LARGE FILING SEPARATOR SHEET

CASE NUMBER: 08-1094-EL-SSO
08-1095-EL-ATA
08-1096-EL-AAM
08-1097-EL-UNC

FILE DATE: 10/10/2008

SECTION: (Part 4 of 6)

NUMBER OF PAGES: 208

DESCRIPTION OF DOCUMENT:

Application of Dayton Power and Light Company

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Demand Side Management Program - Non-Residential Prescriptive Rebates

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.10a

WPG-1.10
Page 1 of 1
Witness Responsible:
Maria Bubp

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Forecast Number of Measures Completed	62,288	66,684	71,370	76,402	81,655	81,655	81,655	521,709	WPG-1.10a, Line 78
2	Annual Prescriptive Rebates	$1,305,904	$1,590,031	$1,897,646	$2,268,886	$2,719,210	$2,807,580	$2,898,827	$15,488,084	WPG-1.10a, Line 78
3	Marketing and Administration % of Incentive	44.00%								Average of Duke, ComEd, Ameren, PEPCO
4	Annual Marketing and Administration	$574,598	$699,614	$834,964	$998,310	$1,196,452	$1,235,335	$1,275,484	$6,814,757	Line 2 * Line 3
5	Annual Program Budget	$1,880,502	$2,289,645	$2,732,610	$3,267,196	$3,915,662	$4,042,915	$4,174,311	$22,302,841	Line 2 + Line 4
6	Annual Energy Savings (kWh)	20,453,522	24,140,470	28,223,448	32,868,215	38,423,383	38,423,383	38,423,383		WPG-1.10a, Line 78
7	Cumulative Annual Energy Savings (kWh)	20,453,522	44,593,992	72,817,440	105,685,655	144,109,038	182,532,421	220,955,804		Cumulative Total From Line 6
8	Annual Demand Savings (kWh)	5,540.5	6,538.2	7,643.4	8,901.8	10,405.4	10,405.4	10,405.4		WPG-1.10a, Line 78
9	Cumulative Annual Demand Savings (kWh)	5,540.5	12,078.7	19,722.1	28,623.9	39,029.3	49,434.7	59,840.1		Cumulative Total From Line 8

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015		2009	2010	2011	2012	2013	2014	2015
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)
1	**C&I Prescriptive Rebates**								kWh Per							
2	**Motors and Drives**				Estimated Participation				Measure				Annual Energy Savings			
3	20-250 hp - avg for group	89	106	128	153	183	183	183	853	75,917	90,418	109,184	130,509	156,099	156,099	156,099
4	1-5 HP motors - incentives per HP	443	532	638	766	919	919	919	96	42,528	51,072	61,248	73,536	88,224	88,224	88,224
5	7.5 - 20 HP motors - incentives per HP	1,329	1,595	1,914	2,297	2,756	2,756	2,756	291	386,739	464,145	556,974	668,427	801,996	801,996	801,996
6	High Efficiency Pumps HP 10	7	9	11	12	15	15	15	756	5,292	6,804	8,316	9,072	11,340	11,340	11,340
7	High Efficiency Pumps HP 15	7	9	11	12	15	15	15	1,135	7,945	10,215	12,485	13,620	17,025	17,025	17,025
8	High Efficiency Pumps HP 20	1	1	1	1	2	2	2	1,513	1,513	1,513	1,513	1,513	3,026	3,026	3,026
9	Variable Frequency Drive Pumps HP 5	4	4	5	6	7	7	7	7,726	30,904	30,904	38,630	46,356	54,082	54,082	54,082
10	VFD HP 7.5	4	4	5	6	7	7	7	11,706	46,824	46,824	58,530	70,236	81,942	81,942	81,942
11	VFD HP 10	7	9	11	12	15	15	15	15,452	108,164	139,068	169,972	185,424	231,780	231,780	231,780
12	VFD HP 15	7	9	11	12	15	15	15	23,412	163,884	210,708	257,532	280,944	351,180	351,180	351,180
13	VFD HP 20	4	4	5	6	7	7	7	31,216	124,864	124,864	156,080	187,296	218,512	218,512	218,512
14	VFD HP 25	0	1	1	1	1	1	1	39,020	0	39,020	39,020	39,020	39,020	39,020	39,020
15	VFD HP 30	0	1	1	1	1	1	1	46,824	0	46,824	46,824	46,824	46,824	46,824	46,824
16	VFD HP 40	0	1	1	1	1	1	1	62,432	0	62,432	62,432	62,432	62,432	62,432	62,432
17	VFD HP 50	0	1	1	1	1	1	1	78,041	0	78,041	78,041	78,041	78,041	78,041	78,041
18	**Compressed Air**															
19	Engineered Nozzles	222	266	319	381	457	457	457	14,707	3,264,954	3,912,062	4,691,533	5,603,367	6,721,099	6,721,099	6,721,099
20	Zone Shutoff Valves	44	53	63	78	92	92	92	1,141	50,204	60,473	71,883	88,998	104,972	104,972	104,972
21	Moisture Traps - Condensate Drain Valve	222	266	319	383	459	459	459	1,090	241,980	289,940	347,710	417,470	500,310	500,310	500,310
22	Dew Point Controlled Desiccant Dryers	9	11	12	14	16	16	16	43,217	388,953	475,387	518,604	605,038	691,472	691,472	691,472
23	**HVAC**															
24	Packaged Terminal AC	195	230	266	319	372	372	372	778	151,710	178,940	206,948	248,182	289,416	289,416	289,416
25	Packaged Terminal HP															
26	Unitary AC Rooftop & HP Rooftop															
27	<65,000 BTUH 1 Phase															
28	<65,000 BTUH 3 Phase															
29	65-135,000 BTUH															
30	135-760,000 BTUH															
31	760,000 + BTUH															
32	Ground Source HP Closed Loop															
33	Water Source HP Building Loop															
34	ES Window AC under 14,000 Btu/hr	44	53	64	76	92	92	92	70	3,080	3,710	4,480	5,320	6,440	6,440	6,440
35	ES Window AC over 14,000 Btu/hr	44	53	64	76	92	92	92	185	8,140	9,805	11,840	14,060	17,020	17,020	17,020
36	ES Sleeve AC under 14,000 Btu/hr	22	27	32	38	46	46	46	80	1,760	2,160	2,560	3,040	3,680	3,680	3,680
37	ES Sleeve AC over 14,000 Btu/hr	22	27	32	38	46	46	46	190	4,180	5,130	6,080	7,220	8,740	8,740	8,740
38	HP Water Heater 500 gal/day	13	16	19	23	28	28	28	21,635	281,255	346,160	411,065	497,605	605,780	605,780	605,780
39	HP Water Heater 1000 gal/day	4	5	6	7	8	8	8	43,637	174,548	218,185	261,822	305,459	349,096	349,096	349,096
40	HP Water Heater 1500 gal/day	4	5	6	7	8	8	8	65,639	262,556	328,195	393,834	459,473	525,112	525,112	525,112
41	Setback/Programmable Thermostat	487	571	672	794	939	939	939	6,441	3,136,767	3,677,811	4,328,352	5,114,154	6,048,099	6,048,099	6,048,099
42	Supply Air Reset - Controls	22	27	32	37	44	44	44	3,178	69,916	85,806	101,696	117,586	139,832	139,832	139,832
43	Unoccupied Cycle - Controls	24	28	34	39	46	46	46	102,953	2,470,872	2,882,684	3,500,402	4,015,167	4,735,838	4,735,838	4,735,838

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44	**Lighting**	Estimated Participation							kWh Per Measure	Annual Energy Savings						
45	8 ft. 1-2 Lamp T-8/E Ballast	48,730	50,502	52,274	54,046	55,818	55,818	55,818	55	2,680,150	2,777,610	2,875,070	2,972,530	3,069,990	3,069,990	3,069,990
46	8 ft. HO 1 &2 T-8/EB															
47	4 ft. 1-4 T-8/EB															
48	3 ft 1-4 T-8/EB															
49	2 ft. 1-4 T-8/EB															
50	LED Exit Signs New/Electronic															
51	CFL Screw in	2,658	3,012	3,438	3,948	4,560	4,560	4,560	178	473,124	536,136	611,964	702,744	811,680	811,680	811,680
52	LED Auto Traffic Signals	886	1,063	1,276	1,531	1,838	1,838	1,838	275	243,650	292,325	350,900	421,025	505,450	505,450	505,450
53	Pulse Start Metal Halide (retrofit only)	266	487	709	930	930	930	930	430	114,380	209,410	304,870	399,900	399,900	399,900	399,900
54	CFL Fixture	316	369	433	509	602	602	602	368	116,288	135,792	159,344	187,312	221,536	221,536	221,536
55	Occupancy Sensors under 500 ft2	115	133	154	180	210	210	210	427	49,105	56,791	65,758	76,860	89,670	89,670	89,670
56	Hi Bay fluorescent 4LT5HO	97	115	136	162	192	192	192	923	89,531	106,145	125,528	149,526	177,216	177,216	177,216
57	Hi Bay Fluorescent 6LF32T8	97	115	136	162	192	192	192	871	84,487	100,165	118,456	141,102	167,232	167,232	167,232
58	Plug Load Occupancy Sensors Document Stations	89	106	128	152	184	184	184	803	71,467	85,118	102,784	122,056	147,752	147,752	147,752
59	Occupancy Sensors over 500 ft3	62	71	82	94	110	110	110	1,068	66,216	75,828	87,576	100,392	117,480	117,480	117,480
60	T-5 with Elec Ballast replacing T-12	53	62	73	85	101	101	101	99	5,247	6,138	7,227	8,415	9,999	9,999	9,999
61	T-5 HO with Elec Ballast replacing T-12	27	31	36	43	51	51	51	109	2,943	3,379	3,924	4,687	5,559	5,559	5,559
62	**Lighting Controls**															
63	Central Lighting Control	95	113	134	159	190	190	190	11,500	1,092,500	1,299,500	1,541,000	1,828,500	2,185,000	2,185,000	2,185,000
64	Switching Controls for Multilevel Lighting	95	113	134	159	190	190	190	9,000	855,000	1,017,000	1,206,000	1,431,000	1,710,000	1,710,000	1,710,000
65	Daylight Sensor controls	93	111	132	158	188	188	188	14,800	1,376,400	1,642,800	1,953,600	2,338,400	2,782,400	2,782,400	2,782,400
66	**Other Measures**															
67	Window Film	4,430	5,316	6,202	7,088	7,974	7,974	7,974	12	53,160	63,792	74,424	85,056	95,688	95,688	95,688
68	Vending Equipment Controller	399	443	496	549	620	620	620	800	319,200	354,400	396,800	439,200	496,000	496,000	496,000
69	Commercial Clothes Washer & Electric Dryer	266	319	383	459	551	551	551	950	252,700	303,050	363,850	436,050	523,450	523,450	523,450
70	Economizer Cycle - Controls	93	111	132	158	188	188	188	1,330	123,690	147,630	175,560	210,140	250,040	250,040	250,040
71	Barrel Wraps (Inj Mold & Extruders)	44	53	64	76	92	92	92	2,501	110,044	132,553	160,064	190,076	230,092	230,092	230,092
72	Chilled Water Reset	27	31	36	42	49	49	49	4,784	129,168	148,304	172,224	200,928	234,416	234,416	234,416
73	Optimal Start/Stop - Controls	24	28	34	39	46	46	46	4,038	96,912	113,064	137,292	157,482	185,748	185,748	185,748
74	Pellet Dryer Tanks and Ducts	22	27	32	37	44	44	44	98	2,156	2,646	3,136	3,626	4,312	4,312	4,312
75	Head Pressure Control	10	12	13	16	19	19	19	37,486	374,860	449,832	487,318	599,776	712,234	712,234	712,234
76	Air Flow Restriction Curtains	9	11	12	14	16	16	16	14,640	131,760	161,040	175,680	204,960	234,240	234,240	234,240
77	Efficient condensor Refrigerator	5	6	7	9	10	10	10	6,787	33,935	40,722	47,509	61,083	67,870	67,870	67,870
78	**Prescriptive Rebate Totals**	62,288	66,684	71,370	76,402	81,655	81,655	81,655		20,453,522	24,140,470	28,223,448	32,868,215	38,423,383	38,423,383	38,423,383

THE DAYTON POWER AND LIGHT COMPANY
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Book II - Customer Conservation and Energy Management
Demand Side Management Program - Non-Residential Prescriptive Rebates

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1	**C&I Prescriptive Rebates**	KW Per								Cost Per							
2	**Motors and Drives**	Measure				Annual Demand Savings				Measure				Incentive Costs			
3	20-250 hp - avg for group	0.23	20.5	24.4	29.4	35.2	42.1	42.1	42.1	$257	$22,873	$28,127	$35,069	$43,281	$53,450	$55,187	$56,980
4	1-5 HP motors - incentives per HP	0.03	13.3	16.0	19.1	23.0	27.6	27.6	27.6	$10	$13,290	$16,479	$20,404	$25,294	$31,333	$32,351	$33,402
5	7.5 - 20 HP motors - incentives per HP	0.08	106.3	127.6	153.1	183.8	220.5	220.5	220.5	$8	$159,480	$197,621	$244,852	$303,398	$375,855	$388,071	$400,683
6	High Efficiency Pumps HP 10	0.21	1.5	1.9	2.3	2.5	3.2	3.2	3.2	$260	$1,820	$2,416	$3,049	$3,434	$4,432	$4,576	$4,725
7	High Efficiency Pumps HP 15	0.31	2.2	2.8	3.4	3.7	4.7	4.7	4.7	$300	$2,100	$2,788	$3,518	$3,963	$5,114	$5,280	$5,452
8	High Efficiency Pumps HP 20	0.41	0.4	0.4	0.4	0.4	0.8	0.8	0.8	$400	$400	$413	$426	$440	$909	$939	$969
9	Variable Frequency Drive Pumps HP 5	2.10	8.4	8.4	10.5	12.6	14.7	14.7	14.7	$2,177	$8,706	$8,989	$11,601	$14,374	$17,315	$17,878	$18,459
10	VFD HP 7.5	3.18	12.7	12.7	15.9	19.1	22.3	22.3	22.3	$2,752	$11,006	$11,364	$14,666	$18,172	$21,889	$22,600	$23,335
11	VFD HP 10	4.19	29.3	37.7	46.1	50.3	62.9	62.9	62.9	$2,864	$20,048	$26,614	$33,585	$37,829	$48,823	$50,410	$52,048
12	VFD HP 15	6.30	44.1	56.7	69.3	75.6	94.5	94.5	94.5	$3,581	$25,064	$33,272	$41,987	$47,293	$61,037	$63,021	$65,069
13	VFD HP 20	8.47	33.9	33.9	42.4	50.8	59.3	59.3	59.3	$4,031	$16,122	$16,646	$21,484	$26,618	$32,064	$33,106	$34,182
14	VFD HP 25	10.59	0.0	10.6	10.6	10.6	10.6	10.6	10.6	$4,706	$0	$4,858	$5,016	$5,179	$5,348	$5,521	$5,701
15	VFD HP 30	12.71	0.0	12.7	12.7	12.7	12.7	12.7	12.7	$5,414	$0	$5,590	$5,772	$5,959	$6,153	$6,353	$6,559
16	VFD HP 40	16.94	0.0	16.9	16.9	16.9	16.9	16.9	16.9	$5,685	$0	$5,870	$6,061	$6,257	$6,461	$6,671	$6,888
17	VFD HP 50	21.18	0.0	21.2	21.2	21.2	21.2	21.2	21.2	$7,128	$0	$7,360	$7,599	$7,846	$8,101	$8,364	$8,636
18	**Compressed Air**																
19	Engineered Nozzles	3.99	885.8	1,061.3	1,272.8	1,520.2	1,823.4	1,823.4	1,823.4	$40	$8,880	$10,986	$13,603	$16,775	$20,775	$21,450	$22,147
20	Zone Shutoff Valves	0.31	13.6	16.4	19.5	24.2	28.5	28.5	28.5	$236	$10,384	$12,915	$15,850	$20,262	$24,675	$25,477	$26,305
21	Moisture Traps - Condensate Drain Valve	0.30	66.6	79.8	95.7	114.9	137.7	137.7	137.7	$88	$19,425	$24,031	$29,756	$36,887	$45,644	$47,127	$48,659
22	Dew Point Controlled Desiccant Dryers	11.73	105.6	129.0	140.8	164.2	187.7	187.7	187.7	$2,500	$22,500	$28,394	$31,982	$38,525	$45,459	$46,936	$48,462
23	**HVAC**																
24	Packaged Terminal AC	0.21	41.0	48.3	55.9	67.0	78.1	78.1	78.1	$396	$77,220	$94,040	$112,294	$139,045	$167,417	$172,858	$178,475
25	Packaged Terminal HP																
26	Unitary AC Rooftop & HP Rooftop																
27	<65,000 BTUH 1 Phase																
28	<65,000 BTUH 3 Phase																
29	65-135,000 BTUH																
30	135-760,000 BTUH																
31	760,000 + BTUH																
32	Ground Source HP Closed Loop																
33	Water Source HP Building Loop																
34	ES Window AC under 14,000 Btu/hr	0.06	2.6	3.2	3.8	4.6	5.5	5.5	5.5	$25	$1,100	$1,368	$1,706	$2,091	$2,614	$2,699	$2,787
35	ES Window AC over 14,000 Btu/hr	0.13	5.7	6.9	8.3	9.9	12.0	12.0	12.0	$50	$2,200	$2,736	$3,411	$4,183	$5,228	$5,398	$5,573
36	ES Sleeve AC under 14,000 Btu/hr	0.06	1.3	1.6	1.9	2.3	2.8	2.8	2.8	$25	$550	$697	$853	$1,046	$1,307	$1,349	$1,393
37	ES Sleeve AC over 14,000 Btu/hr	0.13	2.9	3.5	4.2	4.9	6.0	6.0	6.0	$50	$1,100	$1,394	$1,706	$2,091	$2,614	$2,699	$2,787
38	HP Water Heater 500 gal/day	5.87	76.3	93.9	111.5	135.0	164.4	164.4	164.4	$3,500	$45,500	$57,820	$70,893	$88,607	$111,375	$114,994	$118,732
39	HP Water Heater 1000 gal/day	11.84	47.4	59.2	71.0	82.9	94.7	94.7	94.7	$5,000	$20,000	$25,813	$31,982	$38,525	$45,459	$46,936	$48,462
40	HP Water Heater 1500 gal/day	17.81	71.2	89.1	106.9	124.7	142.5	142.5	142.5	$7,000	$28,000	$36,138	$44,774	$53,934	$63,643	$65,711	$67,847
41	Setback/Programmable Thermostat	1.75	852.3	999.3	1,176.0	1,389.5	1,643.3	1,643.3	1,643.3	$50	$24,350	$29,478	$35,819	$43,698	$53,358	$55,092	$56,882
42	Supply Air Reset - Controls	0.86	18.9	23.2	27.5	31.8	37.8	37.8	37.8	$200	$4,400	$5,576	$6,823	$8,145	$10,001	$10,326	$10,662
43	Unoccupied Cycle - Controls	27.94	670.6	782.3	950.0	1,089.7	1,285.2	1,285.2	1,285.2	$200	$4,800	$5,782	$7,249	$8,585	$10,456	$10,795	$11,146

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Line No.	Description		2009	2010	2011	2012	2013	2014	2015		2009	2010	2011	2012	2013	2014	2015
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)
44	**Lighting**	KW Per Measure	Annual Demand Savings							Cost Per Measure	Incentive Costs						
45	8 ft. 1-2 Lamp T-8/E Ballast	0.015	731.0	757.5	784.1	810.7	837.3	837.3	837.3	$6	$282,634	$302,431	$323,217	$345,034	$367,928	$379,885	$392,232
46	8 ft. HO 1 &2 T-8/EB																
47	4 ft. 1-4 T-8/EB																
48	3 ft 1-4 T-8/EB																
49	2 ft. 1-4 T-8/EB																
50	LED Exit Signs New/Electronic																
51	CFL Screw in	0.05	132.9	150.6	171.9	197.4	228.0	228.0	228.0	$2	$5,316	$6,220	$7,330	$8,691	$10,365	$10,702	$11,049
52	LED Auto Traffic Signals	0.07	62.0	74.4	89.3	107.2	128.7	128.7	128.7	$13	$11,075	$13,719	$17,004	$21,065	$26,111	$26,959	$27,835
53	Pulse Start Metal Halide (retrofit only)	0.12	31.9	58.4	85.1	111.6	111.6	111.6	111.6	$25	$6,650	$12,571	$18,896	$25,591	$26,423	$27,282	$28,168
54	CFL Fixture	0.10	31.6	36.9	43.3	50.9	60.2	60.2	60.2	$22	$6,952	$8,382	$10,155	$12,326	$15,051	$15,541	$16,046
55	Occupancy Sensors under 500 ft2	0.12	13.8	16.0	18.5	21.6	25.2	25.2	25.2	$50	$5,750	$6,866	$8,209	$9,906	$11,933	$12,321	$12,721
56	Hi Bay fluorescent 4LT5HO	0.25	24.3	28.8	34.0	40.5	48.0	48.0	48.0	$96	$9,312	$11,399	$13,918	$17,118	$20,948	$21,628	$22,331
57	Hi Bay Fluorescent 6LF32T8	0.24	23.3	27.6	32.6	38.9	46.1	46.1	46.1	$80	$7,760	$9,499	$11,599	$14,265	$17,456	$18,024	$18,609
58	Plug Load Occupancy Sensors Document Stations	0.04	3.6	4.2	5.1	6.1	7.4	7.4	7.4	$25	$2,225	$2,736	$3,411	$4,183	$5,228	$5,398	$5,573
59	Occupancy Sensors over 500 ft3	0.29	18.0	20.6	23.8	27.3	31.9	31.9	31.9	$100	$6,200	$7,331	$8,742	$10,347	$12,501	$12,908	$13,327
60	T-5 with Elec Ballast replacing T-12	0.03	1.6	1.9	2.2	2.6	3.0	3.0	3.0	$6	$292	$352	$428	$515	$631	$652	$673
61	T-5 HO with Elec Ballast replacing T-12	0.03	0.8	0.9	1.1	1.3	1.5	1.5	1.5	$7	$176	$208	$249	$308	$377	$389	$402
62	**Lighting Controls**																
63	Central Lighting Control	3.12	296.4	352.6	418.1	496.1	592.8	592.8	592.8	$1,350	$128,250	$157,508	$192,850	$236,266	$291,506	$300,980	$310,762
64	Switching Controls for Multilevel Lighting	2.44	231.8	275.7	327.0	388.0	463.6	463.6	463.6	$900	$85,500	$105,005	$128,566	$157,511	$194,337	$200,653	$207,175
65	Daylight Sensor controls	4.02	373.9	446.2	530.6	635.2	755.8	755.8	755.8	$900	$83,700	$103,147	$126,647	$156,520	$192,292	$198,541	$204,994
66	**Other Measures**																
67	Window Film	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$2	$8,860	$10,978	$13,223	$15,604	$18,125	$18,714	$19,322
68	Vending Equipment Controller	0.22	87.8	97.5	109.1	120.8	136.4	136.4	136.4	$50	$19,950	$22,870	$26,438	$30,214	$35,231	$36,376	$37,558
69	Commercial Clothes Washer & Electric Dryer	0.26	69.2	82.9	99.6	119.3	143.3	143.3	143.3	$50	$13,300	$16,468	$20,415	$25,261	$31,310	$32,327	$33,378
70	Economizer Cycle - Controls	0.36	33.5	40.0	47.5	56.9	67.7	67.7	67.7	$200	$18,600	$22,922	$28,144	$34,782	$42,731	$44,120	$45,554
71	Barrel Wraps (Inj Mold & Extruders)	0.68	29.9	36.0	43.5	51.7	62.6	62.6	62.6	$35	$1,540	$1,915	$2,388	$2,928	$3,659	$3,778	$3,901
72	Chilled Water Reset	1.30	35.1	40.3	45.8	54.6	63.7	63.7	63.7	$550	$14,850	$17,604	$21,108	$25,426	$30,628	$31,623	$32,651
73	Optimal Start/Stop - Controls	1.10	26.4	30.8	37.4	42.9	50.6	50.6	50.6	$200	$4,800	$5,782	$7,249	$8,585	$10,456	$10,795	$11,146
74	Pellet Dryer Tanks and Ducts	0.03	0.7	0.8	1.0	1.1	1.3	1.3	1.3	$27	$594	$753	$921	$1,100	$1,350	$1,394	$1,439
75	Head Pressure Control	10.17	101.7	122.0	132.2	162.7	193.2	193.2	193.2	$1,600	$16,000	$19,824	$22,174	$28,178	$34,549	$35,672	$36,831
76	Air Flow Restriction Curtains	3.97	35.7	43.7	47.6	55.6	63.5	63.5	63.5	$1,200	$10,800	$13,629	$15,351	$18,492	$21,820	$22,529	$23,262
77	Efficient condensor Refrigerator	1.84	9.2	11.0	12.9	16.6	18.4	18.4	18.4	$700	$3,500	$4,337	$5,224	$6,934	$7,955	$8,214	$8,481
78	**Prescriptive Rebate Totals**		5,540.5	6,538.2	7,643.4	8,901.8	10,405.4	10,405.4	10,405.4		$1,305,904	$1,590,031	$1,897,646	$2,268,886	$2,719,210	$2,807,580	$2,898,827

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Demand Side Management Program - Non-Residential Custom Rebates

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: None

WPG-1.11
Page 1 of 1
Witness Responsible:
Maria Bubp

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Forecast Total Non-Residential Sales (MWH)	10,050,419	10,106,853	10,161,566	10,212,329	10,260,743	10,318,312	10,384,919		DP&L IRP Forecast
2	Incentive Budgeted Per MWH of Sales	$0.026	$0.108	$0.139	$0.144	$0.149	$0.154	$0.159		Based on ComEd DSM Filing
3	Custom Rebate Incentive Budget	$261,311	$1,091,540	$1,412,458	$1,470,575	$1,528,851	$1,589,020	$1,651,202	$9,004,957	Line 1 * Line 2
4	Marketing and Admin. % of Incentive	55%								Based on ComEd DSM Filing
5	Marketing and Administration	$143,721	$600,347	$776,852	$808,816	$840,868	$873,961	$908,161	$4,952,726	Line 3 * Line 4
6	Annual Program Budget	$405,032	$1,691,887	$2,189,310	$2,279,391	$2,369,719	$2,462,981	$2,559,363	$13,957,683	Line 3 + Line 5
7	Cost per kWh of First Year Savings	$0.09000	$0.09293	$0.09595	$0.09907	$0.10229	$0.10561	$0.10904		Based on ComEd DSM Filing
8	Annual Energy Savings (kWh)	2,903,456	11,745,830	14,720,771	14,843,797	14,946,241	15,046,113	15,143,085		Line 3 / Line 7
9	Cumulative Annual Energy Savings (hWh)	2,903,456	14,649,286	29,370,057	44,213,854	59,160,095	74,206,208	89,349,293		Cumulative Total From Line 8
10	Cost per KW of First Year Savings	$483.00	$498.70	$514.91	$531.64	$548.92	$566.76	$585.18		Based on ComEd DSM Filing
11	Annual Demand Savings (KW)	541.0	2,188.8	2,743.1	2,766.1	2,785.2	2,803.7	2,821.7		Line 3 / Line 10
12	Cumulative Annual Demand Savings (KW)	541.0	2,729.8	5,472.9	8,239.0	11,024.2	13,827.9	16,649.6		Cumulative Total From Line 11

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Demand Side Management Program - Non-Residential Direct Load Control

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: None

WPG-1.12
Page 1 of 1
Witness Responsible:
Maria Bubp

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Non-Residential Customers with AMI	1,182	7,173	16,330	30,597	46,436	62,644	63,381		Non-Residential Cust * Percent of AMI Meters Installed
2	Annual Percentage of Participation	0.00%	1.12%	1.12%	1.12%	1.12%	1.12%	1.12%		Non-residential Survey
3	Incremental Customers on Direct Load Control	0	80	183	343	520	702	710		Line 1 * Line 2
4	Cumulative Customers on Direct Load Control	0	80	263	606	1,126	1,828	2,538		Cumulative Total From Line 3
5	Average Cost Per Thermostat Installed		$343.44	$352.94	$311.97	$317.35	$322.83	$328.61		Based on Industry RFP
6	Annual Cost for Programable Thermostats	$0	$27,475	$64,588	$107,006	$165,022	$226,627	$233,313	$824,031	Line 3 * Line 5
7	Average Marketing and Admin Cost Per Thermostat		$658.00	$161.15	$45.33	$54.24	$37.50	$29.03		Based on Industry RFP
8	Marketing and Administration	$0	$52,640	$29,490	$15,548	$28,205	$26,325	$20,611	$172,819	Line 3 * Line 7
9	Operations and Maintenance % of Installed Base	5%								DP&L Estimate
10	Programable Thermostat Maintenance	$0	$1,374	$4,641	$9,453	$17,867	$29,507	$41,701	$104,542	Line 4 * Line 5 * Line 9
11	Annual Program Budget	$0	$81,489	$98,719	$132,007	$211,094	$282,459	$295,625	$1,101,392	Line 6 + Line 8 + Line 10
12	Annual Energy Savings Per Appliance (kWh)	518								Based on Ameren DSM Filing
13	Annual Energy Savings (kWh)	0	41,440	94,794	177,674	269,360	363,636	367,780		Line 3 * Line 12
14	Cumulative Annual Energy Savings (kWh)	0	41,440	136,234	313,908	583,268	946,904	1,314,684		Cumulative Total From Line 13
15	Demand Savings Per Appliance (KW)	1.93								Based on Ameren DSM Filing
16	Annual Demand Savings (KW)	0.0	154.4	353.2	662.0	1,003.6	1,354.9	1,370.3		Line 3 * Line 15
17	Cumulative Annual Demand Savings (KW)	0.0	154.4	507.6	1,169.6	2,173.2	3,528.1	4,898.4		Cumulative Total From Line 16

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Demand Side Management Program - Non-Residential Time of Use Pricing

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.12

Witness Responsible:
Maria Bubp

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Non-Residential Customers with AMI	1,182	7,173	16,330	30,597	46,436	62,644	63,381		WPG-1.12, Line 1
2	Annual Percentage of Incremental Participation	0.00%	0.00%	1.20%	1.20%	1.20%	1.20%	1.20%		Non-residential Survey
3	Incremental Annual Enrollment	0	0	196	367	557	752	761		Line 1 * Line 2
4	Customers on TOU Program	0	0	196	563	1,120	1,872	2,633		Cumulative Total from Line 3
5	Marketing, Administration and Pilot Evaluation			$250,000	$258,125	$266,514	$275,176	$284,119	$1,333,934	DP&L Estimate
6	Average Demand per Customer	31.90								2007 Avg Demand Per Non-Residential Customer
7	Percentage Reduction in Demand	4.9%								California Statewide Pricing Pilot
8	Demand Savings per Customer	1.56	1.56	1.56	1.56	1.56	1.56	1.56		Line 6 * Line 7
9	Incremental Annual Demand Savings	0.0	0.0	305.8	572.5	868.9	1,173.1	1,187.2		Line 3 * Line 8
10	Cumulative Annual Demand Savings	0.0	0.0	305.8	878.3	1,747.2	2,920.3	4,107.5		Line 4 * Line 8

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Demand Side Management Program - Non-Residential Time of Use + Critical Peak Pricing

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.12

WPG-1.14
Page 1 of 1
Witness Responsible:
Maria Bubp

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Non-Residential Customers with AMI	1,182	7,173	16,330	30,597	46,436	62,644	63,381		WPG-1.12, Line 1
2	Annual Percentage of Incremental Participation	0.00%	0.00%	1.20%	1.20%	1.20%	1.20%	1.20%		Non-residential Survey
3	Incremental Annual Enrollment	0	0	196	367	557	752	761		Line 1 * Line 2
4	Customers on TOU-CPP Program	0	0	196	563	1,120	1,872	2,633		Cumulative Total from Line 3
5	Marketing, Administration and Pilot Evaluation			$250,000	$258,125	$266,514	$275,176	$284,119	$1,333,934	DP&L Estimate
6	Average Demand per Customer (KW)	31.90								WPG-1.13, Line 6
7	Percentage Reduction in Demand	6.0%								Pepco MD filing
8	Demand Savings per Customer (KW)	1.91	1.91	1.91	1.91	1.91	1.91	1.91		Line 6 * Line 7
9	Incremental Annual Demand Savings (KW)	0.0	0.0	374.4	701.0	1,063.9	1,436.3	1,453.5		Line 3 * Line 8
10	Cumulative Annual Demand Savings (KW)	0.0	0.0	374.4	1,075.3	2,139.2	3,575.5	5,029.0		Line 4 * Line 8

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Demand Side Management Program - Education and Outreach

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: None

WPG-1.15
Page 1 of 1
Witness Responsible:
Maria Bubp

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Energy Efficient Home Showcase	$0	$500,000	$0	$0	$0	$0	$0	$500,000	DP&L Commitment
2	Enegy Efficient Home Maintenance Expense	$0	$50,000	$51,625	$53,303	$55,035	$56,824	$58,671	$325,458	DP&L Estimate
3	Program Development and Proof of Concept	$300,000	$400,000	$500,000	$516,250	$533,028	$550,351	$568,237	$3,367,866	DP&L Commitment
4	DP&L Revenue ($000's)	$1,112,914	$1,149,084	$1,186,429	$1,224,988	$1,264,800	$1,305,906	$1,348,348		Based on DP&L 2007 FERC Form 1
5	Budget % for Education Programs	0.12%	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%		Based on ComEd DSM Filing
6	Annual Budget for Education Programs	$1,335,000	$1,034,000	$1,068,000	$1,102,000	$1,138,000	$1,175,000	$1,214,000	$8,066,000	Line 4 * Line 5
7	Annual Program Capital Budget	$0	$500,000	$0	$0	$0	$0	$0	$500,000	Line 1
8	Annual Program Operations and Maintenance Budget	$1,635,000	$1,484,000	$1,619,625	$1,671,553	$1,726,063	$1,782,175	$1,840,908	$11,759,324	Line 2 + Line 3 + Line 6

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Demand Side Management Program - Smart Grid

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPI-1.1

WPG-1.16
Page 1 of 1
Witness Responsible:
Maria Bubp

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	DP&L Sales Forecast (MwH)	15,660,138	15,801,230	15,938,541	16,077,757	16,215,061	16,356,225	16,508,838		DP&L IRP Forecast
2	Ohio Legislative Energy Efficiency Targets (MwH)	44,933	118,606	222,386	340,992	474,424	622,682	770,939		Exhibit MWB-01
3	Forecast of MwH Sales Net of EE and DR	15,615,205	15,682,624	15,716,155	15,736,765	15,740,637	15,733,543	15,737,899		Line 1 - Line 2
4	Percentage of System with Distribution Automation	0.9%	1.8%	2.6%	3.5%	4.4%	5.3%	15.9%		WPI-1.1, Line 30 / 453
5	System Sales in MwH with Distribution Automation	140,537	282,287	408,620	550,787	692,588	833,878	2,502,326		Line 3 * Line 4
6	1% MWH Savings from Line Loss Reductions	1,405	2,823	4,086	5,508	6,926	8,339	25,023		Line 5 * 1%
7	DP&L Demand Forecast - Mw	3,333	3,364	3,397	3,427	3,459	3,489	3,519		DP&L IRP Forecast
8	DSM Reductions in Demand - Mw	32	56	80	104	128	152	176		DP&L Estimate
9	Forecast of MW Demand Net of EE and DR	3,301	3,308	3,317	3,323	3,331	3,337	3,343		Line 7 - Line 8
10	Percentage of System with Distribution Automation	0.9%	1.8%	2.6%	3.5%	4.4%	5.3%	15.9%		Line 4
11	System Demand with Distribution Automation (Mw)	30	60	86	116	147	177	532		Line 9 * Line 10
12	1% MW Savings from Dynamic Voltage Control	0.3	0.6	0.9	1.2	1.5	1.8	5.3		Line 11 * 1%

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Energy Displays Capital + O&M

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.1, WPH-1.1

Witness Responsible:
Jeff Teuscher

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	Number of Residential Customers	459,819	461,393	462,972	464,557	466,146	467,742	469,343		WPG-1.1, Line 1
2	Percentage of AMI Meters Installed	2%	12%	27%	50%	75%	100%	100%		WPH-1.1, Line 1
3	AMI Meters in Field	9,196	55,367	123,002	232,279	349,610	467,742	469,343		Line 1 * Line 2
4	% of customers with AMI receiving HED	30%								DP&L Estimates
5	Cumulative HED Devices in Field		16,610	37,501	69,684	104,883	140,323	140,323		Line 3 * Line 4
6	Average Savings per Customer	5%								ACEEE Emerging Technologies Report "In-Home Energy Use Displays"
7	Average Annual Residential Energy (kWh)	12,120								2007 FERC Form 1
8	Average Savings per Customer (kWh)	606								line 6 * line 7
9	Annual Energy Savings (kWh)	0	10,065,660	22,725,606	42,228,504	63,559,098	85,035,738	85,035,738		Line 5 * Line 8

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Results

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.19, WPG-1.20

Witness Responsible:
Scott Michaelson

Line No.	Program Description	Present Value of Measure Costs	Present Value of Measure Benefits	TRC Ratio
	(A)	(B)	(C)	(D = C / B)
1	Residential			
2	Lighting	$1,715,216	$8,325,573	4.9
3	HVAC Diagnostic and Tune-Up	$841,490	$1,243,084	1.5
4	HVAC Rebates	$442,859	$543,524	1.2
5	Appliance Recycling	$135,525	$271,079	2.0
6	Appliance Rebates	$69,319	$227,130	3.3
7	Direct Load Control	$169,789	$300,800	1.8
8				
9	Non-Residential			
10	Prescriptive Incentives	$3,106,467	$12,019,147	3.9
11	Custom Incentives	$665,690	$1,798,230	2.7
12	Direct Load Control	$47,841	$116,890	2.4

Notes
Column B is based on WPG-1.19, Column I
Column C is based on WPG-1.20, Column K

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Results

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.19, WPG-1.20

WPG-1.18
Page 2 of 4
Witness Responsible:
Scott Michaelson

Line No.	Program Description	Participation	Incremental Cost	Total Incremental Cost
	(A)	(B)	(C)	(D = C / B)
13	Residential Appliance Recycling			
14	Refrigerator	$25,283	$236,022	9.3
15	Freezer	$3,906	$31,117	8.0
16	Room Air Conditioner Turn In	$2,140	$3,933	1.8
17	Program Total	$31,329	$271,073	
18				
19	Residential Appliance Rebates			
20	Energy Star Ceiling Fan	$739	$5,840	7.9
21	Energy Star De-Humidifier	$0	$50,703	> 1.0
22	Energy Star Dishwasher	$0	$68,191	> 1.0
23	Energy Star Freezer	$17,774	$81,406	5.1
24	Energy Star Window A/C	$732	$10,990	15.0
25	Program Total	$19,246	$227,130	
26				
27	C&I Prescriptive Rebates			
28	Motors and Drives			
29	20-250 hp - avg for group	$21,958	$49,788	2.3
30	1-5 HP motors - incentives per HP	$12,758	$28,751	2.3
31	7.5 - 20 HP motors - incentives per HP	$153,101	$254,594	1.7
32	High Efficiency Pumps HP 10	$2,231	$3,491	1.6
33	High Efficiency Pumps HP 15	$3,931	$5,224	1.3
34	High Efficiency Pump HP 20	$816	$993	1.2
35	Variable Frequency Drive Pumps HP 5	$15,716	$20,289	1.2
36	VFD HP 7.5	$21,132	$30,753	1.5
37	VFD HP 10	$38,492	$71,014	1.8
38	VFD HP 15	$48,122	$107,436	2.2
39	VFD HP 20	$30,954	$81,988	2.6
40	VFD HP 25	$9,035	$25,622	2.8
41	VFD HP 30	$10,395	$30,748	3.0
42	VFD HP 40	$10,915	$40,994	3.8
43	VFD HP 50	$13,686	$51,245	3.7
44	Compressed Air			
45	Engineered Nozzles	$17,050	$2,143,777	125.7
46	Zone Shutoff Valves	$19,937	$32,973	1.7
47	Moisture Traps - Condensate Drain Valve	$37,296	$117,079	3.1
48	Dew Point Controlled Desiccant Dryers	$43,200	$255,410	5.9

Notes
Column B is based on WPG-1.19, Column I
Column C is based on WPG-1.20, Column K

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Results

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.19, WPG-1.20

WPG-1.18
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Witness Responsible:
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Line No.	Program Description	Participation	Incremental Cost	Total Incremental Cost
	(A)	(B)	(C)	(D = C / B)
49	HVAC			
50	Packaged Terminal AC	$74,131	$100,159	1.4
51	Packaged Terminal HP			
52	Unitary AC Rooftop & HP Rooftop			
53	<65,000 BTUH 1 Phase			
54	<65,000 BTUH 3 Phase			
55	65-135,000 BTUH			
56	135-760,000 BTUH			
57	760,000 + BTUH			
58	Ground Source HP Closed Loop			
59	Water Source HP Building Loop			
60	ES Window AC under 14,000 Btu/hr	$634	$2,032	3.2
61	ES Window AC over 14,000 Btu/hr	$4,224	$4,998	1.2
62	ES Sleeve AC under 14,000 Btu/hr	$317	$1,105	3.5
63	ES Sleeve AC over 14,000 Btu/hr	$2,112	$2,544	1.2
64	HP Water Heater 500 gal/day	$87,360	$185,871	2.1
65	HP Water Heater 1000 gal/day	$38,400	$115,353	3.0
66	HP Water Heater 1500 gal/day	$53,760	$173,515	3.2
67	Setback/Programmable Thermostat	$109,867	$1,763,470	16.1
68	Supply Air Reset - Controls	$8,448	$33,959	4.0
69	Unoccupied Cycle - Controls	$9,216	$1,200,712	130.3
70	Lighting			
71	8 ft. 1-2 Lamp T-8/E Ballast	$271,329	$1,406,601	5.2
72	8 ft. HO 1 &2 T-8/EB			
73	4 ft. 1-4 T-8/EB			
74	3 ft 1-4 T-8/EB			
75	2 ft. 1-4 T-8/EB			
76	LED Exit Signs New/Electronic			
77	CFL Screw In	$12,758	$211,419	16.6
78	LED Auto Traffic Signals	$42,528	$117,183	2.8
79	Pulse Start Metal Halide (retrofit only)	$38,304	$76,008	2.0
80	CFL Fixture	$13,651	$76,873	5.6
81	Occupancy Sensors under 500 ft2	$11,040	$19,763	1.8
82	Hi Bay fluorescent 4LT5HO	$17,879	$46,998	2.6
83	Hi Bay Fluorescent 6LF32T8	$14,899	$44,484	3.0
84	Plug Load Occupancy Sensors Document Stations	$12,818	$30,027	2.3
85	Occupancy Sensors over 500 ft3	$11,904	$26,517	2.2
86	T-5 with Elec Ballast replacing T-12	$1,119	$2,811	2.5
87	T-5 HO with Elec Ballast replacing T-12	$570	$1,549	2.7

Notes
Column B is based on WPG-1.19, Column I
Column C is based on WPG-1.20, Column K

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Results

Data: 12 Months Forecast
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Work Paper Reference No(s).: WPG-1.19, WPG-1.20

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Line No.	Program Description	Participation	Incremental Cost	Total Incremental Cost
	(A)	(B)	(C)	(D = C / B)
88	**Lighting Controls**			
89	Central Lighting Control	$246,240	$688,072	2.8
90	Switching Controls for Multilevel Lighting	$273,600	$538,418	2.0
91	Daylight Sensor controls	$267,840	$909,807	3.4
92	**Other Measures**			
93	Window Film	$9,058	$21,492	2.4
94	Vending Equipment Controller	$61,285	$155,114	2.5
95	Commercial Clothes Washers - Electric Dryer & Washer	$82,992	$159,078	1.9
96	Economizer Cycle - Controls	$35,712	$81,630	2.3
97	Barrel Wraps (Inj Mold & Extruders)	$2,957	$53,374	18.1
98	Chilled Water Reset	$28,512	$62,643	2.2
99	Optimal Start/Stop - Controls	$9,216	$47,019	5.1
100	Pellet Dryer Tanks and Ducts	$1,140	$1,457	1.3
101	Head Pressure Control	$30,720	$247,198	8.0
102	Air Flow Restriction Curtains	$20,736	$33,437	1.6
103	Efficient condenser Refrigerator	$6,720	$22,375	3.3
104	**Program Total**	**$2,426,721**	**$12,019,147**	

Notes
Column B is based on WPG-1.19, Column I
Column C is based on WPG-1.20, Column K

THE DAYTON POWER AND LIGHT COMPANY
Case No. 09-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Cost Summary

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.11, WPG-1.21, WPG-1.22

Witness Responsible:
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Line No.	Program Description	Participation	Incremental Cost	Total Incremental Cost	NTG	Net Incremental Cost	M&A	EM&V	Total	Source
	(A)	(B)	(C)	(D = B * C)	(E)	(F = D * E)	(G)	(H)	(I = Sum (F:H))	(J)
1	Residential									
2	Lighting	501,663	$2.05	$1,026,279	80%	$821,023	$794,303	$99,890	$1,715,216	Duke DSM Filing - NPV of avoided bulbs
3	HVAC Diagnostic and Tune-Up	5,288	$127.04	$671,788	80%	$537,430	$264,400	$39,660	$841,490	DEER ID Nos. D03-408 and D03-409
4	HVAC Rebates	2,299	$92.62	$212,933	80%	$170,347	$243,004	$29,508	$442,859	DEER ID No. D03-403
5	Appliance Recycling	920	$89.29	$82,146	38%	$31,329	$97,132	$7,064	$135,525	Detailed on Lines 14 through 16
6	Appliance Rebates	2,759	$8.72	$24,057	80%	$19,246	$44,183	$5,891	$69,319	Detailed on Lines 20 through 24
7	Direct Load Control	288	$343.44	$137,946	100%	$137,946	$17,175	$14,668	$169,789	DP&L RFP Results + NPV of ongoing O&M
8										
9	Non-Residential									
10	Prescriptive Incentives	62,292	$40.56	$2,626,793	96%	$2,425,721	$585,016	$95,730	$3,106,467	Detailed on Lines 29 through 103
11	Custom Incentives			$522,622	96%	$501,717	$143,721	$20,252	$665,690	WPG-1.11, Line 3 * 2
12	Direct Load Control	80	$343.44	$38,319	100%	$38,319	$5,447	$4,074	$47,841	DP&L RFP Results + NPV of ongoing O&M

Notes
Column B is based on first year participation for each measure regardless of the year
The source for column C and D is identified Column J
Column E is based on California Database of Energy Efficiency Resources
Column G references WPG-1.21, Column D
Column H references WPG-1.22, Column D

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Cost Summary

Data: 12 Months Forecast
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WPG-1.19
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Witness Responsible:
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Line No.	Program Description	Participation	Incremental Cost	Total Incremental Cost	NTG	Net Incremental Cost	M&A	EM&V	Total	Source
	(A)	(B)	(C)	(D = B * C)	(E)	(F = D * E)	(G)	(H)	(I = Sum (F:H))	(J)
13	**Residential Appliance Recycling**									
14	Refrigerator	739	$97.75	$72,237	35%	$25,283			$25,283	ComEd DSM Filing
15	Freezer	74	$97.75	$7,234	54%	$3,906			$3,906	ComEd DSM Filing
16	Room Air Conditioner Turn In	107	$25.00	$2,675	80%	$2,140			$2,140	Local Market
17	**Program Total**	**920**	**$89.29**	**$82,146**	**38%**	**$31,329**			**$31,329**	**Sum Lines 14 through 16**
18										
19	**Residential Appliance Rebates**									
20	Energy Star Ceiling Fan	77	$12.00	$924	80%	$739			$739	Local Market
21	Energy Star De-Humidifier	499	$0.00	$0	80%	$0			$0	Local Market
22	Energy Star Dishwasher	1,156	$0.00	$0	80%	$0			$0	Local Market
23	Energy Star Freezer	966	$23.00	$22,218	80%	$17,774			$17,774	Local Market
24	Energy Star Window A/C	61	$15.00	$915	80%	$732			$732	ComEd DSM Filing
26	**Program Total**	**2,759**	**$8.72**	**$24,057**	**80%**	**$19,246**			**$19,246**	**Sum Lines 20 through 24**
26										
27	**C&I Prescriptive Rebates**									
28	**Motors and Drives**									
29	20-250 hp - avg for group	89	$257.00	$22,873	96%	$21,958			$21,958	Duke DSM Filing
30	1-5 HP motors - incentives per HP	443	$30.00	$13,290	96%	$12,758			$12,758	Duke DSM Filing
31	7.5 - 20 HP motors - incentives per HP	1,329	$120.00	$159,480	96%	$153,101			$153,101	Duke DSM Filing
32	High Efficiency Pumps HP 10	7	$332.00	$2,324	96%	$2,231			$2,231	Duke DSM Filing
33	High Efficiency Pumps HP 15	7	$585.00	$4,095	96%	$3,931			$3,931	Duke DSM Filing
34	High Efficiency Pump HP 20	1	$850.00	$850	96%	$816			$816	Duke DSM Filing
35	Variable Frequency Drive Pumps HP 5	4	$4,353.00	$17,412	96%	$16,716			$16,716	Duke DSM Filing
36	VFD HP 7.5	4	$5,503.00	$22,012	96%	$21,132			$21,132	Duke DSM Filing
37	VFD HP 10	7	$5,728.00	$40,096	96%	$38,492			$38,492	Duke DSM Filing
38	VFD HP 15	7	$7,161.00	$50,127	96%	$48,122			$48,122	Duke DSM Filing
39	VFD HP 20	4	$8,061.00	$32,244	96%	$30,954			$30,954	Duke DSM Filing
40	VFD HP 25	1	$9,411.00	$9,411	96%	$9,035			$9,035	Duke DSM Filing
41	VFD HP 30	1	$10,828.00	$10,828	96%	$10,395			$10,395	Duke DSM Filing
42	VFD HP 40	1	$11,370.00	$11,370	96%	$10,915			$10,915	Duke DSM Filing
43	VFD HP 50	1	$14,256.00	$14,256	96%	$13,686			$13,686	Duke DSM Filing
44	**Compressed Air**									
45	Engineered Nozzles	222	$80.00	$17,760	96%	$17,050			$17,050	Duke DSM Filing
46	Zone Shutoff Valves	44	$472.00	$20,768	96%	$19,937			$19,937	Duke DSM Filing
47	Moisture Traps - Condensate Drain Valve	222	$175.00	$38,850	96%	$37,296			$37,296	Duke DSM Filing
48	Dew Point Controlled Desiccant Dryers	9	$5,000.00	$45,000	96%	$43,200			$43,200	Duke DSM Filing

Notes
Column B is based on first year participation for each measure regardless of the year
The source for column C is identified Column J
Column E is based on California Database of Energy Efficiency Resources

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Cost Summary

Data: 12 Months Forecast
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WPG-1.19
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Witness Responsible:
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Line No.	Program Description	Participation	Incremental Cost	Total Incremental Cost	NTG	Net Incremental Cost	M&A	EM&V	Total	Source
	(A)	(B)	(C)	(D = B * C)	(E)	(F = D * E)	(G)	(H)	(I = Sum (F:H))	(J)
49	**HVAC**									
50	Packaged Terminal AC	195	$398.00	$77,220	96%	$74,131			$74,131	Duke DSM Filing
51	Packaged Terminal HP									
52	Unitary AC Rooftop & HP Rooftop									
53	<65,000 BTUH 1 Phase									
54	<65,000 BTUH 3 Phase									
55	66-135,000 BTUH									
56	135-760,000 BTUH									
57	760,000 + BTUH									
58	Ground Source HP Closed Loop									
59	Water Source HP Building Loop									
60	ES Window AC under 14,000 Btu/hr	44	$15.00	$660	96%	$634			$634	Local Market
61	ES Window AC over 14,000 Btu/hr	44	$100.00	$4,400	96%	$4,224			$4,224	Duke DSM Filing
62	ES Sleeve AC under 14,000 Btu/hr	22	$15.00	$330	96%	$317			$317	Local Market
63	ES Sleeve AC over 14,000 Btu/hr	22	$100.00	$2,200	96%	$2,112			$2,112	Duke DSM Filing
64	HP Water Heater 500 gal/day	13	$7,000.00	$91,000	96%	$87,360			$87,360	Duke DSM Filing
65	HP Water Heater 1000 gal/day	4	$10,000.00	$40,000	96%	$38,400			$38,400	Duke DSM Filing
66	HP Water Heater 1500 gal/day	4	$14,000.00	$56,000	96%	$53,760			$53,760	Duke DSM Filing
67	Setback/Programmable Thermostat	487	$235.00	$114,445	96%	$109,867			$109,867	Duke DSM Filing
68	Supply Air Reset - Controls	22	$400.00	$8,800	96%	$8,448			$8,448	Duke DSM Filing
69	Unoccupied Cycle - Controls	24	$400.00	$9,600	96%	$9,216			$9,216	Duke DSM Filing
70	**Lighting**									
71	8 ft. 1-2 Lamp T-8/E Ballast	46,730	$6.80	$282,634	96%	$271,329			$271,329	Duke DSM Filing
72	8 ft. HO 1 &2 T-8/EB									
73	4 ft. 1-4 T-8/EB									
74	3 ft 1-4 T-8/EB									
75	2 ft. 1-4 T-8/EB									
76	LED Exit Signs New/Electronic									
77	CFL Screw in	2,658	$5.00	$13,290	96%	$12,758			$12,758	Duke DSM Filing
78	LED Auto Traffic Signals	886	$50.00	$44,300	96%	$42,528			$42,528	Duke DSM Filing
79	Pulse Start Metal Halide (retrofit only)	266	$150.00	$39,900	96%	$38,304			$38,304	Duke DSM Filing
80	CFL Fixture	316	$45.00	$14,220	96%	$13,651			$13,651	Duke DSM Filing
81	Occupancy Sensors under 500 ft2	115	$100.00	$11,500	96%	$11,040			$11,040	Duke DSM Filing
82	HI Bay fluorescent 4LT5HO	97	$192.00	$18,624	96%	$17,879			$17,879	Duke DSM Filing
83	HI Bay Fluorescent 6LF32T8	97	$160.00	$15,520	96%	$14,899			$14,899	Duke DSM Filing
84	Plug Load Occupancy Sensors Document Stations	89	$150.00	$13,350	96%	$12,816			$12,816	Duke DSM Filing
85	Occupancy Sensors over 500 ft3	62	$200.00	$12,400	96%	$11,904			$11,904	Duke DSM Filing
86	T-5 with Elec Ballast replacing T-12	53	$22.00	$1,166	96%	$1,119			$1,119	Duke DSM Filing
87	T-5 HO with Elec Ballast replacing T-12	27	$22.00	$594	96%	$570			$570	Duke DSM Filing

Notes
Column B is based on first year participation for each measure regardless of the year
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Column E is based on California Database of Energy Efficiency Resources

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Cost Summary

Data: 12 Months Forecast
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Work Paper Reference No(s).: WPG-1.10a

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Line No.	Program Description	Participation	Incremental Cost	Total Incremental Cost	NTG	Net Incremental Cost	M&A	EM&V	Total	Source
	(A)	(B)	(C)	(D = B * C)	(E)	(F = D * E)	(G)	(H)	(I = Sum (F:H))	(J)
88	**Lighting Controls**									
89	Central Lighting Control	95	$2,700.00	$256,500	96%	$246,240			$246,240	Duke DSM Filing
90	Switching Controls for Multilevel Lighting	95	$3,000.00	$285,000	96%	$273,600			$273,600	Duke DSM Filing
91	Daylight Sensor controls	93	$3,000.00	$279,000	96%	$267,840			$267,840	Duke DSM Filing
92	**Other Measures**									
93	Window Film	4,430	$2.13	$9,436	96%	$9,058			$9,058	DEER ID No. D03-443
94	Vending Equipment Controller	399	$160.00	$63,840	96%	$61,286			$61,286	Duke DSM Filing
95	Commercial Clothes Washers - Electric Dryer & Washer	266	$325.00	$86,450	96%	$82,992			$82,992	Duke DSM Filing
96	Economizer Cycle - Controls	93	$400.00	$37,200	96%	$35,712			$35,712	Duke DSM Filing
97	Barrel Wraps (Inj Mold & Extruders)	44	$70.00	$3,080	96%	$2,957			$2,957	Duke DSM Filing
98	Chilled Water Reset	27	$1,100.00	$29,700	96%	$28,512			$28,512	Duke DSM Filing
99	Optimal Start/Stop - Controls	24	$400.00	$9,600	96%	$9,216			$9,216	Duke DSM Filing
100	Pellet Dryer Tanks and Ducts	22	$54.00	$1,188	96%	$1,140			$1,140	Duke DSM Filing
101	Head Pressure Control	10	$3,200.00	$32,000	96%	$30,720			$30,720	Duke DSM Filing
102	Air Flow Restriction Curtains	9	$2,400.00	$21,600	96%	$20,736			$20,736	Duke DSM Filing
103	Efficient condensor Refrigerator	5	$1,400.00	$7,000	96%	$6,720			$6,720	Duke DSM Filing
104	**Program Total**	**62,292**	**$40.56**	**$2,526,793**	**96%**	**$2,426,721**			**$2,426,721**	**Sum Lines 29 through 103**

Notes
Column B is based on first year participation for each measure regardless of the year
The source for column C is identified Column J
Column E is based on California Database of Energy Efficiency Resources

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Benefit Summary

Data: 12 Months Forecast
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Work Paper Reference No(s).: WPG-1.1, WPG-1.2, WPG-1.3, WPG-1.7, WPG-1.11, WPG-1.12, WPH-1.10

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Line No.	Program Description	Measure Life	Participation	kWh Saved Per Measure	Total Energy Savings	KW Saved Per Measure	Total KW Savings	Present Value of Lifetime Savings	NTG	Net PV of Savings	Source
	(A)	(B)	(C)	(D)	(E = C * D)	(F)	(G = C * F)	(H)	(I)	(J = H * I)	(K)
1	Residential										
2	Lighting	9	501,663	47	23,578,161	0.004	2,006.7	$10,406,966	80%	$8,325,573	WPG-1.1, Lines 9 and 12
3	HVAC Diagnostic and Tune-Up	10	5,288	394	2,083,472	0.35	1,850.8	$1,553,655	80%	$1,243,084	WPG-1.2, Lines 9 and 12
4	HVAC Rebates	18	2,299	280	643,720	0.25	574.8	$679,405	80%	$543,524	WPG-1.3, Lines 9 and 12
5	Appliance Recycling	10	920	1,707	1,570,119	0.27	245.0	$736,890	38%	$271,073	Detailed on Lines 14 through 16
6	Appliance Rebates	11	2,759	207	570,997	0.03	69.4	$283,913	80%	$227,130	Detailed on Lines 20 through 24
7	Direct Load Control	15	288	370	106,560	1.38	397.4	$300,800	100%	$300,800	WPG-1.7, Lines 12 and 15
8											
9	Non-Residential										
10	Prescriptive Incentives		62,292	332	20,679,839	0.09	5,601.6	$12,519,945	96%	$12,019,147	Detailed on Lines 29 through 103
11	Custom Incentives	15			2,903,456		541.0	$1,673,157	96%	$1,796,230	WPG-1.11, Lines 8 and 11
12	Direct Load Control	15	80	518	41,440	1.93	154.4	$116,890	100%	$116,890	WPG-1.12, Lines 12 and 15

Notes
Column C is based on first year participation for each measure regardless of the year
The source for columns D and F are identified in column K
Column H is based on the present value of first year savings over the life of the individual measure valued at capacity and energy prices on WPH-1.10
Column I is based on California Database of Energy Efficiency Resources

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Benefit Summary

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.10a, WPH-1.10

Witness Responsible:
Scott Michaelson

Line No.	Program Description		Participation	kWh Saved Per Measure	Total Energy Savings	KW Saved Per Measure	Total KW Savings	Present Value of Lifetime Savings	NTG	Net PV of Savings	Source
	(A)	(B)	(C)	(D)	(E = C * D)	(F)	(G = C * F)	(H)	(I)	(J = H * I)	(K)
13	Residential Appliance Recycling										
14	Refrigerator	10	739	1,946	1,438,634	0.300	221.6	$674,349	35%	$236,022	ComEd DSM Filing
15	Freezer	10	74	1,662	122,948	0.256	18.9	$57,625	54%	$31,117	ComEd DSM Filing
16	Room Air Conditioner Turn In	10	107	80	8,540	0.040	4.3	$4,916	80%	$3,933	ComEd DSM Filing
17	**Program Total**		**920**	**1,707**	**1,570,119**	**0.266**	**245.0**	**$736,890**	**38%**	**$271,073**	**Sum Lines 14 through 16**
18											
19	Residential Appliance Rebates										
20	Energy Star Ceiling Fan	10	77	173	13,365	0.070	5.4	$7,300	80%	$5,840	Ameren DSM Filing
21	Energy Star De-Humidifier	10	499	250	124,845	0.070	35.0	$63,379	80%	$50,703	Ameren DSM Filing
22	Energy Star Dishwasher	13	1,156	146	168,779	-	-	$85,239	80%	$68,191	Ameren DSM Filing
23	Energy Star Freezer	11	966	247	238,516	0.020	19.3	$114,257	80%	$91,406	Ameren DSM Filing
24	Energy Star Window A/C	10	61	420	25,493	0.160	9.7	$13,738	80%	$10,990	Ameren DSM Filing
25	**Program Total**		**2,769**	**207**	**570,997**	**0.025**	**69.4**	**$283,913**	**80%**	**$227,130**	**Sum Lines 20 through 24**
26											
27	C&I Prescriptive Rebates										
28	**Motors and Drives**										
29	20-250 hp - avg for group	15	89	853	75,917	0.230	20.5	$51,862	96%	$49,788	Duke DSM Filing
30	1-5 HP motors - incentives per HP	15	443	96	42,528	0.030	13.3	$29,949	96%	$28,751	Duke DSM Filing
31	7.5 - 20 HP motors - incentives per HP	15	1,329	291	386,739	0.080	106.3	$265,202	96%	$254,594	Duke DSM Filing
32	High Efficiency Pumps HP 10	15	7	756	5,292	0.210	1.5	$3,636	96%	$3,491	Duke DSM Filing
33	High Efficiency Pumps HP 15	15	7	1,135	7,945	0.310	2.2	$5,441	96%	$5,224	Duke DSM Filing
34	High Efficiency Pump HP 20	15	1	1,513	1,513	0.410	0.4	$1,035	96%	$993	Duke DSM Filing
35	Variable Frequency Drive Pumps HP 5	15	4	7,726	30,904	2.100	8.4	$21,145	96%	$20,299	Duke DSM Filing
36	VFD HP 7.5	15	4	11,706	46,824	3.180	12.7	$32,034	96%	$30,753	Duke DSM Filing
37	VFD HP 10	15	7	15,452	108,164	4.190	29.3	$73,973	96%	$71,014	Duke DSM Filing
38	VFD HP 15	15	7	23,412	163,884	6.300	44.1	$111,913	96%	$107,436	Duke DSM Filing
39	VFD HP 20	15	4	31,216	124,864	8.470	33.9	$85,404	96%	$81,988	Duke DSM Filing
40	VFD HP 25	15	1	39,020	39,020	10.590	10.6	$26,690	96%	$25,622	Duke DSM Filing
41	VFD HP 30	15	1	46,824	46,824	12.710	12.7	$32,029	96%	$30,748	Duke DSM Filing
42	VFD HP 40	15	1	62,432	62,432	16.940	16.9	$42,702	96%	$40,994	Duke DSM Filing
43	VFD HP 50	15	1	78,041	78,041	21.180	21.2	$53,381	96%	$51,246	Duke DSM Filing
44	**Compressed Air**										
45	Engineered Nozzles	15	222	14,707	3,264,954	3.990	885.8	$2,233,101	96%	$2,143,777	Duke DSM Filing
46	Zone Shutoff Valves	15	44	1,141	50,204	0.310	13.6	$34,347	96%	$32,973	Duke DSM Filing
47	Moisture Traps - Condensate Drain Valve	10	222	1,090	241,980	0.300	66.6	$121,958	96%	$117,079	Duke DSM Filing
48	Dew Point Controlled Desiccant Dryers	15	9	43,217	388,953	11.730	105.6	$266,052	96%	$255,410	Duke DSM Filing

Notes

Column C is based on first year participation for each measure regardless of the year
The source for columns D and F are identified in column K
Column H is based on the present value of first year savings over the life of the individual measure valued at capacity and energy prices on WPH-1.10
Column I is based on California Database of Energy Efficiency Resources

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Benefit Summary

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.10a, WPH-1.10

Line No.	Program Description		Participation	kWh Saved Per Measure	Total Energy Savings	KW Saved Per Measure	Total KW Savings	Present Value of Lifetime Savings	NTG	Net PV of Savings	Source
	(A)	(B)	(C)	(D)	(E = C * D)	(F)	(G = C * F)	(H)	(I)	(J = H * I)	(K)
49	**HVAC**										
50	Packaged Terminal AC	15	195	778	151,710	0.210	41.0	$104,333	96%	$100,159	Duke DSM Filing
51	Packaged Terminal HP										
52	Unitary AC Rooftop & HP Rooftop										
53	<65,000 BTUH 1 Phase										
54	<65,000 BTUH 3 Phase										
55	65-135,000 BTUH										
56	135-760,000 BTUH										
57	760,000 + BTUH										
58	Ground Source HP Closed Loop										
59	Water Source HP Building Loop										
60	ES Window AC under 14,000 Btu/hr	10	44	70	3,080	0.060	2.6	$2,117	96%	$2,032	Duke DSM Filing
61	ES Window AC over 14,000 Btu/hr	10	44	185	8,140	0.130	5.7	$5,206	96%	$4,998	Duke DSM Filing
62	ES Sleeve AC under 14,000 Btu/hr	10	22	80	1,760	0.060	1.3	$1,151	96%	$1,105	Duke DSM Filing
63	ES Sleeve AC over 14,000 Btu/hr	10	22	190	4,180	0.130	2.9	$2,650	96%	$2,544	Duke DSM Filing
64	HP Water Heater 500 gal/day	15	13	21,635	281,255	5.870	76.3	$193,615	96%	$185,871	Duke DSM Filing
65	HP Water Heater 1000 gal/day	15	4	43,637	174,548	11.840	47.4	$120,159	96%	$115,353	Duke DSM Filing
66	HP Water Heater 1500 gal/day	15	4	65,639	262,556	17.810	71.2	$180,745	96%	$173,515	Duke DSM Filing
67	Setback/Programmable Thermostat	12	487	6,441	3,136,767	1.750	852.3	$1,836,947	96%	$1,763,470	Duke DSM Filing
68	Supply Air Reset - Controls	10	22	3,178	69,916	0.860	18.9	$35,374	96%	$33,959	Duke DSM Filing
69	Unoccupied Cycle - Controls	10	24	102,953	2,470,872	27.940	670.6	$1,250,742	96%	$1,200,712	Duke DSM Filing
70	**Lighting**										
71	8 ft. 1-2 Lamp T-8/E Ballast	11	48,730	55	2,680,150	0.015	731.0	$1,467,293	96%	$1,408,601	Duke DSM Filing
72	8 ft. HO 1 &2 T-8/EB										
73	4 ft. 1-4 T-8/EB										
74	3 ft 1-4 T-8/EB										
75	2 ft. 1-4 T-8/EB										
76	LED Exit Signs New/Electronic										
77	CFL Screw in	9	2,656	178	473,124	0.050	132.9	$220,229	96%	$211,419	Duke DSM Filing
78	LED Auto Traffic Signals	10	886	275	243,650	0.070	62.0	$122,065	96%	$117,183	Duke DSM Filing
79	Pulse Start Metal Halide (retrofit only)	16	266	430	114,380	0.120	31.9	$79,175	96%	$76,008	Duke DSM Filing
80	CFL Fixture	16	316	368	116,288	0.100	31.6	$80,076	96%	$76,873	Duke DSM Filing
81	Occupancy Sensors under 500 ft2	8	115	427	49,105	0.120	13.8	$20,586	96%	$19,763	Duke DSM Filing
82	Hi Bay fluorescent 4LT5HO	11	97	923	89,531	0.250	24.3	$48,967	96%	$46,996	Duke DSM Filing
83	Hi Bay Fluorescent 6LF32T8	11	97	871	84,487	0.240	23.3	$46,337	96%	$44,484	Duke DSM Filing
84	Plug Load Occupancy Sensors Document Stations	10	89	803	71,467	0.040	3.6	$31,279	96%	$30,027	Duke DSM Filing
85	Occupancy Sensors over 500 ft3	8	62	1,066	66,216	0.290	18.0	$27,622	96%	$26,517	Duke DSM Filing
86	T-5 with Elec Ballast replacing T-12	11	53	99	5,247	0.030	1.6	$2,928	96%	$2,811	Duke DSM Filing
87	T-5 HO with Elec Ballast replacing T-12	11	27	109	2,943	0.030	0.8	$1,614	96%	$1,549	Duke DSM Filing

Notes

Column C is based on first year participation for each measure regardless of the year

The source for columns D and F are identified in column K

Column H is based on the present value of first year savings over the life of the individual measure valued at capacity and energy prices on WPH-1.10

Column I is based on California Database of Energy Efficiency Resources

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Benefit Summary

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.10a, WPH-1.10

Witness Responsible:
Scott Michaelson

Line No.	Program Description		Participation	kWh Saved Per Measure	Total Energy Savings	KW Saved Per Measure	Total KW Savings	Present Value of Lifetime Savings	NTG	Net PV of Savings	Source
	(A)	(B)	(C)	(D)	(E = C * D)	(F)	(G = C * F)	(H)	(I)	(J = H * I)	(K)
88	**Lighting Controls**										
89	Central Lighting Control	14	95	11,500	1,092,500	3.120	296.4	$716,742	96%	$688,072	Duke DSM Filing
90	Switching Controls for Multilevel Lighting	14	95	9,000	855,000	2.440	231.8	$560,852	96%	$538,418	Duke DSM Filing
91	Daylight Sensor controls	16	93	14,800	1,376,400	4.020	373.9	$947,716	96%	$909,807	Duke DSM Filing
92	**Other Measures**										
93	Window Film	10	4,430	12	53,160	-	-	$22,386	96%	$21,492	Duke DSM Filing
94	Vending Equipment Controller	10	399	800	319,200	0.220	87.8	$161,577	96%	$155,114	Duke DSM Filing
95	Commercial Clothes Washers - Electric Dryer & Washer	14	286	950	252,700	0.260	69.2	$165,706	96%	$159,078	Duke DSM Filing
96	Economizer Cycle - Controls	15	93	1,330	123,690	0.360	33.5	$84,927	96%	$81,530	Duke DSM Filing
97	Barrel Wraps (Inj Mold & Extruders)	10	44	2,501	110,044	0.680	29.9	$55,598	96%	$53,374	Duke DSM Filing
98	Chilled Water Reset	10	27	4,784	129,168	1.300	35.1	$85,254	96%	$82,643	Duke DSM Filing
99	Optimal Start/Stop - Controls	10	24	4,038	96,912	1.100	26.4	$48,979	96%	$47,019	Duke DSM Filing
100	Pellet Dryer Tanks and Ducts	20	22	98	2,156	0.030	0.7	$1,518	96%	$1,457	Duke DSM Filing
101	Head Pressure Control	16	10	37,486	374,860	10.170	101.7	$257,498	96%	$247,198	Duke DSM Filing
102	Air Flow Restriction Curtains	5	9	14,640	131,760	3.970	35.7	$34,630	96%	$33,437	Duke DSM Filing
103	Efficient condensor Refrigerator	18	5	6,787	33,935	1.840	9.2	$23,307	96%	$22,375	Duke DSM Filing
104	**Program Total**		**62,292**	**332**	**20,679,839**	**0.099**	**5,601.6**	**$12,519,945**	**96%**	**$12,019,147**	**Sum Lines 29 through 103**

Notes

Column C is based on first year participation for each measure regardless of the year

The source for columns E and F are identified in column K

Column H is based on the present value of first year savings over the life of the individual measure valued at capacity and energy prices on WPH-1.10

Column I is based on California Database of Energy Efficiency Resources

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Marketing and Administrative Expenses

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1.1, WPG-1.2, WPG-1.3, WPG-1.4, WPG-1.5, WPG-1.7, WPG-1.10a, WPG-1.11, WPG-1.12

WPG-1.21
Page 1 of 1
Witness Responsible:
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Line No.	Program Description	Total Incentives	Marketing and Administartion Percentage	M&A Expenses	Source
	(A)	(B)	(C)	(D = B * C)	(J)
1	Residential				
2	Lighting	$1,203,490	66%	$794,303	WPG-1.1, Lines 5, 6 and 7
3	HVAC Diagnostic and Tune-Up	$528,800	50%	$264,400	WPG-1.2, Lines 5, 6 and 7
4	HVAC Rebates	$347,149	70%	$243,004	WPG-1.3, Lines 5, 6 and 7
5	Appliance Recycling	$44,151	220%	$97,132	WPG-1.4, Lines 5, 6 and 7
6	Appliance Rebates	$73,636	60%	$44,183	WPG-1.5, Lines 5, 6 and 7
7	Direct Load Control	$96,911		$17,175	WPG-1.7, Lines 4, 8 (7 Yr Avg M&A per Install * 2010 Participation)
8					
9	Non-Residential				
10	Prescriptive Incentives	$1,329,582	44%	$585,016	See Note Below
11	Custom Incentives	$261,311	55%	$143,721	WPG-1.11, Lines 3, 4 and 5
12	Direct Load Control	$27,475		$5,447	WPG-1.12, Lines 4, 8 (7 Yr Avg M&A per Install * 2010 Participation)

Notes
Prescriptive Incentives identified above include all 2009 incentives with the addition of 2010 incentives for measures not forecasted to take place until 2010, these incentives are identified in WPG1.10a, Page 3 of 4, Lines 14 - 17, Column L

THE DAYTON POWER AND LIGHT COMPANY
Case No. 08-1094-EL-SSO
Book II - Customer Conservation and Energy Management
Total Resource Cost Test - Evaluation Measurement and Valuation Expense

Data: 12 Months Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPG-1, WPG-1.7, WPG-1.12, WPG-1.21

WPG-1.22
Page 1 of 1
Witness Responsible:
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Line No.	Program Description	O&M Expenses	EM&V Percentage	Total Allocated EM&V Expenses	Source
	(A)	(B)	(C)	(D = B * C)	(J)
1	Residential				
2	Lighting	$1,997,793	5%	$99,890	WPG-1.21, Line 2, Columns B and D
3	HVAC Diagnostic and Tune-Up	$793,200	5%	$39,660	WPG-1.21, Line 3, Columns B and D
4	HVAC Rebates	$590,153	5%	$29,508	WPG-1.21, Line 4, Columns B and D
5	Appliance Recycling	$141,283	5%	$7,064	WPG-1.21, Line 5, Columns B and D
6	Appliance Rebates	$117,821	5%	$5,891	WPG-1.21, Line 6, Columns B and D
7	Direct Load Control	$293,361	5%	$14,668	WPG-1.7, Line 11, Column C
8					
9	Non-Residential				
10	Prescriptive Incentives	$1,914,598	5%	$95,730	WPG-1.21, Line 10, Columns B and D
11	Custom Incentives	$405,032	5%	$20,252	WPG-1.21, Line 11, Columns B and D
12	Direct Load Control	$81,489	5%	$4,074	WPG-1.12, Line 11, Column C

Note
Column C is based on WPG-1, Line 18

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Summary of AMI & Core Telecom & IT Workpapers

Data: 7 Year Forecast
Type of Filing: Original
Work Paper Reference No(s).: WPH 1.1 - 1.8

WPH-1
Page 1 of 1
Witness Responsible:
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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	
	Capital Costs									
1	Meters	$5,809,402	$12,148,452	$14,462,527	$19,488,035	$18,981,517	$18,930,040	$675,343	$90,495,316	WPH-1.1
2	Home Energy Devices	$0	$1,668,142	$2,056,121	$3,104,146	$3,327,147	$3,282,929	$0	$13,438,486	WPH-1.2
3	Communications	$30,011,707	$16,775,233	$2,551,256	$2,500,995	$2,356,231	$1,128,761	$0	$55,324,182	WPH-1.3
4	Subtotal of T&D Capital Costs	$35,821,109	$30,591,827	$19,069,905	$25,093,175	$24,664,895	$23,341,729	$675,343	$159,257,984	sum of lines 1 - 3
5	IT	$24,133,196	$23,814,338	$21,974,828	$12,111,736	$9,526,633	$3,418,843	$779,803	$95,759,377	WPH-1.4
6	Total T&D + IT Capital Costs	$59,954,305	$54,406,165	$41,044,733	$37,204,912	$34,191,528	$26,760,572	$1,455,146	$255,017,361	sum of lines 4 - 5
7	**O&M Costs**									
8	Meters	$506,885	$1,284,659	$1,819,522	$2,124,535	$2,286,175	$2,444,442	$2,097,929	$12,564,146	WPH-1.5
9	Home Energy Devices	$0	$83,407	$186,213	$341,420	$507,778	$671,924	$671,924	$2,462,667	WPH-1.2
10	Communications	$273,579	$1,100,130	$1,700,916	$1,734,760	$1,766,495	$1,777,125	$1,788,074	$10,141,080	WPH-1.6
11	Subtotal of O&M Costs	$780,464	$2,468,196	$3,706,651	$4,200,715	$4,560,448	$4,893,492	$4,557,927	$25,167,893	sum of lines 8 - 10
12	IT	$293,767	$1,391,330	$4,789,216	$7,202,230	$7,701,528	$8,175,079	$8,336,662	$37,889,811	WPH-1.4
13	Total T&D & IT O&M Costs	$1,074,231	$3,859,526	$8,495,867	$11,402,945	$12,261,975	$13,068,571	$12,894,590	$63,057,704	line 11 + line 12
14	**Benefits**									
15	Meters	$109,147	$764,320	$2,130,987	$4,245,609	$6,956,941	$9,830,443	$11,350,907	$35,388,354	WPH-1.7
16	Communications	$0	$48,986	$158,625	$281,139	$343,000	$343,000	$343,000	$1,517,750	WPH-1.8
17	IT	$0	$0	$0	$1,556,765	$1,614,265	$1,675,827	$1,741,813	$6,588,670	WPH-1.4
18	Depreciation Savings from Early Retirement of Capital	$8,336	$241,377	$528,604	$1,596,931	$1,875,216	$1,973,509	$1,993,881	$8,217,855	Schedule B-5
19	Total T&D & IT Benefits	$117,483	$1,054,683	$2,818,216	$7,680,445	$10,789,423	$13,822,779	$15,429,601	$51,712,630	sum of lines 15 - 18

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
AMI Meters

Data: 7 Year Forecast
Type of Filing: Original
Work Paper Reference No(s).: n/a

WPH-1.1
Page 1 of 1
Witness Responsible:
Jeff Teuscher

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	# of Residential Meters	10,037	50,183	75,274	115,420	125,457	125,457	1,716	503,542	# of meters in field
2	Cost per Residential Meter (Hardware)	$125.40	$119.90	$117.70	$114.40	$114.40	$114.40	$114.40	n/a	RFP Response
3	Total Residential Meter Hardware Costs	$1,258,580	$6,016,894	$8,859,738	$13,204,046	$14,352,224	$14,352,224	$196,338	$58,240,043	line 1 * line 2
4	Cost per Residential Meter (Install)	$16.50	$16.83	$17.17	$17.51	$17.86	$18.22	$18.58	n/a	RFP Response
5	Total Residential Meter Install Costs	$165,603	$844,573	$1,292,197	$2,020,996	$2,240,669	$2,285,483	$31,891	$8,881,412	line 1 * line 4
6	Total Residential Meter Installed Costs	$1,424,182	$6,861,467	$10,151,935	$15,225,042	$16,592,893	$16,637,706	$228,229	$67,121,454	line 2 + line 4
7	# of C&I Meters	369	1,847	2,771	4,249	4,619	4,619	0	18,474	# of polyphase + form 12S meters in field
8	Cost per C&I Meter (Hardware)	$246.95	$230.45	$226.60	$213.95	$213.95	$213.95	$213.95	n/a	RFP Response (Average Polyphase Meter + form 12S Meter Cost)
9	Total C&I Meter Hardware Costs	$91,243	$425,733	$627,931	$909,078	$988,128	$988,128	$0	$4,030,242	line 7 * line 8
10	Cost per C&I Meter (Install)	$16.50	$16.83	$17.17	$17.51	$17.86	$18.22	$18.58	n/a	RFP Response
11	Total C&I Meter Install Costs	$6,096	$31,092	$47,570	$74,400	$82,487	$84,137	$0	$325,782	line 7 * line 10
12	Total C&I Meter Installed Costs	$97,340	$456,825	$675,502	$983,478	$1,070,615	$1,072,265	$0	$4,356,024	line 9 + line 11
13	# of Power Quality Meters	10	50	75	115	125	125	0	500	Top 1% of energy users in field today
14	Cost per Power Quality Meter (Polyphase Meter + 2 Way Voice/Data Comm Card)	$891	$864	$858	$836	$836	$836	$836	n/a	RFP Response
15	Total Power Quality Meter Hardware Costs	$8,910	$43,175	$64,350	$96,140	$104,500	$104,500	$0	$421,575	line 13 * line 14
16	Cost per Power Quality Meter (Install)	$16.50	$16.83	$17.17	$17.51	$17.86	$18.22	$18.58	n/a	RFP Response
17	Total Power Quality Meter Install Costs	$165	$842	$1,287	$2,014	$2,233	$2,277	$0	$8,817	line 13 * line 16
18	Total Power Quality Meter Installed Costs	$9,075	$44,017	$65,637	$98,154	$106,733	$106,777	$0	$430,392	line 15 + line 17
19	Total # of Meters	10,416	52,080	78,120	119,784	130,200	130,200	1,716	522,516	line 1 + line 7 + line 13
20	Total Meter Hardware Costs	$1,358,733	$6,485,802	$9,552,019	$14,209,264	$15,444,852	$15,444,852	$196,338	$62,691,859	line 3 + line 9 +line 15
21	Total Meter Installation Costs	$171,864	$876,506	$1,341,055	$2,097,410	$2,325,389	$2,371,897	$31,891	$9,216,011	line 5 + line 11 + line 17
22	# of Engineers (Capital)	2	2	2	2	1	1	0	n/a	DP&L Estimates
23	Loaded Salary for Engineer (With Benefits) per year	$102,123	$105,187	$108,342	$111,593	$114,940	$118,389	$121,940	n/a	DP&L Estimates
24	# of Project Managers (Capital)	7	7	7	7	6	6	3	n/a	DP&L Estimates
25	Loaded Salary for Project Manager (With Benefits) per year	$124,817	$128,562	$132,418	$136,391	$140,483	$144,697	$149,038	n/a	DP&L Estimates
26	Total Capital Engineering & Project Management Salary	$1,077,965	$1,110,304	$1,143,613	$1,177,921	$957,836	$986,571	$447,114	$6,901,325	line 22 * line 23 + line 24 * line 25
27	Facility Lease Costs	$950,840	$675,840	$675,840	$253,440	$253,440	$126,720	$0	$2,936,120	DP&L Estimates
28	Total Capital Engineering + Project Management	$2,028,805	$1,786,144	$1,819,453	$1,431,361	$1,211,276	$1,113,291	$447,114	$9,837,445	line 26 + line 27
29	GIS	$2,250,000	$3,000,000	$1,750,000	$1,750,000	$0	$0	$0	$8,750,000	DP&L Estimates
30	Total AMI Meter Capital Cost	$5,809,402	$12,148,452	$14,462,527	$19,488,035	$18,981,512	$18,930,040	$675,343	$90,495,316	line 20 + line 21 + line 28 + line 29

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Energy Displays Capital + O&M

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	# Home Energy Display Devices	0	16,610	20,891	32,183	35,199	35,440	0	140,323	Based on 30% of Residential Customers with AMI. (WPG-1.17)
2	Average Cost per Device	$100.43	$100.43	$98.42	$96.45	$94.52	$92.63	$90.78	n/a	RFP Responses
3	Total Home Energy Display Capital Costs	$0	$1,668,142	$2,056,121	$3,104,146	$3,327,147	$3,282,929	$0	$13,438,486	line 1 * line 2
4	Total Home Energy Display O&M Cost	$0	$83,407	$186,213	$341,420	$507,778	$671,924	$671,924	$2,462,667	5% of installed Energy Display capital

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
AMI Communications Capital

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	2-Way Voice/Data Frequency Acquisition Cost	$660,000	$0	$0	$0	$0	$0	$0	$660,000	RFP Response
2	Total 2 -Way Voice/Data Base Station Cost	$2,174,119	$1,144,273	$0	$0	$0	$0	$0	$3,318,392	RFP Response
3	2-Way System Back Office (Data Switch, EMS, Wide Area Con	$3,920,648	$1,100,000	$0	$0	$0	$0	$0	$5,020,648	RFP Response
4	2- Way System Spares	$481,896	$0	$0	$0	$0	$0	$0	$481,896	RFP Response
5	Total 2-Way Voice/Data Hardware & Software	$7,236,662	$2,244,273	$0	$0	$0	$0	$0	$9,480,935	sum of lines 1 - 4
6	2-Way Vendor Engineering, Project Management, and Installation Services	$2,179,215	$1,331,591	$175,049	$180,300	$0	$0	$0	$3,866,154	RFP Response
7	Total Cost of New Vehicular Radios	$1,061,500	$212,300	$0	$0	$0	$0	$0	$1,273,800	RFP Response
8	Total Cost of New Portable Radios	$60,665	$60,665	$60,665	$0	$0	$0	$0	$181,995	RFP Response
9	2-Way Voice/Data Mobiles & Portables	$1,122,165	$272,965	$60,665	$0	$0	$0	$0	$1,455,795	line 7 + line 8
10	Total 2 Way Voice + Data	$10,538,042	$3,848,829	$235,714	$180,300	$0	$0	$0	$14,802,885	line 5+ line 6 + line 9
11	Microwave Vendor Project Management	$1,760,000	$440,000	$0	$0	$0	$0	$0	$2,200,000	RFP Response
12	Microwave Vendor Engineering Support	$880,000	$220,000	$0	$0	$0	$0	$0	$1,100,000	RFP Response
13	Microwave Vendor Engineering Integration (EMS, Routers, Alarms, Etc.)	$1,056,000	$264,000	$0	$0	$0	$0	$0	$1,320,000	RFP Response
14	Microwave Documentation, Training, Spares	$275,000	$275,000	$0	$0	$0	$0	$0	$550,000	RFP Response
15	IP Enabling Existing Fiber Resources	$440,000	$0	$0	$0	$0	$0	$0	$440,000	DP&L Estimate
16	Network Management System (Manage All Equipment not Managed by Transmission or Distribution SCADA System)	$781,000	$500,500	$0	$0	$0	$0	$0	$1,281,500	DP&L Estimate
17	Total IP Upgrade Cost for existing Microwave Backbone Sites	$3,017,300	$1,633,500	$0	$0	$0	$0	$0	$4,650,800	RFP Response
18	Total Cost for IP Microwave to Sites without Existing Microwave Equipment	$904,530	$2,110,570	$0	$0	$0	$0	$0	$3,015,100	RFP Response
19	Total Cost to Prepare Fiber Substations that need Towers	$520,320	$1,301,500	$0	$0	$0	$0	$0	$1,821,820	RFP Response
20	Cost for Backhaul to Remote 2-Way Voice/Data Sites Not in Substations	$104,500	$0	$0	$0	$0	$0	$0	$104,500	RFP Response
21	Cost of Broadband Mesh Gateways on IP Backbone Sites (Supply Communications to Substations with out Fiber or	$704,000	$528,000	$0	$0	$0	$0	$0	$1,232,000	RFP Response
22	Total Microwave	$10,442,850	$7,272,870	$0	$0	$0	$0	$0	$17,715,720	sum of line 11 - line 21
23	Total Microwave + 2 Way Voice Data	$20,980,892	$11,121,699	$235,714	$180,300	$0	$0	$0	$32,518,605	line 10 + line 22
24	AMI Management System	$1,122,915	$114,576	$171,864	$263,525	$286,440	$286,440	$0	$2,245,760	RFP Response
25	AMI Vendor Project Management and Engineering Support	$1,144,000	$693,000	$594,000	$396,000	$396,000	$396,000	$0	$3,619,000	RFP Response
26	Cost of AMI Communication Equipment in DPL Substations	$990,700	$749,008	$1,141,232	$1,240,470	$1,240,470	$0	$0	$4,961,880	RFP Response
27	Total Substation Preparation Costs	$574,200	$669,900	$0	$0	$0	$0	$0	$1,244,100	RFP Response and DPL Estimates
28	Cost of AMI Backhaul to Substations	$99,000	$115,500	$0	$0	$0	$0	$0	$214,500	DPL Estimates
29	AMI Backhaul Project Management	$385,000	$385,000	$0	$0	$0	$0	$0	$770,000	DP&L Estimate
30	AMI Backhaul Engineering Support	$330,000	$330,000	$0	$0	$0	$0	$0	$660,000	DP&L Estimate
31	Total AMI Backhaul Costs	$4,245,815	$3,056,984	$1,907,096	$1,899,995	$1,922,910	$682,440	$0	$13,715,240	sum of line 24 - line 30
32	Core Telecom Outsourced Engineering for AMI	$4,785,000	$2,596,550	$408,447	$420,700	$433,321	$446,321	$0	$9,090,338	DP&L Estimate
33	Total AMI Communications Capital	$30,011,707	$16,775,233	$2,551,256	$2,500,995	$2,356,231	$1,128,761	$0	$55,324,182	line 23 + line 31 + line 32

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Information Technology - All Systems Summary

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	Summary of Capital Costs									
2	Customer Information System	$11,130,380	$17,534,290	$11,882,913	$0	$0	$0	$0	$40,547,582	WPH-1.4.1
3	eServices (Website)	$718,737	$959,885	$683,017	$0	$0	$0	$0	$2,361,640	WPH-1.4.2
4	Meter Data and Load Management System	$3,490,530	$3,121,851	$2,593,288	$0	$0	$0	$0	$9,205,669	WPH-1.4.3
5	Outage Management System (OMS)	$0	$0	$2,225,200	$6,963,406	$177,268	$0	$0	$9,365,874	WPH-1.4.4
6	Distribution Management System (DMS)	$0	$0	$2,895,355	$3,992,378	$1,326,693	$310,279	$134,257	$8,658,962	WPH-1.4.5
7	Mobile Workforce Management (MWM)	$0	$0	$0	$0	$6,897,618	$2,233,160	$266,344	$9,397,123	WPH-1.4.6
8	SOA	$1,816,943	$348,289	$654,466	$873,288	$801,145	$437,343	$0	$4,931,473	WPH-1.4.7
9	Infrastructure	$6,711,799	$1,176,276	$0	$0	$0	$0	$0	$7,888,075	WPH-1.4.8
10	Subtotal Capital Costs	$23,868,389	$23,140,591	$20,934,239	$11,829,071	$9,202,724	$2,980,782	$400,601	$92,356,397	sum of lines 2-9
11	AFUDC	$264,807	$673,747	$1,040,589	$282,665	$323,909	$438,061	$379,202	$3,402,980	Schedule B-6
12	Total Capital Costs	$24,133,196	$23,814,338	$21,974,828	$12,111,736	$9,526,633	$3,418,843	$779,803	$95,759,377	line 10 + line 11
13	Summary of O&M Costs									
14	Customer Information System	$206,987	$140,638	$1,524,500	$1,349,809	$1,673,852	$1,675,790	$1,677,790	$8,249,365	WPH-1.4.1
15	eServices (Website)	$3,416	$32,336	$197,567	$355,566	$355,965	$356,377	$356,803	$1,658,031	WPH-1.4.2
16	Meter Data and Load Management System	$18,337	$146,500	$752,863	$918,616	$919,647	$920,712	$921,811	$4,598,484	WPH-1.4.3
17	Outage Management System (OMS)	$0	$0	$56,021	$671,328	$516,339	$696,326	$697,158	$2,637,171	WPH-1.4.4
18	Distribution Management System (DMS)	$0	$0	$45,835	$242,323	$491,701	$492,270	$661,237	$1,933,367	WPH-1.4.5
19	Mobile Workforce Management (MWM)	$0	$0	$0	$0	$75,322	$360,654	$344,530	$780,506	WPH-1.4.6
20	SOA	$32,185	$310,862	$231,779	$554,198	$554,820	$555,463	$556,126	$2,795,433	WPH-1.4.7
21	Infrastructure	$32,842	$760,995	$1,980,651	$3,110,390	$3,113,882	$3,117,486	$3,121,208	$15,237,454	WPH-1.4.8
22	Total O&M Costs	$293,767	$1,391,330	$4,789,216	$7,202,230	$7,701,528	$8,175,079	$8,336,662	$37,889,811	sum of lines 14-21
23	Annual Systems Savings									
24	Annual Mainframe O&M	$0	$0	$0	$1,556,765	$1,614,265	$1,675,827	$1,741,813	$6,588,670	WPH-1.4.1
25	Total Annual Systems Savings	$0	$0	$0	$1,556,765	$1,614,265	$1,675,827	$1,741,813	$6,588,670	line 24

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Information Technology - CIS System Summary

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Summary of CIS Capital Costs									
2	Solution Implementation Costs	$6,142,837	$15,107,978	$10,079,497	$0	$0	$0	$0	$31,330,312	DPL IT Budget Estimate; Customer Information System (CIS) Estimate Package
3	Labor Expenses	$761,317	$1,872,743	$1,249,434	$0	$0	$0	$0	$3,883,495	DPL IT Budget Estimate; Customer Information System (CIS) Estimate Package
4	Hardware Purchases	$1,002,952	$0	$0	$0	$0	$0	$0	$1,002,952	DPL IT Budget Estimate; Customer Information System (CIS) Estimate Package
5	Software Purchases	$3,223,274	$0	$0	$0	$0	$0	$0	$3,223,274	DPL IT Budget Estimate; Customer Information System (CIS) Estimate Package
6	Software Maintenance	$0	$553,569	$553,981	$0	$0	$0	$0	$1,107,550	DPL IT Budget Estimate; Customer Information System (CIS) Estimate Package
7	Subtotal	$11,130,380	$17,534,290	$11,882,913	$0	$0	$0	$0	$40,547,582	sum of lines 2-6
8	AFUDC	$127,760	$419,987	$752,816	$0	$0	$0	$0	$1,300,563	Schedule B-6
9	Total CIS Capital Costs	$11,258,140	$17,954,277	$12,635,729	$0	$0	$0	$0	$41,848,145	line 7+ line 8
10	Summary of CIS O&M Costs									
11	Solution Implementation Costs	$184,236	$0	$654,865	$0	$0	$0	$0	$839,101	DPL IT Budget Estimate
12	Labor Expenses	$22,750	$0	$80,896	$0	$0	$0	$0	$103,647	DPL IT Budget Estimate
13	Hardware Maintenance	$0	$140,638	$145,105	$145,263	$145,426	$145,594	$145,768	$867,793	DPL IT Budget Estimate
14	Software Maintenance	$0	$0	$0	$560,212	$560,841	$561,490	$562,161	$2,244,704	DPL IT Budget Estimate
15	Maintenance Labor (DPL only)	$0	$0	$643,633	$644,334	$967,585	$968,705	$969,862	$4,194,119	DPL IT Budget Estimate
16	Total CIS O&M Costs	$206,987	$140,638	$1,524,500	$1,349,809	$1,673,852	$1,675,790	$1,677,790	$8,249,365	sum of lines 11-15
17	Annual Systems Savings									
18	Annual Mainframe O&M	$0	$0	$0	$1,556,765	$1,614,265	$1,675,827	$1,741,813	$6,588,670	DPL IT Budget Estimate (2008 O&M Mainframe Budget tab and Mainframe O&M Savings tab)
19	Total Annual Systems Savings	$0	$0	$0	$1,556,765	$1,614,265	$1,675,827	$1,741,813	$6,588,670	

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Information Technology - eServices Summary

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Summary of eServices Capital Costs									
2	Solution Implementation Costs	$348,411	$839,271	$592,926	$0	$0	$0	$0	$1,780,609	DPL IT Budget Estimate; eServices Estimate Package
3	Labor Expenses	$43,181	$104,034	$73,498	$0	$0	$0	$0	$220,712	DPL IT Budget Estimate; eServices Estimate Package
4	Hardware Purchases	$230,602	$0	$0	$0	$0	$0	$0	$230,602	DPL IT Budget Estimate; eServices Estimate Package
5	Software Purchases	$96,544	$0	$0	$0	$0	$0	$0	$96,544	DPL IT Budget Estimate; eServices Estimate Package
6	Software Maintenance	$0	$16,581	$16,593	$0	$0	$0	$0	$33,173	DPL IT Budget Estimate; eServices Estimate Package
7	Subtotal	$718,737	$959,885	$683,017	$0	$0	$0	$0	$2,361,640	sum of lines 2-6
8	AFUDC	$5,690	$21,767	$40,318	$0	$0	$0	$0	$67,775	Schedule B-6
9	Total eServices Capital Costs	$724,427	$981,652	$723,335	$0	$0	$0	$0	$2,429,415	line 7+ line 8
10	Summary of eServices O&M Costs									
11	Solution Implementation Costs	$3,041	$0	$2,934	$0	$0	$0	$0	$5,974	DPL IT Budget Estimate
12	Labor Expenses	$375	$0	$362	$0	$0	$0	$0	$738	DPL IT Budget Estimate
13	Hardware Maintenance	$0	$32,336	$33,363	$33,399	$33,437	$33,475	$33,515	$199,526	DPL IT Budget Estimate
14	Software Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	DPL IT Budget Estimate
15	Maintenance Labor (DPL only)	$0	$0	$160,908	$322,167	$322,528	$322,902	$323,287	$1,451,793	DPL IT Budget Estimate
16	Total eServices O&M Costs	$3,416	$32,336	$197,567	$355,566	$355,965	$356,377	$356,803	$1,658,031	sum of lines 11-15

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Information Technology - MDM & LMS Systems Summary

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Summary of MDM & LMS Capital Costs									
2	Solution Implementation Costs	$872,780	$2,334,745	$2,025,391	$0	$0	$0	$0	$5,232,916	DPL IT Budget Estimate; Meter Data Management (MDM) & Load Management (LMS) Estimate Package
3	Labor Expenses	$130,471	$332,815	$288,119	$0	$0	$0	$0	$751,405	DPL IT Budget Estimate; Meter Data Management (MDM) & Load Management (LMS) Estimate Package
4	Hardware Purchases	$988,148	$65,609	$0	$0	$0	$0	$0	$1,053,758	DPL IT Budget Estimate; Meter Data Management (MDM) & Load Management (LMS) Estimate Package
5	Software Purchases	$1,499,131	$131,219	$0	$0	$0	$0	$0	$1,630,350	DPL IT Budget Estimate; Meter Data Management (MDM) & Load Management (LMS) Estimate Package
6	Software Maintenance	$0	$257,462	$279,778	$0	$0	$0	$0	$537,241	DPL IT Budget Estimate; Meter Data Management (MDM) & Load Management (LMS) Estimate Package
7	Subtotal	$3,490,530	$3,121,851	$2,593,288	$0	$0	$0	$0	$9,205,669	sum of lines 2-6
8	AFUDC	$41,095	$88,900	$151,042	$0	$0	$0	$0	$281,037	Schedule B-6
9	Total MDM & LMS Capital Costs	$3,531,625	$3,210,751	$2,744,330	$0	$0	$0	$0	$9,486,706	line 7+ line 8
10	Summary of MDM & LMS O&M Costs									
11	Solution Implementation Costs	$16,321	$7,065	$104,904	$0	$0	$0	$0	$128,290	DPL IT Budget Estimate
12	Labor Expenses	$2,015	$872	$12,959	$0	$0	$0	$0	$15,847	DPL IT Budget Estimate
13	Hardware Maintenance	$0	$138,562	$152,275	$152,441	$152,612	$152,788	$152,971	$901,649	DPL IT Budget Estimate
14	Software Maintenance	$0	$0	$0	$282,925	$283,243	$283,571	$283,909	$1,133,647	DPL IT Budget Estimate
15	Maintenance Labor (DPL only)	$0	$0	$482,725	$483,250	$483,793	$484,353	$484,931	$2,419,051	DPL IT Budget Estimate
16	Total MDM & LMS O&M Costs	$18,337	$146,500	$752,863	$918,616	$919,647	$920,712	$921,811	$4,598,484	sum of lines 11-15

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
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Information Technology - OMS System Summary

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Summary of OMS Capital Costs									
2	Solution Implementation Costs	$0	$0	$1,979,790	$5,056,265	$0	$0	$0	$7,036,055	DPL IT Budget Estimate; Outage Management System (OMS) Estimate Package
3	Labor Expenses	$0	$0	$245,411	$626,768	$0	$0	$0	$872,179	DPL IT Budget Estimate; Outage Management System (OMS) Estimate Package
4	Hardware Purchases	$0	$0	$0	$229,133	$0	$0	$0	$229,133	DPL IT Budget Estimate; Outage Management System (OMS) Estimate Package
5	Software Purchases	$0	$0	$0	$1,051,239	$0	$0	$0	$1,051,239	DPL IT Budget Estimate; Outage Management System (OMS) Estimate Package
6	Software Maintenance	$0	$0	$0	$0	$177,268	$0	$0	$177,268	DPL IT Budget Estimate; Outage Management System (OMS) Estimate Package
7	Subtotal	$0	$0	$2,225,200	$6,963,406	$177,268	$0	$0	$9,365,874	sum of lines 2-6
8	AFUDC	$0	$0	$24,477	$123,789	$16,896	$0	$0	$165,162	Schedule B-6
9	Total OMS Capital Costs	$0	$0	$2,249,677	$7,087,195	$194,164	$0	$0	$9,531,036	line 7+ line 8
10	Summary of OMS O&M Costs									
11	Solution Implementation Costs	$0	$0	$49,861	$167,398	$0	$0	$0	$217,260	DPL IT Budget Estimate
12	Labor Expenses	$0	$0	$6,159	$20,679	$0	$0	$0	$26,839	DPL IT Budget Estimate
13	Hardware Maintenance	$0	$0	$0	$0	$32,546	$32,584	$32,623	$97,753	DPL IT Budget Estimate
14	Software Maintenance	$0	$0	$0	$0	$0	$179,390	$179,604	$358,994	DPL IT Budget Estimate
15	Maintenance Labor (DPL only)	$0	$0	$0	$483,250	$483,793	$484,353	$484,931	$1,936,326	DPL IT Budget Estimate
16	Total OMS O&M Costs	$0	$0	$56,021	$671,328	$516,339	$696,326	$697,158	$2,637,171	sum of lines 11-15

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Information Technology - DMS System Summary

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Summary of DMS Capital Costs									
2	Solution Implementation Costs	$0	$0	$1,145,620	$3,387,494	$1,022,456	$124,043	$119,238	$5,798,851	DPL IT Budget Estimate; Distribution Management System (DMS) Estimate Package
3	Labor Expenses	$0	$0	$142,009	$438,827	$138,049	$19,911	$15,019	$753,815	DPL IT Budget Estimate; Distribution Management System (DMS) Estimate Package
4	Hardware Purchases	$0	$0	$622,899	$0	$0	$0	$0	$622,899	DPL IT Budget Estimate; Distribution Management System (DMS) Estimate Package
5	Software Purchases	$0	$0	$984,828	$0	$0	$0	$0	$984,828	DPL IT Budget Estimate; Distribution Management System (DMS) Estimate Package
6	Software Maintenance	$0	$0	$0	$166,057	$166,188	$166,325	$0	$498,570	DPL IT Budget Estimate; Distribution Management System (DMS) Estimate Package
7	Subtotal	$0	$0	$2,895,355	$3,992,378	$1,326,693	$310,279	$134,257	$8,658,962	sum of lines 2-6
8	AFUDC	$0	$0	$25,587	$96,178	$155,023	$176,043	$184,685	$636,516	Schedule B-6
9	Total DMS Capital Costs	$0	$0	$2,920,942	$4,087,556	$1,481,716	$486,322	$318,942	$9,295,478	line 7+ line 8
10	Summary of DMS O&M Costs									
11	Solution Implementation Costs	$0	$0	$40,796	$136,962	$0	$0	$0	$177,758	DPL IT Budget Estimate
12	Labor Expenses	$0	$0	$5,040	$16,919	$0	$0	$0	$21,959	DPL IT Budget Estimate
13	Hardware Maintenance	$0	$0	$0	$88,441	$88,541	$88,643	$88,749	$354,374	DPL IT Budget Estimate
14	Software Maintenance	$0	$0	$0	$0	$0	$0	$168,379	$168,379	DPL IT Budget Estimate
15	Maintenance Labor (DPL only)	$0	$0	$0	$0	$403,161	$403,627	$404,109	$1,210,897	DPL IT Budget Estimate
16	Total DMS O&M Costs	$0	$0	$45,835	$242,323	$491,701	$492,270	$661,237	$1,933,367	sum of lines 11-15

THE DAYTON POWER AND LIGHT COMPANY
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BOOK II - Customer Conservation and Energy Management
Information Technology - MWM System Summary

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	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Summary of MWM Capital Costs									
2	Solution Implementation Costs	$0	$0	$0	$0	$4,094,617	$1,750,098	$0	$5,844,715	DPL IT Budget Estimate; Mobile Workforce Management (MWM) Estimate Package
3	Labor Expenses	$0	$0	$0	$0	$507,567	$216,943	$0	$724,510	DPL IT Budget Estimate; Mobile Workforce Management (MWM) Estimate Package
4	Hardware Purchases	$0	$0	$0	$0	$717,403	$0	$0	$717,403	DPL IT Budget Estimate; Mobile Workforce Management (MWM) Estimate Package
5	Software Purchases	$0	$0	$0	$0	$1,578,031	$0	$0	$1,578,031	DPL IT Budget Estimate; Mobile Workforce Management (MWM) Estimate Package
6	Software Maintenance	$0	$0	$0	$0	$0	$266,119	$266,344	$532,464	DPL IT Budget Estimate; Mobile Workforce Management (MWM) Estimate Package
7	Subtotal	$0	$0	$0	$0	$6,897,618	$2,233,160	$266,344	$9,397,123	sum of lines 2-6
8	AFUDC	$0	$0	$0	$0	$68,673	$163,421	$194,511	$426,605	Schedule B-6
9	Total MWM Capital Costs	$0	$0	$0	$0	$6,966,291	$2,396,581	$460,855	$9,823,728	line 7+ line 8
10	Summary of MWM O&M Costs									
11	Solution Implementation Costs	$0	$0	$0	$0	$67,040	$122,491	$0	$189,531	DPL IT Budget Estimate
12	Labor Expenses	$0	$0	$0	$0	$8,282	$15,132	$0	$23,414	DPL IT Budget Estimate
13	Hardware Maintenance	$0	$0	$0	$0	$0	$101,943	$102,064	$204,007	DPL IT Budget Estimate
14	Software Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	DPL IT Budget Estimate
15	Maintenance Labor (DPL only)	$0	$0	$0	$0	$0	$121,088	$242,465	$363,554	DPL IT Budget Estimate
16	Total MWM O&M Costs	$0	$0	$0	$0	$75,322	$360,654	$344,530	$780,506	sum of lines 11-15

THE DAYTON POWER AND LIGHT COMPANY
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Information Technology - SOA Summary

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	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Summary of SOA Capital Costs									
2	Solution Implementation Costs	$351,550	$309,878	$582,287	$776,975	$712,788	$389,109	$0	$3,122,586	DPL IT Budget Estimate; Service Oriented Architecture (SOA) Estimate Package
3	Labor Expenses	$43,570	$38,412	$72,179	$96,313	$88,357	$48,234	$0	$387,064	DPL IT Budget Estimate; Service Oriented Architecture (SOA) Estimate Package
4	Hardware Purchases	$520,748	$0	$0	$0	$0	$0	$0	$520,748	DPL IT Budget Estimate; Service Oriented Architecture (SOA) Estimate Package
5	Software Purchases	$901,075	$0	$0	$0	$0	$0	$0	$901,075	DPL IT Budget Estimate; Service Oriented Architecture (SOA) Estimate Package
6	Software Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	DPL IT Budget Estimate; Service Oriented Architecture (SOA) Estimate Package
7	Subtotal	$1,816,943	$348,289	$654,466	$873,288	$801,145	$437,343	$0	$4,931,473	sum of lines 2-6
8	AFUDC	$23,813	$33,648	$45,418	$63,223	$83,033	$98,483	$0	$347,618	Schedule B-6
9	Total SOA Capital Costs	$1,840,756	$381,937	$699,884	$936,511	$884,178	$535,826	$0	$5,279,091	line 7+ line 8
10	Summary of SOA O&M Costs									
11	Solution Implementation Costs	$28,648	$76,741	$0	$0	$0	$0	$0	$105,389	DPL IT Budget Estimate
12	Labor Expenses	$3,538	$9,476	$0	$0	$0	$0	$0	$13,014	DPL IT Budget Estimate
13	Hardware Maintenance	$0	$73,021	$75,341	$75,423	$75,507	$75,595	$75,685	$450,571	DPL IT Budget Estimate
14	Software Maintenance	$0	$151,623	$156,439	$156,609	$156,785	$156,966	$157,154	$935,575	DPL IT Budget Estimate
15	Maintenance Labor (DPL only)	$0	$0	$0	$322,167	$322,528	$322,902	$323,287	$1,290,884	DPL IT Budget Estimate
16	Total SOA O&M Costs	$32,185	$310,862	$231,779	$554,198	$554,820	$555,463	$556,126	$2,795,433	sum of lines 11-15

THE DAYTON POWER AND LIGHT COMPANY
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Information Technology - Infrastructure Summary

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	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	Summary of Infrastructure Capital Costs									
2	Solution Implementation Costs	$2,021,828	$1,046,549	$0	$0	$0	$0	$0	$3,068,376	DPL IT Budget Estimate; Infrastructure Estimate Package
3	Labor Expenses	$250,577	$129,727	$0	$0	$0	$0	$0	$380,304	DPL IT Budget Estimate; Infrastructure Estimate Package
4	Hardware Purchases	$2,673,287	$0	$0	$0	$0	$0	$0	$2,673,287	DPL IT Budget Estimate; Infrastructure Estimate Package
5	Software Purchases	$1,766,107	$0	$0	$0	$0	$0	$0	$1,766,107	DPL IT Budget Estimate; Infrastructure Estimate Package
6	Software Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	DPL IT Budget Estimate; Infrastructure Estimate Package
7	Subtotal	$6,711,799	$1,176,276	$0	$0	$0	$0	$0	$7,888,075	sum of lines 2-6
8	AFUDC	$66,449	$109,445	$931	$475	$284	$114	$6	$177,704	Schedule B-6
9	Total Infrastructure Capital Costs	$6,778,248	$1,285,721	$931	$475	$284	$114	$6	$8,065,779	line 7+ line 8
10	Summary of Infrastructure O&M Costs									
11	Solution Implementation Costs	$29,232	$79,178	$0	$0	$0	$0	$0	$108,410	DPL IT Budget Estimate
12	Labor Expenses	$3,610	$9,777	$0	$0	$0	$0	$0	$13,387	DPL IT Budget Estimate
13	Hardware Maintenance	$0	$374,859	$386,765	$387,186	$387,621	$388,069	$388,533	$2,313,033	DPL IT Budget Estimate
14	Software Maintenance	$0	$297,181	$306,620	$306,953	$307,298	$307,654	$308,021	$1,833,726	DPL IT Budget Estimate
15	Maintenance Labor (DPL only)	$0	$0	$1,287,266	$2,416,251	$2,418,963	$2,421,763	$2,424,655	$10,968,898	DPL IT Budget Estimate
16	Total Infrastructure O&M Costs	$32,842	$760,995	$1,980,651	$3,110,390	$3,113,882	$3,117,486	$3,121,208	$15,237,454	sum of lines 11-15

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
AMI Meter O&M

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	AMI related Call Center Volume	5,208	26,040	39,060	59,892	65,100	65,100	858	261,258	DP&L Estimate
2	Average Cost per Call	$2.42	$2.42	$2.42	$2.42	$2.42	$2.42	$2.42	$2.42	DP&L Estimate
3	Total Call Center Costs	$12,603	$63,017	$94,525	$144,939	$157,542	$157,542	$2,077	632,245	line 1 * line 2
4	Outsourced Engineering	$175,000	$356,439	$367,132	$378,146	$283,610	$283,610	$283,610	$2,127,548	DP&L Estimate
5	Additional Engineers	1	2	2	2	2	2	2	n/a	DP&L Estimate
6	Average Engineering Salary (Loaded)	$102,123	$105,187	$108,342	$111,593	$114,940	$118,389	$121,940	$121,940	DP&L Estimate
7	Total Engineering Costs	$102,123	$210,373	$216,685	$223,185	$229,881	$236,777	$243,880	$1,462,904	line 5 * line 6
8	Number of Additional Telecom and System Operation Techs	2	3	3	3	3	3	1	n/a	DP&L Estimate
9	Average Technician Salary (Loaded)	$108,579	$111,837	$115,192	$118,647	$122,207	$125,873	$129,649	$129,649	DP&L Estimate
10	Total System Tech Costs	$217,158	$335,510	$345,575	$355,942	$366,621	$377,619	$129,649	$2,128,074	line 8 * line 9
11	Telecommunication Equipment Maintenance Cost	$0	$309,945	$533,104	$672,322	$811,022	$951,394	$1,001,213	$4,279,000	Approximately 7% of cumulative AMI Infrastructure Costs (equipment maintenance expenses only)
12	AMI O&M	$506,885	$1,275,284	$1,557,022	$1,774,535	$1,848,675	$2,006,942	$1,660,429	$10,629,771	line 3 + line 4 + line 7 + line 10 + line 11
13	GIS Maintenance	$0	$9,375	$262,500	$350,000	$437,500	$437,500	$437,500	$1,934,375	DP&L Estimate
14	Total AMI Meter O&M Cost	$506,885	$1,284,659	$1,819,522	$2,124,535	$2,286,175	$2,444,442	$2,097,929	$12,564,146	line 12 + line 13

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AMI Communications O&M

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	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	2-Way Voice and Data Maintenance Cost	273,579	807,523	980,130	1,013,974	1,045,709	1,056,339	1,067,288	6,244,543	5% of cumulative Capital (equipment maintenance expenses, Includes fully loaded Additional DPL headcount, etc.)
2	Backbone Telecommunication Maintenance Cost	$0	$292,607	$720,786	$720,786	$720,786	$720,786	$720,786	3,896,537	5% of cumulative Telco Capital Equipment (not including Vendor project management and Engineering)
3	Total O&M Cost	$273,579	$1,100,130	$1,700,916	$1,734,760	$1,766,495	$1,777,125	$1,788,074	$10,141,080	Line 1 + Line 2

THE DAYTON POWER AND LIGHT COMPANY
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BOOK II - Customer Conservation and Energy Management
AMI Meter Benefits

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	Baseline meter reading expense	$3,267,000	$3,267,000	$3,272,000	$3,367,000	$3,466,000	$3,565,001	$3,668,000	n/a	DP&L Estimate
2	Average % of meters installed during year	1%	7%	20%	39%	63%	88%	100%	n/a	DP&L Estimate
3	Reduction in meter reading expense	$32,670	$228,690	$638,040	$1,296,295	$2,166,250	$3,119,376	$3,668,000	$11,149,321	line 1 * line 2
4	Average revenue per residential customer	$1,073	$1,073	$1,073	$1,073	$1,073	$1,073	$1,073	n/a	2006 residential revenues/# residential customers
5	Improvement factor - reduction in energy theft due to AMI	1%	1%	1%	1%	1%	1%	1%	n/a	DP&L Estimate
6	Average # of meters installed	5,208	36,456	101,556	200,508	325,500	455,700	521,658	n/a	DP&L Estimate
7	Reduction in energy theft	$27,950	$195,647	$545,018	$1,076,061	$1,746,852	$2,445,593	$2,799,569	$8,836,691	line 4 * line 5 * line 6
8	Total Cost of Uncollected Accounts	$307,000	$307,000	$307,000	$307,000	$307,000	$307,000	$307,000	n/a	DP&L Estimate
9	Reduction in uncollected accounts	$3,070	$21,490	$59,865	$118,195	$191,875	$268,625	$307,000	$970,120	line 2 * line 8
10	Outage Crew Cost	$138,756	$142,919	$147,206	$151,622	$156,171	$160,856	$165,682	n/a	DP&L Estimate
11	Reduction on no outage calls	$1,388	$10,004	$28,705	$58,375	$97,607	$140,749	$165,682	$502,509	line 2 * line 10
12	Potential Workman's Comp Savings	$600,000	$600,000	$600,000	$600,000	$600,000	$600,000	$600,000	n/a	DP&L Estimate
13	Reduction in Worker's Comp Costs	$6,000	$42,000	$117,000	$231,000	$375,000	$525,000	$600,000	$1,896,000	line 2 * line 12
14	Additional Revenue due to elimination of electro-mechanical meters	0.40%	0.40%	0.40%	0.40%	0.40%	0.40%	0.40%	n/a	DP&L Estimate
15	Additional Revenue with improved bill accuracy of new meters	$22,360	$156,518	$436,014	$860,849	$1,397,482	$1,956,475	$2,239,655	$7,069,353	line 4 * line 6 * line 14
16	Decrease in Billing Processing (Significant reduction in exception processing costs)	$85,000	$85,000	$85,000	$85,000	$85,000	$85,000	$85,000	n/a	DP&L Estimate
17	Reduction of bill processing (Lower Exceptions)	$850	$5,950	$16,575	$32,725	$53,125	$74,375	$85,000	$268,600	line 2 * line 16
18	Reduction in Field Service Costs (Lower Field Service Orders)	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	n/a	DP&L Estimate
19	Reduction of Field Service	$11,000	$77,000	$214,500	$423,500	$687,500	$962,500	$1,100,000	$3,476,000	line 2 * line 18
20	Reduction in annual capital costs	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	n/a	DP&L Estimate
21	Deferral of Capital Costs	$250	$1,750	$4,875	$9,625	$15,625	$21,875	$25,000	$79,000	line 2 * line 20
22	Reduction in Call Center Costs (Better Outage Information and Lower Billing Inquiries)	$206,000	$206,000	$206,000	$206,000	$206,000	$206,000	$206,000	n/a	DP&L Estimate
23	Reduction of Call Center Costs (Fewer Calls and shorter calls)	$2,060	$14,420	$40,170	$79,310	$128,750	$180,250	$206,000	$650,960	line 2 * line 22
24	Potential decrease in annual Load Research	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	n/a	DP&L Estimate
25	Reduction of load research costs	$1,000	$7,000	$19,500	$38,500	$62,500	$87,500	$100,000	$316,000	line 2 * line 24
26	Reduction of Costs to deliver power to unoccupied premises.	$35,000	$35,000	$35,000	$35,000	$35,000	$35,000	$35,000	n/a	DP&L Estimate
27	Reduction of costs from power delivered to unoccupied premises	$350	$2,450	$6,825	$13,475	$21,875	$30,625	$35,000	$110,600	line 2 * line 26
28	Reduction in costs to test new meter shipments as they arrive in DPL	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	n/a	DP&L Estimate
29	Reduction of meter testing cost for new meter shipments	$200	$1,400	$3,900	$7,700	$12,500	$17,500	$20,000	$63,200	line 2 * line 30
30	Total AMI Benefits	$169,147	$764,320	$2,130,987	$4,245,609	$6,936,941	$9,830,443	$11,350,907	$35,388,354	line 3 + line 7 + line 9 + line 11 + line 13 + line 15 + line 17 + line 19 + line 21 + line 23 + line 25 + line 27 + line 29

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Completion of Core Telecom Rollout (End of Year)	0%	14%	46%	82%	100%	100%	100%	n/a	DP&L Rollout Schedule
2	Existing 2 Way Radio System and Microwave System Maintenance Cost	$143,000	$143,000	$143,000	$143,000	$143,000	$143,000	$143,000	n/a	DP&L Estimate
3	Reduction in Existing Two Way Radio System and Existing Microwave System Maintenance	$0	$20,423	$66,132	$117,210	$143,000	$143,000	$143,000	$632,765	line 1 * line 2
4	Completion of Core Telecom Rollout (Midyear)	0%	14%	46%	82%	100%	100%	100%	n/a	DP&L Rollout Plan
5	Potential Field Crew Savings (e.g., fuel, overtime)	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	n/a	DP&L Estimate
6	Total Field Crew Savings	$0	$28,563	$92,493	$163,930	$200,000	$200,000	$200,000	$884,986	line 4 * line 5
7	Total AMI Communications Benefits	$0	$48,986	$158,625	$281,139	$343,000	$343,000	$343,000	$1,517,750	line 3 + line 6

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Societal Benefits

Data: 7 Year Forecast
Type of Filing: Original
Work Paper Reference No(s): n/a

WPH-1.9
Page 1 of 1
Witness Responsible:
Kevin Hall

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)
1	[redacted]																
2	Direct Load Control Capacity Value	$0	$17,422	$91,916	$252,977	$673,498	$1,612,553	$2,658,220	$3,597,102	$4,525,235	$5,510,724	$6,556,430	$7,663,472	$8,841,026	$10,086,093	$11,403,950	WPH-1.10
3	Time Based Pricing Capacity Value	$0	$0	$0	$15,046	$63,310	$297,764	$828,592	$1,590,172	$2,459,706	$3,357,778	$4,344,824	$5,384,982	$6,491,393	$7,667,479	$8,916,806	WPH-1.10
4	Third Party Curtailment Capacity Value	$229,553	$765,775	$1,353,606	$2,209,232	$4,372,029	$6,255,977	$8,072,316	$9,191,301	$10,243,112	$11,406,904	$12,694,623	$14,119,237	$15,695,066	$17,437,920	$19,365,254	WPH-1.10
5	Direct Load Control Energy Value	$0	$13,113	$61,423	$152,358	$297,365	$499,940	$810,129	$953,039	$1,196,846	$1,443,209	$1,916,056	$2,096,581	$2,438,070	$2,637,148	$2,983,155	WPH-1.10
6	Total Value of Societal Benefits from Demand Response Products	$229,553	$796,310	$1,506,946	$2,629,613	$5,406,192	$8,666,234	$12,379,257	$15,331,914	$18,415,899	$21,728,615	$25,311,943	$29,176,272	$33,465,555	$37,828,639	$42,667,164	sum of lines 2-4
7	Discount Rate	9.15%															Schedule B-6
8	Net Present Value	$97,416,553															NPV of line 6 based on line 7
9																	
10	[redacted]																
11	Total Capacity Value from Energy Efficiency Programs	$0	$0	$0	$1,131,957	$2,336,185	$4,425,097	$6,959,357	$9,150,314	$11,314,972	$13,604,476	$16,024,075	$18,579,923	$21,278,432	$24,126,293	$27,129,504	WPH-1.10
12	Total Energy Value from Energy Efficiency Programs	$3,729,246	$8,194,392	$13,296,409	$19,596,248	$26,492,638	$34,571,814	$41,665,640	$49,906,503	$58,793,469	$68,202,574	$77,973,363	$89,358,267	$99,574,345	$111,335,063	$123,784,501	WPH-1.10
13	Total Energy Value from Home Energy Displays	$0	$639,220	$1,426,809	$2,757,105	$4,954,400	$5,913,169	$6,102,607	$6,298,202	$6,500,154	$6,708,669	$6,923,961	$7,146,249	$7,375,762	$7,612,735	$7,857,409	WPH-1.10
14	Total Value of Societal Benefits from Improved Utilization Efficiency	$3,729,246	$8,833,612	$14,723,218	$23,485,310	$33,783,221	$44,910,080	$54,727,804	$65,355,019	$76,608,595	$88,515,719	$100,921,398	$115,084,440	$128,228,540	$143,074,090	$158,771,714	sum of lines 11-13
15	Net Present Value	$425,426,780															NPV of line 14 based on line 7
16																	
17	[redacted]																
18	Total Non-Weather Related Outage Time for Outages over 10 Minutes	35,642,090															DP&L system data
19	# of DP&L Customers	514,405															FERC
20	Outage Time per Customer	69															line 18 / line 19
21																	
22	Average residential customer benefit per minute from reduced outages	$0.04															"Characterizing and Quantifying the Societal Benefits Attributable to Smart Metering Investments," EPRI, 2008.
23	Average small C&I customer benefit per minute from reduced outages	$22															"Characterizing and Quantifying the Societal Benefits Attributable to Smart Metering Investments," EPRI, 2008.
24	Average large C&I customer benefit per minute from reduced outages	$230															"Characterizing and Quantifying the Societal Benefits Attributable to Smart Metering Investments," EPRI, 2008.
25	Total Residential Customers	459,819	471,393	472,972	474,557	477,147	477,742	479,343	480,982	482,627	484,278	485,934	487,596	489,264	490,937	992,616	DP&L Customer Forecast
26	Total Small C&I Customers	57,225	57,898	58,580	59,269	59,967	60,673	61,387	62,109	62,840	63,580	64,328	65,086	65,852	66,627	67,411	DP&L Customer Forecast
27	Total Large C&I Customers	1,859	1,881	1,903	1,925	1,948	1,971	1,994	2,018	2,041	2,065	2,090	2,114	2,139	2,164	2,190	DP&L Customer Forecast
28																	
29	Smart Grid Improvements																
30	% of customers on circuits with adequate ties	57%															DP&L Estimates
31	% improvement in outages	39%															DP&L Estimates
32	Total Outage Reduction	22%															line 30 * line 31
33	DA Reduction per Customer (minutes)	15.3															FERC Data
34	DA Rollout Schedule	1%	3%	3%	4%	4%	5%	17%	27%	37%	48%	58%	69%	79%	90%	100%	DA Rollout Plan
35	Average DA Outage Reduction per Year per Customer	0.15	0.51	0.46	0.61	0.61	0.77	2.60	4.14	5.67	7.35	8.89	10.55	12.10	13.79	15.32	line 33 * line 34
36																	
37	AMI Improvements																
38	Range of Potential AMI Reliability Improvements	2.5% - 7.5%															Vendor Estimates (Freeman, Sullivan & Co)
39	Average Estimate of Reliability Improvement	5%															Average of Vendor Estimates
40	AMI Outage Reduction per Customer (minutes)	3.5															line 20 * line 39
41	AMI Rollout Schedule	2%	12%	27%	50%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	AMI Rollout Plan
42	Average AMI Outage Reduction per Year per Customer	0.1	0.4	0.9	1.7	2.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	line 40 * line 41
43																	
44	Reliability Summary																
45	Total Outage Reduction per Customer (minutes)	0.2	0.7	1.4	2.3	3.2	4.2	6.1	7.6	9.1	10.8	12.3	14.0	15.6	17.3	18.8	line 35 + line 42
46	Total Outage Reduction Value to Residential Customers	$4,130	$13,742	$26,635	$44,925	$58,853	$81,589	$117,436	$147,584	$177,936	$211,460	$242,266	$275,886	$307,468	$341,918	$373,553	line 22 * line 25 * line 45
47	Total Outage Reduction Value to Small C&I Customers	$273,821	$899,208	$1,757,517	$2,939,169	$4,148,413	$5,520,264	$8,012,326	$10,153,030	$12,343,018	$14,792,631	$17,086,363	$19,619,296	$22,047,222	$24,721,487	$27,233,544	line 23 * line 26 * line 45
48	Total Outage Reduction Value to Large C&I Customers	$95,256	$312,818	$611,409	$1,039,888	$1,440,723	$1,920,303	$2,787,344	$3,532,057	$4,293,914	$5,146,093	$5,944,004	$6,825,200	$7,669,832	$8,600,161	$9,474,060	line 24 * line 27 * line 45
49	Total Value of Outage Reduction	$373,209	$1,225,768	$2,395,561	$4,024,012	$5,643,989	$7,522,225	$10,917,106	$13,832,670	$16,814,868	$20,150,221	$23,272,633	$26,720,381	$30,024,522	$33,663,565	$37,081,157	sum of lines 46 - 48
50	Net Present Value	$90,699,784															NPV of line 49 based on line 8
51																	
52																	
53	[redacted]																
54	MWh Savings from Demand Response	-	10,225	23,442	43,971	76,864	90,436	93,540	94,756	96,895	98,928	101,082	103,260	106,541	107,625	109,833	DP&L Energy Efficiency & Demand Response Plan
55	MWh Savings from Improved Utilization Efficiency	55,009	128,168	210,889	299,711	392,933	496,562	580,433	673,598	768,747	864,075	956,929	1,062,648	1,146,743	1,242,021	1,337,620	DP&L Energy Efficiency & Demand Response Plan
56	MWh Savings from Distribution Network Efficiency	1,405	2,823	4,086	5,308	6,926	8,339	25,023	41,688	58,367	75,006	90,808	106,309	121,059	135,683	150,033	DP&L Smart Grid Plan
57	Total MWh Savings	55,014	141,216	238,417	349,190	476,723	595,337	698,995	810,041	923,989	1,038,009	1,148,818	1,272,216	1,374,343	1,485,330	1,597,486	line 54 + line 55 + line 56
58	Average CO2 Emissions per MWh	1.02															DP&L Emissions
59	Total CO2 Emissions	56,387	144,536	244,020	357,396	487,926	609,328	713,422	829,077	945,703	1,062,402	1,175,816	1,302,113	1,406,640	1,520,235	1,635,027	line 57 * line 58
60	Average Value of CO2 Emissions	16.5															"Characterizing and Quantifying the Societal Benefits Attributable to Smart Metering Investments," EPRI, 2008.
61	Total CO2 Value	$929,963	$2,384,323	$4,026,334	$5,897,032	$8,050,779	$10,053,910	$11,804,456	$13,679,771	$15,604,896	$17,529,640	$19,400,959	$21,484,871	$23,209,553	$25,083,877	$26,977,948	line 59 * line 60
62	Net Present Value	$85,805,614.76															NPV of line 62 based on line 8
63																	
64	[redacted]																
65	Dynamic Voltage Control Capacity Value	$0	$0	$0	$20,200	$34,641	$96,105	$143,434	$287,454	$550,842	$946,794	$1,366,007	$1,817,046	$2,301,666	$2,825,702	$3,379,109	WPH-1.10
66	Line Losses Energy Value	$97,075	$179,864	$257,376	$350,447	$467,849	$581,456	$1,801,649	$3,097,302	$4,474,872	$5,938,145	$7,421,289	$8,968,489	$10,542,601	$12,197,773	$13,923,516	WPH-1.10
67	Total Distribution Network Efficiency Savings	$97,075	$179,864	$257,376	$380,647	$522,490	$677,561	$1,944,084	$3,384,756	$5,025,714	$6,884,939	$8,787,296	$10,785,534	$12,844,270	$15,023,475	$17,302,625	line 65 + line 66
68	Net Present Value	$29,642,378															NPV of line 67 based on line 8
69																	
70	Total Net Present Value	$728,991,112															line 8 + line 15 + line 50 + line 62 + line 68

THE DAYTON POWER [redacted]IGHT COMPANY
CASE NO. [redacted]-SSO
BOOK II - Customer Conservation and Energy Management
Energy & Demand Valuation

Data: 15 Year Forecast
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Page 1 of 2
Witness Responsible:
Kevin Hall

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q) = Sum (B:P)	(R)
1	[redacted]																	
2	Energy Values																	
3	Residential Lighting Energy Savings	22,578	$1,087	$0,401	100,094	137,755	177,594	$95,461	214,487	253,583	282,778	$12,072	341,477	370,975	400,550	430,258		DP&L Energy Efficiency & Demand Response Plan
4	Average Value per Avoided MWh	$72	$65	$69	$68	$70	$71	$74	$77	$79	$82	$85	$87	$90	$93	$96		Commercial Operations
5	Total Residential Lighting Energy Value	$1,797,200	$3,453,336	$5,265,595	$7,177,885	$9,622,077	$12,607,182	$14,551,691	$17,282,875	$20,136,511	$23,189,565	$26,424,180	$29,857,036	$33,493,724	$37,344,217	$41,430,537	$252,919,292	line 3 * line 4
6	Residential Air Conditioner Tune-Up Energy Savings	2,083	3,048	8,020	11,001	13,988	17,001	20,015	23,029	27,074	29,119	31,175	35,261	38,318	41,405	44,502		DP&L Energy Efficiency & Demand Response Plan
7	Average Value per Avoided MWh		$69	$68	$73	$75	$75	$77	$80	$82	$85	$87	$90	$93	$96	$99		Commercial Operations
8	Total Residential HVAC Tune-up Energy Value	$157,240	$250,011	$548,282	$778,901	$1,020,750	$1,277,174	$1,549,585	$1,838,101	$2,223,981	$2,467,387	$2,705,856	$3,172,159	$3,553,102	$3,955,968	$4,387,579	$30,098,244	line 6 * line 7
9	Residential New and Replacement HVAC Systems	744	2,323	4,008	5,799	7,597	9,009	10,807	12,921	14,241	15,977	17,799	19,437	21,181	22,931	24,787		DP&L Energy Efficiency & Demand Response Plan
10	Average Value per Avoided MWh	$75	$69	$71	$73	$75	$77	$80	$82	$85	$87	$90	$93	$96	$99			Commercial Operations
11	Total Residential New and Replacement HVAC Systems Energy Value	$56,129	$161,082	$284,642	$430,477	$539,426	$683,658	$836,212	$998,971	$1,170,897	$1,353,872	$1,556,810	$1,760,579	$1,965,204	$2,193,101	$2,448,324	$16,391,523	line 9 * line 10
12	Residential Appliance Recycling Energy Savings	1,576	4,723	1,778	13,736	13,718	29,910	24,716	33,758	33,770	37,718	40,779	44,855	48,943	53,043	57,156		DP&L Energy Efficiency & Demand Response Plan
13	Average Value per Avoided MWh	$66	$61	$61	$63	$65	$68	$70	$72	$74	$77	$79	$82	$84	$87	$90		Commercial Operations
14	Total Residential Appliance Recycling Energy Value	$104,170	$289,606	$553,183	$856,920	$1,151,785	$1,908,529	$1,923,190	$2,068,794	$2,435,762	$2,894,666	$3,231,219	$3,660,591	$4,134,199	$4,626,321	$5,148,357	$34,233,316	line 12 * line 13
15	Residential Energy Star Appliance Rebates Energy Savings	571	1,525	2,294	3,255	4,250	5,188	7,160	7,134	8,813	9,936	10,979	11,977	12,959	13,954	14,953		DP&L Energy Efficiency & Demand Response Plan
16	Average Value per Avoided MWh	$66	$61	$61	$63	$65	$68	$70	$72	$74	$77	$79	$82	$84	$87	$90		Commercial Operations
17	Total Residential Energy Star Appliance Rebates Energy Value	$37,885	$91,919	$138,441	$206,202	$276,006	$350,353	$499,201	$513,502	$650,587	$767,557	$793,602	$966,217	$1,091,870	$1,138,363	$1,265,481	$8,533,211	line 15 * line 16
18	Residential Low Income Affordability Energy Savings	1,703	3,410	3,315	7,921	8,726	10,231	11,937	13,741	15,347	17,061	18,588	20,472	22,178	23,872	25,577		DP&L Energy Efficiency & Demand Response Plan
19	Average Value per Avoided MWh	$68	$63	$62	$65	$67	$69	$73	$76	$78	$81	$83	$86	$89	$92			Commercial Operations
20	Total Residential Low Income Affordability Energy Value	$116,129	$214,877	$319,425	$508,898	$572,298	$708,447	$852,727	$1,012,671	$1,166,160	$1,337,520	$1,511,033	$1,700,244	$1,910,633	$2,121,966	$2,345,864	$16,485,646	line 18 * line 19
21	Non-Residential Prescriptive Rebates Energy Savings	20,454	46,554	72,817	105,786	144,908	182,932	220,956	259,379	297,803	337,226	374,749	413,075	451,497	489,919	528,345		DP&L Energy Efficiency & Demand Response Plan
22	Average Value per Avoided MWh	$66	$61	$61	$63	$65	$68	$70	$72	$74	$77	$79	$82	$84	$87	$90		Commercial Operations
23	Total Non-Residential Prescriptive Rebates Energy Value	$1,319,988	$2,734,173	$4,490,391	$6,705,634	$9,431,515	$12,534,134	$15,415,305	$18,682,601	$22,147,924	$25,194,352	$29,780,142	$33,811,971	$38,157,453	$42,549,384	$47,592,462	$311,167,120	line 21 * line 22
24	Non-Residential Custom Rebates Energy Savings	2,981	14,749	29,370	44,714	59,170	74,207	89,244	104,557	119,870	135,117	150,517	172,017	181,395	192,237	21,939		DP&L Energy Efficiency & Demand Response Plan
25	Average Value per Avoided MWh	$66	$61	$61	$63	$65	$68	$70	$72	$74	$77	$79	$82	$84	$87	$90		Commercial Operations
26	Total Non-Residential Custom Rebates Energy Value	$192,407	$905,080	$1,785,952	$2,838,430	$3,870,260	$5,012,847	$6,230,569	$7,527,888	$8,906,323	$10,369,601	$11,917,062	$14,482,330	$15,319,290	$17,281,543	$19,173,058	$125,725,879	line 24 * line 25
27	Home Energy Display Energy Savings	-	10,676	23,728	42,239	73,559	85,036	85,036	85,036	85,036	85,036	85,036	85,036	85,036	85,036	85,036		DP&L Energy Efficiency & Demand Response Plan
28	Average Value per Avoided MWh	$69	$65	$63	$65	$67	$70	$72	$74	$76	$79	$81	$84	$87	$90	$93		Commercial Operations
29	Total Home Energy Display Energy Value	$0	$639,220	$1,496,689	$2,757,105	$4,956,400	$5,913,189	$6,102,607	$6,294,202	$6,500,154	$6,701,669	$6,923,961	$7,146,249	$7,375,762	$9,612,795	$7,859,409	$78,218,251	line 27 * line 28
30	Energy Efficiency Programs Energy Value	$8,729,340	$8,894,192	$13,296,469	$19,596,248	$25,492,858	$34,578,814	$41,665,660	$49,905,505	$58,795,469	$68,202,574	$77,923,963	$89,558,267	$99,576,345	$111,335,053	$123,784,108	$676,474,671	line 5 + line 8 + line 11 + line 14 + line 17 + line 20 +line 23 + line 26
31	Home Energy Display Energy Value	$0	$639,220	$1,496,689	$2,757,105	$4,956,400	$5,913,189	$6,102,607	$6,294,202	$6,500,154	$6,701,669	$6,923,961	$7,146,249	$7,375,762	$7,612,795	$7,859,409	$78,218,251	line 29
32	Total Energy Value from Improved Utilization Efficiency	$8,729,340	$9,533,412	$14,723,018	$22,353,282	$30,449,258	$40,484,982	$47,768,247	$56,204,706	$65,295,623	$74,911,243	$84,847,923	$96,504,517	$106,950,107	$118,947,797	$131,641,909	$754,692,922	line 30 + line 31
33																		
34	Capacity Values																	
35	Residential Lighting Capacity Savings	2	4	8	9	12	14	16	19	22	24	28	29	32	34	38		DP&L Energy Efficiency & Demand Response Plan
36	Biddable Demand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		Commercial Operations
37	Average Value per Avoided MW	$38,739	$53,532	$69,927	$48,667	$60,712	$80,087	$95,356	$100,375	$108,283	$106,381	$108,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
38	Total Residential Lighting Capacity Value	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	line 35 * line 37
39	Residential Air Conditioner Tune-Up Capacity Savings	3	4	7	10	12	15	18	20	23	26	29	31	34	38	40		DP&L Energy Efficiency & Demand Response Plan
40	Biddable Demand	-	-	-	4	7	10	15	15	18	20	23	26	29	33	38		Commercial Operations
41	Average Value per Avoided MW	$38,739	$53,532	$69,927	$48,667	$60,712	$80,087	$95,356	$100,375	$108,283	$106,381	$108,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
42	Total Residential HVAC Tuneup Capacity Value	$0	$0	$0	$211,934	$492,712	$993,054	$1,185,980	$1,344,672	$1,735,652	$2,177,660	$2,538,301	$2,919,759	$3,322,889	$3,748,697	$4,198,314	$24,376,773	line 40 * line 41
43	Residential New and Replacement HVAC Systems	1	3	4	5	8	9	10	11	13	14	16	17	19	20	22		DP&L Energy Efficiency & Demand Response Plan
44	Biddable Demand	-	-	-	2	4	5	7	9	10	11	13	14	16	17	19		Commercial Operations
45	Average Value per Avoided MW	$38,739	$53,532	$69,927	$48,667	$60,712	$80,087	$95,356	$100,375	$108,283	$106,381	$108,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
46	Total Residential New and Replacement HVAC Systems Capacity Value	$0	$0	$0	$181,035	$217,396	$407,684	$628,692	$864,318	$996,107	$1,189,531	$1,393,496	$1,669,231	$1,937,257	$2,078,164	$2,332,931	$13,897,841	line 44 * line 45
47	Residential Appliance Recycling Capacity Savings	0	1	1	2	3	3	4	4	5	6	7	7	8	8	9		DP&L Energy Efficiency & Demand Response Plan
48	Biddable Demand	-	-	-	1	1	1	2	3	4	4	5	6	6	7	8		Commercial Operations
49	Average Value per Avoided MW	$38,739	$53,532	$69,927	$48,667	$60,712	$80,087	$95,356	$100,375	$108,283	$106,381	$108,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
50	Total Residential Appliance Recycling Capacity Value	$0	$0	$0	$37,973	$82,404	$158,373	$247,917	$323,374	$397,746	$476,863	$550,997	$648,245	$741,532	$840,081	$944,133	$5,458,320	line 48 * line 49
51	Residential Energy Star Appliance Rebates Capacity Savings	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2		DP&L Energy Efficiency & Demand Response Plan
52	Biddable Demand	-	-	-	0	0	0	1	1	1	1	1	1	1	1	1		Commercial Operations
53	Average Value per Avoided MW	$38,739	$53,532	$69,927	$48,667	$60,712	$80,087	$95,356	$100,375	$108,283	$106,381	$108,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
54	Total Residential Energy Star Appliance Rebates Capacity Value	$0	$0	$0	$8,233	$30,831	$33,506	$41,025	$52,653	$76,856	$91,567	$107,115	$123,952	$143,545	$160,887	$179,464	$1,049,365	line 52 * line 53
55	Residential Low Income Affordability Capacity Savings	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2		DP&L Energy Efficiency & Demand Response Plan
56	Biddable Demand	-	-	-	0	1	1	1	1	1	1	1	1	2	2	2		Commercial Operations
57	Average Value per Avoided MW	$38,739	$52,422	$69,927	$48,867	$60,712	$80,087	$95,356	$100,375	$108,283	$106,381	$108,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
58	Total Residential Low Income Affordability Capacity Value	$0	$0	$0	$18,805	$33,259	$31,526	$73,091	$89,408	$106,423	$123,317	$149,139	$199,800	$270,569	$260,481	$222,389	$1,399,059	line 54 * line 57
59	Non-Residential Prescription Rebates Capacity Savings	5	12	20	29	39	49	60	70	81	91	101	112	122	133	143		DP&L Energy Efficiency & Demand Response Plan
60	Biddable Demand	$0	$0	$0	$11	$26	$25	$39	$49	$60	$70	$81	$91	$101	$112	$122		Commercial Operations
61	Average Value per Avoided MW	$38,739	$52,422	$69,927	$48,867	$60,712	$80,087	$95,356	$100,375	$108,283	$106,381	$108,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
62	Total Non-Residential Prescriptive Rebates Capacity Value	-	-	-	605,759	1,222,828	1,282,544	2,721,698	4,927,060	6,180,437	7,492,811	8,157,164	10,276,612	11,794,494	13,194,300	15,079,273	$85,874,856	line 60 * line 61
63	Non-Residential Custom Rebates Capacity Savings	1	3	5	8	11	14	17	19	22	25	28	31	34	37	40		DP&L Energy Efficiency & Demand Response Plan
64	Biddable Demand	-	-	-	3	5	8	11	14	17	19	22	25	28	31	34		Commercial Operations
65	Average Value per Avoided MW	$38,739	$52,422	$69,927	$48,667	$60,712	$80,087	$95,356	$100,375	$108,283	$106,381	$108,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
66	Total Non-Residential Custom Rebates Capacity Value	$0	$0	$0	$141,842	$353,734	$466,347	$1,161,814	$1,387,189	$1,720,031	$2,072,903	$2,446,622	$2,845,194	$3,261,047	$3,704,573	$4,173,590	$20,794,980	line 64 * line 65
67	Home Energy Display Capacity Savings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		DP&L Energy Efficiency & Demand Response Plan
68	Biddable Demand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		Commercial Operations
69	Average Value per Avoided MW	$38,739	$52,422	$69,927	$48,667	$60,712	$80,087	$95,356	$100,375	$108,283	$106,381	$108,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
70	Total Home Energy Display Demand Value	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Commercial Operations
71	Energy Efficiency Programs Capacity Value	$0	$0	$0	$8,131,967	$3,336,183	$4,625,097	$8,929,587	$8,150,314	$11,914,972	$13,604,476	$16,024,075	$18,579,923	$21,278,432	$24,126,295	$27,129,864	$156,961,092	line 38 + line 41 + line 46 + line 50 + line 54 + line 58 + line 62 + line 66
72	Home Capacity Displays Capacity Value	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	line 70
73	Total Capacity Value from Improved Utilization Efficiency	$0	$0	$0	$8,131,967	$3,336,183	$4,625,097	$8,929,587	$8,150,314	$11,914,972	$13,604,476	$16,024,075	$18,579,923	$21,278,432	$24,126,295	$27,129,864	$156,961,092	line 71 + line 72
74																		
75	Summary																	
76	Total Energy and Capacity Value of Energy Efficiency	$8,729,340	$9,194,192	$13,296,469	$20,728,215	$28,828,821	$39,190,911	$49,615,397	$59,056,819	$70,108,441	$81,807,050	$93,947,637	$107,938,190	$120,852,777	$135,461,856	$150,914,385	$982,515,563	line 30 + line 71
77	Total Energy and Capacity Value of Home Energy Displays	$0	$639,220	$1,496,689	$2,757,105	$4,956,400	$5,913,189	$6,102,607	$6,294,202	$6,500,154	$6,701,669	$6,923,961	$7,146,249	$7,375,762	$7,612,795	$7,859,409	$78,218,251	line 31 + line 72
78	Total Energy and Capacity Value of Improved Utilization Efficiency	$8,729,340	$9,533,412	$14,723,018	$22,485,319	$33,785,221	$44,910,099	$55,717,004	$65,295,019	$76,608,595	$88,515,719	$100,871,598	$115,084,440	$128,228,540	$143,074,650	$158,773,794	$1,060,733,814	line 76 + line 77
79																		
80																		

THE DAYTON POWER A[…]T COMPANY
CASE NO. 08-[…]SO
BOOK II - Customer Conservation and Energy Management
Energy & Demand Valuations

Data: 15 Year Forecast
Type of Filing: Original
Work Paper Reference No(s).: n/a

WPH-1.10
Page 2 of 2
Witness Responsible:
Kevin Hall

Line No.	Description (A)	2009 (B)	2010 (C)	2011 (D)	2012 (E)	2013 (F)	2014 (G)	2015 (H)	2016 (I)	2017 (J)	2018 (K)	2019 (L)	2020 (M)	2021 (N)	2022 (O)	2023 (P)	Total (Q) = Sum (B:P)	Source (R)
81	[illegible]																	
82	Energy Value																	
83	Residential Direct Load Control Energy Savings	-	109	579	1,429	2,722	4,453	7,189	7,931	9,718	11,434	13,195	14,971	17,734	18,513	20,297		DP&L Energy Efficiency & Demand Response Plan
84	Average Value per Avoided MWh	$97	$88	$86	$87	$90	$93	$95	$98	$101	$104	$107	$110	$113	$117	$120		Commercial Operations
85	Total Residential Direct Load Control Energy Value	$0	$9,466	$49,655	$124,910	$244,191	$412,190	$684,873	$777,653	$986,992	$1,187,872	$1,411,153	$1,642,454	$2,010,522	$2,161,174	$2,440,133	$14,149,925	line 83 * line 84
86	Non-Residential Direct Load Control Energy Savings	-	41	137	314	583	948	1,315	1,789	2,079	2,451	2,851	3,353	3,771	4,077	4,506		DP&L Energy Efficiency & Demand Response Plan
87	Average Value per Avoided MWh	$97	$88	$86	$87	$90	$93	$95	$98	$101	$104	$107	$110	$113	$117	$120		Commercial Operations
88	Total Non-Residential Direct Load Control Energy Value	$0	$3,647	$11,761	$27,447	$52,474	$87,790	$125,256	$175,117	$209,854	$253,337	$304,912	$358,127	$427,548	$475,971	$541,037	$3,056,317	line 86 * line 87
89	Direct Load Control Energy Value	$0	$13,113	$61,421	$152,358	$297,365	$499,940	$810,129	$953,019	$1,196,846	$1,441,209	$1,716,066	$2,006,581	$2,438,070	$2,637,148	$2,981,155	$17,206,441	line 85 + line 88
90	Total Energy Value from Demand Response	$0	$13,113	$61,421	$152,358	$297,365	$499,940	$810,129	$953,019	$1,196,846	$1,441,209	$1,716,066	$2,006,581	$2,438,070	$2,637,148	$2,981,155	$17,206,441	line 89
91																		
92	Capacity Value																	
93	Demand Response Products																	
94	Residential Direct Load Control Capacity Savings	-	0	2	3	10	18	21	30	37	43	48	56	72	79	78		DP&L Energy Efficiency & Demand Response Plan
95	Biddable Demand	-	0	1	4	9	17	21	30	36	43	49	56	62	69	76		Commercial Operations
96	Average Value per Avoided MW	$31,739	$32,622	$40,927	$41,667	$60,712	$80,087	$95,356	$100,275	$103,283	$106,381	$109,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
97	Total Residential Direct Load Control Demand Value	$0	$15,547	$74,176	$167,441	$584,743	$1,520,098	$2,201,127	$2,966,284	$3,728,873	$4,516,899	$5,392,461	$6,297,767	$7,255,271	$8,267,203	$9,336,034	$52,160,823	line 95 * line 96
98	Non-Residential Direct Load Control Capacity Savings	-	0	1	1	2	4	5	6	8	9	11	12	14	15	17		DP&L Energy Efficiency & Demand Response Plan
99	Biddable Demand	-	0	0	1	3	4	5	6	8	9	11	13	14	15	17		Commercial Operations
100	Average Value per Avoided MW	$31,739	$32,622	$40,927	$41,667	$60,712	$80,087	$95,356	$100,275	$103,283	$106,381	$109,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
101	Total Non-Residential Direct Load Control Demand Value	$0	$4,875	$17,146	$45,526	$118,745	$212,555	$467,093	$630,911	$796,363	$973,826	$1,163,970	$1,367,305	$1,585,755	$1,818,190	$2,067,916	$11,341,880	line 99 * line 100
102	Residential Time-of-Use Capacity Savings	-	-	0	0	2	4	6	8	14	13	15	17	19	21	24		DP&L Energy Efficiency & Demand Response Plan
103	Biddable Demand	-	-	-	0	0	1	2	4	6	8	10	11	15	17	19		Average of prior three years of line 102
104	Average Value per Avoided MW	$31,739	$32,622	$40,927	$41,667	$60,712	$80,087	$95,356	$100,275	$103,283	$106,381	$109,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
105	Total Residential Time-of-Use Demand Value	$0	$0	$0	$2,133	$3,332	$33,653	$183,910	$392,094	$627,805	$873,096	$1,143,615	$1,425,210	$1,723,506	$2,039,323	$2,373,470	$10,840,181	line 103 * line 104
106	Residential Peak Time Rebate Capacity Savings	-	-	0	0	2	5	8	12	15	11	21	24	27	30	33		DP&L Energy Efficiency & Demand Response Plan
107	Biddable Demand	-	-	-	0	0	1	3	5	8	12	15	18	21	24	27		Average of prior three years of line 106
108	Average Value per Avoided MW	$31,739	$32,622	$40,927	$41,667	$60,712	$80,087	$95,356	$100,275	$103,283	$106,381	$109,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
109	Total Residential Peak Time Rebate Demand Value	$0	$0	$0	$1,879	$4,687	$70,050	$252,583	$545,664	$877,705	$1,210,286	$1,604,379	$2,010,996	$2,431,898	$2,866,484	$3,336,793	$15,212,806	line 107 * line 108
110	Non-Residential Time-of-Use Capacity Savings	-	-	1	2	4	6	9	12	15	17	20	22	26	29	32		DP&L Energy Efficiency & Demand Response Plan
111	Biddable Demand	-	-	-	0	1	2	4	7	9	12	15	17	20	23	26		Average of prior three years of line 110
112	Average Value per Avoided MW	$31,739	$32,622	$40,927	$41,667	$60,712	$80,087	$95,356	$100,275	$103,283	$106,381	$109,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
113	Total Non-Residential Time-of-Use Demand Value	$0	$0	$0	$11,034	$53,308	$174,063	$392,090	$652,410	$945,197	$1,259,356	$1,596,790	$1,958,775	$2,346,688	$2,762,072	$3,206,544	$18,358,266	line 111 * line 112
114	Third Party Curtailment Capacity Savings	6	15	27	45	72	78	85	92	99	107	116	125	135	146	157		"North American Utility Demand Response Survey Results", Summit Blue, 2006; DP&L Estimate
115	Biddable Demand	6	15	27	45	72	78	85	92	99	107	116	125	135	146	157		line 114
116	Average Value per Avoided MW	$31,739	$32,622	$40,927	$41,667	$60,712	$80,087	$95,356	$100,275	$103,283	$106,381	$109,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
117	Total Third Party Curtailment Capacity Value	$229,553	$765,775	$1,355,606	$2,209,232	$4,372,029	$6,255,977	$8,072,316	$9,191,501	$10,243,113	$11,446,904	$12,694,423	$14,119,227	$15,695,066	$17,437,920	$19,365,254	$133,412,104	line 115 & line 116
118	Direct Load Control Capacity Value	-	17,422	91,916	152,977	673,488	1,612,153	2,668,220	3,597,202	4,525,235	5,310,726	6,556,430	7,665,472	8,841,026	10,084,095	11,403,950	$63,502,709	line 97 + line 101
119	Time Based Pricing Capacity Value	-	-	-	13,046	63,310	297,764	821,592	1,390,172	2,450,706	3,367,738	4,344,824	5,394,982	6,491,395	7,667,479	8,916,806	$41,411,852	line 105 + line 109 + line 113
120	Third Party Curtailment Capacity Value	$229,553	$765,775	$1,355,606	$2,209,232	$4,372,029	$6,255,977	$8,072,316	$9,191,501	$10,243,113	$11,446,904	$12,694,423	$14,119,227	$15,695,066	$17,437,920	$19,365,254	$133,412,104	line 117
121	Total Capacity Value from Demand Response Products	$229,553	$783,197	$1,445,522	$2,477,255	$5,108,827	$8,166,294	$11,569,128	$14,378,875	$17,219,053	$20,285,406	$23,595,877	$27,169,491	$31,027,484	$35,191,491	$39,686,010	$238,333,665	sum of lines 118 - 120
122																		
123	Summary																	
124	Total Energy and Capacity Value of Direct Load Control	$0	$30,535	$153,340	$405,335	$970,852	$2,112,402	$3,478,349	$4,560,241	$5,722,082	$6,955,955	$8,272,496	$9,672,052	$11,270,096	$12,722,240	$14,335,104	$80,709,350	line 89 + line 118
125	Total Energy and Capacity Value of Time-Based Pricing	-	-	-	15,046	63,310	297,764	821,592	1,590,172	2,450,706	3,367,778	4,344,826	5,394,982	6,491,395	7,667,479	8,916,896	$41,411,852	line 119
126	Total Energy and Capacity Value of Third Party Curtailment	$229,553	$765,775	$1,353,606	$2,209,232	$4,372,029	$6,255,977	$8,072,316	$9,191,501	$10,243,112	$11,406,904	$12,694,633	$14,119,229	$15,695,066	$17,437,920	$19,365,254	$133,412,104	line 120
127	Total Energy and Capacity Value from Demand Response Products	$229,553	$796,110	$1,506,946	$2,629,613	$5,405,192	$8,666,234	$12,379,257	$15,331,914	$18,415,899	$21,728,615	$25,311,943	$29,176,272	$33,465,535	$37,828,639	$42,667,164	$255,540,806	sum of lines 124 - 126
128																		
129																		
130	[illegible]																	
131	Energy																	
132	DVC / Line Losses (MWh)	1,405	2,823	4,016	5,301	6,926	8,339	25,023	41,688	58,147	75,006	90,958	106,389	121,059	135,683	150,033		DP&L Energy Efficiency & Demand Response Plan
133	Average Energy Value	$69	$64	$63	$65	$68	$70	$72	$74	$77	$79	$82	$84	$87	$90	$93		Commercial Operations
134	Total Line Losses Energy Value	$97,075	$179,364	$257,276	$360,487	$467,149	$581,456	$1,801,049	$3,097,302	$4,474,872	$5,938,145	$7,421,209	$8,962,489	$10,542,403	$12,197,773	$13,921,506	$70,309,026	line 132 * line 133
135	Total Energy Value from Distribution Network Efficiency	$97,075	$179,364	$257,376	$360,447	$467,149	$581,456	$1,801,049	$3,097,302	$4,474,872	$5,938,145	$7,421,209	$8,962,489	$10,542,403	$12,197,773	$13,921,506	$70,309,026	line 134
136																		
137	Demand																	
138	Non-Residential Dynamic Voltage Control Capacity Savings	0	1	1	1	2	2	5	9	11	16	20	24	29	31	35		DP&L Energy Efficiency & Demand Response Plan
139	Biddable Demand	-	-	-	1	1	1	2	3	3	9	12	16	20	24	27		Commercial Operations
140	Average Value per Avoided MW	$31,739	$32,622	$40,927	$41,667	$60,712	$80,087	$95,356	$100,275	$103,283	$106,381	$109,573	$112,860	$116,246	$119,733	$123,325		Commercial Operations
141	Total DVC Capacity Value	$0	$0	$0	$29,200	$54,641	$96,105	$143,034	$287,454	$550,142	$946,794	$1,366,007	$1,817,046	$2,301,666	$2,825,702	$3,379,109	$15,797,600	line 139 * line 140
142	Total Capacity Value from Distribution Network Efficiency	$0	$0	$0	$29,200	$54,641	$96,105	$143,034	$287,454	$550,142	$946,794	$1,366,007	$1,817,046	$2,301,666	$2,825,702	$3,379,109	$15,797,600	line 141
143																		
144	Summary																	
145	Total Energy and Capacity Value from Distribution Network Efficiency	$97,075	$179,364	$257,376	$389,647	$522,490	$677,561	$1,944,084	$3,384,756	$5,025,714	$6,884,939	$8,787,216	$10,781,534	$12,844,070	$15,023,475	$17,302,628	$86,106,626	line 135 + line 142
146																		
147																		
148	[illegible]																	
149	Total Energy and Capacity Value of Improved Utilization Efficiency	$3,729,246	$8,833,412	$14,723,011	$23,431,319	$33,785,221	$44,910,080	$54,727,804	$65,355,819	$76,608,505	$88,515,719	$100,921,598	$115,084,440	$128,221,540	$143,074,090	$158,771,714	$1,060,753,814	line 71
150	Total Energy and Capacity Value from Demand Response Products	$229,553	$796,310	$1,506,946	$2,629,613	$5,406,192	$8,666,234	$12,379,257	$15,331,914	$18,415,899	$21,721,615	$25,311,948	$29,176,272	$33,465,535	$37,828,639	$42,667,144	$255,540,106	line 127
151	Total Energy and Capacity Value from Distribution Network Efficiency	$97,075	$179,364	$257,376	$389,647	$522,490	$677,561	$1,944,084	$3,384,756	$5,025,714	$6,884,939	$8,787,216	$10,785,534	$12,844,070	$15,023,475	$17,302,623	$86,106,626	line 145
152	Total Energy and Capacity Value from CCEM	$4,055,874	$9,809,586	$16,487,340	$26,564,579	$39,713,903	$54,253,875	$69,051,145	$84,071,689	$100,050,208	$117,120,273	$135,020,757	$155,046,246	$174,530,584	$195,926,205	$218,741,503	$1,400,404,546	sum of lines 149 - 151

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Summary of Smart Grid Development Workpapers

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Line No.	Description (A)	2009 (B)	2010 (C)	2011 (D)	2012 (E)	2013 (F)	2014 (G)	2015 (H)	Total (I = Sum (B:H))	
	Capital Costs									
1	Distribution Automation	$1,643,261	$1,817,976	$1,840,162	$1,844,183	$1,818,116	$1,796,869	$8,768,997	$19,529,563	WPI-1.1
2	Substation Automation	$5,895,123	$5,409,807	$3,262,554	$1,945,521	$1,385,234	$1,673,764	$2,500,938	$22,072,941	WPI-1.2
3	Total of Capital Costs	$7,538,384	$7,227,783	$5,102,715	$3,789,704	$3,203,350	$3,470,632	$11,269,935	$41,602,503	line 1 + line 2
4	**O&M Costs**									
5	Distribution Automation	$108,579	$131,884	$154,908	$177,663	$200,278	$222,641	$244,762	$1,240,715	WPI-1.3
6	Substation Automation	$0	$363,840	$474,160	$540,395	$572,889	$577,806	$582,871	$3,111,961	WPI-1.4
7	Total of O&M Costs	$108,579	$495,724	$629,068	$718,058	$773,167	$800,447	$827,633	$4,352,677	line 5 + line 6
8	**Benefits**									
9	Distribution Automation	$6,614	$17,614	$29,768	$42,352	$55,036	$68,000	$150,011	$369,396	WPI-1.5
10	Substation Automation	$16,244	$44,983	$74,972	$104,961	$134,950	$167,438	$214,921	$758,470	WPI-1.6
11	Total T&D Benefits	$22,858	$62,598	$104,740	$147,314	$189,986	$235,438	$364,932	$1,127,866	line 9 + line 10

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Distribution Automation Capital

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	# of DA/SA Relay Engineers	1	1	1	1	1	1	1	n/a	DP&L Estimate
2	# of Design Engineers	1	1	1	1	1	1	1	n/a	DP&L Estimate
3	# of DA RTU/SCADA Engineers	0	0	1	1	1	1	1	n/a	DP&L Estimate
4	# of Incremental SCADA Engineers for DA & SA	2	2	2	2	2	2	2	n/a	DP&L Estimate
5	Total Engineers	4	4	5	5	5	5	5	n/a	line 1+ line 2 + line 3 +line 4
6	Average Engineer Salary (Loaded)	$102,123	$105,187	$108,342	$111,593	$114,940	$118,389	$121,940	n/a	DP&L Estimate
7	Total Engineering Cost	$408,492	$420,747	$541,711	$557,963	$574,702	$591,943	$609,701	$3,705,258	line 5* line 6
8	# of Project Managers	1	1	1	1	1	1	2	n/a	DP&L Estimate
9	Average Project Manager Salary (Loaded)	$124,817	$128,562	$132,418	$136,391	$140,483	$144,697	$149,038	n/a	DP&L Estimate
10	Total Project Management Cost	$124,817	$128,562	$132,418	$136,391	$140,483	$144,697	$298,076	$1,105,444	line 8 * line 9
11	Incremental DPL Installation Technicians	1	1	1	1	1	1	2	n/a	DP&L Estimate
12	Average Technician Salary (Loaded)	$108,579	$111,837	$115,192	$118,647	$122,207	$125,873	$129,649	n/a	DP&L Estimate
13	Total Technician Cost	$108,579	$111,837	$115,192	$118,647	$122,207	$125,873	$259,298	$961,633	line 11 * line 12
14	Total DP&L Engineering & Project Management Cost	$641,888	$661,145	$789,321	$813,001	$837,391	$862,513	$1,167,076	$5,772,335	line 7 + line 10 + line 13
15	Outsourced Engineering Costs	$322,123	$490,187	$396,550	$385,000	$346,500	$311,850	$280,665	$2,532,875	DP&L Estimate
16	Number of New Poles	5	5	5	5	5	5	55	85	DP&L Estimate
17	Cost per Pole	$2,200	$2,200	$2,200	$2,200	$2,200	$2,200	$2,200	n/a	DP&L Estimate
18	Total Cost of New Poles	$11,000	$11,000	$11,000	$11,000	$11,000	$11,000	$121,000	$187,000	line 16 * line 17
19	# of Underground Circuits Automated	0.0	0.0	0.0	0.2	0.2	0.2	2.4	3.0	DP&L Estimate
20	# of Reclosers per Underground Circuit	2.0	2.0	2.0	2.0	2.0	2.0	2.0	n/a	DP&L Estimate
21	Cost per Underground Recloser	$64,350	$63,063	$61,802	$60,566	$59,354	$58,167	$57,004	n/a	Current Vendor Costs + DP&L Labor and Installation Estimates
22	Total Underground Recloser Cost	$0	$0	$0	$24,226	$23,742	$23,267	$273,619	$344,854	line 19 * line 20 * Line 21
23	# of Overhead Circuits Automated	4.0	4.0	4.0	3.8	3.8	3.8	45.6	69.0	DP&L Estimate
24	# of Reclosers per Overhead Circuit	2.0	2.0	2.0	2.0	2.0	2.0	2.0	n/a	DP&L Estimate
25	Cost per Overhead Recloser	$35,850	$36,113	$35,391	$34,683	$33,989	$33,309	$32,643	n/a	Current Vendor Costs + DP&L Labor and Installation Estimates
26	Total Overhead Recloser Cost	$294,800	$288,904	$283,126	$263,590	$258,318	$253,152	$2,977,068	$4,618,959	line 23 * line 24 * line 25
27	# of Air Break Switch Controls	4.0	4.0	4.0	4.0	4.0	4.0	4.0	n/a	DP&L Estimate
28	Cost per Installed Air Break Switch Control	$6,050	$5,929	$5,810	$5,694	$5,580	$5,469	$5,359	n/a	Current Vendor Costs + DP&L Labor and Installation Estimates
29	Total Cost of Air Break Switch Controls	$96,800	$94,864	$92,967	$86,552	$84,821	$83,125	$977,545	$1,516,673	line 23 * line 27 * line 28
30	# of Circuits Automated	4.0	4.0	4.0	4.0	4.0	4.0	48.0	72.0	DP&L Estimate

THE DAYTON POWER AND LIGHT COMPANY
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Distribution Automation Capital

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
31	# Capacitor Banks per circuit	4.0	4.0	4.0	4.0	4.0	4.0	4.0	n/a	DP&L Estimate
32	Cost per installed Capacitor Bank Control	$9,350	$9,163	$8,980	$8,800	$8,624	$8,452	$8,283	n/a	Current Vendor Costs + DP&L Labor and Installation Estimates
33	Total Cost of Capacitor Bank Controls	$149,600	$146,608	$143,676	$140,802	$137,986	$135,227	$1,590,264	$2,444,163	line 30 * line 31 * line 32
34	% of Circuits Overhead	100%	100%	100%	95%	95%	95%	95%	n/a	DP&L Estimate
35	# of Voltage Regulators per Circuit	1.0	1.0	1.0	1.0	1.0	1.0	1.0	n/a	DP&L Estimate
36	Cost per Installed Voltage Regulator Control	$6,050	$5,929	$5,810	$5,694	$5,580	$5,469	$5,359	n/a	Current Vendor Costs + DP&L Labor and Installation Estimates
37	Total Cost of Voltage Regulator Controls	$24,200	$23,716	$23,242	$21,698	$21,205	$20,781	$244,386	$379,168	line 30 * line 34 * line 35 * line 36
38	# of Pad Mounted Switchgear	0.5	0.5	0.5	0.5	0.5	0.5	0.5		DP&L Estimate
39	Cost per installed Pad Mounted Switchgear	$6,050	$5,929	$5,810	$5,694	$5,580	$5,469	$5,359	n/a	Current Vendor Costs + DP&L Labor and Installation Estimates
40	Cost of Pad Mounted Switchgear	$12,100	$11,858	$11,621	$11,388	$11,161	$10,937	$128,624	$197,690	line 30 * line 38 * line 39
41	# of Single Phase Sensors per Circuit	12.0	12.0	12.0	12.0	12.0	12.0	12.0	n/a	DP&L Estimate
42	Cost per installed Single Phase Sensor	$1,100	$1,078	$1,056	$1,035	$1,015	$994	$974	n/a	Vendor Hardware Estimates & DP&L Installation Estimates
43	Total Cost of Single Phase Sensors	$52,800	$51,744	$50,709	$49,695	$48,701	$47,727	$561,270	$862,646	line 30 * line 41 * line 42
44	# of DA Devices Installed	94	94	94	93	93	93	1118	1680	DP&L Estimate
45	# of Underground Circuit Circuits Automated	0.0	0.0	0.0	0.2	0.2	0.2	2.4	3.0	DP&L Estimate
46	# of Overhead Circuit Circuits Automated	4.0	4.0	4.0	3.8	3.8	3.8	45.6	69.0	DP&L Estimate
47	Cost per 2-way Voice/Data Modem for DA Device	$825	$825	$825	$825	$825	$825	$825	n/a	RFP Response
48	Total Cost of 2-way Voice/Data Modems for DA Devices	$37,950	$37,950	$37,950	$37,290	$37,290	$37,290	$447,480	$673,200	(line 44 - line 41 * (line 45 + line 46)) * line 47
49	Total DA Capital	$1,643,261	$1,817,976	$1,840,162	$1,844,183	$1,818,116	$1,796,869	$8,768,997	$19,529,563	line 14 + line 15 + line 18 + line 22 + line 26 + line 29 + line 33 + line 37 + line 40 + line 43 + line 48

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Substation Automation Capital

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Line	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Outsourced Engineering Costs	$495,000	$571,032	$588,163	$605,808	$623,982	$642,702	$661,983	$4,188,669	DP&L Estimate
2	Additional Field Technicians	1	2	2	2	2	2	3	n/a	DP&L Estimate
3	Average Technician Salary (Loaded)	$108,579	$111,837	$115,192	$118,647	$122,207	$125,873	$129,649	n/a	DP&L Estimate
4	Installation / Testing Cost	$108,579	$223,673	$230,383	$237,295	$244,414	$251,746	$388,948	$1,685,038	line 2 * line 3
5	# of DA/SA Relay Engineers	0	1	1	1	1	1	1	n/a	DP&L Estimate
6	# of SA Planning Engineers	1	1	1	1	1	1	1	n/a	DP&L Estimate
7	Total Engineers	1	2	2	2	2	2	2	n/a	line 5 + line 6
8	Average Engineer Salary (Loaded)	$102,123	$105,187	$108,342	$111,593	$114,940	$118,389	$121,940	n/a	DP&L Estimate
9	DP&L Engineering and Technician Costs	$210,702	$434,047	$447,068	$460,480	$474,294	$488,523	$632,828	$3,147,942	line 7 * line 8 + line 4
10	Upgrade Pilot Wire	$2,640,000	$660,000	$0	$0	$0	$0	$0	$3,300,000	Existing Vendors + DP&L Installation Estimate
11	# of Substations w/o IP Backbone	12.0	20.0	20.0	9.0	-	-	-	n/a	Existing Substation Configurations
12	# of Substations w/ IP Backbone	54.4	13.6	-	-	-	-	-	n/a	Existing Substation Configurations
13	Cost per Substation Communication Gateway	$11,000	$11,000	$11,000	$11,000	$11,000	$11,000	$11,000	n/a	Existing Vendors
14	Total Cost of Substation Communication Gateways	$730,400	$369,600	$220,000	$99,000	$0	$0	$0	$1,419,000	(line 11 + line 12) * line 13
15	# of Substations Requiring Real-Time SCADA Communication	12	20	20	9	0	0	0	n/a	Existing Substation Configurations
16	Total Cost for SA Telecom Equipment	328,171	1,717,939	616,135	448,379	-	-	-	$3,110,624	line 10 + line 14 + DP&L Estimates for Broadband Equipment
17	Total Installation Cost of SA Telecom Equipment	578,229	744,569	478,567	7,021	-	-	-	$1,808,387	DP&L Estimates
18	SA Telecom Equipment & Installation	906,400	2,462,508	1,094,702	455,400	-	-	-	$4,919,010	line 16+ line 17
19	# of Substation Relays Replaced	6	6	6	6	6	7	12	49	DP&L Estimates
20	Total Cost of New Relays	$912,621	$912,621	$912,621	$324,833	$286,958	$542,539	$1,206,127	$5,098,319	DP&L Estimates
21	Total SA	$5,895,123	$5,409,807	$3,262,554	$1,945,521	$1,385,234	$1,673,764	$2,500,938	$22,072,941	line 1 + line 9 + line 10 + line 14 + line 18 + line 20

THE DAYTON POWER AND LIGHT COMPANY
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BOOK II - Customer Conservation and Energy Management
Distribution Automation O&M

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(J)
1	Total Underground Recloser Cost	$0	$0	$0	$24,226	$23,742	$23,267	$273,619	$344,854	DA Capital Worksheet
2	Total Overhead Recloser Cost	$294,800	$288,904	$283,126	$263,590	$258,318	$253,152	$2,977,068	$4,618,959	DA Capital Worksheet
3	Air Break Switch Equipment Cost	$96,800	$94,864	$92,967	$86,552	$84,821	$83,125	$977,545	$1,516,673	DA Capital Worksheet
4	Capacitor Controls Equipment Cost	$149,600	$146,608	$143,676	$140,802	$137,986	$135,227	$1,590,264	$2,444,163	DA Capital Worksheet
5	Voltage Regulator Controls Equipment Cost	$24,200	$23,716	$23,242	$21,638	$21,205	$20,781	$244,386	$379,168	DA Capital Worksheet
6	Pad Mounted Switchgear Cost	$12,100	$11,858	$11,621	$11,388	$11,161	$10,937	$128,624	$197,690	DA Capital Worksheet
7	Single Phase Sensors Equipment Cost	$52,800	$51,744	$50,709	$49,695	$48,701	$47,727	$561,270	$862,646	DA Capital Worksheet
8	Narrowband 800MHz Modem Equipment Costs	$37,950	$37,950	$37,950	$37,290	$37,290	$37,290	$447,480	$673,200	DA Capital Worksheet
9	Total DA Device Costs	$668,250	$655,644	$643,290	$635,182	$623,224	$611,506	$7,200,256	$11,037,353	sum of lines 1-8
10	Cumulative Previous DA Device Capital		$668,250	$1,323,894	$1,967,184	$2,602,366	$3,225,591	$3,837,096	$11,037,353	line 10
11	Maintenance Cost (% of Cumulative Capital)	3%	3%	3%	3%	3%	3%	3%	n/a	DP&L Estimate
12	Total DA Device Maintenance Costs	$0	$20,048	$39,717	$59,016	$78,071	$96,768	$115,113	$408,731	line 10 * line 11
13	# of Telecom Technicians	1	1	1	1	1	1	1	n/a	DP&L Estimate
14	Average Technician Salary (Loaded)	$108,579	$111,837	$115,192	$118,647	$122,207	$125,873	$129,649	n/a	DP&L Estimate
15	Telecom and Engineering HC Expense	$108,579	$111,837	$115,192	$118,647	$122,207	$125,873	$129,649	$831,984	line 13 * line 14
16	Total DA O&M	$108,579	$131,884	$154,908	$177,663	$200,278	$222,641	$244,762	$1,240,715	line 15 + line 12

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Substation Automation O&M

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	SA Telecom Equipment & Installation	$906,400	$2,462,508	$1,094,702	$455,400	$0	$0	$0	$4,919,010	SA Capital Worksheet
2	Cumulative Previous DA Device Capital		$906,400	$3,368,908	$4,463,610	$4,919,010	$4,919,010	$4,919,010	n/a	line 1
3	Total SA Telco Maintenance Costs	$0	$213,840	$319,660	$381,260	$408,980	$408,980	$408,980	$2,141,700	Approximately 5% of line 2
4	Outsourced O&M HC Costs	$0	$150,000	$154,500	$159,135	$163,909	$168,826	$173,891	$970,261	DP&L Estimate
5	Total SA O&M	$0	$363,840	$474,160	$540,395	$572,889	$577,806	$582,871	$3,111,961	line 3 + line 4

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Distribution Automation Benefits

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Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	% of Calls Outage Related on DA Enabled Feeders	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	n/a	DPL Estimate
2	Reduction in Outage Related Calls	0.15%	0.35%	0.66%	0.93%	1.19%	1.46%	3.18%	n/a	Based on Rollout of DA and DPL Estimate for reduction in Outage Calls on DA enabled circuits
3	Reduction in Total Call Volume	0.01%	0.02%	0.05%	0.06%	0.08%	0.10%	0.22%	n/a	line 1 * line 2
4	Baseline Call Volume	1,029,090	1,029,090	1,029,090	1,029,090	1,029,090	1,029,090	1,029,090	n/a	DPL Estimate
5	Cost per Call	$1.38	$1.38	$1.38	$1.38	$1.38	$1.38	$1.38	n/a	DPL Actual Costs in 2007
6	Savings from Reduction in Outage Related Calls	$154	$346	$658	$922	$1,185	$1,448	$3,160	$7,873	line 3 * line 4 * line 5
7	% Improvement - Crew Productivity - Fault Location	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	n/a	DPL Estimate
8	Average % Circuits Automated During Year	0.55%	1.32%	2.21%	3.09%	3.97%	4.86%	10.60%	n/a	DP&L Rollout Plan
9	Cost Center 51 Restoration Services	$1,624,000	$1,624,000	$1,624,000	$1,624,000	$1,624,000	$1,624,000	$1,624,000	n/a	DPL 2007 Costs
10	Cost Center 142 - 24/7 Operations & Trouble	$8,100,000	$9,307,000	$9,342,000	$9,598,000	$9,598,000	$9,598,000	$9,598,000	n/a	DPL 2007 Costs adjusted for growth
11	Savings from Increased Crew Productivity	$1,503	$4,343	$7,262	$10,405	$13,377	$16,350	$35,673	$88,913	line 7 * line 8 * (line 9 + line 10)
12	Reduction in Capacitor Bank and Switch Capital	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	n/a	Based on Rollout of DA and DPL Estimate for reduction in Capacitor and Switch Capital Expenditures on DA enabled circuits
13	Deferral of Capital Costs (Switches, Cap Banks, etc.)	$1,030	$2,649	$4,415	$6,181	$7,947	$9,713	$21,192	$53,127	line 8 * line 12
14	Capacitor Bank Maintenance Cost	$447,346	$460,767	$474,590	$488,827	$503,492	$518,597	$534,155	n/a	Based on Rollout of DA and DPL Estimate for reduction in Capacitor Bank Maintenance on DA enabled circuits
15	Reduction of Capacitor Bank Manual Inspection	$2,304	$6,103	$10,477	$15,107	$20,006	$25,186	$56,599	$135,782	line 8 * line 14
16	Cumulative # of Meters Installed	536,459	536,459	536,459	536,459	536,459	536,459	536,459	n/a	DP&L Rollout Plan (15 yrs)
17	Lost Revenue Per Customer per Year Due to Outages	$0.06	$0.06	$0.06	$0.06	$0.06	$0.06	$0.06	n/a	Based on Rollout of DA and DPL Estimate for reduction in Customer Outages on DA enabled circuits
18	Increase in DPL Revenue due to DA Related Reduced Outage Time	$152	$392	$653	$914	$1,175	$1,436	$3,132	$7,852	line 8 * line 16 * line 17
19	Potential Reduction in Transformer Replacement due to less overloading of transformers	$285,537	$285,537	$285,537	$285,537	$285,537	$285,537	$285,537		Based on Rollout of DA and DPL Estimate for reduction in Transformer failures on DA enabled circuits
20	Reduction in Transformer Replacement Capital	$1,471	$3,782	$6,303	$8,825	$11,346	$13,867	$30,256	$75,849	line 18 * line 19
21	Total DA Benefits	$6,614	$17,614	$29,768	$42,352	$55,036	$68,000	$150,011	$369,396	line 6 + line 11 + line 13 + line 15 + line 18 + line 20

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
BOOK II - Customer Conservation and Energy Management
Substation Automation Benefits

Data: 7 Year Forecast
Type of Filing: Original
Work Paper Reference No(s).: n/a

WPI-1.6
Page 1 of 1
Witness Responsible:
Jeff Teuscher

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total	Source
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I = Sum (B:H))	(I)
1	Average % of Substations Automated	2%	6%	10%	14%	19%	23%	30%	n/a	DP&L Rollout Plan
2	Potential Substation Cost Reductions	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	n/a	DP&L Estimate
3	Reduction of Planned Substation Capital Costs	$11,207	$31,034	$51,724	$72,414	$93,103	$115,517	$148,276	$523,276	line 1 * line 2
4	Reduced RTU Maintenance Costs	15	15	15	15	15	15	15	n/a	DP&L Estimate
5	# of Minutes per Year	525,960	525,960	525,960	525,960	525,960	525,960	525,960	n/a	365.25 days * 24 hours * 60 minutes
6	Average Revenue per Residential Customer	$1,073	$1,073	$1,073	$1,073	$1,073	$1,073	$1,073	n/a	2006 residential revenues/# residential customers
7	Total AMI Meters Installed	527,700	527,700	527,700	527,700	527,700	527,700	527,700	n/a	DP&L Rollout Plan (10 yrs)
8	Increased DPL Revenue from SA Related Reduced Outage Time	$362	$1,003	$1,671	$2,339	$3,008	$3,732	$4,790	$16,905	line 1 * line 6 * line 7 * (line 4 / line 5)
9	Potential Reduction in RTU Maintenance Costs	$108,579	$108,579	$108,579	$108,579	$108,579	$108,579	$108,579	n/a	DP&L Estimate
10	Reduced RTU Maintenance Cost	$2,434	$6,739	$11,232	$15,725	$20,218	$25,086	$32,199	$113,634	line 1 * line 9
11	Reduced SA Capital due to less overloadiag	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	n/a	DP&L Estimate
12	Better Utilization of Substation Capital	$2,241	$6,207	$10,345	$14,483	$18,621	$23,103	$29,655	$104,655	line 1 * line 11
13	Total SA Benefits	$16,244	$44,983	$74,972	$104,961	$134,950	$167,438	$214,921	$758,470	line 3 + line 8 + line 10 + line 12

BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO
CASE NO. 08-1095-EL-ATA
CASE NO. 08-1096-EL-AAM
CASE NO. 08-1097-EL-UNC

BOOK II – Customer Conservation and Energy Management Programs

DIRECT TESTIMONY

BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO

BOOK II – Customer Conservation and Energy Management Programs

DIRECT TESTIMONY

OF MARIA W. BUBP

- ☐ 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

MARIA W. BUBP

ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Maria Bubp. My business address is 1900 Dryden Road, Dayton, Ohio 45439.

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

A. I am employed by The Dayton Power and Light Company ("DP&L" or "Company") as a Director of Operations.

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

A. I assumed my present position in January, 2008. Prior to that position, I was a Manager of Operations where I oversaw the operations of customer service field personnel (such as Meter Readers and Service Technicians), budgeting activities for the transmission and distribution business unit and some PJM settlement activities. Before this, I held a variety of positions including managing the Company's gas transportation program, supervising regulatory activities and purchasing natural gas and associated interstate pipeline services.

Q. What are your responsibilities in your current position and to whom do you report?

A. In my current position, I am responsible for developing DP&L's demand side management programs and overseeing the implementation preparations for DP&L's Customer Conservation and Energy Management initiative. I report to DP&L's Senior Vice President of Service Operations.

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

A. I received an MBA from the University of Dayton in 1994 and a B.S. in Marketing from Wright State University, Dayton, Ohio, in 1988. I have worked for DP&L for a total of 16 years. Through my tenure with the Company, I was involved in selling DP&L's natural gas business to the Indiana Gas Company as it was merging with Southern Indiana Gas and Electric Co. to form Vectren Energy Holdings. Like other employees involved with DP&L's gas business, I became an employee of Vectren upon the sale of the gas business. I served as Vectren's Director of Customer Programs where I oversaw Vectren's regulated gas services and developed Vectren's Ohio gas choice tariff.

Q. What is the purpose of this testimony?

A. The purpose of this testimony is to show how DP&L will meet the energy and demand reduction targets set out in Am. Sub. S.B. 221 and to support the energy efficiency and demand response programs and other initiatives proposed by the Company to meet these targets. This testimony provides insights into how the initial suite of programs was selected along with the anticipated cost and energy/demand reductions associated with each program. I will also explain how the effectiveness of each program shall be evaluated and provide an overview of the additional staff to be hired to support the programs.

Q. What Chapter, Exhibits, Schedules and Workpapers are you supporting?

A. I am supporting Chapter II, the "Energy Efficiency and Demand Response Plan 2009-2015" of The Dayton Power & Light Company and Exhibits MWB-1, MWB-2 and MWB-3. I also support Schedule B-2 lines 3 – 8, Schedule B-3 lines 3 - 8, Schedule B-4 lines 5 -8, Schedule B-5 lines 5 - 8, as well as Workpapers G-1 and G-1.1 through G-1.16 relating to DP&L's programs and other initiatives to reduce electric energy and/or

demand. In addition, I support the energy and demand reduction volumes contained in WPF-1.

II. PROGRAM OVERVIEW

Q. Am. Sub. S.B. 221 requires electric distribution utilities to implement demand side management programs to achieve prescribed energy and demand reduction targets. What are DP&L's targets under that Bill and how are they calculated?

A. As shown in Exhibit MWB-1, DP&L calculated the annual energy reduction targets using the Company's baseline sales, which is the average of the weather-normalized sales during the calendar years of 2006 through 2008, adjusted for known, significant load changes between such baseline year and the year for which the target is being calculated. Each year's energy reduction target is then calculated by applying the cumulative savings requirement set out in Am. Sub. S.B. 221 against the respective year's baseline sales. The demand reduction targets were calculated in the same manner, with the exception that actual system peak demand is used rather than weather-normalized sales. At the time that this testimony is being finalized, the Commission's final rules regarding targets are not available; therefore, the Company reserves the right to file supplemental testimony addressing this subject.

Q. How did DP&L calculate the energy and demand reductions to be achieved through this filing?

A. In addition to the energy and demand reduction impacts of the various customer programs supported in this testimony, reductions in the form of line losses associated with the Smart Grid Development (calculated at 1% of sales utilizing enhanced distribution lines) were incorporated as well as energy reductions attributable to customer

behavioral changes associated with home energy displays (calculated at 5% of overall energy usage for customers with this infrastructure). Finally, the anticipated demand reduction associated with direct participation of non-residential customers in PJM's Demand Response programs was also incorporated.

Q. Will the programs and measures you are proposing meet the targets you have calculated?

A. As graphically depicted in Exhibit MWB-2, based on the calculations outlined above, the programs and initiatives contained in this filing should meet the energy and demand reduction targets the Company has calculated, given that technology advances will make additional cost-effective opportunities reasonably available to achieve additional reductions beginning by at least 2013. The Company is committed to meeting the targets, and shall continue to explore additional opportunities made available through technology developments, infrastructure enhancements and additional customer programs.

Q. Can you please provide a summary of the proposed suite of energy efficiency and demand response programs as well as infrastructure enhancements contained in the filing?

A. Yes. DP&L's filing contains energy efficiency and demand response programs for residential and non-residential customers as well as educational outreach initiatives to build and expand consumer energy management awareness. Following is a list of the various programs, with program-specific estimated costs and energy/demand reductions contained in Exhibit MWB-3:

- The residential portfolio includes lighting, HVAC diagnostic & tune-up, HVAC rebates, appliance recycling, appliance rebates, low-income affordability, direct

load control, time-of-use pricing and peak-time-rebate pricing. The total amount committed to this portfolio is $61 million with an anticipated seven-year cumulative energy reduction of 1,058 GWh and a seventh year anticipated demand reduction of 87,217 kW.

- The non-residential portfolio is comprised of prescriptive rebates, custom rebates, direct load control and time-of-use pricing (with and without a critical peak pricing component). The total amount committed to this portfolio is $40 million with an anticipated seven-year cumulative energy reduction of 1,108 GWh and a seventh year anticipated demand reduction of 90,525 kW.

- Education and outreach efforts include enhancements to DP&L's website as well as the introduction of new general education efforts, school and community presentations and the development and use of an energy efficiency showcase and educational facility. DP&L is committing $12.3 million to this effort over the seven-year period.

In addition to these programs, energy and demand reductions shall be achieved through the Smart Grid Development and home energy displays indicated in Workpapers WPI-1 WPH-1.2 and supported by Mr. Teuscher. The anticipated seven-year cumulative energy reduction of 363 GWh and a seventh-year anticipated demand reduction of 5,300 kW are attributable to these initiatives. Overall, DP&L also intends to spend $5.7 million over the seven years on evaluation, measurement and verification activities.

Q. How were these programs selected?

A. The principles guiding our selection process were that the programs be relevant for all customer classes, be modeled after programs proven to be effective at other utilities, and

should enable the Company to meet the targets for energy and demand reduction set forth in Am. Sub. S.B. 221. The Company thoroughly reviewed best-practice energy efficiency and demand response programs from across the nation and tested these programs with a sample of DP&L's residential and non-residential customers to determine local relevance and estimated participation levels. Finally, as described in the testimony of Mr. Michaelson, all short-listed measures were tested for cost effectiveness using the Total Resource Cost test as defined by the *California Standard Practice Manual* to arrive at our list of programs.

Q. Please describe the process used to identify and review "best practice" programs.

A. The evaluated programs were drawn from a review of a number of well-respected assessments of program best practices such as The American Council for an Energy Efficient Economy's (ACEEE) "Compendium of Champions: Chronicling Exemplary Energy Efficient Programs from Across the U.S." and reviews of program best practices sponsored by the California Public Utilities Commission and the Energy Trust of Oregon. The initial list is also based on a review of the types of programs implemented by utilities often considered to be leaders in the field such as Xcel Energy, Northeast Utilities, Pacific Gas & Electric, and the Wisconsin Focus on Energy. Finally, the services of the Bridge Strategy Group, a consulting firm with experience in evaluating and developing demand side management programs, were utilized throughout the identification and review process.

Q. Do you anticipate that this initial suite of programs will be adjusted over time?

A. Yes. DP&L believes that this suite of programs is the best for our customers, and we intend to learn from experience. Therefore, over time, we may make revisions to

individual programs, add new programs or potentially discontinue a program based on customer participation levels, realized energy and demand reductions relative to the targets prescribed in Am. Sub. S.B. 221, current market conditions or advances in technology.

Q. **The participation levels, estimated demand/energy reductions and costs associated with several other utilities' programs and filings were relied upon to develop the sections that follow. Could you please provide a listing of these utilities and explain why you relied upon data from their programs and filings?**

A. The Company referenced the filings of Ameren, the Anaheim Public Utility filing by San Diego Gas and Electric, Connecticut Light & Power, Commonwealth Edison, Duke of Ohio, Narragansett Electric Company, Pacific Gas & Electric, Pepco, Wisconsin Electric Power and Wisconsin Public Service. The Company relied upon data from those utility filings when it was the best available data as to estimated demand/energy reductions and costs.

Q. **What philosophy did you follow in determining the penetration rates for the energy efficiency and demand response programs?**

A. The Company used primary market research when possible and benefited from the experience of other utilities. Overall, we adopted penetration rates from the most aggressive programs to reflect our pursuit of the statutory targets. However, for those programs for which DP&L has little experience, we used less-aggressive penetration rates.

Q. **What overarching principles were used to determine the energy and demand impact for the various program measures?**

A. As a general principle DP&L utilized California's Database for Energy Efficiency Resources (DEER) for estimates of energy and demand impact. When programs were weather-sensitive, DP&L used energy and demand impacts from utilities in the region. Since regional information on time-based pricing was not available, we used a compendium of benchmarks from programs throughout the country to estimate measure impacts.

Q. What principles were followed to determine incentive costs?

A. Our preference was to set incentive levels using data gathered from our primary market research. In addition, we used the incentive levels that corresponded to the programs from which we also used the penetration rates. Finally, the thermostat costs included as part of the Direct Load Control program were determined based on industry RFPs.

Q. How did you determine marketing and administration costs?

A. For our efficiency programs, we utilized other utilities' filings and experience to determine marketing and administration costs. In cases where we used penetration rates from a specific utility, we also used that utility's marketing and administrative costs to reflect the promotional efforts required to achieve those penetration rates. Where the penetration rates were based on DP&L market research, we used an average marketing/administration rate of programs in the region.

III. RESIDENTIAL LIGHTING

Q. Will you describe the Residential Lighting program, as reflected in WPG-1.1?

A. Yes. This program is designed to increase the number of Energy Star qualified compact fluorescent lamp (CFL) bulbs sold by providing incentives to decrease consumer costs.

The program should increase consumer awareness and acceptance of energy-efficient lighting technology through education and has an educational component to promote proper disposal of CFL bulbs. Although the initial focus is on CFL bulbs, this program will evolve to encompass new residential energy efficient lighting technologies as appropriate.

Q. Please describe your target market for this program.

A. This program is designed for residential customers who purchase bulbs through retail channels. All customers taking delivery service from DP&L are eligible for this program regardless of their choice of supplier.

Q. What is your implementation plan for this program?

A. DP&L and implementation partners selected through an RFP process will negotiate discounts with bulb manufacturers, establish partnerships with retailers and/or their suppliers, oversee the implementation of cooperative advertising, audit retail outlets to confirm that appropriate promotions are being implemented and track the number of bulbs purchased and recycled. DP&L anticipates paying an average of $2.92 per CFL bulb from 2009 through 2015.

Q. What are the estimated energy and demand reductions associated with this program?

A. Measure impacts of 47 kWh and 0.004 kW per bulb have been used, and were obtained form the California DEER. These impacts were applied to the forecasted number of bulbs implemented (based on surveys of DP&L's residential customers and industry

benchmarks) to determine the cumulative energy reductions of 195 GWh and cumulative year 7 demand savings is 16.6 MW as shown on WPG1.1.

Q. Are you familiar with the requirements of the Energy Independence and Security Act of 2007 (42 U.S.C. § 6295(i)(1)(B)) relating to availability of incandescent bulbs?

A. Yes. It is my understanding that incandescent bulbs will begin to be phased out in 2012.

Q. How does DP&L plan to continue to achieve energy savings from its residential lighting program when traditional incandescent are no longer available?

A. DP&L will continue to offer rebates for the most efficient lighting technology. DP&L's focus will initially be on CFLs as long as they are more efficient than bulbs with dominant market share. However, the Company will focus on ensuring that as new technology emerges it is made available to our customers and DP&L expects to provide rebates for the most efficient lighting technology.

Q. What are the estimated costs for this program, and how were these estimate developed?

A. The 7-year total cost of this program is $20.1 million as identified on line 8 of WPG-1.1. The 7-year incentive costs are $12.1 million and the marketing and administration expense is $8.0 million.

IV. RESIDENTIAL HVAC DIAGNOSTIC & TUNE-UP

Q. Will you describe the Residential HVAC Diagnostic and Tune-Up program as reflected in WPG-1.2?

A. Yes. This program promotes summer period energy and demand savings by increasing the efficiency of residential central air conditioner units. Under this program, DP&L will pay a portion of the cost of a specific diagnostic and tune-up services performed by HVAC contractors that are certified by a third party to perform such tune-ups. Among other points, the tune-up will verify the unit's refrigerant charge and air flow.

Q. Please describe your target market for this program.

A. This program is designed for residential customers with central air conditioning units in owner-occupied, single-family residential dwellings. All targeted customers taking delivery service from DP&L are eligible for this program regardless of their choice of supplier.

Q. What is your implementation plan for this program?

A. Channel partners must undergo training and certification provided by an approved third party prior to being able to provide this service to DP&L's customers under this program. Customers may schedule appointments directly with the approved HVAC contractors and DP&L will pay a $100 incentive after completion of the HVAC tune-up. This incentive is available for a qualifying account every three years.

Q. What are the estimated energy and demand reductions associated with this program?

A. Measure impacts of 394 kWh and 0.35 kW have been used, and were applied to the anticipated participation levels to obtain the 7-year cumulative energy reductions of 20 GWh and cumulative year 7 demand savings of 17.8 MW.

Q. What are the estimated costs for this program, and how were these estimates developed?

A. The total 7-year expenses for this program are $8.4 million as set out on line 8 of WPG-1.2. This figure is comprised of a 7-year incentive amount of $5.6 million and marketing and administration expense of $2.8 million.

V. RESIDENTIAL HVAC REBATES

Q. Will you describe the Residential HVAC Rebate program, as reflected in WPG-1.3?

A. Yes. There are substantial energy efficiency and demand reduction opportunities associated with the proper sizing and installation of new central HVAC systems, as well as with the installation of premium efficiency equipment. This program provides a rebate to qualifying customers that serves to pay for a portion of a new HVAC unit.

Q. Please describe your target market for this program.

A. This program is designed for any homeowner or landlord purchasing an HVAC unit that will be installed at a residence within the DP&L service territory. All targeted customers taking delivery service from DP&L are eligible for this program regardless of their choice of supplier.

Q. What is your implementation plan for this program?

A. DP&L plans to partner with HVAC contractors that become certified to participate in the program and sign a partnership agreement. Contractor incentives will be provided for documented installations that meet the requirements. DP&L anticipates paying an average of $168 per central HVAC system from 2009 through 2015.

Q. What are the estimated energy and demand reductions associated with this program?

A. Measure impacts of 280 kWh and 0.25 kW have been used, and when applied to the projected participation levels, they generate cumulative 7-year energy savings of 10.8 GWh and cumulative year 7 demand savings of 9.6 MW as shown on WPG-1.3.

Q. What are the estimated costs for this program, and how were these estimates developed?

A. The 7-year expense for this program is $11.0 million as set out on line 8 of WPG-1.3, which is comprised of $6.5 million in incentives and $4.5 million in marketing and administration costs.

VI. RESIDENTIAL APPLIANCE RECYCLING

Q. Will you describe the Residential Appliance Recycling program, as reflected in WPG-1.4?

A. Yes. DP&L will pay the customer an incentive of $50 for an inefficient second refrigerator or freezer and $25 for an inefficient window air conditioner. DP&L will also arrange for and fund the removal and recycling of the inefficient units. To qualify, the appliance must be in working condition.

Q. Please describe your target market for this program.

A. This program is designed for residential customers with working inefficient room air conditioners and working second refrigerators or freezers. All targeted customers taking

delivery service from DP&L are eligible for this program regardless of their choice of supplier.

Q. What is your implementation plan for this program?

A. DP&L will work with a third party that will remove the qualifying unit, arrange for the appropriate recycling and provide to DP&L the customer information to facilitate the rebate. The vendor(s) will be selected through an RFP process.

Q. What are the estimated energy and demand reductions associated with this program?

A. Measure impacts of 1,707 kWh and 0.267 kW have been used, which translate to cumulative 7-year energy reductions of 24 GWh and year 7 cumulative demand savings of 3.9 MW as shown on WPG-1.4.

Q. What are the estimated costs for this program, and how were these estimate developed?

A. The total 7-year expense for this program is $2.5 million as set out on line 8 of WPG-1.4. This is comprised of $772,000 of incentives and $1.7 million of marketing administrative charges.

VII. RESIDENTIAL APPLIANCE REBATE

Q. Will you describe the Residential Appliance Rebate program, as reflected in WPG-1.5?

A. Yes. Specific incentives will be awarded to customers who purchase qualifying Energy Star ceiling fans, room air conditioners, dishwashers, freezers and dehumidifiers.

Q. Please describe your target market for this program.

A. This program is designed for residential customers in existing and new homes within the DP&L service territory, regardless of their choice of energy supplier.

Q. What is your implementation plan for this program?

A. The delivery strategy will focus on generating participation from appliance retailers within DP&L's service territory, and participating customers will mail in the appropriate information to receive a rebate. DP&L expects to partner with a fulfillment party to contact appliance outlets and to generate the customer refunds. DP&L anticipates paying an average of $30 per appliance from 2009 – 2015.

Q. What are the estimated energy and demand reductions associated with this program?

A. Measure impacts of 207 kWh and .025 kW have been used, which yield the 7-year cumulative energy savings of 6.2 GWh and year 7 cumulative demand savings of 744.0 MW as shown in WPG-1.5.

Q. What are the estimated costs for this program, and how were these estimates developed?

A. The 7-year expenses for this program are $1.4 million a set out on line 8 of WPG-1.5, and is comprised of $883,000 of incentives and $530,000 of marketing and administration expenses.

VIII. RESIDENTIAL LOW INCOME AFFORDABILITY

Q. Will you describe the Residential Low Income program, as reflected in WPG-1.6?

A. Yes. Low-income electric customers meeting the program guidelines may undergo an energy audit where the auditor will review the energy efficiency of the home and provide feedback on areas of improvement. The auditor will then work with the customer to create a mutually beneficial plan for improving the energy efficiency of the home. Those electric solutions that are found to have a benefit / cost ratio better than 1.0 will be funded through this program. The cost of the efficiency solutions funded through this program can be a maximum for any single family home of $5,000, and a multi-family home of $50,000.

Q. Please describe your target market for this program.

A. This program is available to low-income residential electric customers within the DP&L service territory with household incomes up to 200% of the federal poverty level. Eligible households include single-family homes and multi-family homes where 80% of the tenants meet the income requirements of the program. This program is available to all qualifying electric customers taking delivery service from DP&L, regardless of their choice of supplier.

Q. How will DP&L determine eligibility for this program?

A. Any cost-effective energy efficiency solution that is recommended by the auditor and that passes the benefit / cost ratio test may be included. The expected types of solutions include efficient lighting, new refrigerator, new freezer, window air conditioner replacement; HVAC tune-up and/or replacement, caulking, insulation and education. DP&L will fund new equipment purchases when the removal of the inefficient equipment has been accomplished.

Q. What is your implementation plan for this program?

A. DP&L will partner with local non-profit agencies to bring to low-income customers the benefits of this program. The Department of Energy Home Weatherization Assistance Program, the Ohio Electric Partnership Program (EPP) and the Community Action Partnership (CAP) agencies have been involved in energy efficiency activities for years. Through this new program DP&L will help to fund the agencies, audits and solutions to expand the reach of these programs and to help to make electricity more affordable to the qualifying low-income customers within the Company's service territory.

Q. What are the estimated energy and demand reductions associated with this program?

A. Measure impacts of 1,999 kWh and 0.151 kW have been used. Multiplying these impacts against the anticipated annual number of homes completed (based on the EPP forecast) yields a 7-year cumulative energy savings of 11.9 GWh and a year 7 cumulative demand savings of 901.6 kW as shown on WPG-1.6.

Q. What are the estimated costs for this program, and how was this estimate developed?

A. A total of $1 million per year, adjusted for inflation, is committed to this program. Of this total, 21% is allocated to administrative costs (as calculated from the Ohio Electric Partnership Program's Impact Evaluation report dated June 30, 2006), with the remainder allocated to home efficiency upgrades. The 7-year total cost for this program is $7.7 million as shown on line 6 of WPG-1.6.

IX. RESIDENTIAL DIRECT LOAD CONTROL

Q. Will you describe the Residential Direct Load Control program, as reflected in WPG-1.7?

A. Yes. The Direct Load Control program provides eligible participants with a programmable thermostat that is installed at no cost, and can be programmed via the internet. During peak summer conditions or periods of regional operating constraints, DP&L can signal the thermostat to cycle the air conditioner on and off, which will reduce load on DP&L's system and result in a temperature increase of only a few degrees Fahrenheit.

Q. Please describe your target market for this program.

A. This program targets residential customers within the DP&L service territory who have central air conditioning. This program is available to all qualifying electric customers taking delivery service from DP&L, regardless of their choice of supplier.

Q. What is your implementation plan for this program?

A. DP&L plans to finalize the specific terms and conditions of the program in 2009 to begin implementation in the summer of 2010 for customers who have advanced meter infrastructure in place. Based on the success of this effort, DP&L intends to make this service available to all residential customers with advanced metering infrastructure commencing the summer of 2011. DP&L anticipates that it will pay $324 per household to install a programmable thermostat from 2010 through 2015.

DP&L will choose a qualified implementation partner through an RFP process. The selected vendor(s) or contractor(s) will work with DP&L to deliver services to the area.

Elements or the vendors' role may include customer recruitment, thermostat installation, demand response implementation, and quality control inspection.

Q. What are the estimated energy and demand reductions associated with this program?

A. Measure impacts of 370 kWh and 1.38 kW have been used. When applied to the estimated number of participants, as determined through a survey of a sample of DP&L's residential customers and factoring in the phasing of the AMI system, the 7-year cumulative energy savings is 6.2 GWh and the cumulative year 7 demand reduction is 23.1 MW.

Q. What are the estimated costs for this program, and how were these estimates developed?

A. The total cost of this program is $7.1 million over 7 years as set out on line 11 of WPG-1.7. The cost of an installed thermostat and the associated marketing and administrative expenses were determined based on the results of an industry RFP. These costs were applied to the estimated participation level, which was established based on the survey results of DP&L's residential customers and the planned AMI roll-out schedule, to generate a 7-year total installed thermostat expense of $5.4 million and marketing/administration evaluation expense of $1 million. In addition, DP&L anticipates that it will incur $678,000 in incremental operating and maintenance costs associated with the program.

X. RESIDENTIAL TIME-OF-USE PRICING

Q. Will you describe the Residential Time-of-Use Pricing program, as reflected in WPG-1.8?

A. Yes. The Time-of-Use Pricing tariff encourages participating customers to shift electric usage from peak to off-peak hours, particularly during the summer season. The time-of-use rates will be designed so that the price per kWh during the peak summer season will be higher during the peak hours and lower during the off-peak hours. Those customers who reduce consumption during peak periods or who switch their consumption to off-peak hours should see a lower annual energy bill.

Q. Please describe your target market for this program.

A. This program is available to all residential customers taking delivery service from DP&L who elect to purchase transmission and generation service from DP&L.

Q. What is your implementation plan for this program?

A. Prior to 2011, DP&L will conduct rate design studies needed to establish the revenue-neutral prices and will determine the specific terms and conditions of the program, such as defining the applicable months as well as the on- and off-peak hours and rates. DP&L plans to offer the Time-of-Use Pricing program beginning in 2011 to customers that have advanced metering infrastructure in place. Based on the success of this effort, DP&L intends to make this service available to all residential customers with advanced metering infrastructure.

Q. What are the estimated energy and demand reductions associated with this program?

A. An average impact of 0.42 kW has been used, which represents a 13.4% reduction in the average demand per residential customer. The estimated cumulative year 7 demand savings are 6 MW as set out on WPG-1.8. For purposes of this filing, DP&L assumes no energy savings from this program, as the emphasis is on shifting electric consumption.

Q. What are the estimated costs for this program, and how were these estimates developed?

A. The estimated 7-year total budget for this program is $1.3 million as set out on line 5 of WPG1.8, which reflects the estimated marketing, administration and pilot evaluation costs. Since this is a revenue-neutral rate, there are no incentive expenses associated with this pricing option.

XI. RESIDENTIAL PEAK TIME REBATE PRICING

Q. Will you describe the Residential Peak Time Rebate Pricing program, as reflected in WPG-1.9?

A. Yes. The Peak Time Rebate rider gives customers a rebate per kWh for curtailing energy below a pre-established baseline projection during peak conditions. The amount of curtailed energy is based on actual consumption during the applicable hours compared with a customer's baseline, which is calculated as the average energy consumed during comparable days preceding the day of peak conditions. Customers will receive advanced notification of a peak event, which will occur only on a weekday during the summer period.

Q. Please describe your target market for this program.

A. This program is targeted towards all residential customers taking delivery service from DP&L. This program is available to all qualifying electric customers, regardless of their choice of supplier or DP&L tariff option.

Q. What is your implementation plan for this program?

A. Prior to 2011, DP&L will conduct the rate design studies needed to establish the refund value and will determine the specific terms and conditions of the program, such as how the customer-specific baseline calculation will be conducted. DP&L will introduce the Peak Time Rebate program beginning in 2011 to customers who have advanced metering infrastructure in place. Based on the success of this effort, DP&L intends to make the Peak Time Rebate program available to all residential customers with advanced metering infrastructure.

Q. What are the estimated energy and demand reductions associated with this program?

A. An average impact of .37 kW has been used, with a cumulative year 7 demand savings of 8.5 kW. For purposes of this filing, DP&L assumes no energy savings from this program, as the emphasis is on shifting electric consumption.

Q. What are the estimated costs for this program, and how was this estimate developed?

A. The 7-year budget for this program is $1.3 million as set out in WPG-1.9 and is comprised of marketing, administration and pilot evaluation expenses.

XII. NON-RESIDENTIAL PRESCRIPTIVE REBATES

Q. Will you describe the Non-Residential Prescriptive Rebates program, as reflected in WPG-1.10?

A. Yes. The Non-Residential Prescriptive Rebates program is designed to provide a simple set of solutions for non-residential customers who wish to become more energy efficient. The initial set of solutions and corresponding incentive rebates (as contained in WPG-1.10a) represent proven products that provide energy savings over the standard products in each category. Rebate amounts are determined based on cost effectiveness and will not exceed 50% of the measure cost. The rebate listing will be available on DP&L's website and will be updated periodically to account for new and improving technologies. DP&L does not envision placing a cap on the amount that a customer may receive under this program.

Q. Please describe your target market for this program.

A. This program is designed for all non-residential customers seeking to improve the energy efficiency of their new and existing facilities within the DP&L service territory. The program may be utilized by all non-residential customers regardless of their choice of energy supplier.

Q. Will DP&L target any specific industry sectors when promoting this program?

A. Approximately sixty percent of DP&L's non-residential customers fall into the segments of office space, retail and manufacturing. Therefore, specific outreach efforts will be directed to these segments.

Q. What is your implementation plan for this program?

A. Upon completion of a qualifying project, the customer will file a rebate application, which will identify the measure taken and document the project's costs. DP&L's marketing efforts for this program will focus heavily on educating channel partners about the incentive program and the qualifying measures. In addition to these activities, DP&L will focus specific efforts on reaching its key non-residential customer segments, which account for significant load and savings opportunities. The incentives and marketing strategy will change based on customer response, market prices and manufacturer/distributor co-funding. A random sampling of applications and every rebate application over $10,000 will be subject to on-site verification prior to any payment being made.

Q. What are the estimated energy and demand reductions and participation levels associated with this program?

A. They are shown in WPG-1.10a.

Q. What are the estimated costs for this program, and how was this estimate developed?

A. The 7-year budget for this program is $22.3 million as set out in WPG-1.10. This total is comprised of $15.5 million of incentives and $6.8 million of marketing/administration expenses.

XIII. NON-RESIDENTIAL CUSTOM REBATES

Q. Will you describe the Non-Residential Custom Rebates program, as reflected in WPG-1.11?

A. Yes. This program provides financial assistance to non-residential customers to support implementation of efficiency opportunities available for new equipment purchases, facility modernization and industrial process improvement. The incentive will be calculated based on expected demand and energy savings. As an optional part of the program, DP&L will establish an audit program to assist customers in evaluating the energy efficiency opportunities available to them.

Q. Please describe your target market for this program.

A. This program is targeted to existing non-residential customers with cost-effective efficiency opportunities that do not qualify for prescriptive rebates, but nonetheless provide efficiency opportunities that are worthy of implementing. This program is available to qualifying customers taking delivery service from DP&L regardless of their choice of supplier.

Q. What is your implementation plan for this program?

A. The program will employ both incentive reservation and application stages. Prior to undertaking a project, applicants must submit a rebate reservation form that provides all data necessary to determine an incentive level. The Company will review the reservation and verify the incentive. For large projects, DP&L reserves the right to perform a site visit to verify baseline conditions. If approved, DP&L will reserve the incentive amount and approve the level of funding to support the project. Upon completion of the project, the customer will file a rebate application, which will be similar to the reservation application but will also require documentation of project costs. On-site verification prior to any payment will be performed for both a random sampling of applications and every rebate application over $10,000.

DP&L's marketing efforts for the custom rebate program will focus heavily on educating trade allies about the incentive program. In addition to these activities, DP&L will focus specific efforts on reaching the key non-residential customer segments mentioned earlier, which account for significant load and savings opportunities. Finally, DP&L anticipates making audits available to non-residential customers to identify energy efficiency opportunities.

Q. How will the Custom Rebate program interrelate with the Prescriptive Rebate program?

A. The two programs are designed to complement each other, with the custom program providing rebate opportunities for the less-common measures that are not set out in the prescriptive program. Also, as a common measure is recognized through the custom program, this measure may be added to the prescriptive program.

Q. What are the estimated energy and demand reductions associated with this program?

A. The cumulative 7-year energy savings is 89 GWh and the year 7 cumulative demand savings is 16.6 MW.

Q. What are the estimated costs for this program, and how were these estimates developed?

A. The seven-year expense for this program is $14.0 million as set out in WPG-1.11. The custom rebate incentive expense is $9.0 million, and the marketing/administrative expense is $5 million.

XIV. NON-RESIDENTIAL DIRECT LOAD CONTROL

Q. Will you describe the Non-Residential Direct Load Control program, as reflected in WPG-1.12?

A. Yes. The Direct Load Control program provides eligible participants with a programmable thermostat that is installed at no cost, and can be programmed via the internet. During peak summer conditions or periods of regional operating constraints, DP&L can signal the thermostat to cycle the air conditioner on and off, which will reduce load on DP&L's system and result in a temperature increase of only a few degrees Fahrenheit.

Q. Please describe your target market for this program.

A. This program targets small non-residential customers within the DP&L service territory who have central air conditioning units. This program is available to all qualifying electric customers taking delivery service from DP&L, regardless of their choice of supplier or DP&L tariff option.

Q. What is your implementation plan for this program?

A. DP&L plans to finalize the specific terms and conditions of the program in 2009 and introduce the program beginning the summer of 2010 to customers that have advanced meter infrastructure in place. Based on the success of this effort, DP&L intends to make this service available to all non-residential customers with advanced metering infrastructure commencing the summer of 2011.

DP&L will choose a qualified implementation partner through an RFP process. The selected vendor(s) or contractor(s) will work with DP&L to deliver services to the area.

Elements of the vendor's role include customer recruitment, thermostat installation, demand response implementation, and quality control inspection.

Q. What are the estimated energy and demand reductions associated with this program?

A. Measure impacts of 518 kWh and 1.93 kW has been used, with the 7-year cumulative energy savings of 1.3 GWh and cumulative year 7 demand reductions of 4.9 MW.

Q. What are the estimated costs for this program, and how were these estimates developed?

A. The total estimated cost of this program is $1.1 million over 7 years as set out in WPG-1.12. The cost of an installed thermostat and the associated marketing and administrative expenses were estimated based on the results of an industry RFP. These costs were applied to the estimated participation levels, which were established by survey results of DP&L's non-residential customers and the planned AMI roll-out schedule, to generate an estimated 7-year total installed thermostat expense of $824,000 and marketing/administration/pilot evaluation expense of $173,000. In addition, DP&L estimates that it will incur $105,000 in incremental operating and maintenance costs associated with the program.

XV. NON-RESIDENTIAL TIME-OF-USE PRICING

Q. Will you describe the Non-Residential Time-of-Use Pricing program with the optional Critical Peak Pricing option, as reflected in Workpapers G-1.13 and G-1.114?

A. Yes. The Time-of-Use rates encourage participating customers to shift electric usage from peak to off-peak hours, particularly during the summer peak season. The Time-of-Use rates will be designed so that the price per kWh during the peak summer season will be higher during the peak hours and lower during the off-peak hours. Those customers that are able to reduce consumption during peak periods or to shift their consumption to off-peak hours should see a lower annual energy bill. This program differs from the Residential Time-of-Use Pricing program in that non-residential customers may elect the Critical Peak Pricing (CPP) option, whereby the rate for power consumed on the off-peak hours is further reduced in exchange for a significantly higher rate during critical peak events. Customers will receive prior notification of a CPP event. Workpaper G-1.13 contains information for participation in the Time-of-use pricing program without the CPP option, and Workpaper G-1.14 contains information on the CPP option.

Q. Please describe your target market for this program.

A. This program is available to all non-residential customers taking delivery service from DP&L that elect to purchase transmission and generation service from DP&L.

Q. What is your implementation plan for this program?

A. Prior to 2011, DP&L will conduct the rate design studies needed to establish the revenue-neutral prices and will determine the specific terms and conditions of the program, such as defining the critical peak pricing differential. DP&L plans to introduce the Time-of-Use Pricing program beginning in 2011 to customers that have advanced metering infrastructure in place. Based on the success of this effort, DP&L intends to make this service available to all non-residential customers with advanced metering infrastructure.

Q. What are the estimated energy and demand reductions associated with this program?

A. Measure impacts of 1.56 kW for Time of Use (WPG-1.13) and 1.91 kW for Critical Peak Pricing (WPG-1.14) have been used.

Q. What are the estimated levels of participation for this program?

A. The estimated level of participation for each program is identical and is based on survey results of DP&L's non-residential customers, adjusted to reflect the planned AMI roll-out schedule.

Q. What are the estimated costs for this program, and how were these estimates developed?

A. The total estimated cost of this program is $2.7 million over 7 years, which reflects the marketing and administrative costs of the both the Time of Use and Critical Peak Pricing components. The marketing and administrative costs for each of these components are estimated at $250,000 in 2011 and are increased annually by the cost of inflation.

XVI. EDUCATION AND AWARENESS

Q. Will you describe the Education and Awareness program, as reflected in WPG-1.15?

A. Yes. The program will use education and outreach activities as well as energy efficiency enhancements to the Company's website to educate customers, community leaders and children. The education and outreach activities will be targeted to schools, government leaders, civic organizations and local media. Significant enhancements will be made to

the Company's website and will feature tools for conserving energy, custom applications that grant customers insights into the usage characteristics of their premises as well as detailed information on DP&L's programs and participating channel partners.

Q. Please describe your target market for this program.

A. This program is designed for all customers taking delivery service from DP&L, regardless of their choice of supplier.

Q. What is your implementation plan for this program?

A. The education and outreach activities will be performed by DP&L employees and selected channel partners. Additional features will be made available on DP&L's website once the appropriate systems are acquired and/or developed.

Q. What are the estimated energy and demand reductions associated with this program?

A. As we believe that providing customers educational opportunities along with tools creates an environment which drives energy reductions, DP&L has not forecasted any energy or demand savings at this time.

Q. What are the estimated costs for this program?

A. The 7-year O&M budget for the education effort is $8.1 million as shown in WPG-1.15.

Q. Are there any other education-related costs contained in Workpaper G-1.15?

A. Yes. DP&L intends to study and, if the customer benefits are sound, to implement innovative energy-efficient programs and services. Therefore, $300,000 is budgeted in

2009 for program development efforts, such as exploring new energy/demand reducing technologies. This amount will increase by $100,000/year in both 2010 and 2011, and escalated by inflation thereafter. In addition, $500,000 of capital and $325,000 of expenses are budgeted for the joint construction and operation of an educational facility to showcase new energy efficiency technologies.

Q. Are there any sources of energy or demand reductions that will be employed by DP&L to meet the targets set out in Am. Sub. S.B. 221 in addition to the aforementioned programs?

A. Yes. As referenced in WPG-1.16, through the Smart Grid Development initiative discussed by Mr. Teuscher in his testimony, DP&L anticipates reducing its line loss by 1% of the sales utilizing the distribution lines enhanced through this initiative. This will result in the energy and demand reductions set out on lines 6 and 12, respectively, of WPG-1.16. The Company will make available home energy displays to those customers with access to the advanced metering infrastructure. As shown in WPG-1.17, DP&L anticipates a 5% energy usage reduction by those customers that utilize the home energy displays. Finally, DP&L will continue to explore additional opportunities to reduce energy and demand.

XVII. PROGRAM IMPLEMENTATION

Q. What is the planned implementation timeline?

A. We plan to phase in those energy efficiency and demand reduction programs *not* requiring infrastructure enhancements (i.e., all programs except Direct Load Control, the new pricing tariffs and some features of the website) starting in January 2009. We plan

to begin to offer the Direct Load Control programs during the summer of 2010 and the pricing tariffs soon thereafter. These programs will then be expanded as appropriate.

Q. Please describe the marketing activities that will be utilized to promote the programs.

A. DP&L plans to utilize multiple communications channels to promote the programs to maximize customer engagement. Those channels include television, radio, print ads, bill stuffers, direct mail, telemarketing, enhancements to the website as well as outreach activities by DP&L employees through community presentations, personal visits with business customers and educational activities geared toward children. DP&L is working with an advertising agency to develop a branding, education and promotional campaign to maximize the effectiveness of the advertising budget.

Q. Could overall spending associated with the programs exceed the amount sought in the filing?

A. Yes. DP&L used its best effort to estimate the spending level needed to achieve the energy and demand reduction targets set out in Am. Sub. S.B. 221. However, the Company's actual expenditures will be influenced by customer action, with the Company adjusting the amount of promotion and incentives as appropriate to meet the S.B. 221 targets, provided such activities are cost-effective.

Q. Do you anticipate hiring additional personnel associated with these programs?

A. Yes. We anticipate hiring an additional 8 full-time employees to support the demand side management programs. These employees will join the two individuals currently working on program development to have a total staff of 10. These new positions include

managers over the DSM programs and vendor relationships, field sales personnel and analysts.

XVIII. EVALUATION AND MEASUREMENT

Q. How and by whom will the effectiveness of each program be evaluated in the future?

A. On a regular basis, DP&L will evaluate the actual participation, energy/demand reduction and costs of each program in comparison to the estimates contained in the filing. In addition, DP&L shall engage an evaluation and measurement firm to aid in this effort. The cost for the EM&V effort is identified on line 18 of WPG-1 and is set at 5% of the total operating costs associated with the programs.

Q. To meet the energy efficiency and demand reductions targets set out in Am. Sub. S.B. 221, do you anticipate the need to make any changes to individual programs or your program suite over time?

A. Yes. As I stated earlier, we expect to refine the initial programs, add new programs and delete any under-performing programs to respond to changes in technology, economic conditions and consumer preferences. We must also evaluate additional infrastructure investments that can generate energy or demand reductions.

XIX. 2016 – 2023 FORECASTED ENERGY/DEMAND REDUCTIONS

Q. What energy and demand reductions do you attribute to the programs and other initiatives for the years 2016 through 2023, and how were these determined?

A. Please see WPF-1 for the projected annual energy and demand reductions for the 15-year period ending 2023. The reductions for the first 7 years were obtained from WPG-1.

DP&L forecasts the 2015 incremental annual penetration rates will continue from 2016 through 2023 for all programs and initiatives. It is worth noting, however, that given the requirements of the Energy Independence and Security Act of 2007 relating to the availability of incandescent bulbs discussed earlier in my testimony, the incremental energy and demand savings per bulb under the Residential Lighting program is forecasted at half of the 2015 level for the years 2016 through 2023 to reflect a more efficient baseline (e.g. CFLs to LEDs instead of incandescent to CFLs).

XX. SCHEDULES AND WORKPAPERS

Q. Are you responsible the Energy Efficiency and Demand Response Plan contained in Section F, lines 3 – 8 of Schedule B-2, lines 3 – 8 of Schedule B-3, lines 5 – 8 of Schedule B-4, lines 5 – 8 of Schedule B-5, Workpaper G-1, Workpapers G-1.1 through G-1.16 and the energy and demand reduction volumes contained in Workpaper F-1?

A. Yes. I am. Workpapers G-1.1 through G-1.16 have been explained earlier in my testimony. Workpaper G-1 is a summary of the cost and energy/demand reduction information from the other workpapers and these costs appear on lines 3 – 8 of Schedule B-2, lines 3 – 8 of Schedule B-3, lines 5 – 8 of Schedule B-4, lines 5 – 8 of Schedule B-5. Workpaper F-1 contains a 15-year summary of DP&L's projected energy and demand reduction volumes. Finally, the Energy Efficiency and Demand Response Plan contained in Section F is a summary of the information contained in my testimony.

XXI. CONCLUSION

Q. Please summarize your testimony.

A. In summary, DP&L has developed a suite of reasonable programs to empower customers to reduce their energy and peak demand needs. This suite along with the infrastructure enhancements should allow DP&L to meet the energy and demand reduction targets set out in Am. S.B. 221 given that technology advances will make additional cost-effective opportunities reasonably available to achieve additional reductions beginning by at least 2013. The Company is committed to meeting the targets, and shall continue to explore additional cost-effective opportunities made available through technology developments, infrastructure enhancements and additional customer programs. The programs that comprise this initial suite were selected due to their relevance for all customer classes and effectiveness at other utilities. DP&L has developed reasonable implementation plans and estimates of avoided demand/energy and costs associated with each program, and the suite of programs will be revised as needed based on experience and changes in technology.

Q. Does this conclude your direct testimony?

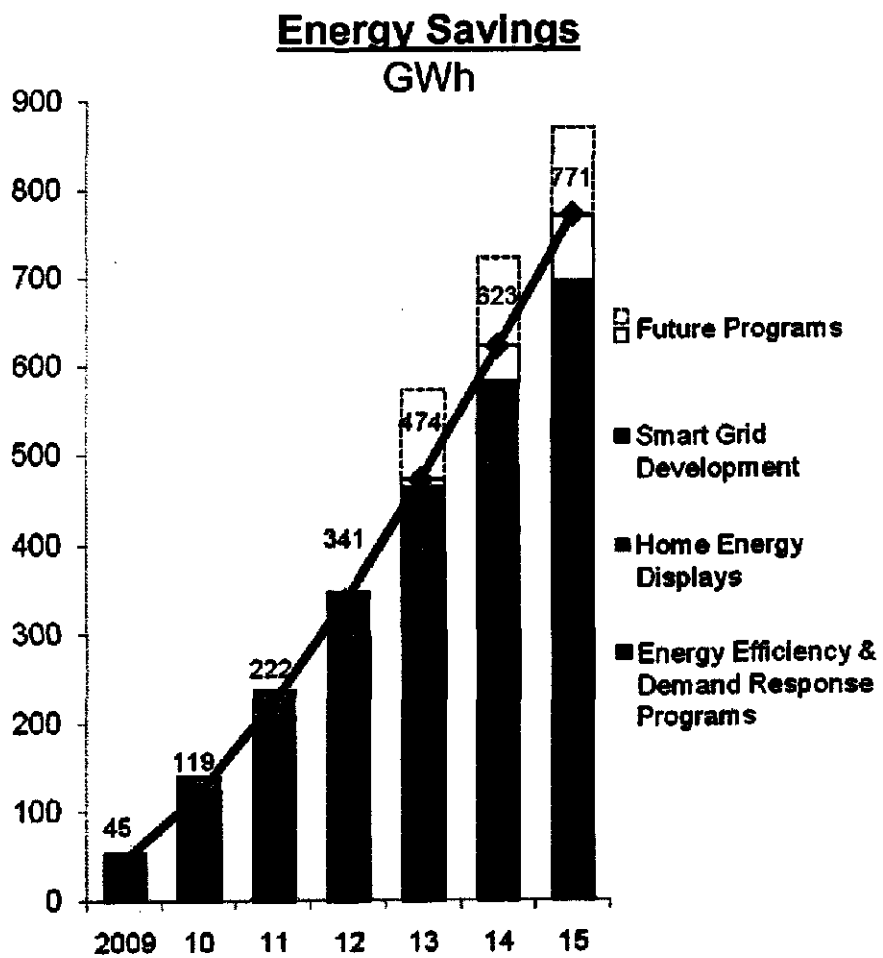
A. Yes, it does.

Energy and Demand Reduction Targets

Baseline Calculations	2006	2007	2008	Average
Energy (MWh)				
Weather Normalized Sales	15,110,170	15,001,267	15,467,655	
Adjustments for 2009	-285,771	-219,477	-140,658	
2009 MWh Baseline	14,824,399	14,781,790	15,326,997	14,977,729
Adjustments for 2010 & Beyond	-451,974	-377,823	-272,043	
2010 & Beyond Baseline	14,658,196	14,623,444	15,195,612	14,825,751
Demand (MW)				
System Peak	3,240	3,270	3,299	
Adjustments for 2009	-60	-45	-33	
2009 MW Baseline	3,180	3,225	3,266	3,224
Adjustments for 2010 & Beyond	-93	-77	-62	
2010 & Beyond Baseline	3,147	3,193	3,237	3,192

Target Calculations	2009	2010	2011	2012	2013	2014	2015
Energy (MWh)							
Baseline	14,977,729	14,825,751	14,825,751	14,825,751	14,825,751	14,825,751	14,825,751
Annual Savings Requirement	0.30%	0.50%	0.70%	0.80%	0.90%	1.00%	1.00%
Cumulative Savings Requirement	0.30%	0.80%	1.50%	2.30%	3.20%	4.20%	5.20%
Target (Cumulative)	44,933	118,606	222,386	340,992	474,424	622,682	770,939
Demand (MW)							
Baseline	3,224	3,192	3,192	3,192	3,192	3,192	3,192
Annual Savings Requirement	1.00%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%
Cumulative Savings Requirement	1.00%	1.75%	2.50%	3.25%	4.00%	4.75%	5.50%
Target (Cumulative)	32	56	80	104	128	152	176

Comparison of Targets and Anticipated Savings



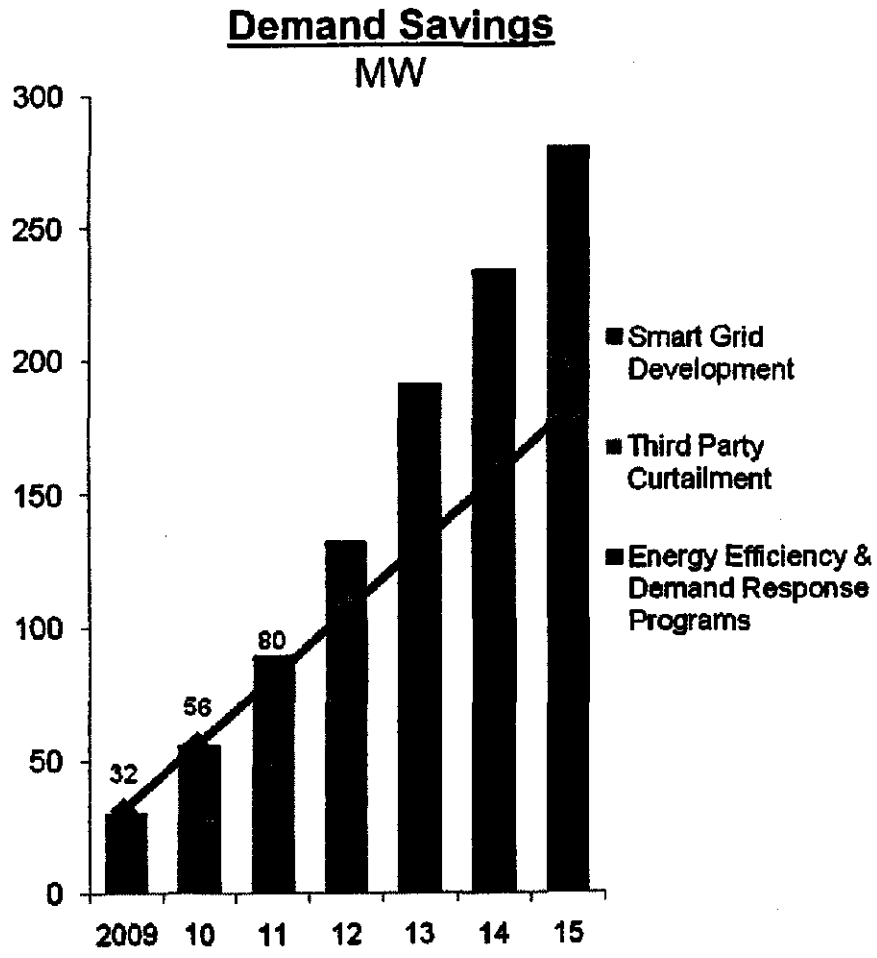


EXHIBIT MWB-3

Summary of Program Costs and Energy/Demand Savings

Program/Initiative	7-Year O&M Costs	7-Year Capital Costs	7-Year Energy Savings (KwH)	Yr. 7 Demand Savings (Kw)
Residential Portfolio				
Residential Lighting	$20,143,118		765,028,964	16,637.7
Residential HVAC Diagnostic & Tune-Up	$8,442,276		77,165,688	17,779.7
Residential HVAC Rebate	$11,030,628		39,977,000	9,649.5
Residential Appliance Recycling	$2,470,570		89,448,507	3,850.3
Residential Appliance Rebates	$1,413,207		23,023,161	744.0
Residential Low Income Affordability	$7,715,198		47,744,116	901.6
Residential Direct Load Control	$7,101,913		15,467,850	23,083.2
Residential Time of Use Pricing	$1,333,934			6,076.1
Residential Peak Time Rebates	$1,333,934			8,494.5
Subtotal	$60,984,778		1,057,855,286	87,216.6
Non-Residential Portfolio				
Non-Residential Prescriptive Rebates	$22,302,841		791,147,872	59,840.1
Non-Residential Custom Rebates	$13,957,683		313,852,249	16,649.6
Non-Residential Direct Load Control	$1,101,392		3,336,438	4,898.4
Non-Residential Time of Use Pricing	$1,333,934			4,107.5
Non-Residential Critical Peak Pricing	$1,333,934			5,029.0
Subtotal	$40,029,784		1,108,336,559	90,524.6
Education and Outreach				
Education and Outreach	$11,759,324	$500,000		
Other				
Distribution Automation System Enhancements	*	*	54,110,000	5,300.0
Home Energy Display	*		308,650,344	
Evaluation Measurement and Verification	$5,663,694			
Subtotal	$5,663,694		362,760,344	5,300.0
	$118,437,580	$500,000	2,528,952,189	183,041.2

* The costs associated with these initiatves are supported in the AMI and Smart Grid chapters of this filing.

BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO

BOOK II – Customer Conservation and Energy Management Programs

DIRECT TESTIMONY

OF GREGORY S. CAMPBELL, CPA

- ☐ 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

GREGORY S. CAMPBELL, CPA

ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Gregory S. Campbell. My business address is 1065 Woodman Drive, Dayton, Ohio.

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

A. I am employed by The Dayton Power and Light Company ("DP&L" or "Company") as Director, Accounting Policy and External Reporting.

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

A. I assumed my present position on June 18, 2008. Prior to that, I had been employed from 1981 through 2008 by American Electric Power, serving in a number of accounting and financial positions with that company.

Q. What are your responsibilities in your current position and to whom do you report?

A. In my current position, I am responsible for financial reporting to certain regulatory bodies, including the SEC and FERC. I am also responsible for reviewing certain accounting transactions to insure adherence to Generally Accepted Accounting Principles. I report to the Assistant Controller of DP&L.

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

A. I received a Bachelor of Business Administration degree in Accounting from the College of William and Mary in 1977, and am a Certified Public Accountant. From 1977 to 1981, I worked for two large public accounting firms: Coopers and Lybrand, and Peat,

Marwick and Mitchell. During the years 1981 through 1984, I worked in the Accounting Department of one of American Electric Power's electric operating subsidiaries, Appalachian Power Company. From 1984 until 2008, I worked for the American Electric Power Service Corporation in a variety of jobs, including Accounting Policy and Research for fourteen years, accounting for fiber optic operations, and accounting and financial analysis for regulated and non-regulated operations. In June 2008, I accepted my current position at DP&L.

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

A. Yes. I have sponsored testimony before the PUCO in a number of cases on behalf of Columbus Southern Power and Ohio Power Company, two subsidiaries of American Electric Power. My previous testimony included both base rate and fuel cases.

Q. What is the purpose of this testimony?

A. The purpose of this testimony is to support and explain the accounting treatments associated with the Customer Conservation and Energy Management ("CCEM") Programs. My testimony addresses the future accounting impacts.

Q. What Schedules are you supporting?

A. I am supporting Schedules B-2 through B-6 and Schedules C-2 through C-3.1. I am also sponsoring Workpapers WPB-2 through WPB-6 and Workpapers WPC-2 through WPC-3.2.

II. METHODOLOGY

Q. What is the source of the information shown in Schedules B-2 through B-6 and Schedules C-2 through C-3.1?

A. The Company developed the business case for three components of the CCEM Programs: Delivery, Energy Efficiency & Demand Response, and Information Technology (IT). My responsibility was to consolidate the estimates for each of those components, allocate costs and benefits to the appropriate accounts, and produce integrated accounting statements.

- ***Delivery.*** Included estimates for Advanced Metering Infrastructure (AMI) and Smart Grid Development Plan (Smart Grid) Projects. These figures included estimates of: capital costs; Operations and Maintenance (O&M) expense; in-service dates, any early retirement dates; depreciation rates for new equipment (if different from previous DP&L accounting practices); and operational savings from deployment of new technology.

- ***Energy Efficiency and Demand Response.*** Included estimates for all proposed programs included in DP&L's Energy Efficiency & Demand Response Plan. These figures included estimates of costs associated with developing and running the proposed suite of programs; estimated demand and energy savings associated with the operation of those programs; and estimates of new capital costs.

- ***IT.*** Included estimates for all IT systems required to support AMI, Smart Grid, and Energy Efficiency & Demand Response Programs; capital costs; O&M expense; in-service dates, any early retirement dates; and operational savings from deployment of new systems.

Q. Did you ensure that all data/estimates were reported in a consistent manner and in accordance with PUCO guidelines?

A. Yes. I reviewed the standard PUCO accounting schedules and identified the schedules relevant to the initiatives proposed as part of CCEM. I then developed a template to collect data for each part of CCEM in a standardized format that would feed into those schedules.

Q. What is the basis for translating projections into future year dollars?

A. The analyses assume an annual inflation rate of 3.25-percent which is appropriate and reasonable when compared to the increases in the Consumer Price Index for all Urban Customers (CPI-U) for the last three calendar years 2005 through 2007.

III. SCHEDULES

Q. Please list the schedules for which you are responsible.

A. I am responsible for the following schedules. Please note that all these Schedules include subtotals for Energy Efficiency and Infrastructure, except for Schedule B-6. Schedule B-6 uses the same Allowance for Funds Used During Construction (AFUDC) rate for both Energy Efficiency and Infrastructure.

Schedule B-2: Plant In-Service – New Property. This Schedule shows the year-end balances in Account 101, Electric Plant In-Service.

Schedule B-3: Reserve for Accumulated Depreciation and Amortization – New Property. This Schedule shows the year-end balances in Account 108, Reserve for Accumulated Depreciation and Account 111, Reserve for Accumulated Amortization.

Schedule B-4: Construction Work In-Progress. This Schedule shows the year-end balances in Account 107, Construction Work In-Progress.

Schedule B-5: Net Book Value of Assets Prematurely Retired. This Schedule shows the amount of annual retirements.

Schedule B-6: Allowance for Funds Used During Construction.

Schedule C-2: Total Operations and Maintenance Expense and Related Fringe Benefits by Account. Decreased O&M costs are shown on Schedule C-2.1

Schedule C-3: Total Depreciation and Amortization Increased Costs. Decreased depreciation and amortization costs are shown on Schedule C-3.1

Q. How did you categorize CCEM program costs that were submitted to you?

A. Once I received the figures, I identified and appropriately accounted for capital versus O&M expenses based on the requirements contained within the FERC Uniform System of Accounts. A summary of total CCEM O&M is provided in Schedules C-2 through C-3.1.

Q. Can you describe the process that you used to calculate the operations and maintenance expense amounts shown in Schedules C-2 and C-2.1?

A. Yes. Operations and maintenance expenses were submitted in the templates I provided. These amounts are identified as incremental charges for new activities, less savings resulting from the elimination or reduction of current activities in future periods. The dollar amounts are expressed in future year dollars and are a measurement of the

projected effect upon operations and maintenance expenditures that results directly from the implementation of the CCEM Programs.

Q. Please explain how you treated new capital investments required for CCEM Programs as summarized in Schedules B-2 and B-4.

A In Schedules B-2 and B-4, I classify all new capital line items as either "in service" or "in construction" at each year-end based on the start date of construction and the time required to complete the construction activities.

I identified the appropriate property account to which the cost items relate based on FERC guidelines and DP&L practices. To develop Schedule B-3, I used the appropriate depreciation rate to forecast depreciation expense on an annual basis, based upon the original property account.

The original cost less accumulated depreciation constitutes the property component of the year-end rate base.

Q. Can you describe the process that you used to calculate the depreciation and amortization expense amounts summarized in Schedule B-3?

A. Yes. The amounts of the annual construction expenditures were provided to me. The depreciation expense amounts associated with this property are generally based on applying the Company's present depreciation rates to the capital property which is expected to be acquired or constructed for the CCEM Programs. The new AMI meters are an exception to the use of the Company's present depreciation rates. These new AMI meters are expected to have a useful life significantly different from the Company's

existing meters. Therefore, I used a higher depreciation rate based on the expected relatively shorter life of the new AMI meters.

Q. In developing Schedule B-3, you used an "average expected useful life" for AMI meters of fifteen years. How was this life determined?

A. DP&L believes that these meters have an estimated useful life of about fifteen years. Consolidated Edison Company of New York and PEPCO have both filed with their commissions for approval of a fifteen year depreciable life for AMI meters. These cases are still in process. This average life expectancy of fifteen years has also been reviewed for reasonableness at our request by the actuarial firm of Management Applications Consulting, Inc., which is located in Reading, Pennsylvania.

Q Did you calculate AFUDC for new capital?

A. Yes. The AFUDC computation is based upon inclusion in rate base of 75% of construction value. The amount of Construction Work In-Progress (CWIP) in rate base is summarized in Schedule B-4. The earnings impact of the annual AFUDC accruals is contained in the same Schedule.

Q. Did you consider the potential need to retire existing capital early as a result of CCEM Programs?

A. Yes. Some initiatives will involve the retirement of assets at dates prior to that which would otherwise have been expected. Details of all premature retirements associated with CCEM Programs are identified in Schedule B-5. I was provided with information as to which capital assets will need to be retired. Then I identified the property account that applies to the retired property. For each retirement, I identified the appropriate

depreciation rate that was applicable in order to calculate depreciation savings and forecasted the net book value based on the in-service date of the property through to the projected date of retirement.

Q. How were the amounts of assets prematurely retired that are associated with property determined in Schedule B-5?

A. The assets prematurely retired calculation pertains to the early retirement of capital property as noted earlier. The accumulated depreciation for this property was calculated by applying the depreciation rates in effect for each asset that is expected to be retired, to the original cost of the asset over the time in which it has been in service. The depreciation rates exclude the cost of the future removal of the asset. The remaining un-depreciated net book value was reduced by the projected amount of salvage proceeds that are expected to result from the disposition of the asset.

Q. What did you do to obtain the employee fringe benefits and tax expense amounts shown in Schedule C-2?

A. I was provided with the workforce requirements of the CCEM Programs. Then the dollar impact on the Company's base payroll cost was calculated. This information, with which I was provided, was used in developing the earnings summary in Schedule C-2. The projected fringe benefits were based on the cost per employee or a percentage of the payroll dollars. As examples, the medical insurance was based on the average medical cost to the Company for each employee, while the pension expense was based on a percentage of the employees' payroll costs.

The effect upon employee taxes is based on applying the present FICA rate of 7.65% to the portion of the incremental dollars of the Company payroll charges which would be

charged to operations and maintenance costs as a result of the CCEM Programs. I also included federal and state unemployment taxes, FUTA and SUTA, respectively, in the employee taxes based on their current rates.

Q. What did you do to obtain the decreased costs shown in Schedule C-2.1?

A. The forecasted cost reductions are based on specific savings anticipated from the CCEM Programs.

Q. What did you do to obtain the increased depreciation and amortization expense summarized in Schedule C-3?

A. These amounts were taken from the detailed workpapers that were used to calculate the reserve for accumulated depreciation and amortization shown on Schedule B-3.

Q. What did you do to obtain the decrease in depreciation and amortization expense amounts shown in Schedule C-3.1?

A. These amounts were developed by taking the depreciation and amortization rates that would have been charged to the assets that were prematurely retired and multiplying those rates times the original cost of those assets.

Q. Are the calculations shown in the referenced schedules reasonable?

A. Yes, the results are based on the researched costs of specific activities that have been projected by the Company. The Company's present depreciation rates have been used to quantify the impact on depreciation expense, other than the previously-noted proposed new depreciation rate for the new AMI meters. The dollar amount of property retirements is based on the original capitalized cost of the property.

IV. REVENUE DEFERRAL

Q. Will a portion of the revenue associated with the levelization of the infrastructure revenue be deferred in the early years of the seven-year period?

A. Yes. As discussed by witness Seger-Lawson, we are requesting the levelization of the infrastructure revenue over a seven-year period. We will defer the levelized revenue in excess of each calendar year's unlevelized revenue requirement in Account 254, Other Regulatory Liabilities. This deferred revenue will be fed back to revenue in the later years when the levelized revenue level is less than the annual unlevelized revenue requirement. We would also record deferred federal income taxes associated with this revenue levelization.

V. CONCLUSION

Q. Please summarize your testimony.

A. In summary, the projected dollar expenditures (both incremental and savings) are based on specific activities and asset purchases. The depreciation costs associated with new assets are based on established rates, except in the case of new AMI meters for which Commission approval is being sought for the application of a new rate of depreciation for these meters. Depreciation reductions are based on the original costs of equipment to be retired. Premature asset retirement cost measurements are based on the net book value of equipment to be retired less estimated salvage.

Q. Does this conclude your direct testimony?

A. Yes, it does.

BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO

BOOK II – Customer Conservation and Energy Management Programs

DIRECT TESTIMONY

OF KAREN R. GARRISON

- ☐ 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

KAREN R. GARRISON

ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Karen R. Garrison. My business address is 1900 Dryden Road, Dayton, Ohio 45439.

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

A. I am employed by DPL Inc. as Director, Corporate Information Systems.

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

A. I assumed my present position in February 2001. Prior to that time, I was a consultant working for PCMS Datafit in Cincinnati OH. I worked primarily on packaged system implementations. I have 23 years of experience working in various types of business in an Information Technology role.

Q. What are your responsibilities in your current position and to whom do you report?

A. In my current position, I am responsible for all aspects of Information Technology (IT) for The Dayton Power and Light Company ("DP&L" or "Company"). My department is responsible for all IT infrastructure and applications throughout DP&L. I report to the CFO of DP&L.

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

A. I received a BS degree in Computer Management from West Virginia Institute of Technology in 1985. I received an MBA with a concentration in Operations Management from the University of Cincinnati in 2002. I worked at the Hamilton County

Department of Human Services from 1985 to 1997. I held a variety of roles beginning as a programmer and progressed to analyst, project manager and programming manager. I then worked for Clopay Corporation as an Applications Development manager from 1997 to 2000. I worked for PCMS Datafit as a senior consultant from 2000 to 2001. During that time, I worked at a variety of companies providing implementation services for package systems. I was engaged by DP&L in July of 2000 to work on its Enterprise Resource Planning (ERP) system. I was hired by DP&L as a full-time employee in February of 2001. I held the application development manager role, responsible for ERP, and I then took responsibility for all corporate applications including the customer information system. In April 2007, I took responsibility for all IT at DP&L.

Q. What is the purpose of this testimony?

A. The purpose of this testimony is to support and explain the IT systems required to implement DP&L's Customer Conservation and Energy Management ("CCEM") Programs. I am also providing facts about the functionality and cost of these systems. This testimony relates specifically to the IT Systems (e.g., Meter Data Management (MDM) and supporting systems) that will be used to process the new data captured by the Advanced Meter Infrastructure (AMI) system.

Q. What Workpapers are you supporting?

A. I am supporting:

1. Workpaper WPH-1.4 – Information Technology – All Systems Summary
2. Workpaper WPH-1.4.1 – Information Technology – CIS System Summary

3. Workpaper WPH-1.4.2 – Information Technology – eServices Summary

4. Workpaper WPH-1.4.3 – Information Technology – MDM & LMS Systems Summary

5. Workpaper WPH-1.4.4 – Information Technology – OMS System Summary

6. Workpaper WPH-1.4.5 – Information Technology – DMS System Summary

7. Workpaper WPH-1.4.6 – Information Technology – MWM System Summary

8. Workpaper WPH-1.4.7 – Information Technology – SOA Summary

9. Workpaper WPH-1.4.8 – Information Technology – Infrastructure Summary

Q. Have you prepared a glossary of terms used in this testimony?

A. Yes, as follows:

AMI - Advanced Metering Infrastructure

BAM – Business Activity Monitoring

BPM – Business Process Management

CIS – Customer Information System

DMS – Distribution Management System

DSM – Demand Side Management - Influencing the level of demand for electricity, e.g., through conservation programs and education related to home insulation, energy efficient appliances, etc.

EPMM - Enterprise Project Management Methodology

ERP – Enterprise Resource Planning

eServices – Internet Services

GIS – Geospatial Information System

IVR – Interactive Voice Response

LMS – Load Management System

MDM – Meter Data Management

MWM – Mobile Workforce Management

OMS – Outage Management System

PMO – Program Management Office

SOA – Service Oriented Architecture

II. OVERVIEW OF SCOPE OF PROJECTS

Q. Please describe DP&L's plan for implementing IT systems to support CCEM Programs.

A. As part of the CCEM initiative, DP&L has developed a detailed, multi-year plan for the upgrading and implementation of new automation systems intended to improve back office functions, streamline utility operations, improve transmission and distribution network reliability and enhance customer service. Among the systems to be implemented under this plan are:

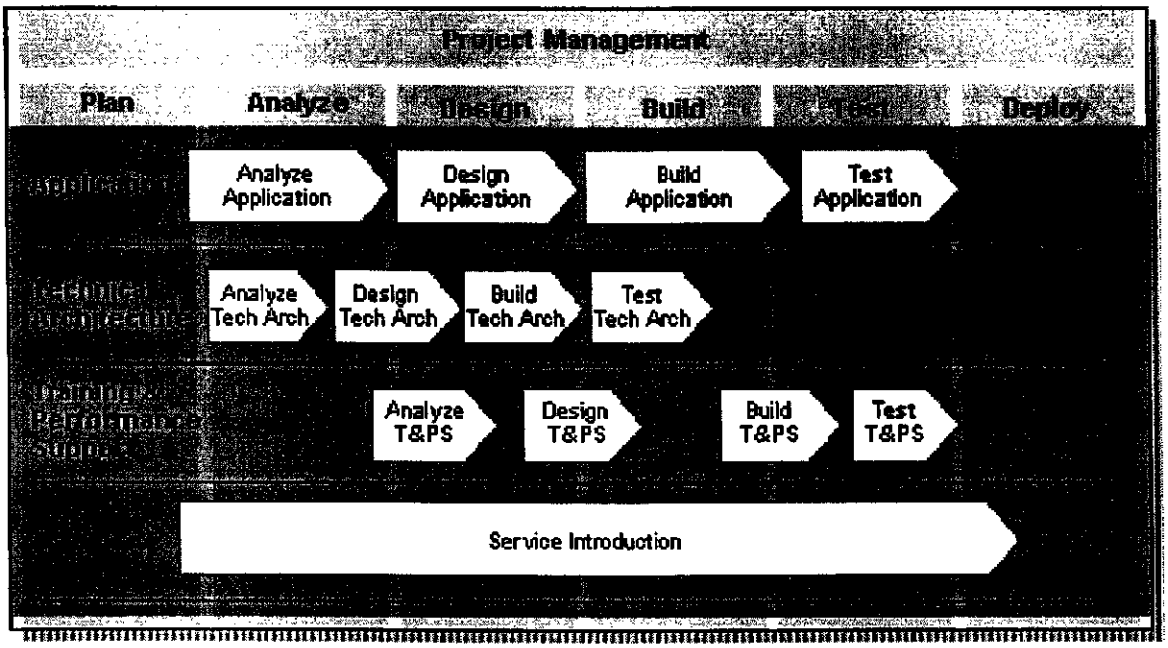
- Customer Information System (CIS)
- eServices (e.g., web services for customer interaction)
- MDM System & Load Management System (LMS)
- Outage Management System (OMS)
- Distribution Management System (DMS)
- Mobile Work Force System (MWM)

- Service Oriented Architecture (SOA)
- IT Infrastructure (e.g., Hardware, Software)

The system estimates sponsored in this testimony include the hardware, software, associated maintenance, and labor required to implement and deliver these systems. Although not within my scope of testimony, DP&L will also be installing an AMI system as the centerpiece of its plans to pursue its CCEM vision. Together, these new systems and technologies will position DP&L to pursue the Smart Grid concept and to help meet the energy efficiency and alternative energy requirements of S.B. 221.

Q. What is in the scope of DP&L's estimates from a phase perspective (change management, conversion, testing, etc.)?

A. DP&L's estimates include the cost of implementing a system completely through delivery to the end user. The estimates also included the costs of ongoing maintenance (e.g., hardware, software and labor) to support the CCEM operations going forward. The figure below shows the work flows and project phases that were estimated:



Q. Do DP&L's estimates include modifications to existing systems or replacement with new systems?

A. DP&L's estimates were based upon replacement of existing systems or implementation of new systems where the function did not exist in the past. Replacement systems include CIS, OMS and MWM. New systems include MDM, LMS, eServices, and DMS. SOA and the IT Infrastructure components are required to enable a seamless implementation of the integrated systems to support the CCEM vision.

Q. Why has DP&L chosen to replace systems versus upgrading/modifying existing systems?

A. We assessed each system independently to determine whether or not we would replace the system or modify the existing system. In some cases, those decisions were fairly straight-forward, as DP&L did not have an existing system that supported the needed

functionality (e.g., Meter Data Management, Load Management, Distribution Management). As we assessed the existing legacy systems, it became apparent that the cost of upgrading, modifying and maintaining those legacy systems would outweigh the cost of implementing newer, more flexible applications. There are several key circumstances that led us to this decision. First, the requirements for CCEM Programs are expansive and will affect a large percentage of the individual systems that we need to replace (e.g., CIS, OMS). Second, the systems that we currently maintain were developed on older technology that is not easy to modify. Third, the existing systems are highly customized and were not specifically developed to support the Demand Response and Smart Grid requirements that are generally new to the industry as a whole. Finally, DP&L's previous studies support the approach of replacing these older systems versus continuing to modify. This decision aligns with the DP&L IT Department's philosophy of deploying open-architecture and standards-based IT technology that is useful across the largest possible set of users, that can serve as the foundation for more specialized services and applications, and that is secure, stable, reliable, robust, timely, well-documented, and easy to integrate.

Q. Please describe the team that created DP&L's estimates.

A. The team consisted of a project lead from DP&L's IT department and a lead from an external consulting practice with expertise in the utility industry and the development of IT estimates. Providing direct support to those team leads were key DP&L business and IT resources and external consulting firm team members, which included senior leadership, project management and subject matter specialists. The team used existing

data, interviews, meetings and/or workshops to collaborate with the key stakeholders within the business units and functions served.

Q. What was the process for creating DP&L's estimates?

A. The approach used a blended consulting / DP&L team, working together to provide the estimates for the systems discussed earlier. The team used existing and historical data, interviews, and meetings to collaborate directly with the DP&L subject matter specialists and key stakeholders within the business units. The external consulting team members provided day-to-day industry knowledge by providing subject matter specialists to support, the development of the estimates, consistent with DP&L's vision. Furthermore, DP&L followed the industry standard estimating methodology and practices used by the consulting firm to deliver estimates that took into consideration the time-value of money and met the high-level functional requirements needed for each system.

Q. Can you please describe the quality assurance methods that DP&L has in place to provide complete and accurate deliverables for this project?

A. One of the DP&L IT Department's core functions is estimating and delivering projects. DP&L assigned subject matter specialists for each of the designated areas within CCEM. These DP&L employees worked with the subject matter specialists from the external consultant to determine future requirements and estimate costs. In addition DP&L has its own internal standard documentation and estimating methodology that has been developed from years of experience. The estimating components created for CCEM were compared against this estimating methodology. Finally, DP&L also has a formal project management office established to ensure standard and reliable methods are used to estimate and execute projects.

Q. Are you familiar with the quality assurance methods that the external consultant assisting DP&L with CCEM Programs used to provide completeness and accuracy?

A. Yes, I became familiar with that process through my extensive work with that external consultant. The external consultant has a formal and clearly-defined quality assurance methodology that it employs for each project that it executes. This quality assurance methodology is standard across all projects it performs to ensure uniformity and clarity across its global organization. The intent of this rigorous quality assurance methodology is to improve predictability of delivery and reduce risk of things such as project budget overruns. The external consultant employed this methodology throughout the estimation process.

Q. What are the major components and variables that make up DP&L's estimates (e.g., Rates, Workdays, Complexity, Number of widgets)?

A. The major components and variables that make up DP&L's estimates include:

- Number of widgets (reports, databases, forms, business processes, interfaces, etc.)
- Required labor, both internal and external
- Hardware
- Software

Q. What Software and Hardware are included in DP&L's estimates?

A. The estimates include the hardware, applications and operating software necessary to satisfy the requirements as defined by the business. Generally, the hardware and software included are:

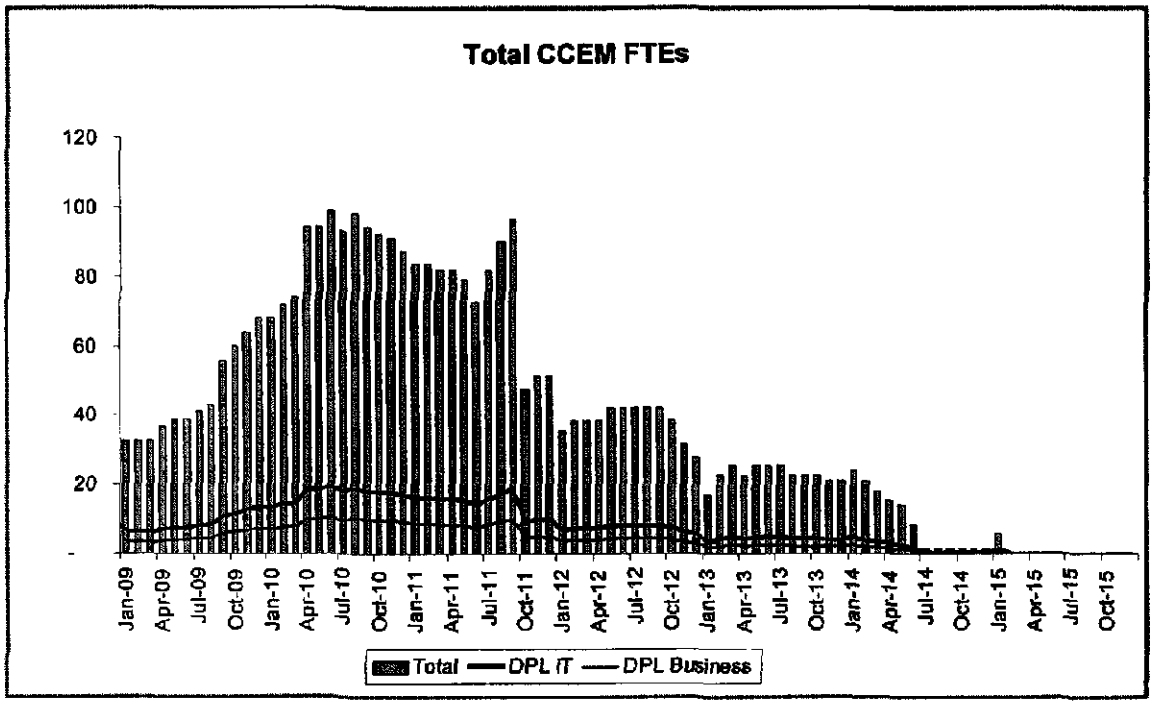
- Vendor software required for the operation of the infrastructure such as database and operating system software and protocols
- Application, network, communications and database servers
- Hubs, routers, work stations, printers, cables and other devices
- Voice, data and network management systems and communications
- Web servers and web hosting software
- Third party software including Windows, Linux, UNIX, DB2, IBM and other proprietary platforms and applications
- MDM, CIS, WMS, OMS, LMS and other proprietary software applications and licenses
- Data storage software and licenses such as Oracle, SQL and associated database access tools and protocols
- Ancillary tools and products needed in support of the implementation and ongoing operations of the systems (e.g., development tools, backup and recovery software, system monitoring tools, etc.)

Q. What is the largest cost component?

A. The largest cost component is labor. If examined on a per-system basis, the largest cost component is for the CIS system. The significant labor cost for the CIS results from the need to design and configure the complex functionality inherent in a CIS as necessary to support a broad range of interactive customer service functions for a regulated utility operating in a competitive market.

Q. What resources will be needed to implement the IT systems?

A. The implementation team will be comprised of a mix of internal staff (IT and Business) as well as external consultants. The following figure shows an estimate of the total staffing required by quarter for the first seven years. At the peak, DP&L anticipates that 99 total Full Time Equivalents (FTEs) will be working on the implementation.



Q. What types of resources will be needed to implement these systems?

A. The implementation of these systems will require a variety of resources including project managers, IT strategy personnel, technical architects, and business process designers.

Q. How will the increase in operating and applications software and equipment affect the IT department's overall O&M expenditures once these systems are implemented?

A. DP&L has estimated that upon completion, a total of 35 additional IT employees will be required to support the new IT architecture and operating platform. This total number of

additional resources is necessary to support the increase in network and data center infrastructure hardware and operating systems, and databases and application software that will be implemented and must then be maintained and periodically upgraded. To validate further the IT resource increase, DP&L contacted a utility of similar size that currently operates systems similar to those in DP&L's estimates. Although the DP&L total IT staffing requirements were slightly lower overall than that of the comparable utility, we found that our total resource requirements were closely aligned by functional area. Ongoing support of the implemented systems is included in future O&M projections.

Q. Are the implementation estimates and timelines appropriate and reasonable?

A. Yes. DP&L has adopted a multi-year implementation strategy that takes into consideration the relative complexities and interdependencies of the various systems and interfaces that will be required to achieve the CCEM vision. Some parts of the plan, such as the IT infrastructure improvements, are targeted for earlier phases, while others, such as the Outage Management and Mobile Work Force Management Systems, will come later and will benefit from new functionality that will be provided by AMI with its new communications links and the GIS. The IT infrastructure upgrades will provide the up-to-date hardware platforms, security and governance improvements needed to position DP&L for the forthcoming replacement of its legacy CIS system. DP&L's plan is designed to build upon previous phases and to capitalize on the initial stages of deployment to meet the upcoming energy efficiency and demand response requirements.

Q. Can you please describe the review process that the estimates went through during the planning of CCEM Programs?

A. There were multiple levels of review that occurred throughout the estimating process. The project team reviewed the estimates, the project managers reviewed estimates and then the executive sponsors of the project reviewed and provided feedback on the estimates. From a process perspective, one of the most important components of the review process was peer reviews. The external consultant scheduled meetings with multiple peer groups within its organization to review the assumptions, requirements and estimates. These peer reviews are a methodical examination of work product by objective peers to identify defects and recommend changes to assist in a more accurate and complete product. During these peer reviews, the CCEM program estimates were compared with project implementation actuals that contained similar attributes (e.g., scope, functionality, scale, etc.). The estimates were compared on a variety of dimensions. Examples of these dimensions included workdays, dollars, implementation timeframes, number of resources required and percentage of workdays per implementation phase. If there were differences among the dimensions, estimates and requirements, they were discussed within the project team and adjustments were made as appropriate.

Q. Can you please provide examples of quality assurance project roles that ensured completeness and accuracy?

A. Both the external consultant and DP&L had project managers assigned to the project. One responsibility of the project manager was to define the project review and iteration process. Another project manager responsibility was to review the estimates using established estimating models, leading practices and past experiences. DP&L and external consulting subject matter specialists also played a key role in analyzing the

estimates for completeness and accuracy. The external consultant employed a Quality Assurance director within the process. This is a senior executive role with quality assurance responsibilities. These responsibilities include verifying the external consultant methodology is used on the project, as well as reviewing the key deliverables of the project for completeness and accuracy.

Q. How do DP&L's estimates compare to costs for similar projects in the marketplace?

A. The figures that DP&L has developed are consistent with those developed by other utilities, although the scope and timing may be different. While no two utilities are exactly alike in terms of service area, customer mix, deregulation state and retail supplier access requirements, these estimates are in line with implementations executed at other similarly-sized utility firms that have similar operating and customer service requirements. The project team used Gartner, a leading information technology research and advisory company, to validate the estimates. The research included gathering current, applicable white papers for the team to use as reference data points. We also scheduled conference calls with industry analysts to discuss the DP&L plans and how they correlate to others.

Q. Please describe DP&L's planned implementation sequence.

A. DP&L's plan provides a logical installation sequence that begins to upgrade the IT infrastructure and moves to an open-architecture platform through SOA before moving to other system installations. Early project initiatives for AMI, CIS and MDM, involve multi-year planning and installation horizons that will provide sufficient time for the planned IT upgrades to take place prior to final testing and implementation. DP&L will

then proceed with the later phases of its CCEM Programs including installation of systems such as outage and distribution management that have a heavy reliance on AMI.

Q. Is the sequence of implementations consistent with DP&L's overall CCEM strategy?

A. Yes. The aggressive energy efficiency targets and timetables established in S.B. 221 dictate that DP&L move rapidly to establish the mechanisms for achieving the required results. DP&L's CCEM timeline is structured to bring AMI and load management functions on line as soon as reasonably possible given the complexity of the CCEM Programs. As these systems begin to contribute the desired benefits, DP&L will then target the additional operating and network reliability improvements that will come from implementing OMS and DMS.

Q. Are there controls in place to ensure project success?

A. Yes. Consistent with program and project management principles, there are mechanisms and processes to manage the project effectively to facilitate success. These processes include but are not limited to: quality management, status reporting, effective work planning, issue/risk management, scope and change management, budget/benefit and financial management.

The IT department at DP&L has developed and instituted an Enterprise Project Management Methodology (EPMM) that will be followed for the CCEM Programs to ensure successful completion. The EPMM is managed by the IT Department's PMO. DP&L's EPMM is currently in use to control, monitor, and support the successful execution and completion of all enterprise technology initiatives. IT PMO resources are using the EPMM to achieve success.

Q. Can you further describe the EPMM and how it will be used for the CCEM Programs?

A. The DP&L IT EPMM solution establishes controls throughout the life cycle of the project. The controls are in place from planning through post implementation. During planning, the EPMM ensures that project objectives, risks, scope, etc. are confirmed. All roles and responsibilities are defined, a project work plan is created, all resources are identified, and a communications plan is developed. During implementation, the structured and rigorous EPMM is followed from requirements gathering and design through testing and implementation. The DP&L IT EPMM is established for all aspects of project management. The IT EPMM process manages: master implementation plan development and the work breakdown structure, the project's budget, issues, risks, scope, change control management, resources, integration and dependencies, quality, communications, knowledge, status reporting, benefits realization, and performance management.

Q. Can you describe the responsibilities of the IT work stream Coordinator?

A. Yes. The responsibilities of that role include:

- Assisting with the roll-up of program management processes, methods associated with the IT work stream
- Ensuring work stream deliverables are consistent with the overall management of the total CCEM initiative
- Overseeing the work plan, and the financial, resource, issue, quality, scope and risk management issues associated with the IT work stream
- Developing communications needed for program leadership

- Assuring that the IT decisions are consistent across all work streams and aligned with the CCEM vision
- Ensuring necessary individuals are included and bought into the solution

Q. What process will DP&L use to manage the CCEM IT program schedule?

A. The IT work team will manage a work plan with clear start and end dates, precedence, order, dependencies, and resources needed for all activities. The work plan will be monitored continuously by the PMO and project leadership to ensure that it is comprehensive, sound and logical.

Q. What process will DP&L use to manage the CCEM IT budget?

A. Financial Management is a key component of IT's EPMM project management process. EPMM will control and manage the project's budget and other finances, as well as the financial reporting for the program/project. This process encompasses establishing budget amounts and tracking mechanisms, and tracking all budget amounts, actual amounts incurred, forecasts, and variances for both internal and external project activities. Requiring that the team provide forecasts allows for corrections to be made along the project timeline to minimize budget impacts and overruns.

Q. What process will DP&L use to manage the risks and issues related to delivery of the CCEM IT systems?

A. Risk Management is the process of identifying, measuring, and assessing risk impacts, and developing strategies to manage those impacts. IT's EPMM Issue Management practice covers the process for the identification, analysis, resolution, reporting, and escalation of the project's issues. The EPMM will enable the program leadership to create strategies and effectively address potential barriers to program success. The

PMO's risk and issue monitoring responsibilities include scheduled reporting to inform program leadership of the project's risk profile (impact, probability, level of control, risk prioritization) and establishing a target date, owner and corrective action plan for issues that arise. The IT PMO's methodology also includes a central tool during project implementation phase to allow anyone on the project to raise issues and risks.

Q. What method will DP&L use to manage the scope of the IT work stream?

A. Scope Management is the process by which changes to the original approved content and work breakdown areas for a development project are established and controlled. The IT EPMM manages scope by defining and documenting program scope early in the planning stages and obtaining agreement to that scope. The scope is tied to requirements and downstream deliverables to enable continuous understanding throughout the life cycle of the project. An important piece of managing scope is defining the impact when there are needed changes to the overall programs and teams. The decision criteria used by the PMO to consider a change in scope are impact on cost, schedule, resources and benefits.

Q. What process will DP&L use to manage the quality of CCEM IT work stream?

A. The IT Department's method for Quality Management ensures that the program's expectations and quality requirements are understood and actively managed. DP&L's quality management monitoring practice for a project consists of identifying quality objectives based on stakeholder expectations. Peer reviews and formal sign-offs are conducted for each deliverable and each phase.

Q. What process will DP&L use to manage IT work stream resources?

A. Resource management is a core process within the EPMM. This process involves forecasting the project's needs, assigning project personnel, managing changes to resource needs, and performance management.

Q. What process will DP&L use to manage IT work stream milestones and status?

A. Weekly reports are due from each of the project area leads within the IT work stream that track issues, milestones, progress, budget, schedule, delivery, provide accomplishments for the week, and plans for next week. The weekly reports from the project leads are scheduled to be reviewed by the coordinators before being submitted to the PMO for consolidation. The coordinators have an opportunity to resolve any issues before the weekly report is submitted to the PMO for inclusion in the consolidated status report that will be delivered to the CCEM sponsors and leadership.

Q. Describe the oversight that DP&L will provide for the IT work stream.

A. There are multiple levels of oversight that IT's EPMM employs to facilitate success. At the working level, there is a project coordinator assigned to the IT work stream. The IT work stream coordinator and the IT PMO will integrate their project management tools with those of the overall PMO for the CCEM Programs. There is also a steering committee for the overall effort that reviews program progress. The steering committee meets quarterly and receives status notifications monthly.

III. CUSTOMER INFORMATION SYSTEM PROJECT

Q. Can you describe the Customer Information System Project?

A. Yes. Although DP&L's current legacy CIS is capable of performing the traditional meter-to-cash functions required for today's service levels, the features and functions that will be necessary to support increased customer service functions enabled by the CCEM initiative will require a new CIS. A more flexible and configurable architecture will allow DP&L to quickly and more affordably make the changes necessary to deliver the value created by AMI, now and in the future. The new and improved CIS features will become increasingly important as we offer new demand response options to our customers to help achieve energy efficiency and load control targets. This new system will be flexible, scalable and configurable, which will allow DP&L to focus on designing creative solutions to meet needs caused by future unpredictable business conditions, while having the tools in place to make technical changes quickly and efficiently.

Q. Why is DP&L replacing CIS as part of the CCEM project?

A. Although DP&L's current IT systems are functional in the existing business environment, the advent of AMI will require a more flexible set of IT systems and platforms. Extensive and costly modifications to the legacy CIS would be necessary to offer time-of-use and real-time billing options, to build interfaces to other CCEM applications and to track customer participation in demand response programs and energy product offerings. Further, current functionality does not support the customer segmentation that will be necessary to target customers that are most likely to participate in various efficiency programs. The existing CIS system will become increasingly difficult and costly to maintain and operate, and the customized code and tightly integrated nature of the system make it inflexible to modify and maintenance-intensive. The system is limited as to the scalability of its exception processing capabilities and would be overly

dependent upon use of labor-intensive business processes required to integrate it with newer off-the-shelf applications and operating platforms that will be implemented through CCEM. Cumulatively, the changes that would be required to the current CIS system to meet future requirements are so extensive as to necessitate replacement of the entire system. Further, as part of an audit by the PUCO, in December, 2004, Utilipoint stated "Although UtiliPoint International has determined that the decision to modify the existing billing system and the associated expenditures for those modifications were prudent in the late 1990's, it is strongly recommended that DP&L undertake a proactive look at market alternatives in 2005 for more efficient ways to perform the billing function." The system described above meets this need.

Q. Please explain DP&L's plan for implementing the CIS project.

A. DP&L plans to implement a new open-standards-based CIS packaged software solution over a three-year period. A comprehensive, formal RFP process will be utilized to evaluate and select the CIS system that will best meet DP&L's current and future operating requirements. A project team consisting of both internal DP&L resources and external consultants with experience specific to CIS implementations will be selected to develop and execute a project plan that will follow the standard system development lifecycle (analyze, design, build, test, deploy) methodology used by DP&L to implement large IT projects. Business processes will be re-designed to minimize system customizations and to maximize post-implementation performance. A project management team will be used to manage cross-project goals, to eliminate conflicts related to schedule, budget, functionality and risk. Critical success factors will be

established to measure continually the success of the project and to ensure that it is meeting DP&L's objectives.

Q. When does DP&L expect work on the CIS project to begin and to be completed?

A. DP&L expects to begin implementation of a packaged CIS solution upon approval by this Commission with an anticipated completion date three years thereafter.

Q. What investments does DP&L anticipate making to implement the CIS project?

A. DP&L anticipates that it will need $41,848,145 in capital over a three-year period from 2009 through 2011 to implement a new CIS. This figure includes the hardware, software, associated maintenance, and labor required to implement and deliver a new CIS system. DP&L anticipates that it will need to spend $8,249,365 in O&M expenses over a seven-year period from 2009 through 2015 for hardware, software and labor to support CIS operations going forward. Given the size and makeup of the customer base and recognizing the large number of design variables that must be considered, DP&L's proposed CIS system cost estimate is reasonable.

Q. Is there a Workpaper associated with the CIS project?

A. Yes. Workpaper WPH-1.4.1 - Information Technology – CIS System Summary provides details of the scope and cost of the CIS project.

IV. eSERVICES PROJECT

Q. Can you describe the eServices Project?

A. Yes. eServices is the name given by DP&L to the set of customer focused web-based services proposed as part of the CCEM project. As DP&L customers become more interested in controlling their own energy use, we must make available to them the tools to assist in doing so. Via an interactive web portal, DP&L plans to offer a variety of easily accessible and easy-to-use eServices programs designed to educate its customers about its energy management product offerings and energy consumption patterns and to make it easy for them to participate. Customers will be able to view their past energy use, billing information and historical interval usage patterns along with associated pricing data as part of DP&L's eServices offering. In addition, DP&L plans to implement outbound web-notification of energy events related to direct load control, programmable thermostats, home energy displays, scheduled load reduction and critical peak pricing programs, which will encourage eligible customers to participate in these load-reduction events.

Q. Please explain DP&L's plan for implementing the eServices Project.

A. DP&L plans to procure and configure the components necessary to support the web portal and eServices program offerings planned for our customers as part of our CCEM vision. A comprehensive, formal RFP process will be followed to evaluate and select the eServices components that will best meet our current and future operating requirements. A project team consisting of both internal DP&L resources and external consultants with experience specific to eServices implementations will be selected to develop and execute a project plan that will follow the standard system development lifecycle (analyze, design, build, test, deploy) methodology used by DP&L to implement large IT projects. Business processes will be created or re-designed to define and support DP&L's desired

web services "customer experience" while using these tools. A project management team will be used to manage cross-project goals, to eliminate conflicts related to time, budget, functionality and risk. Critical success factors will be established to measure continually the success of the project and to ensure that it is meeting DP&L's objectives.

Q. When does DP&L expect work on the eServices Project to begin and to be completed?

A. DP&L expects to begin implementation of a packaged eServices solution in June 2009 with an expected completion date of December 2011.

Q. What investments does DP&L anticipate making to implement the eServices Project?

A. DP&L anticipates that it will need $2,429,415 in capital over a three-year period from 2009 through 2011 to implement the new eServices programs and functionality. This figure includes the hardware, software, associated maintenance and labor required to implement and deliver a new eServices system. DP&L anticipates that it will need to spend $1,658,031 in O&M expenses over a seven-year period from 2009 through 2015 for hardware, software and labor to support eServices operations. DP&L has identified the timeline and essential scope requirements for implementing a web services portal, including various entry screens and web services necessary to support the functions described above, resulting in an eServices cost estimate that is reasonable.

Q. Is there a Workpaper associated with the eServices Project?

A. Yes. Workpaper WPH-1.4.2 - Information Technology – eServices Summary provides detailed information related to project scope and cost.

V. METER DATA MANAGEMENT AND LOAD MANAGEMENT SYSTEMS PROJECT

Q. Can you describe the Meter Data Management and Load Management System Project?

A. Yes. DP&L will utilize a new Meter Data Management system (MDM) to provide a repository designed specifically to accommodate the massive amounts of data that will be obtained from the AMI system. The MDM will evaluate meter readings provided by the AMI system through use of its validation, estimation and editing function. In addition, it will generate the billing determinants to be sent to CIS that provide the ability to bill time-differentiated incentive-based rates. As the repository for historical energy usage data, the MDM can be accessed by other applications or eServices to review consumption patterns for various classes of customers, thereby improving trend analysis and accuracy of rate design and load forecasting.

The Load Management System (LMS), which will interface with CIS, MDM and AMI, will perform various load control functions and will monitor the activation and restoration of load control equipment consistent with DP&L's load control programs. An important function of an LMS is to store data related to various in-home load control devices, programmable thermostats, and home energy display devices installed throughout DP&L's service territory that will enable homeowners to better control their energy use. An LMS coupled with effective marketing campaigns and implementation of demand response functions through integration with CIS will allow DP&L to initiate demand response events, effectively lowering peak demand requirements during high usage or emergency curtailment periods. DP&L also plans to improve the reliability of

its transmission/distribution system by implementing programs that support voluntary load shedding during system duress periods that occur as a result of accidental or storm-related equipment failures.

Q. Please explain DP&L's plan for implementing the MDM and LMS projects.

A. DP&L plans to implement packaged software solutions for both MDM and LMS over a three-year period. A comprehensive, formal RFP process will be followed to evaluate and select MDM and LMS software packages that will best meet our current and future operating requirements. A project team consisting of both internal DP&L resources and external consultants with experience specific to MDM and LMS implementations will be selected to develop and execute a project plan that will follow the standard system development lifecycle (analyze, design, build, test, deploy) methodology employed by DP&L for large-scale IT projects. Business processes will be created or re-designed to minimize system customizations and maximize upgradeability and adaptability to future requirements. A project management team will be used to manage cross-project goals, to eliminate conflicts related to time, budget, functionality and risk. Critical success factors will be established to measure continually the success of the project and to ensure that it is meeting DP&L's objectives. As DP&L proceeds with the implementation of AMI, the availability of the MDM and LMS is essential to capturing the full range of AMI benefits. Since a working MDM is required to perform a complete vertical test of the meter data collection, data validation and time-of-use rate billing process, DP&L plans to have the MDM fully operational by the later stages of the AMI implementation, when sufficient quantities of AMI-enabled meters are available to generate interval data. Similarly,

DP&L plans to have a fully operational LMS system by the later stages of the AMI implementation to enable comprehensive testing of various demand response initiatives.

Q. When does DP&L expect work on the MDM and LMS projects to begin and to be completed?

A. DP&L expects to begin implementation of both a packaged MDM and LMS solution upon approval by this Commission with an anticipated completion date three years thereafter.

Q. What investments does DP&L anticipate making to implement the MDM and LMS projects?

A. DP&L anticipates that it will need $9,486,706 in capital over a three-year period from 2009 through 2011 to implement new MDM and LMS systems. This figure includes the hardware, software, associated maintenance and labor required to implement and deliver new MDM and LMS systems. DP&L anticipates that it will need to spend $4,598,484 in O&M expenses over a seven-year period from 2009 through 2015 for hardware, software and labor to support the MDM and LMS operations.

Q. Is there a Workpaper associated with the MDM and LMS projects?

A. Yes. Workpaper WPH-1.4.3 - Information Technology – MDM & LMS Systems Summary provides details of the associated scope and cost.

VI. OUTAGE MANAGEMENT SYSTEM PROJECT

Q. Can you describe the Outage Management System Project?

A. Yes. An important objective of DP&L's CCEM initiative is to improve network reliability by evaluating power outage data in real time from sources such as AMI, substation automation, SCADA and the IVR and then using this data to locate power outages more rapidly and shorten restoration time. DP&L plans to replace its legacy custom outage management system with a more flexible and robust packaged Outage Management System (OMS) capable of processing outage alarms, restoration alarms, and low- and high-voltage alarms generated in real time from the new AMI system. This real time information combined with customer status and location information provided from DP&L's SCADA and mapping systems will allow the new OMS to deploy work crews in the most efficient manner in order to respond efficiently to power outages. The new OMS will receive and process various inputs for outage analysis, outage location predictions, crew management, and dynamic circuit model changes, and will help DP&L work crews to respond more rapidly to identified outages. Restoration alarms received by the OMS from the AMI system will help DP&L to confirm that power has been restored at affected customer locations so that line crews can be more efficiently dispatched during storm conditions. When linked with MWM, the two systems should produce operating synergies that will significantly improve outage response time while utilizing the utility workforce in the most efficient manner.

Q. Please explain DP&L's plan for implementing the OMS project.

A. DP&L plans to implement a packaged OMS software solution over a three-year period. A comprehensive, formal RFP process will be followed to evaluate and select the OMS system that will best meet our current and future operating requirements. A project team consisting of both internal DP&L resources and external consultants with experience

specific to OMS implementations will be selected to develop and execute a project plan that will follow the standard system development lifecycle (analyze, design, build, test, deploy) methodology employed by DP&L for large-scale IT projects. Business processes will be created or re-designed to minimize system customizations and maximize the significant new functionality available in the new OMS system. A project management team will be used to manage cross-project goals, to eliminate conflicts related to time, budget, functionality and risk. Critical success factors will be established to measure continually the success of the project and to ensure that it is meeting DP&L's objectives. Without a new OMS, DP&L would not be able to take advantage of much of the available new outage data coming from its AMI system, or be in a position to manage outage events through MWM and DMS. Utilities such as Puget Sound Energy, Duquesne Light and PECO Energy are already benefiting from integration of their OMS with AMI. DP&L's planned upgrades of its telecommunications infrastructure and implementation of a new MWM should serve to further leverage the capabilities of OMS.

Q. When does DP&L expect work on the OMS project to begin and to be completed?

A. DP&L expects to begin implementation of the OMS project in January 2011 with an expected completion date of December 2013.

Q. What investments does DP&L anticipate making to implement the OMS project?

A. DP&L anticipates that it will need $9,531,036 in capital over a three-year period from 2011 through 2013 to implement a new OMS. This figure includes the hardware, software, associated maintenance and labor required to implement and deliver a new OMS. DP&L anticipates that it will need to spend $2,637,171 in O&M expenses over a five-year period from 2011 through 2015 for hardware, software and labor to support

OMS operations. DP&L has identified key operational aspects of OMS design and has considered other interfaces and system objects such as screen designs and reports to result in an OMS estimate that is reasonable.

Q. Is there a Workpaper associated with the OMS project?

A. Yes. Workpaper WPH-1.4.4 - Information Technology – OMS System Summary provides details of project scope and cost.

VII. DISTRIBUTION MANAGEMENT SYSTEM PROJECT

Q. Can you describe the Distribution Management System Project?

A. Yes. As DP&L's other systems become more sophisticated and are increasingly more capable of providing load monitoring and status in near real time, a specialized system is needed to help manage circuit loading to optimize network performance and improve overall network reliability. A Distribution Management System (DMS) will allow DP&L to efficiently perform: (1) scenario/contingency analysis of planned work, (2) plan daily operations by helping DP&L to understand recent system events, and (3) anticipate future events that could affect system integrity. The DMS system will provide the necessary functionality to manage utility circuit loading and switching operations from both internal and external sources such as wind and solar so that circuits can be balanced properly and transformer and circuit overload conditions, energy losses and equipment failures can be minimized. In addition, a DMS will provide the capability to generate switching orders, streamline clearance management, and optimize DP&L's distribution system through equipment condition monitoring, load surveys and feeder load balancing. By using the load data and network reliability information provided by the OMS, DP&L will be able

to make informed decisions leading to significant savings through reductions in unplanned outages and system technical losses, as well as reductions in future capital expenditures for distribution infrastructure through right sizing of conductors, substation/distribution transformers, and appropriate timing for circuit/substation upgrades due to load growth.

Q. Please explain DP&L's plan for implementing the DMS project.

A. DP&L plans to implement a packaged DMS software solution over a five-year period beginning in 2011. A comprehensive, formal RFP process will be followed to evaluate and select the DMS system that will best meet DP&L's current and future operating requirements. A project team consisting of both internal DP&L resources and external consultants with experience specific to DMS implementations will be selected to develop and execute a project plan that will follow the standard system development lifecycle (analyze, design, build, test, deploy) employed by DP&L and others in the industry, for large-scale IT projects. Business processes will be created or re-designed to minimize system customizations and maximize use of the functionality provided by the new DMS system. A project management team will be used to manage cross-project goals to eliminate conflicts related to time, budget, functionality and risk. Critical success factors will be established to measure continually the success of the project and to ensure that it is meeting DP&L's objectives. DP&L plans for DMS to be implemented in the later stages of its CCEM plan, since DMS performance is heavily reliant on the availability of other systems such as the OMS and the field data collection improvements to GIS. In addition, DMS's effective use of real time incoming outage and load data from other systems and external power sources cannot be accomplished until DP&L has completed

the IT Infrastructure and SOA installations and upgrades that will provide the IT platform for delivery of real time data to the various CCEM applications.

Q. When does DP&L expect work on the DMS project to begin and to be completed?

A. DP&L expects to begin implementation of a packaged DMS solution in January 2011 with an expected completion date of December 2015.

Q. What investments does DP&L anticipate making to implement the DMS project?

A. DP&L anticipates that it will need $9,295,478 in capital over a five-year period from 2011 through 2015 to implement a new DMS. This figure includes the hardware, software, associated maintenance and labor required to implement and deliver a new DMS. DP&L anticipates that it will need to spend $1,933,367 in O&M expenses over a five-year period from 2011 through 2015 for hardware, software and labor to support DMS operations. DP&L has captured the essential business processes and configuration requirements resulting in a DMS estimate that is appropriate for the level of functionality that will be provided.

Q. Is there a Workpaper associated with the DMS project?

A. Yes. Workpaper WPH-1.4.5 - Information Technology – DMS System Summary provides details of scope and cost information.

VIII. MOBILE WORKFORCE MANAGEMENT SYSTEM PROJECT

Q. Can you describe the Mobile Workforce Management System Project?

A. Yes. While DP&L's existing custom-developed mobile workforce management system provides a level of efficiency for distributing and collecting field service orders generated by CIS, it does not allow real-time dispatch of priority service orders, service order completion, or generation/dispatch of outage-related service orders. A new Mobile Workforce Management system (MWM) will take advantage of the latest advances in mobile devices, handheld PCs, wireless communication and mobile software applications to maximize the utilization and productivity of DP&L's workforce. Automated scheduling and resource optimization, dynamic routing and workflow management, and global positioning and e-maps, combined with real-time communications between DP&L's operations center, call center, CIS, and field service order staff, will result in superior customer service and outage restoration.

Q. Please explain DP&L's plan for implementing the MWM project.

A. DP&L plans to implement a packaged MWM software solution over a three-year period beginning in 2013. A comprehensive, formal RFP process will be followed to evaluate and select the MWM system that will best meet our current and future operating requirements. A project team consisting of both internal DP&L resources and external consultants with experience specific to MWM implementations will be selected to develop and execute a project plan that will follow the standard system development lifecycle (analyze, design, build, test, deploy) methodology employed by DP&L and others in the industry for large-scale IT projects. Business processes will be created or re-designed to minimize system customizations and maximize the use of new functionality provided by the MWM system. A project management team will be used to manage cross-project goals, to eliminate conflicts related to time, budget, functionality

and risk. Critical success factors will be established to measure continually the success of the project and to ensure that it is meeting DP&L's objectives. Achieving the full benefits of the new MWM is highly dependent on the completion of planned IT infrastructure, SOA and telecommunications upgrades, as well as availability to receive information from other new systems that are part of the CCEM plan. Implementing the MWM too soon would add additional complexity to the overall plan without providing the ability to capture most benefits. By scheduling MWM implementation in the later stages of DP&L's 7-year planning horizon, DP&L will be able to more closely align the implementation costs and system benefits.

Q. When does DP&L expect work on the MWM project to begin and to be completed?

A. DP&L expects to begin implementation of a packaged MWM solution in January 2013 with an expected completion date of December 2015.

Q. What investments does DP&L anticipate making to implement the MWM project?

A. DP&L anticipates that it will need $9,823,728 in capital over a three-year period from 2013 through 2015 to implement a new MWM system. This figure includes the hardware, software, associated maintenance and labor required to implement and deliver a new MWM system. DP&L anticipates that it will need to spend $780,506 in O&M expenses over a three-year period from 2013 through 2015 for hardware, software and labor to support MWM operations. The current MWM estimate is reasonable considering the complexity of the large number of interactive functions, data entry screens and reports included as part of the MWM service order process.

Q. Is there a Workpaper associated with the MWM project?

A. Yes. Workpaper WPH-1.4.6 - Information Technology – MWM System Summary provides details of the scope and cost information.

IX. SERVICE ORIENTED ARCHITECTURE PROJECT

Q. Can you describe the Service Oriented Architecture Project?

A. Yes. A Service Oriented Architecture (SOA) is an IT architectural approach to system design that is being implemented to support efficient system interoperability through use of standardized messages that are grouped to form business services that transfer data from one system to another, enabling easy automation, data capture and real-time measurement of high-value DP&L business processes. SOA permits different services to be run on distributed IT architecture and accessed across different networks. Using SOA, DP&L and third parties will be able to view processes and manipulate process data in real-time regardless of the multiple applications, systems and business units that they span. SOA relies on point-to-point communications using widely accepted open standards, an Enterprise Service Bus that allows a network of disparate systems to interact as one unified enterprise system, an Orchestration Engine and Business Process Management (BPM) to create integrated enterprise-level business processes, and Business Activity Monitoring (BAM) for end-to-end performance monitoring and control of DP&L business processes. Examples of high-value business processes from which the customer and DP&L would benefit as a result of implementing SOA automation are end-to-end efficiency and demand response program management, real-time outage management (OMS) and customer experience management (eServices).

Q. Is it reasonable for DP&L to include SOA?

A. Yes. The demands of CCEM Programs and similar future Smart Grid initiatives dictate that a flexible, open-standards-based design architecture be implemented so that future system changes and upgrades can be efficiently implemented. The SOA distributed computing model developed by DP&L will support interoperability of services so that future business applications can be added without requiring major modifications to existing hardware and operating platforms. The decision to begin implementation of SOA along with AMI, MDM, CIS and eServices is a logical approach to prepare for the introduction of major operating changes to DP&L's enterprise level systems.

Q. What value will DP&L gain from the SOA implementation?

A. Moving to a flexible, open-standards-based IT architectural design will position DP&L not only for implementation of its planned CCEM projects, but also will help to ensure that additional future Smart Grid improvements and system upgrades will be more easily and efficiently integrated with AMI and these other new systems. SOA's business process design methodology is built to accommodate the interoperability of services and design flexibility that will provide continuing benefits as DP&L implements new Smart Grid technologies in the future.

Q. Please explain DP&L's plan for implementing the SOA project.

A. DP&L plans to procure and configure the components necessary to support SOA for key business processes. A comprehensive, formal RFP process will be followed to evaluate and select the SOA components that will best meet DP&L's current and future operating requirements. A project team consisting of both internal DP&L resources and external consultants with experience specific to SOA implementations will be selected to develop and execute a project plan that will follow the standard system development lifecycle

(analyze, design, build, test, deploy) methodology employed by DP&L and others in the industry for its large-scale IT projects. Business processes will be created or re-designed to minimize system customizations and maximize the value achieved from implementing SOA. A project management team will be used to manage cross-project goals to eliminate conflicts related to time, budget, functionality and risk. Critical success factors will be established to measure continually the success of the project and to ensure that it is meeting DP&L's objectives. DP&L has established a 5-6 year timetable to achieve high level operational performance built around its new SOA best practices design approach. During the first 3 years, DP&L will develop its service delivery platform and common data model, and acquire the necessary hardware and software, so that it is prepared to design and test interfaces to new systems as they begin to come online in 2010 – 2011.

Q. When does DP&L expect work on the SOA project to begin and to be completed?

A. DP&L expects to begin implementation of SOA architecture upon approval by this Commission with an expected completion date of five years thereafter.

Q. What investments does DP&L anticipate making to implement the SOA project?

A. DP&L anticipates that it will need $5,279,091 in capital over a five-year period from 2009 through 2013 to implement SOA automation. This figure includes the hardware, software, associated maintenance and labor required to implement and deliver SOA automation. DP&L anticipates that it will need to spend $2,795,433 in O&M expenses over a seven-year period from 2009 through 2015 for hardware, software and labor to support SOA operations.

Q. Is there a Workpaper associated with the SOA project?

A. Yes. Workpaper WPH-1.4.7 - Information Technology – SOA Summary provides details of the scope and cost information.

X. INFRASTRUCTURE PROJECT

Q. Can you describe the Infrastructure Project?

A. Yes. Implementation of AMI and transition to the Smart Grid require use of advanced IT systems with an enterprise architecture orientation that supports business process design, and plays a key role in running the business. IT infrastructure improvements are needed to support installation and operation of the complex additional IT systems that are part of the CCEM vision. IT infrastructure to support AMI and other systems is comprised of three elements: (1) hardware to run applications; (2) disaster recovery and system management software to achieve the required user experience; and (3) reengineered IT infrastructure governance and processes to meet required IT service levels. Servers and storage with adequate capacity are necessary to ensure a reasonable response time for users in a production environment, while also supporting development, testing and disaster recovery environments. New system software and operating platforms are required to enable efficient management of applications (e.g., help desk, network monitoring, job scheduling, backup/recovery etc.). More robust security, identity and access management processes and procedures are required to deal with the increased number of new applications, networks, and communication channels that could pose unsecured entry risks. To take advantage of robust new capabilities of the infrastructure improvements, IT processes must be reengineered to accommodate more users asking more questions about a greater number of systems that are central to doing their jobs in a

cost-effective manner. The infrastructure project will provide an enterprise level foundation as well as the overarching support for all other system implementations. The company is taking an enterprise approach to system implementation, rather than a system-by-system approach, because it better supports system integration and is more cost efficient.

Q. Is it reasonable for DP&L to include the Infrastructure Project?

A. Yes. Implementing DP&L's CCEM Programs require integrated, secure, and reliable hardware and operating systems, and robust IT governance. The complex challenge of implementing several major new systems including AMI and CIS will require additional service desk, database and application support resources necessary to test new systems, perform change management and ensure that security requirements and user access are managed properly.

Q. Please explain DP&L's plan for implementing the Infrastructure Project.

A. DP&L plans to procure and configure the components necessary to build the strong IT infrastructure required to support the new systems proposed as part of the CCEM vision. A comprehensive, formal RFP process will be followed to evaluate and select the infrastructure components that will best meet our current and future operating requirements. A project team consisting of both internal DP&L resources and external consultants with experience specific to infrastructure redesign will be selected to develop and execute a project plan that will follow the standard system development lifecycle (analyze, design, build, test, deploy) methodology employed by DP&L and others in the industry for large-scale IT projects. A project management team will be used to manage cross-project goals, to eliminate conflicts related to time, budget, functionality and risk.

Critical success factors will be established to measure continually the success of the project and to ensure that it is meeting DP&L's objectives.

Q. When does DP&L expect work on the Infrastructure Project to begin and to be completed?

A. DP&L expects to begin implementation of a new IT Infrastructure upon approval by this Commission with an anticipated completion date two years thereafter.

Q. What investments does DP&L anticipate making to implement the Infrastructure Project?

A. DP&L anticipates that it will need $8,065,779 in capital over a two year-period from 2009 through 2010 to implement a new infrastructure. This figure includes the hardware, software, operating systems, associated maintenance and labor required to implement and deliver a new infrastructure. DP&L anticipates that it will need to spend $15,237,454 in O&M expenses over a seven-year period from 2009 through 2015 for hardware, software and labor to support infrastructure operations going forward.

Q. Is there a Workpaper associated with the Infrastructure Project?

A. Yes. Workpaper WPH-1.4.8 - Information Technology – Infrastructure Summary provides details of scope and cost information.

XI. WORKPAPERS WPH-1.4 – WPH-1.4.8

Q. Can you describe the process that you used to calculate the figures shown on Workpapers WPH-1.4 – WPH-1.4.8?

A. Yes. The process used a blended consulting / DP&L team, working together to provide the estimates for the systems discussed throughout this testimony. Included in the team were subject matter experts knowledgeable in each of the areas that would be affected by the CCEM requirements. The team created a list of system requirements needed to execute successfully the demand response and other programs included in this filing. Those requirements were then mapped to DP&L's people, process and technology components to determine their current and future impacts. Those impacts consisted of items such as changes in the way we do business (i.e., business process change), modifications or implementation of new systems, and changes to staffing levels and/or skills. Those impacts were then translated into changes in the number and type of tangible components (e.g., number of reports, configuration components, interfaces, etc.). To determine the labor requirement, we then applied workday counts based on our knowledge and available industry-wide information concerning execution of the same or similar work. From the workday counts, we applied labor rates to come up with the implementation costs. To determine the software costs we used an averaged software cost based on input from multiple software companies. The hardware costs were also averaged based on multiple hardware options on the market.

Q. Are you responsible for Workpapers WPH-1.4 – WPH-1.4.8?

A. Yes. I am responsible for those workpapers and for the computations to arrive at the costs for the IT systems related to each workpaper.

Q. What is shown on Workpaper WPH-1.4?

A. Workpaper WPH-1.4 depicts the summarized Capital and O&M costs by IT system, by year for 2009 through 2015. This sheet is a summary of Workpapers WPH–1.4.1 through

1.4.8. The total capital expenditure for all IT systems for 2009 through 2015 is $95,759,377. The total O&M expenditure for all IT systems for 2009 through 2015 is $37,889,811.

Q. What is shown on Workpapers WPH-1.4.1 – WPH-1.4.8?

A. Workpapers WPH-1.4.1 – WPH-1.4.8 depict the Capital and O&M costs by IT system, by year for 2009 through 2015. Capital costs include the solution implementation costs, labor expenses, hardware purchases, software purchases, and software maintenance expenses associated with the implementation of the related system and realized during the implementation phase of that system. O&M costs include solution implementation costs, labor expenses, hardware maintenance, software maintenance, and maintenance labor associated with the ongoing support of the related system. In addition, if there are annual savings associated with a given system, those dollars are shown under the Annual Systems Savings heading.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* Capital Costs," how is "Solution Implementation Costs" calculated?

A. Solution Implementation Costs under the Capital Costs heading for each system are comprised of capitalized labor costs (both internal and external) that represent the labor required to implement that particular system. Capitalized labor costs are calculated by applying a labor rate to the estimated number of days required to implement the given system. The number of estimated work days to implement the system is calculated based on analysis of the specific business requirements developed during team sessions. The labor rate is a blended rate of internal staff rates and external consulting rates specific to the skills and staff required to support a specific system implementation.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* Capital Costs," how is "Labor Expenses" calculated?

A. Labor expenses include expenses related to travel and project work such as transportation, lodging, project supplies, etc. Each IT System's capital labor expenses figure is the result of multiplying the capital solution implementation costs by a figure within the industry accepted range of standard rates (12%-16%) for calculating expenses associated with large scale, multi-year projects such as CCEM. DP&L used a slightly higher than average rate for the MDM,LMS and DMS system estimates due to increased labor expenses associated with these more complex and evolving technologies.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* Capital Costs," how is "Hardware Purchases" calculated?

A. Hardware purchases to support each of the project system implementations include components such as servers, hubs, routers, work stations, printers, storage, etc for production, development and disaster recovery environments and the associated taxes. The hardware purchases figures were driven by the IT department philosophy of standardization of platforms, open systems, and open standards. Servers and storage were estimated utilizing industry best practices to determine hardware capacity and user requirements for typical IT system implementations. The team then took an enterprise view of the hardware purchases required for each system, and utilized methods such as virtualization and consolidation to ensure that the servers and storage are sized efficiently without wasted capacity while ensuring adequate growth capability.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* Capital Costs," how is "Software Purchases" calculated?

A. Software purchases to support each of the project system implementations include application and database software licenses and ancillary end user data query tools and the associated taxes. The software purchases figures were driven by the IT department philosophy of standardization of platforms, open systems, and open standards. The figures used for our Capital cost Summary are vendor-neutral and represent a blended cost of reputable industry-established software packages.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* Capital Costs," how is "Software Maintenance" calculated?

A. Software Maintenance includes the fees payable to the software company to provide maintenance and support needed to maintain current system functionality. Software maintenance is calculated using 18% of the pre-tax Software Purchases Costs, The 18% figure is a widely-recognized standard amount charged by software vendors for ongoing maintenance of their systems. The software maintenance is included in the Summary of *[Project]* Capital Costs if the costs are incurred during the implementation. Software maintenance costs incurred after the software is installed and has been placed into production are included in Summary of *[Project]* O&M Costs.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* O&M Costs," how is "Solution Implementation Costs" calculated?

A. Under the O&M Costs heading, Solution Implementation Costs are comprised of non-capitalized labor costs (both internal and external) associated with the planning and training tasks necessary to support each system implementation. These costs can be as low as 1% and as high as 8% of the capitalized Solution Implementation Costs. In one year in particular, the costs for SOA are as high as 24% due to the increased planning and

training efforts required to establish the direction for future SOA deliverables. Utilizing this methodology to determine non-capitalizable labor costs is a widely-accepted practice within the Information Technology community.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* O&M Costs," how is "Labor Expenses" calculated?

A. Labor expenses include expenses related to travel and project work such as transportation, lodging, project supplies, etc. Each IT System's O&M cost labor expense figure is the result of multiplying the capital solution implementation costs by the industry-accepted range of standard rates (12%-16%) for calculating expenses associated with large scale, multi-year IT projects such as CCEM.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* O&M Costs," how is "Hardware Maintenance" calculated?

A. Hardware Maintenance includes the fees payable to the hardware vendor to provide maintenance and support needed to maintain the servers and storage systems. Hardware maintenance is calculated using 15% of the pre-tax Hardware Purchases Costs. The 15% is a widely recognized standard amount charged by hardware vendors to estimate the hardware maintenance costs associated with large scale, multi-year IT projects.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* O&M Costs," how is "Software Maintenance" calculated?

A. Software Maintenance includes the fees payable to the software company to provide maintenance and support needed to maintain current system functionality. Software maintenance is calculated using 18% of the pre-tax Software Purchases Costs, The 18%

is a widely-recognized standard amount charged by software vendors for ongoing maintenance and routine software support of licensed vendor software. The software maintenance costs are included in the Summary of *[Project]* Capital Costs if the costs are incurred during the implementation. Software maintenance costs incurred after the software has been installed, tested and is placed into production, are included in Summary of *[Project]* O&M Costs.

Q. In Workpapers WPH-1.4.1 – WPH-1.4.8, under "Summary of *[Project]* O&M Costs," how is "Maintenance Labor" calculated?

A. Maintenance Labor includes the incremental DP&L labor costs needed to maintain the systems necessary to fulfill the CCEM vision. The calculations for maintenance labor for each system were based on a fully-loaded hourly rate multiplied by the number of FTEs required to support the specific systems. This total number of additional resources is necessary to support the increase in IT infrastructure, databases and associated equipment, and to provide ongoing application support. To validate the IT resource increase, we contacted a utility of similar size which currently operates systems similar to those in our estimates. We found that the DP&L total IT staffing requirements were slightly lower overall than that of the comparative utility, but that our total resource requirements align closely when analyzed by functional area.

Q. **What is the source of the information shown on Workpapers WPH-1.4. – WPH-1.4.8?**

A. The information contained in Workpapers WPH-1.4 – WPH-1.4.8 was developed using a typical IT system estimating methodology recognized throughout the IT industry that uses as input, the parameters and logical assumptions developed as a result of defining a

set of high-level system requirements by DP&L IT and business subject matter experts. The DP&L team used historical and industry data, interviews, meetings, and vendor information, and conducted workshops directly involving key DP&L stakeholders in addition to drawing on the extensive experience of an external consulting firm to arrive at system designs that meet our business requirements and are consistent with DP&L's CCEM vision.

Q. Are the investments outlined in the Workpapers that you have provided, WHP-4.1 – WHP-4.1.8 reasonable and prudent?

A. Yes. DP&L has conducted extensive analysis of business needs and available solutions, and considers the dollar investments outlined in Workpapers WHP-4.1 – WHP-4.1.8 to be reasonable and prudent. As stated above, DP&L assembled a team of subject matter specialists to arrive at solid business requirements for each system, incorporating logical and well thought-out plans. Using an industry-accepted bottom-up estimation approach, a final estimate for each system was developed. Each system estimate was then subjected to several reviews for reasonableness by soliciting the opinions of internal and external experienced software project managers and estimating specialists. DP&L will further refine its IT system costs upon completion of a comprehensive, formal RFP process that will be employed to evaluate and select the IT systems required to support the business needs of the CCEM projects and best meet its current and future operating requirements.

XII. CONCLUSION

Q. Please summarize your testimony.

A. In summary, the IT systems that DP&L proposes to implement to achieve its Customer Conservation and Energy Management vision over the next 7 years will enable its customers to receive the near term significant benefits which AMI offers today, and will also lay the foundation for implementation of additional smart grid technologies with additional capabilities that provide even greater operational efficiencies, increased reliability and new customer services. DP&L's IT system architecture was developed specifically to support AMI implementation as part of the overall CCEM initiative. In addition to enabling DP&L to implement a wide range of energy efficiency programs, these systems will provide real-time data about the DP&L distribution network extending all the way to the customer's premise. The availability and use of this data will provide us with a comprehensive view and better understanding of our distribution system. Working together, the proposed supporting IT systems make it possible for DP&L to establish new rates based on time-differentiated consumption data, and to improve outage detection and restoration capabilities available through AMI. Furthermore, they will enable transmission and distribution operations personnel to sense, monitor, and analyze information from many data sources at various levels of system granularity, which will allow system planners to utilize this information to optimize use of DP&L's assets. Finally, by establishing a strong web presence, and offering a variety of beneficial eService options, DP&L will be able to increase customer satisfaction by enabling our customers to better control their own energy use.

Q. Does this conclude your direct testimony?

A. Yes, it does.

BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO

BOOK II – Customer Conservation and Energy Management Programs

DIRECT TESTIMONY

OF KEVIN L. HALL

- ☐ 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

KEVIN L. HALL

ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY

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I. INTRODUCTION

Q. Please state your name and business address.

A. Kevin L. Hall, 1900 Dryden Rd., Dayton, Ohio 45439.

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

A. I am employed by the Dayton Power and Light Company ("DP&L") as its Director of Transmission and Distribution Engineering.

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

A. I have been in my present position since July 2007.

Q. What are your responsibilities in your current position and to whom do you report?

A. I have responsibility for the distribution planning function for the Company along with its distribution, substation and transmission line engineering areas, as well as several of the Company's technical operations including the metering department, downtown electric network operations, substation maintenance and construction group, and the test department. I report to the Senior Vice President, Service Operations.

Q. Briefly describe your professional experience prior to your current position.

A. I have been continuously employed by DP&L since June 1991. From 1991 through 1995, I was assigned to the substation and transmission maintenance/construction groups as a maintenance engineer, project manager and group leader. In 1996, I was named Manager of System Operating and had the responsibility of leading the real-time grid

operations group through wholesale transmission access change.

In 2004, I was designated as the Project Manager responsible for the Company's integration into the PJM Regional Transmission Organization (RTO). In 2005, I became the Director of Design Engineering, with responsibility for the design and engineering of the Company's distribution facilities. I also have responsibility for implementation of the North American Electric Reliability Corporation's Critical Infrastructure Protection Standards (CIP).

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

A. I hold a Bachelor's degree in Electrical Engineering from the University of Cincinnati along with a Masters in Business Administration from the University of Dayton. I am a registered professional engineer in the State of Ohio.

Q. Have you previously provided testimony before the Federal Energy Regulatory Commission ("FERC")?

A. Yes. I have previously provided written testimony before the FERC regarding DP&L's Open Access Transmission Tariff.

Q. What is the purpose of this testimony?

A. The purpose of my testimony is to support the definition and calculation of the societal benefits attributable to DP&L's Customer Conservation and Energy Management ("CCEM") proposal. Societal benefits are those benefits that accrue directly or indirectly to customers or society, rather than to the utility.

Q. Describe your role in the development of this CCEM proposal.

A. I was the Company representative during the Commission-Ordered Workshops Regarding Smart Metering Deployment (Case No. 07-646-EL-UNC). At the conclusion of the workshop proceedings, Staff encouraged the Ohio utilities to continue work on their AMI and smart grid initiatives. Staff also welcomed the development of estimates for societal benefits by the utilities. Subsequently, the four Ohio utilities commissioned a study of societal benefits with the Electric Power Research Institute ("EPRI"). I continued to be the Company representative during the EPRI study period as well.

Q. What Exhibits are you supporting?

A. I am supporting exhibits KLH A-1 and KLH B-1.

II. APPROACH TO QUANTIFYING SOCIETAL BENEFITS

Q. Please describe the methodology used to value societal benefits.

A. DP&L joined three other Ohio utilities to commission a report from EPRI to provide a framework and methodology for valuing the societal benefits associated with advanced metering infrastructure ("AMI"). Exhibit KLH A-1 shows our approach. Societal benefits are divided into seven categories:

1) Demand Response Products

Universal deployment of AMI enables greater demand response by making all consumers potential participants in time-varied pricing or load control programs. Increased participation in demand response programs results in both capacity and energy savings.

2) Improved Utilization Efficiency

CCEM improves end-use efficiency in two ways: (1) the rollout of AMI and corresponding Home Energy Displays provides consumers with timely and readily available information about their electricity usage pattern and the corresponding cost, which knowledge will result in a reduction in the overall use of electricity; and (2) DP&L's proposed energy efficiency programs provide incentives to curtail energy consumption. Improved utilization efficiency results in both energy and capacity savings.

3) Other Products and Services

EPRI's analysis shows that new revenue streams may become viable from supplemental services enabled by AMI. DP&L is not seeking recovery for any investment associated with new products and services at this time.

4) Enhanced Service Quality

The source of this benefit is advanced metering and smart grid capabilities that enable the utility to reduce the frequency or duration of electrical outages.

5) Macroeconomic Impacts

EPRI's analysis shows that changes in regional economic output, such as employment and wages, may be attributable to AMI. It would be speculative to quantify such impacts at this time.

6) Externalities

Externalities are secondary benefits associated with kW and kWh impacts attributable to another benefit source, such as demand response or feedback. For the purposes of quantifying externalities from CCEM, DP&L has estimated the value of reduced carbon emissions associated with demand response, energy efficiency programs, and reduced

line losses from smart grid development.

7) **Distribution Network Efficiency**

This category accounts for the reduction in energy and peak demand associated with DP&L's smart grid investments. In particular, DP&L's investments in distribution and substation automation will reduce line losses and allow reductions in peak demand via dynamic voltage control.

Q. Did DP&L modify the framework proposed by EPRI to incorporate benefits associated with DP&L's integrated vision for the CCEM Programs?

A. Yes. DP&L's CCEM Programs include AMI, demand response and energy efficiency programs, and smart grid development. Therefore, the Company modified EPRI's framework in two ways. In the category of improved utilization efficiency the Company included benefits associated with DP&L's proposed energy efficiency programs as well as those benefits associated directly with AMI. Second, DP&L added a new category of benefits, distribution network efficiency, which is not included in EPRI's framework. This new category captures the societal benefits of DP&L's smart grid development plan.

Q. How did you estimate the benefits of demand response products?

A. There are two components of benefits associated with demand response products. The first component is the value of avoided peak capacity stemming from direct load control, time-based pricing programs, and C&I curtailment programs. The second component is the value of avoided energy usage resulting from MWh savings from the same programs.

Q. Why have you included societal benefits for C&I curtailment programs when DP&L does not plan to offer those programs?

A. DP&L decided not to offer C&I curtailment programs because the Company believes that the market is already mature, with third-party firms offering such services. However, their curtailment services are enabled by DP&L's AMI infrastructure. Consequently, the third-party curtailment benefits derive in part from the AMI deployment, which is why the Company included those benefits in its calculations.

Q. How did you estimate the capacity reduction resulting from third-party C&I curtailment?

A. Industry benchmarks show that utilities with mature interruptible programs can shed up to 8% of C&I peak capacity from C&I curtailment programs. For DP&L's service territory, this number results in a total reduction potential of 170 MW. DP&L estimates that third-party curtailment providers will achieve one-half of this reduction within the next five years, and the remainder will be achieved in the subsequent ten years. Given the rapid growth of the curtailment market, the Company believes this figure to be a reasonable, indeed conservative, estimate.

Q. How did you put a monetary value on the cost of avoided peak capacity and energy?

A. For demand, the Company multiplied the total number of peak megawatts saved by the market price for peak capacity. For energy, we multiplied the megawatt-hour savings by the market price of energy. We used this same methodology for all energy and demand valuations associated with societal benefits. For detail on how the demand and energy savings were determined, please refer to testimony provided by Ms. Bubp. For detail on how the prices of avoided energy and capacity were determined, please refer to the testimony of Ms. Marrinan.

Q. How did you determine the value of improved utilization efficiency?

A. Improved utilization efficiency represents the value of avoided energy and peak capacity associated with DP&L's energy efficiency programs as well as that associated with the deployment of Home Energy Devices. Again, for demand, the Company multiplied the total number of peak megawatts saved by the market price for peak capacity. For energy, we multiplied the megawatt-hour savings by the market price of energy.

Q. How did you determine the value of enhanced service quality?

A. First, the Company estimated the outage time reduction potential from the AMI and Smart Grid programs. Based on vendor estimates, the Company believes that it can reduce average outage time by 5% for customers with AMI meters. Moreover, the Company believes that it can reduce average outage time by 22% once the Smart Grid is fully deployed. The detailed sources and calculations can be found in WPH-1.9. The combined average outage time reduction is 19 minutes per year.

To determine the monetary value of this reduction, we used values provided by EPRI for an average outage cost per hour for residential, small C&I and large C&I customers. For C&I customers, these costs reflect the out-of-pocket and opportunity costs associated with an outage (e.g., lost productivity). For residential customers, the costs were based on the amount that customers would be willing to pay to avoid an outage or, conversely, their willingness to accept payment for the interruption. We assumed that the outage time reduction is consistent across all customer groups. Detailed calculations can be found in WPH-1.9.

Q. How did you determine the value of the externalities?

A. While many externalities exist, the only externality that is both significant and reasonably quantifiable is the value of emissions. Consequently, DP&L valued reduced carbon emissions as part of our societal benefits analysis. Reduced carbon emissions are a function of the total megawatt-hour reduction associated with DP&L's demand response products, improved utilization efficiency and distribution network efficiency. The Company multiplied those numbers by its CO_2 emission per megawatt hour generated to get the total eliminated carbon tonnage.

To determine the dollar value for the eliminate carbon emissions, the Company used the guidelines given by California regulators as quoted in the EPRI report. Detailed calculations can be found in WPH-1.9.

Q. How did you determine the value of distribution network efficiency?

A. One effect of the Company's smart grid development plan is improved efficiency of the distribution network. The Company will reduce line losses and build the capability to deploy dynamic load control during times of peak demand. The testimony of Mr. Teuscher provides details of how energy and demand savings from network efficiency were determined.

Q. Why are societal benefits based on a fifteen-year period?

A. Both AMI and smart grid have considerable up-front costs and benefits that stretch out over a number of years. Therefore, it is necessary to take a longer-term view of the initiatives to determine accurately and fairly their true value to society. The Company

needs to select an appropriate period to measure the societal benefits from the program. The Company selected fifteen years because that period coincides with the depreciable life of the AMI meters and with the end of the program's expenditures for this project.

Q. What is the combined value of all of these societal benefits?

A. DP&L estimates that its CCEM Programs will generate $682 million in societal benefits. Please see exhibit KLH B-1 for a detailed breakdown.

III. WORKPAPERS

Q. For what workpapers are you responsible?

A. I am responsible for WPH-1.9

Q. What information is provided in WPH-1.9?

A. This workpaper provides the detailed calculations upon which our societal benefit estimates are based. It shows the net present value of each of the individual benefit categories discussed in Section II. The demand response product section (lines 1 – 8) shows the cost savings from avoided capacity and energy stemming from DP&L direct load control and time-based pricing, as well as from third-party curtailment programs. The improved utilization efficiency section (lines 10-15) shows the cost savings associated with avoided energy and capacity stemming from DP&L's energy efficiency programs and Home Energy Displays. The enhanced service quality section (lines 17 - 50) shows how the Company calculated the reduction in outage time and determined the associated monetary value, including the average hourly cost of outage reductions by

customer class, as well as the source for this information. The externalities section (lines 53 – 62) shows how the Company calculated total carbon emissions and determined the associated monetary value. This section includes DP&L's CO_2 emissions per ton and the monetary value per ton of CO_2, as well as the source for this information. Last, the distribution network efficiency section (lines 64 – 68) shows the cost savings from avoided capacity and energy stemming from DP&L's smart grid initiative.

IV. CONCLUSION

Q. Please summarize your testimony.

A. In summary, the Company estimates that DP&L's CCEM Programs will generate $682 million in societal benefits. In combination with operational benefits for the utility, this value more than justifies the expense associated with DP&L's CCEM Programs.

DP&L's approach to estimating societal benefits is sound and conservative for several reasons. First, every component of the Company's estimates was tailored to DP&L's service territory and customer base. Whenever possible, the Company built bottom-up estimates of the potential opportunity for societal benefits. When benchmarks were necessary, the Company selected highly conservative ones and then applied them as specifically as possible to its service territory and customer base. Moreover, it excluded those benefits that could not be calculated with a meaningful degree of precision. Last, the Company's evaluation approach is based on EPRI's recommended framework, which is also being utilized by other Ohio utilities. Given EPRI's considerable experience in this area and the Company's active participation in the process of developing the methodology, DP&L is confident of its soundness.

Q. Does this conclude your direct testimony?

A. Yes, it does.

DPL

Exhibit KLH A-1

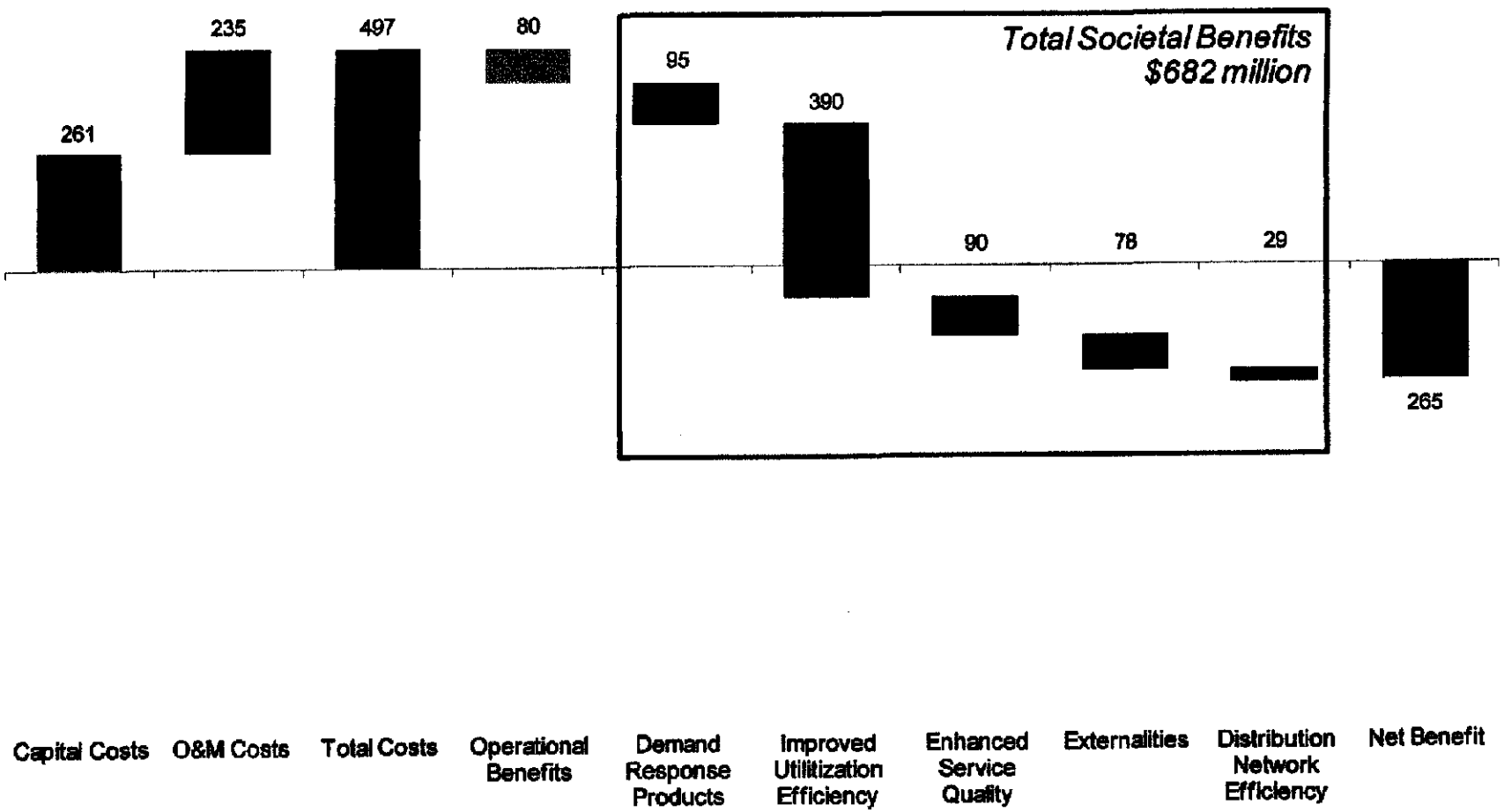
Source of Benefits	CCEM Initiative	Value Component
Demand Response Products	Demand Response Programs (enabled by AMI)	Capacity Energy
Improved Utilization Efficiency	Energy Efficiency Programs Home Energy Display	Capacity Energy
Other Products and Services	Not Applicable	Revenue
Enhanced Service Quality	AMI Smart Grid Development	Outage Duration
Macroeconomic Impacts	Not Applicable	Unemployment/Wages
Externalities (Carbon Emissions)	Demand Response Programs Energy Efficiency Smart Grid Development	Market Value of Emissions
Distribution Network Efficiency	Smart Grid Development	Capacity Energy

Sourced: Based on Framework Developed by EPRI

Exhibit KLH B-1

CCEM Societal Benefits Analysis

15-Year-NPV (millions of dollars)



BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO

BOOK II – Customer Conservation and Energy Management Programs

DIRECT TESTIMONY

OF CHRIS T. HERGENRATHER

- ☐ 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

CHRIS T. HERGENRATHER

ON BEHALF OF
THE DAYTON POWER & LIGHT COMPANY

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I. INTRODUCTION

Q. Would you please state your name and business address for the record?

A. My name is Chris T. Hergenrather. My business address is 1065 Woodman Drive, Dayton, Ohio 45432.

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

A. I am employed by The Dayton Power and Light Company ("DP&L") as Senior Manager, Tax.

Q. Would you describe briefly your educational and business background?

A. I am a 1981 graduate of Wright State University with a Bachelor of Science in Accounting and received a Masters of Business Administration in Management in 1988, also from Wright State University. I am also a member of the Edison Electric Institute's Taxation Subcommittee. I joined DP&L in September 1981, and worked until 1992 in various accounting positions. In February 1992, I moved into DP&L's Tax Department in a staff position. In 2000, I was promoted to Supervisor, and in 2002 I was promoted to Tax Manager. In 2007, I was promoted to Senior Manager, Tax. In my current position I am responsible for matters related to DP&L's tax liabilities.

Q. What are the purposes of your testimony?

A. The purposes of my testimony are to support and explain (1) the calculation of the gross revenue conversion factor; (2) changes in DP&L's property tax liabilities resulting from the Customer Conservation and Energy Management ("CCEM") property investments;

and (3) changes in DP&L's deferred taxes due to changes in DP&L's rate base as a result of the CCEM investment.

Q. What schedules and workpapers do you sponsor?

A. I am sponsoring Schedule A-4, Schedule B-7, Schedule C-4, Schedule C-4.1 and the associated workpapers. These schedules and workpapers were prepared based on information provided in Schedule B-2, Schedule B-3 and Schedule B-5 relating to DP&L's anticipated investment in Transmission and Distribution Infrastructure and Energy Efficiency property.

II. GROSS REVENUE CONVERSION FACTOR

Q. Can you explain the purpose of a gross revenue conversion factor?

A. Yes. DP&L, like most businesses, has uncollectible accounts, and pays taxes on its profits. The purpose of a gross revenue conversion factor is to determine how much total revenue DP&L must receive so that DP&L will receive its revenue requirements after accounting for uncollectibles and taxes. DP&L's revenue requirement is thus multiplied by the gross revenue conversion factor to determine the total revenue DP&L is entitled to receive.

Q. Can you explain how you calculated the gross revenue conversion factor in this matter?

A. Yes. That calculation is shown on Summary Schedule A-4. The gross revenue conversion factor is used to determine incremental revenue requirements by identifying and quantifying incremental costs (such as uncollectibles) and tax changes that vary with revenue. DP&L's historic rate of uncollectible accounts and applicable statutory income tax rates are used in the calculations and all tax percentages include the effects of other

taxes on the incremental rate. Dona Seger-Lawson sponsors the workpaper showing the calculation of the uncollectible rate.

Q. Please describe why Summary Schedule A-4 shows two different gross revenue conversion factors.

A. The gross revenue conversion factor is used on Schedule A-2 to increase the Revenue Requirement exclusive of Income Taxes. The O&M/Debt gross revenue conversion factor excludes the tax components of the factor recognizing that the items included in the O&M/Debt Revenue Requirement exclusive of Income Taxes are deductible for tax purposes. In other words, for each incremental dollar of revenue required there is an offsetting dollar of expenses deducted and no additional revenues are needed to cover incremental increases in tax. The O&M/Debt gross revenue conversion factor compensates only for uncollectible expense. The Equity Revenue Requirement exclusive of Income Taxes is not tax deductible, so each incremental dollar of revenue required will result in additional income tax. Therefore, the Equity gross revenue conversion factor is needed to increase the Revenue Requirement to compensate for the incremental income tax in addition to the uncollectible expense.

III. DEFERRED TAXES

Q. Can you explain what deferred taxes are and how they affect DP&L's rate base?

A. Yes. Deferred taxes represent the tax effect of timing differences in the recognition of income and deductions for tax and when income and deductions are recognized for books. Generally, Financial Accounting Standards Board Statement No. 109 requires deferred taxes to be measured by the difference between the net tax basis (gross tax asset

or liability less accumulated tax depreciation) and the net book basis (gross book asset or liability less accumulated book depreciation). In DP&L's case, deferred taxes arise due to the fact that tax laws generally permit a utility to depreciate its assets at a faster rate than the utility can depreciate those assets on its regulatory books. The accelerated tax depreciation permits a utility to recognize increased expenses on its tax returns, and thus pay lower taxes. Since a utility has received the benefit of paying lower taxes, that benefit is used to reduce the utility's rate base.

Q. Will DP&L experience a change in deferred taxes as a result of the CCEM project?

A. Yes. Schedule A-4 shows that DP&L will invest in a significant amount of new property which will increase rate base. DP&L will depreciate this property on its tax books at a rate faster than DP&L will depreciated the property on its regulatory books. As explained above, that accelerated depreciation creates deferred taxes.

Q. Can you describe how you calculated the change in deferred taxes that DP&L experienced between the base period and the test period?

A. Yes. That calculation is shown on Schedule B-7. Schedule B-7 computes the deferred tax balances related to new investment in Transmission and Distribution Infrastructure and Energy Efficiency property utilizing the net tax basis shown on Workpaper WPB-7.1 and Workpaper WPB-7.2. Workpapers WPB-7.1.1, WPB-7.2.1, WPB-7.2.2, and WPB-7.2.3 compute net tax basis using the current tax depreciation methodology to arrive at the net tax basis. The net tax basis of retirements of infrastructure is computed on Workpaper WPB-7.4 and is netted against the tax basis of the new investment to arrive at the net tax basis on Workpaper WPB-7.2. Net book basis was computed using gross

plant additions from Schedule B-2 and the accumulated depreciation from Schedule B-3. Net book basis of retirements is shown on Schedule B-5. Schedule B-2, Schedule B-3, and Schedule B-5 are sponsored by Greg Campbell. The difference between the net tax basis and the net book basis times the current tax rate provides the deferred tax balance by year.

IV. PROPERTY TAXES

Q. Are there any O&M changes related to taxes as a result of the CCEM project?

A. Yes. The CCEM project consists of a significant investment in new property which will be subject to Ohio's public utility property tax. This investment will cause a significant increase in property tax expense to DP&L as shown on Schedule C-4 and a reduction in property tax expense to DP&L as a result of the retirement of property as shown on Schedule C-4.1.

Q. Can you explain how you quantified the changes to DP&L's expenses due to changes in personal property tax?

A. Yes. The results of my calculations are summarized on Workpaper WPC-4. My calculations are shown on Workpapers WPC-4.1, WPC-4.2, and WPC-4.3. Those schedules quantify the effect of the additional investment on DP&L's expenses on a year-by-year basis. The public utility property tax provides statutory depreciation factors for different classes of property. Those schedules apply the statutory depreciation factors to the amount of property placed in service annually. The public utility property tax also assesses the property tax on a percentage of the depreciated value. This percentage, known as the listing percentage or assessment percentage, is 84% for transmission and

distribution property. The resulting assessed value is multiplied by the average property tax rate, as determined on Workpaper WPC-4.4, to arrive at the property taxes. DP&L has also recognized that as property is retired DP&L will realize a reduction in its current property tax obligation. Schedule C-4.1 shows the reduction in property tax as a result of the retirement of property due to the CCEM project. The results of my calculations supporting the reduction in property tax expense are summarized on Workpaper WPC-4.5. Workpapers WPC-4.5.1 and WPC-4.5.2 show the calculations of the property tax reduction. Those workpapers apply the statutory depreciation factors to the amount of property after determining the estimated age of the property retired. The public utility property tax also assesses the property tax on a percentage of the depreciated value. This percentage, known as the listing percentage or assessment percentage, is 84% for transmission and distribution property. The resulting assessed value is multiplied by the average property tax rate, as determined on Workpaper WPC-4.4, to arrive at the property taxes.

V. CONCLUSION

Q. Please summarize your testimony.

A. This testimony explains and supports: (1) the calculation of DP&L's gross revenue conversion factor; (2) the changes in deferred taxes on the capital investment and their effect on rate base; and (3) the effect of property taxes on DP&L's O&M costs.

Q. Does this conclude your direct testimony?

A. Yes it does.

BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY
CASE NO. 08-1094-EL-SSO

BOOK II – Customer Conservation and Energy Management Programs

DIRECT TESTIMONY

OF SCOTT J. KELLY

- ☐ 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

SCOTT J. KELLY

ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Scott J. Kelly. My business address is 1065 Woodman Drive, Dayton, OH 45432.

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

A. I am employed by The Dayton Power and Light Company ("DP&L" or "Company") as Senior Vice President, Service Operations.

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

A. I assumed my present position in March, 2007. Prior to that, I was Director of Engineering and Business Development (1/2002 – 3/2007), Customer Business Manager (6/2001 – 1/2002), Customer Group Manager (1/1997 – 6/2001), Operations Manager, Marysville (12/1995 – 12/1996), Assistant Manager, Centerville (4/1995 – 12/1995) and Assistant Manager assigned to Special Project Team (11/1994 – 4/1995).

Q. What are your responsibilities in your current position and to whom do you report?

A. In my current position, I am responsible for delivering reliable and quality service to Dayton Power and Light's 500,000 customers located throughout West Central Ohio. I report to the President and Chief Executive Officer of DP&L.

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

A. I received a Bachelor of Science degree in Mechanical Engineering from Carnegie Mellon in 1988 and a Master of Business Administration from Xavier University in 2006.

Prior to DP&L, I spent six years at Rockwell International, holding various Manager-level positions.

Q. What is the purpose of this testimony?

A. The purpose of this testimony is to support and explain DP&L's request for approval of its plan for the Customer Conservation and Energy Management ("CCEM") Programs. I will provide a high-level overview of the project and subsequent testimony will cover key components in more detail.

Q. Describe your role in the development of this CCEM proposal.

A. I provided overall leadership and oversight in the preparation of the business case for the CCEM project.

Q. What chapter and Exhibits are you supporting?

A. I am supporting Chapter 1, "Executive Summary of The Dayton Power & Light Company's Customer Conservation and Energy Management Programs." I also support Exhibits SJK A-1, A-2, B-1, B-2, and B-3.

II. OVERVIEW OF DP&L'S CUSTOMER CONSERVATION AND ENERGY MANAGEMENT PROJECT

Q. Can you please describe DP&L's Customer Conservation and Energy Management ("CCEM") project?

A. Yes. By means of this Application, DP&L proposes a seven-year roadmap for establishing the necessary building blocks for what the Company envisions as the

Customer Conservation and Energy Management ("CCEM") Programs. The three fundamental building blocks of DP&L's CCEM Programs are:

- **Energy Efficiency & Demand Response.** Establishment of a robust set of energy efficiency and demand response programs targeted toward giving customers the ability to control their own energy usage and expenditures.
- **Delivery System Modernization.** Building an Advanced Metering Infrastructure ("AMI") and developing key elements of the smart grid such as distribution and substation automation.
- **Enabling Infrastructure.** Addressing gaps in DP&L's existing information technology and telecommunications infrastructure to be able to support and realize the full potential of both AMI and smart grid functionality.

Exhibit SJK A-1 summarizes this roadmap for building DP&L's CCEM Programs.

Q. What are you requesting from the Commission?

A. The Company is seeking approval to spend and to recover in rates $297M in capital and $186M in O&M over 7 years to implement energy efficiency & demand response programs, to build AMI, and launch a smart grid development plan. DP&L is seeking recovery of O&M costs, depreciation of and return on capital, and shared savings.

Q. What time period are you covering in this application?

A. Seven years starting upon Commission approval.

Q. Please identify the principal components of DP&L's CCEM proposal to the Commission.

A. DP&L has provided the Commission with detailed documentation in support of its CCEM roadmap. The roadmap consists of four chapters:

- Chapter 1: Executive Summary of The Dayton Power & Light Company's Customer Conservation and Energy Management Programs,
- Chapter 2: The Dayton Power & Light Company's Energy Efficiency and Demand Response Plan,
- Chapter 3: The Dayton Power & Light Company's Advanced Metering Infrastructure Plan, and
- Chapter 4: The Dayton Power & Light Company's Smart Grid Development Plan.

The executive summary briefly summarizes the integrated CCEM plan. Each subsequent chapter provides a description of the proposed program or delivery system modernization initiative and provides detail regarding any enabling infrastructure investment required to support the program or initiative. I will briefly describe the major components of the CCEM plan. Additional testimony will be provided by DP&L representatives and external consultants to support each module in greater detail.

I) Energy Efficiency and Demand Response Programs

The objective of DP&L's Energy Efficiency and Demand Response Plan is to enhance our customers' energy value. Customers will immediately be able to exercise more control over their energy usage and expenditures. The programs will also help us achieve the targets set out in S.B. 221. The Plan has three primary elements.

- ***Residential Portfolio of Programs.*** The residential portfolio of programs offers customers multiple opportunities to better control their energy usage and costs while promoting comprehensive actions that can create the most value for customers. Specific program elements include:
  - Residential Lighting point of purchase buy downs,
  - Residential Heating, Ventilation and Air Conditioning ("HVAC") Diagnostics & Tune-Up discount,
  - Residential HVAC Rebates,
  - Residential Appliance Recycling,
  - Residential Appliance Rebates,
  - Residential Low Income Energy Audits and Funding for Initiatives that have a Benefit-to-Cost Ratio Better than 1.0,
  - Residential Direct Load Control,
  - Residential Time of Use Pricing,
  - Residential Peak Time Rebate Pricing, and
  - Home Energy Displays ("HED").

DP&L will also continue to explore opportunities to influence the efficiency of the new housing stock via partnering with home builders and architects; however, given low new home growth at this time, the Company does not plan to launch a broad-scale new construction program. As circumstances change the Company will re-evaluate based on the estimated value proposition to our customers from such programs. In the meantime, DP&L plans to pursue small opportunities with existing residential homes to gather energy consumption and premise-performance data that

will help us to refine and refresh the overall program portfolio. The Company is evaluating an innovative energy information system that will allow customers to monitor the efficiency of their end-use activities and equipment.

- ***Non-Residential Portfolio of Programs.*** The portfolio includes a wide variety of individual technology and/or device incentives. Specific program elements include:
  - Prescriptive Rebates for lighting, HVAC, motors & drives, and compressed air;
  - Custom Rebates;
  - Non-Residential Direct Load Control; and
  - Non-Residential Time of Use Pricing.

- ***Education / Awareness / Market Transformation Activities.*** DP&L recognizes the importance of customer education. The Company will implement educational outreach initiatives to build and expand consumer energy management awareness. DP&L plans to launch these programs as soon as possible following Commission approval of DP&L's request. DP&L will use and enhance existing energy education venues and networks such as its website, various customer communications modalities and school presentations to maximize the public's exposure to these initiatives. The Company will also explore partnering with energy efficiency vendors and channel partners to build an energy efficiency showcase and educational facility.

2) AMI and Enabling Infrastructure

The objective of the Company's plan to implement AMI is to introduce new functionality that will support the improvement of operations and provide greater value to customers. The key functionality AMI will provide for DP&L customers include:

- The availability of interval data and accurate load shapes that can be made available to customers to help them manage energy costs.
- The enabling technology for the success of demand response by providing reliable interval data necessary to measure and verify load reductions and the creation of a platform to engage customers in demand response.
- The ability to quickly and accurately recognize service restoration needs, allowing improved crew dispatch, reduction in unneeded trips to customers whose service has already been restored, and improved communications with customers and the community.
- The fundamental enabling component of the smart grid. Much of the benefit to implementing a smart grid infrastructure relies on the capture of data detailed and timely enough to communicate the status of the utility distribution system to process-intelligent controls for the distribution equipment.

There are four primary components necessary for AMI system configurations which make up our AMI implementation plan.

- **Meters and Modules.** The proposed AMI system calls for the replacement of all residential and commercial meters with digital electronic meters and meter module combinations that provide full AMI functionality.

- **Communications Network & Equipment.** The AMI communications solution consists of communications hardware and software and associated system and data management software that create a two-way communications network between AMI

meters and utility business systems which allow collection and distribution of information to customers and the utility.

- **Home Energy Displays.** DP&L's plan includes support for a customer Home Area Network (HAN) and includes energy display devices that are easy to access and to use. These devices will show customers their energy usage, trends, and current energy prices. DP&L will make energy displays available to customers who do not have Internet access.

- **IT Systems.** Effective implementation of AMI technology requires the acquisition and implementation of supporting IT systems including a customer information system ("CIS"), meter data management system ("MDMS") and e-Services. These system investments are required to make it possible for DP&L to manage the enhanced operational environment as well as to allow customers to access data and interact with DP&L.

*3) **Smart Grid Development***

The Company's long-term vision of a Smart Grid includes a fully network-connected system that identifies and communicates the status of the power grid and automates distribution decision-making systems. Expected results from planned Smart Grid implementation will be a greatly improved delivery system that reduces line losses, maximizes customer service and system reliability, allows for operational savings for DP&L and generates substantial benefits for society at large.

Smart Grid infrastructure is expected to create an energy system that will enhance both operational performance and improve outcomes by allowing DP&L to:

- Detect and address emerging problems on the system before they affect service;

- Respond to local and system-wide inputs and provide additional information about broader system problems;
- Incorporate extensive measurements, rapid communications, centralized advanced diagnostics, and feedback control that quickly return the system to a stable state after interruptions or disturbances;
- Automatically adapt protective systems to accommodate changing system conditions,
- Re-route power flows, change load patterns, improve voltage profiles, and take other corrective steps within seconds of detecting a problem;
- Enable distributed energy resources and demand response loads to be integrated into operations;
- Improve reliability and security; and
- Provide system operators with advanced visualization tools to enhance their ability to oversee, manage, and troubleshoot the system, for improved reliability for customers.

By means of this Application the Company is proposing a 7-year smart grid development plan which involves the deployment of a sub-set of smart grid technologies, primarily pertaining to distribution and substation automation. Smart grid development in combination with AMI systems and demand response programs will achieve operational, reliability, and efficiency benefits. Following this 7-year development phase DP&L expects to submit an expanded proposal for full deployment of an integrated smart grid implementation plan.

The 7-year smart grid development plan will focus on effective implementation of distribution automation technology which requires the installation of a series of controls, switches and monitors as well as a supporting communications infrastructure.

In addition, the Company proposes to automate all substations by upgrading relay protection and communication systems in substations to enable fault isolation and load redistribution.

Q. When will the CCEM project be implemented?

A. Exhibit SJK A-2 provides detail as to the expected implementation of the key components of CCEM. Most initiatives will be launched within 30 days of Commission approval, and for purposes of this exhibit we assume implementation begins in January, 2009. However some components cannot be implemented until the underlying infrastructure is in place; consequently, some CCEM components have a staged deployment. In summary, DP&L expects that the following components will be implemented at the following times:

1) ***Energy Efficiency and Demand Response Programs***

Energy efficiency programs will be launched in January of 2009. Direct Load Control, however, is dependent upon AMI meters being in place along with supporting telecommunications infrastructure. Therefore Direct Load Control will be launched in June of 2010 when a sufficient number of meters are in the field. Full deployment of Direct Load Control is expected in June of 2011. Similarly, Time-of-Use Pricing and Peak Time Rebates are dependent upon AMI meters, a telecommunications

infrastructure, as well as a flexible billing system capable of supporting time-based rates. Consequently, Time-of-Use Pricing and Peak Time Rebates will be launched in 2011.

2) AMI and Enabling Infrastructure

The Company plans to begin installing AMI meters upon Commission approval and the deployment is expected to be complete in six years. The supporting communications network infrastructure which is necessary for two-way communication between the meters and the utility will be deployed alongside the new meters and is expected to be complete in four years. Home Energy Displays will be deployed starting in 2010 and deployment will be complete after five years. Deployment of the IT systems necessary to support meter data collection and analysis as well as customer interfaces and bill presentment will begin immediately upon Commission approval. IT system deployment will be managed over a three-year time period with the exception of the Infrastructure Solution module which will be completed in the first year-and-a-half and Service Oriented Architecture which will continue through year-end 2013. Two additional IT systems, Outage Management System/Distribution Management and Mobile Workforce will not be deployed until 2011 and 2012 respectively, as they require not only AMI meters to be in place but also a subset of circuits to be fully automated using smart grid technologies.

3) Smart Grid Development

In years 2009 through 2014, DP&L plans to automate 4 circuits per year and in 2015 will automate 30-50 circuits as part of the distribution automation development plan. Circuits will be prioritized based on reliability and customer impact. Also in years 2009 through 2014, DP&L plans to automate 6-7 substations per year and 12 substations in 2015 as part

of the substation automation development plan. The customer reliability benefits of substation control will be immediately felt by customers.

III. BUSINESS CASE

Q. What investments does DP&L anticipate making to implement the CCEM Programs?

A. Detail of spending by module is summarized in Exhibit SJK B-1. In summary DP&L anticipates it will need to invest $297.1M in capital and $185.8M in O&M over the seven years covered in this Application. The majority of capital expenditure, $255.0M is in support of AMI deployment, $41.6M is required for smart grid development and only $0.5M in capital is necessary to support our energy efficiency & demand response programs. $118.4M in O&M is required for energy efficiency & demand response program implementation, $63.1M in O&M will go toward AMI, and $4.3M toward smart grid development.

Q. Is that investment reasonable and prudent?

A. Yes. Over the past year DP&L has evaluated the various technologies to implement AMI and smart grid. Technology vendors have given presentations to cross-functional teams within the Company. DP&L employees attended several conferences and visited utilities that have implemented different components of AMI and smart grid technologies to gain a broader knowledge of the successes and pitfalls which others have experienced in the implementation of these technologies. DP&L also engaged an external consulting firm, Bridge Strategy Group, to assist the Company in research and analysis to develop a feasible and cost-effective CCEM strategy.

The information for estimating meter, communication equipment, and installation costs was developed from proposals provided by vendors based on a formal request for proposal ("RFP") process. DP&L also worked with a third-party consulting firm, Accenture, to develop the IT, IT related infrastructure and IT integration requirements necessary to support the future CCEM capabilities.

The methodology for estimating costs for energy efficiency & demand response programs included:

- Benchmarking program costs at leading utilities;
- Conducting market research to identify program take-up rates;
- Issuing price elasticity surveys to identify appropriate incentive levels; and
- Issuing RFPs for direct load control vendors.

Q. How did DP&L determine which elements of the existing infrastructure and/or systems need to be replaced?

A. The Company built a blueprint of the systems and infrastructure required to support the energy efficiency, safety, and reliability capabilities of the CCEM Programs. Analysis was conducted to determine whether existing infrastructure and systems could be expanded or modified in a cost effective manner, or whether it would be necessary to replace them. Detail of the specific assessments regarding telecommunication infrastructure and IT systems are supported in the testimony of DP&L witnesses Teuscher and Garrison.

Q. Can you identify the amount of energy and peak demand that DP&L believes can be saved through the CCEM project?

A. Yes. Exhibit SJK B-3 provides a breakout of energy and peak demand savings expected as a result of CCEM. In summary, based on our seven-year development plan the Company expects to reduce energy consumption by 2,528,952 MWh and reduce peak demand by 183MW in 2015.

Q. How much will this increase rates for the various classes of consumers?

DP&L estimates that CCEM will result in a 7-year compound annual growth rate of 1.2% for residential customers, 1.5% for commercial customers, and 1.9% for industrial customers. The Company expects that in many cases customers will actually be able to lower their energy bills by utilizing the enhanced energy management infrastructure made available to them as part of CCEM.

Q. What are the benefits to the consumer of CCEM?

A. The Customer Conservation and Energy management Programs will provide customers with the following benefits.

- Improved power reliability;
- Greater billing accuracy;
- Less intrusive meter reading and service connection/disconnection;
- Improved outage response;
- Empowerment to control usage and expenditure; and
- More customer information and choices via:
  - Time-of-Use Pricing,

- Demand response, and
- eServices.

It is worth noting that some of these benefits and other benefits that accrue to society at large can be quantified. Mr. Hall's testimony will discuss DP&L's approach to quantifying this category of "societal benefits."

Q. What are the benefits of CCEM to the Company and its shareholders?

A. Exhibit SJK B-2 provides a summary of operational benefits as a result of CCEM. Total operational benefits to the Company and shareholders are $53M over seven years, $52M from AMI and $1M from development of distribution and substation automation technologies.

Examples of the sources of these operational benefits to the company and shareholders from CCEM include the following:

- Reduction in meter reading and other service expense,
- Reduction in energy theft,
- Improved meter accuracy,
- Reduction in field service,
- Lower load research costs,
- Elimination of false outage dispatches, and
- Lower bill processing costs from fewer exceptions.

The benefits from the CCEM Programs have been conservatively stated. Additional benefits to the Company and shareholders that DP&L did not attempt to quantify at this early stage include:

- Rapid fault isolation and load distribution from automated switches,
- Improved substation monitoring and remote control,
- Enriched power quality monitoring through sensors,
- Improved power factor and lower line losses from automated capacitors, and
- Enablement of distributed generation.

IV. CONCLUSION

Q. Please summarize your testimony.

A. This testimony supports DP&L's request for approval of its plan for the Customer Conservation and Energy Management ("CCEM") Programs. Further testimony will be provided by DP&L personnel and third party consultants in order to give enhanced detail in the following areas:

- Energy Efficiency & Demand Response Programs
    - Program Selection and Cost and Benefits Estimates
    - Total Resource Cost Tests
    - Valuation of Demand and Energy
- T&D Infrastructure Investments

- IT System Investments
- Proposed Cost and Revenue Recovery Model
- Customer Rate Impact
- Cost of Capital
- Tax Treatment
- Accounting Treatment

Q. Does this conclude your direct testimony?

A. Yes, it does.

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EXHIBIT SJK A-1

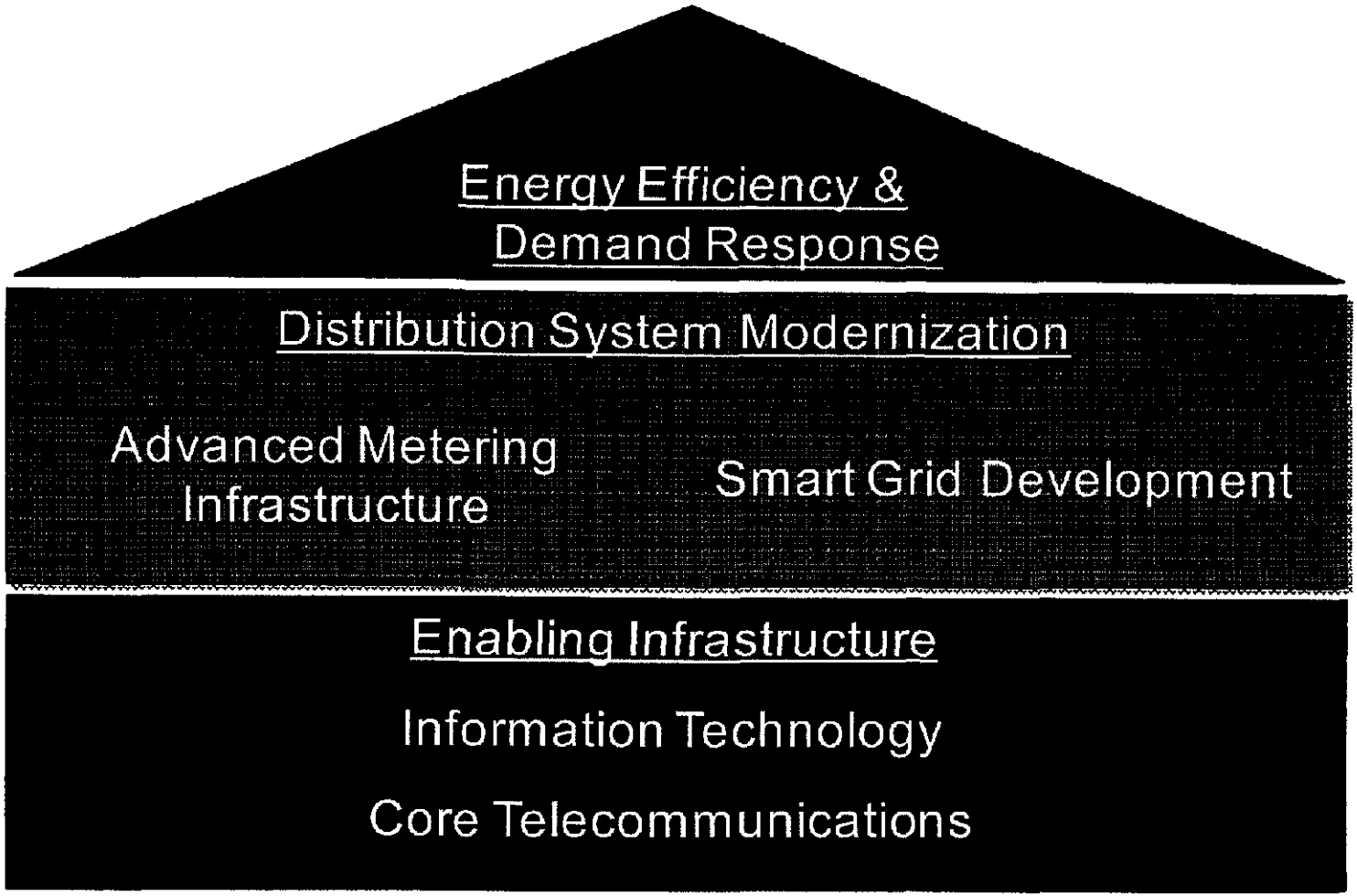

EXHIBIT SJK A-2

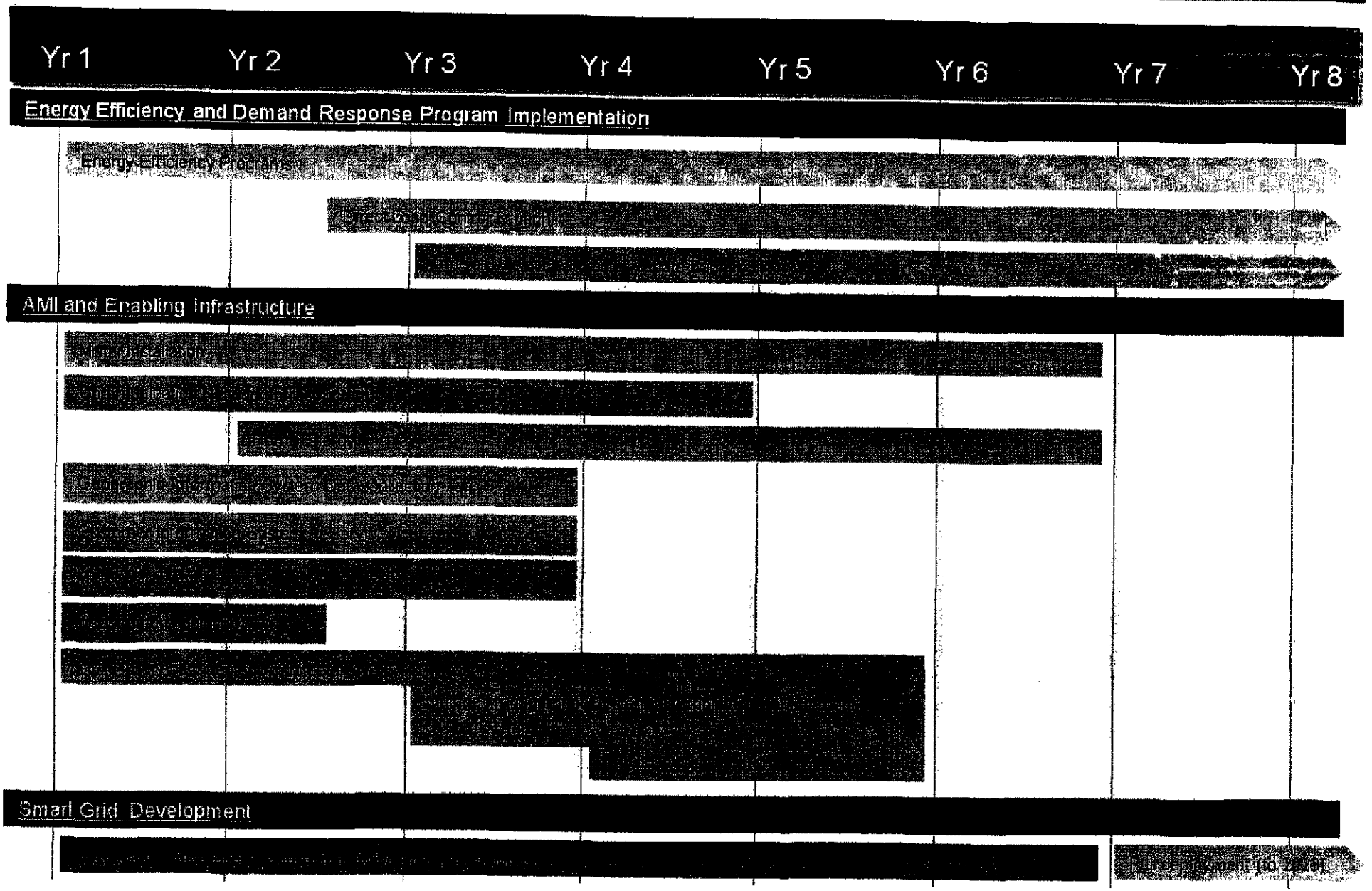

Exhibit SJK B-1

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J) = (sum(C:I))
1	Capital ($000)								
2	Energy Efficiency & Demand Response	-	505	-	-	-	-	-	505
3	AMI	59,954	54,406	41,045	37,205	34,192	26,761	1,455	255,017
4	Smart Grid Development	7,538	7,228	5,103	3,790	3,203	3,471	11,270	41,603
5	Total Capital	67,493	62,139	46,147	40,995	37,395	30,231	12,725	297,125
6									
7	O&M ($000)								
8	Energy Efficiency & Demand Response	8,988	13,513	16,465	17,752	19,539	20,723	21,457	118,438
9	AMI	1,074	3,860	8,496	11,403	12,262	13,069	12,895	63,058
10	Smart Grid Development	109	496	629	718	773	800	828	4,353
11	Total O&M	10,171	17,868	25,590	29,873	32,574	34,592	35,179	185,848

Work Paper Reference No(s): WPG-1, WPH-1, WPI-1

Exhibit SJK B-2

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J) = (sum(C:I))
1	Operational Benefits ($000)								-
2	Energy Efficiency & Demand Response								
3	AMI	117	1,055	2,818	7,680	10,789	13,823	15,430	51,713
4	Smart Grid Development	23	63	105	147	190	235	365	1,128
5	Total Operational Benefits	140	1,117	2,923	7,828	10,979	14,058	15,795	52,840

Work Paper Reference No(s): WPG-1, WPH-1, WPI-1

Exhibit SJK B-3

Line No.	Description	2009	2010	2011	2012	2013	2014	2015	Total
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J) = (sum(C:I))
1	Energy Savings (MWh)								
2	Energy Efficiency & Demand Response	53,509	138,280	234,220	342,382	458,685	575,896	671,870	2,474,842
3	AMI	-	-	-	-	-	-	-	-
4	Smart Grid Development	1,405	2,823	4,086	5,508	6,926	8,339	25,023	54,110
5	Total Energy Savings	54,914	141,103	238,306	347,890	465,611	584,235	696,893	2,528,952
6									
7	Demand Savings (MW)								
8	Energy Efficiency & Demand Response	11	27	48	73	105	141	178	
9	AMI	-	-	-	-	-	-	-	
10	Smart Grid Development	-	1	1	1	2	2	5	
11	Total Demand Savings	11	28	49	74	106	143	183	

Work Paper Reference No(s): WPG-1