

PPL Electric Utilities Corporation
Rate Schedule LP-4
Large General Service at Secondary Voltage
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

PRESENT RATE	Units	Rate	Rate Revenue
Transmission			
All KW	13,054,555	\$1.61000	\$21,017,834
All KWH	5,789,729,986	\$0.00133	\$7,700,341
Subtotal			\$28,718,175
Distribution			
All KW	12,795,190	\$2.312	\$29,582,479
First 200 Hours	2,508,232,481	\$0.00000	\$0
Next 200 Hours	2,170,416,386	\$0.00000	\$0
Excess KWH	1,111,081,119	\$0.00000	\$0
Subtotal			\$29,582,479
Energy & Capacity			
All KW	12,795,190	\$4.046	\$51,769,339
First 200 Hours	2,508,232,481	\$0.04908	\$123,104,050
Next 200 Hours	2,170,416,386	\$0.03696	\$80,218,590
Excess KWH	1,111,081,119	\$0.03175	\$35,276,826
Subtotal	5,789,729,986		\$290,368,805
Competitive Transition Charge			
All KW	12,795,190	\$0.232	\$2,968,484
First 200 Hours	2,508,232,481	\$0.00290	\$7,273,874
Next 200 Hours	2,170,416,386	\$0.00224	\$4,861,733
Excess KWH	1,111,081,119	\$0.00195	\$2,166,608
Subtotal	0		\$17,270,699
Intangible Transition Charge			
All KW	12,795,190	\$0.679	\$8,687,934
First 200 Hours	2,508,232,481	\$0.00848	\$21,269,811
Next 200 Hours	2,170,416,386	\$0.00654	\$14,194,523
Excess KWH	1,111,081,119	\$0.00570	\$6,333,162
Subtotal	5,789,729,986		\$50,485,430
T. O. D. Metering L4C	5,263	\$14.65	\$77,103 \$156,905
Econ. Dev. Credits			(\$18,183,546)
Total Rate Revenue			\$398,476,050

PROPOSED RATE	Units	Rate	Rate Revenue
Transmission			
All KW	13,054,555	\$1.61000	\$21,017,834
All KWH	5,789,729,986	\$0.00133	\$7,700,341
Subtotal			\$28,718,175
Distribution			
All KW	12,795,190	2.290	\$29,300,985
First 200 Hours	2,508,232,481	\$0.00000	\$0
Next 200 Hours	2,170,416,386	\$0.00000	\$0
Excess KWH	1,111,081,119	\$0.00000	\$0
Subtotal	5,789,729,986		\$29,300,985
Energy & Capacity			
All KW	12,795,190	4.046	\$51,769,339
First 200 Hours	2,508,232,481	\$0.04908	\$123,104,050
Next 200 Hours	2,170,416,386	\$0.03696	\$80,218,590
Excess KWH	1,111,081,119	\$0.03175	\$35,276,826
Subtotal	5,789,729,986		\$290,368,805
Competitive Transition Charge			
All KW	12,795,190	0.232	\$2,968,484
First 200 Hours	2,508,232,481	\$0.00290	\$7,273,874
Next 200 Hours	2,170,416,386	\$0.00224	\$4,861,733
Excess KWH	1,111,081,119	\$0.00195	\$2,166,608
Subtotal	5,789,729,986		\$17,270,699
Intangible Transition Charge			
All KW	12,795,190	0.679	\$8,687,934
First 200 Hours	2,508,232,481	\$0.00848	\$21,269,811
Next 200 Hours	2,170,416,386	\$0.00654	\$14,194,523
Excess KWH	1,111,081,119	\$0.00570	\$6,333,162
Subtotal	5,789,729,986		\$50,485,430
T. O. D. Metering L4C	5,263	\$0.00	\$0 \$139,397
Econ. Dev. Credits			(\$18,183,546)
Total Rate Revenue			\$398,099,945

Summary of Total Revenues

Total from bill distributions Proposed Rates	\$398,099,945
Total from bill distributions Present Rates	\$398,476,050
Rate Change Amount	-\$376,105
Percent	-0.09%
2006 Rate revenue under Present Rates	\$402,363,602
Rate Change Percent	-0.09%
Amount	-\$362,127
2006 Projected Revenue under Proposed Rates	\$402,001,475
2007 Rate revenue under Present Rates	\$386,340,595
Rate Change Percent	-0.09%
Amount	-\$347,707
2007 Projected Revenue under Proposed Rates	\$385,992,888

PPL Electric Utilities Corporation
Rate Schedule LP-4
Off-Peak Space Conditioning and Water Heating (LAC)
Calculation Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

<u>PRESENT RATE</u>	<u>Units</u>	<u>Rate</u>	<u>Rate Revenue</u>
<u>Transmission</u>			
All KW	27,037	\$1.61000	\$43,530
All KWH	3,005,230	\$0.00133	\$3,997
Subtotal			<u>\$47,527</u>
<u>Distribution</u>			
All KW	2,213	\$2.429	\$5,375
All KWH	3,005,230	\$0.00387	\$11,630
Subtotal			<u>\$17,005</u>
<u>Energy & Capacity</u>			
All KWH	3,005,230	\$0.02073	\$62,298
<u>Competitive Transition Charge</u>			
All KWH	3,005,230	\$0.00165	\$4,959
<u>Intangible Transition Charge</u>			
All KWH	3,005,230	\$0.00806	\$24,222
T. O. D. Metering	61	\$14.65	\$894
Total Rate Revenue			<u><u>\$156,905</u></u>
<u>PROPOSED RATE</u>	<u>Units</u>	<u>Rate</u>	<u>Rate Revenue</u>
<u>Transmission</u>			
All KW	27,037	\$1.61000	\$43,530
All KWH	3,005,230	\$0.00133	\$3,997
Subtotal			<u>\$47,527</u>
<u>Distribution</u>			
All KW	2,213	\$0.00000	\$0
All KWH	3,005,230	\$0.00013	\$391
Subtotal			<u>\$391</u>
<u>Energy & Capacity</u>			
All KWH	3,005,230	\$0.02073	\$62,298
<u>Competitive Transition Charge</u>			
All KWH	3,005,230	\$0.00165	\$4,959
<u>Intangible Transition Charge</u>			
All KWH	3,005,230	\$0.00806	\$24,222
T. O. D. Metering	61	\$0.00	\$0
Total Rate Revenue			<u><u>\$139,397</u></u>

PPL Electric Utilities Corporation
Rate Schedule IS-P (R)
Interruptible Large General Service at 12,470 Volts or Higher
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

PRESENT RATE	Units	Rate	Rate Revenue
Transmission			
All KW	774,787	\$1.61000	\$1,247,407
All KWH	320,075,335	\$0.00133	\$425,700
Subtotal			\$1,673,107
Distribution			
All KW	331,301	4.758	\$1,576,330
First 400 KWH	125,342,900	\$0.00000	\$0
Excess KWH	194,732,435	\$0.00000	\$0
Subtotal			\$1,576,330
Energy & Capacity			
All KW	331,301	3.682	\$1,219,850
First 400 KWH	125,342,900	\$0.04395	\$5,508,820
Excess KWH	194,732,435	\$0.02625	\$5,111,726
Subtotal			\$11,840,396
Competitive Transition Charge			
All KW	331,301	-0.091	(\$30,148)
First 400 KWH	125,342,900	(\$0.00119)	(\$149,158)
Excess KWH	194,732,435	(\$0.00075)	(\$146,049)
Subtotal			(\$325,355)
Intangible Transition Charge			
All KW	331,301	0.880	\$291,545
First 400 KWH	125,342,900	\$0.01004	\$1,258,443
Excess KWH	194,732,435	\$0.00631	\$1,228,762
Subtotal			\$2,778,750
T. O. D. Metering	336	\$14.33	\$4,815
Total Rate Revenue			\$17,548,043

PROPOSED RATE	Units	Rate	Rate Revenue
Transmission			
All KW	774,787	\$1.61000	\$1,247,407
All KWH	320,075,335	\$0.00133	\$425,700
Subtotal			\$1,673,107
Distribution			
All KW	331,301	\$4.45000	\$1,474,289
First 400 KWH	125,342,900	\$0.00000	\$0
Excess KWH	194,732,435	\$0.00000	\$0
Subtotal			\$1,474,289
Energy & Capacity			
All KW	331,301	\$3.68200	\$1,219,850
First 400 KWH	125,342,900	\$0.04395	\$5,508,820
Excess KWH	194,732,435	\$0.02625	\$5,111,726
Subtotal	320,075,335		\$11,840,396
Competitive Transition Charge			
All KW	331,301	-0.091	(\$30,148)
First 400 KWH	125,342,900	(\$0.00119)	(\$149,158)
Excess KWH	194,732,435	(\$0.00075)	(\$146,049)
Subtotal	320,075,335		(\$325,355)
Intangible Transition Charge			
All KW	331,301	0.880	\$291,545
First 400 KWH	125,342,900	\$0.01004	\$1,258,443
Excess KWH	194,732,435	\$0.00631	\$1,228,762
Subtotal	320,075,335		\$2,778,750
T. O. D. Metering	336	\$0.00	\$0
Total Rate Revenue			\$17,441,187

Summary of Total Revenues	
Total from bill distributions Proposed Rates	\$17,441,187
Total from bill distributions Present Rates	\$17,548,043
Rate Change Amount	-\$106,856
Percent	-0.61%
2006 Rate revenue under Present Rates	\$18,501,779
Rate Change Percent	-0.61%
Amount	-\$112,861
2006 Projected Revenue under Proposed Rates	\$18,388,918
2007 Rate revenue under Present Rates	\$20,464,461
Rate Change Percent	-0.61%
Amount	-\$124,833
2007 Projected Revenue under Proposed Rates	\$20,339,628

PPL Electric Utilities Corporation
 Rate Schedule LP-5
 Large General Service at 69,000 Volts or Higher
 Calculation of Effect of Proposed Rate vs. Current Tariff
 Based on bill frequency distribution for 12 months ended December 2006

PRESENT RATE	Units	Rate	Rate Revenue
Transmission			
All KW	5,215,044	\$1.76400	\$9,199,338
All KWH	3,063,803,130	\$0.00120	\$3,676,564
Subtotal			\$12,875,902
Distribution			
All KW	6,309,306	\$0.172	\$1,085,201
First 200 Hours	1,167,893,030	\$0.00000	\$0
Next 200 Hours	1,084,422,891	\$0.00000	\$0
Excess KWH	811,487,209	\$0.00000	\$0
Subtotal			\$1,085,201
Energy & Capacity			
All KW	6,309,306	\$4.895	\$30,884,053
First 200 Hours	1,167,893,030	\$0.04337	\$50,651,521
Next 200 Hours	1,084,422,891	\$0.03649	\$39,570,591
Excess KWH	811,487,209	\$0.03134	\$25,432,009
Subtotal	3,063,803,130		\$146,538,174
Competitive Transition Charge			
All KW	6,309,306	\$0.292	\$1,842,317
First 200 Hours	1,167,893,030	\$0.00278	\$3,246,743
Next 200 Hours	1,084,422,891	\$0.00237	\$2,570,082
Excess KWH	811,487,209	\$0.00206	\$1,671,664
Subtotal	3,063,803,130		\$9,330,806
Intangible Transition Charge			
All KW	6,309,306	\$0.866	\$5,463,859
First 200 Hours	1,167,893,030	\$0.00819	\$9,565,044
Next 200 Hours	1,084,422,891	\$0.00699	\$7,580,116
Excess KWH	811,487,209	\$0.00607	\$4,925,727
Subtotal	3,063,803,130		\$27,534,746
T. O. D. Metering	1,367	\$8.05	\$11,004
Eco. Dev. Credits			(\$14,258,662)
Total Rate Revenue			\$183,117,171

PROPOSED RATE	Units	Rate	Rate Revenue
Transmission			
All KW	5,215,044	\$1.76400	\$9,199,338
All KWH	3,063,803,130	\$0.00120	\$3,676,564
Subtotal			\$12,875,902
Distribution			
Total Bills	1,367	\$800.000	\$1,093,600
First 200 Hours	1,246,804,430	\$0.00000	\$0
Next 200 Hours	1,090,304,591	\$0.00000	\$0
Excess KWH	726,694,109	\$0.00000	\$0
Subtotal	3,063,803,130		\$1,093,600
Energy & Capacity			
All KW	6,309,306	\$4.895	\$30,884,053
First 200 Hours	1,167,893,030	\$0.04337	\$50,651,521
Next 200 Hours	1,084,422,891	\$0.03649	\$39,570,591
Excess KWH	811,487,209	\$0.03134	\$25,432,009
Subtotal	3,063,803,130		\$146,538,174
Competitive Transition Charge			
All KW	6,309,306	\$0.292	\$1,842,317
First 200 Hours	1,167,893,030	\$0.00278	\$3,246,743
Next 200 Hours	1,084,422,891	\$0.00237	\$2,570,082
Excess KWH	811,487,209	\$0.00206	\$1,671,664
Subtotal	3,063,803,130		\$9,330,806
Intangible Transition Charge			
All KW	6,309,306	\$0.866	\$5,463,859
First 200 Hours	1,167,893,030	\$0.00819	\$9,565,044
Next 200 Hours	1,084,422,891	\$0.00699	\$7,580,116
Excess KWH	811,487,209	\$0.00607	\$4,925,727
Subtotal	3,063,803,130		\$27,534,746
T. O. D. Metering	1,367	\$0.00	\$0
Eco. Dev. Credits			(\$14,258,662)
Total Rate Revenue			\$183,114,566

Summary of Total Revenues

Total from bill distributions Proposed Rates	\$183,114,566
Total from bill distributions Present Rates	\$183,117,171
Rate Change Amount	-\$2,605
Percent	0.00%
2006 Rate revenue under Present Rates	\$183,690,354
Rate Change Percent	0.00%
Amount	\$0
2006 Projected Revenue under Proposed Rates	\$183,690,354
2007 Rate revenue under Present Rates	\$182,475,688
Rate Change Percent	0.00%
Amount	\$0
2007 Projected Revenue under Proposed Rates	\$182,475,688

PPL Electric Utilities Corporation
Rate Schedule IS-T (R)
Interruptible Large General Service at 69,000 Volts or Higher
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

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PRESENT RATE	Units	Rate	Rate Revenue
Transmission			
All KW	2,689,788	\$1.76400	\$4,744,786
All KWH	1,915,227,926	\$0.00120	\$2,298,274
Subtotal			\$7,043,060
Distribution			
All KW	894,752	\$0.585	\$523,430
First 400 KWH	357,900,800	\$0.00000	\$0
Excess KWH	1,557,327,126	\$0.00000	\$0
Subtotal	1,915,227,926		\$523,430
Energy & Capacity			
All KW	894,752	\$5.564	\$4,978,400
First 400 KWH	357,900,800	\$0.03956	\$14,158,556
Excess KWH	1,557,327,126	\$0.02518	\$39,213,497
Subtotal	1,915,227,926		\$58,350,453
Competitive Transition Charge			
All KW	894,752	-\$0.068	(\$60,843)
First 400 KWH	357,900,800	(\$0.00044)	(\$157,476)
Excess KWH	1,557,327,126	(\$0.00028)	(\$436,052)
Subtotal	1,915,227,926		(\$654,371)
Intangible Transition Charge			
All KW	894,752	\$1.261	\$1,128,282
First 400 KWH	357,900,800	\$0.00854	\$3,056,473
Excess KWH	1,557,327,126	\$0.00570	\$8,876,765
Subtotal	1,915,227,926		\$13,061,520
T. O. D. Metering	304	\$8.56	\$2,602
Total Rate Revenue			\$78,326,694

PROPOSED RATE	Units	Rate	Rate Revenue
Transmission			
All KW	2,689,788	\$1.76400	\$4,744,786
All KWH	1,915,227,926	\$0.00120	\$2,298,274
Subtotal			\$7,043,060
Distribution			
Total Bills	304	\$1,460.000	\$443,840
First 400 KWH	357,900,800	\$0.00000	\$0
Excess KWH	1,557,327,126	\$0.00000	\$0
Subtotal	1,915,227,926		\$443,840
Energy & Capacity			
All KW	894,752	\$5.564	\$4,978,400
First 400 KWH	357,900,800	\$0.03956	\$14,158,556
Excess KWH	1,557,327,126	\$0.02518	\$39,213,497
Subtotal	1,915,227,926		\$58,350,453
Competitive Transition Charge			
All KW	894,752	-\$0.068	(\$60,843)
First 400 KWH	357,900,800	(\$0.00044)	(\$157,476)
Excess KWH	1,557,327,126	(\$0.00028)	(\$436,052)
Subtotal	1,915,227,926		(\$654,371)
Intangible Transition Charge			
All KW	894,752	\$1.261	\$1,128,282
First 400 KWH	357,900,800	\$0.00854	\$3,056,473
Excess KWH	1,557,327,126	\$0.00570	\$8,876,765
Subtotal	1,915,227,926		\$13,061,520
T. O. D. Metering	304	\$0.00	\$0
Total Rate Revenue			\$78,244,502

Summary of Total Revenues

Total from bill distributions Proposed Rates	\$78,244,502
Total from bill distributions Present Rates	\$78,326,694
Rate Change Amount	-\$82,192
Percent	-0.10%
2006 Rate revenue under Present Rates	\$87,247,553
Rate Change Percent	-0.10%
Amount	-\$87,248
2006 Projected Revenue under Proposed Rates	\$87,160,305
2007 Rate revenue under Present Rates	\$88,641,513
Rate Change Percent	-0.10%
Amount	-\$88,642
2007 Projected Revenue under Proposed Rates	\$88,552,871

PPL Electric Utilities Corporation
Rate Schedule LP-6
Large General Service at 69,000 Volts or Higher
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

PRESENT RATE	Units	Rate	Rate Revenue
Transmission			
All KW	731,208	\$1.76400	\$1,289,851
All KWH	427,174,000	\$0.00120	\$512,609
Subtotal			\$1,802,460
Distribution			
All KW	765,395	\$0.042	\$32,147
First 400 Hours	306,158,000	\$0.00000	\$0
Next 200 Hours	110,352,600	\$0.00000	\$0
Excess KWH	10,663,400	\$0.00000	\$0
Subtotal	427,174,000		\$32,147
Energy & Capacity			
All KW	765,395	\$4.793	\$3,668,538
First 400 Hours	306,158,000	\$0.04005	\$12,261,628
Next 200 Hours	110,352,600	\$0.02369	\$2,614,253
Excess KWH	10,663,400	\$0.01850	\$197,273
Subtotal	427,174,000		\$18,741,692
Competitive Transition Charge			
All KW	765,395	(\$0.451)	(\$345,193)
First 400 Hours	306,158,000	(\$0.00366)	(\$1,120,538)
Next 200 Hours	110,352,600	(\$0.00227)	(\$250,500)
Excess KWH	10,663,400	(\$0.00182)	(\$19,407)
Subtotal	427,174,000		(\$1,735,638)
Intangible Transition Charge			
All KW	765,395	\$1.714	\$1,311,887
First 400 Hours	306,158,000	\$0.01389	\$4,252,535
Next 200 Hours	110,352,600	\$0.00863	\$952,343
Excess KWH	10,663,400	\$0.00696	\$74,217
Subtotal	427,174,000		\$6,590,982
T. O. D. Metering	46	\$2.68	\$123
Total Rate Revenue			\$25,431,766

PROPOSED RATE	Units	Rate	Rate Revenue
Transmission			
All KW	731,208	\$1.76400	\$1,289,851
All KWH	427,174,000	\$0.00120	\$512,609
Subtotal			\$1,802,460
Distribution			
Total Bills	46	\$900.000	\$41,400
First 400 Hours	310,229,200	\$0.00000	\$0
Next 200 Hours	108,337,800	\$0.00000	\$0
Excess KWH	8,607,000	\$0.00000	\$0
Subtotal	427,174,000		\$41,400
Energy & Capacity			
All KW	765,395	\$4.793	\$3,668,538
First 400 Hours	306,158,000	\$0.04005	\$12,261,628
Next 200 Hours	110,352,600	\$0.02369	\$2,614,253
Excess KWH	10,663,400	\$0.01850	\$197,273
Subtotal	427,174,000		\$18,741,692
Competitive Transition Charge			
All KW	765,395	(\$0.451)	(\$345,193)
First 400 Hours	306,158,000	(\$0.00366)	(\$1,120,538)
Next 200 Hours	110,352,600	(\$0.00227)	(\$250,500)
Excess KWH	10,663,400	(\$0.00182)	(\$19,407)
Subtotal	427,174,000		(\$1,735,638)
Intangible Transition Charge			
All KW	765,395	\$1.714	\$1,311,887
First 400 Hours	306,158,000	\$0.01389	\$4,252,535
Next 200 Hours	110,352,600	\$0.00863	\$952,343
Excess KWH	10,663,400	\$0.00696	\$74,217
Subtotal	427,174,000		\$6,590,982
T. O. D. Metering	46	\$0.00	\$0
Total Rate Revenue			\$25,440,896

Summary of Total Revenues	
Total from bill distributions Proposed Rates	\$25,440,896
Total from bill distributions Present Rates	\$25,431,766
Rate Change Amount	\$9,130
Percent	0.04%
2006 Rate revenue under Present Rates	\$26,338,956
Rate Change Percent	0.04%
Amount	\$10,536
2006 Projected Revenue under Proposed Rates	\$26,349,492
2007 Rate revenue under Present Rates	\$24,525,676
Rate Change Percent	0.04%
Amount	\$9,810
2007 Projected Revenue under Proposed Rates	\$24,535,486

PPL Electric Utilities Corporation
Rate Schedule L/PEP
Power Service to Electric Propulsion
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

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<u>PRESENT RATE</u>	<u>Units</u>	<u>Rate</u>	<u>Rate Revenue</u>
<u>Transmission</u>			
All KW	267,264	\$1.76400	\$471,454
All KWH	62,010,000	\$0.00120	\$74,412
Subtotal			\$545,866
<u>Distribution</u>			
Facility Charge	12	\$3,329.11	\$39,949
All KW	306,056	\$1.345	\$411,645
First 60 Hours (1,200,000 KWH Max)	14,400,000	\$0.00000	\$0
Next 250 Hours	45,190,000	\$0.00000	\$0
Excess KWH	2,420,000	\$0.00000	\$0
T. O. D. Metering	12	\$14.64	\$176
230 KV Credit	306,056	\$0.00	\$0
Subtotal			\$451,770
<u>Energy & Capacity</u>			
All KW	306,056	\$2.721	\$832,778
First 60 Hours (1,200,000 KWH Max)	14,400,000	\$0.02949	\$424,656
Next 250 Hours	45,190,000	\$0.02759	\$1,246,792
Excess KWH	2,420,000	\$0.01686	\$40,801
Subtotal	62,010,000		\$2,545,027
<u>Competitive Transition Charge</u>			
All KW	306,056	\$0.498	\$152,416
First 60 Hours (1,200,000 KWH Max)	14,400,000	\$0.00466	\$67,104
Next 250 Hours	45,190,000	\$0.00440	\$198,836
Excess KWH	2,420,000	\$0.00291	\$7,042
Subtotal	62,010,000		\$425,398
<u>Intangible Transition Charge</u>			
All KW	306,056	\$1.890	\$578,446
First 60 Hours (1,200,000 KWH Max)	14,400,000	\$0.01814	\$261,216
Next 250 Hours	45,190,000	\$0.01709	\$772,297
Excess KWH	2,420,000	\$0.01117	\$27,031
Subtotal	62,010,000		\$1,638,990
Total Rate Revenue			\$ 5,607,051

<u>PROPOSED RATE</u>	<u>Units</u>	<u>Rate</u>	<u>Rate Revenue</u>
<u>Transmission</u>			
All KW	267,264	\$1.76400	\$471,454
All KWH	62,010,000	\$0.00120	\$74,412
Subtotal			\$545,866
<u>Distribution</u>			
Customer Charge	12	\$37,100.00	\$445,200
All KW	306,056	\$0.000	\$0
First 60 Hours (1,200,000 KWH Max)	14,400,000	\$0.00000	\$0
Next 250 Hours	45,190,000	\$0.00000	\$0
Excess KWH	2,420,000	\$0.00000	\$0
T. O. D. Metering	12	\$0.00	\$0
230 KV Credit	306,056	\$0.00	\$0
Subtotal			\$445,200
<u>Energy & Capacity</u>			
All KW	306,056	\$2.721	\$832,778
First 60 Hours (1,200,000 KWH Max)	14,400,000	\$0.02949	\$424,656
Next 250 Hours	45,190,000	\$0.02759	\$1,246,792
Excess KWH	2,420,000	\$0.01686	\$40,801
Subtotal	62,010,000		\$2,545,027
<u>Competitive Transition Charge</u>			
All KW	306,056	\$0.498	\$152,416
First 60 Hours (1,200,000 KWH Max)	14,400,000	\$0.00466	\$67,104
Next 250 Hours	45,190,000	\$0.00440	\$198,836
Excess KWH	2,420,000	\$0.00291	\$7,042
Subtotal	62,010,000		\$425,398
<u>Intangible Transition Charge</u>			
All KW	306,056	\$1.890	\$578,446
First 60 Hours (1,200,000 KWH Max)	14,400,000	\$0.01814	\$261,216
Next 250 Hours	45,190,000	\$0.01709	\$772,297
Excess KWH	2,420,000	\$0.01117	\$27,031
Subtotal	62,010,000		\$1,638,990
Total Rate Revenue			\$5,600,481

<u>Summary of Total Revenues</u>		
Total from bill distributions Proposed Rates		\$5,600,481
Total from bill distributions Present Rates		\$5,607,051
Rate Change Amount		-\$6,570
Percent		-0.12%
2006 Rate revenue under Present Rates		\$5,430,247
Rate Change Percent		-0.12%
Amount		-\$6,516
2006 Projected Revenue under Proposed Rates		\$5,423,731
2007 Rate revenue under Present Rates		\$5,696,108
Rate Change Percent		-0.12%
Amount		-\$6,835
2007 Projected Revenue under Proposed Rates		\$5,689,273

PPL Electric Utilities Corporation
Rate Schedule ISA
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

PRESENT RATE	Units	Rate	Rate Revenue
Transmission			
All KW	202,692	\$1.76400	\$357,549
All KWH	438,159,287	\$0.00120	\$525,791
Subtotal			\$883,340
Distribution			
Customer Charge	12	\$19,822.73	\$237,873
All KW	90,000	\$3.05	\$274,500
Firm KWH	438,159,287	\$0.00018	\$78,869
Interruptible KWH	0	\$0.00000	\$0
Subtotal	438,159,287		\$591,242
Energy & Capacity			
All KW	90,000	\$1.92	\$172,800
Firm KWH	438,159,287	\$0.03248	\$14,231,414
Interruptible KWH	0	\$0.02997	\$0
Excess KWH	0	Market Value	Market Value
Subtotal	438,159,287		\$14,404,214
Competitive Transition Charge			
All KW	90,000	\$0.14	\$12,600
Firm KWH	438,159,287	\$0.00236	\$1,034,056
Interruptible KWH	0	\$0.00219	\$0
Subtotal	438,159,287		\$1,046,656
Intangible Transition Charge			
All KW	90,000	\$0.48	\$43,200
Firm KWH	438,159,287	\$0.00801	\$3,509,656
Interruptible KWH	0	\$0.00739	\$0
Subtotal	438,159,287		\$3,552,856
Eco. Dev. Credits			\$0
Total Rate Revenue			\$ 20,478,308

PROPOSED RATE	Units	Rate	Rate Revenue
Transmission			
All KW	202,692	\$1.76400	\$357,549
All KWH	438,159,287	\$0.00120	\$525,791
Subtotal			\$883,340
Distribution			
Customer Charge	12	\$19,823.00	\$237,876
All KW	90,000	\$3.05	\$274,500
Firm KWH	438,159,287	\$0.0001800	\$78,869
Interruptible KWH	0	\$0.00000	\$0
Subtotal	438,159,287		\$591,245
Energy & Capacity			
All KW	90,000	\$1.92	\$172,800
Firm KWH	438,159,287	\$0.03248	\$14,231,414
Interruptible KWH	0	\$0.02997	\$0
Excess KWH	0	Market Value	Market Value
Subtotal	438,159,287		\$14,404,214
Competitive Transition Charge			
All KW	90,000	\$0.14	\$12,600
Firm KWH	438,159,287	\$0.00236	\$1,034,056
Interruptible KWH	0	\$0.00219	\$0
Subtotal	438,159,287		\$1,046,656
Intangible Transition Charge			
All KW	90,000	\$0.48	\$43,200
Firm KWH	438,159,287	\$0.00801	\$3,509,656
Interruptible KWH	0	\$0.00739	\$0
Subtotal	438,159,287		\$3,552,856
Eco. Dev. Credits			\$0
Total Rate Revenue			\$20,478,311

Summary of Total Revenues		
Total from bill distributions Proposed Rates		\$20,478,311
Total from bill distributions Present Rates		\$20,478,308
Rate Change Amount		\$3
Percent		0.00%
2006 Rate revenue under Present Rates		\$14,195,456
Rate Change Percent		0.00%
Amount		\$0
2006 Projected Revenue under Proposed Rates		\$14,195,456
2007 Rate revenue under Present Rates		\$15,485,182
Rate Change Percent		0.00%
Amount		\$0
2007 Projected Revenue under Proposed Rates		\$15,485,182

PPL Electric Utilities Corporation
Rate Schedule IS-1 (R)
Interruptible Service to Greenhouses
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

PRESENT RATE	Units	Rate	Rate Revenue
Transmission			
All KWH	1,664,560	\$0.00600	\$9,987
Subtotal			\$9,987
Distribution			
Total Bills	36	\$845.39	\$30,434
All KW	1,371	\$0.000	\$0
First 730 Hours	890,770	\$0.00000	\$0
Excess KWH	773,790	\$0.00000	\$0
Subtotal			\$30,434
Energy & Capacity			
All KW	1,371	\$1.598	\$2,191
First 730 Hours	890,770	\$0.02908	\$25,904
Excess KWH	773,790	\$0.02189	\$16,938
Subtotal			\$45,033
Competitive Transition Charge			
All KW	1,371	(\$1.540)	(\$2,111)
First 730 Hours	890,770	(\$0.02595)	(\$23,115)
Excess KWH	773,790	(\$0.02047)	(\$15,839)
Subtotal			(\$41,065)
Intangible Transition Charge			
All KW	1,371	\$2.390	\$3,277
First 730 Hours	890,770	\$0.04017	\$35,782
Excess KWH	773,790	\$0.03166	\$24,498
Subtotal			\$63,557
Total Rate Revenue			\$107,946

PROPOSED RATE	Units	Rate	Rate Revenue
Transmission			
All KWH	1,664,560	\$0.00600	\$9,987
Subtotal			\$9,987
Distribution			
Total Bills	36	\$840.00	\$30,240
All KW	1,371	\$0.000	\$0
First 730 kWh	890,770	\$0.00000	\$0
Excess kWh	773,790	\$0.00000	\$0
Subtotal		\$0.00000	\$30,240
Energy & Capacity			
All KW	1,371	\$1.598	\$2,191
First 730 Hours	890,770	\$0.02908	\$25,904
Excess KWH	773,790	\$0.02189	\$16,938
Subtotal			\$45,033
Competitive Transition Charge			
All KW	1,371	(\$1.540)	(\$2,111)
First 730 Hours	890,770	(\$0.02595)	(\$23,115)
Excess KWH	773,790	(\$0.02047)	(\$15,839)
Subtotal			(\$41,065)
Intangible Transition Charge			
All KW	1,371	\$2.390	\$3,277
First 730 Hours	890,770	\$0.04017	\$35,782
Excess KWH	773,790	\$0.03166	\$24,498
Subtotal			\$63,557
Total Rate Revenue			\$107,752

Summary of Total Revenues	
Total from bill distributions Proposed Rates	\$107,752
Total from bill distributions Present Rates	\$107,946
Rate Change Amount	-\$194
Percent	-0.18%
2006 Rate revenue under Present Rates	\$107,660
Rate Change Percent	-0.18%
Amount	-\$194
2006 Projected Revenue under Proposed Rates	\$107,466
2007 Rate revenue under Present Rates	\$147,920
Rate Change Percent	-0.18%
Amount	-\$266
2007 Projected Revenue under Proposed Rates	\$147,654

PPL Electric Utilities Corporation
Rate Schedule BL
Borderline Service - Electric Service
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

Attachment IV-C Revision
O.G. Kasper
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PRESENT RATE	Units	Rate	Rate Revenue
Transmission - All KWH	6,164,221	\$0.00600	\$36,985
<u>Distribution</u>			
All KWH	6,164,221	\$0.04025	\$248,110
<u>Energy & Capacity</u>			
All KWH	6,164,221	\$0.04065	\$250,576
<u>Competitive Transition Charge</u>			
All KWH	6,164,221	\$0.00286	\$17,630
<u>Intangible Transition Charge</u>			
All KWH	6,164,221	\$0.00952	\$58,683
Facility Charge			\$18,293
Total Rate Revenue			<u>\$630,277</u>

PROPOSED RATE	Units	Rate	Rate Revenue
Transmission - All KWH	6,164,221	\$0.00600	\$36,985
<u>Distribution</u>			
All KWH	6,164,221	\$0.04033	\$248,603
<u>Energy & Capacity</u>			
All KWH	6,164,221	\$0.04065	\$250,576
<u>Competitive Transition Charge</u>			
All KWH	6,164,221	\$0.002860	\$17,630
<u>Intangible Transition Charge</u>			
All KWH	6,164,221	\$0.00952	\$58,683
Facility Charge			\$18,293
Total Rate Revenue			<u>\$630,770</u>

Summary of Total Revenues

Total from bill distributions Proposed Rates	\$630,770
Total from bill distributions Present Rates	\$630,277
Rate Change Amount	\$493
Percent	0.08%
2006 Rate revenue under Present Rates	\$632,333
Rate Change Percent	0.08%
Amount	\$506
2006 Projected Revenue under Proposed Rates	\$632,839
2007 Rate revenue under Present Rates	\$657,428
Rate Change Percent	0.08%
Amount	\$526
2007 Projected Revenue under Proposed Rates	\$657,954

PPL ELECTRIC UTILITIES CORPORATION
RATE SCHEDULE SA
CALCULATION OF EFFECT OF PROPOSED RATE
BASED ON BILL FREQUENCY DISTRIBUTION
FOR 12 MONTHS ENDED DECEMBER, 2007

TYPE OF SERVICE	LUMEN	NUMBER	ANNUAL KWH	MONTHLY RATE				
				TRANS CHARGE	DIST CHARGE	CTC	ITC	CAPACITY & ENERGY
OVERHEAD								
WOOD POLE	6650	19,690	15,499,968	\$ 0.394	\$ 10.382	\$ (0.041)	\$ 0.759	\$ 2.809
	9500	9,305	7,324,896	\$ 0.394	\$ 10.382	\$ (0.041)	\$ 0.759	\$ 2.809
			22,824,864					
CALCULATED ANNUAL REVENUE				\$ 137,088	\$ 3,612,313	\$ (14,266)	\$ 264,086	\$ 977,363

TYPE OF SERVICE	LUMEN	NUMBER	ANNUAL KWH	MONTHLY RATE				
				TRANS CHARGE	DIST CHARGE	CTC	ITC	CAPACITY & ENERGY
OVERHEAD								
WOOD POLE	6650	19,690	15,499,968	\$ 0.394	\$ 12.531	\$ (0.041)	\$ 0.759	\$ 2.809
	9500	9,305	7,324,896	\$ 0.394	\$ 12.531	\$ (0.041)	\$ 0.759	\$ 2.809
			22,824,864					
CALCULATED ANNUAL REVENUE				\$ 137,088	\$ 4,360,026	\$ (14,266)	\$ 264,086	\$ 977,363
TOTAL PRESENT REVENUE								\$ 4,976,586
TOTAL PROPOSED REVENUE								\$ 5,724,299
RATE CHANGE: AMOUNT								\$ 747,713
PERCENT								15.02%

2006 Rate revenue under Present Rates	\$ 4,836,027
Rate Change Percent	15.02%
2006 Projected Revenue under Proposed Rates	\$ 5,562,197
2007 Rate revenue under Present Rates	\$ 5,038,245
Rate Change Percent	15.02%
2007 Projected Revenue under Proposed Rates	\$ 5,928,452

PPL ELECTRIC UTILITIES CORPORATION
RATE SCHEDULE SM
CALCULATION OF EFFECT OF PROPOSED RATE
BASED ON BILL FREQUENCY DISTRIBUTION
FOR 12 MONTHS ENDED DECEMBER, 2007

PAGE 1 OF 2

TYPE OF SERVICE	LUMEN	NUMBER	ANNUAL KWH	MONTHLY RATE				CAPACITY & ENERGY
				TRANS CHARGE	DIST CHARGE	CTC	IIC	
OVERHEAD								
WOOD POLE	3350	1,598	941,222	\$ 0.295	\$ 8.481	\$ (0.275)	\$ 0.765	\$ 2.420
	6650	1,570	1,444,400	\$ 0.460	\$ 10.508	\$ (0.430)	\$ 1.195	\$ 2.788
	10500	23	29,578	\$ 0.643	\$ 13.531	\$ (0.601)	\$ 1.673	\$ 3.478
	20000	67	136,546	\$ 1.019	\$ 17.343	\$ (0.952)	\$ 2.650	\$ 4.030
	34000	3	10,422	\$ 1.737	\$ 28.454	\$ (1.623)	\$ 4.516	\$ 6.470
	51000	10	48,010	\$ 2.401	\$ 36.189	\$ (2.242)	\$ 6.240	\$ 7.809
METAL POLE	6650	4	3,680	\$ 0.460	\$ 16.431	\$ (0.430)	\$ 1.195	\$ 4.800
	10500	8	10,288	\$ 0.643	\$ 19.306	\$ (0.601)	\$ 1.673	\$ 5.566
	20000	11	22,418	\$ 1.019	\$ 23.221	\$ (0.952)	\$ 2.650	\$ 6.155
	34000	0	0	\$ 1.737	\$ 34.514	\$ (1.623)	\$ 4.516	\$ 8.607
	51000	0	0	\$ 2.401	\$ 42.545	\$ (2.242)	\$ 6.240	\$ 9.975
UNDERGROUND								
WOOD POLE	3350	13	7,657	\$ 0.295	\$ 13.748	\$ (0.275)	\$ 0.765	\$ 4.324
	6650	301	276,920	\$ 0.460	\$ 16.085	\$ (0.430)	\$ 1.195	\$ 4.804
LOW MOUNT	3350	412	242,668	\$ 0.295	\$ 15.067	\$ (0.275)	\$ 0.765	\$ 4.800
	6650	335	308,200	\$ 0.460	\$ 17.361	\$ (0.430)	\$ 1.195	\$ 5.285
HIGH MOUNT	6650	12	11,040	\$ 0.460	\$ 19.385	\$ (0.430)	\$ 1.195	\$ 5.997
	10500	0	0	\$ 0.643	\$ 22.090	\$ (0.601)	\$ 1.673	\$ 6.572
	20000	362	737,756	\$ 1.019	\$ 26.210	\$ (0.952)	\$ 2.650	\$ 7.238
	34000	9	31,266	\$ 1.737	\$ 38.391	\$ (1.623)	\$ 4.516	\$ 10.082
	51000	10	48,010	\$ 2.401	\$ 46.402	\$ (2.242)	\$ 6.240	\$ 11.500
MULTIPLE UNIT	6650	5	4,600	\$ 0.460	\$ 8.784	\$ (0.430)	\$ 1.195	\$ 2.166
	10500	0	0	\$ 0.643	\$ 12.334	\$ (0.601)	\$ 1.673	\$ 3.087
	20000	10	20,380	\$ 1.019	\$ 15.439	\$ (0.952)	\$ 2.650	\$ 3.342
	34000	0	0	\$ 1.737	\$ 26.708	\$ (1.623)	\$ 4.516	\$ 5.845
	51000	0	0	\$ 2.401	\$ 34.448	\$ (2.242)	\$ 6.240	\$ 7.148
CUSTOMER OWNI	3350	95	55,955	\$ 0.295	\$ 4.897	\$ (0.275)	\$ 0.765	\$ 1.123
	6650	31	28,520	\$ 0.460	\$ 7.018	\$ (0.430)	\$ 1.195	\$ 1.525
	10500	0	0	\$ 0.643	\$ 9.437	\$ (0.601)	\$ 1.673	\$ 1.998
	20000	7	14,266	\$ 1.019	\$ 13.559	\$ (0.952)	\$ 2.650	\$ 2.663
CALCULATED ANNUAL REVENUE			4,433,802	\$ 26,616	\$ 731,955	\$ (24,857)	\$ 69,126	\$ 206,168

RATE SCHEDULE SM

PAGE 2 OF 2

TYPE OF SERVICE	LUMEN	NUMBER	MONTHLY RATE					CAPACITY & ENERGY
			ANNUAL KWH	PROPOSED				
				TRANS CHARGE	DIST CHARGE	CTC	ITC	
OVERHEAD								
WOOD POLE	3350	1,598	941,222	\$ 0.295	\$ 10.222	\$ (0.275)	\$ 0.765	\$ 2.420
	6650	1,570	1,444,400	\$ 0.460	\$ 12.665	\$ (0.430)	\$ 1.195	\$ 2.788
	10500	23	29,578	\$ 0.643	\$ 16.309	\$ (0.601)	\$ 1.673	\$ 3.478
	20000	67	136,546	\$ 1.019	\$ 20.904	\$ (0.952)	\$ 2.650	\$ 4.030
	34000	3	10,422	\$ 1.737	\$ 34.296	\$ (1.623)	\$ 4.516	\$ 6.470
	51000	10	48,010	\$ 2.401	\$ 43.619	\$ (2.242)	\$ 6.240	\$ 7.809
METAL POLE	6650	4	3,680	\$ 0.460	\$ 19.804	\$ (0.430)	\$ 1.195	\$ 4.800
	10500	8	10,288	\$ 0.643	\$ 23.270	\$ (0.601)	\$ 1.673	\$ 5.566
	20000	11	22,418	\$ 1.019	\$ 27.988	\$ (0.952)	\$ 2.650	\$ 6.155
	34000	0	0	\$ 1.737	\$ 41.600	\$ (1.623)	\$ 4.516	\$ 8.607
	51000	0	0	\$ 2.401	\$ 51.279	\$ (2.242)	\$ 6.240	\$ 9.975
UNDERGROUND								
WOOD POLE	3350	13	7,657	\$ 0.295	\$ 16.570	\$ (0.275)	\$ 0.765	\$ 4.324
	6650	301	276,920	\$ 0.460	\$ 19.387	\$ (0.430)	\$ 1.195	\$ 4.804
LOW MOUNT	3350	412	242,668	\$ 0.295	\$ 18.160	\$ (0.275)	\$ 0.765	\$ 4.800
	6650	335	308,200	\$ 0.460	\$ 20.925	\$ (0.430)	\$ 1.195	\$ 5.265
HIGH MOUNT	6650	12	11,040	\$ 0.460	\$ 23.365	\$ (0.430)	\$ 1.195	\$ 5.997
	10500	0	0	\$ 0.643	\$ 26.625	\$ (0.601)	\$ 1.673	\$ 6.572
	20000	362	737,756	\$ 1.019	\$ 31.591	\$ (0.952)	\$ 2.650	\$ 7.236
	34000	9	31,266	\$ 1.737	\$ 46.273	\$ (1.623)	\$ 4.516	\$ 10.062
	51000	10	48,010	\$ 2.401	\$ 55.928	\$ (2.242)	\$ 6.240	\$ 11.500
MULTIPLE UNIT	6650	5	4,600	\$ 0.460	\$ 10.587	\$ (0.430)	\$ 1.195	\$ 2.166
	10500	0	0	\$ 0.643	\$ 14.866	\$ (0.601)	\$ 1.673	\$ 3.087
	20000	10	20,380	\$ 1.019	\$ 18.609	\$ (0.952)	\$ 2.650	\$ 3.342
	34000	0	0	\$ 1.737	\$ 32.191	\$ (1.623)	\$ 4.516	\$ 5.845
	51000	0	0	\$ 2.401	\$ 41.520	\$ (2.242)	\$ 6.240	\$ 7.148
CUSTOMER OWN	3350	95	55,955	\$ 0.295	\$ 5.902	\$ (0.275)	\$ 0.765	\$ 1.123
	6650	31	28,520	\$ 0.460	\$ 8.459	\$ (0.430)	\$ 1.195	\$ 1.525
	10500	0	0	\$ 0.643	\$ 11.374	\$ (0.601)	\$ 1.673	\$ 1.998
	20000	7	14,266	\$ 1.019	\$ 16.343	\$ (0.952)	\$ 2.650	\$ 2.663
CALCULATED ANNUAL REVENUE			4,433,802	\$ 26,616	\$ 882,226	\$ (24,857)	\$ 69,126	\$ 206,168
TOTAL PRESENT REVENUE								\$ 1,009,008
TOTAL PROPOSED REVENUE								\$ 1,159,278
RATE CHANGE: AMOUNT								\$ 150,270
PERCENT								14.89%
2006 Rate revenue under Present Rates								\$ 989,492
Rate Change Percent								14.89%
2006 Projected Revenue under Proposed Rates								\$ 1,136,786
2007 Rate revenue under Present Rates								\$ 1,334,593
Rate Change Percent								14.89%
2007 Projected Revenue under Proposed Rates								\$ 1,568,002

PPL ELECTRIC UTILITIES CORPORATION
RATE SCHEDULE SHS
CALCULATION OF EFFECT OF PROPOSED RATE
BASED ON BILL FREQUENCY DISTRIBUTION
FOR 12 MONTHS ENDED DECEMBER, 2007

PAGE 1 OF 2

TYPE OF SERVICE	LUMEN	NUMBER	ANNUAL KWH	MONTHLY RATE				
				TRANS CHARGE	DIST CHARGE	CTC	ITC	CAPACITY & ENERGY
OVERHEAD								
WOOD POLE	5800	26,505	9,462,285	\$ 0.179	\$ 8.359	\$ (0.065)	\$ 0.362	\$ 2.611
	9500	31,149	15,948,288	\$ 0.256	\$ 9.384	\$ (0.093)	\$ 0.519	\$ 2.809
	16000	7,267	5,472,051	\$ 0.377	\$ 10.585	\$ (0.135)	\$ 0.761	\$ 2.969
	25500	2,724	3,701,916	\$ 0.680	\$ 14.839	\$ (0.245)	\$ 1.375	\$ 3.840
	50000	542	1,156,086	\$ 1.067	\$ 19.532	\$ (0.387)	\$ 2.161	\$ 4.675
METAL POLE	5800	148	52,836	\$ 0.179	\$ 11.786	\$ (0.065)	\$ 0.362	\$ 3.841
	9500	499	255,488	\$ 0.256	\$ 12.568	\$ (0.093)	\$ 0.519	\$ 3.952
	16000	194	146,082	\$ 0.377	\$ 13.601	\$ (0.135)	\$ 0.761	\$ 4.060
	25500	126	171,234	\$ 0.680	\$ 17.486	\$ (0.245)	\$ 1.375	\$ 4.788
	50000	6	12,798	\$ 1.067	\$ 21.822	\$ (0.387)	\$ 2.161	\$ 5.496
UNDERGROUND								
WOOD POLE	5800	1,163	415,191	\$ 0.179	\$ 13.720	\$ (0.065)	\$ 0.362	\$ 4.536
	9500	3,286	1,682,432	\$ 0.256	\$ 14.900	\$ (0.093)	\$ 0.519	\$ 4.790
LOW MOUNT	5800	4,822	1,721,454	\$ 0.179	\$ 13.846	\$ (0.065)	\$ 0.362	\$ 4.575
	9500	10,562	5,407,744	\$ 0.256	\$ 14.967	\$ (0.093)	\$ 0.519	\$ 4.821
HIGH MOUNT	9500	1,270	650,240	\$ 0.256	\$ 18.135	\$ (0.093)	\$ 0.519	\$ 5.952
	16000	1,112	837,336	\$ 0.377	\$ 19.151	\$ (0.136)	\$ 0.761	\$ 6.053
	25500	913	1,240,767	\$ 0.680	\$ 26.566	\$ (0.246)	\$ 1.375	\$ 8.050
	50000	345	735,885	\$ 1.067	\$ 31.041	\$ (0.387)	\$ 2.161	\$ 8.809
MULTIPLE UNIT	5800	61	21,777	\$ 0.179	\$ 7.483	\$ (0.065)	\$ 0.362	\$ 2.296
	9500	225	115,200	\$ 0.256	\$ 8.466	\$ (0.093)	\$ 0.519	\$ 2.478
	16000	146	109,938	\$ 0.377	\$ 8.883	\$ (0.136)	\$ 0.761	\$ 2.364
	25500	140	190,260	\$ 0.680	\$ 12.238	\$ (0.246)	\$ 1.375	\$ 2.903
	50000	85	181,305	\$ 1.067	\$ 15.040	\$ (0.387)	\$ 2.161	\$ 3.060
			49,688,593	\$ 0.475				\$ 4.336
CALCULATED ANNUAL REVENUE				\$ 298,409	\$ 12,366,561	\$ (108,116)	\$ 604,087	\$ 3,787,435

RATE SCHEDULE SHS

PAGE 2 OF 2

TYPE OF SERVICE	LUMEN NUMBER	ANNUAL KWH	MONTHLY RATE					CAPACITY & ENERGY
			PROPOSED					
			TRANS CHARGE	DIST CHARGE	CTC	IIC		
OVERHEAD								
WOOD POLE	5800	26,505	9,462,285	\$ 0.179	\$ 10.083	\$ (0.065)	\$ 0.362	\$ 2.611
	9500	31,149	15,948,288	\$ 0.256	\$ 11.320	\$ (0.093)	\$ 0.519	\$ 2.809
	16000	7,267	5,472,051	\$ 0.377	\$ 12.745	\$ (0.135)	\$ 0.781	\$ 2.969
	25500	2,724	3,701,916	\$ 0.680	\$ 17.900	\$ (0.245)	\$ 1.375	\$ 3.840
	50000	542	1,156,086	\$ 1.067	\$ 23.561	\$ (0.387)	\$ 2.161	\$ 4.675
METAL POLE	5800	148	52,836	\$ 0.179	\$ 14.217	\$ (0.065)	\$ 0.362	\$ 3.841
	9500	499	255,488	\$ 0.256	\$ 15.161	\$ (0.093)	\$ 0.519	\$ 3.952
	16000	194	146,082	\$ 0.377	\$ 16.407	\$ (0.135)	\$ 0.761	\$ 4.060
	25500	126	171,234	\$ 0.680	\$ 21.093	\$ (0.245)	\$ 1.375	\$ 4.788
	50000	6	12,798	\$ 1.067	\$ 26.324	\$ (0.387)	\$ 2.161	\$ 5.496
UNDERGROUND								
WOOD POLE	5800	1,163	415,191	\$ 0.179	\$ 16.550	\$ (0.065)	\$ 0.362	\$ 4.536
	9500	3,286	1,682,432	\$ 0.256	\$ 17.974	\$ (0.093)	\$ 0.519	\$ 4.790
LOW MOUNT	5800	4,822	1,721,454	\$ 0.179	\$ 16.702	\$ (0.065)	\$ 0.362	\$ 4.575
	9500	10,562	5,407,744	\$ 0.256	\$ 18.079	\$ (0.093)	\$ 0.519	\$ 4.821
HIGH MOUNT	9500	1,270	650,240	\$ 0.256	\$ 21.876	\$ (0.093)	\$ 0.519	\$ 5.952
	16000	1,112	837,336	\$ 0.377	\$ 23.102	\$ (0.136)	\$ 0.761	\$ 6.053
	25500	913	1,240,767	\$ 0.680	\$ 32.047	\$ (0.246)	\$ 1.375	\$ 8.050
	50000	345	735,885	\$ 1.067	\$ 37.445	\$ (0.387)	\$ 2.161	\$ 8.809
MULTIPLE UNIT	5800	61	21,777	\$ 0.179	\$ 9.027	\$ (0.065)	\$ 0.362	\$ 2.296
	9500	225	115,200	\$ 0.256	\$ 10.213	\$ (0.093)	\$ 0.519	\$ 2.478
	16000	146	109,938	\$ 0.377	\$ 10.716	\$ (0.136)	\$ 0.761	\$ 2.364
	25500	140	190,260	\$ 0.680	\$ 14.763	\$ (0.246)	\$ 1.375	\$ 2.903
	50000	85	181,305	\$ 1.067	\$ 18.143	\$ (0.387)	\$ 2.161	\$ 3.060
			49,688,593					
CALCULATED ANNUAL REVENUE			\$ 298,409	\$ 14,917,783	\$ (108,116)	\$ 604,087	\$ 3,787,435	
TOTAL PRESENT REVENUE							\$ 16,948,377	
TOTAL PROPOSED REVENUE							\$ 19,499,598	
RATE CHANGE: AMOUNT							\$ 2,551,222	
PERCENT							15.05%	
2006 Rate revenue under Present Rates							\$ 16,268,679	
Rate Change Percent							15.05%	
2006 Projected Revenue under Proposed Rates							\$ 18,716,791	
2007 Rate revenue under Present Rates							\$ 16,297,902	
Rate Change Percent							15.05%	
2007 Projected Revenue under Proposed Rates							\$ 19,184,838	

PPL ELECTRIC UTILITIES CORPORATION
RATE SCHEDULE SE
CALCULATION OF EFFECT OF PROPOSED RATE
BASED ON BILL FREQUENCY DISTRIBUTION
FOR 12 MONTHS ENDED DECEMBER, 2007

PAGE 1 OF 2

TYPE OF SERVICE	LUMEN NUMBER	ANNUAL KWH	MONTHLY RATE					
			TRANS CHARGE	DIST CHARGE	CTC	ITC	CAPACITY & ENERGY	
UTILITY POLE	3350	115	67,735	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	6650	63	57,960	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	5800	6,691	2,388,687	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	9500	13,172	6,744,064	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	10500	40	51,440	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	16000	5,296	3,987,888	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	20000	256	521,728	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	25500	1,628	2,212,452	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	34000	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	50000	90	191,970	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	51000	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	7900	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	21000	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	22000	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	14000	3	2,709	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	19000	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	36000	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	37000	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	3500	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	6500	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	8000	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
	12000	0	0	\$ 0.00600	\$ 0.06662	\$ 0.00043	\$ 0.00325	\$ 0.01261
CUSTOMER POLE	3350	28	16,492	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	6650	758	697,360	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	10500	703	904,058	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	20000	477	972,126	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	34000	1	3,474	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	51000	137	657,737	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	5800	1,937	691,509	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	9500	4,160	2,129,920	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	16000	3,474	2,615,922	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	25500	2,453	3,333,627	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	50000	2,411	5,142,663	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	21000	20	24,940	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	22000	1,767	1,747,563	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	7900	478	265,290	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	14000	306	276,318	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	19000	54	53,784	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	36000	42	82,362	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	37000	28	43,960	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	3500	0	0	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	6500	0	0	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	8000	0	0	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
	12000	0	0	\$ 0.00600	\$ 0.02969	\$ 0.00035	\$ 0.00270	\$ -
			35,885,738					
CALCULATED ANNUAL REVENUE				\$ 215,314	\$ 1,664,697	\$ 13,858	\$ 105,816	\$ 204,618

TYPE OF SERVICE	LUMEN NUMBER	ANNUAL KWH	MONTHLY RATE					
			PROPOSED				CAPACITY & ENERGY	
			TRANS CHARGE	DIST CHARGE	CTC	ITC		
UTILITY POLE	3350	115	67,735	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	6650	63	57,960	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	5800	6,691	2,388,687	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	9500	13,172	6,744,064	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	10500	40	51,440	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	16000	5,296	3,987,888	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	20000	256	521,728	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	25500	1,628	2,212,452	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	34000	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	50000	90	191,970	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	51000	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	7900	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	21000	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	22000	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	14000	3	2,709	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	19000	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	36000	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	37000	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	3500	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	6500	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	8000	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
	12000	0	0	\$ 0.00600	\$ 0.08038	\$ 0.00043	\$ 0.00325	\$ 0.01261
CUSTOMER POLE	3350	28	16,492	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	6650	758	697,360	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	10500	703	904,058	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	20000	477	972,126	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	34000	1	3,474	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	51000	137	657,737	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	5800	1,937	691,509	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	9500	4,160	2,129,920	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	16000	3,474	2,615,922	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	25500	2,453	3,333,627	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	50000	2,411	5,142,663	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	21000	20	24,940	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	22000	1,767	1,747,563	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	7900	478	265,290	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	14000	306	276,318	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	19000	54	53,784	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	36000	42	82,362	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	37000	28	43,960	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	3500	0	0	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	6500	0	0	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	8000	0	0	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
	12000	0	0	\$ 0.00600	\$ 0.03582	\$ 0.00035	\$ 0.00270	-
			35,885,738					
CALCULATED ANNUAL REVENUE				\$ 215,314	\$ 2,008,457	\$ 13,858	\$ 105,816	\$ 204,618
TOTAL PRESENT REVENUE								\$ 2,204,304
TOTAL PROPOSED REVENUE								\$ 2,548,064
RATE CHANGE: AMOUNT								\$ 343,760
PERCENT								15.59%
2006 Rate revenue under Present Rates					\$ 2,074,890			
Rate Change Percent					15.59%			
2006 Projected Revenue under Proposed Rates					\$ 2,398,277			
2007 Rate revenue under Present Rates					\$ 1,944,965			
Rate Change Percent					15.59%			
2007 Projected Revenue under Proposed Rates					\$ 2,304,072			

PPL ELECTRIC UTILITIES CORPORATION
 RATE SCHEDULE TS(R)
 CALCULATION OF EFFECT OF PROPOSED RATE
 BASED ON BILL FREQUENCY DISTRIBUTION
 FOR 12 MONTHS ENDED DECEMBER, 2007

Attachment IV-C Revision
 O.G. Kasper
 Page 29

TYPE OF SERVICE	WATTS	NUMBER	ANNUAL KWH	MONTHLY RATE				
				PRESENT				
				TRANS CHARGE	DIST CHARGE	CTC	ITC	CAPACITY & ENERGY
TRAFFIC SIGNAL	25	0	0	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	50	0	0	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	60	0	0	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	67	0	0	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	69	417	252,202	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	100	0	0	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	104	0	0	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	107	0	0	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	116	0	0	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	125	0	0	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	134	59	69,242	\$ 0.00438	\$ 0.05462	\$ (0.00398)	\$ 0.01127	\$ 0.03392
			321,444					
CALCULATED ANNUAL REVENUE				\$ 1,929	\$ 24,041	\$ (1,752)	\$ 4,960	\$ 14,930

TYPE OF SERVICE	WATTS	NUMBER	ANNUAL KWH	MONTHLY RATE				
				PROPOSED				
				TRANS CHARGE	DIST CHARGE	CTC	ITC	CAPACITY & ENERGY
TRAFFIC SIGNAL	25	0	0	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	50	0	0	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	60	0	0	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	67	0	0	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	69	417	252,202	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	100	0	0	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	104	0	0	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	107	0	0	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	116	0	0	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	125	0	0	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
	134	59	69,242	\$ 0.00438	\$ 0.06530	\$ (0.00398)	\$ 0.01127	\$ 0.03392
			321,444					
CALCULATED ANNUAL REVENUE				\$ 1,929	\$ 28,741	\$ (1,752)	\$ 4,960	\$ 14,930

TOTAL PRESENT REVENUE \$ 44,109

TOTAL PROPOSED REVENUE \$ 48,808

RATE CHANGE: AMOUNT \$ 4,700
 PERCENT 10.65%

2006 Rate revenue under Present Rates \$ 42,606
 Customer Charge
 Rate Change Percent 10.65%

2006 Projected Revenue under Proposed Rates \$ 47,146

2007 Rate revenue under Present Rates \$ 46,182
 Rate Change Percent 10.65%

2007 Projected Revenue under Proposed Rates \$ 51,689

PPL ELECTRIC UTILITIES CORPORATION
 RATE SCHEDULE SI-1(R)
 CALCULATION OF EFFECT OF PROPOSED RATE
 BASED ON BILL FREQUENCY DISTRIBUTION
 FOR 12 MONTHS ENDED DECEMBER, 2007

TYPE OF SERVICE	LUMEN	NUMBER	ANNUAL KWH	MONTHLY RATE					
				PRESENT					
				TRANS CHARGE	DIST CHARGE	CTC	ITC	CAPACITY & ENERGY	
OVERHEAD									
WOOD POLE	600	195	48,555	\$ 0.125	\$ 4.720	\$ (0.259)	\$ 0.466	\$ 1.452	
	1000	17	7,531	\$ 0.222	\$ 5.851	\$ (0.461)	\$ 0.828	\$ 1.654	
UNDERGROUND									
LOW MOUNT	4000	19	26,714	\$ 0.703	\$ 17.426	\$ (1.462)	\$ 2.629	\$ 4.829	
			82,800						
CALCULATED ANNUAL REVENUE				\$ 498	\$ 16,212	\$ (1,033)	\$ 1,859	\$ 4,836	

TYPE OF SERVICE	LUMEN	NUMBER	ANNUAL KWH	MONTHLY RATE					
				PROPOSED					
				TRANS CHARGE	DIST CHARGE	CTC	ITC	CAPACITY & ENERGY	
OVERHEAD									
WOOD POLE	600	195	48,555	\$ 0.125	\$ 5.636	\$ (0.259)	\$ 0.466	\$ 1.452	
	1000	17	7,531	\$ 0.222	\$ 6.986	\$ (0.461)	\$ 0.828	\$ 1.654	
UNDERGROUND									
LOW MOUNT	4000	19	26,714	\$ 0.703	\$ 20.806	\$ (1.462)	\$ 2.629	\$ 4.829	
			82,800						
CALCULATED ANNUAL REVENUE				\$ 498	\$ 19,356	\$ (1,033)	\$ 1,859	\$ 4,836	

TOTAL PRESENT REVENUE \$ 22,371

TOTAL PROPOSED REVENUE \$ 25,516

RATE CHANGE: AMOUNT \$ 3,145
 PERCENT 14.06%

2006 Rate revenue under Present Rates \$ 22,199

Rate Change Percent 14.06%

2006 Projected Revenue under Proposed Rates \$ 25,321

2007 Rate revenue under Present Rates \$ 23,427

Rate Change Percent 14.06%

2007 Projected Revenue under Proposed Rates \$ 27,261

PPL Electric Utilities Corporation
Rate Schedule GH-1 (R)
Single Meter Commercial Space Heating Service
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

PRESENT RATE	Units	Rate	Rate Revenue
Transmission			
All KWH	272,855,742	\$0.00600	\$1,637,134
Subtotal			\$1,637,134
Distribution			
Monthly Charge	11,174	\$18.22	\$203,590
All KW	1,056,938	\$2.21	\$2,335,833
First 150 Hours (6000 KWH Max)	45,748,416	\$0.01529	\$699,493
Excess KWH	227,107,326	\$0.00830	\$1,884,991
Subtotal	272,855,742		\$5,123,907
Energy & Capacity			
All KW	1,056,938	\$0.00	\$0
First 150 Hours (6000 KWH Max)	45,748,416	\$0.05481	\$2,507,471
Excess KWH	227,107,326	\$0.04659	\$10,580,930
Subtotal	272,855,742		\$13,088,401
Competitive Transition Charge			
First 150 Hours (6000 KWH Max)	45,748,416	(\$0.00317)	(\$145,022)
Excess KWH	227,107,326	(\$0.00272)	(\$617,732)
Subtotal	272,855,742		(\$762,754)
Intangible Transition Charge			
First 150 Hours (6000 KWH Max)	45,748,416	\$0.02674	\$1,223,313
Excess KWH	227,107,326	\$0.02306	\$5,237,095
Subtotal	272,855,742		\$6,460,408
T.O.D. Metering	894	\$13.57	\$12,132
12 KV Credit	0	\$0.0000	\$0
Total Rate Revenue			\$25,559,228
PROPOSED RATE			
Transmission			
All KWH	272,855,742	\$0.00600	\$1,637,134
Subtotal			\$1,637,134
Distribution			
Monthly Charge	11,174	\$0.00	\$0
All KW	1,107,327	\$5.00	\$5,536,635
First 200 kWh	50,960,134	\$0.00000	\$0
Next 200 kWh	171,366,717	\$0.00000	\$0
Excess kWh	50,528,891	\$0.00000	\$0
Subtotal	272,855,742		\$5,536,635
Energy & Capacity			
All KW	1,056,938	\$0.00	\$0
First 150 Hours (6000 KWH Max)	45,748,416	\$0.05481	\$2,507,471
Excess KWH	227,107,326	\$0.04659	\$10,580,930
Subtotal	272,855,742		\$13,088,401
Competitive Transition Charge			
First 150 Hours (6000 KWH Max)	45,748,416	(\$0.003170)	(\$145,022)
Excess KWH	227,107,326	(\$0.002720)	(\$617,732)
Subtotal	272,855,742		(\$762,754)
Intangible Transition Charge			
First 150 Hours (6000 KWH Max)	45,748,416	\$0.02674	\$1,223,313
Excess KWH	227,107,326	\$0.02306	\$5,237,095
Subtotal	272,855,742		\$6,460,408
T.O.D. Metering	0	\$0.00	\$0
12 KV Credit	12,618,778	\$0.0000	\$0
Total Rate Revenue			\$25,959,824
Summary of Total Revenues			
Total from bill distributions Proposed Rates			\$25,959,824
Total from bill distributions Present Rates			\$25,559,228
Rate Change Amount			\$400,596
Percent			1.57%
2006 Rate revenue under Present Rates			\$26,167,733
Rate Change Percent			1.57%
Amount			\$410,833
2006 Projected Revenue under Proposed Rates			\$26,578,566
2007 Rate revenue under Present Rates			\$28,039,082
Rate Change Percent			1.57%
Amount			\$440,214
2007 Rate revenue under Proposed Rates			\$28,479,296

PPL Electric Utilities Corporation
Rate Schedule GH-2 (R)
Separate Meter General Space Heating Service
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

PRESENT RATE	Units	Rate	Rate Revenue
<u>Transmission</u>			
All KWH	61,827,433	\$0.00600	\$370,965
<u>Distribution</u>			
Total Bills	29,052	\$18.18	\$528,165
First 200 KWH	5,287,969	\$0.00000	\$0
Excess KWH	56,539,464	\$0.01195	\$675,647
Subtotal			<u>\$1,203,812</u>
<u>Energy & Capacity</u>			
First 200 KWH	5,287,969	(\$0.00513)	(\$27,127)
Excess KWH	56,539,464	\$0.05183	\$2,930,440
Subtotal	61,827,433		<u>\$2,903,313</u>
<u>Competitive Transition Charge</u>			
First 200 KWH	5,287,969	\$0.00000	\$0
Excess KWH	56,539,464	(\$0.00176)	-\$99,509
Subtotal	61,827,433		<u>(\$99,509)</u>
<u>Intangible Transition Charge</u>			
First 200 KWH	5,287,969	\$0.00000	\$0
Excess KWH	56,539,464	\$0.02422	\$1,369,386
Subtotal	61,827,433		<u>\$1,369,386</u>
Total Rate Revenue			<u>\$5,747,967</u>
PROPOSED RATE	Units	Rate	Rate Revenue
<u>Transmission</u>			
All KWH	61,827,433	\$0.00600	\$370,965
<u>Distribution</u>			
Total Bills	29,052	\$0.00	\$0
All KW	684,462	\$1.90000	\$1,300,478
First 200 kWh	54,544,349	\$0.00000	\$0
Next 200 kWh	6,846,162	\$0.00000	\$0
Excess KWH	436,922	\$0.00000	\$0
Subtotal			<u>\$1,300,478</u>
<u>Energy & Capacity</u>			
First 200 KWH	5,287,969	(\$0.00513)	(\$27,127)
Excess KWH	56,539,464	\$0.05183	\$2,930,440
Subtotal	61,827,433		<u>\$2,903,313</u>
<u>Competitive Transition Charge</u>			
First 200 KWH	5,287,969	\$0.00000	\$0
Excess KWH	56,539,464	(\$0.00176)	(\$99,509)
Subtotal	61,827,433		<u>(\$99,509)</u>
<u>Intangible Transition Charge</u>			
First 200 KWH	5,287,969	\$0.00000	\$0
Excess KWH	56,539,464	\$0.02422	\$1,369,386
Subtotal	61,827,433		<u>\$1,369,386</u>
Total Rate Revenue			<u>\$5,844,633</u>
<u>Summary of Total Revenues</u>			
Total from bill distributions Proposed Rates			\$5,844,633
Total from bill distributions Present Rates			\$5,747,967
Rate Change Amount			\$96,666
Percent			1.68%
2006 Rate revenue under Present Rates			\$5,860,254
Rate Change Percent			1.68%
Amount			\$98,452
2006 Projected Revenue under Proposed Rates			\$5,958,706
2007 Rate revenue under Present Rates			\$6,335,705
Rate Change Percent			1.68%
Amount			\$106,440
2007 Projected Revenue under Proposed Rates			\$6,442,145

PPL Electric Utilities Corporation
Tariff Rule 6A
Stand-By Service for Qualifying Facilities
Calculation of Effect of Proposed Rate vs. Current Tariff
Based on bill frequency distribution for 12 months ended December 2006

PRESENT RATE	Units	Rate	Rate Revenue
Back-Up Power Transmission Charge:			
All KW	0	1.764	\$0
Service at 480 Volts or Less - All KWH	0	\$0.00120	\$0
Service at 12 KV - All KWH	0	\$0.00120	\$0
Service at 69 KV or Higher - All KWH	4,987,987	\$0.00120	\$5,986
Subtotal	4,987,987		\$5,986
Back-Up Power Distribution Charge:			
Service at 480 Volts or Less - All KW	0	1.495	\$0
Service at 480 Volts or Less - All KWH	0	\$0.00232	\$0
Service at 12 KV - All KW	0	0.968	\$0
Service at 12 KV - All KWH	0	\$0.00042	\$0
Service at 69 KV or Higher - All KW	420,235	0.087	\$36,560
Service at 69 KV or Higher - All KWH	4,987,987	\$0.00000	\$0
Subtotal	4,987,987		\$36,560
Back-Up Power Energy & Capacity Charge:			
Service at 480 Volts or Less - All KW	0	1.110	\$0
Service at 480 Volts or Less - All KWH	0	\$0.00995	\$0
Service at 12 KV - All KW	0	1.330	\$0
Service at 12 KV - All KWH	0	\$0.00995	\$0
Service at 69 KV or Higher - All KW	420,235	1.250	\$525,294
Service at 69 KV or Higher - All KWH	4,987,987	\$0.01133	\$56,514
Subtotal	4,987,987		\$581,808
Back-Up Power CTC Charge:			
Service at 480 Volts or Less - All KWH	0	-\$0.01276	\$0
Service at 12 KV - All KWH	0	-\$0.01239	\$0
Service at 69 KV or Higher - All KWH	4,987,987	-\$0.01050	(\$52,374)
Subtotal	4,987,987		(\$52,374)
Back-Up Power ITC Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.04655	\$0
Service at 12 KV - All KWH	0	\$0.04517	\$0
Service at 69 KV or Higher - All KWH	4,987,987	\$0.03816	\$190,342
Subtotal	4,987,987		\$190,342
Maintenance Power Transmission Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.00120	\$0
Service at 12 KV - All KWH	0	\$0.00120	\$0
Service at 69 KV or Higher - All KWH	1,593,013	\$0.00120	\$1,912
Subtotal	1,593,013		\$1,912
Maintenance Power Distribution Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.00232	\$0
Service at 12 KV - All KWH	0	\$0.00042	\$0
Service at 69 KV or Higher - All KWH	1,593,013	\$0.00000	\$0
Subtotal	1,593,013		\$0
Maintenance Power Energy & Capacity Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.00995	\$0
Service at 12 KV - All KWH	0	\$0.00995	\$0
Service at 69 KV or Higher - All KWH	1,593,013	\$0.01133	\$18,049
Subtotal	1,593,013		\$18,049
Maintenance Power CTC Charge:			
Service at 480 Volts or Less - All KWH	0	(\$0.01276)	\$0
Service at 12 KV - All KWH	0	(\$0.01239)	\$0
Service at 69 KV or Higher - All KWH	1,593,013	(\$0.01050)	(\$16,727)
Subtotal	1,593,013		(\$16,727)
Maintenance Power ITC Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.04655	\$0
Service at 12 KV - All KWH	0	\$0.04517	\$0
Service at 69 KV or Higher - All KWH	1,593,013	\$0.03816	\$60,789
Subtotal	1,593,013		\$60,789
Total Rate Revenue			\$826,345

PPL Electric Utilities Corporation
 Tariff Rule 6A
 Stand-By Service for Qualifying Facilities
 Calculation of Effect of Proposed Rate vs. Current Tariff
 Based on bill frequency distribution for 12 months ended December 2006

PROPOSED RATE	Units	Rate	Rate Revenue
Back-Up Power Transmission Charge:			
All KW	0	1.764	\$0
Service at 480 Volts or Less - All KWH	0	\$0.00120	\$0
Service at 12 KV - All KWH	0	\$0.00120	\$0
Service at 69 KV or Higher - All KWH	4,987,987	\$0.00120	\$5,986
Subtotal	4,987,987		\$5,986
Back-Up Power Distribution Charge:			
Service at 480 Volts or Less - All KW	0	1.495	\$0
Service at 480 Volts or Less - All KWH	0	\$0.00002	\$0
Service at 12 KV - All KW	0	0.968	\$0
Service at 12 KV - All KWH	0	\$0.00000	\$0
Service at 69 KV or Higher - All KW	420,235	0.087	\$36,560
Service at 69 KV or Higher - All KWH	4,987,987	\$0.00000	\$0
Subtotal	4,987,987		\$36,560
Back-Up Power Energy & Capacity Charge:			
Service at 480 Volts or Less - All KW	0	1.110	\$0
Service at 480 Volts or Less - All KWH	0	\$0.00995	\$0
Service at 12 KV - All KW	0	1.330	\$0
Service at 12 KV - All KWH	0	\$0.00995	\$0
Service at 69 KV or Higher - All KW	420,235	1.250	\$525,294
Service at 69 KV or Higher - All KWH	4,987,987	\$0.01133	\$56,514
Subtotal	4,987,987		\$581,808
Back-Up Power CTC Charge:			
Service at 480 Volts or Less - All KWH	0	(\$0.01276)	\$0
Service at 12 KV - All KWH	0	(\$0.01239)	\$0
Service at 69 KV or Higher - All KWH	4,987,987	(\$0.01050)	(\$52,374)
Subtotal	4,987,987		(\$52,374)
Back-Up Power ITC Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.04655	\$0
Service at 12 KV - All KWH	0	\$0.04517	\$0
Service at 69 KV or Higher - All KWH	4,987,987	\$0.03816	\$190,342
Subtotal	4,987,987		\$190,342
Maintenance Power Transmission Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.00120	\$0
Service at 12 KV - All KWH	0	\$0.00120	\$0
Service at 69 KV or Higher - All KWH	1,593,013	\$0.00120	\$1,912
Subtotal	1,593,013		\$1,912
Maintenance Power Distribution Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.00232	\$0
Service at 12 KV - All KWH	0	\$0.00042	\$0
Service at 69 KV or Higher - All KWH	1,593,013	\$0.00000	\$0
Subtotal	1,593,013		\$0
Maintenance Power Energy & Capacity Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.00995	\$0
Service at 12 KV - All KWH	0	\$0.00995	\$0
Service at 69 KV or Higher - All KWH	1,593,013	\$0.01133	\$18,049
Subtotal	1,593,013		\$18,049
Maintenance Power CTC Charge:			
Service at 480 Volts or Less - All KWH	0	(\$0.01276)	\$0
Service at 12 KV - All KWH	0	(\$0.01239)	\$0
Service at 69 KV or Higher - All KWH	1,593,013	(\$0.01050)	(\$16,727)
Subtotal	1,593,013		(\$16,727)
Maintenance Power ITC Charge:			
Service at 480 Volts or Less - All KWH	0	\$0.04655	\$0
Service at 12 KV - All KWH	0	\$0.04517	\$0
Service at 69 KV or Higher - All KWH	1,593,013	\$0.03816	\$60,789
Subtotal	1,593,013		\$60,789
Total Rate Revenue			\$826,345

Summary of Total Revenues

Total from bill distributions Proposed Rates	\$826,345
Total from bill distributions Present Rates	\$826,345
Rate Change Amount	\$0
Percent	0.00%
2006 Rate revenue under Present Rates	\$834,428
Rate Change Percent	0.00%
Amount	\$0
2006 Projected Revenue under Proposed Rates	\$834,428
2007 Rate revenue under Present Rates	\$1,057,716
Rate Change Percent	0.00%
Amount	\$0
2007 Projected Revenue under Proposed Rates	\$1,057,716

ATTACHMENT 3

PPL Electric Utilities Corporation
2007 Distribution Rate Filing
ROR & Revenue Requirements
(\$000s)

	System	RS+RDT	RTS	GS-1+BL	GS-3+IS-1	LP-4	ISP	GH-1+GH-2	SE+SA+ SHS+SM+TS +SI-1 (Street Lighting)	LP-5	IST	LP-6	LPEP	L5-S
Present ROR	6.35%	4.13%	-3.57%	12.60%	13.24%	13.37%	17.96%	8.42%	0.86%	12.25%	29.95%	-5.14%	14.29%	8.51%
Pct of System	100.00%	65.04%	-56.22%	198.43%	208.50%	210.55%	282.83%	132.60%	13.54%	192.91%	471.65%	-80.94%	225.04%	134.02%
Proposed ROR	8.43%	7.09%	-2.11%	12.65%	13.05%	13.12%	16.16%	9.85%	3.83%	12.35%	24.08%	-3.08%	13.92%	8.51%
Pct of System	100.00%	84.10%	-25.03%	150.06%	154.80%	155.63%	191.70%	116.84%	45.43%	146.50%	285.65%	-36.54%	165.12%	100.95%
Change Proposed ROR	2.08%	2.96%	1.46%	0.05%	-0.19%	-0.25%	-1.80%	1.43%	2.97%	0.10%	-5.87%	2.06%	-0.37%	0.00%
Pct of System	0.00%	19.06%	31.19%	-48.37%	-53.70%	-54.92%	-91.13%	-15.76%	31.89%	-46.41%	-186.00%	44.40%	-59.92%	-33.07%
Revenue Increase	76,980	72,507	999	198	(932)	(339)	(125)	541	4,213	5	(89)	9	(7)	0
Pct of Total Revenues	2.47%	5.48%	3.68%	0.08%	-0.13%	-0.09%	-0.62%	1.57%	17.07%	0.00%	-0.10%	0.04%	-0.12%	0.00%
Pct of Distribution														
Rate Revenues	12.19%	18.76%	25.03%	0.27%	-0.85%	-1.16%	-7.02%	8.38%	24.05%	0.43%	-15.78%	25.00%	-2.10%	0.00%
25% Pct Incr Cap	25.00%													
Revenue Increase Components:														
Social Program Rider	27,896	27,629	267											
Energy Efficiency Rider	2,857	2,363	23	471										
Base Rate Change	46,227	42,515	709	(273)	(932)	(339)	(125)	541	4,213	5	(89)	9	(7)	0
Total	76,980	72,507	999	198	(932)	(339)	(125)	541	4,213	5	(89)	9	(7)	0
Pct of System														
50% Move to SARR														
Present		65.04%	-56.22%	198.43%	208.50%	210.55%	282.83%	132.60%	13.54%	192.91%	471.65%	-80.94%	225.04%	134.02%
Proposed		84.10%	-25.03%	150.06%	154.80%	155.63%	191.70%	116.84%	45.43%	146.50%	285.65%	-36.54%	165.12%	100.95%
Move		19.06%	31.19%	-48.37%	-53.70%	-54.92%	-91.13%	-15.76%	31.89%	-46.41%	-186.00%	44.40%	-59.92%	-33.07%
Pct Move		54.52%	19.97%	49.14%	49.49%	49.68%	49.84%	48.34%	36.88%	49.95%	50.05%	24.54%	47.92%	97.21%

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. R-00072155

PPL Electric Utilities Corporation

Statement No. 8-R

Rebuttal Testimony of Timothy R. Dahl

1 **Rebuttal Testimony of Timothy R. Dahl**

2 Q. Please state your full name and address.

3 A. My name is Timothy R. Dahl and my business address is PPL Electric
4 Utilities, 827 Hausman Road, Allentown, PA 18104

5

6 Q. What is your position at PPL Electric Utilities Corporation ("PPL Electric" or
7 the "Company")?

8 A. I am the Manager-Regulatory Programs & Business Services in PPL
9 Electric's Customer Services Department.

10

11 Q. What are your major responsibilities?

12 A. My responsibilities include oversight and management of the Company's
13 universal service programs (e.g., OnTrack, WRAP and Operation HELP),
14 compliance with Chapter 56 and Chapter 14 regulations, and quality
15 assurance activities. I act as a liaison between PPL Electric and
16 various state agencies (e.g., Public Utility Commission, Department of
17 Public Welfare and Office of Consumer Advocate) regarding programs
18 and services for low-income customers.

19

20 Q. What is the purpose of your rebuttal testimony regarding PPL Electric's
21 request for an increase in base rates?

22 A. My purpose is to respond to various witnesses' recommendations and
23 concerns regarding the PPL Electric's proposals to increase funding for its

1 universal service programs, to implement a reconcilable surcharge to
2 recover costs for its universal service programs, and to conduct a three-
3 year pilot known as the Sustainable Development Program.
4

5 I. Summary of Recommendations

6 Q. Would you please summarize the key recommendations and issues
7 identified by the various witnesses regarding PPL Electric's universal
8 service programs?

9 A. **OnTrack:** Witness Roger Colton for the Office of Consumer Advocate
10 ("OCA") is primarily concerned with the reasonableness of the Customer
11 Assistance Program ("CAP") expenses that PPL Electric proposes to
12 recover from residential customers. Regarding PPL Electric's CAP,
13 which is known as OnTrack, Witness Colton reaches four (4) general
14 conclusions:

- 15 1. PPL Electric overstates CAP costs to be recovered through rates;
- 16 2. The Commission should require the Company to adopt certain
17 offsets in compliance with the CAP Policy Statement;
- 18 3. The Company should allocate universal service costs to all classes
19 of customers; and
- 20 4. The Commission should modify PPL Electric's proposed ceiling on
21 CAP credits.

1 As a result of his analysis, Mr. Colton recommends a \$7.0 million
2 reduction in CAP expense recovery through the Company's proposed
3 Universal Service Rider ("USR").

4 Witness Colton also expressed concerns about PPL Electric's
5 ability to provide sufficient information to support an annual reconciliation
6 of universal service expenses. Mr. Colton recommends that the Company
7 be required to confirm that it can track, archive and access these data.

8 **WRAP:** The key recommendation of Witness Eugene Brady from
9 the Commission on Economic Opportunity ("CEO") is to increase the
10 annual funding for the Winter Relief Assistance Program ("WRAP") by \$2
11 million instead of the \$1 million proposed by PPL Electric. CEO
12 recommends that PPL carry over any unspent portion of weatherization
13 dollars to the next year. Witness Brady suggests that the Company be
14 required to earmark \$500,000 for WRAP solar water heating jobs and to
15 conduct a photovoltaic pilot in cooperation with CEO. Other proposals
16 include the following:

- 17 1. Lower the annual minimum usage requirement from 6,000 kWh
18 to 5,000 kWh;
- 19 2. Increase the expenditure level from 20 percent to 25 percent for
20 customers with household incomes between 151-200 percent of
21 the federal poverty level; and
- 22 3. Have the Commission direct PPL Electric to use community-
23 based organizations to implement its universal service programs.

1 **Universal Service Rider:** PPL Electric has proposed to recover its
2 costs associated with OnTrack and WRAP through the annually
3 reconcilable USR, which applies only to residential customers. Witness
4 Amanda Gordon of the Pennsylvania Public Utility Commission's ("PUC"
5 or the "Commission") Office of Trial Staff ("OTS") has recommended that
6 the Commission deny the Company's request, and instead require PPL
7 Electric to adjust the USR prospectively on a quarterly basis to track
8 changes in costs without reconciliation.

9 Witness Colton has recommended reducing the proposed Universal
10 Service Charge from 6.53 percent to 4.74 percent, which would reduce
11 CAP cost recovery by nearly \$7.0 million.

12
13 Q. In sum, what are the recommendations and issues associated with PPL
14 Electric's proposed Sustainable Development Program ("SDP")?

15 A. OTS Witness Janet Markovich recommends that the Commission reject
16 the Company's claim of \$1.25 million for the SDP. Ms. Markovich cites
17 three reasons for the Commission to deny the funding claim. First, she
18 contends that the proposed program does not support any regulatory
19 goals approved by the Commission. Second, from OTS's perspective,
20 there is no discernable benefit to ratepayers. Finally, she asserts that
21 funding for the SDP would be tantamount to a forced contribution or
22 taxation of customers. Witness Markovich further notes that the

1 Commission in the past has denied regulatory recovery for programs like
2 the SDP.

3 Witness Jennifer Hopkins, President - Sustainable Energy Fund of
4 Central Eastern Pennsylvania ("SEF") supports PPL Electric's proposal to
5 implement the Sustainable Development Program. Ms. Hopkins proposes
6 that the SEF partner with the Company to administer and manage the
7 proposed \$1 million Downtown Development Program component of
8 the SDP. Witness Hopkins indicates that the SEF has a demonstrated
9 ability to administer such programs, as evidenced by the \$16 million in
10 projects funded by the SEF since 1999.

11
12 II. Summary of PPL Electric's Responses

13 Q. Would you please summarize the Company's primary responses to the
14 the recommendations offered by the various witnesses regarding universal
15 service programs and the Universal Service Rider.

16 A. **Universal Service Programs:** With respect to the recommendations of
17 the various witnesses, PPL Electric offers the following comments.

18 OnTrack:

19 1. **Lack of Budget Detail for OnTrack** -- PPL Electric disagrees with this
20 conclusion. The Company has consistently and fully complied with all
21 Commission reporting requirements regarding universal service
22 programs, including CAP. In addition, PPL Electric tracks and retains
23 detailed information regarding its CAP expenditures on a monthly

1 basis. Such information is more than sufficient to support annual
2 reconciliation of recovery of CAP expenses.

3 **2. Removal of PPL Electric's Administrative Expenses** -- The
4 Company agrees with the proposal to collect its internal CAP
5 administrative expenses through base rates rather than through the
6 USR.

7 **3. Overstatement of CAP Credits, Ceiling for CAP Credits and**
8 **Double Recovery of CAP Credits** -- PPL Electric disagrees with the
9 conclusions and recommendations regarding these related issues
10 because the Company has based its recovery claim for CAP credits on
11 actual costs incurred. A downward adjustment of recovery for CAP
12 credits (i.e., the difference between the customer's actual bill and the
13 OnTrack bill) is unwarranted and contrary to the full recovery provision
14 of the Electricity Competition Act.

15 **4. Overstatement of Arrearage Forgiveness** -- PPL Electric disagrees
16 with the proposal to reduce the cost recovery amount for OnTrack
17 arrearage forgiveness. As indicated in the above response, the
18 Company has calculated its recovery need for arrearage forgiveness
19 based on actual costs incurred.

20 **5. Offsets for Credit and Collection and Bad Debt** -- The Company
21 contends that Mr. Colton for the OCA has not adequately supported his
22 adjustment attributable to savings from credit and collection. PPL

1 Electric is not double collecting the arrearage forgiveness costs
2 associated with OnTrack customers.

3 **6. Offsets for Cash Working Capital** -- PPL Electric disagrees with the
4 conclusion that there is a cash working capital savings associated with
5 OnTrack. From an accounting perspective, the Company treats
6 arrearage forgiveness as a non-cash item. As such, the Commission
7 should reject the recommendation to adjust PPL Electric's recovery of
8 the arrearage forgiveness costs for OnTrack.

9 **7. Cost Recovery from all Customer Classes** -- The Company
10 disagrees with the recommendation to recover universal service costs
11 from all customer classes. The Commission disagrees as well. In its
12 *Final Investigatory Order*, entered December 18, 2006 at Docket No.
13 M-00051923, the Commission reiterated its current policy of allocating
14 CAP costs only to residential customers.

15 **WRAP:**

16 **1. More Funding for Weatherization** -- PPL Electric disagrees with the
17 proposal to increase funding for WRAP by an additional \$2 million.
18 PPL Electric believes that its proposed annual increase of 16 percent
19 in WRAP funding is appropriate because it allows the Company to
20 serve more customers while being sensitive to the cost pressures on
21 the residential class. Regarding the carryover of unspent WRAP
22 funds, it has been PPL Electric's policy over the years to do so.

- 1 2. **Earmark More Funding for Solar Water Heating and Conduct a**
2 **Photovoltaic Pilot** -- The Company disagrees with increasing funding
3 for solar water heating applications. Identifying and certifying homes
4 for solar water heating is difficult, time consuming and costly. PPL
5 Electric has already conducted a photovoltaic pilot ("PV") in
6 cooperation with the WRAP administering agencies. The results
7 showed that PV applications are expensive and have very long
8 paybacks.
- 9 3. **Reduce the kWh Requirement** -- PPL Electric disagrees with the
10 recommendation to lower the annual usage requirement from 6,000
11 kWh to 5,000 kWh. Opportunities to realize meaningful energy savings
12 for low-use customers are limited. However, PPL Electric has
13 proposed to offer energy savings kits and/or energy education to low-
14 income customers whose annual usage is less than 6,000 kWh.
- 15 4. **More Expenditures for Higher Income Customers** -- The Company
16 recommends that the Commission reject the proposal to increase (from
17 20 percent to 25 percent) the level of WRAP expenditures for
18 customers with household incomes between 151-200 percent of the
19 federal poverty level. PPL Electric believes that it is more appropriate
20 to target its weatherization dollars toward households with lower
21 incomes.
- 22 5. **Have PPL Electric use CBOs** -- PPL Electric plans to continue using
23 community-based organizations ("CBOs") and private contractors to

1 administer its universal service programs. The CBOs play an integral
2 role in delivering programs to low-income households. However, PPL
3 Electric also wants to maintain the flexibility to use the most qualified
4 and efficient providers of services for universal service programs in
5 each portion of its service area.

6
7 **Universal Service Rider:**

8 PPL Electric's comments and recommendations regarding the
9 USR are as follows:

- 10 1. **Adjust the USR Quarterly** -- PPL Electric disagrees with the
11 recommendation to adjust the USR prospectively on a quarterly basis,
12 without reconciliation, to track changes in costs. The Company believes
13 that full cost recovery can be achieved only by tracking and reconciling
14 actual costs on an annual basis, similar to the former Energy Cost Rate
15 and the present riders for the Competitive Transition Charge, Intangible
16 Transition Charge and the Transmission Service Charge.
- 17 2. **Reduce the USR** -- The Commission should reject the proposal to
18 reduce the proposed USR from 6.53 percent to 4.74 percent, which
19 would result in an under collection of costs for PPL Electric.

20
21 Q. Would you please summarize PPL Electric's concerns regarding the
22 recommendation related to the proposed Sustainable Development
23 Program ("SDP")?

1 A. **Sustainable Development Program** -- Regarding the
2 recommendations offered by the various witnesses, PPL Electric's
3 reactions and concerns are as follows.

4 1. **No Ratepayer Funding for the SDP** -- The Company disagrees with
5 the recommendation to deny funding for the SDP. The program
6 supports Commission policy objectives regarding energy efficiency and
7 economic development. The SDP also complements state efforts to
8 implement environmental improvements, which benefit all residents of
9 Pennsylvania.

10 2. **Partnership with the Sustainable Energy Fund** -- PPL Electric agrees
11 that the Sustainable Energy Fund of Central Eastern Pennsylvania
12 ("SEF") supports some of PPL Electric's objectives (i.e., energy
13 efficiency, renewable energy and energy conservation education).
14 Nevertheless, the Company disagrees with the SEF's proposal to
15 administer the Downtown Development Program. PPL Electric has
16 experience in managing this type of grant program.

17
18 III. PPL Electric's Responses to Recommendations
19 Re: Universal Service Programs

20
21 Q. Do you have other concerns about the recommendations regarding the
22 universal service programs?

23 A. Yes, I do. In addition to presenting more detail of PPL Electric's concerns
24 regarding the above recommendations, I will address other subordinate, yet
25 important issues offered in the various witnesses' testimony.

1 **OnTrack:**

2 Q. What are PPL Electric's major issues and concerns regarding the
3 recommendations for OnTrack?

4 A. **Reconciliation:** Witness Colton expressed concern that PPL Electric
5 lacked the detail to support the reconciliation of the proposed Universal
6 Service Rider ("USR"). *Mr. Colton recommended that PPL Electric confirm*
7 *that its information technology can track and store the data needed to*
8 *reconcile OnTrack expenditures.*

9 The Company has the information systems and capabilities in place
10 to accurately and fully provide the data needed to reconcile the proposed
11 USR annually. Under Commission regulations at 52 Pa. Code § 54.75
12 (annual residential collection and universal service and energy conservation
13 program reporting requirements), electric and natural gas utilities must
14 report detailed information on annual expenditures for universal service
15 programs. The Company has established the technology and processes to
16 track and report these data annually to the Commission's Bureau of
17 Consumer Services ("BCS"). The BCS has developed a "data dictionary" to
18 help ensure uniform and accurate reporting by utilities.

19 Known as the universal service reporting requirements, PPL Electric
20 has been providing this extensive report annually to the BCS since 2000.
21 During this period of time, PPL Electric has had no problems or issues
22 providing complete, accurate and timely data to the Commission. Key
23 data in this annual report include expenditures regarding CAP credits,

1 arrearage forgiveness and administrative expenses. This is exactly the data
2 the Company would need to successfully reconcile the USR.

3 **OnTrack Administrative Expenses:** For cost recovery purposes,
4 PPL Electric agrees with Mr. Colton's proposal to exclude the Company's
5 administrative expenses for CAP from the proposed USR. PPL Electric will
6 *recover its internal expenses (e.g., wages, benefits and employee*
7 *expenses)* through base rates.

8 As noted in Schedule RDC - 1, Witness Colton recommends an
9 adjustment of \$1,029,213 to eliminate administrative expenses from the
10 USR. PPL Electric suggests instead an adjustment of \$993,393, a
11 difference of \$35,820. The Company recommends recovery of the \$35,820
12 (see table below) through the USR because these costs involve work
13 by outsiders. For example, Services expenditures include payments to
14 vendors for computer programming and Miscellaneous expenditures include
15 payments to CBOs for training purposes. Several of the OnTrack agencies
16 charge their postage costs to the Company. PPL Electric calculated the
17 difference between Witness Colton's proposed adjustment and the
18 Company's proposed adjustment as shown in the following table.

19

Description	Expenditures
Services	\$30,000
Postage, Mail/Package Delivery	1,320
Advertising	1,500
Miscellaneous	3,000
Total	\$35,820

20

1 **Adjustment for Unpaid CAP Credits:** Mr. Colton has proposed an
2 adjustment that would allow PPL Electric to recover only 71 percent of the
3 proposed \$12.9 million in CAP credits, or approximately \$9.2 million (\$12.9
4 million x 71 percent). It appears that Witness Colton bases this
5 adjustment on the assumption that PPL Electric based its claim on the
6 assumption that 100 percent of OnTrack customers make their monthly
7 payment. Mr. Colton then concludes that PPL Electric is overstating its
8 claim for recovery of CAP credits through the USR.

9 There are two serious flaws with this recommendation. First, the
10 Company's estimates do not assume that 100 percent of customers
11 pay their OnTrack bills in a timely manner (i.e., on or before the due date).
12 As Mr. Colton points out, this is an unrealistic assumption, and PPL Electric
13 does not make that assumption for planning purposes or for projecting
14 OnTrack annual expenditures. Mr. Colton's entire adjustment is based on a
15 completely flawed assumption that has no basis in fact. It should therefore
16 be rejected. Second, simply using a percentage of OnTrack customers who
17 made timely payments is the wrong measure and would result in a
18 significant under recovery of program expenditures.

19 The Company does not dispute Witness Colton's conclusion that 71
20 percent of OnTrack customers make timely payments; however, this
21 percentage by itself is insufficient to determine actual CAP credits. PPL
22 Electric uses actual OnTrack expenditures to project future program
23 expenditures. The Company maintains a six-year, 12-month rolling average

1 of OnTrack monthly expenditures (i.e., CAP credits, arrearage forgiveness
2 and administrative expenses) and participation rate to help track and
3 forecast program expenditures. These data take into consideration the
4 payment behavior of all OnTrack customers, those who make timely
5 payments, those who make sporadic payments and those who make no
6 payments.

7 In looking at actual expenditures by month in 2006, the average
8 annual CAP credit amount was \$547 per customer. This average amount
9 includes the effects of customers that do not earn all credits. PPL Electric
10 used this figure as the basis for its projection of CAP credit expenditures
11 (\$12.9 million). An enrollment of 22,000 to 24,000 customers would result in
12 CAP credit expenditures ranging from approximately \$12.0 million (22,000 x
13 \$547) to \$13.1 million (24,000 x \$547). PPL Electric believes that a range
14 of expenditures for CAP credits is appropriate because weather can affect
15 the level of expenditures. For instance, compared with other electric utilities
16 in the state, the Company has a high saturation level of electric heat (31
17 percent). Both a colder than normal and prolonged winter and a warmer
18 than normal and prolonged summer can increase CAP credits expenditures.

19 The rolling average monthly data also accounts for customers who
20 receive partial OnTrack benefits during the year. For instance, a customer
21 may enroll in the program in February and leave the program in June either
22 on a voluntary or non-voluntary basis. Although this customer received five
23 (5) months of OnTrack benefits, he or she would not appear in the year-end

1 data reported to the Commission through the universal service
2 reporting requirements. As noted on page 7 of my Direct Testimony
3 (Statement No. 8), just over 29,000 customers received OnTrack benefits
4 in 2006. However, the year-end number reported to the Commission was
5 20,721 customers. Tracking actual expenditures over time is a better
6 indicator than using a percentage of customers who make timely payments.

7 PPL Electric agrees with Mr. Colton that the Company should not
8 recover OnTrack expenses that it does not incur. However, simply using a
9 percentage of OnTrack customers who make timely payments is
10 inappropriate because it would not reflect all actual expenditures for CAP
11 credits. The Commission noted on page 13 of its *Final Investigatory Order*
12 regarding Customer Assistance Programs: Funding Levels and Cost
13 Recovery Mechanisms, entered December 18, 2006 (Docket No. M-
14 00051923), that "Both the Electricity Competition Act and the Natural Gas
15 Competition Act state explicitly that utilities have a right to fully recover
16 their costs incurred in providing universal service programs." Witness
17 Colton's proposed adjustment regarding CAP credits would violate this
18 provision. As such, the Commission should reject this
19 recommendation.

20 Finally, PPL Electric also notes that annual reconciliation will make
21 certain that the Company will only recover actual CAP credits earned by
22 customers.

1 **Ceiling on CAP Credits:** Mr. Colton correctly notes that PPL
2 Electric has proposed an annual ceiling on CAP credits of \$1,800 for
3 heating customers and \$700 for non-heating customers. The Commission's
4 current CAP Policy Statement (52 Pa. Code § 69.265(3) (v) (B) (C)) limits
5 annual CAP credits to \$1,400 for heating customers and \$560 for non-
6 heating customers. On page 50 of its *Final Investigatory Order* (Docket No.
7 M-00051923), the Commission noted that until it could amend the CAP
8 Policy Statement to adopt a permanent method to adjust maximum CAP
9 credits, utilities should consider revising their limits to \$1,800 and \$700.
10 PPL Electric has done just that.

11 As shown in Schedule RDC-4, Witness Colton proposes an
12 adjustment (i.e., reduction) of \$815,625 in CAP credits because he
13 estimates that PPL Electric will remove between 12-14 percent of OnTrack
14 customers who exceed their \$1,800 maximum limit. As a result, he
15 contends that the Commission should not allow the Company to recover
16 these costs in excess of the maximum limit on CAP credits.

17 PPL Electric does not dispute Witness Colton's claim that it will
18 remove a certain percentage of customers from OnTrack who reach their
19 limits for CAP credits (\$1,800 heating and \$700 non-heating). However,
20 PPL Electric disagrees with Mr. Colton's proposed adjustment for two
21 reasons. First, the Company based its 2007 budget for CAP credits on the
22 \$1,400 and \$560 caps that were in effect when the budget was prepared.
23 The Company has proposed to increase these caps to \$1,800 and \$700.

1 All else being equal, this increase in the caps will increase OnTrack
2 expenses, not decrease them. Mr. Colton is correct in theory but his
3 adjustment goes in the wrong direction.

4 Second, the CAP Policy Statement at § 69.265(3) (vi) (A-E) allows
5 utilities to exempt participants from a CAP control feature (i.e., annual
6 maximum CAP credits) if certain conditions exist. Some of the key reasons
7 for exempting a participant include addition of a family member, serious
8 illness or energy consumption beyond the household's ability to control.
9 Because credits will be continued for certain CAP customers over and
10 above the limits, actual experience during 2005 and 2006 is not a
11 reasonable basis for projecting the effect of the CAP limits during 2008 and
12 beyond. Mr. Colton's proposed adjustment of nearly \$816,000 is
13 inappropriate. In his testimony on page 35, Witness Colton recognizes this
14 issue when he recommends that PPL Electric not remove customers who
15 exceed their CAP credits limit if they can demonstrate that their usage was
16 beyond their control.

17 Finally, I note again that the reconcilable mechanism will account for
18 actual CAP credits provided to OnTrack customers.

19 **Double Recovery of CAP Credits:** Mr. Colton recommends an
20 adjustment of approximately \$68,000 to ensure that existing expenses in
21 base rates should not be recovered a second time through the USR.
22 Mr. Colton contends that PPL Electric's uncollectible expense already
23 includes some CAP shortfall dollars and, therefore, in his opinion the

1 Commission should not allow the Company to recover these non-
2 incremental expenses again using the USR.

3 PPL Electric believes that generally there is no double recovery of
4 CAP credits. The Company establishes its provision for uncollectible
5 accounts (i.e., written off final accounts) and its budget for CAP
6 arrearage forgiveness based on actual expenses incurred. From an
7 accounting perspective, PPL Electric treats CAP credits as an offset to
8 revenue rather than an uncollectible expense.

9 Mr. Colton bases his adjustment on an estimated increase of 2,000
10 customers in OnTrack. He then uses an average CAP credits amount of
11 \$656 and uniformly applies a 5.19 percent gross write-off rate for confirmed
12 low-income customers to calculate his adjustment. PPL Electric contends
13 that there is not a dollar-for-dollar relationship between CAP credits
14 recovered through the proposed USR and CAP credits that may already be
15 included in base rates. For example, the Company does not write off active
16 accounts. As a result, a customer moving from CAP to a non-CAP status
17 does not necessarily translate into write-offs that would affect the
18 uncollectible expense. In addition, customers removed from CAP may
19 rejoin the program after several months. If they had an overdue balance but
20 remained an active customer (i.e., established a payment agreement), there
21 would have been no write-off before rejoining OnTrack.

22 Mr. Colton is overstating his proposed adjustment. If there were to
23 be an adjustment, PPL Electric believes that \$36,000 is a more appropriate

1 figure. To calculate his proposed adjustment, Mr. Colton assumed an
2 increase in CAP enrollment of 2,000 customers and an average CAP credit
3 amount of \$656. PPL Electric projects an increase in CAP enrollment of
4 approximately 1,300 customers (22,000 minus 20,721 as of December 31,
5 2006) and an average of \$534 in CAP credits in 2007. Using Mr. Colton's
6 gross write-off rate of 5.19 percent for confirmed low-income customers, the
7 Company calculated its proposed adjustment as follows: $1,300 \times \$534 =$
8 $\$694,200 \times 5.19 \text{ percent} = \$36,000.$

9 **Arrearage Forgiveness Credits:** Using the same erroneous logic
10 and rationale that he employed for the recommended adjustment to unpaid
11 CAP credits, Mr. Colton suggests that the Commission allow PPL Electric to
12 collect only 71 percent of proposed budget for arrearage forgiveness. This
13 would translate into an adjustment of \$1.3 million.

14 PPL Electric disagrees with this adjustment for primarily the same
15 reasons that it objected to the proposed adjustment for unpaid CAP credits.
16 First, the Company does not assume in its cost estimates that 100 percent
17 of OnTrack customer will make timely payments. Second, simply using a
18 percentage of customers who pay timely will underestimate the actual
19 expenses incurred by PPL Electric for arrearage forgiveness. The
20 Company believes it is more appropriate to use actual expenses incurred to
21 establish a budget projection for OnTrack arrearage forgiveness. For
22 example, in 2006 PPL Electric expended approximately \$4.4 million for
23 arrearage forgiveness and had nearly 21,000 active accounts at year's end.

1 Using a percentage, as suggested by Witness Colton, will understate PPL
2 Electric's actual arrearage forgiveness expenditures. Anything other than
3 full recovery for legitimate CAP expenses is contrary to the Electric
4 Competition Act and the Commission's expressed policy objectives
5 presented in its *Final Investigatory Order* (Docket No. M-00051923). And,
6 again, reconciliation will ensure that the Company recovers only the actual
7 arrearage forgiveness provided to customers.

8 **CAP Cost Offsets:** Witness Colton believes that he has identified
9 four (4) offsets to CAP costs; they include: 1) credit and collection, 2) bad
10 debt, 3) cash working capital and 4) cash working capital on a going-forward
11 basis. Taken together, Witness Colton recommends an offset of over
12 \$667,000 for these four (4) items. The Company's reaction to these
13 proposed offsets is as follows.

14 **Credit and Collection:** Mr. Colton recommends an offset of \$45,300
15 for net additions of customers. PPL Electric disagrees with this proposed
16 adjustment for several reasons. First, Mr. Colton provides no real
17 foundation for the adjustment, other than noting that other Pennsylvania
18 utilities have generated estimates of administrative savings. He does not
19 provide the names of the utilities, nor does he provide and discuss the
20 methodology they used to determine administrative savings.

21 Second, savings realized at one utility may not be transferable to
22 another utility because of how the companies administer their programs.
23 The Commission's CAP Policy Statement provides guidelines for

1 administering CAP rather than a prescriptive "cookie cutter" approach.
2 Each utility may have a slightly different approach to administering their
3 CAP in terms of the delivery of services, automation, arrearage forgiveness,
4 payment options and collection efforts.

5 Finally, as Mr. Colton notes on pages 25 and 26 of his Direct
6 Testimony, the administrative savings are estimates. In other words, there
7 is no documentation of actual savings realized by these other Pennsylvania
8 utilities. PPL Electric believes that it would be difficult to develop a
9 methodology or formula to accurately reconcile CAP costs and savings.
10 This effort would be impractical because a methodology or formula would
11 perforce require numerous assumptions that would render any savings
12 conclusions as speculative. Further, a methodology or formula would fail to
13 account for the individual characteristics of Pennsylvania's utilities and the
14 needs of their customers.

15 **Bad Debt:** Mr. Colton recommends a bad debt offset of \$165,820
16 for OnTrack. Mr. Colton posits that, even without OnTrack, the Company
17 would have written off some portion of the arrears subject to forgiveness.
18 Without deducting these dollars from the USR, he believes that PPL Electric
19 would be collecting for the same dollars twice. PPL Electric disagrees with
20 this conclusion for the reasons discussed below.

21 The Company is not double collecting for arrearage forgiveness
22 because it budgets and tracks costs separately for residential customers in
23 normal collections and for customers' arrearage forgiveness in OnTrack. As

1 noted in Exhibit Future 1, B-4, Acct. No. 904 and Acct. No. 908, PPL Electric
2 has established two separate provisions -- one for uncollectible accounts
3 (\$20.155 million) and one for OnTrack arrearage forgiveness (\$4.5 million).

4 It is important to note the difference between these two provisions.
5 The traditional uncollectible provision is only for final accounts that PPL
6 Electric writes off after 115 days, minus any recovery of funds. On the other
7 hand, the provision for OnTrack represents pre-program arrearages that the
8 Company "freezes" then writes off through a set schedule (e.g., 12 months
9 for overdue balances at or below \$1,000). If a low-income customer
10 participates in OnTrack, then it is proper to charge arrearage forgiveness to
11 the program's \$4.5 million provision. Similarly, it is proper to charge write-
12 offs for final accounts to the \$20.155 million provision.

13 **Cash Working Capital:** Using data from 2005 and 2006, Mr. Colton
14 recommends an offset of \$320,090 for cash working capital related to
15 arrearage forgiveness and \$135,943 offset for cash working capital related
16 to arrearage forgiveness on a going-forward basis. PPL Electric disagrees
17 with this recommendation because the \$4.5 million for arrearage
18 forgiveness is a non-cash item. In other words, the \$4.5 million is simply a
19 book entry and is not included in PPL Electric's cash working capital
20 calculations, as indicated in Exhibit Historic 1, C4 and in Exhibit Future 1,
21 C4.

22
23 Q. Do you have a conclusion regarding Mr. Colton's proposed adjustments?

1 A. Yes. Witness Colton recommends reducing the proposed USR from 6.53
2 percent to 4.74 percent -- a reduction of nearly \$7.0 million. For the various
3 reasons stated above, PPL Electric disagrees with this reduction. Under
4 Witness Colton's recommendation, the Company would significantly under
5 collect its actual costs for implementing OnTrack and WRAP. Except for
6 moving PPL Electric's salaries and expenses for CAP to base rates, the
7 other adjustments proposed by Mr. Colton (i.e., unpaid CAP credits, ceiling
8 on CAP credits, double collecting on arrearage forgiveness, bad debt and
9 cash working capital) are without merit. As such, the Commission should
10 reject these adjustments.

11
12 **Universal Service Cost Allocation:**

13 Q. Has Witness Colton offered other recommendations regarding the costs
14 associated with OnTrack?

15 A. Yes, Mr. Colton recommends allocating the costs of universal service
16 programs to all classes of customers, including commercial and industrial.

17
18 Q. Does PPL Electric support this recommendation?

19 A. No, it does not. In the Company's last distribution rate case (Docket No.
20 R-000492550), the Office of Consumer Advocate ("OCA") made a similar
21 recommendation. PPL Electric opposed the suggestion to allocate
22 universal service costs to all customer classes and the Commission
23 ruled that it is appropriate to allocate these costs only to the residential
24 class. In its final order, the Commission held that "[u]niversal service

1 programs, by their nature, are narrowly tailored to the residential
2 customers and therefore, should be funded only by the residential class."

3 The Commission affirmed this position in its *Final Investigatory Order*,
4 entered December 18, 2006, at Docket No. M-00051923. In that order, the
5 Commission's language and position regarding this issue were clear and
6 unambiguous. On page 31 of the order, the Commission noted the
7 following:

8 "After careful consideration of the comments and the arguments
9 presented, the Commission will continue its current policy of
10 allocating CAP costs to the only customer class whose
11 members are eligible for the program – residential customers."
12

13 PPL Electric believes that its rationale for opposing the
14 allocation of universal service costs to all classes of customers in 2004 is
15 still applicable. The Company supports the Commission's policy of
16 allocating these costs only to residential customers. As such, PPL Electric
17 recommends that the Commission reject the OCA's proposal.

18
19 **Winter Relief Assistance Program ("WRAP"):**

20 Q. What are other parties' major issues and concerns regarding the
21 recommendations for WRAP?

22 A. **Increase Funding by \$2 Million:** Witness Eugene Brady from the
23 Commission on Economic Opportunity ("CEO") has recommended
24 increasing annual funding for WRAP by \$2 million instead of the \$1 million
25 proposed by PPL Electric. The Company disagrees with this
26 recommendation because PPL Electric's proposal strikes a balance

1 between serving more customers while mitigating the cost impact on all
2 customers in the residential class.

3 PPL Electric proposes to increase annual funding for WRAP by \$1
4 million or 16 percent. Based on historical costs and the types of WRAP
5 jobs, this proposed increase would allow the Company to serve an
6 additional 500 customers annually. From 2002 through 2006, an average of
7 2,600 customers received WRAP benefits annually. PPL Electric projects
8 that its proposed increase of \$1 million would raise the number of
9 customers served from 2,600 to 3,100 -- a jump of 19 percent. The
10 Commission's regulations at 52 Pa. Code § 58.4 require electric utilities to
11 expend 0.2 percent of jurisdictional revenues on LIURP. The Company's
12 proposed funding level of \$7.25 million for WRAP represents nearly 0.25
13 percent of jurisdictional revenues as of December 31, 2006.

14 **Lower the kWh Usage Requirement:** Witness Brady has proposed
15 that PPL Electric lower the minimum usage requirement from 6,000 kWh to
16 5,000 kWh. The opportunities for low-use customers to save energy and
17 reduce the amount of their electric bills are limited.

18 The Company believes there is still a sufficient pool of higher use
19 customers who have not yet participated in WRAP. PPL Electric should be
20 able to target its weatherization efforts toward higher use households that
21 are having difficulty paying their energy bills. In addition, the Commission's
22 regulations for the Low Income Usage Reduction Programs ("LIURP") at 52
23 Pa. Code § 58.10 (a) (1) note the following:

1 "Among eligible customers, those with the largest usage and greatest
2 opportunities for bill reductions relative to the cost of providing
3 program services shall receive services first."
4

5 If these low-use customers heat their homes with natural gas or oil,
6 the Company's WRAP personnel refer them either to their gas utility's
7 LIURP or the Pennsylvania Department of Community and Economic
8 Development's ("DCED") federally-funded Weatherization Assistance
9 Program. A number of CBOs that administer PPL Electric's WRAP also
10 administer the weatherization programs offered by gas utilities and DCED.

11 In addition, the Company's kWh requirement is already significantly
12 more generous than the standards established in the Commission's LIURP
13 regulations. The LIURP regulations define a high usage baseload customer
14 as someone who uses 125 percent of the utility's average residential
15 baseload customer. In 2006, the average baseload customer used 9,067
16 kWh annually; adding 25 percent to that brings the total to 11,335 kWh. In
17 other words, under Commission regulations, PPL Electric would not have to
18 offer WRAP baseload services to customers unless their annual kWh usage
19 exceeded approximately 11,300 kWh. The Company offers WRAP
20 baseload measures to customers whose annual usage exceeds 6,000 kWh.

21 However, PPL Electric realizes that many residential customers,
22 regardless of their annual kWh usage, are interested in conserving
23 electricity and managing their bills. On page 15 of my Direct Testimony
24 (Statement No. 8), I discuss the Company's proposal to offer energy saving
25 kits and/or energy education to low-income customers who are ineligible for

1 WRAP because their annual usage falls below 6,000 kWh. PPL Electric
2 recommends offering a maximum of \$200 in low-cost comfort
3 and safety measures. The Company also proposes to offer baseload
4 WRAP measures (i.e., energy education, caulking and CFLs) to applicants
5 who do not receive landlord approval.

6 **Increase Expenditures for Higher Income Customer:** The
7 Commission's LIURP regulations allow utilities to provide weatherization
8 services to customers who have overdue balances and household incomes
9 at or below 200 percent of the federal poverty level ("FPL"). Although the
10 regulations at § 58.10 (c) state 10 percent, the Commission has determined
11 that utilities can spend up to 20 percent of their LIURP budgets on these
12 special needs customers (i.e., household incomes between 151-200
13 percent of the FPL). Mr. Brady recommends increasing this amount to 25
14 percent. The Company disagrees with this suggestion primarily for three
15 reasons.

16 First, PPL Electric believes that it is more appropriate to expend the
17 WRAP budget on households with higher kWh usage and lower incomes.
18 These households are more susceptible to shut-offs for non-payment of
19 electric bills. Effective and properly installed weatherization measures, in
20 combination with energy education, can lower electric bills and help reduce
21 the possibility of termination of service. In 2006, PPL Electric expended
22 \$625,525 or 12 percent of its WRAP budget on households with incomes
23 from 151 percent to 200 percent of the FPL, which represented 11 percent

1 of all homes weatherized. The Company promotes the extended income
2 guidelines in all WRAP communications and accepts all eligible customers
3 into the program. The Company believes that the maximum of 20 percent
4 of expenditures for these higher income customers is adequate.

5 Second, the Commission's LIURP regulations at § 58.10 (c) do not
6 require utilities to spend a certain percentage on these customers; rather,
7 the regulations indicate that utilities may spend up to a certain percentage.
8 PPL Electric believes that the maximum 20 percent figure established by the
9 Commission is appropriate.

10 Finally, before changing the percentage expended on special needs
11 customers, the Company believes that the Commission would need to
12 amend its LIURP regulations through a formal rulemaking proceeding. A
13 distribution rate case proceeding is not the proper venue for analyzing and
14 amending Commission regulations.

15 **Expand Funding for Solar Water Heating and Conduct a**
16 **Photovoltaic ("PV") Pilot:** As a result of PPL Electric's last distribution
17 rate case (Docket No. R-00049255), the Company agreed to: 1) make solar
18 water heating ("SWH") a standard measure for WRAP where applicable,
19 and 2) expend an average of \$400,000 annually on SWH installations.
20 In 2005, WRAP contractors completed 43 SWH jobs at a cost of \$311,587,
21 and in 2006 they completed 53 installations at a cost of \$370,451. Witness
22 Brady recommends increasing this annual expenditure level to

1 \$500,000. PPL Electric agrees to continue funding SWH installations but
2 disagrees with the level of funding suggested by Witness Brady.

3 PPL Electric proposes to continue SWH as a standard measure
4 for WRAP, provided that homes meet program requirements (proper
5 roof orientation, no shade trees, sufficient kWh usage, etc.). In fact, on
6 June 11-12, 2007, PPL Electric, in cooperation with CEO, conducted a solar
7 *water heating certification course for approximately 35 WRAP contractors at*
8 *CEO's offices in Wilkes-Barre, Pennsylvania.* However, the Company
9 recommends that there be no specifically earmarked budget for WRAP
10 SWH installations. Instead, PPL Electric proposes that the WRAP
11 contractors continue their current practice of determining whether a home
12 meets the requirements for a SWH installation. If it does and the customer
13 agrees to the installation, the WRAP contractors would simply include the
14 work as part of their normal WRAP job (attic insulation, air sealing, etc.).

15 PPL Electric has several concerns with the proposal to expand
16 funding for solar water heating. First and foremost, identifying homes of
17 low-income customers that meet the SWH requirements is difficult and
18 time consuming. In 2006, for example, to find the 53 customers that
19 received SWH installation, PPL Electric staff and WRAP contractors had to
20 analyze and evaluate 948 customer locations. Based on its installation
21 experience in 2005 and 2006, the Company estimates that less than two (2)
22 percent of WRAP participants' homes qualify for SWH. Second, customers
23 must consent to the installation and must have a demonstrated capacity to

1 understand the system. Third, installing a SWH system is time consuming
2 and does not benefit from "mass production" efficiencies because every
3 home and installation is different. Finally, the average cost of a SWH job for
4 WRAP has risen significantly from \$4,712 in 2004 to \$6,977 in 2006 -- an
5 increase of 48 percent.

6 In sum, PPL Electric wants to continue funding for SWH installations
7 and to continue SWH training for the WRAP contractors. However, the
8 Company recommends paying for qualified SWH installations identified by
9 the WRAP contractors rather than earmarking a specific level of expenditure
10 for SWH installations.

11 Witness Brady has proposed that the Company fund and work with
12 CEO in developing and implementing a photovoltaic ("PV") pilot. A PV
13 system converts sunlight into direct current then uses an inverter to turn the
14 direct current into alternating current. PPL Electric recommends that the
15 Commission reject this proposal for several reasons.

16 First, the Company has already conducted a PV pilot with CEO and
17 other WRAP contractors. As part of its 1998 Settlement Agreement in its
18 restructuring case, PPL Electric agreed to conduct a PV pilot and used
19 WRAP contractors to install a total of 45 units from 2001 to 2005. Second,
20 as noted on page 43 of my Rebuttal Testimony (Statement 7R) in Docket
21 No. R-00049255, the average installation cost exceeded \$10,000 per PV
22 application and had an average payback period over 70 years. In the
23 Company's estimation, the payback period for PV installations has improved

1 little over the past several years. Third, there are significant installation
2 challenges in finding suitable locations, obtaining reliable equipment and
3 maintaining the systems. Fourth, a study completed in October 2005
4 or the Commission by Gil Peach & Associates regarding the solar water
5 heating and PV pilots for PPL Electric, Allegheny Power and FirstEnergy
6 concluded that PV systems were not cost effective for Pennsylvania.
7 Finally, in PPL Electric's last distribution rate case (Docket No. R-
8 00049255), the Commission properly rejected CEO's proposal to
9 earmark funding for PV installations and should do so again.

10 **Direct PPL Electric to Use CBOs:** Mr. Brady has recommended
11 that the Commission direct the Company to use community-based
12 organizations ("CBOs") to administer its universal service programs. The
13 Commission should reject this recommendation for the following reasons.
14 First, I have already indicated on page 5 of my Direct Testimony (Statement
15 No. 8) that the Company will collaborate with CBOs to deliver universal
16 service programs to eligible households. Second, on page 43 of its rate
17 case order in PPL Electric's last distribution rate case (Docket No. R-
18 00049255), the Commission rejected a similar recommendation offered by
19 Witness Brady. Third, PPL Electric should have the flexibility in
20 delivering a cost-effective program through the most effective means
21 possible, including the use of both CBOs and private contractors. Finally, I
22 have been informed by counsel that there are no provisions in the Electricity
23 Competition Act or Commission regulations, orders or Policy Statements

1 requiring the electric distribution companies must use CBOs exclusively to
2 administer their universal service programs.

3
4 IV. PPL Electric's Responses to Recommendations
5 Re: Universal Service Rider
6

7 Q. Do you have any concerns or comments regarding the proposed Universal
8 Service Rider ("USR")?

9 A. Yes, I do. Office of Trial Staff ("OTS") Witness Amanda Gordon
10 recommends that PPL Electric adjust the surcharge prospectively on a
11 quarterly basis to track changes in costs. The primary basis for this
12 recommendation is that an annual reconciliation provides no incentive for
13 the Company to ". . . prudently incur costs or create more cost effective
14 measures." PPL Electric disagrees with her conclusion and
15 recommendation for quarterly adjustments to the surcharge. The Company
16 has the following concerns.

17 First, the Commission's *Final Investigatory Order* (Docket No.
18 M-00051923) states that "Utilities are free to propose quarterly or annual
19 reconciliation, and other parties are free to contest the proposal." PPL
20 Electric recommends an annual "true-up" or reconciliation of universal
21 service expenditures, but with quarterly expenditure reports to the
22 Commission. An annual reconciliation considers actual costs incurred
23 and does not rely on estimates or projections of future expenditures, which
24 are subject to uncertainties such as the effects of weather, production of the
25 CBOs, customer participation levels, invoicing from CBOs, etc. By adjusting

1 the surcharge prospectively, there never would be an actual "truing up" of
2 expenditures.

3 Second, adjusting the surcharge quarterly is administratively more
4 complex and time consuming. Quarterly adjustments or reconciliations may
5 be more appropriate for natural gas utilities because of the volatility of the
6 purchased price of natural gas. Reconciling the USR annually is
7 straightforward and efficient and very much like reconciling the former
8 Energy Cost Rate ("ECR").

9 Third, Witness Gordon states that the Public Utility Code requires
10 rates to be just and reasonable and that a reconcilable surcharge would not
11 meet that standard. PPL Electric disagrees with that conclusion. Until
12 1997, all major electric utilities in Pennsylvania included the ECR in rates.
13 The ECR was a reconcilable surcharge (adjusted annually) that permitted
14 recovery of energy costs on a full and current basis. The clause was
15 understandable, easy to administer and worked well for decades. The ECR
16 also involved the reconciliation of significantly more dollars (hundreds of
17 millions) than OnTrack. The ECR was rolled into the base rates of
18 Pennsylvania's electric utilities to implement the rate cap provisions of the
19 Customer Choice Act. 66 Pa. C.S. § 2801, *et seq.*

20 PPL Electric and other Pennsylvania electric utilities used the ECR
21 model to develop reconcilable surcharges for recovery of Competitive
22 Transition Charges and Intangible Transition Charges. In addition, the
23 Company used the same model to develop its Transmission Service

1 Charge. All of these recently developed clauses are working well, have
2 been approved by the Commission and, therefore, must meet the Public
3 Utility Code's standard of just and reasonable rates.

4 Finally, Ms. Gordon states that a guaranteed dollar for dollar
5 recovery (i.e., reconcilable surcharge) provides no incentive for utilities to
6 keep CAP costs prudent. The Commission already has a significant
7 oversight role regarding the funding, implementation and evaluation of
8 utilities' universal service programs. For instance, Commission regulations
9 require detailed annual reports regarding expenditures and participation
10 levels for CAP and LIURP. The Commission issues annual reports (e.g.,
11 *Universal Service Programs & Collections Performance*) on the results and
12 performance of universal service programs. Utilities submit, for Commission
13 approval, detailed three-year plans regarding the implementation of
14 universal service programs. Commission regulations require each utility to
15 have a periodic third-party evaluation of their low-income programs. These
16 evaluations include recommendations to improve the cost-effectiveness of
17 programs. Utilities provide informal reports (e.g., CAP enrollment levels) to
18 the Commission as well. There are many opportunities for utilities and the
19 Commission to identify and eliminate imprudent practices and expenses.

20
21
22 V. PPL Electric's Responses to Recommendations
23 Re: Sustainable Development Program
24

25 Q. Do you have any comments or concerns regarding the Company's
26 proposed Sustainable Development Program ("SDP")?

1 A. Yes. Regarding the SDP, PPL Electric has proposed a three-year pilot with
2 an annual budget of \$1.25 million. The Company would use \$150,000 for a
3 LEED certification ("green buildings") initiative, \$1,000,000 for a Downtown
4 Development effort and \$100,000 to support DCED's new economic
5 development regional marketing program. The primary purpose of the SDP
6 is to promote and support environmental and economic development efforts
7 in local communities. OTS Witness Janet Markovich recommends that the
8 Commission reject this claim for three reasons: 1) SDP does not support
9 Commission approved regulatory goals, 2) SDP provides no benefit to
10 ratepayers, and 3) SDP represents a forced contribution from ratepayers.

11 PPL Electric disagrees with Witness Markovich's assertion that the
12 proposed SDP does not support the Commission's public policy regulatory
13 objectives. The Commission has a long history addressing issues related to
14 the environment and economic development. For example, at the
15 Commission's July 11, 2007 Public Meeting, Chairman Wendell Holland
16 issued a Motion regarding the Distribution System Improvement Charge
17 ("DSIC") petition of Pennsylvania- American Water. The Chairman noted
18 that regulatory bodies across the nation recognize the DSIC as a "best
19 practice" and that one of its main features is that it promotes economic
20 development. In addition, on page 31 of its Final Investigatory Order
21 (Docket No. M-00051923) confirming its current policy of allocating CAP
22 costs only to the residential class, the Commission noted the following:

1 "The Commission believes that we should not initiate a policy change
2 that could have a detrimental impact on economic development and
3 the climate for business and jobs within the Commonwealth."
4

5 Based on the above comments, PPL Electric disagrees with Witness
6 Markovich's conclusion that economic development is not a regulatory goal
7 for the Commission.

8 Progressive economic development, as proposed in the
9 Sustainable Development Program, involves well-planned, sustainable
10 growth. Sustainable communities are more efficient in their consumption of
11 all forms of energy and, therefore, would have similar benefits to
12 customers as investments in conservation. Concentrating development
13 in downtowns by revitalizing these commercial areas creates benefits over
14 the long term. Encouraging the development of LEED-certified buildings
15 produces more immediate energy efficiency gains. PPL Electric believes
16 that the proposed modest budget for the SDP balances the interests of local
17 stakeholders (e.g., elected officials and economic development
18 organizations) with the cost impact on customers.

19 Similarly, the Commission has taken an active role in addressing
20 environmental concerns, as evidenced by its involvement with the Alternate
21 Energy Portfolio Standards and the establishment of the Demand-Side
22 Working Group. In addition, the Commission has begun an effort to develop
23 and implement a statewide energy conservation education program. All of
24 these efforts relate to environmental concerns. Again, it is inaccurate
25 to conclude that improving the environment is not one of the Commission's

1 public policy objectives. Improvements to environmental quality provide
2 benefits to a broad range customers.

3
4 Q. Do you have any other comments regarding the proposed SDP?

5 A. Yes, I do. Witness Jennifer Hopkins of the Sustainable Energy Fund of
6 Central Eastern Pennsylvania ("SEF") proposes that SEF administer the
7 \$1 million Downtown Development Program ("DDP") component of the
8 SDP. This proposed initiative would provide grants to downtown
9 organizations for activities such as architectural and construction
10 management services and streetscape improvements.

11 From PPL Electric's perspective, the SEF is a viable and effective
12 organization that has extensive experience and a proven track record in
13 administering grant, loan and investment programs. The SEF certainly
14 could administer the SDP's DDP. However, PPL Electric would prefer to
15 administer the DDP itself for several reasons. First, the Company's
16 Regional Community Relations Directors ("RCRDs") have extensive
17 experience not only in economic development but also in evaluating and
18 awarding grants to local organizations. Second, the RCRDs have a
19 broader and more extensive network of contacts with local communities.
20 The RCRDs serve in various leadership positions in key organizations
21 throughout the Company's service area. Third, using the SEF would add
22 more administrative complexity and costs (i.e., SEF's administrative fee) to
23 the process. Finally, the SEF could still partner with PPL Electric by

1 providing loan dollars or identifying other sources of financing to supplement
2 the SDP's grants.

3
4 VI. Other Concerns
5 Re: Universal Service Programs
6

7 Q. Would you please summarize any other comments or concerns regarding
8 the various recommendations for PPL Electric's proposed programs.

9 A. **Ceiling on CAP Credits:** PPL Electric has proposed to remove customers
10 from OnTrack when they exceed their maximum limit on CAP credits
11 (\$1,800 for heating customers and \$700 for non-heating customers).

12 Witness Colton agrees with this proposal but with two conditions: 1)
13 customers should have the opportunity to show that their usage is beyond
14 their ability to control, and 2) customers removed from OnTrack for
15 exceeding their annual limit of CAP credits be given first priority for LIURP
16 services.

17 As Mr. Colton correctly notes, the CAP Policy Statement allows
18 utilities to exempt from a CAP control feature (i.e., maximum CAP credits) if
19 certain conditions exist. PPL Electric will continue to adhere to this
20 provision and will not remove customers who exceed their CAP credits limit
21 for reasons beyond their control. For example, the Company would not
22 remove a customer from OnTrack if his or her landlord refused permission
23 to install weatherization measures through WRAP. As noted earlier, PPL
24 Electric proposes to offer baseload WRAP measures (i.e., energy
25 education, CFLs and appliance replacement) to these customers.

1 PPL Electric has established a strong and effective connection
2 between OnTrack and WRAP. Approximately 66 percent of all WRAP jobs
3 are for active OnTrack customers. The Commission's CAP Policy
4 Statement, at § 69.265(7) (v), allows utilities to remove customers from CAP
5 if they refuse weatherization or energy education services. Before
6 removing a customer from OnTrack for exceeding their maximum CAP
7 credits, the Company would send a series of letters (i.e., at 50 percent of
8 maximum and at 80 percent of maximum) to alert customers. These letters
9 would include information about WRAP and energy education.

10 Because of the strong link between OnTrack and WRAP, customers
11 removed from OnTrack for exceeding their limit on CAP credits would likely
12 had already received a referral to WRAP. If not, PPL Electric would attempt
13 to give priority to these customers for WRAP measures and energy
14 education.

15 **CAP Credits or Arrearage Forgiveness for "Cured" Payments:**

16 Witness Colton, on page 13 of his testimony, expresses concern that PPL
17 Electric has no process in place to grant CAP credits or arrearage
18 forgiveness to customers who pay their missed OnTrack payments. To
19 address this concern, the Company already has in process an
20 enhancement to its customer information system. During the fourth quarter
21 of 2007, the Company will implement an enhancement granting arrearage
22 forgiveness to customers who "cure" their missed CAP payments. This

1 enhancement will likely increase costs above those PPL Electric has
2 reflected in the USR when implemented.

3 **Postpone Imposition of Maximum CAP Credits:** On page 36 of
4 his testimony, Mr. Colton proposes a postponement of establishing
5 maximum CAP credits in the electric industry “. . . until after all stakeholders
6 can determine what maximum would be reasonable in the post-price cap
7 environment.” PPL disagrees with this suggestion for several reasons.
8 First, given the uncertainty associated with future generation prices, it
9 would be difficult for stakeholders to determine what maximum would be
10 reasonable after removal of generation rate caps. Timing also complicates
11 the situation because not all generation rate caps expire simultaneously.
12 Second, the Commission is likely to revise its CAP Policy Statement before
13 the expiration of the generation rate caps. The Company recommends
14 addressing the issue of establishing maximum CAP credits through the
15 Commission’s rulemaking process rather than through a distribution rate
16 case. Finally, PPL Electric believes that increasing the maximum CAP
17 credits to \$1,800 (heating customers) and \$700 (non-heating customers) is
18 a reasonable interim step.

19 **CAP Credits and Customer Payments:** Witness Colton suggests
20 that PPL Electric’s proposal regarding a ceiling on CAP credits would
21 actually discourage customers from making their monthly payments. Mr.
22 Colton reasons that because customers cannot receive CAP credits unless
23 they make timely payments, they may avoid payment of their monthly CAP

1 bills in order to conserve their CAP credits. This logic would make sense if
2 there were no consequences for missing CAP payments; however, there
3 are serious consequences for customers. PPL Electric pursues termination
4 of service for OnTrack customers who miss their monthly payments. In fact,
5 Commission staff has encouraged utilities to give priority to shutting off
6 service to CAP customers who miss payments.

7 **Energy Conservation:** Witness Brady from CEO expresses
8 concern that as utilities move toward charging customers based on fixed
9 costs rather than consumption, there is less incentive for customers to
10 conserve energy. PPL Electric is actively working to encourage
11 customers to use energy wisely. In addition to proposing additional funding
12 for WRAP, the Company has taken various steps (e.g., a comprehensive
13 new Web site and advertising) to encourage residential customers to
14 understand and to learn more about their energy usage patterns. PPL
15 Electric has also proposed a variety of other new initiatives, as described in
16 the Direct Testimony of Robert T. Homa (Statement No. 9), to address the
17 issue of energy conservation.

18
19 Q. Does this conclude your rebuttal testimony?

20 A. Yes, it does.

21

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

DOCKET NO. R-00072155

PPL ELECTRIC UTILITIES CORPORATION

STATEMENT NO. 11R

REBUTTAL TESTIMONY OF PAUL R. MOUL

PPL Electric Utilities Corporation
Rebuttal Testimony of Paul R. Moul
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REBUTTAL TESTIMONY OF PAUL R. MOUL

INTRODUCTION

1

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

3 A. My name is Paul R. Moul and I am Managing Consultant of the firm P. Moul &
4 Associates. My business address is 251 Hopkins Road, Haddonfield, NJ 08033-3062.

5 **Q. Mr. Moul, have you previously submitted direct testimony in this proceeding?**

6 A. Yes. My direct testimony was submitted as Statement No. 11 with the Company's case-
7 in-chief filed on March 29, 2007.

8 **Q. What is the purpose of your rebuttal testimony?**

9 A. PPL Electric Utilities Corporation ("PPL Electric" or the "Company") has requested that I
10 comment on and rebut the testimony presented by Mr. David C. Parcell, a witness
11 appearing on behalf of the Office of Consumer Advocate ("OCA"), and Mr. Kevan L.
12 Deardorff, a witness appearing on behalf of the Office of Trial OTS ("OTS"). I will also
13 update the Company's proposed rate of return to reflect its revised plans to issue long-
14 term debt in the future test year.

15 REBUTTAL SUMMARY

16 **Q. Before beginning your rebuttal, please explain the Company's updated rate of**
17 **return.**

18 A. The Company has submitted a revised Schedule B-9 for the future test year. In its
19 revision, it has updated the interest rate on the \$240 million of new debt that is scheduled
20 to be sold in August 2007. A Securities Certificate for the shelf-registration of debt is
21 currently pending before the Commission. The embedded cost of long-term debt for the
22 future test year is now estimated to be 6.07%, which represents an increase from the
23 original forecast of 5.93%. The updated embedded cost of long-term debt reflects higher

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 interest rates since the Company's original filing for its new issue of debt to be sold in the
2 future test year. For the new issue, the all-in cost is now projected to be 6.40%, as
3 compared to the 5.70% in the original filing. This increase in the cost of debt is due to an
4 increase in the market cost of debt since the Company's original projection and because
5 the term of the issue was increased from 10 to 30 years. The 6.40% rate includes issuance
6 expenses anticipated for the new issue. When the final coupon rate and issuance expense
7 are known, they will be reflected in the actual effected cost rate for the new issue. In its
8 update, the Company now proposes an 8.43% overall rate of return, which represents a
9 slight increase from the original filing.

10 **Q. Please identify the principal areas of controversy concerning the rate of return issue**
11 **in this proceeding.**

12 A. The Company's proposed rate of return on common equity represents the principal area of
13 dispute in this case. The issues in this case are: (i) a cost of equity that is required by the
14 financial community for the Company to attract capital at reasonable cost, (ii) the
15 selection of proxy group companies to measure the cost of equity, (iii) the determination
16 of a reasonable Discounted Cash Flow (DCF) cost rate, (iv) whether an adjustment to the
17 DCF is warranted when applied to a capital structure measured at book value, and (v) the
18 extent to which other methods of determining the cost of equity provide a reasonable
19 measure of the appropriate rate of return on common equity.

20 **Q. Please summarize your rebuttal testimony.**

21 A. Various errors in the DCF analyses of Messrs. Deardorff and Parcell result in an
22 understatement of the cost of equity. Mr. Deardorff's DCF analysis for his six companies
23 when properly corrected for financial risk/leverage adjustment supports a cost of equity of

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 11.40%. Mr. Parcell's DCF analysis produces an understated equity return because of his
2 reliance on historical and book value growth rates that do not reflect investor expectations
3 as reflected in stock prices. Mr. Parcell has also failed to adjust his DCF results in the
4 manner frequently used by Commission to recognize the financial risk difference between
5 the book value and market value capital structure. When corrected to reflect prospective
6 growth rates and the financial risk/leverage adjustment, Mr. Parcell's DCF results would
7 be 10.87% for his Comparison Group and 11.77% for my Electric Group.

8 The bottom line is that the cost of equity cannot be less than 10.7% adopted by
9 Commission for PPL Electric in its 2004 rate case. For example, my DCF analysis in this
10 case produces an 11.01% cost of equity, which includes the leverage adjustment, while
11 my DCF analysis in the Company's last case produced a 10.69% cost of equity for the
12 Electric Group. Likewise, Mr. Deardorff determined his return from a DCF analysis in
13 this case to be within the range of 9.75% to 10.50%, as compared to his cost of equity
14 proposal in the last case of 8.75% to 9.00%, which was also based on the DCF analysis.
15 This indicates that the cost of equity has increased since 2004, as measured by the DCF
16 model.

17 In addition, PPL Electric is now a more risky company, because its financial risk
18 has increased due to a lower common equity ratio in this case. That is to say, the common
19 equity ratio for the future test year is 43.13% in this case, as compared to the 46.87%
20 common equity ratio accepted by the Commission in the Company's last rate case. All
21 else being equal, PPL Electric has more financial risk today as revealed by its lower
22 common equity ratio. Further, the Commission should reflect PPL Electric's superior
23 management performance and customer service and the Commission should also

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 acknowledge that the Company has enhanced its credit quality through ring-fencing, by
2 adopting a cost of equity above the midpoint of the cost of equity range.

3 In my opinion, the rates of return on common equity proposed by the OCA and
4 OTS witnesses are inadequate to provide the Company with the opportunity to earn its
5 cost of capital during the rate effective period given all these factors. These witnesses
6 propose rates of return on common equity that may be summarized as follows:

	Range			Proposed
Mr. Parcell	9.0%	to	10.25%	9.625%
Mr. Deardorff	9.75%	to	10.50%	10.13%

7 In my opinion, the costs of equity proposed by OTS witness Parcell is particularly
8 inadequate to provide PPL Electric with a reasonable opportunity to achieve the earnings
9 required by investors. The spread between the cost of debt and the equity return must be
10 greater than that implied by Mr. Parcell as shown by the evidence presented on pages 42-43
11 of Statement No. 11.

12 **Q. How do the costs of equity proposed by Messrs. Deardorff and Parcell compare to**
13 **other authorized returns.**

14 A. As a demonstration of the inadequacy of their cost of equity proposals, the rates of return
15 being provided to energy utilities in other rate case proceedings is instructive. The PUR
16 Utility Regulatory News ("URN") issue dated December 29, 2006 provides the results of
17 the annual survey of regulatory authorized rates of return on common equity. The
18 distributions of the returns were:

REBUTTAL TESTIMONY OF PAUL R. MOUL

	Electric & Gas		Electric Only	
	Number	Percent	Number	Percent
Less than 10%	6	11%	1	4%
10% to 10.9%	28	52%	14	54%
11 to 11.9%	19	35%	11	42%
Higher than 12%	1	2%	0	0%
AVERAGE	10.61%		10.75%	
MEDIAN	10.57%		10.75%	
MIDPOINT	10.73%		10.65%	

1 For electric utilities, the average authorized rate of return on common equity was 10.75%,
 2 the median return was 10.75%, and the midpoint return was 10.65%, taken from the
 3 overall range of 9.55% to 11.75%. These data show that the typical equity return
 4 allowance was in the upper-10% range for electric utilities for the twelve months ending
 5 September 30, 2006. Interest rates since that time have increased.

6 **Q. Does OCA witness Parcell also consider the earnings of electric utilities in his**
 7 **analysis?**

8 A. Yes. As shown on page 1 of Schedule 10 of Mr. Parcell's Exhibit ____ (DCP-1), the
 9 historical returns for his Comparison Group of electric utilities were 12.10% as the ten-
 10 year average and 13.7% as the five-year average, while the forecast also show returns in
 11 this range. In spite of the fact that investors expect the electric utilities to earn these
 12 returns, Mr. Parcell concludes that the rate of return on common equity of no more than
 13 10% is warranted because the returns that he cites have resulted in market-to-book ratios
 14 of 131% and greater. Mr. Parcell's conclusions in this regard are misplaced because they
 15 provide no justification for repudiation of the returns that investors actually expect the
 16 electric utilities to earn.

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 Q. What accounts for the low returns on equity that has been proposed by the OCA
2 and OTS witnesses?

3 A. For a variety of technical reasons that I will cover later in my rebuttal testimony, the rate
4 of return testimony submitted by the OCA and OTS witnesses contains various
5 misspecifications of the models used to measure the cost of equity. In general, those
6 infirmities include:

- 7
- An analysis of growth rates that understate investors' expectations.
 - A failure to adjust the DCF and CAPM results when their results are to be used to calculate the weighted average cost of capital with the book value capitalization.
 - CAPM/Risk Premium results that fail to adequately measure the required returns of investors for electric utilities.
- 8
9
10
11
12

13 Q. Please identify some of the factors that contribute to the positions taken by Messrs.
14 Parcell and Deardorff on the cost of equity.

15 A. The factors that contribute to the low cost of equity positions taken by these witnesses
16 include inadequate recognition of the increase in capital costs during the past several
17 months. The yields on Treasury obligations have recently reached a five-year high,
18 according to The Wall Street Journal article dated June 13, 2007. With recent volatility in
19 interest rates, the cost of equity that I proposed in my prefiled direct testimony is
20 appropriate, if not conservative, today.

21 Q. Both OCA witness Parcell and OTS witness Deardorff have selected an equity
22 allowance at the midpoint of their range. Is this appropriate?

23 A. No. For reasons stated in my direct testimony, the Company's higher risk profile justifies
24 a return above the midpoint of the range. In addition, neither witness has provided
25 recognition for the exemplary performance of the Company's management in their equity

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 return proposals, as explained in the direct testimony of Mr. DeCampli.

2 DISCOUNTED CASH FLOW ANALYSIS OF MR. DEARDORFF

3 Q. What returns on equity are presented in the testimony of Mr. Deardorff using the
4 DCF method?

5 A. Mr. Deardorff calculates DCF returns for two groups. He makes a computation for my
6 eight company electric group, and a sub-group that excludes two companies. I will
7 discuss his differences between the overall group and sub-group below. His DCF returns
8 are:

	Low	High	Average
Eight Companies	9.75%	9.77%	9.76%
Six Companies	10.39%	10.46%	10.43%

9
10 In reaching his conclusion, he has erroneously altered the growth component of the DCF
11 analysis. This results in an erroneous DCF result, particularly for the group of eight
12 companies.

13 Q. How has he done this?

14 A. While Mr. Deardorff correctly recognizes that analysts' forecasts of earnings growth are
15 the best estimate of the DCF growth rate, he has made multiple erroneous adjustments to
16 the analysts projected growth rates in arriving at the growth component of the DCF. He
17 acknowledges that had his indicated DCF growth rate would have been approximately
18 6.5%, as supported by an average of 6.6%, in contrast to the growth rates used in his
19 analysis of 6.0% for the six companies and 5.5% for the eight companies. See OTS ST.
20 No. 1, p. 19, lines 9-14. The 6.6% growth rate for the eight company and six company
21 group as reported by analysts without adjustment is the simple average of the analysts'

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 projected growth rates shown on Mr. Deardorff's Schedule 4, p. 3, lines 9 and 10. There
2 is no reason to alter this growth rate because it is the one used by investors who set the
3 price of the barometer group stocks and the dividend yields.

4 **Q. Can you restate Mr. Deardorff's DCF analysis by reflecting the analysts' reported**
5 **DCF growth rates?**

6 A. Those returns are shown below using Mr. Deardorff's dividend yield and the growth rate
7 taken from his sources without alteration:

	D_1/P_0	+	g	=	k
Eight Company Group	4.26%	+	6.5%	=	10.76%
Six Company Group	4.43%	+	6.5%	=	10.93%

8
9 These returns would not, however, reflect the appropriate rate of return on common
10 equity because an adjustment of 0.47% is required to reflect the financial risk associated
11 with the book value capital structure, as I will explain later. This adjustment would result
12 in a rate of return on common equity of 11.23% and 11.40%, respectively. I will discuss
13 this adjustment below.

14 **Q. Please expand on the errors or omissions that you have identified in Mr. Deardorff's**
15 **application of the DCF model?**

16 A. While he began his analysis with analyst's projections, he made improper alterations to
17 the analysts' growth rates, and he made various substitutions that do not reflect the
18 growth that investors expect as part of their DCF returns. The DCF analysis must employ
19 the data that investors use to price the stocks of these companies and not some alternative
20 numbers derived by Mr. Deardorff. To do otherwise results in a DCF return that has no

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 meaning because there is a fundamental disconnect between the dividend yields that
2 investors establish and the growth rate that is unrelated to these yields.

3 **Q. What errors has Mr. Deardorff introduced in his DCF growth rate analysis?**

4 A. Mr. Deardorff incorrectly reduces his growth rate for Northeast Utilities (one member of
5 his Barometer Group) by using a regression analysis.¹ See OTS St. No. 1, pp. 19-20. His
6 substitution in this regard is improper because each of the sources shown by Mr.
7 Deardorff on page 3 of Schedule 4 of OTS Exhibit No. 1 consistently show growth rates
8 for Northeast Utilities that substantially exceed Mr. Deardorff's regression results. If
9 indeed there were some inherent problem with the growth rate for Northeast Utilities,
10 then at least one of Mr. Deardorff's sources would be showing results that more closely
11 parallel his thinking. But, Value Line, S&P, Thomson First Call, Clear Station, Smart
12 Money, MSN, and Morningstar consistently show higher results for Northeast Utilities
13 than Mr. Deardorff. Mr. Deardorff's growth rate for Northeast Utilities is an internally
14 generated number that, by definition, has no influence on investors that establish the price
15 of stock. It matters not what the practitioner (either Mr. Deardorff, Mr. Parcell, or
16 myself) thinks, but rather the data that investors use when they price stocks. Mr.
17 Deardorff does not (and could not) contend that the regression analysis he performed is
18 relied upon by investors. His results therefore are not relevant here.

¹ Mr. Deardorff also has apparently misspecified the input values in his regression analysis. In response to the Company's Set I, item 1 interrogatory, Mr. Deardorff noted a correction in his regression results. Although that response showed a 0.0677622 slope, he incorrectly reduced that value down to 6.5% as his growth rate. Even with this correction, his inputs for Northeast Utilities continue to require further correction. Mr. Deardorff projects the Value Line forecast of earnings per share for Northeast Utilities of \$1.80 in 2012. Actually, Value Line shows average earnings per share of \$1.80 for the years 2010 through 2012. As such, \$1.80 would only be correct for 2011. Earnings of \$1.70 would be appropriate for 2010 and \$1.90 would be appropriate for 2012. Hence, the average for the entire period is \$1.80 ($\$1.70 + \$1.80 + \$1.90 = \$5.40 \div 3 = \1.80). This would further change Mr. Deardorff's regression results for Northeast Utilities to 7.45%, or an amount similar to the growth rate cited on line 10 of page 20 of OTS Statement No. 1 prior to his correction.

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1 **Q. Have you detected other errors in Mr. Deardorff's growth rate analysis?**

2 A. Yes. He has made errors for Central Vermont Public Service similar to those noted above
3 for Northeast Utilities. His corrected regression results shown in his response to
4 Company interrogatory Set I, Question 1 shows a growth rate of 8.0%. This response is
5 provided as Exhibit PRM-2. Yet, he projects only 5.5% growth, as corrected from 5.2%
6 as originally shown on page 4 of Schedule 4 of OTS Exhibit No. 1. Further correcting for
7 Central Vermont in the manner described in the footnote above would produce an 8.33%
8 growth rate. These corrections are shown on Exhibit PRM-3.

9 **Q. Are there other errors that you detected in Mr. Deardorff's growth rate analysis?**

10 A. Yes. On page 20 of OTS Statement No. 1, Mr. Deardorff states that he imputed growth
11 rates for UIL Holding for the missing entries for all other analysts shown on page 3 of
12 Schedule 4 of OTS Exhibit No. 1. Although not stated, apparently he did the same
13 imputation for CH Energy Group. This procedure is incorrect because there is no basis to
14 conclude that the other analysts would reach the same conclusions as Mr. Deardoff for
15 CH Energy Group and UIL Holdings.

16 **Q. Is there a legitimate reason for Mr. Deardorff to segment your Electric Group by
17 creating a sub-group of six companies?**

18 A. No. Mr. Deardorff has adopted the proxy group of companies that I proposed in my direct
19 testimony as representative of the risk of PPL Electric. But, he then removed CH Energy
20 and Central Vermont Public Service to arrive at a sub-group based upon his view that
21 each company in the barometer group should have at least two sources of analyst forecasts
22 of earnings growth. OTS St. No. 1, pp. 11-12.. There is no reason to exclude those
23 companies merely because they lack multiple sources of forecast growth. To do

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1 otherwise would introduce a bias in the group, which was selected with objective set of
2 criteria. If the eight company group reflects the Company's risk, then there is no need to
3 adjust the group, i.e., Mr. Deardorff's removal of two companies does not create a more
4 comparable group. Nevertheless, as illustrated above, analyst forecasts, even without
5 adjustment for financial risk, support a significantly higher DCF cost rate than proposed
6 by Mr. Deardorff.

7 DISCOUNTED CASH FLOW ANALYSIS OF MR. PARCELL

8 **Q. Have you detected problems with the proxy group used by OCA witness Parcell?**

9 A. Mr. Parcell used a much more diverse group of companies, many of which are vertically
10 integrated electric companies that have extensive generation portfolios, e.g. AEP, Exelon,
11 PPL Corp, Southern Company, etc. A number of his companies should be excluded from
12 Mr. Parcell's group because they operate in regions geographically remote from PPL
13 Electric. Those companies have fundamentals that make them dissimilar to PPL Electric.
14 Mr. Parcell's failure to consider a geographic criteria is surprising given the criteria
15 specified in the Bluefield case which states:

16 "A public utility is entitled to such rates as will permit it to
17 earn a return on the value of the property which it employs
18 for the convenience of the public equal to that generally
19 being made at the same time and in the same general part of
20 the country on investments in other business undertakings
21 which are attended by corresponding risks and
22 uncertainties; but it has no constitutional right to profits
23 such as are realized or anticipated in highly profitable
24 enterprises or speculative ventures." (emphasis supplied).
25 Bluefield Water Works and Improvement Co. v. Public
26 Service Commission of West Virginia, 262 U.S. 679, 43 S.
27 Ct. 675, 67 L.Ed. 1176, 1182-1183 (1923)."

28
29 Without screening for specific risk variables, he is proposing a cost of equity without

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1 regard to the risk traits of PPL Electric.

2 Moreover, a number of the Companies in Mr. Parcell's proxy group own a
3 significant amount of unregulated generating assets. These companies have different risk
4 traits than PPL Electric, and it is inappropriate to include these companies in the proxy
5 group. I note that in PPL Electric's last rate case, OCA's witness, Mr. Matthew I. Kahal
6 testified that it was inappropriate to include PPL Corporation in the proxy group because
7 of its "extensive unregulated operations." See OCA St. No. 3, p. 25 at Docket No. R-
8 00049255.

9 Mr. Parcell also employed the companies in my Electric group. By comparing
10 the results shown by Mr. Parcell through his mechanical application of the various models
11 of the cost of equity, it can be seen how unreasonable his DCF returns are shown to be
12 with the two groups. For example, Mr. Parcell shows DCF returns of 9.2% (average) and
13 9.1% (median) for his Comparison Group and only 7.8% (average) and 8.0% (median) for
14 my Electric Group. A cost of equity of 7.8% or 8.0% provides an insufficient premium
15 over the prospective cost of long term debt and is well below the range of allowed returns
16 in other jurisdictions.. This assessment is confirmed by a comparison of even Mr.
17 Parcell's inadequate CAPM results for both groups that show 10.3% (average) and 10.1%
18 (median) for Mr. Parcell's Comparison Group and 9.9% (average) and 10.1% (median)
19 for my Electric Group. The similarity of the CAPM results between the two groups show
20 that Mr. Parcell's mechanical approach to the DCF for the two groups provides unrealistic
21 DCF results. The deficiencies of Mr. Parcell's DCF analysis require Mr. Parcell to resort
22 to his Comparison Group which is not an appropriate barometer group.

23 **Q. Do you have specific concerns regarding the DCF testimony of Mr. Parcell?**

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1 A. Mr. Parcell's DCF results are not credible because the cost of equity cannot be as low as
2 5.6% to 8.1% which he shows for five of eight individual companies on his Schedule 7, p.
3 4.

4 **Q. Have you also detected any errors in Mr. Parcell's dividend yields?**

5 A. Yes. On page 1 of Schedule 7 of Exhibit ___(DCF-1), Mr. Parcell is showing a 0.0%
6 dividend yield for FPL Group, Inc. In fact, FPL Group is presently paying a \$0.41 per
7 share quarterly dividend, or \$1.64 per share dividend on an annualized basis. Using Mr.
8 Parcell's price per share for FPL Group, this would produce a 2.7% dividend yield rather
9 than the 0.0% that he shows. This correction will also increase the average dividend yield
10 for Mr. Parcell's Comparison Group to 3.3%. His adjusted dividend yield, therefore,
11 would be 3.4%.

12 **Q. What methods for establishing the growth rate component of the DCF have been**
13 **used by Mr. Parcell?**

14 A. Mr. Parcell used a variety of sources including book value and historic growth rates to
15 reach his judgment concerning the growth component of the DCF. The theory of DCF
16 indicates that the value of a firm's equity (i.e., share price) will grow at the same rate as
17 earnings per share and that dividend growth will equal earnings growth with a constant
18 payout ratio. Unfortunately, a constant payout ratio reflects neither the reality of the
19 equity markets, nor investor expectations. Therefore, to properly reflect investor
20 expectations within the limitations of the DCF model, projected earnings per share
21 growth, which is the basis for the capital gains yield and the source of dividend payments,
22 must be emphasized. Use of other growth rates is inconsistent with investor expectations
23 of growth as reflected in the stock price and dividend yield.

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1 **Q. With regard to the growth component of the DCF formula, do you believe that**
2 **average growth rates of 6.0% and 3.8% as calculated by Mr. Parcell are reasonable**
3 **for his various groups?**

4 A. No, they are clearly too low. It has been demonstrated that analysts' forecasts provide the
5 best measure of growth. Professor Myron Gordon, the foremost proponent of the DCF
6 model in rate cases, established that the best measure of growth in the DCF model is
7 forecasts of earnings per share growth.² This is attributed to the fact that analysts
8 consider historical data which is then adjusted for abnormalities that are not considered
9 relevant for future growth. For Mr. Parcell's Comparison Group, the average First Call
10 growth rate is 7.0%, and for my Electric Group, the average First Call growth rate is
11 7.3%. This shows that Mr. Parcell's mechanical approach to averaging DCF growth rates
12 is deficient. These forecasts exceed the average growth rates that Mr. Parcell has used
13 which were influenced by historical earnings that contained negative values that should be
14 avoided, low historical dividend growth rates caused by declining payout ratios, and book
15 value and retention growth rates that should also be avoided for reasons I will explain
16 later in this testimony.

17 **Q. What DCF return would be indicated for Mr. Parcell's electric groups by reflecting**
18 **the First Call growth rates?**

19 A. Those returns are shown below including the correction of the dividend yield for the
20 Comparison Group to reflect the correct dividend yield for FPL Group:

² "Choice Among Methods of Estimating Share Yield," The Journal of Portfolio Management, spring 1989 by Gordon, Gordon & Gould.

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	D_1/P_0	+	g	=	k
Parcell's Comparison Group	3.4%	+	7.0%	=	10.4%
Moul's Electric Group	4.0%	+	7.3%	=	11.3%

These returns would not, however, reflect the complete cost of equity because an adjustment of 0.47% is required to reflect the cost of equity applicable to the financial risk associated with the book value capital structure. This adjustment would result in a rate of return on common equity of 10.87% and 11.77%, respectively. I will discuss this adjustment below.

Q. Can you show how the DCF model is often misapplied in a utility rate case?

A. The major infirmity of the DCF method becomes apparent when viewing the model in its retention growth rate form. Mr. Parcell has employed the retention growth method, i.e., the "b x r" approach in his DCF analysis. This special form of the DCF merely adjusts the rate of return on book common equity by the difference between the dividend yield on book value and the dividend yield on market value. This form of the DCF cannot be viewed as a full market model because it mixes accounting returns and market returns. The formula shown below denotes how an analysis would convert the expected return on book common equity ("E/B") into the return on equity ("ROE") when employing the retention growth form of the DCF. It merely substitutes the dividend yield on market value ("D/P") for the dividend yield on book value ("D/B").

$$\begin{array}{c} E/B \\ -D/B \\ \hline +D/P \\ \hline \underline{ROE} \end{array}$$

where: E = earnings per share
D = dividend per share

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1 B = book value per share

2 P = price per share

3 ROE = return on equity

4
5 The fallacy of retention growth is displayed below by the comparison of projected returns
6 and the return suggested by this model. Mr. Parcell's DCF returns of 9.0% and 9.4% for
7 his Comparison Group that are based on historic and projected retention growth rates as
8 shown on page 4 of Schedule 7 of Exhibit __ (DCP-1) are inconsistent with the historical
9 earned returns of 13.7% and forecast returns of 13.2% for Mr. Parcell's Comparison
10 Group. There is just no way these companies could earn the investor expected return of
11 13.2% if the DCF cost rates submitted by Mr. Parcell were used in the ratesetting process.

12 In reality, a true market model should be represented by the formula:

13
14 where: D = dividends per share

15 P₀ = current price per share

16 P₁ = appreciated price per share

17 k = cost of equity

18
19
$$K = \frac{D_1}{P_0} + \frac{P_1 - P_0}{P_0}$$

20
21 The retention growth form of the DCF does not adequately reflect investor expectations
22 of total returns (dividend yield + capital gains yield). Since retention growth is intended
23 to describe growth in book value, this method is inappropriate because investors do not
24 necessarily realize growth in the value of their investment at the retention growth rate
25 because utility share prices do not always trade at book value. I have listed some of the
26 other factors which contribute to earnings growth that are not accounted for by the
27 retention growth approach on page E-10 of Statement No. 11.

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1 Q. Ignoring the deficiencies of retention growth, has OCA witness Parcell properly
2 determined retention growth?

3 A. No. Mr. Parcell has relied upon the Value Line forecasts of the retention growth rate.
4 These growth rates are calculated with year-end, rather than average book values. When
5 using the Value Line returns, it is necessary to convert those returns from year-end to
6 average book common equity. Without an adjustment to convert the Value Line forecast
7 return from year-end to average book values, there is a downward bias in the results,
8 because with an increasing book value caused by retention growth, the average book
9 value will be less than year-end book value. When the Federal Energy Regulatory
10 Commission ("FERC") employs these data, it adjusts the year-end returns to derive the
11 average yearly return. The FERC uses the formula $2(1 + G) / (2 + G)$ that is computed
12 with the growth in the equity component (see 92 FERC ¶ 61,070). Generally speaking,
13 this adjustment would increase the retention growth rate.

14 Q. Has Mr. Parcell included external financing growth in his internal
15 growth/sustainable growth analyses?

16 A. No. This omission results in a further downward bias in his retention growth rate
17 analysis. Forecasts indicate future growth from external stock financing will add to the
18 growth in equity for the Value Line electric companies. This would result in an
19 internal/external growth rate higher than that developed by Mr. Parcell.

20 OTHER DCF ISSUES

21 Q. Are the DCF results proposed model by Messrs. Parcell and Deardorff applicable to
22 the Company's weighted average cost of capital computed with book values?

23 A. No. It is apparent that Messrs. Deardorff's and Parcell's DCF results understate cost of

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1 equity due to their failure to apply the Commission accepted financial risk adjustment.
2 This is because the unadjusted DCF market cost rate applied to book value rate base
3 understates rate of return on common equity. The Commission has repeatedly accepted
4 an adjustment to the DCF to compensate for the additional financial risk associated with a
5 book value capital structure and rejected the criticisms leveled by Messrs. Deardorff and
6 Parcell on this adjustment. Each witness made the same arguments in the PPL Gas rate
7 case (Docket No. R-00061398) and the Commission implicitly rejected those arguments
8 by accepting the adjustment. Although the Commission did not specifically apply the
9 leverage adjustment in FirstEnergy rate cases, the FirstEnergy adjustment was calculated
10 in a different manner, was significantly higher, and the Commission recognized the
11 deficiencies of the DCF by at least adopting the high end of the DCF range in that case.

12 **Q. Please respond to the opposing party witnesses' criticism of your leverage**
13 **adjustment.**

14 **A.** Mr. Deardorff mischaracterizes this adjustment as an adjustment for market/book ("MB")
15 ratios. This adjustment contains no factor that would express the DCF return for any
16 particular market-to-book ratio under my approach to arrive at the return. The rate of
17 return on common equity is the unleveraged cost of capital (or equity return at 100%
18 equity) plus a term(s) reflecting the increase in financial risk resulting from the use of
19 leverage in the capital structure. Multiple terms are used in the case of both debt and
20 preferred stock. This adjustment to rate of return is necessary in order to reflect the
21 financial risk that varies from the book value capital structure and the market value
22 capital structure. Perhaps it is worthwhile to recap the procedure used in making my
23 adjustment, which, as previously explained, entails a three step process. In step one, the

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1 DCF cost of equity is calculated using the market price of stock and the capital structure
2 ratios are computed from the market capitalization of both the debt and equity of a firm.
3 In step two, a completely unlevered cost of equity is calculated, as if the firm were 100%
4 equity financed. In the third step, a relevered cost of equity is calculated with the capital
5 structure determined from the book value of debt and equity capitalization. There is
6 absolutely no reference to MB ratios in the process of adjusting the DCF return for
7 application to the book value capitalization. As noted above, I must once again make it
8 clear that my leverage adjustment contains no factor for a particular market-to-book ratio.
9 It merely expresses the cost of equity as the unleveraged return plus compensation for the
10 additional risk of introducing debt and/or preferred stock into the capital structure.

11 In further response to Mr. Deardorff's specific points, I disagree that market
12 prices in excess of book value are symptomatic of earnings that exceed a firm's cost of
13 capital (sees page 29 and 30 of OTS Statement No. 1). Mr. Deardorff fails to realize that
14 stock prices above book value are common for utility stocks, and indeed for all of the
15 major market indexes. According to the Barron's issue of July 23, 2007, utility stocks
16 were trading at a multiple of 2.94 times book value; the S&P 500 index was trading at
17 3.39 times book value; the S&P Industrial index was at 3.97 times book value, and the
18 Dow Jones Industrial index was trading at 3.95 times book value. It is difficult to accept
19 that the vast majority of all firms with publicly traded stocks are generating returns far in
20 excess of their cost of capital. Certainly, in our free-market economy, competition should
21 constrain such "excesses" if they indeed existed.

22 **Q. But does not your leverage adjustment encourage even higher MB ratios?**

23 **A.** No. Mr. Deardorff also claims that my leverage adjustment will encourage even higher

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1 MB ratios and cites the adjustment in the rate cases for Aqua Pennsylvania, whereby the
2 adjustment was 47 basis points in 2001, 64 basis points in 2007, and 103 basis points in
3 2005. What Mr. Deardorff fails to acknowledge is that the interest rate component used
4 in the Modigliani and Miller formula that I provided on page E-15 of Statement No. 11
5 declined during those time periods. Such a change has an impact on the adjustment,
6 because the current cost of debt is a factor that is included in the Modigliani and Miller
7 formula. Also, the dividend yield component of the simple DCF (i.e., $D/P+g$) has also
8 declined. In this regard, it is important to recognize that the leverage adjustment is
9 affected by changes in a variety of factors, including changes in market capitalization and
10 book capitalization, the components of yield and growth, and the overall level of capital
11 costs as revealed by the cost of debt and preferred stock. What Mr. Deardorff also fails to
12 acknowledge is that the leverage adjustment proposed here for PPL Electric is 0.47%,
13 which is nearly the same as it was in the Company's last rate case where the Commission
14 added 0.45% to the Company's unadjusted DCF cost rate to arrive at the rate of return on
15 common equity (Docket No. R-00049255).

16 **Q. Mr. Deardorff attacks your leverage adjustment in the context of a Blue Mountain**
17 **case that is twenty-five (25) years old. Please comment.**

18 A. Mr. Deardorff makes reference to a 25-year old case involving Blue Mountain
19 Consolidated Water Company where I testified before the Commission. First, that case
20 was not decided using the DCF method. The Blue Mountain case relied heavily on
21 earnings/prices ratios to set the return on equity in the context of a fair value rate base.
22 Second, in its decision on remand, the Pennsylvania PUC noted that over a period of
23 years it is relatively easy to discern the trends in market-to-book ratios which, when

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1 compared to performance in other financial ratios, can give an indication of the proper
2 return the Commission must award to assure reasonable access by public utilities to the
3 major capital markets. The trends in market-to-book ratios during that period 25-years
4 ago were substantially different from today. At the time that case was litigated, market-
5 to-book ratios for the broad market generally fluctuated around a relatively narrow band
6 where market prices were approximately equal to book value. That is to say, the Dow
7 Jones Industrial Average market to book ratios for quite a number of years in the late
8 1970s were about equal to book value. And, there was no large change during that period
9 in those market-to-book ratios for the broad market.

10 Since that time, prices have moved markedly higher than book value. So, while
11 the market-to-book ratio of the DJI approximated 1:1 in the late 1970s, today the DJI
12 trades at 395% of book value. The capital markets today are markedly different than
13 those that existed at the time of the Blue Mountain case. I should also note that, since that
14 time, the Pennsylvania PUC has adopted my leverage adjustment to the DCF model on
15 numerous occasions.

16 **Q. In reaching his conclusion regarding the results of his DCF analysis Mr. Parcell**
17 **focused on the upper end of the DCF results as a substitute for the leverage**
18 **adjustment. Please comment.**

19 **A.** Mr. Parcell focused on the upper end of his DCF calculations due to the relatively high
20 levels of market-to-book ratios implicitly recognizing that the DCF understates the cost of
21 equity in the rate process in such circumstances. However, moving to the top of the range
22 of DCF results does not fix the problems with the DCF model because the entire range is
23 understated without the adjustment. Mr. Parcell provided the same arguments regarding

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1 the leverage adjustment to the DCF in the case for PPL Gas Utilities. In spite of those
2 arguments, the Commission adjusted the DCF results there, and in other rate case
3 decisions since 2002. The exception to this adjustment was the rate cases for the
4 FirstEnergy subsidiaries Metropolitan Edison and Pennsylvania Electric. In that decision,
5 the Commission neither accepted nor rejected the leverage adjustment. I must note,
6 however, that the evidence presented in those cases did not include the same methodology
7 that I propose in this case, which the Commission also accepted in the Company's last
8 cases for its gas and electric operations.

9 **Q. Mr. Deardorff challenges the ex-dividend adjustment in the calculation of your**
10 **dividend yields. Please respond.**

11 A. Mr. Deardorff challenges my consideration of the timing of the dividend payments
12 relative to the ex-dividend date. He claims there is no academic support for the
13 adjustment and that there are no financial publications that provide ex-dividend adjusted
14 yields.

15 As to Mr. Deardorff's first point, there has been extensive academic research on
16 the impact of the ex-dividend on stock prices. I am aware of numerous academic studies
17 that indicate that stock prices react to the ex-dividend date³. As to Mr. Deardorff's

³ Avner Kalay, "The Ex-Dividend Day Behavior of Stock Prices: A Re-examination of the Clientele Effect," *Journal of Finance*, 37 (September 1982), 1059-70; Keneth M. Eades, Patrick J. Hess, and E. Han Kim, "On Interpreting Security Returns During the Ex-Dividend Period," *Journal of Financial Economics*, 13 (March 1984), 3-34; Patrick J. Hess, "The Ex-Dividend Day Behavior of Stock Returns: Further Evidence on Tax Effects," *Journal of Finance*, 37 (May 1982), 445-56; James M. Poterba and Lawrence H. Summers, "New Evidence That Taxes Affect the Valuation of Dividends," *Journal of Finance*, 39 (December 1984), 1397-1416; Michael Barclay, "Tax Effects with No Taxes? Further Evidence on the Ex-Dividend Day Behavior of Common Stock Prices," working paper, Stanford University (September 1984); and Costas P. Kaplanis, "Options, Taxes, and Ex-Dividend Day Behavior," *Journal of Finance*, 41 (June 1986), 411-24.

See Kalay, "The Ex-Dividend Day Behavior of Stock Prices"; Jerry Green, "Taxation and the Ex-Dividend Day Behavior of Common Stock Prices" working paper. National Bureau of Economic Research, Cambridge, Mass

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1 second point, the ex-dividend dates are routinely reported in the financial press, and they
2 are widely available on the internet. Moreover, the Barron's source that Mr. Deardorff
3 has used for his stock prices, as well as The Wall Street Journal, provides a list of stocks
4 that trade ex-dividend. The importance of the ex-dividend adjustment is shown by the
5 fact that while there is a change in the price of stock equal to the amount of the dividend
6 payment when the stock trades without its dividend on the ex-dividend date, there is no
7 net change from the prior day's stock price shown in the daily change column. The Wall
8 Street Journal signifies the lack of pricing change related to the dividend by the "x"
9 notation in its stock listings. Finally, the Securities and Exchange Commission ("SEC")
10 has explained the significance of the ex-dividend adjustment. The SEC has stated:

11 "With a significant dividend, the price of a stock may move
12 up by the dollar amount of the dividend as the ex-dividend
13 date approaches and then fall by that amount after the ex-
14 dividend date. A stock that has gone ex-dividend is marked
15 with an "x" in newspapers on that day."
16 <http://www.sec.gov/answers/dividen.htm>.

RISK PREMIUM METHOD

19 **Q. Do you believe the Risk Premium method provides significant evidence of the cost of**
20 **equity?**

21 A. Yes. In my opinion, the Risk Premium results should be given serious consideration.
22 The Risk Premium method is straight-forward, understandable and has intuitive appeal
23 because it is based on a company's own borrowing rate. The utility's borrowing rate

(1980); and Hess, "The Ex-Dividend Day Behavior of Stock Returns." Black and Scholes, "The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns."

Miller and Scholes, "Dividends and Taxes." See Marshall Blume, "Stock Returns and Dividend Yields: Some More Evidence." Review of Economics and Statistics, 62 (November 1980), 567-77.

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1 provides the foundation for its cost of equity, which must be higher than the cost of debt
2 in recognition of the higher risk of equity. Stated simply, it is an approach that provides a
3 direct and complete reflection of a utility's risk and return.

4 **Q. Please respond to Mr. Deardorff's comments regarding your Risk Premium**
5 **approach.**

6 A. Mr. Deardorff makes the unfounded assertion that, although the Risk Premium and
7 CAPM methods are relevant to investment decision making, they may be ignored in the
8 public utility ratesetting process. In fact, it is precisely because investors consider the
9 results of other methods that they too should be used in addition to the DCF in the
10 development of the cost of equity in this proceeding. Mr. Deardorff's assertion that the
11 Risk Premium method does not measure the current cost of equity as directly as the DCF
12 is similarly without foundation. I do not claim that there is a "constant" risk premium, nor
13 do my calculations imply that there is one.

14 **Q. Mr. Parcell also criticizes your use of historical data in the Risk Premium approach.**
15 **Please respond.**

16 A. As a preliminary matter, Mr. Parcell has used historical data extensively in his testimony.
17 Mr. Parcell reviews same basic period (1975 to present) that I used for the Risk Premium
18 approach. Also, differences in inflation and interest rates are accounted for by use of
19 prospective bond yield as I have applied the Risk Premium approach. Further, higher risk
20 premiums are expected during periods of lower interest rates, which are shown from my
21 testimony in this case as compared to the last case. Therefore, the use of risk premium for
22 the periods 1974-2006 and 1979-2006 reflect market conditions more reflective of

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1 existing market fundamentals.

2 **Q. Please respond to Mr. Parcell's testimony concerning your Risk Premium approach.**

3 A. As to my selection of a utility equity risk premium, I have taken a balanced approach by
4 utilizing a 5.72% premium for the S&P Public Utilities which is between the lowest and
5 the highest premium. The periods that I did use, which were 1974-2006 and 1979-2006,
6 reflected higher interest rates than for the longer historical period, which produces a risk
7 premium lower than otherwise. The risk premium that I adopted for this case is
8 appropriate under present interest rate conditions. This premium was then adjusted for
9 the risk of my Electric Group by considering nine risk factors. I should further note that I
10 have used forecast returns when developing the market premium component of the
11 CAPM. There, the use of forecast returns as part of the CAPM provides a return that was
12 higher than the results of my Risk Premium analysis.

CAPITAL ASSET PRICING MODEL

13
14 **Q. What are your observations concerning Mr. Deardorff's application of the CAPM?**

15 A. Mr. Deardorff's CAPM cost of equity reflects the following elements: (i) use of the yield
16 on 10-year Treasury notes, (ii) use of S&P 500 to calculate total market return, (iii) failure
17 to use leveraged adjusted betas, and (iv) failure to recognize size adjustment.

18 **Q. How does the use of the yield on 10-year Treasury notes compare with the use of the
19 yield on 30-year Treasury bonds?**

20 A. Due to the relatively flat yield curve, there is not much difference in those yields.
21 According to Mr. Deardorff's Blue Chip source dated June 1, 2007, the yield on 30-year
22 Treasury bonds is 0.1% higher than 10-year Treasury notes.

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 Q. What are your observations concerning Mr. Deardorff's calculation of the total
2 market return using the S&P 500 and Value Line data?

3 A. His approach is structured along the lines that I used to calculate the forecast return for
4 the total market. The fundamental problem with Mr. Deardorff's approach rests with his
5 use of the 10.1% historical return for the S&P 500, which is calculated with the geometric
6 means. As explained later in the rebuttal testimony, the correct value for CAPM
7 purposes, using historical data, is the arithmetic mean. The correct value excluding the
8 geometric mean data is 12.03%. This would produce an average return of 11.88% using
9 the other returns shown on page 1 of Schedule 5 of OTS Exhibit No. 1.

10 Q. How would his correction change Mr. Deardorff's CAPM?

11 A. Those results are shown below:

	<i>R_f</i>	+	β	(	<i>R_m</i>	-	<i>R_f</i>	)	=	<i>K</i>
Electric Group	5.00%	+	0.85	(	11.88%	-	5.00%	)	=	10.85%

12
13 However, this would not be the final CAPM cost rate because the beta must be adjusted
14 for the financial risk associated with the book value capital structure (just like DCF) and
15 the size of the Electric Group must also be recognized. The reasons for using a leverage
16 adjusted beta were fully explained in my direct testimony. Again, the fundamental
17 principle is that the beta for a particular firm or portfolio is equal to the beta of an
18 unleveraged firm plus the addition risk associated with the introduction of debt and/or
19 preferred stock into a company's capital structure.

20 Mr. Deardorff also challenges the need for an adjustment to the CAPM to
21 compensate for the risk associated with small size. To buttress his belief, he refers to an

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 article that was authored fourteen (14) years ago, which employed data going back into
2 the 1960s, or forty-four (44) years ago (i.e., the Wong article referred on page 32 of OTS
3 Statement No. 1). Enormous changes have occurred in the industry since the 1960s that
4 have fundamentally changed the utility business. In the Wong article, she notes that the
5 betas for the non-regulated companies were larger than the betas of the utilities. This is
6 not a new revelation, because history shows that utilities generally have lower betas than
7 many other companies. This fact does not invalidate the additional risk associated with
8 small size. The Wong article further concludes that with data going back into the 1960s,
9 the effect of size could not be explained in terms of beta. Again, this should not be a
10 surprise to Mr. Deardorff. Beta is not the tool that should be employed to make that
11 determination. Indeed, beta is a measure of systematic risk and it does not provide the
12 means to identify the return necessary to compensate for the additional risk of small size.
13 The famous Fama/French study (see “The Cross-Section of Expected Stock Returns,” The
14 Journal of Finance, June 1992) identified the element of size as a separate issue that helps
15 explain returns. The Ibbotson study deals specifically with the additional return over the
16 simple CAPM that is associated with the size affect.

17 **Q. Do you have concerns regarding Mr. Parcell’s CAPM analysis?**

18 A. Mr. Parcell’s CAPM understates cost of equity because: (i) he fails to use the prospective
19 yields on Treasury obligations, (ii) he fails to use the leverage adjustment beta, (iii) he
20 includes geometric means in the determination of the market premium, and (iv) he does
21 not provide a size adjustment.

22 **Q. Please explain your concerns regarding Mr. Parcell’s application of the CAPM?**

23 A. Mr. Parcell considers both the geometric mean and the arithmetic mean in computing the

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 market premium component of the CAPM. The arithmetic mean must be used in the
2 context of the CAPM because it provides the correct representation of all probable
3 outcomes and has a measurable variance. The geometric mean, which Mr. Parcell also
4 presented, consists merely of a rate of return taken from two data points which would
5 have no measurable variance within the period to determine a particular level of risk. So
6 while a geometric mean will represent the growth from an initial to a terminal value, it
7 cannot provide a reasonable representation of the market risk premium in the context of
8 the CAPM. The arithmetic mean should be used directly in the CAPM approach, to the
9 exclusion of the geometric mean. The arithmetic mean provides an unbiased estimate,
10 provides the correct representation of all probable outcomes, and has a measurable
11 variance. As stated by Ibbotson:

12 *Arithmetic Versus Geometric Differences*

13 For use as the expected equity risk premium in the CAPM,
14 the arithmetic or simple difference of the arithmetic means
15 of stock market returns and riskless rates is the relevant
16 number. This is because the CAPM is an additive model
17 where the cost of capital is the sum of its parts. Therefore,
18 the CAPM expected equity risk premium must be derived
19 by arithmetic, not geometric, subtraction.

20 *Arithmetic Versus Geometric Means*

21 The expected equity risk premium should always be
22 calculated using the arithmetic mean. The arithmetic mean
23 is the rate of return which, when compounded over multiple
24 periods, gives the mean of the probability distribution of
25 ending wealth values....This makes the arithmetic mean
26 return appropriate for computing the cost of capital. The
27 discount rate that equates expected (mean) future values
28 with the present value of an investment is that investment's
29 cost of capital. The logic of using the discount rate as the
30 cost of capital is reinforced by noting that investors will
31 discount their (mean) ending wealth values from an
32 investment back to the present using the arithmetic mean,
33 for the reason given above. They will therefore require
34 such an expected (mean) return prospectively (that is, in the

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1 present looking toward the future) in order to commit their
2 capital to the investment. (Stocks, Bonds, Bills and
3 Inflation - 1996 Yearbook, pages 153-154

4 The geometric mean, which Mr. Parcell also uses, consists merely of a rate of
5 return taken from two data points which would have no measurable variance. Although a
6 geometric mean will represent the growth from an initial to a terminal value, it should not
7 be used in the CAPM approach.

8 **Q. Mr. Parcell has also criticized your leverage-adjusted betas. Please respond.**

9 A. The betas that I have used are calculated strictly from market values, using a firm's stock
10 price as the dependent variable and the market index as the independent variable. There
11 is no reference to book values in those calculations. I have explained in my direct
12 testimony and in additional detail in my rebuttal testimony addressing the DCF method,
13 the reasons that the regulatory-determined cost of equity must be adjusted for the
14 differences between the risks implicit in the market-based ROE models versus the
15 financial risk associated with book value capital structure used in ratesetting. The
16 Hamada formula that I used to adjust the betas is merely an extension of the Modigliani
17 and Miller formula that I used relative to the DCF calculation.

18 It must be recognized that in order to make the CAPM results relevant to the
19 common equity ratio computed from the book value capitalization, the market derived
20 cost rate cannot be used without modification. My adjustment comes into play when
21 market values diverge from book values, thereby indicating that less leverage exists in a
22 capital structure measured with market values than exists in a capital structure that is
23 measured with book values, as in the context of ratesetting. As a factual matter, Mr.
24 Parcell does not dispute that, using the market values, my Electric Group had a 54.62%

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 common equity ratio. The CAPM calculation represents the returns that investors expect
2 on the market value of their investments that is reflective of the common equity ratios
3 noted above as calculated from the market capitalization. My adjustment is necessary to
4 convert the market returns related to price into earned returns related to the book value
5 capitalization. As I stated previously, my leverage adjustment is not intended, nor was it
6 designed, to address the reasons that stock prices are different from book values.

7 **Q. Mr. Parcell has objected to the market premium which you used in the CAPM.**
8 **Please comment.**

9 A. There is some disagreement between Mr. Parcell and me concerning the market premium
10 in the CAPM. Mr. Parcell used a market premium ("R_m-R_f") of 5.90%, while I used
11 6.47% in my direct testimony. Like Mr. Parcell, I have considered historical results, and I
12 have also used investor-expected returns using the Value Line data and returns for the
13 S&P 500. It is important when using the CAPM that the total market return (combination
14 of the risk free rate of return and the market risk premium) reflects reasonable
15 expectations for the future.

16 As shown by the data presented on Schedule 8 of Exhibit ____(DCP-1), Mr. Parcell
17 develops a 6.2% market premium. On page 23 of OCA Statement No. 2, he develops a
18 6.5% market premium from historical data using the arithmetic mean. As noted above,
19 the geometric mean is inappropriate for use in the CAPM. By combining his two sources
20 that are useful for this purpose, his CAPM market premium is 6.35% (6.2% + 6.5% =
21 12.7% ÷ 2).

22 **Q. How would the use of this market premium change Mr. Parcell's CAPM?**

23 A. Those results are shown below. However, it is necessary to adjust the risk-free rate of

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 return to 5.0% to reflect an investor expected risk free rate based upon projected interest
2 rates.

	R_f	+	β	($R_m - R_f$	)	=	K
Comparison Group	5.00%	+	0.91	(	6.35%	)	=	10.78%
Electric Group	5.00%	+	0.85	(	6.35%	)	=	10.40%

3
4 I note that this would not be the final CAPM cost rate because the beta must be adjusted
5 for the financial risk associated with the book value capital structure (just like DCF) and
6 the size of the Electric Group must also be recognized. The reasons for using a leverage
7 adjusted beta were fully explained in my direct testimony.

8 **Q. Please comment on the size of a firm as it impacts the CAPM result.**

9 A. As explained in my direct testimony, the size of a firm has a direct bearing upon the
10 results of the CAPM. On pages 47 and 48 of my direct testimony, I provided broad
11 support based upon both investment theory and practice concerning this adjustment. The
12 size adjustment is only warranted when an accurate measure of the market capitalization
13 of a firm (or group of firms) meets established criteria. As shown in my direct testimony,
14 the average market capitalization for the Electric Group places them in the mid-
15 capitalization, which requires size adjustments.

16 COMPARABLE EARNINGS

17 **Q. Mr. Parcell and Mr. Deardorff also quarrel with your Comparable Earnings**
18 **approach. Please comment.**

19 A. The underlying premise of the Comparable Earnings method is that regulation should
20 emulate results obtained by firms operating in competitive markets and that a utility must

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 be given an opportunity cost of capital equal to that which could be earned if one invested
2 in firms of comparable risk. It must be recognized that the purpose of regulation is to
3 perform the normal economic function of a free enterprise system. For non-regulated
4 firms, the cost of capital concept is used to determine whether the expected marginal
5 returns on new projects will be greater than the cost of capital, i.e., the cost of capital
6 provides the hurdle rate at which new projects can be justified, and therefore undertaken.
7 Because the Comparable Earnings method is derived from a firm's overall performance
8 (i.e., its average return), it is likely that the approach has measured blended returns on a
9 variety of projects that have produced returns above and below the cost of capital during
10 the measurement period. Further, given the 10-year time frame (i.e., five years historical
11 and five years projected) considered by my study, it is unlikely that the earned returns of
12 non-regulated firms would diverge significantly from their cost of capital. I have used
13 this approach in connection with the other market models (i.e., DCF, Risk Premium, and
14 CAPM) and the combined results of all methods fulfill established standards of a fair rate
15 of return, i.e. namely, comparability and capital attraction. In the Hope decision, the
16 United States Supreme Court defined these requirements as:

17 ...by that standard the return to the equity owner should be
18 commensurate with returns on investments in other
19 enterprises having corresponding risks. That return,
20 moreover, should be sufficient to assure confidence in the
21 financial integrity of the enterprise, so as to maintain its
22 credit and attract capital.
23

24 The Comparable Earnings approach satisfies the Supreme Court's comparability
25 standard. I have used this approach as an additional data point along with the other
26 market models (i.e., DCF, Risk Premium, and CAPM) and the combined results of all

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 methods fulfill the established Supreme Court standards bearing on the determination of a
2 fair rate of return. The financial community has expressed the view⁴ that the regulatory
3 process must consider the returns that are being achieved in the non-regulated sector to
4 ensure that regulated companies can compete effectively in the capital markets.

5 **Q. Mr. Parcell disagrees with your Comparable Earnings approach. Please comment.**

6 A. First, Mr. Parcell disputes that the risk parameters that I used to screen for my
7 Comparable earnings companies establishes risk equivalence. His focus on the
8 parameters that include Value Line safety, Value Line financial strength, and Value Line
9 beta is surprising because he used these same variables in comparing risk on Schedule 12
10 of his Exhibit__(DCP-1). Next, he compares the returns for the companies in the
11 Comparable Earnings group with the returns for the electric utilities. This comparison is
12 not appropriate because it introduces circularity to the Comparable Earnings method,
13 which I avoid for reasons explained in my direct testimony (see Statement No. 11, page
14 48). Moreover, comparing forecast returns for non-regulated companies with regulated
15 utility returns fails to consider the differences which relate to the non-regulated returns,
16 which are competitively determined, and the utility returns, which are regulatory
17 determined.

18 **Q. Mr. Parcell considers market-to-book ("M/B") ratios in his Comparable Earnings**
19 **approach. Please comment.**

20 A. Preliminarily, I should note that an analysis of M/B ratios are not necessary to apply the
21 Comparable Earnings method. Indeed, the introduction of the M/B analysis into the

⁴ "Natural Gas: The Case for ROE Reform," John E. Olson First Vice President, Merrill Lynch & Co., October 11, 1994.

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 Comparable Earnings method introduces the subjectivity which Mr. Parcell indicates
2 should be minimal in this approach. Moreover, there is a mismatch between historical
3 achieved results and future earnings expectations reflected in any M/B ratio analysis.
4 Further, it is impossible to know whether the market valuation is solely related to earnings
5 for a particular company. Market sentiment can significantly influence the price of stock.
6 This is particularly evident with regard to a more global market for capital, the advent of
7 program trading, and the effect on the market of mergers and leveraged financed stock
8 acquisitions which have boosted stock prices by both shrinking the supply of shares and
9 by fueling takeover speculation.

CONCLUSION

11 **Q. Please summarize your Rebuttal Testimony.**

12 **A.** The Commission should accept the Company's updated rate of return. The central issue
13 concerning the cost of equity relates to whether the final determination will reflect
14 investor expectations. The opposing parties' recommendations do not provide PPL
15 Electric the level of regulatory support that investors expect. It is necessary for the
16 Commission to provide consistent supportive regulation necessary during periods of
17 capital investment. There is no basis to conclude cost of equity is less than 10.7% given
18 that its common equity ratio is lower today as compared to the last rate case. Also, PPL's
19 management performance should be recognized within the cost of equity range.
20 Company initiatives, such as ring-fencing, have permitted a lower common equity ratio
21 while maintaining the current bond rating. The Company also has provided high quality
22 customer service which should be reflected in the allowed ROE.

REBUTTAL TESTIMONY OF PAUL R. MOUL

1 Q. Does this conclude your rebuttal testimony?

2 A. Yes.

PPL Electric Utilities Corporation

Exhibit PRM 2

Docket No. R-00072155

The Pennsylvania Public Utility Commission

v.

PPL Electric Utilities Corporation

Docket No. R-00072155

OTS Response to PPL Electric Utilities Corporation's Interrogatories, Set I

Witness: Kevan Deardorff

- 1. Please provide all supporting calculations (spreadsheet with formulas intact) for the adjustment to the growth rate discussed at page 19, line 18, through page 20, line 10, of Mr. Deardorff's testimony.**

Response: Please see the attached document and Microsoft Excel file. An error was detected in the regression analysis. The corrected growth rates for Northeast Utilities and Central Vermont are 6.5% and 5.5%, respectively.

Expected Growth Rates
for the Barometer Groups of Electric Distribution Companies

<u>Company</u>	<u>Value Line Earnings Growth</u> (1)	<u>S & P Earnings Growth</u> (2)	<u>Yahoo Thomson First Call Earnings Growth</u> (3)	<u>Clear Station Earnings Growth</u> (4)	<u>Smart Money Earnings Growth</u> (5)	<u>MSN Earnings Growth</u> (6)	<u>Morning- star Earnings Growth</u> (7)
[1] CH Energy Group	3.0	3.0	3.0	3.0	3.0	3.0	3.0
[2] Central Vermont P.S.	5.5	5.5	5.5	5.5	5.5	5.5	5.5
[3] Consolidated Edison	3.5	3.0	3.0	3.5	3.5	3.5	3.9
[4] Energy East	2.5	4.0	4.0	3.5	3.5	3.5	3.5
[5] Northeast Utilities	6.5	6.5	6.5	6.5	6.5	6.5	6.5
[6] NSTAR	8.5	6.0	6.0	6.3	4.0	6.3	5.8
[7] Pepco Holdings	8.0	7.0	8.0	6.7	6.7	6.7	7.3
[8] UIL Holdings	5.5	8.0	8.0	7.2	7.2	7.2	7.2
[9] Six Company Average	5.8	5.8	5.9	5.6	5.2	5.6	5.7
[10] Eight Company Average	5.4	5.4	5.5	5.3	5.0	5.3	5.3

Sources: Value Line Investment Survey, June 1, 2007
 Internet, Tradingday.com, June 11, 2007
 Standard & Poor's Earnings Guide, June, 2007

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	slope	intercept
cv	0.93	1.54	1.41	1.25	0.08	1.63	1.65	1.75	1.77	1.79	1.82	1.85	0.0801748	-159.41495
Regression normalized					1.34	1.42	1.50							

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	slope	intercept
nu	1.37	1.08	1.24	0.91	0.98	0.82	1.4	1.55	1.61	1.67	1.73	1.8	0.0677622	-134.61826
Regression normalized					1.25	1.31	1.38							

1.335	1.85	1.067
1.416	1.85	1.055
1.496	1.85	1.043
Average		1.055

1.245	1.8	1.077
1.313	1.8	1.065
1.381	1.8	1.054
Average		1.065

PPL Electric Utilities Corporation

Exhibit PRM 3

Docket No. R-00072155

Expected Growth Rates
for the Barometer Groups of Electric Distribution Companies

<u>Company</u>	<u>Value Line Earnings Growth</u> (1)	<u>S & P Earnings Growth</u> (2)	<u>Yahoo Thomson First Call Earnings Growth</u> (3)	<u>Clear Station Earnings Growth</u> (4)	<u>Smart Money Earnings Growth</u> (5)	<u>MSN Earnings Growth</u> (6)	<u>Morning- star Earnings Growth</u> (7)
[1] CH Energy Group	3.0						
[2] Central Vermont P.S.	8.3	8.3	8.3	8.3	8.3	8.3	8.3
[3] Consolidated Edison	3.5	3.0	3.0	3.5	3.5	3.5	3.9
[4] Energy East	2.5	4.0	4.0	3.5	3.5	3.5	3.5
[5] Northeast Utilities	7.5	7.5	7.5	7.5	7.5	7.5	7.5
[6] NSTAR	8.5	6.0	6.0	6.3	4.0	6.3	5.8
[7] Pepco Holdings	8.0	7.0	8.0	6.7	6.7	6.7	7.3
[8] UIL Holdings	5.5	8.0	8.0				
[9] Six Company Average	5.9	5.9	6.1	5.5	5.0	5.5	5.6
[10] Eight Company Average	5.9	6.3	6.4	6.0	5.6	6.0	6.1

Sources:

Value Line Investment Survey, June 1, 2007
Internet, Tradingday.com, June 11, 2007
Standard & Poor's Earnings Guide, June, 2007

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	slope	intercept
cv	0.93	1.54	1.41	1.25	0.08	1.63	1.65	1.75	1.77	1.8	1.85	1.9	0.0832867	-165.65146
Regression normalized					1.34	1.42	1.50							

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	slope	intercept
nu	1.37	1.08	1.24	0.91	0.98	0.82	1.4	1.55	1.61	1.7	1.8	1.9	0.0745455	-148.21212
Regression normalized					1.25	1.33	1.40							

1.335	1.85	1.067
1.416	1.85	1.055
1.496	1.85	1.043
Average		1.055

1.245	1.8	1.077
1.313	1.8	1.065
1.381	1.8	1.054
Average		1.065

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. R-00072155

PPL Electric Utilities Corporation

Statement No. 12-R

Rebuttal Testimony of Julie M. Cannell

1 **Q. Please state your name and business affiliation.**

2 A. My name is Julie M. Cannell. I am president of J.M. Cannell, Inc.

3

4 **Q. Did you previously submit direct testimony in this proceeding?**

5 A. Yes. My direct testimony (Statement No. 12) was submitted with the filing
6 by PPL Electric Utilities Corporation (PPL Electric or the Company) on
7 March 29, 2007.

8

9 **Q. What is the purpose of your rebuttal testimony?**

10 A. I will respond to the return on equity recommendations of the Office of
11 Consumer Advocate (OCA) and the Office of Trial Staff (OTS). As well, I
12 will address comments of OCA witness David C. Parcell regarding my
13 direct testimony. In particular, I will address Mr. Parcell's opinions about
14 the risk present in a stand-alone distribution company.

15

16 **REBUTTAL SUMMARY**

17 **Q. Please summarize the key points of your rebuttal testimony.**

18 A. The respective 9.625% ROE recommendation of OCA and 10.13%
19 proposal of the PUC Staff do not meet the expectations of investors. Both
20 recommendations are below the 10.7% the PUC authorized in 2004 and
21 neither adequately compensates investors for the risk they are assuming
22 with an investment in PPL Electric Utilities. OCA witness Parcell confuses
23 the recent declining trend in allowed ROEs with investors' expectations for

1 prospective returns. He also incorrectly assumes that the market-to-book
2 value ratios for many utilities are reflective of investors accepting the
3 decline in authorized returns. Further, Mr. Parcell has inaccurately
4 characterized the discussion in my direct testimony regarding the risk
5 inherent in distribution-only utilities. My point was that such companies
6 face a different set of risks in their current state that are higher than those
7 they were exposed to as part of an integrated entity. That is not to say,
8 however, that distribution-only utilities face greater risk than generation
9 companies. Accordingly, the company's risks today cannot be said to be
10 diminished, as Mr. Parcell suggests in reaching his proposed 9.625%
11 ROE. Should investors' expectations fail to be met in the case of PPL
12 Electric's potential for growth in earnings and dividends, it is probable that
13 they would reevaluate their opinion of Pennsylvania regulation, which
14 ultimately would increase the cost of capital to the Company and
15 ultimately the cost of service to ratepayers.

16 RETURN ON EQUITY

17
18 **Q. Please begin by indicating whether the ROE recommendations of
19 Staff and OCA are consistent with investor expectations.**

20 **A.** Both Staff's proposed 10.13% ROE and particularly OCA's
21 recommendation of a 9.625% equity return are below the 10.7% level the
22 Company was authorized by the PUC in 2004. Should the PUC adopt
23 either proposal, I believe it would have a very deleterious impact on

1 investor perceptions regarding the Company's earnings and dividend
2 prospects as well as the quality and consistency of Pennsylvania
3 regulation. An ROE outcome in the current proceeding deemed as being
4 inadequate in meeting investors' requirements for risk compensation most
5 likely would result in a deterioration of perceptions of the quality of
6 Pennsylvania regulation. I note also that consistency is important to
7 investors and that a reduction of the 10.7% allowed return to 9.625% or
8 even 10.13% without any major change in market fundamentals is not
9 likely to be well received by the markets. A negative regulatory
10 perception requires a higher compensation for risk associated with utilities
11 governed by that regulatory jurisdiction.

12
13 **Q. Is the rationale that OCA witness Parcell puts forth for his**
14 **recommendation appropriate?**

15 **A.** No, I don't believe it is. Mr. Parcell, disagreeing with my position that
16 investors require a higher return when investing in the electric utility
17 industry today, noted the declining trend in allowed ROE levels in recent
18 years. While his observation that ROE levels have been trending down
19 was accurate, he failed to draw the distinction between allowed returns
20 and investors' expected, allowed, and earned returns. Historical allowed
21 returns do not establish expectations; they are not equivalent to the
22 returns investors view as adequate on a prospective basis.

1 **Q. Are there other reasons to conclude that Mr. Parcell's observation**
2 **about allowed returns does not support his recommendation?**

3 **A.** Yes. Mr. Parcell observes that average allowed returns as reported by
4 Regulator Research Associates dropped to 10.36% in 2006. As noted
5 previously, allowed ROEs do not identify the investor expected or earned
6 return in the future. Investors are concerned about regulatory lag
7 associated with expanding capital investment which will reduce free cash
8 flow available for dividends. As a result, they likely are expecting higher
9 allowed returns to maintain reasonable levels of earned returns. I note
10 further that even if investors were to rely to some degree on recent
11 allowed returns, it is hard to understand why an investor would expect a
12 jurisdiction like Pennsylvania, which, in my view, is perceived as providing
13 supportive and balanced regulation, to adopt an ROE of 9.625% when the
14 recent average allowance cited by Mr. Parcell was 10.36%.

15
16 **Q. Do you agree with Mr. Parcell's position that rising market-to-book**
17 **value ratios for electric and gas/electric companies in recent years**
18 **reflect an acceptance of declining authorized returns?**

19 **A.** No, I do not. Investors do not judge their investment returns on the book
20 value of a company. Rather, returns are premised on the market value,
21 i.e. stock price. Book value is an historical valuation of a company, while
22 the market value incorporates investors' perceptions and assessments
23 about the worth of a company currently. Market-to-book value ratios can

1 be a reflection of many factors, many of which are relative to the rest of
2 the market and none of which necessarily pertain to authorized return
3 levels. The strong performance enjoyed by electric utility stocks over the
4 last few years can be largely attributed to a recovery from the Enron and
5 merchant generator market debacle as many companies adopted a "back
6 to basics" strategy. Utility stocks' market-to-book value ratios reflect those
7 factors, not investors' ostensible acceptance of allowed return on equity
8 levels.

9
10
11
12
13 **RESPONSE TO DAVID C. PARCELL**

14 **Q. Please turn now to Mr. Parcell's commentary on your direct**
15 **testimony's discussion of the risks faced by PPL Electric Utilities as**
16 **a wires-only company.**

17 **A.** Mr. Parcell appears to have misunderstood my characterization of the
18 risks that PPLEU faces as a distribution company. My direct testimony
19 noted that the utility faces *additional* risks today stemming from a variety
20 of factors that it did not encounter when it was part of an integrated
21 company. I did not state that PPLEU has greater risks than a generation
22 company; rather, I noted in my direct testimony that the mounting risks of
23 a distribution company have the potential to reduce a company's earnings

1 and cash flow streams and increase its volatility. In turn, those factors
2 could raise the risk inherent in an investment in a company. In the case of
3 PPLEU, should investors' expectations for growth in earnings and
4 dividends fail to be met, it is likely that investors would reevaluate their
5 opinion of Pennsylvania regulation. Ultimately, this would raise the cost of
6 capital to the Company and also the cost of service to ratepayers.

7

8 **Q. Does this complete your rebuttal testimony?**

9 A. Yes.

10

11

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Docket No. R-00072155

PPL Electric Utilities Corporation

Statement No. 13-R

Rebuttal Testimony of Terry Novatnack

1 Q. Please state your full name and business address.

2 A. My name is Terry Novatnack and my business address is Two North Ninth
3 Street, Allentown, PA.

4
5 Q. By whom are you employed and in what capacity?

6 A. I am employed by PPL Services Corporation as the Director of Corporate Risk
7 & Insurance.

8
9 Q. What is your educational background?

10 R. I hold a B.A. Degree from East Stroudsburg University and Chartered Property
11 & Casualty Underwriter ("CPCU") and Associate in Risk Management ("ARM")
12 designations from the Insurance Institute of America.

13
14 Q. How long have you been employed by PPL Corporation and in what
15 capacities?

16 A. I have been employed in the Financial & Risk Management Departments of
17 PPL Corporation and its predecessor companies for 25 years as an Insurance
18 Analyst, Senior Analyst-Corporate Risk & Insurance, Manager-Corporate Risk
19 & Insurance and Director-Corporate Risk & Insurance. Corporate Risk &
20 Insurance is responsible for hazard and operational risk management. It
21 identifies risks which may impact the operations of PPL Corporation and its
22 subsidiaries, such as PPL Electric Utilities Corporation ("PPL Electric"), and
23 develops strategies to mitigate, finance or transfer to outside parties (such as

1 insurers) the cost of the identified risks. In this regard, one of the services that
2 the Risk Management Department provides to the subsidiaries of PPL
3 Corporation is obtaining various types of insurance coverage for those
4 companies. My primary responsibility is to identify insurance requirements
5 and then obtain the required insurance coverage. In this role, I was
6 responsible for obtaining the storm damage insurance policy for PPL Electric.
7

8 Q. Mr. Novatnack, please describe the subject matter of your rebuttal testimony in
9 this proceeding.

10 A. I am responding to the testimony of Office of Consumer Advocate witness
11 Lafayette K. Morgan, who recommends disallowance of PPL Electric's claim
12 for a \$7.5 million annual premium for storm damage insurance. Please note
13 that all of the financial data in my testimony is stated on a total Company
14 basis; other PPL Electric witnesses address ratemaking adjustments to that
15 data. My rebuttal testimony addresses Mr. Morgan's contentions regarding
16 the need for storm damage insurance, the decision to place the first layer of
17 coverage with an affiliate and the reasonableness of the annual premium. Mr.
18 Krall addresses Mr. Morgan's criticism of the cost analysis in Mr. Krall's direct
19 testimony. Mr. Krall also presents the Company's alternative claim for storm
20 damage expense if the Commission were to disallow its claim for the annual
21 premium for this insurance coverage.
22

23 Q. Are you sponsoring any exhibits in PPL Electric's filing?

1 A. Yes. I am sponsoring one exhibit. PPL Exhibit TN 1 is a copy of the storm
2 damage insurance policy for PPL Electric for the first policy term (June 5, 2006
3 to June 4, 2007). The policy has been renewed for a second term (June 5,
4 2007 to June 1, 2008) on the same terms and with the same premium as set
5 forth in Exhibit TN 1, but the Company has not yet received the updated
6 policy.

7
8 Q. Mr. Morgan is critical of PPL Electric's decision to obtain storm damage
9 insurance coverage from an affiliated company. Please explain why the
10 Company elected to obtain that insurance coverage from PPL Power
11 Insurance, Ltd. ("PPL Power").

12 A. Affiliated insurance companies, such as PPL Power, are established to
13 provide primary coverages at lower premiums than what would be charged by
14 the commercial insurance market. The premiums are lower because they are
15 based on expected losses within the limit of coverage and do not include
16 normal commercial insurance company loadings for underwriting expenses
17 and profits. These loadings may add an additional 20% to 30% to the cost of
18 the coverage. In addition, affiliated insurers may provide coverages which
19 commercial insurers are not willing to provide. PPL Power was established in
20 2002 to underwrite primary property, public liability and workers' compensation
21 coverages for PPL Corporation and its subsidiaries. Catastrophic protection,
22 above the primary layer provided by PPL Power for these coverages, is
23 purchased from the commercial reinsurance market.

1 From 2002 forward, the annual storm damage cost to PPL Electric's
2 transmission and distribution system was increasing and substantially
3 exceeded the costs reflected in rates. Indeed, the average annual distribution
4 operation and maintenance expense excluding regular wages and benefits
5 resulting from storm damage over the five-year period 2002 – 2006 was \$12.8
6 million. To address this situation, PPL Electric explored the possibility of
7 obtaining storm damage insurance as a way to normalize the cost of storm
8 damage and to obtain protection against the cost of catastrophic storms.
9 When we went to market, however, we discovered that due to the losses
10 incurred in the major hurricanes of 2004 and 2005, the primary property
11 insurance market was not willing to offer general coverage for storm damage
12 to transmission and distribution systems. The Company also approached the
13 reinsurance market and determined that it was willing to provide catastrophic
14 protection to PPL Electric, but only above coverage offered by a primary
15 insurer. In other words, insurance was available in the reinsurance market,
16 but only if there were a primary insurance policy in place. To address this
17 issue, the primary insurance protection was underwritten by PPL Power, and
18 PPL Electric was then able to obtain excess coverage for catastrophic storms
19 from the commercial reinsurance market.

20
21 Q. Please describe the storm insurance coverage that PPL Electric has obtained
22 from PPL Power and the reinsurance market.

1 A. The coverage applies to all PUC Reportable Storms, which are defined as
2 storms in which there is an outage affecting 2,500 or more customers for six or
3 more hours. The coverage includes all of the expenses that PPL Electric
4 incurs to repair damages arising from these storms and to restore service to
5 customers, except the coverage does not include regular pay and benefits or
6 any capital costs

7 On an individual storm basis, PPL Electric retains responsibility for the
8 first \$5 million of insured damages. PPL Power covers the next \$15 million,
9 and the reinsurers provide up to \$10 million of coverage. PPL Electric's
10 maximum retention, i.e. deductible, for all storms during any policy year is \$7.5
11 million and the maximum coverage provided by PPL Power and the reinsurers
12 during any policy year is \$20 million and \$10 million, respectively. The annual
13 premium for the PPL Power coverage is \$6,000,000 and the reinsurance
14 premium is \$1,560,000.

15 The deductible amounts were established based on similar amounts
16 PPL Electric has budgeted in the past for normal, non-catastrophic storms and
17 which are reflected in rates. PPL Power's coverage limits are based on the
18 primary insurance limits required by the reinsurers. The reinsurance limits are
19 the maximum the reinsurers are willing to offer.

20
21 Q Mr. Morgan contends that storm insurance does not benefit customers. Do you
22 agree?

1 A. No, I do not. First, the storm insurance is providing customers with up to \$30
2 million in coverage for an annual premium of \$7,560,000. Second, the total
3 cost to customers (\$7.5 million in rates for ongoing storm costs plus the \$5.749
4 distribution portion of the insurance premiums) is only slightly more than the
5 average experienced storm damage expense over the last five years (\$12.8
6 million). Further, I note that the insurance covers repairs and replacements
7 that are capitalized. This benefit is not reflected in these comparisons.

8 So, for an amount essentially equal to historic actual expense,
9 customers are receiving insurance against storm damage expenses of up to
10 \$30 million.

11
12 Q. Mr. Morgan criticizes PPL Electric's approach to establishing the premium for
13 the storm insurance. Please describe how the premium was established and
14 explain why PPL Electric used that approach.

15 A. As mentioned earlier, the premium charged for coverages underwritten by PPL
16 Power is based on expected losses within its coverage layer. Since PPL
17 Power does not have storm damage models of its own, it requested that the
18 reinsurers run PPL Electric's storm damage data through their models to
19 determine the expected losses within its coverage layer. The models
20 indicated that those covered losses, including damage to both transmission
21 and distribution facilities, would be about \$6 million per year. Based on this
22 information, PPL Power established an annual premium of \$6 million for the
23 primary storm damage insurance coverage. In evaluating this premium, it is

1 very important to recognize that it does not include any additional loadings
2 commercial insurers would add for underwriting expenses and profits. Thus,
3 the amount of the premium is substantially less than PPL Electric would have
4 paid to get this coverage in the market, if it were available in the first instance,
5 which it is not.

6
7 Q. Please describe any claims that PPL Electric has submitted or plans to submit
8 to PPL Power Insurance under the storm insurance policy at issue in this case.

9 A. During PPL Power Insurance's first policy term (June 5, 2006 to June 4, 2007),
10 ten PUC Reportable Storms occurred with a total damage amount of
11 approximately \$15 million dollars. The insurable portion of this amount is
12 estimated at \$12.5 million and, after application of the maximum PPL Electric
13 retention of \$7,500,000, PPL Electric expects to recover about \$5,000,000
14 from PPL Power. PPL Electric is in the process of assembling the claims
15 submission for review and adjustment by PPL Power's independent claims
16 adjustment and claims audit firms.

17
18 Q. Please summarize your view regarding the benefits of storm damage
19 insurance to PPL Electric and its customers.

20 A. The premium charged by PPL Power, as calculated by the underwriting
21 models, is the annual expected storm damage losses above the annual \$7.5
22 million deductible. The reinsurance being purchased by PPL Power shifts the
23 cost of catastrophic storms from ratepayers to the commercial reinsurance

1 market. In essence, PPL Electric's customers are paying nothing more than
2 the estimated annual costs of storm damage with the added protection against
3 the costs of catastrophic storms. Moreover, customers also are protected if
4 actual storm costs are lower than anticipated. Under those circumstances,
5 PPL Electric will build a surplus with the insurance carriers. After a period of
6 time, the cumulative surplus may be large enough to support a reduction in the
7 Company's annual premium or an increase in coverage. For these reasons, I
8 believe this insurance coverage provides clear financial benefits to PPL
9 Electric's customers.

10

11 Q. Does this conclude your rebuttal testimony?

12 A. Yes, it does.

PPL Electric Utilities Corporation

EXHIBIT TN 1

Docket No. R-00072155

PPL POWER INSURANCE LIMITED

Victoria Hall, Victoria Street, Hamilton HM 11, Bermuda
Tel: 441 299 8862 Fax: 441 299 8813

Policy No. 1- TD001-01 TRANSMISSION AND DISTRIBUTION INSURANCE COVER NOTE

NAMED INSURED: PPL Electric Utilities and all subsidiary, associated and affiliated companies now or hereinafter acquired

POLICY PERIOD: 12:01AM June 5, 2007 to 12:01AM June 1, 2008 (standard time at location of property insured)

INTEREST: All Distribution and Transmission Lines, including but not limited to Towers, Fixtures, Poles, Conductors, Conduits, Transformers, Fiber Optic Equipment and Devices and similar property of others for which the Insured is liable; including PPL's interest in tie lines, except as more specifically insured.

LIMITS OF LIABILITY: First Layer: \$15m per occurrence/\$20m annual aggregate excess of Deductible
Second Layer: \$10m per occurrence/\$10m annual aggregate excess of First Layer subject to Minimum Attachment Point of \$15m

DEDUCTIBLE: \$5m per occurrence/\$7.5m annual aggregate

POLICY PREMIUM: US\$7,560,000

Executed in Hamilton, Bermuda

this 4th day of June 2007

By:


For and on behalf of PPL Power Insurance Limited

PPL POWER INSURANCE LIMITED

Victoria Hall, Victoria Street, Hamilton HM 11, Bermuda

Tel: 441 299 8862

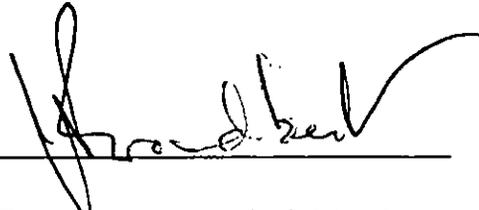
Fax: 441 294 4772

Primary All Risk Policy

Transmission and Distribution Insurance

Policy Number 1-TD001-01

Executed in Hamilton, Bermuda this 14th day of September 2006

By: 

For and on behalf of PPL Power Insurance Limited

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-

PRIMARY PHYSICAL DAMAGE FORM

1. NAMED INSURED

A. PPL Electric Utilities and all subsidiary, associated and affiliated companies now or hereinafter acquired

B. LOSS PAYABLE

All losses will be paid to the Named Insured (above) or their order.

2. PREMIUM

This Policy is issued in consideration of a premium of \$7,560,000

3. TERM

In consideration of the premium charged, this policy is in respect of losses occurring during the period 12:01 AM, June 5, 2006 (standard time at location of the property insured) until 12:01 AM, June 5, 2007 (standard time at location of the property insured).

4. LIMIT OF LIABILITY

First Layer: \$15 million per Occurrence/\$20 million Annual Aggregate excess of Deductible

Second Layer: \$10 million per Occurrence/\$10 million Annual Aggregate excess of First Layer subject to Minimum Attachment Point of \$15 million.

5. DEDUCTIBLE

\$5 million per Occurrence/ \$7.5 million Annual Aggregate

6. INTEREST AND PROPERTY COVERED

This policy covers the interest of the Insured in:

- a) All Distribution and Transmission Lines, including but not limited to Towers, Fixtures, Poles, Conductors, Conduits, Transformers, Fiber Optic Equipment and Devices and similar property of others for which the Insured is liable; including PPL 's interest in tie lines, except as more specifically insured. Gas Transmission and Distribution lines are excluded.

Coverage under this policy shall not apply while such property is in storage or in transit until actually installed or being installed.

- b) This policy excludes all property at or on Generating Stations and/or substations and any property more specifically covered elsewhere.
-

7. EXPENSES INSURED

This policy is intended to cover expenses necessarily incurred by the Insured during a Period of Restoration directly resulting from physical damage caused by a PUC Reportable Event to property insured by the Perils Insured.

Expenses shall include:

- a. Overtime wages of the insured's employees
- b. Premium wages of the insured's employees
- c. Costs of outside service providers and mutual aid utilities used to aid the insured during the Period of Restoration
- d. Materials and Supplies used to repair or replace the property insured under this policy
- e. Overhead charges associated with collectible expenses including but not limited to wage and benefits, transportation, purchasing and stores charges
- f. Expediting expense for the reasonable extra costs to make temporary repairs and to expedite the permanent repair or replacement of damaged property.

Expenses shall not include

- a. Loss of Income
- b. Costs which normally would have been incurred in conducting the business of the insured during the same period had no insured damage occurred
- c. Cost of replacement power

8. DEFINITIONS

The following terms wherever used in this policy shall be defined as follows:

A. NORMAL CONDUCT OF BUSINESS

The conditions that would have existed had no damage of the type insured against occurred. In determining the indemnity payable, due consideration shall be given to the experience of the business before the loss and the probable experience thereafter had no loss occurred.

B. PERIOD OF RESTORATION

The Liability of the Underwriters hereunder shall be limited to the Period of Restoration. The Period of Restoration shall be the length of time required, with the exercise of due diligence and dispatch to rebuild, repair or replace such described property as has been damaged and to make such property ready for operations under the same or equivalent physical and operating conditions

that existed prior to the Occurrence. The Period of Restoration shall not include any additional time required for making changes to buildings, equipment or contents regardless of the reason(s) for the changes nor any additional time required for restaffing or retraining employees nor the delay of any kind caused by labor disputes including strikes.

The liability of the Underwriters under this policy shall not be limited by the expiration of this policy.

C. ADDITIONAL EXCLUSIONS

This policy does not cover:

- (1) Any period during which business operations or services would not have been maintained for any reason other than physical damage to property insured by the perils insured.
- (2) Expense incurred due to the suspension, cancellation or lapse of any lease, contract, license or breach of contract or for late or non-operation of orders or penalties of whatever nature, nor shall the Underwriters be liable for expense incurred due to any other consequential or remote loss.
- (3) Land and water

D. USE OF OTHER PROPERTY

The Insured agrees to use any suitable property or service owned or controlled by the Insured or obtainable from other sources in reducing the expense incurred under this policy.

E. PUC REPORTABLE EVENT

A PUC Reportable Event is an outage affecting 2,500 or greater customers for 6 or more hours.

9. PERILS INSURED

This policy insures against All Risks of Direct Physical Loss or Damage to the property insured from windstorm, tornado, hurricane, tropical storm, tropical depression, rain, snow, hail, sleet, ice, lightning, flood, earthquake, and fire resulting from any of the previously named perils.

10. PERILS EXCLUDED

This policy does not insure:

- A. Loss or damage caused directly or indirectly by or resulting from hostile or warlike action in time of peace or war, including action in hindering, combating or defending against an actual, impending or expected attack, by any government or sovereign power (de jure or de facto), or by any authority maintaining or using military, naval or air forces; or by an agent of such government, power, authority, or forces; any weapon of war employing atomic fission or radioactive force whether in time of peace or war; insurrection, rebellion, revolution, civil war, usurped power, or action taken by governmental authority in hindering, combating or defending against such an occurrence; seizure or destruction under quarantine or customs regulations; confiscation by or destruction by order of any government or public authority.
- B. Any dishonest act or omission of the Insured or of any associate, agent or employee of the Insured, whether acting alone or in collusion with others.
- C. The cost of making good, errors in design, faulty or defective workmanship, faulty material or latent defect but this exclusion does not apply to loss or damage resulting from such faulty or defective workmanship or faulty materials, errors in design or latent defects.
- D. Loss or damage caused by, resulting from, contributed to or made worse by actual, alleged or threatened release, discharge, escape or dispersal of CONTAMINANTS or POLLUTANTS, all whether direct or indirect, proximate or remote or in whole or in part caused by, contributed to or aggravated by an physical damage insured by this policy.

Nevertheless, if fire is not excluded from this policy and a fire arises directly or indirectly from seepage or contamination or pollution, any loss or damage insured under this policy arising directly from that fire is insured, subject to the provisions of this policy.

CONTAMINANTS or POLLUTANTS means any material which after its release can cause or threaten damage to human health or welfare or causes or threatens damage, deterioration, loss of value, marketability or loss of use to property insured hereunder, including, but not limited to, bacteria, fungi, virus, or hazardous substances as listed in the Federal Water Pollution Control Act, Clean Air Act, Resource Conservation and Recovery Act of 1976, and Toxic Substances Control Act, or as designated by the U.S. Environmental Protection Agency.

This exclusion shall not apply when loss or damage is directly caused by fire, lightning, windstorm, or hail or fire resulting from those perils.

- E. With respect to asbestos material the following exclusions apply:
1. asbestos material removal unless the asbestos is itself damaged by lightning, windstorm, hail or fire resulting from those perils.
 2. demolition or increased cost of construction, repair, debris removal or loss of use necessitated by the enforcement of any law or ordinance regulating asbestos material.
 3. any governmental direction or request declaring that asbestos material present in or part of or utilized on any undamaged portion of the Insured's property can no longer be used for the purpose for which it was intended or installed and must be removed or modified.
- F. Delay, Loss of Use, Business Interruption, Loss of Mark~ Inherent Vice, Wear and Tear, Gradual Deterioration, Rust, Corrosion, Wet or Dry Rot, Mold, Moths, Vermin, Termites, or Insects, Dampness of Atmosphere, Freezing or Other Extremes of Temperature, Smog, Loss of Weight, Shrinking, Change in Flavor, Color, Texture or Finish, nor Settling or Expansion in Building or Foundations.
- G. Unexplained or mysterious disappearance or shortage disclosed on taking inventory.

11. OCCURRENCE

The term "Occurrence" shall mean the sum of all losses (Individual or otherwise) covered under this policy directly occasioned by any one disaster, accident or loss arising out of one event ("Loss or Losses") or series of disasters, accidents or losses arising out of one event ("Series of Losses") that occur(s) during the Policy Period anywhere within the Policy territory. Except as specifically set forth below, the duration and extent of any one "Occurrence" shall be limited to all losses covered under this Policy occurring during any period of 168 consecutive hours arising out of and directly occasioned by the same event. In the following circumstances, an "Occurrence" is further defined to be;

- 1) As regards windstorm, hail, tornado, hurricane, all Losses or Series of Losses covered under this policy taking place during any period of 72 consecutive hours arising out of and directly occasioned by the same event.
 - 2) As regards earthquake and fire following directly occasioned by the earthquake all losses or Series of losses taking place during any period of 168 consecutive hours.
 - 3) As regards flood, all Losses or Series of Losses taking place during any period of 168 consecutive hours, regardless of the number of peaks and bodies of water affected by that flood.
-

The Insured may choose the date and time when such period of consecutive hours commences, provided that it is not earlier than the date and time of the occurrence of the first recorded individual Loss sustained by the Insured arising out of that disaster, accident or loss and provided that only one such period of (i) 72 consecutive hours shall apply with respect to one event for circumstances defined in paragraph C (1) above and (ii) 168 consecutive hours shall apply with respect to one event for other circumstances defined above.

No individual Loss occasioned by an event that is subject to the 72-hour provision in C. (1) may be included in any "Occurrence" under the 168-hour provision.

Nothing in this definition alters or increases any Policy limit or Policy sublimit.

12. SALVAGE

Any salvage or other recovery, after expenses incurred in salvage or recovery are deducted, except recovery through subrogation proceedings, shall accrue entirely to the benefit of Underwriters until the sum paid by Underwriters has been recovered, except for any amount assumed by the Insured (other than the deductible) over and above any payment made under this policy or other policies providing like coverage.

13. TERRITORY

This policy covers property insured anywhere within the 50 States of the United States of America, mainly Pennsylvania.

14. VALUATION

In case of loss the basis of adjustment, unless otherwise endorsed hereon, shall be the cost to repair or replace the property with like kind and quality and capacity, with no deduction for depreciation.

15. CONTRIBUTING INSURANCE

Permission is granted to obtain additional policies written upon the same plan, terms, conditions, and provisions as those contained in this policy.

The Underwriters shall contribute to the total of each loss otherwise payable hereunder only to the extent of their participation in this policy's limit of liability.

16. EXCESS AND UNDERLYING INSURANCE

Permission is granted the Insured to purchase excess insurance over the limit of liability set forth in this policy and to purchase underlying insurance below the attachment point set forth in this policy without prejudice to this policy, and the existence of such insurance, if any, shall not reduce any liability under this policy.

17. SUBROGATION

- (a) Any release from liability entered into in writing by the Insured prior to loss thereunder shall not affect this policy or the right of the Insured to recover hereunder. The right of subrogation against any of the Insured's subsidiary or affiliated companies or any other companies associated with the Insured through ownership or management is waived.
- (b) In the event of any payment under this policy, Underwriters shall be subrogated to the extent of such payment to all the Insured's rights of recovery therefore and the Insured shall execute all papers required and shall do anything that may be necessary to secure such right. The Underwriters will act in concert with all other interests concerned (including the Insured) in the exercise of such rights of recovery. If any amount is recovered as a result of such proceedings such amount shall be distributed as follows:
- I. any interest (including the Insured) suffering a loss (excluding the amount of the deductible) in excess of payment made under this policy shall first be reimbursed up to the amount of said payment;
 - II. out of the balance remaining, Underwriters shall be reimbursed up to the extent of their payment under this policy.

The expense of all proceedings necessary for the recovery of any such amount shall be apportioned between the interests concerned, including that of the Insured, in the ratio of their respective recoveries as finally settled. If there should be no recovery and proceedings are instituted solely on the initiative of Underwriters the expense thereof shall be borne by the Underwriters.

18. DEBRIS REMOVAL

The Underwriters will pay the expense to remove debris of insured property damaged or destroyed by an insured peril during the policy term.

The Underwriters will not pay the expense to:

- a) Extract contaminants or pollutants from the debris; or
- b) Extract contaminants or pollutants from land or water; or
- c) Remove, restore or replace contaminated or polluted land or water; or
- d) Remove or transport any property or debris to a site for storage or decontamination required because the property or debris is affected by pollutants or contaminants, whether or not such removal, transport, or decontamination is required by law or regulation.

It is a condition precedent to recovery under this policy that the Underwriters shall have paid or agreed to pay for direct physical loss or damage to the property insured hereunder and that the Insured shall give written notice to the Underwriters of intent to claim for cost of removal of debris or cost to clean up not later than twelve months after the date of such physical loss or damage.

It is further understood and agreed that the Underwriters liability for Debris Removal Costs shall not exceed 50% of the amount of loss recovery for damage to property as covered under this policy.

19. DEMOLITION AND INCREASE COST OF CONSTRUCTION

It is understood and agreed that if at the time of any direct physical loss or damage insured against by this Policy there is in force any law or ordinance regulating the construction, repair, replacement or use of the property insured hereunder, then this Policy is extended to cover:

- (1) The additional loss sustained in demolishing any undamaged portion of the property insured hereunder.
- (2) The cost incurred in actually rebuilding both the damaged and demolished portions of such property insured hereunder with materials and in a manner to fully satisfy the minimum requirements of such law or ordinance.

The Underwriters shall not be liable for any cost of demolition necessitated by any law or ordinance regulating any form of pollution or contamination.

The total liability under this Policy shall not exceed the actual expenditure incurred in demolishing the undamaged portion of the property insured hereunder involved plus the lesser of the following:

- (3) The actual expenditure incurred, not including the cost of land, in rebuilding on another site, or
- (4) The cost of rebuilding on the same site.

Payment made hereunder is part of and not in addition to the Limit of Liability specified elsewhere herein.

20. SUE AND LABOR

In case of actual loss or damage it shall be lawful and necessary for the Insured, their factors, servants or assigns, to sue, labor and travel for, in and about the defense, safeguard and recovery of the property insured hereunder, nor shall the acts of the Insured or the Underwriters in recovering, saving and preserving the property insured in case of loss, be considered a waiver or acceptance of abandonment; the expenses so incurred shall be borne by the Underwriters and the Insured proportionately to the extent of their respective interest.

21. ABANDONMENT

There can be no abandonment to Underwriters of the property insured.

Notwithstanding any of the provisions of this Policy, this Policy does not cover expenses, fines, penalties or costs incurred or sustained by the Insured or imposed on the Insured at the order of any Government Agency, Court or other Authority, in connection with any kind or description of environmental impairment including Seepage or Pollution or Contamination from any cause.

22. TITLES OF PARAGRAPHS

The several titles of the various paragraphs of this form (and of endorsements, if any, now or hereafter attached to this policy) are inserted solely for convenience of reference and shall not be deemed in any way to limit or affect the provisions to which they relate.

23. APPRAISAL

If the Insured and these Underwriters fail to agree to the amount of loss, each shall, on the written demand of either, made within sixty (60) days after receipt of Proof of Loss by the Underwriters, select a competent and disinterested appraiser, and the appraisers shall first select a competent and disinterested umpire, and failing for fifteen days to agree upon such umpire, then, on the request of the Insured or these Underwriters such umpire, then, on the request of the Insured or these Underwriters such umpire shall be selected by a judge of a court of record in the county and state in which such appraisal is pending. The appraisers shall then appraise the loss, stating separately the value at the time of loss and the amount of loss, and failing to agree shall submit their difference to the umpire. An award in writing of any two shall determine the amount of loss. The Insured and these Underwriters shall pay their chosen appraisers. The other expenses of the appraisal and the umpire's fee shall be divided, half to be paid by the Insured and half to be paid by the Underwriters.

24. NOTICE OF LOSS

The Insured shall report in writing to the Underwriters as soon as practicable every loss or damage which may become a claim under the insurance. Notice should be sent to FM Global.

All adjusted claims shall be due and payable sixty (60) days after the presentation and acceptance of Proofs of Loss at the office of the Underwriters. .

25. UNDERWRITER'S INTEREST

The interest of each Underwriter hereunder is individual and not joint and wherever any right or privilege is retained by the Underwriters such right or privilege may be exercised by each Underwriter independently.

26. CANCELLATION

This Policy may be cancelled by the Insured, or by Underwriters, at anniversary date only, by either party delivering to the other ninety (90) days notice of said cancellation prior to anniversary date (being 5 June).

27. GOVERNING LAW

This Policy shall be construed and enforced in accordance with the laws of the State of Pennsylvania in the United States, except insofar as such laws.

- 1) Pertain to regulation under Pennsylvania Insurance law, or regulations issued by the Insurance Department of Pennsylvania pursuant thereto, applying to insurers doing business or issuance, delivery or procurement of policies of insurance, within the State of Pennsylvania or as respects risks or insureds situated in the State of Pennsylvania;
 - 2) Pertain to choice of law rules that result in the selection of a substantive state law other than Pennsylvania;
 - 3) Purport to limit, exempt, repeal or otherwise qualify in any way the exclusion of all physical loss or damage and of all other interests, expenses or sums arising from or relating to terrorism, including but not limited to fire-following terrorism; or
 - 4) Are inconsistent with any of the provisions of this Policy.
-

Attaching to and forming part of Policy No 1-TD001-01

U.S.A.

**RADIOACTIVE CONTAMINATION EXCLUSION CLAUSE-
PHYSICAL DAMAGE - DIRECT**

This policy does not cover any loss or damage arising directly or indirectly from nuclear reaction, nuclear radiation or radioactive contamination however such nuclear reaction nuclear radiation or radioactive contamination may have been caused. NEVERTHELESS if Fire is an insured peril and a Fire arises directly or indirectly from nuclear reaction nuclear radiation or radioactive contamination any loss or damage arising directly from that Fire shall (subject to the provisions of this policy) be covered EXCLUDING however all loss or damage caused by nuclear reaction nuclear radiation or radioactive contamination arising directly or indirectly from that Fire.

*Note.-- If Fire is not an insured peril under this policy the words 'NEVERTHELESS' to the end of the clause do not apply and should be disregarded.

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TERRORISM

Without qualification, this Policy does not insure loss, damage, business interruption, expense, cost, or any other interest or obligation directly or indirectly resulting from or arising out of or in any way related to the following regardless of any other cause or event that in any way contributed concurrently or in any sequence to the loss claimed by the Insured:

- 1) "Terrorism" as defined below; or
- 2) Any actions taken by or on behalf of any government or any branch or division thereof (including, without limitation, the uniformed armed forces, militia, police, state security, and anti-terrorism agencies) in responding to, combating, defending or retaliating against any act or acts of "terrorism".

As used herein, "Terrorism" means the use or threatened use of any violence or force (including acts of sabotage) by any person or persons for, including but not limited to, religious, racial, ethnic, ideological, political or financial ends, whether or not such person or persons are acting in concert with or on behalf of any organization or government (de facto or de jure). "Terrorism" includes, but is not limited to, any use or threatened use of violence, force or physical harm by any means that frightens, intimidates or instills fear in the public at large or any numbers of the public.

In any arbitration or proceeding in which PPL Power Insurance submits that this exclusion applies, the burden of proving that the exclusion does not apply shall be on the Insured.

ELECTRONIC DATA AND MEDIA

Without qualification, this Policy does not insure loss, damage, business interruption, expense, cost, or any other interest or obligation directly or indirectly resulting from or arising out of or in any way related to the following regardless of any other cause or event that in any way contributed concurrently or in any sequence to the loss claimed by the Insured:

Except as specifically set forth below, any circumstance involving loss, damage, destruction, distortion, erasure, corruption, alteration, diminishment in value, or loss of use of usefulness of;

- 1) "Electronic Data" by any cause whatsoever (including but not limited to "Computer Virus"); and/or
- 2) "Electronic Media" caused by or resulting from the foregoing.

This exclusion does not apply to loss or damage of Electronic Data or Electronic Media caused by or resulting from the perils of fire, explosion, riot and civil commotion, aircraft or vehicle impact, sonic boom, sprinkler leakage, sinkhole, collapse, flood, earthquake, or volcanic action, and then only if and to the extent (i) that peril is insured by this Policy, and (ii) coverage is limited to that part of the Electronic Data or Electronic Media that sustains insured loss from that peril.

As used herein, "Electronic Data" means facts, concepts, information or data, including compilations thereof, in a form useable or intended for use or processing by Computers or for storage on Electronic Media. Electronic Data includes but is not limited to files, programs, applications, operating systems, and other coded instructions for the processing, calculation and storage of facts, concepts and information by Computers. "Electronic Media" means any physical device that holds, stores contains or transfers Electronic Data, and includes but is not limited to disks, drives, films, tapes, records, drums, or cells.

As used herein "Computers" includes but is not limited to mainframes, servers, workstations and portable computers, personal information managers, wide and local area network hardware, electronic and electromechanical equipment, data processing equipment, electronic controls for machinery, electronically programmed memory chips, and electronically controlled communication equipment. "Computer Virus" means instructions, code, applications or any software program that has the ability or is suspected to have the ability to damage, destroy, erase, corrupt, alter, or prevent access to Electronic Data, Electronic Media or Computers or to disrupt or interfere with the operations of Computers.

In those circumstances where coverage exists as part of a loss insured under this Policy, Electronic Media or Electric data shall be valued at the cost of the blank media plus the costs of copying or restoring Electronic Data from back-up or from originals of a previous

generation, not including research and engineering or the costs or expense of recreating, gathering or assembling such Electronic Data. Under no circumstances shall this insurance or claim value include any amount pertaining to the value of such Electronic Data to the insured or any other party, even if such Electronic Data cannot be recreated, gathered or assembled. If not repaired, replaced or restored, *Electronic Media shall be valued at the cost of the blank media.*

Attaching to and forming part of Policy No 1-TD001-01

BIOLOGICAL, CHEMICAL, NUCLEAR, RADIOLOGICAL

Without qualification, this Policy does not insure loss, damage, business interruption, expense, cost, or any other interest or obligation directly or indirectly resulting from or arising out of or in any way related to the following regardless of any other cause or event that in any way contributed concurrently or in any sequence to the loss claimed by the Insured:

- 1) The unlawful possession, use, release, discharge, dispersal or disposal of any chemical, bacteriological, viral, radioactive or similar agents or matter regardless of who is responsible for the act and whether war be declared or not.
 - 2) The unlawful possession, use, release discharge, detonation, dispersal or disposal of any device or material capable of producing a nuclear reaction or the spread of radioactivity, regardless of who is responsible for the act and whether war be declared or not.
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