	PERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D-M) (N)	Source (O)
1	Summary of PM & CM Capital Costs													
2														
3	Hardware & Software Purchases	303	\$550,000	\$561,440	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,111,440	DP&L Estimate
4														
5	Internal DPL Labor													
6														
7	Engineers													
8	Engineer Fully Loaded Salary		\$122,326	\$124,871	\$127,468	\$130,119	\$132,826	\$135,589	\$0	\$0	\$0	\$0	\$3,092,795	DP&L Estimate Line 8 * Line 9
9	Total Engineer Cost		\$489,305	\$499,483	\$509,872	\$520,477	\$531,303	\$542,354	\$0	\$0	\$0	\$0		
10														
11	IT/System Engineer/DBAs													
12	IT/System Engineer/DBAs Fully Loaded Salary		\$124,637	\$127,229	\$129,876	\$132,577	\$135,355	\$138,150	\$0	\$0	\$0	\$0	\$1,575,606	DP&L Estimate Line 12 * Line 13
13	Total IT/System Engineer/DBAs Cost		\$249,274	\$254,459	\$259,751	\$265,154	\$270,669	\$276,299	\$0	\$0	\$0	\$0		
14														
15	Managers													
16	Managers Fully Loaded Salary		\$223,378	\$228,025	\$232,768	\$237,609	\$242,551	\$247,597	\$0	\$0	\$0	\$0	\$1,411,928	DP&L Estimate Line 16 * Line 17
17	Total Managers Cost		\$223,378	\$228,025	\$232,768	\$237,609	\$242,551	\$247,597	\$0	\$0	\$0	\$0		
18														
19	Total Internal DPL Labor		\$961,957	\$981,966	\$1,002,391	\$1,023,241	\$1,044,324	\$1,066,250	\$0	\$0	\$0	\$0	\$6,080,329	Sum Lines 10, 14, 18
20														
21	External Labor													
22														
23	Consultant													
24	Consultant Rate		\$296,700	\$302,871	\$309,171	\$315,602	\$322,166	\$328,867	\$0	\$0	\$0	\$0	\$3,719,667	DP&L Estimate Line 24 * Line 25
25	Total Consultant Cost		\$712,080	\$726,891	\$742,011	\$757,444	\$773,600	\$789,641	\$0	\$0	\$0	\$0		
26														
27	Experienced Consultant													
28	Experienced Consultant Rate		\$351,900	\$359,220	\$366,691	\$374,318	\$382,104	\$390,052	\$0	\$0	\$0	\$0	\$5,514,622	DP&L Estimate Line 28 * Line 29
29	Total Experienced Consultant Cost		\$1,055,700	\$1,077,659	\$1,100,074	\$1,122,955	\$573,156	\$585,078	\$0	\$0	\$0	\$0		
30														
31	Senior Consultant													
32	Senior Consultant Rate		\$441,600	\$450,785	\$460,162	\$469,733	\$479,503	\$489,477	\$0	\$0	\$0	\$0	\$5,536,248	DP&L Estimate Line 32 * Line 33
33	Total Senior Consultant Cost		\$1,059,840	\$1,081,885	\$1,104,388	\$1,127,359	\$575,404	\$587,373	\$0	\$0	\$0	\$0		
34														
35	Manager/IT Architect													
36	Manager/IT Architect Rate		\$558,900	\$570,525	\$582,392	\$594,506	\$606,872	\$619,494	\$0	\$0	\$0	\$0	\$7,006,814	DP&L Estimate Line 36 * Line 37
37	Total Manager/IT Architect Cost		\$1,341,560	\$1,369,260	\$1,397,741	\$1,426,814	\$738,246	\$743,393	\$0	\$0	\$0	\$0		
38														
39	Senior Manager													
40	Senior Manager Rate		\$641,700	\$655,047	\$668,672	\$682,581	\$696,778	\$711,271	\$0	\$0	\$0	\$0	\$4,022,430	DP&L Estimate Line 40 * Line 41
41	Total Senior Manager Cost		\$770,040	\$786,057	\$802,407	\$819,097	\$418,067	\$426,763	\$0	\$0	\$0	\$0		
42														
43	Director													
44	Director Rate		\$841,800	\$859,309	\$877,183	\$895,428	\$914,053	\$933,066	\$0	\$0	\$0	\$0	\$4,397,281	DP&L Estimate Line 44 * Line 45
45	Total Director Cost		\$841,800	\$859,309	\$877,183	\$895,428	\$457,027	\$466,533	\$0	\$0	\$0	\$0		
46														
47	Total External Labor		\$5,780,820	\$5,901,061	\$6,023,803	\$6,149,098	\$3,138,500	\$3,203,781	\$0	\$0	\$0	\$0	\$30,197,063	Sum Lines 26-30, 34, 38, 42, 46
48														
49	Transition to Internal Ownership													
50	CIS Replacement - Program Management & Governance - Internal Resource Expense		\$0	\$0	\$0	\$0	\$0	\$0	\$3,960,153	\$0	\$0	\$0	\$3,960,153	DP&L Estimate
51	CIS Replacement - Program Management & Governance - External Resource Expense		\$856,800	\$874,621	\$166,308	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,897,730	DP&L Estimate
52	CIS Replacement - Training & Change Management - Internal Resource Expense		\$5,917,292	\$5,917,292	\$1,202,203	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,916,215	DP&L Estimate
53	CIS Replacement - Training & Change Management - External Resource Expense		\$680,400	\$1,492,001	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,172,401	DP&L Estimate
54	CIS Replacement - Training & Change Management - Internal Resource Expense		\$5,492,720	\$2,971,140	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,463,860	DP&L Estimate
55														
56	Total Capital Costs		\$18,119,417	\$18,699,522	\$8,394,706	\$7,172,339	\$4,183,024	\$4,270,031	\$3,960,153	\$0	\$0	\$0	\$64,799,192	Sum Lines 4, 20, 48, 50-54

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Analytics Center of Excellence (CoE) Capital and O&M

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Page 1 of 1
Witness Responsible: Tom Hulsebosch

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of CoE Capital Costs													
2	Solution Implementation Costs		\$0	\$2,239,404	\$2,285,984	\$2,333,533	\$1,788,130	\$0	\$0	\$0	\$0	\$0	\$8,647,051	DP&L Estimate
3	Hardware Purchases	362	\$0	\$290,928	\$296,979	\$303,156	\$103,154	\$0	\$0	\$0	\$0	\$0	\$994,218	DP&L Estimate
4	Software Purchases	303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
5	Software Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
6	Total CoE Capital Costs	362 / 303	\$0	\$2,530,332	\$2,582,963	\$2,636,689	\$1,891,284	\$0	\$0	\$0	\$0	\$0	\$9,641,268	Sum of lines 2-5
7														
8	Summary of CoE O&M Costs													
9	Solution Implementation Costs		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
10	Hardware Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
11	Software Maintenance		\$0	\$0	\$0	\$0	\$184,591	\$188,431	\$192,350	\$196,351	\$200,435	\$204,604	\$1,166,764	DP&L Estimate
12	Maintenance Labor (DP&L)		\$0	\$0	\$1,005,378	\$1,026,290	\$1,343,319	\$1,371,260	\$1,399,782	\$1,428,897	\$1,458,618	\$1,488,958	\$10,522,501	DP&L Estimate
13	Total CoE O&M Costs	935	\$0	\$0	\$1,005,378	\$1,026,290	\$1,527,910	\$1,559,691	\$1,592,132	\$1,625,248	\$1,659,054	\$1,693,562	\$11,689,264	Sum of lines 9-12

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Systems Integration (SI) Capital and O&M

Date: Forecasted
Type of Filing: Original
Work Paper Reference No(s):

WP-7.3
Page 1 of 1
Witness Responsible: Antonio Navaez

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr Total Sum (D)-(M) (N)	Source (O)
1	Summary of Systems Integration (SI) Capital Costs													
2	Solution Implementation Costs													
3	Hardware Purchases	362	\$904,637	\$1,297,229	\$909,876	\$912,577	\$525,335	\$0	\$0	\$0	\$0	\$0	\$4,549,653	DP&L Estimate
4	Software Purchases	303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
5	CIS Replacement - Enterprise Service Bus - External Resource Expense		\$280,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$280,000	DP&L Estimate
6	Total SI Capital Costs	362 / 303	\$1,318,905	\$3,164,072	\$59,576	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,542,552	DP&L Estimate
7			\$2,503,542	\$4,461,301	\$969,451	\$912,577	\$525,335	\$0	\$0	\$0	\$0	\$0	\$9,372,206	Sum of lines 2-5
8	Summary of Systems Integration (SI) O&M Costs													
9	Solution Implementation Costs													
10	Hardware Maintenance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	DP&L Estimate
11	Software Maintenance		\$0	\$42,874	\$43,765	\$44,676	\$45,605	\$46,554	\$47,522	\$48,510	\$49,519	\$50,549	\$419,574	DP&L Estimate
12	Maintenance Labor (DP&L)		\$0	\$0	\$0	\$0	\$0	\$138,150	\$141,023	\$143,956	\$146,951	\$150,007	\$720,087	DP&L Estimate
13	Total SI O&M Costs	935	\$0	\$42,874	\$43,765	\$44,676	\$45,605	\$184,703	\$188,545	\$192,467	\$196,470	\$200,557	\$1,139,661	Sum of lines 9-12

WP-7.4
Page 1 of 1
Witness Responsible: Antonio Narvaez

[illegible]

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Utility Benefits

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(6):

WP-2-A
Page 1 of 2
Witness Responsible: Kevin Hall

Line No.	Description (B)	FERC Account (C)	Year 1 (D)	Year 2 (E)	Year 3 (F)	Year 4 (G)	Year 5 (H)	Year 6 (I)	Year 7 (J)	Year 8 (K)	Year 9 (L)	Year 10 (M)	10 Yr. Total Sum (D-M) (N)	Source (O)
1 O&M Savings Benefit Detail														
2	Reduction in Customer Call Center Costs (DA/SA)	903	\$ -	\$ -	\$ -	\$ 33,288	\$ 69,034	\$ 105,182	\$ 142,721	\$ 183,815	\$ 187,638	\$ 191,541	\$ 913,219	DP&L Estimate
3	Reduction of Residential Reconnect/Disconnect Costs (Smart Meters)		\$ -	\$ 32,490	\$ 381,402	\$ 710,960	\$ 1,084,063	\$ 1,411,131	\$ 1,440,382	\$ 1,470,444	\$ 1,501,029	\$ 1,552,251	\$ 9,534,251	DP&L Estimate
4	Reduction in Meter Reading Labor Expense	902	\$ -	\$ 76,560	\$ 527,520	\$ 1,296,393	\$ 2,097,013	\$ 2,930,378	\$ 3,394,417	\$ 3,465,021	\$ 3,535,094	\$ 3,610,665	\$ 20,933,070	DP&L Estimate
5	Reduction in Meter Reading Vehicle Expense	592	\$ -	\$ 5,230	\$ 30,188	\$ 55,125	\$ 80,063	\$ 103,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ 695,625	DP&L Estimate
6	Reduction in Meter Reading Expense (Smart Meters)	592	\$ -	\$ 5,235	\$ 31,253	\$ 58,258	\$ 86,373	\$ 115,632	\$ 118,037	\$ 120,492	\$ 122,999	\$ 125,557	\$ 783,926	DP&L Estimate
7	Reduced Inventory Costs (EAM)	592	\$ 200,000	\$ 204,160	\$ 208,407	\$ 212,741	\$ 217,166	\$ 221,683	\$ 226,294	\$ 231,001	\$ 233,806	\$ 240,711	\$ 2,197,971	DP&L Estimate
8	Reduction of Truck Rolls (MWFM)	592	\$ 60,172	\$ 61,424	\$ 62,702	\$ 192,017	\$ 326,686	\$ 533,481	\$ 340,417	\$ 347,498	\$ 354,726	\$ 362,104	\$ 2,441,226	DP&L Estimate
9	Field Operational & Overtime Savings (MWFM)	592	\$ 8,000	\$ 8,166	\$ 8,336	\$ 25,529	\$ 43,433	\$ 44,337	\$ 45,239	\$ 46,200	\$ 47,161	\$ 48,142	\$ 324,564	DP&L Estimate
10	Reduction in Customer Call Center Costs (Smart Meters)	903	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 757,155	\$ 752,487	\$ 768,139	\$ 784,116	\$ 800,426	\$ 3,842,324	DP&L Estimate
11	Reduction in Crew Costs (DA/SA)	592	\$ 4,489	\$ 9,164	\$ 50,448	\$ 93,104	\$ 137,513	\$ 185,729	\$ 231,083	\$ 235,889	\$ 240,796	\$ 245,804	\$ 1,432,018	DP&L Estimate
12	Call Center Reductions due to Pre-Pay	903	\$ -	\$ -	\$ -	\$ 7,300	\$ 17,903	\$ 24,508	\$ 213,515	\$ 584,024	\$ 866,766	\$ 964,103	\$ 2,677,819	DP&L Estimate
13	Reduction in Meter Reading Costs	592	\$ -	\$ -	\$ -	\$ 2,190	\$ 5,371	\$ 7,352	\$ 63,565	\$ 175,207	\$ 260,030	\$ 289,231	\$ 803,346	DP&L Estimate
14	Reduction in Field Technician Costs due to Pre-Pay Customers	903	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,371	\$ 63,565	\$ 175,207	\$ 260,030	\$ 289,231	\$ 803,346	DP&L Estimate
15	Reduction in Customer Call Center Costs (Customer Service)	903	\$ -	\$ 52,297	\$ 112,894	\$ 115,242	\$ 117,639	\$ 120,086	\$ 122,384	\$ 125,134	\$ 127,737	\$ 130,393	\$ 1,027,007	DP&L Estimate
16	Reduction in Customer Call Center Costs (Customer Service)	903	\$ -	\$ -	\$ 1,666,500	\$ 1,666,500	\$ 1,666,500	\$ 1,833,150	\$ 1,833,150	\$ 1,833,150	\$ 1,833,150	\$ 1,833,150	\$ 14,165,250	DP&L Estimate
17	Reduction in Mainframe Maintenance (CIS Replacement)	903	\$ -	\$ -	\$ 459,322	\$ 468,876	\$ 478,629	\$ 488,584	\$ 498,447	\$ 509,121	\$ 519,710	\$ 530,320	\$ 3,953,509	DP&L Estimate
18	Reduction in Mainframe Labor (CIS Replacement)		\$ -	\$ -	\$ -	\$ 459,322	\$ 468,876	\$ 478,629	\$ 498,447	\$ 509,121	\$ 519,710	\$ 530,320	\$ 3,953,509	DP&L Estimate
19	Total Projected O&M Benefits		\$ 272,661	\$ 457,835	\$ 3,538,980	\$ 4,939,715	\$ 6,402,757	\$ 8,668,740	\$ 9,591,823	\$ 10,375,342	\$ 10,983,787	\$ 11,298,829	\$ 66,530,470	Sum Lines 2 - 17
20 Summary of Projected Deferred Capital Benefits														
21	Residential Meter Avoided Capital (Smart Meters)		\$ -	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 11,471,897	DP&L Estimate
22	Single Phase C&I Meter Avoided Capital (Smart Meters)		\$ -	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 1,015,913	DP&L Estimate
23	Polyphase Meter Avoided Capital (Smart Meters)		\$ -	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 1,880,663	DP&L Estimate
24	C&I Other Transformer Rated Meter Avoided Capital (Smart Meters)		\$ -	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 24,048	DP&L Estimate
25	Savings for Distribution Transformer Reduced Capital (TLM)		\$ 30,498	\$ 252,018	\$ 22,172	\$ 85,775	\$ 174,766	\$ 191,417	\$ 231,545	\$ 196,331	\$ 236,438	\$ 189,506	\$ 1,610,487	DP&L Estimate
26	Avoided Future CIS Replacement CapEx (CIS Replacement)		\$ -	\$ -	\$ 746,939	\$ 457,485	\$ 467,001	\$ 476,714	\$ 486,630	\$ 496,752	\$ 507,084	\$ 517,632	\$ 4,156,237	DP&L Estimate
27	Total Projected Deferred Capital Benefits		\$ 30,498	\$ 1,851,187	\$ 2,368,279	\$ 2,142,429	\$ 2,367,301	\$ 2,317,344	\$ 2,317,344	\$ 2,292,252	\$ 2,342,712	\$ 2,306,307	\$ 20,159,244	Sum Lines 21 - 26
29 Billing Process Efficiency Benefit Detail														
29	Increase in Billing Process Efficiency due to New Meters (Smart Meters)		\$ -	\$ 31,290	\$ 183,638	\$ 343,453	\$ 510,269	\$ 683,207	\$ 725,839	\$ 796,267	\$ 853,695	\$ 883,429	\$ 5,011,105	DP&L Estimate
30	Reconciliation of Unbilled Attachments (GIS)		\$ 1,072,400	\$ 2,189,412	\$ 2,234,952	\$ 2,281,439	\$ 2,328,893	\$ 2,377,333	\$ 2,426,782	\$ 2,477,259	\$ 2,528,786	\$ 2,581,385	\$ 22,498,640	DP&L Estimate
31	Increase in Billing Process Efficiencies due to Reduction of Bad Debt Write-Offs (Customer Service/Operations)		\$ -	\$ 35,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 595,000	DP&L Estimate
32	Total Projected Enhanced Revenue Benefits		\$ 1,072,400	\$ 2,255,701	\$ 2,488,609	\$ 2,694,891	\$ 2,909,162	\$ 3,130,540	\$ 3,222,621	\$ 3,343,526	\$ 3,452,481	\$ 3,534,813	\$ 28,104,745	Sum Lines 30 - 32

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Utility Benefits

Data: Forecasted
Type of Filing: Original
Work Paper Reference No(s):

WP-A
Page 2 of 2
Witness Responsible: Kevin Hall

Line No.	Description (B)	FERC Account (C)	Year 11 (D)	Year 12 (E)	Year 13 (F)	Year 14 (G)	Year 15 (H)	Year 16 (I)	Year 17 (J)	Year 18 (K)	Year 19 (L)	Year 20 (M)	20 Yr Total Sum (D-M) (N)	Source (O)
1	O&M Savings Benefit Detail													
2	Reduction in Customer Call Center Costs (DA/SA)	903	\$ 195,525	\$ 199,592	\$ 203,743	\$ 207,981	\$ 212,307	\$ 216,733	\$ 221,231	\$ 225,833	\$ 230,530	\$ 235,325	\$ 3,062,009	DP&L Estimate
3	Reduction of Residential Reconnect/Disconnect Costs (Smart Meters)		\$ 1,564,122	\$ 1,596,655	\$ 1,629,866	\$ 1,663,767	\$ 1,698,373	\$ 1,733,699	\$ 1,769,760	\$ 1,806,571	\$ 1,844,148	\$ 1,882,506	\$ 26,723,719	DP&L Estimate
4	Reduction in Meter Reading Labor Expense	902	\$ 3,685,767	\$ 3,762,431	\$ 3,840,689	\$ 3,920,576	\$ 4,002,124	\$ 4,085,368	\$ 4,170,344	\$ 4,257,087	\$ 4,345,634	\$ 4,436,023	\$ 61,441,113	DP&L Estimate
5	Reduction in Meter Reading Vehicle Expense	592	\$ 105,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ 1,745,625	DP&L Estimate
6	Reduction in Meter Read Expense (Smart Meters)	902	\$ 128,169	\$ 130,835	\$ 133,556	\$ 136,334	\$ 139,170	\$ 142,064	\$ 145,019	\$ 148,036	\$ 151,115	\$ 154,258	\$ 2,192,481	DP&L Estimate
7	Reduced Inventory Costs (EAM)	592	\$ 245,718	\$ 250,829	\$ 256,046	\$ 261,372	\$ 266,808	\$ 272,358	\$ 278,023	\$ 283,806	\$ 289,709	\$ 295,735	\$ 4,898,374	DP&L Estimate
8	Reduction of Truck Rolls (MWFM)	592	\$ 369,036	\$ 377,324	\$ 385,173	\$ 393,184	\$ 401,362	\$ 409,711	\$ 418,233	\$ 426,932	\$ 435,812	\$ 444,877	\$ 6,503,469	DP&L Estimate
9	Field Operational & Overtime Savings (MWFM)	592	\$ 49,144	\$ 50,166	\$ 51,209	\$ 52,274	\$ 53,362	\$ 54,472	\$ 55,605	\$ 56,761	\$ 57,942	\$ 59,147	\$ 864,645	DP&L Estimate
10	Reduction in Customer Call Center Costs (Smart Meters)	903	\$ 817,075	\$ 834,070	\$ 851,419	\$ 869,128	\$ 887,206	\$ 905,660	\$ 924,498	\$ 943,727	\$ 963,357	\$ 983,395	\$ 12,821,858	DP&L Estimate
11	Reduction in Crew Costs (DA/SA)	592	\$ 250,917	\$ 256,136	\$ 261,464	\$ 266,902	\$ 272,454	\$ 278,121	\$ 283,905	\$ 289,811	\$ 295,839	\$ 301,992	\$ 4,189,557	DP&L Estimate
12	Call Center Reductions due to Pre-Pay	903	\$ 964,103	\$ 964,103	\$ 964,103	\$ 964,103	\$ 964,103	\$ 964,103	\$ 964,103	\$ 964,103	\$ 964,103	\$ 964,103	\$ 12,318,848	DP&L Estimate
13	Reduction in Field Technician Costs due to Pre-Pay Customers	903	\$ 289,231	\$ 289,231	\$ 289,231	\$ 289,231	\$ 289,231	\$ 289,231	\$ 289,231	\$ 289,231	\$ 289,231	\$ 289,231	\$ 3,693,654	DP&L Estimate
14	Reduction in Mailing Cost for Pre-Paid Customers	903	\$ 133,106	\$ 133,874	\$ 138,700	\$ 141,585	\$ 144,530	\$ 147,537	\$ 150,605	\$ 153,738	\$ 156,936	\$ 160,200	\$ 2,489,819	DP&L Estimate
15	Reduction in Customer Call Center Costs (Customer Service)		\$ 2,016,465	\$ 2,016,465	\$ 2,016,465	\$ 2,016,465	\$ 2,016,465	\$ 2,016,465	\$ 2,016,465	\$ 2,016,465	\$ 2,016,465	\$ 2,016,465	\$ 25,338,133	DP&L Estimate
16	Reduction in Mainframe Maintenance (CIS Replacement)		\$ 341,555	\$ 352,819	\$ 364,318	\$ 376,056	\$ 388,038	\$ 400,269	\$ 412,755	\$ 425,500	\$ 438,510	\$ 451,791	\$ 9,903,121	DP&L Estimate
17	Reduction in Mainframe Labor (CIS Replacement)		\$ 11,644,761	\$ 11,810,760	\$ 11,980,212	\$ 12,153,189	\$ 12,329,764	\$ 12,511,657	\$ 12,695,554	\$ 12,881,477	\$ 13,070,266	\$ 13,262,932	\$ 191,886,079	DP&L Estimate
18	Total Projected O&M Benefits													Sum Lines 2 - 17
19														
20	Summary of Projected Deferred Capital Benefits													
21	Residential Meter Avoided Capital (Smart Meters)		\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 1,274,655	\$ 24,218,450	DP&L Estimate
22	Single Phase C&I Meter Avoided Capital (Smart Meters)		\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 112,879	\$ 2,144,706	DP&L Estimate
23	Polyphase Meter Avoided Capital (Smart Meters)		\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 208,963	\$ 3,970,288	DP&L Estimate
24	C&I Other Transformer Rated Meter Avoided Capital (Smart Meters)		\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 2,672	\$ 50,768	DP&L Estimate
25	Savings for Distribution Transformer Reduced Capital (TLM)		\$ 30,498	\$ 30,498	\$ 30,498	\$ 30,498	\$ 30,498	\$ 30,498	\$ 30,498	\$ 30,498	\$ 30,498	\$ 30,498	\$ 1,915,462	DP&L Estimate
26	Avoided Future CIS Replacement CapEx (CIS Replacement)		\$ 528,398	\$ 539,389	\$ 550,608	\$ 562,061	\$ 573,752	\$ 585,686	\$ 597,868	\$ 610,304	\$ 622,998	\$ 635,957	\$ 9,963,258	DP&L Estimate
27	Total Projected Deferred Capital Benefits		\$ 2,158,065	\$ 2,169,056	\$ 2,180,275	\$ 2,191,728	\$ 2,203,418	\$ 2,215,353	\$ 2,227,535	\$ 2,239,970	\$ 2,252,665	\$ 2,265,623	\$ 42,302,932	Sum Lines 21 - 26
28														
29	Billing Process Efficiency Benefit Detail													
30	Increase in Billing Process Efficiency due to New Meters (Smart Meters)		\$ 898,775	\$ 914,442	\$ 930,433	\$ 946,758	\$ 963,422	\$ 980,433	\$ 997,797	\$ 1,015,523	\$ 1,033,617	\$ 1,052,088	\$ 14,744,393	DP&L Estimate
31	Reconciliation of Unbilled Attachments (GIS)		\$ 2,635,078	\$ 2,689,887	\$ 2,745,837	\$ 2,802,950	\$ 2,861,252	\$ 2,920,766	\$ 2,981,518	\$ 3,043,533	\$ 3,106,839	\$ 3,171,461	\$ 51,457,760	DP&L Estimate
32	Increase in Billing Process Efficiency due to Reduction of Bad Debt Write-Offs (Customer Service/Operations)		\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 1,295,000	DP&L Estimate
33	Total Projected Enhanced Revenue Benefits		\$ 3,603,853	\$ 3,674,329	\$ 3,746,270	\$ 3,819,708	\$ 3,894,674	\$ 3,971,198	\$ 4,049,315	\$ 4,129,056	\$ 4,210,456	\$ 4,293,549	\$ 67,497,154	Sum Lines 30 - 32

WP-B
Page 1 of 2
Witness Responsible: Tom Hulsebosch

Data: Forecasted

Line	No.	Description	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	Source						
10 Yr Total																							
Sum (D-M)																							
Energy and Demand Benefits																							
1																							
2																							
3		Reduced cost of peak DEMAND from CVR (\$)	\$	-	\$	-	\$	-	\$	318,174	\$	644,677	\$	1,057,939	\$	1,624,088	\$	3,644,878	DP&L Estimate				
4																							
5		Reduced cost of purchased power from CVR (\$)	\$	-	\$	-	\$	-	\$	1,518,410	\$	3,124,914	\$	5,340,894	\$	7,313,385	\$	17,297,604	DP&L Estimate				
6																							
7		Annual Energy Savings from More Optimally Loaded Distribution Transformers	\$	8,340	\$	30,058	\$	43,593	\$	58,517	\$	71,690	\$	86,280	\$	101,467	\$	148,417	\$	697,075	DP&L Estimate		
8																							
9		Reduced unaccounted for energy due to theft reduction (Residential)	\$	-	\$	86,622	\$	520,377	\$	1,010,717	\$	1,550,025	\$	2,044,233	\$	2,668,616	\$	3,455,683	\$	14,052,340	DP&L Estimate		
10																							
11		Reduced energy consumption due to theft reduction (Single Phase C&I)	\$	-	\$	55,140	\$	331,249	\$	643,377	\$	986,678	\$	1,301,268	\$	1,312,789	\$	1,329,833	\$	1,498,230	DP&L Estimate		
12																							
13		Reduction in Energy Losses from Customers with Inactive Meters (CIDM)	\$	-	\$	17,324	\$	104,075	\$	202,143	\$	310,005	\$	408,847	\$	413,723	\$	417,821	\$	470,737	DP&L Estimate		
14																							
15		ePort Energy Savings Value	\$	-	\$	10	\$	12,932	\$	42,553	\$	92,001	\$	111,718	\$	131,629	\$	167,748	\$	190,671	DP&L Estimate		
16																							
17		Purchase Power Demand Savings due to TOU Rates and ePort - Residential	\$	-	\$	891	\$	1,331	\$	30,078	\$	193,730	\$	461,964	\$	745,497	\$	1,061,815	\$	1,548,420	DP&L Estimate		
18																							
19		Purchase Power Demand Savings due to TOU Rates and ePort - Single Phase C&I	\$	-	\$	171	\$	308	\$	5,049	\$	30,718	\$	72,113	\$	113,695	\$	159,117	\$	228,757	DP&L Estimate		
20																							
21		Purchase Power Demand Savings due to TOU Rates - Polyphase C&I	\$	-	\$	-	\$	-	\$	5,032	\$	23,446	\$	52,321	\$	76,954	\$	102,706	\$	142,623	DP&L Estimate		
22																							
23		Purchase Power Demand Savings due to TOU Rates - Other C&I	\$	-	\$	-	\$	-	\$	18,049	\$	90,503	\$	184,419	\$	268,758	\$	355,201	\$	488,411	DP&L Estimate		
24																							
25		Savings from Summer Energy Shift from On-Peak to Off-Peak with TOU Rates	\$	-	\$	-	\$	-	\$	16,016	\$	84,352	\$	186,280	\$	291,655	\$	411,243	\$	568,368	DP&L Estimate		
26																							
27		Savings from Winter Energy Shift from On-Peak to Off-Peak with TOU Rates	\$	-	\$	-	\$	-	\$	11,059	\$	58,049	\$	124,843	\$	202,857	\$	283,869	\$	346,088	DP&L Estimate		
28																							
29		Summer Energy Savings Benefits due to TOU Rates	\$	-	\$	-	\$	-	\$	26,144	\$	137,948	\$	257,455	\$	338,720	\$	419,708	\$	548,359	DP&L Estimate		
30																							
31		Winter Energy Savings Benefits due to TOU Rates	\$	-	\$	-	\$	-	\$	41,084	\$	216,775	\$	404,572	\$	532,275	\$	659,540	\$	862,021	DP&L Estimate		
32																							
33		Prepay Energy Benefits	\$	-	\$	-	\$	-	\$	3,790	\$	11,778	\$	18,916	\$	592,262	\$	1,089,069	\$	1,223,915	DP&L Estimate		
34																							
35		Prepay Demand Benefits	\$	-	\$	-	\$	-	\$	1,920	\$	6,257	\$	9,091	\$	84,248	\$	233,871	\$	379,130	DP&L Estimate		
36																							
37		Battery Storage - Initial Pilot - Summer Demand Shift	\$	-	\$	-	\$	-	\$	1,313	\$	2,767	\$	2,855	\$	2,849	\$	2,952	\$	2,944	DP&L Estimate		
38		Battery Storage - Initial Pilot - Winter Demand Shift	\$	-	\$	-	\$	-	\$	907	\$	1,904	\$	1,834	\$	1,972	\$	1,798	\$	1,748	DP&L Estimate		
39		Battery Storage - Pilot Extension - Summer Demand Shift	\$	-	\$	-	\$	-	\$	-	\$	9,224	\$	18,244	\$	18,903	\$	19,800	\$	19,626	DP&L Estimate		
40		Battery Storage - Pilot Extension - Winter Demand Shift	\$	-	\$	-	\$	-	\$	-	\$	6,348	\$	12,227	\$	13,148	\$	11,983	\$	11,634	DP&L Estimate		
41																							
42		Lower Energy Cost from shifting EVs to off-peak charging	\$	-	\$	9,559	\$	35,428	\$	85,663	\$	165,197	\$	246,710	\$	333,214	\$	402,752	\$	474,338	DP&L Estimate		
43		Avoided Peak Demand Increase due to EV Intelligent Charging	\$	-	\$	796	\$	24,279	\$	205,375	\$	755,715	\$	1,666,396	\$	2,371,151	\$	2,972,898	\$	3,991,286	DP&L Estimate		
44																							
Improved Reliability																							
45																							
46																							
47		Average Residential customer benefit per minute from reduced outages (DA/SA)	\$	-	\$	-	\$	-	\$	319,317	\$	552,816	\$	738,560	\$	895,171	\$	1,013,644	\$	1,013,644	\$	5,546,797	DP&L Estimate
48		Average C&I Single Phase customer benefit per minute from reduced outages (DA/SA)	\$	-	\$	-	\$	-	\$	6,884,240	\$	11,460,691	\$	15,058,306	\$	19,041,306	\$	21,419,878	\$	21,419,878	\$	116,704,380	DP&L Estimate
49		Average C&I Poly Phase customer benefit per minute from reduced outages (DA/SA)	\$	-	\$	-	\$	-	\$	783,963	\$	1,636,265	\$	2,346,167	\$	2,800,070	\$	3,196,447	\$	3,196,447	\$	17,155,804	DP&L Estimate
50																							
51		Average Residential customer benefit per minute from reduced outages (AMI)	\$	-	\$	1,905	\$	11,181	\$	20,842	\$	30,901	\$	41,368	\$	42,229	\$	44,107	\$	44,004	\$	44,919	DP&L Estimate
52		Average C&I Single Phase customer benefit per minute from reduced outages (AMI)	\$	-	\$	35,889	\$	210,656	\$	392,677	\$	582,179	\$	779,394	\$	795,605	\$	812,154	\$	829,047	\$	5,283,901	DP&L Estimate
53		Average C&I Poly Phase customer benefit per minute from reduced outages (AMI)	\$	-	\$	105,489	\$	619,179	\$	1,154,192	\$	1,711,194	\$	2,290,868	\$	2,338,518	\$	2,387,159	\$	2,436,812	\$	15,530,908	DP&L Estimate
54																							
55		Customer EV Savings	\$	-	\$	167,188	\$	616,411	\$	1,338,331	\$	2,495,348	\$	3,855,635	\$	5,037,756	\$	6,116,922	\$	7,088,399	\$	8,397,859	DP&L Estimate
56																							
57		Total Customer Benefits	\$	8,340	\$	499,634	\$	2,506,713	\$	13,277,803	\$	23,213,881	\$	32,748,659	\$	42,372,560	\$	50,520,701	\$	57,706,725	\$	65,033,192	Sum Lines 1-55

Work Paper Reference No(s):

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Societal Benefits

Line No.	Description (B)	Year 1 (C)	Year 2 (D)	Year 3 (E)	Year 4 (F)	Year 5 (G)	Year 6 (H)	Year 7 (I)	Year 8 (J)	Year 9 (K)	Year 10 (L)	10 Yr Total Sum (D)-(M) (M)	Source (N)
1	Summary of Total Societal Benefits												
2													
3	Reduced Greenhouse Gas												
4	Tons of GHG Savings through Reduced Vehicle Miles due to MWFS	28	28	28	85	142	142	142	142	142	142	1,025	DP&L Estimate
5	Tons of GHG Saved from Optimized Distribution (VVO and CVR)	0	0	0	0	0	0	28,179	57,423	88,014	119,284	292,900	DP&L Estimate
6	Tons of GHG Savings Reduced for Unaccounted Energy (CTM and Theft)	0	3,525	20,270	37,015	53,759	70,504	70,504	70,504	70,504	70,504	467,090	DP&L Estimate
7	Tons of GHG Savings due to Few Truck Rolls due to decrease in Meter Investigations and Connect/Dis	0	11	64	117	170	224	224	224	224	224	1,096	DP&L Estimate
8	Tons of GHG Savings Through reduced consumer consumption due to ePortal and TOU rates	0	0	46	1,445	6,793	12,914	16,592	20,269	23,947	27,625	109,651	DP&L Estimate
9	Tons of GHG Savings Through Pre-Pay	0	0	0	76	222	355	3,552	10,883	17,947	19,962	52,978	DP&L Estimate
10	Tons of GHG Savings Associated with Conversion of Gasoline to Electric Vehicles	0	274	956	2,000	3,576	5,328	6,721	7,879	8,758	9,738	45,230	DP&L Estimate
11	Tons of GHG Savings from TLM	196	413	638	869	1,105	1,346	1,601	1,865	2,143	2,421	12,598	DP&L Estimate
12	Tons of GHG Savings from Community Solar Demonstration	0	0	0	988	4,938	7,901	7,901	7,901	7,901	7,901	45,433	DP&L Estimate
13													
14	Cost of GHG per Ton	\$ 9.18	\$ 9.83	\$ 9.89	\$ 9.94	\$ 10.60	\$ 10.60	\$ 11.20	\$ 11.20	\$ 11.20	\$ 11.80	Estimate	
15	Annual GHG Savings	\$ 2,063	\$ 41,812	\$ 217,559	\$ 423,519	\$ 749,319	\$ 1,046,137	\$ 1,516,053	\$ 1,982,911	\$ 2,458,678	\$ 3,041,210	\$ 11,479,261	Sum Lines 4-12 * Line 14
16													
17	Economic Impact	\$ 138,487,296	\$ 178,871,403	\$ 144,243,005	\$ 116,705,602	\$ 129,901,162	\$ 95,743,109	\$ 65,136,674	\$ 8,908,197	\$ 9,083,240	\$ 9,261,925	\$ 896,341,613	Estimate

The Dayton Power and Light Company
Case No. 18-1875-EL-GRD
Distribution Modernization Plan
Societal Benefits

Date: Forecasted
Type of Filing: Original
Work Paper Reference No(s): WP-C
Page 2 of 2
Witness Responsible: Tom Hulsebosch

Line No.	Description (B)	Year 11 (C)	Year 12 (D)	Year 13 (E)	Year 14 (F)	Year 15 (G)	Year 16 (H)	Year 17 (I)	Year 18 (J)	Year 19 (K)	Year 20 (L)	20 Yr Total Sum (D)-(M) (M)	Source (N)
1	Summary of Total Societal Benefits												
2													
3	Green House Gas Reduction												
4	Tons of GHG Savings through Reduced Vehicle Miles due to MWFS	142	142	142	142	142	142	142	142	142	142	2,449	DP&L Estimate
5	Tons of GHG Saved from Optimized Distribution (VVO and CVR)	149,105	149,105	149,105	149,105	149,105	149,105	149,105	149,105	149,105	149,105	1,785,947	DP&L Estimate
6	Tons of GHG Savings due to Fewer Trucks due to Unaccounted Energy (CIM and Theft)	70,504	70,504	70,504	70,504	70,504	70,504	70,504	70,504	70,504	70,504	1,172,132	DP&L Estimate
7	Tons of GHG Savings due to Fewer Trucks due to decrease in Meter Investigations and Connect/Dis	224	224	224	224	224	224	224	224	224	224	2,449	DP&L Estimate
8	Tons of GHG Savings Through reduced consumer consumption due to ePortal and TOU rates	31,302	34,980	37,856	38,047	38,238	38,429	38,619	38,810	39,001	39,192	484,106	DP&L Estimate
9	Tons of GHG Savings Through Pre-Pay	19,962	19,962	19,962	19,962	19,962	19,962	19,962	19,962	19,962	19,962	252,603	DP&L Estimate
10	Tons of GHG Savings Associated with Conversion of Gasoline to Electric Vehicles	10,869	12,318	14,337	16,524	18,764	20,529	22,140	23,580	24,827	24,589	233,908	DP&L Estimate
11	Tons of GHG Savings from TLM	2,663	2,905	3,147	3,389	3,631	3,873	4,115	4,357	4,599	4,841	50,119	DP&L Estimate
12	Tons of GHG Savings from Community Solar Demonstration	7,901	7,901	7,901	7,901	7,901	7,901	7,901	7,901	7,901	7,901	124,446	DP&L Estimate
13													
14	Cost of GHG per Ton	\$ 11.85	\$ 12.51	\$ 12.56	\$ 13.22	\$ 13.27	\$ 13.98	\$ 14.09	\$ 14.80	\$ 14.91	\$ 15.62		Estimate
15	Annual GHG Savings	\$ 3,468,702	\$ 3,729,950	\$ 3,808,407	\$ 4,041,501	\$ 4,093,823	\$ 4,343,491	\$ 4,406,518	\$ 4,656,194	\$ 4,715,900	\$ 4,943,410	\$ 53,687,158	Sum Lines 4-12 * Line 14
16													
17	Economic Impact	\$ 4,477,956	\$ 4,571,097	\$ 4,666,176	\$ 4,763,232	\$ 4,862,308	\$ 4,963,444	\$ 5,066,683	\$ 5,172,070	\$ 5,279,649	\$ 5,389,466	\$ 945,555,694	Estimate

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Case No(s). 18-1875-EL-GRD, 18-1876-EL-WVR, 18-1877-EL-AAM

Summary: Exhibit Schedules and Workpapers electronically filed by Mr. Jeffrey S Sharkey on behalf of The Dayton Power and Light Company