FUEL COST 1 OF 4

	JANUARY 1987	FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	TOTAL
OIL (NO.6 & NO. 2)							
SCHUYLKILL#1	1,845,000	1,033,000	885,000	587,000	398,000	624,000	10,591,000
EDDYSTONE1&2	204,000	180,000	188,000	157,000	187,000	213,000	2,200,000
EDDYSTONE3&4	7,635,000	4,710,000	2,016,000	2,415,000	2,522,000	3,661,000	51,619,000
EDDY 1,2,3,4	7,839,000	4,890,000	2,204,000	2,572,000	2,709,000	3,874,000	53,819,000
ED (SULFUR)	727,000	558,000	599,000	0	0	0	2,489,000
EDDYSTONE	8,566,000	5,448,000	2,803,000	2,572,000	2,709,000	3,874,000	56,308,000
CROMBY#1	6,000	9,000	14,000	10,000	7,000	14,000	135,000
CROMBY#2	1,884,000	621,000	1,997,000	1,465,000	1,292,000	1,793,000	13,588,000
CR (SULFUR)	218,000	172,000	139,000	71,000	59,000	135,000	1,773,000
CROMBY	2,108,000	802,000	2,150,000	1,546,000	1,358,000	1,942,000	15,496,000
DELAWARE 7&8	2,112,000	1,649,000	1,006,000	863,000	366,000	1,000,000	16,865,000
RICHMOND	0	0	0	0	0	0	0
SOUTHWARK1&2	0	0	0	0	0	0	0
TOTAL OIL	14,631,000	8,932,000	6,844,000	5,568,000	4,831,000	7,440,000	99,260,000
COAL							
EDDYSTONE#1	2,273,000	2,036,000	1,989,000	2,162,000	2,011,000	1,880,000	24,946,000
EDDYSTONE#2	2,724,000	1,804,000	2,482,000	2,377,000	2,413,000	1,850,000	19,564,000
EDDYSTONE	4,997,000	3,840,000	4,471,000	4,539,000	4,424,000	3,730,000	44,510,000
CROMBY#1	1,513,000	1,197,000	976,000	510,000	427,000	959,000	12,264,000
TOTAL PECOAL	6,510,000	5,037,000	5,447,000	5,049,000	4,851,000	4,689,000	56,774,000
GAS FOR SCRUBBER							
EDDYSTONE#1	0	0	17,000	281,000	258,000	242,000	2,047,000
EDDYSTONE#2	0	0	23,000	306,000	310,000	236,000	1,572,000
TOTAL GAS	0	0	40,000	587,000	568,000	478,000	3,619,000
TOTAL OIL, TOTAL COAL & TOTAL GAS PHILA STEAM	21,141,000	13,969,000	12,331,000	11,204,000	10,250,000	12,607,000	159,653,000

FUEL COST 2 OF 4

	JULY 1986	AUGUST 1986	SEPTEMBER 1986	OCTOBER 1986	NOVEMBER 1986	DECEMBER 1986
MINEMOUTH (PE SHARE)						
KEYSTN1 COAL	1,349,000	1,361,000	1,196,000	1,404,000	1,208,000	1,160,000
KEYSTN2 COAL	164,000	1,054,000	1,112,000	1,225,000	1,094,000	1,155,000
KEYSTONE C	1,513,000	2,415,000	2,308,000	2,629,000	2,302,000	2,315,000
KEYST1&2 OIL	8,000	17,000	16,000	0	8,000	42,000
KEYSTONE	1,521,000	2,432,000	2,324,000	2,629,000	2,310,000	2,357,000
CON1 COAL	1,268,000	1,483,000	1,346,000	1,359,000	1,249,000	1,344,000
CON2 COAL	1,383,000	1,335,000	1,476,000	1,457,000	1,230,000	1,165,000
CONEMAUGH C	2,651,000	2,818,000	2,822,000	2,816,000	2,479,000	2,509,000
CON1&2 OIL	7,000	7,000	7,000	14,000	14,000	28,000
CONEMAUGH	2,658,000	2,825,000	2,829,000	2,830,000	2,493,000	2,537,000
MINEMOUTH	4,179,000	5,257,000	5,153,000	5,459,000	4,803,000	4,894,000
NUCLEAR (PE SHARE)						
PB2 NUCLEAR	1,786,023	1,946,704	1,748,944	1,495,563	2,008,504	1,439,943
PB3 NUCLEAR	1,739,222	2,065,905	1,566,089	1,426,141	1,006,296	2,019,255
PB2&3INTREST	816,540	785,468	754,396	723,324	692,252	661,180
PB ATOMIC	4,341,785	4,798,077	4,069,429	3,645,028	3,707,052	4,120,378
AUX BOILER	28,034	28,034	27,130	28,034	27,130	28,034
PB DIESEL	4,434	4,434	4,290	4,434	4,290	4,434
SALEM 1	2,088,000	1,953,000	1,795,000	1,830,000	2,033,000	1,831,000
SALEM 2	1,976,000	1,703,000	848,000	0	0	152,000
SLM1INTEREST	481,915	466,511	451,107	435,703	420,299	404,895
SLM2INTEREST	257,184	246,549	235,913	235,913	235,913	508,291
SALEM AUXBLR	0	0	0	0	0	0
SALEM DIESEL	200	200	200	200	200	200
LM1 NUCLEAR	5,228,000	4,961,000	4,029,000	5,077,000	4,312,000	4,462,000
LM2 NUCLEAR	0	0	0	0	0	0
LM NUC TOTAL	5,228,000	4,961,000	4,029,000	5,077,000	4,312,000	4,462,000
LIMAUXBOILER	43,158	43,158	41,766	43,158	41,766	43,158
LIM DIESEL	7,026	7,026	6,799	7,026	6,799	7,026
NUCLEAR	14,455,736	14,210,989	11,508,634	11,306,496	10,788,449	11,561,416
NOTE: FOR JIM MILLER						
SALEM JC2	0	0	0	0	0	0
OTHER (PRECOMMERCIAL)						
OTHER	0	0	0	0	0	0

FUEL COST 2 OF 4

	JANUARY 1987	FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	TOTAL
MINEMOUTH (PE SHARE)							
KEYSTN1 COAL	1,208,000	1,177,000	1,449,000	271,000	883,000	1,333,000	13,999,000
KEYSTN2 COAL	1,057,000	1,056,000	1,227,000	1,210,000	1,408,000	1,214,000	12,976,000
KEYSTONE C	2,265,000	2,233,000	2,676,000	1,481,000	2,291,000	2,547,000	26,975,000
KEYST1&2 OIL	25,000	16,000	0	0	8,000	0	140,000
KEYSTONE	2,290,000	2,249,000	2,676,000	1,481,000	2,299,000	2,547,000	27,115,000
CON1 COAL	1,542,000	1,323,000	1,489,000	1,408,000	1,648,000	1,400,000	16,859,000
CON2 COAL	1,478,000	996,000	102,000	1,352,000	1,639,000	1,242,000	14,855,000
CONEMAUGH C	3,020,000	2,319,000	1,591,000	2,760,000	3,287,000	2,642,000	31,714,000
CON1&2 OIL	14,000	7,000	7,000	7,000	0	21,000	133,000
CONEMAUGH	3,034,000	2,326,000	1,598,000	2,767,000	3,287,000	2,663,000	31,847,000
MINEMOUTH	5,324,000	4,575,000	4,274,000	4,248,000	5,586,000	5,210,000	58,962,000
NUCLEAR (PE SHARE)							
PB2 NUCLEAR	1,915,804	98,880	0	0	1,798,577	1,999,138	16,238,080
PB3 NUCLEAR	1,965,941	1,732,694	1,802,039	1,875,236	1,192,160	0	18,390,978
PB2&3INTREST	632,414	603,650	587,905	572,159	946,210	910,176	8,685,674
PB ATOMIC	4,514,159	2,435,224	2,389,944	2,447,395	3,936,947	2,909,314	43,314,732
AUX BOILER	28,034	25,320	28,034	27,130	28,034	27,130	330,078
PB DIESEL	4,434	4,006	4,434	4,290	4,434	4,290	52,204
SALEM 1	1,946,000	1,906,000	2,095,000	2,081,000	2,223,000	2,129,000	23,910,000
SALEM 2	1,805,000	1,481,000	1,468,000	1,948,000	1,488,000	2,142,000	15,011,000
SLM1INTEREST	389,491	374,087	358,683	343,279	327,876	312,472	4,766,318
SLM2INTEREST	491,860	475,430	458,999	442,568	426,138	409,707	4,424,465
SALEM AUXBLR	0	0	0	0	0	0	0
SALEM DIESEL	200	200	200	200	200	200	2,400
LM1 NUCLEAR	4,428,000	3,842,000	4,403,000	0	0	0	40,742,000
LM2 NUCLEAR	0	0	0	0	0	0	0
LM NUC TOTAL	4,428,000	3,842,000	4,403,000	0	0	0	40,742,000
LIMAUXBOILER	43,158	38,981	43,158	41,766	43,158	41,766	508,151
LIM DIESEL	7,026	6,346	7,026	6,799	7,026	6,799	82,724
NUCLEAR	13,657,362	10,588,594	11,256,478	7,342,427	8,484,813	7,982,678	133,144,072
NOTE: FOR JIM MILLER SALEM JC2	0	0	0	0	0	0	0
OTHER (PRECOMMERCIAL) OTHER	0	0	0	0	0	0	0

FUEL COST 3 OF 4

	JULY 1986	AUGUST 1986	SEPTEMBER 1986	OCTOBER 1986	NOVEMBER 1986	DECEMBER 1986
DIESELS						
CROMBY D 1&2	1,400	0	0	0	6,000	2,500
DELAWARE D	1,700	1,400	0	1,100	2,400	0
SOUTHWARK D	0	0	0	0	0	0
SCHUYLKILL D	0	0	1,400	400	0	0
KEYSTONE D	400	1,000	800	0	0	0
CONEMAUGH D	400	800	600	0	0	0
DIESEL	3,900	3,200	2,800	1,500	8,400	2,500
GAS TURBINES						
SOUTHWARK CT	17,000	59,000	30,000	0	0	0
EDDYSTONE CT	25,000	67,000	28,000	0	0	0
DELAWARE CT	22,000	60,000	29,000	0	0	0
SCHUYLKILLCT	9,000	35,000	8,000	0	0	0
CHESTER CT	17,000	38,000	23,000	0	0	0
FALLS CT	20,000	53,000	23,000	0	0	0
MOSER CT	20,000	62,000	26,000	0	0	0
PLY MTG CT	0	0	0	0	0	0
RICH GE CT	346,000	509,000	179,000	86,000	179,000	19,000
RICH NE CT	0	0	0	0	0	0
RICH NO CT	0	0	0	0	0	0
RICHMOND CT	346,000	509,000	179,000	86,000	179,000	19,000
CROYDON	893,000	1,352,000	661,000	460,000	411,000	223,000
SALEM CT	3,000	1,000	3,000	0	0	0
GAS TURBINES	1,372,000	2,236,000	1,010,000	546,000	590,000	242,000
TOTAL IC	1,375,900	2,239,200	1,012,800	547,500	598,400	244,500

FUEL COST 3 OF 4

	JANUARY 1987	FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	TOTAL
DIESELS							
CROMBY D 1&2	0	4,300	700	0	0	0	14,900
DELAWARE D	10,100	2,400	0	3,100	0	0	22,200
SOUTHWARK D	0	0	0	0	0	0	0
SCHUYLKILL D	2,400	0	0	0	0	0	4,200
KEYSTONE D	0	0	0	600	0	0	2,800
CONEMAUGH D	0	0	0	400	0	0	2,200
DIESEL	12,500	6,700	700	4,100	0	0	46,300
GAS TURBINES							
SOUTHWARK CT	0	0	0	10,000	0	0	116,000
EDDYSTONE CT	0	0	0	10,000	0	0	130,000
DELAWARE CT	0	0	0	21,000	0	0	132,000
SCHUYLKILLCT	0	0	0	3,000	0	0	55,000
CHESTER CT	0	0	0	15,000	0	0	93,000
FALLS CT	0	0	0	12,000	0	0	108,000
MOSER CT	0	0	0	17,000	0	0	125,000
PLY MTG CT	0	0	0	0	0	0	0
RICH GE CT	87,000	67,000	10,000	225,000	55,000	97,000	1,859,000
RICH NE CT	0	0	0	0	0	0	0
RICH NO CT	0	0	0	0	0	0	0
RICHMOND CT	87,000	67,000	10,000	225,000	55,000	97,000	1,859,000
CROYDON	610,000	700,000	160,000	544,000	178,000	342,000	6,534,000
SALEM CT	0	0	0	0	0	0	7,000
GAS TURBINES	697,000	767,000	170,000	857,000	233,000	439,000	9,159,000
TOTAL IC	709,500	773,700	170,700	861,100	233,000	439,000	9,205,300

FUEL COST 4 OF 4 (SUMMARY)

	JULY 1986	AUGUST 1986	SEPTEMBER 1986	OCTOBER 1986	NOVEMBER 1986	DECEMBER 1986
TOTAL OIL	8,879,000	8,265,000	8,236,000	6,641,000	8,452,000	10,541,000
TOTAL PECOAL	4,954,000	5,654,000	3,645,000	3,629,000	3,325,000	3,984,000
TOTAL GAS	545,000	625,000	354,000	315,000	107,000	0
MINEMOUTH	4,179,000	5,257,000	5,153,000	5,459,000	4,803,000	4,894,000
TOTAL IC	1,375,900	2,239,200	1,012,800	547,500	598,400	244,500
NUCLEAR	14,455,736	14,210,989	11,508,634	11,306,496	10,788,449	11,561,416
OTHER	0	0	0	0	0	0
NET INTCH	1,889,000	(1,218,000)	4,471,000	3,016,000	2,462,000	3,876,000
PUR POWER	25,196	91,196	106,196	171,196	346,196	757,196
2PARTY TRANS	5,546,000	5,458,000	5,335,000	5,758,000	5,693,000	6,097,000
CONTRACT CAP	0	0	0	0	0	0
FUEL HANDL'G	851,072	936,240	834,285	838,548	844,109	844,445
OIL, COAL, GAS, MINEMOUTH AND IC						
TOTAL FOSSIL	19,932,900	22,040,200	18,400,800	16,591,500	17,285,400	19,663,500
FOSSIL AND NUCLEAR						
TOTAL FUEL	34,388,636	36,251,189	29,909,434	27,897,996	28,073,849	31,224,916
INTERCHANGE AND PURCHASE						
INTCH & PUR	7,460,196	4,331,196	9,912,196	8,945,196	8,501,196	10,730,196
FOSSIL, NUCLEAR, INTERCHANGE, PURCHASE AND OTHER						
TOTAL ENERGY	41,848,832	40,582,385	39,821,630	36,843,192	36,575,045	41,955,112
TOTAL ENERGY AND CONTRCT CAPACITY						
SUBTOT	41,848,832	40,582,385	39,821,630	36,843,192	36,575,045	41,955,112
ENERGY, CONTRACT CAPACITY AND FUEL HANDLING						
GRAND TOTAL	42,699,904	41,518,625	40,655,915	37,681,740	37,419,154	42,799,557

FUEL COST 4 OF 4 (SUMMARY)

	JANUARY 1987	FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	TOTAL
TOTAL OIL	14,631,000	8,932,000	6,844,000	5,568,000	4,831,000	7,440,000	99,260,000
TOTAL PECOAL	6,510,000	5,037,000	5,447,000	5,049,000	4,851,000	4,689,000	56,774,000
TOTAL GAS	0	0	40,000	587,000	568,000	478,000	3,619,000
MINEMOUTH	5,324,000	4,575,000	4,274,000	4,248,000	5,586,000	5,210,000	58,962,000
TOTAL IC	709,500	773,700	170,700	861,100	233,000	439,000	9,205,300
NUCLEAR	13,657,362	10,588,594	11,256,478	7,342,427	8,484,813	7,982,678	133,144,072
OTHER	0	0	0	0	0	0	0
NET INTCH	(12,987,000)	3,128,000	407,000	9,897,000	9,878,000	20,697,000	45,516,000
PUR POWER	913,280	576,280	378,280	149,280	49,280	71,280	3,634,856
2PARTY TRANS	5,956,000	5,335,000	5,652,000	5,269,000	5,012,000	5,031,000	66,142,000
CONTRACT CAP	0	0	0	0	0	0	0
FUEL HANDL'G	0	0	0	0	0	0	5,148,699
OIL, COAL, GAS, MINEMOUTH AND IC							
TOTAL FOSSIL	27,174,500	19,317,700	16,775,700	16,313,100	16,069,000	18,256,000	227,820,300
FOSSIL AND NUCLEAR							
TOTAL FUEL	40,831,862	29,906,294	28,032,178	23,655,527	24,553,813	26,238,678	360,964,372
INTERCHANGE AND PURCHASE							
INTCH & PUR	(6,117,720)	9,039,280	6,437,280	15,315,280	14,939,280	25,799,280	115,292,856
FOSSIL, NUCLEAR, INTERCHANGE, PURCHASE AND OTHER							
TOTAL ENERGY	34,714,142	38,945,574	34,469,458	38,970,807	39,493,093	52,037,958	476,257,228
TOTAL ENERGY AND CONTRCT CAPACITY							
SUBTOT	34,714,142	38,945,574	34,469,458	38,970,807	39,493,093	52,037,958	476,257,228
ENERGY, CONTRACT CAPACITY AND FUEL HANDLING							
GRAND TOTAL	34,714,142	38,945,574	34,469,458	38,970,807	39,493,093	52,037,958	481,405,927

STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 1 OF 5

	JULY 1986	AUGUST 1986	SEPTEMBER 1986	OCTOBER 1986	NOVEMBER 1986	DECEMBER 1986
OPERATING STATISTICS - MWH OUTPUT						
STEAM						
PHILADELPHIA AREA STATIONS						
COAL-PE STM.	274,000	314,000	202,000	198,000	182,000	217,000
OIL-PE STM.	168,000	155,000	153,000	116,000	157,000	197,000
PHILA STEAM	442,000	469,000	355,000	314,000	339,000	414,000
MINEMOUTH						
KEYSTONE STA	120,000	192,000	183,000	205,000	179,000	180,000
CONEMAUGHSTA	170,000	181,000	181,000	178,000	157,000	158,000
COAL-MINEMTH	290,000	373,000	364,000	383,000	336,000	338,000
FOSSIL STEAM	732,000	842,000	719,000	697,000	675,000	752,000
NUCLEAR (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).						
PEACH BOT#2	258,117	281,339	252,759	216,140	290,270	208,102
PEACH BOT#3	229,541	272,658	206,693	188,222	132,811	266,502
SALEM#1	282,000	264,000	242,000	247,000	275,000	247,000
SALEM #2	317,000	273,000	136,000	0	0	21,000
LIMERICK #1	663,000	629,000	511,000	643,000	546,000	565,000
LIMERICK #2	0	0	0	0	0	0
MWH.NUCLEAR	1,749,658	1,719,997	1,348,452	1,294,362	1,244,081	1,307,604
INTERNAL COMBUSTION						
DIESEL	70	50	40	30	140	40
GAS TURBINE	6,850	12,440	4,890	1,290	2,710	280
CROYDON	14,300	22,000	11,100	7,900	6,800	3,800
INT.COMB.	21,220	34,490	16,030	9,220	9,650	4,120
TOTAL FOSSIL, NUCLEAR & I. C. (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).						
TOTAL F&N	2,502,878	2,596,487	2,083,482	2,000,582	1,928,731	2,063,724

STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 1 OF 5

	JANUARY 1987	FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	TOTAL
OPERATING STATISTICS - MWH OUTPUT							
STEAM							
PHILADELPHIA AREA STATIONS							
COAL-PE STM.	351,000	271,000	289,000	267,000	254,000	246,000	3,065,000
OIL-PE STM.	278,000	159,000	119,000	102,000	86,000	139,000	1,829,000
PHILA STEAM	629,000	430,000	408,000	369,000	340,000	385,000	4,894,000
MINEMOUTH							
KEYSTONE STA	174,000	171,000	205,000	113,000	174,000	193,000	2,089,000
CONEMAUGHSTA	188,000	144,000	98,000	170,000	202,000	162,000	1,989,000
COAL-MINEMTH	362,000	315,000	303,000	283,000	376,000	355,000	4,078,000
FOSSIL STEAM	991,000	745,000	711,000	652,000	716,000	740,000	8,972,000
NUCLEAR (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).							
PEACH BOT#2	276,873	14,290	0	0	248,293	275,980	2,322,163
PEACH BOT#3	259,465	228,681	237,790	246,797	156,899	0	2,426,059
SALEM#1	263,000	257,000	283,000	281,000	300,000	287,000	3,228,000
SALEM #2	255,000	209,000	207,000	275,000	210,000	302,000	2,205,000
LIMERICK #1	561,000	486,000	555,000	0	0	0	5,159,000
LIMERICK #2	0	0	0	0	0	0	0
MWH.NUCLEAR	1,615,338	1,194,971	1,282,790	802,797	915,192	864,980	15,340,222
INTERNAL COMBUSTION							
DIESEL	210	110	10	70	0	0	770
GAS TURBINE	1,300	1,010	140	4,470	830	1,470	37,680
CROYDON	10,100	11,700	2,700	9,000	3,000	5,700	108,100
INT.COMB.	11,610	12,820	2,850	13,540	3,830	7,170	146,550
TOTAL FOSSIL, NUCLEAR & I. C. (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).							
TOTAL F&N	2,617,948	1,952,791	1,996,640	1,468,337	1,635,022	1,612,150	24,458,772

STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 2 OF 5

	JULY 1986	AUGUST 1986	SEPTEMBER 1986	OCTOBER 1986	NOVEMBER 1986	DECEMBER 1986
OPERATING STATISTICS - MWH OUTPUT (CONTINUED)						
INTERCHANGE & PURCHASE						
INTERCHANGE POWER						
RECEIVED PJM	253,000	200,000	286,000	170,000	281,000	279,000
DELIV'D PJM	(122,000)	(190,000)	(104,000)	(89,000)	(120,000)	(114,000)
NET INTCH	131,000	10,000	182,000	81,000	161,000	165,000
PURCHASED POWER						
PUR POWER	716	2,616	3,016	4,816	9,816	19,716
THO PARTY TRANSACTIONS						
ALLGH'Y PWR	205,000	200,000	196,000	211,000	210,000	228,000
CENTL WDS'N	0	0	0	0	0	0
TOTAL INTERCHANGE & PURCHASE						
INTCH & PUR	336,716	212,616	381,016	296,816	380,816	412,716
HYDRO						
HYDRO-RIVER FLOW GENERATION						
CONOWINGO	79,000	57,000	52,000	85,000	123,000	181,000
PUMP STORAGE GENERATION						
MUDDY RUN	143,000	114,000	118,000	97,000	81,000	109,000
PUMP STORAGE INPUT						
M R INPUT	(199,000)	(178,000)	(169,000)	(132,000)	(128,000)	(147,000)
NET HYDRO	23,000	(7,000)	1,000	50,000	76,000	143,000
OTHER PRODUCTION (PRECOMMERCIAL)						
OTHER	0	0	0	0	0	0
(NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED IN TOTAL.OUTPUT)						
TOTAL.OUTPUT	2,862,594	2,802,103	2,465,498	2,347,398	2,385,547	2,619,440
SALES	2,531,700	2,573,200	2,481,800	2,210,400	2,138,800	2,394,200
COMPANY USE	2,723	2,635	2,926	2,323	3,324	4,231
(NOTE: SALEM 2 MWH SOLD TO GPU EXCLUDED IN "LOSS" CALCULATIONS)						
LOSSES	328,171	226,268	(19,228)	134,675	243,423	221,009
%LOSS-OUTPUT	11.46	8.07	(0.78)	5.74	10.20	8.44

STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 2 OF 5

	JANUARY 1987	FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	TOTAL
OPERATING STATISTICS - MWH OUTPUT (CONTINUED)							
INTERCHANGE & PURCHASE							
INTERCHANGE POWER							
RECEIVED PJM	123,000	265,000	239,000	397,000	378,000	691,000	3,562,000
DELIV'D PJM	(355,000)	(124,000)	(162,000)	(19,000)	(28,000)	(7,000)	(1,434,000)
NET INTCH	(232,000)	141,000	77,000	378,000	350,000	684,000	2,128,000
PURCHASED POWER							
PUR POWER	22,016	14,816	11,216	4,616	1,616	2,216	97,192
TWO PARTY TRANSACTIONS							
ALLGH'Y PWR	223,000	199,000	207,000	190,000	175,000	178,000	2,422,000
CENTL HDS'N	0	0	0	0	0	0	0
TOTAL INTERCHANGE & PURCHASE							
INTCH & PUR	13,016	354,816	295,216	572,616	526,616	864,216	4,647,192
HYDRO							
HYDRO-RIVER FLOW GENERATION							
CONOWINGO	138,000	172,000	259,000	258,000	205,000	123,000	1,732,000
PUMP STORAGE GENERATION							
MUDDY RUN	90,000	95,000	97,000	82,000	81,000	116,000	1,223,000
PUMP STORAGE INPUT							
M R INPUT	(129,000)	(137,000)	(143,000)	(116,000)	(123,000)	(162,000)	(1,763,000)
NET HYDRO	99,000	130,000	213,000	224,000	163,000	77,000	1,192,000
OTHER PRODUCTION (PRECOMMERCIAL)							
OTHER	0	0	0	0	0	0	0
(NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED IN TOTAL.OUTPUT)							
TOTAL.OUTPUT	2,729,964	2,437,607	2,504,856	2,264,953	2,324,638	2,553,366	30,297,964
SALES	2,754,700	2,621,700	2,479,400	2,386,800	2,199,200	2,382,300	29,154,200
COMPANY USE	4,950	5,153	5,464	4,640	3,423	2,723	44,515
(NOTE: SALEM 2 MWH SOLD TO GPU EXCLUDED IN "LOSS" CALCULATIONS)							
LOSSES	(29,686)	(189,246)	19,992	(126,487)	122,015	168,343	1,099,249
%LOSS-OUTPUT	(1.09)	(7.76)	0.80	(5.58)	5.25	6.59	3.63

80/20 FILING - 7/86 - 6/89

LECTRIC GENERATION AND FUEL COST ESTIMATES

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
WH						
IL-PE STM.	259,000	269,000	219,000	113,000	99,000	244,000
OAL-PE STM.	302,000	299,000	218,000	181,000	185,000	295,000
OAL-MINEMTH	349,000	337,000	242,000	360,000	367,000	350,000
NT.COMB.	19,040	22,120	23,090	4,260	4,270	14,760
OTAL FOSSIL	929,040	927,120	702,090	658,260	655,270	903,760
WH NUCLEAR	908,591	1,371,270	1,252,484	1,186,164	1,111,361	1,247,950
ET HYDRO	20,000	0	4,000	35,000	81,000	143,000
THER	0	0	0	0	0	0
ECEIVED PJM	831,000	367,000	353,000	326,000	365,000	223,000
ELIV'D PJM	(35,000)	(83,000)	(62,000)	(48,000)	(42,000)	(156,000)
TEAM-HT PP	2,100	3,000	2,700	4,500	8,100	18,900
E,PPL & DPL	16	16	16	16	16	16
PARTY TRANS	201,000	204,000	188,000	194,000	192,000	217,000
NTCH & PUR	999,116	491,016	481,716	476,516	523,116	302,916
OTAL OUTPUT	2,856,747	2,789,406	2,440,290	2,355,940	2,370,747	2,597,626
IL-PE STM	12,673,000	13,299,000	10,849,000	6,084,000	5,376,000	12,043,000
OAL-PE STM	6,611,000	6,512,000	4,737,000	4,040,000	4,137,000	6,584,000
INEMOUTH	5,279,000	5,008,000	3,659,000	5,554,000	5,607,000	5,359,000
NT.COMB	1,206,200	1,378,700	1,439,400	252,700	273,200	915,900
OTAL FOSSIL	25,769,200	26,197,700	20,684,400	15,930,700	15,393,200	24,901,900
NUCLEAR EXCLUDING INTEREST, BUT INCLUDING OIL)						
UCLEAR.	6,470,095	8,924,504	7,920,898	7,375,974	6,969,065	7,749,913
THER	0	0	0	0	0	0
ECEIVED PJM	26,490,000	12,126,000	11,510,000	10,021,000	11,132,000	7,030,000
ELIV'D PJM	(1,953,000)	(4,395,000)	(3,241,000)	(2,069,000)	(1,955,000)	(8,235,000)
TEAM-HT PP	74,000	112,000	97,000	146,000	264,000	752,000
E,PPL & DPL	1,280	1,280	1,280	1,280	1,280	1,280
PARTY TRANS	5,646,000	5,703,000	5,322,000	5,584,000	5,493,000	6,075,000
NTCH & PUR	30,258,280	13,547,280	13,689,280	13,683,280	14,935,280	5,623,280
NFORMATION FOR RATE DIVISION ($'S EXCLUDE FUEL HANDLING)						
-FIN.CHGS	62,497,575	48,669,484	42,294,578	36,989,954	37,297,545	38,275,093
IN.CHGS	1,578,047	1,523,738	1,469,430	1,430,525	1,391,620	1,352,716
&FIN.CHGS	64,075,622	50,193,222	43,764,008	38,420,479	38,689,165	39,627,809
GAS $ INCLUDED IN COAL-PE STM)						
OTAL GAS	605,000	586,000	390,000	126,000	0	0
NFORMATION FOR GEN. ACC. BUDGET GRP. (TOTAL FUEL HAND. $)						
UEL HANDL'G	0	0	0	0	0	10,585,211

80/20 FILING - 7/86 - 6/89

ELECTRIC GENERATION AND FUEL COST ESTIMATES

MWH	JANUARY 1988	FEBRUARY 1988	MARCH 1988	APRIL 1988	MAY 1988	JUNE 1988	TOTAL
OIL-PE STM.	435,000	168,000	250,000	110,000	127,000	128,000	2,421,000
COAL-PE STM.	352,000	304,000	183,000	174,000	167,000	265,000	2,925,000
COAL-MINEMTH	370,000	373,000	346,000	270,000	256,000	369,000	3,989,000
INT.COMB.	55,090	10,890	13,700	7,380	6,670	8,080	189,350
TOTAL FOSSIL	1,212,090	855,890	792,700	561,380	556,670	770,080	9,524,350
MWH NUCLEAR	1,108,736	1,371,728	1,208,537	1,209,270	1,367,261	1,468,626	14,811,978
NET HYDRO	84,000	141,000	225,000	205,000	149,000	79,000	1,166,000
OTHER	0	0	0	0	0	0	0
RECEIVED PJM	350,000	152,000	254,000	212,000	249,000	202,000	3,884,000
DELIV'D PJM	(120,000)	(226,000)	(149,000)	(132,000)	(140,000)	(208,000)	(1,401,000)
STEAM-HT PP	25,100	18,400	18,900	5,900	2,000	1,900	111,500
ME,PPL & DPL	16	16	16	16	16	16	192
2PARTY TRANS	206,000	181,000	198,000	199,000	198,000	165,000	2,343,000
INTCH & PUR	461,116	125,416	321,916	284,916	309,016	160,916	4,937,692
TOTAL OUTPUT	2,865,942	2,494,034	2,548,153	2,260,566	2,381,947	2,478,622	30,440,020
$							
OIL-PE STM	20,665,000	8,800,000	12,300,000	5,858,000	6,712,000	6,781,000	121,440,000
COAL-PE STM	8,021,000	6,941,000	4,190,000	3,989,000	3,848,000	6,093,000	65,703,000
MINEMOUTH	5,870,000	5,834,000	5,398,000	4,156,000	4,257,000	5,870,000	61,851,000
INT.COMB	3,467,100	676,900	854,800	452,600	405,400	515,500	11,838,400
TOTAL FOSSIL	38,023,100	22,251,900	22,742,800	14,455,600	15,222,400	19,259,500	260,832,400
(NUCLEAR EXCLUDING INTEREST, BUT INCLUDING OIL)							
NUCLEAR.	7,009,853	8,879,368	7,919,565	7,747,838	8,813,362	9,571,888	95,352,323
OTHER	0	0	0	0	0	0	0
RECEIVED PJM	13,221,000	5,367,000	9,042,000	6,485,000	8,169,000	6,595,000	127,188,000
DELIV'D PJM	(7,434,000)	(10,242,000)	(7,061,000)	(6,118,000)	(5,512,000)	(7,589,000)	(65,804,000)
STEAM-HT PP	1,113,000	707,000	739,000	217,000	70,000	62,000	4,353,000
ME,PPL & DPL	1,369	1,369	1,369	1,369	1,369	1,369	15,894
2PARTY TRANS	5,849,000	5,159,000	5,695,000	5,695,000	5,705,000	4,960,000	66,886,000
INTCH & PUR	12,750,369	992,369	8,416,369	6,280,369	8,433,369	4,029,369	132,638,894
INFORMATION FOR RATE DIVISION ($'S EXCLUDE FUEL HANDLING)							
$-FIN.CHGS	57,783,322	32,123,637	39,078,734	28,483,807	32,469,131	32,860,757	488,823,617
FIN.CHGS	1,562,286	1,505,640	1,454,190	1,402,739	1,767,717	1,987,489	18,426,137
$&FIN.CHGS	59,345,608	33,629,277	40,532,924	29,886,546	34,236,848	34,848,246	507,249,754
(GAS $ INCLUDED IN COAL-PE STM)							
TOTAL GAS	0	0	0	0	221,000	549,000	2,477,000

INFORMATION FOR GEN. ACC. BUDGET GRP. (TOTAL FUEL HAND. $)

MWH DISTRIBUTION 1 OF 4

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
OIL						
PE REHEAT OIL						
SCHUYLKILL#1	30,000	27,000	14,000	8,000	9,000	37,000
EDDYSTONE#3	59,000	64,000	49,000	29,000	17,000	58,000
EDDYSTONE#4	58,000	73,000	57,000	20,000	17,000	35,000
CROMBY#2	72,000	59,000	59,000	44,000	43,000	76,000
DELAWARE#7	24,000	27,000	23,000	11,000	8,000	25,000
DELAWARE#8	16,000	19,000	17,000	1,000	5,000	13,000
MWH R H OIL	259,000	269,000	219,000	113,000	99,000	244,000
PE MARGINAL OIL						
RICHMOND#9	0	0	0	0	0	0
SOUTHWARK#1	0	0	0	0	0	0
SOUTHWARK#2	0	0	0	0	0	0
MWH MARG OIL	0	0	0	0	0	0
REHEAT & MARGINAL OIL						
MWH OIL	259,000	269,000	219,000	113,000	99,000	244,000
PE COAL						
EDDYSTONE#1	109,000	134,000	26,000	0	0	62,000
EDDYSTONE#2	137,000	106,000	134,000	129,000	130,000	148,000
CROMBY#1	56,000	59,000	58,000	52,000	55,000	85,000
MWH COAL	302,000	299,000	218,000	181,000	185,000	295,000
PHILA. AREA OIL AND COAL.						
PHILA STEAM	561,000	568,000	437,000	294,000	284,000	539,000
MEMO - STATION TOTALS						
EDDYSTONE	363,000	377,000	266,000	178,000	164,000	303,000
CROMBY	128,000	118,000	117,000	96,000	98,000	161,000
DELAWARE7&8	40,000	46,000	40,000	12,000	13,000	38,000
SOUTHWARK1&2	0	0	0	0	0	0

MNH DISTRIBUTION 1 OF 4

	JANUARY 1988	FEBRUARY 1988	MARCH 1988	APRIL 1988	MAY 1988	JUNE 1988	TOTAL
OIL							
PE REHEAT OIL							
SCHUYLKILL#1	54,000	21,000	28,000	9,000	19,000	17,000	273,000
EDDYSTONE#3	109,000	45,000	53,000	16,000	21,000	21,000	541,000
EDDYSTONE#4	113,000	47,000	47,000	26,000	30,000	33,000	556,000
CROMBY#2	81,000	13,000	80,000	46,000	42,000	37,000	652,000
DELAWARE#7	42,000	21,000	21,000	13,000	15,000	11,000	241,000
DELAWARE#8	36,000	21,000	21,000	0	0	9,000	158,000
MNH R H OIL	435,000	168,000	250,000	110,000	127,000	128,000	2,421,000
PE MARGINAL OIL							
RICHMOND#9	0	0	0	0	0	0	0
SOUTHWARK#1	0	0	0	0	0	0	0
SOUTHWARK#2	0	0	0	0	0	0	0
MNH MARG OIL	0	0	0	0	0	0	0
REHEAT & MARGINAL OIL							
MNH OIL	435,000	168,000	250,000	110,000	127,000	128,000	2,421,000
PE COAL							
EDDYSTONE#1	126,000	106,000	106,000	114,000	117,000	108,000	1,008,000
EDDYSTONE#2	133,000	123,000	0	0	6,000	116,000	1,162,000
CROMBY#1	93,000	75,000	77,000	60,000	44,000	41,000	755,000
MNH COAL	352,000	304,000	183,000	174,000	167,000	265,000	2,925,000
PHILA. AREA OIL AND COAL.							
PHILA STEAM	787,000	472,000	433,000	284,000	294,000	393,000	5,346,000
MEMO - STATION TOTALS							
EDDYSTONE	481,000	321,000	206,000	156,000	174,000	278,000	3,267,000
CROMBY	174,000	88,000	157,000	106,000	86,000	78,000	1,407,000
DELAWARE7&8	78,000	42,000	42,000	13,000	15,000	20,000	399,000
SOUTHWARK1&2	0	0	0	0	0	0	0

MMH DISTRIBUTION 2 OF 4

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
MINEMOUTH (PE SHARE)						
KEYSTONE#1	94,000	104,000	105,000	110,000	95,000	96,000
KEYSTONE#2	84,000	91,000	18,000	69,000	101,000	96,000
KEYSTONE STA	178,000	195,000	123,000	179,000	196,000	192,000
CONEMAUGH#1	80,000	59,000	25,000	78,000	84,000	71,000
CONEMAUGH#2	91,000	83,000	94,000	103,000	87,000	87,000
CONEMAUGHSTA	171,000	142,000	119,000	181,000	171,000	158,000
MINEMOUTH	349,000	337,000	242,000	360,000	367,000	350,000
PHILA. AREA OIL & COAL, AND MINEMOUTH COAL.						
FOSSIL STEAM	910,000	905,000	679,000	654,000	651,000	889,000
NUCLEAR (PE SHARE)						
PEACH BOT#2	287,591	290,270	288,484	291,164	239,361	292,950
PEACH BOT#3	0	0	0	0	0	0
PCH BOT STA	287,591	290,270	288,484	291,164	239,361	292,950
SALEM#1	260,000	271,000	123,000	0	0	0
SALEM#2	260,000	247,000	214,000	249,000	300,000	271,000
SALEM STA	520,000	518,000	337,000	249,000	300,000	271,000
LIM1	101,000	563,000	627,000	646,000	572,000	684,000
LIM2	0	0	0	0	0	0
LIM STA	101,000	563,000	627,000	646,000	572,000	684,000
MMH NUCLEAR	908,591	1,371,270	1,252,484	1,186,164	1,111,361	1,247,950
OTHER (PRECOMMERCIAL)						
LIMERICK 1	0	0	0	0	0	0
LIMERICK 2	0	0	0	0	0	0
OTHER	0	0	0	0	0	0

MMH DISTRIBUTION 2 OF 4

	JANUARY 1988	FEBRUARY 1988	MARCH 1988	APRIL 1988	MAY 1988	JUNE 1988	TOTAL
MINEMOUTH (PE SHARE)							
KEYSTONE#1	112,000	100,000	105,000	90,000	7,000	98,000	1,116,000
KEYSTONE#2	71,000	100,000	94,000	89,000	75,000	99,000	987,000
KEYSTONE STA	183,000	200,000	199,000	179,000	82,000	197,000	2,103,000
CONEMAUGH#1	101,000	82,000	84,000	91,000	104,000	81,000	940,000
CONEMAUGH#2	86,000	91,000	63,000	0	70,000	91,000	946,000
CONEMAUGHSTA	187,000	173,000	147,000	91,000	174,000	172,000	1,886,000
MINEMOUTH	370,000	373,000	346,000	270,000	256,000	369,000	3,989,000
PHILA. AREA OIL & COAL, AND MINEMOUTH COAL.							
FOSSIL STEAM	1,157,000	845,000	779,000	554,000	550,000	762,000	9,335,000
NUCLEAR (PE SHARE)							
PEACH BOT#2	294,736	269,728	229,537	290,270	289,377	289,377	3,352,845
PEACH BOT#3	0	0	0	0	146,884	290,249	437,133
PCH BOT STA	294,736	269,728	229,537	290,270	436,261	579,626	3,789,978
SALEM#1	0	216,000	221,000	288,000	269,000	252,000	1,900,000
SALEM#2	268,000	270,000	248,000	0	0	0	2,327,000
SALEM STA	268,000	486,000	469,000	288,000	269,000	252,000	4,227,000
LIM1	546,000	616,000	510,000	631,000	662,000	637,000	6,795,000
LIM2	0	0	0	0	0	0	0
LIM STA	546,000	616,000	510,000	631,000	662,000	637,000	6,795,000
MMH NUCLEAR	1,108,736	1,371,728	1,208,537	1,209,270	1,367,261	1,468,626	14,811,978
OTHER (PRECOMMERCIAL)							
LIMERICK 1	0	0	0	0	0	0	0
LIMERICK 2	0	0	0	0	0	0	0
OTHER	0	0	0	0	0	0	0

MWH DISTRIBUTION 3 OF 4

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
DIESELS						
CROMBY D 1&2	50	90	0	10	70	80
DELAWARE D	0	0	0	0	0	0
SOUTHWARK D	0	0	0	0	0	0
SCHUYLKILL D	0	80	40	20	0	0
PE DIESELS	50	170	40	30	70	80
KEYSTONE D	0	10	0	0	0	0
CONEMAUGH D	0	0	0	0	0	0
DIESEL	50	180	40	30	70	80
GAS TURBINES						
RICH GE CT	4,410	5,890	6,290	830	900	2,880
RICH NE CT	0	0	0	0	0	0
RICH NO CT	0	0	0	0	0	0
RICHCT TOTAL	4,410	5,890	6,290	830	900	2,880
SOUTHWARK CT	80	0	120	0	0	0
EDDYSTONE CT	100	0	60	0	0	0
DELAWARE CT	120	60	160	0	0	0
SCHUYLKILLCT	80	30	70	0	0	0
CHESTER CT	60	0	90	0	0	0
FALLS CT	120	60	80	0	0	0
MOSER CT	120	0	80	0	0	0
PLY MTG CT	0	0	0	0	0	0
SUBTOTAL	5,090	6,040	6,950	830	900	2,880
CROYDON	13,900	15,900	16,100	3,400	3,300	11,800
GAS TURBINES	18,990	21,940	23,050	4,230	4,200	14,680
SALEM CT	0	0	0	0	0	0
TOTAL CT	18,990	21,940	23,050	4,230	4,200	14,680
TOTAL CT AND DIESEL						
TOTAL IC	19,040	22,120	23,090	4,260	4,270	14,760
SIMPLE CYCLE (INC. SALEM CT)						
CT TOTAL	5,090	6,040	6,950	830	900	2,880

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
ELS						
BY D 1&2	50	90	0	10	70	80
HARE D	0	0	0	0	0	0
HARK D	0	0	0	0	0	0
VLKILL D	0	80	40	20	0	0
IESELS	50	170	40	30	70	80
TONE D	0	10	0	0	0	0
HAUGH D	0	0	0	0	0	0
EL	50	180	40	30	70	80
TURBINES						
GE CT	4,410	5,890	6,290	830	900	2,880
NE CT	0	0	0	0	0	0
MO CT	0	0	0	0	0	0
CT TOTAL	4,410	5,890	6,290	830	900	2,880
HARK CT	80	0	120	0	0	0
STONE CT	100	0	60	0	0	0
HARE CT	120	60	160	0	0	0
VLKILLCT	80	30	70	0	0	0
TER CT	60	0	90	0	0	0
S CT	120	60	80	0	0	0
R CT	120	0	80	0	0	0
ITG CT	0	0	0	0	0	0
OTOTAL	5,090	6,040	6,950	830	900	2,880
OON	13,900	15,900	16,100	3,400	3,300	11,800
TURBINES	18,990	21,940	23,050	4,230	4,200	14,680
I CT	0	0	0	0	0	0
. CT	18,990	21,940	23,050	4,230	4,200	14,680
. CT AND DIESEL						
. IC	19,040	22,120	23,090	4,260	4,270	14,760
LE CYCLE (INC. SALEM CT)						
OTAL	5,090	6,040	6,950	830	900	2,880

MWH DISTRIBUTION 4 OF 4 (SUMMARY)

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
OIL STEAM	259,000	269,000	219,000	113,000	99,000	244,000
PECOAL STEAM	302,000	299,000	218,000	181,000	185,000	295,000
MINEMOUTH	349,000	337,000	242,000	360,000	367,000	350,000
FOSSIL STEAM	910,000	905,000	679,000	654,000	651,000	889,000
MWH NUCLEAR	908,591	1,371,270	1,252,484	1,186,164	1,111,361	1,247,950
OTHER	0	0	0	0	0	0
DIESEL	50	180	40	30	70	80
TOTAL CT	18,990	21,940	23,050	4,230	4,200	14,680
NET INTCH	796,000	284,000	291,000	278,000	323,000	67,000
PUR POWER	2,116	3,016	2,716	4,516	8,116	18,916
2PARTY TRANS	201,000	204,000	188,000	194,000	192,000	217,000
CONOMINGO	77,000	57,000	51,000	85,000	129,000	181,000
MUDDY RUN	138,000	107,000	113,000	120,000	91,000	112,000
M R INPUT	(195,000)	(164,000)	(160,000)	(170,000)	(139,000)	(150,000)
TOTAL OUTPUT	2,856,747	2,789,406	2,440,290	2,355,940	2,370,747	2,597,626

NOTE: THIS PAGE EXCLUDES SALEM #2 WHILE SOLD TO J.C.

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MWH DISTRIBUTION 4 OF 4 (SUMMARY)

	JANUARY 1988	FEBRUARY 1988	MARCH 1988	APRIL 1988	MAY 1988	JUNE 1988	TOTAL
OIL STEAM	435,000	168,000	250,000	110,000	127,000	128,000	2,421,000
PECOAL STEAM	352,000	304,000	183,000	174,000	167,000	265,000	2,925,000
MINEMOUTH	370,000	373,000	346,000	270,000	256,000	369,000	3,989,000
FOSSIL STEAM	1,157,000	845,000	779,000	554,000	550,000	762,000	9,335,000
MWH NUCLEAR	1,108,736	1,371,728	1,208,537	1,209,270	1,367,261	1,468,626	14,811,978
OTHER	0	0	0	0	0	0	0
DIESEL	80	80	290	90	40	80	1,110
TOTAL CT	55,010	10,810	13,410	7,290	6,630	8,000	188,240
NET INTCH	230,000	(74,000)	105,000	80,000	109,000	(6,000)	2,483,000
PUR POWER	25,116	18,416	18,916	5,916	2,016	1,916	111,692
2PARTY TRANS	206,000	181,000	198,000	199,000	198,000	165,000	2,343,000
CONOMINGO	134,000	183,000	266,000	255,000	199,000	121,000	1,738,000
MUDDY RUN	82,000	101,000	109,000	101,000	111,000	110,000	1,295,000
M R INPUT	(132,000)	(143,000)	(150,000)	(151,000)	(161,000)	(152,000)	(1,867,000)
TOTAL OUTPUT	2,865,942	2,494,034	2,548,153	2,260,566	2,381,947	2,478,622	30,440,020

NOTE: THIS PAGE EXCLUDES SALEM #2 WHILE SOLD TO J.C.

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FUEL COST 1 OF 4

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
OIL (NO.6 & NO. 2)						
SCHUYLKILL#1	1,354,000	1,172,000	616,000	351,000	439,000	1,656,000
EDDYSTONE1&2	203,000	226,000	157,000	162,000	157,000	203,000
EDDYSTONE3&4	6,288,000	7,266,000	5,777,000	3,103,000	2,281,000	5,218,000
EDDY 1,2,3,4	6,491,000	7,492,000	5,934,000	3,265,000	2,438,000	5,421,000
ED (SULFUR)	0	0	0	211,000	355,000	572,000
EDDYSTONE	6,491,000	7,492,000	5,934,000	3,476,000	2,793,000	5,993,000
CROMBY#1	14,000	13,000	13,000	13,000	15,000	6,000
CROMBY#2	2,961,000	2,478,000	2,466,000	1,857,000	1,827,000	3,144,000
CR (SULFUR)	147,000	156,000	151,000	137,000	144,000	224,000
CROMBY	3,122,000	2,647,000	2,630,000	2,007,000	1,986,000	3,374,000
DELAWARE 7&8	1,853,000	2,144,000	1,820,000	598,000	657,000	1,816,000
RICHMOND	0	0	0	0	0	0
SOUTHWARK1&2	0	0	0	0	0	0
TOTAL OIL	12,820,000	13,455,000	11,000,000	6,432,000	5,875,000	12,839,000
COAL						
EDDYSTONE#1	2,117,000	2,565,000	495,000	0	0	1,233,000
EDDYSTONE#2	2,674,000	2,074,000	2,602,000	2,553,000	2,579,000	2,916,000
EDDYSTONE	4,791,000	4,639,000	3,097,000	2,553,000	2,579,000	4,149,000
CROMBY#1	1,068,000	1,131,000	1,099,000	1,013,000	1,059,000	1,639,000
TOTAL PECOAL	5,859,000	5,770,000	4,196,000	3,566,000	3,638,000	5,788,000
GAS FOR SCRUBBER						
EDDYSTONE#1	268,000	327,000	63,000	0	0	0
EDDYSTONE#2	337,000	259,000	327,000	126,000	0	0
TOTAL GAS	605,000	586,000	390,000	126,000	0	0
TOTAL OIL, TOTAL COAL & TOTAL GAS						
PHILA STEAM	19,284,000	19,811,000	15,586,000	10,124,000	9,513,000	18,627,000

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FUEL COST 1 OF 4

	JANUARY 1988	FEBRUARY 1988	MARCH 1988	APRIL 1988	MAY 1988	JUNE 1988	TOTAL
OIL (NO.6 & NO. 2)							
SCHUYLKILL#1	2,365,000	956,000	1,226,000	423,000	863,000	751,000	12,172,000
EDDYSTONE1&2	202,000	201,000	213,000	157,000	202,000	157,000	2,240,000
EDDYSTONE3&4	11,335,000	5,141,000	5,623,000	2,679,000	3,124,000	3,307,000	61,142,000
EDDY 1,2,3,4	11,537,000	5,342,000	5,836,000	2,836,000	3,326,000	3,464,000	63,382,000
ED (SULFUR)	708,000	623,000	287,000	312,000	89,000	0	3,157,000
EDDYSTONE	12,245,000	5,965,000	6,123,000	3,148,000	3,415,000	3,464,000	66,539,000
CROMBY#1	4,000	7,000	9,000	13,000	16,000	16,000	139,000
CROMBY#2	3,292,000	590,000	3,298,000	1,936,000	1,793,000	1,585,000	27,227,000
CR (SULFUR)	244,000	196,000	203,000	156,000	116,000	107,000	1,981,000
CROMBY	3,540,000	793,000	3,510,000	2,105,000	1,925,000	1,708,000	29,347,000
DELAWARE 7&8	3,467,000	1,905,000	1,931,000	650,000	714,000	965,000	18,520,000
RICHMOND	0	0	0	0	0	0	0
SOUTHWARK1&2	0	0	0	0	0	0	0
TOTAL OIL	21,617,000	9,619,000	12,790,000	6,326,000	6,917,000	6,888,000	126,578,000
COAL							
EDDYSTONE#1	2,544,000	2,167,000	2,167,000	2,332,000	2,406,000	2,201,000	20,227,000
EDDYSTONE#2	2,693,000	2,486,000	0	0	125,000	2,410,000	23,112,000
EDDYSTONE	5,237,000	4,653,000	2,167,000	2,332,000	2,531,000	4,611,000	43,339,000
CROMBY#1	1,832,000	1,469,000	1,533,000	1,189,000	891,000	826,000	14,749,000
TOTAL PECOAL	7,069,000	6,122,000	3,700,000	3,521,000	3,422,000	5,437,000	58,088,000
GAS FOR SCRUBBER							
EDDYSTONE#1	0	0	0	0	207,000	264,000	1,129,000
EDDYSTONE#2	0	0	0	0	14,000	285,000	1,348,000
TOTAL GAS	0	0	0	0	221,000	549,000	2,477,000
TOTAL OIL, TOTAL COAL & TOTAL GAS PHILA STEAM	28,686,000	15,741,000	16,490,000	9,847,000	10,560,000	12,874,000	187,143,000

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FUEL COST 2 OF 4

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
MINEMOUTH (PE SHARE)						
KEYSTN1 COAL	1,270,000	1,407,000	1,423,000	1,512,000	1,308,000	1,317,000
KEYSTN2 COAL	1,128,000	1,221,000	241,000	944,000	1,389,000	1,321,000
KEYSTONE C	2,398,000	2,628,000	1,664,000	2,456,000	2,697,000	2,638,000
KEYST1&2 OIL	25,000	8,000	0	8,000	8,000	8,000
KEYSTONE	2,423,000	2,636,000	1,664,000	2,464,000	2,705,000	2,646,000
CON1 COAL	1,336,000	981,000	416,000	1,321,000	1,430,000	1,206,000
CON2 COAL	1,506,000	1,384,000	1,572,000	1,755,000	1,472,000	1,473,000
CONEMAUGH C	2,842,000	2,365,000	1,988,000	3,076,000	2,902,000	2,679,000
CON1&2 OIL	14,000	7,000	7,000	14,000	0	34,000
CONEMAUGH	2,856,000	2,372,000	1,995,000	3,090,000	2,902,000	2,713,000
MINEMOUTH	5,279,000	5,008,000	3,659,000	5,554,000	5,607,000	5,359,000
NUCLEAR (PE SHARE)						
PB2 NUCLEAR	2,083,243	2,102,652	2,089,713	2,109,122	1,733,880	2,122,061
PB3 NUCLEAR	0	0	0	0	0	0
PB2&3INTREST	867,702	865,228	842,754	820,280	797,806	775,332
PB ATOMIC	2,970,945	2,967,880	2,932,467	2,929,402	2,531,686	2,897,393
AUX BOILER	28,034	28,034	27,130	28,034	27,130	28,034
PB DIESEL	4,434	4,434	4,290	4,434	4,290	4,434
SALEM 1	1,926,000	2,007,000	912,000	0	0	0
SALEM 2	1,842,000	1,748,000	1,520,000	1,764,000	2,127,000	1,924,000
SLM1INTEREST	297,068	281,664	266,260	266,260	266,260	266,260
SLM2INTEREST	393,277	376,846	360,416	343,985	327,554	311,124
SALEM AUXBLR	0	0	0	0	0	0
SALEM DIESEL	200	200	200	200	200	200
LM1 NUCLEAR	536,000	2,984,000	3,319,000	3,420,000	3,028,000	3,621,000
LM2 NUCLEAR	0	0	0	0	0	0
LM NUC TOTAL	536,000	2,984,000	3,319,000	3,420,000	3,028,000	3,621,000
LIMAUXBOILER	43,158	43,158	41,766	43,158	41,766	43,158
LIM DIESEL	7,026	7,026	6,799	7,026	6,799	7,026
NUCLEAR	8,048,142	10,448,242	9,390,328	8,806,499	8,360,685	9,102,629
NOTE: FOR JIM MILLER SALEM JC2	0	0	0	0	0	0
OTHER (PRECOMMERCIAL) OTHER	0	0	0	0	0	0

FUEL COST 2 OF 4

	JANUARY 1988	FEBRUARY 1988	MARCH 1988	APRIL 1988	MAY 1988	JUNE 1988	TOTAL
MINEMOUTH (PE SHARE)							
KEYSTN1 COAL	1,574,000	1,410,000	1,486,000	1,278,000	95,000	1,402,000	15,482,000
KEYSTN2 COAL	1,004,000	1,410,000	1,322,000	1,269,000	1,074,000	1,409,000	13,732,000
KEYSTONE C	2,578,000	2,820,000	2,808,000	2,547,000	1,169,000	2,811,000	29,214,000
KEYST1&2 OIL	33,000	0	8,000	0	33,000	0	131,000
KEYSTONE	2,611,000	2,820,000	2,816,000	2,547,000	1,202,000	2,811,000	29,345,000
CON1 COAL	1,764,000	1,427,000	1,469,000	1,602,000	1,820,000	1,433,000	16,205,000
CON2 COAL	1,488,000	1,580,000	1,092,000	0	1,228,000	1,612,000	16,162,000
CONEMAUGH C	3,252,000	3,007,000	2,561,000	1,602,000	3,048,000	3,045,000	32,367,000
CON1&2 OIL	7,000	7,000	21,000	7,000	7,000	14,000	139,000
CONEMAUGH	3,259,000	3,014,000	2,582,000	1,609,000	3,055,000	3,059,000	32,506,000
MINEMOUTH	5,870,000	5,834,000	5,398,000	4,156,000	4,257,000	5,870,000	61,851,000
NUCLEAR (PE SHARE)							
PB2 NUCLEAR	2,135,001	1,953,850	1,662,713	2,102,653	2,096,183	2,096,183	24,287,254
PB3 NUCLEAR	0	0	0	0	1,049,327	2,073,520	3,122,847
PB2&3INTREST	752,858	730,384	707,910	685,436	1,068,156	1,026,471	9,960,317
PB ATOMIC	2,887,859	2,684,234	2,370,623	2,788,089	4,213,666	5,196,174	37,370,418
AUX BOILER	28,034	26,224	28,034	27,130	28,034	27,130	330,982
PB DIESEL	4,434	4,148	4,434	4,290	4,434	4,290	52,346
SALEM 1	0	1,668,000	1,711,000	2,224,000	2,077,000	1,949,000	14,474,000
SALEM 2	1,898,000	1,918,000	1,759,000	0	0	0	16,500,000
SLM1INTEREST	514,735	496,993	479,251	461,508	443,766	426,024	4,466,049
SLM2INTEREST	294,693	278,263	267,029	255,795	255,795	534,994	3,999,771
SALEM AUXBLR	0	0	0	0	0	0	0
SALEM DIESEL	200	200	200	200	200	200	2,400
LM1 NUCLEAR	2,894,000	3,262,000	2,704,000	3,341,000	3,508,000	3,373,000	35,990,000
LM2 NUCLEAR	0	0	0	0	0	0	0
LM NUC TOTAL	2,894,000	3,262,000	2,704,000	3,341,000	3,508,000	3,373,000	35,990,000
LIMAUXBOILER	43,158	40,374	43,158	41,766	43,158	41,766	509,544
LIM DIESEL	7,026	6,572	7,026	6,799	7,026	6,799	82,950
NUCLEAR	8,572,139	10,385,008	9,373,755	9,150,577	10,581,079	11,559,377	113,778,460
NOTE: FOR JIM MILLER SALEM JC2	0	0	0	0	0	0	0
OTHER (PRECOMMERCIAL) OTHER	0	0	0	0	0	0	0

FUEL COST 3 OF 4

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
DIESELS						
CROMBY D 1&2	2,800	5,600	0	700	4,200	4,900
DELAWARE D	0	0	0	0	0	0
SOUTHWARK D	0	0	0	0	0	0
SCHUYLKILL D	0	4,500	2,400	1,000	0	0
KEYSTONE D	200	400	0	0	0	0
CONEMAUGH D	200	200	0	0	0	0
DIESEL	3,200	10,700	2,400	1,700	4,200	4,900
GAS TURBINES						
SOUTHWARK CT	8,000	0	10,000	0	0	0
EDDYSTONE CT	8,000	0	5,000	0	0	0
DELAWARE CT	10,000	4,000	13,000	0	0	0
SCHUYLKILLCT	6,000	2,000	6,000	0	0	0
CHESTER CT	6,000	0	8,000	0	0	0
FALLS CT	9,000	5,000	6,000	0	0	0
MOSER CT	9,000	0	6,000	0	0	0
PLY MTG CT	0	0	0	0	0	0
RICH GE CT	291,000	388,000	414,000	55,000	60,000	193,000
RICH ME CT	0	0	0	0	0	0
RICH MO CT	0	0	0	0	0	0
RICHMOND CT	291,000	388,000	414,000	55,000	60,000	193,000
CROYDON	856,000	969,000	969,000	196,000	209,000	718,000
SALEM CT	0	0	0	0	0	0
GAS TURBINES	1,203,000	1,368,000	1,437,000	251,000	269,000	911,000
TOTAL IC	1,206,200	1,378,700	1,439,400	252,700	273,200	915,900

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FUEL COST 3 OF 4

	JANUARY 1986	FEBRUARY 1986	MARCH 1986	APRIL 1986	MAY 1986	JUNE 1986	TOTAL
DIESELS							
CROMBY D 1&2	4,900	2,500	12,700	0	0	0	38,300
DELAWARE D	0	0	1,700	700	0	0	2,400
SOUTHWARK D	0	0	0	0	0	0	0
SCHUYLKILL D	0	2,400	2,400	4,900	2,400	4,500	24,500
KEYSTONE D	200	0	0	0	0	0	800
CONEMAUGH D	0	0	0	0	0	0	400
DIESEL	5,100	4,900	16,800	5,600	2,400	4,500	66,400
GAS TURBINES							
SOUTHWARK CT	0	0	0	0	0	0	18,000
EDDYSTONE CT	0	0	0	0	0	0	13,000
DELAWARE CT	0	0	0	0	0	0	27,000
SCHUYLKILLCT	0	0	0	0	0	0	14,000
CHESTER CT	0	0	0	0	0	0	14,000
FALLS CT	0	0	0	0	0	0	20,000
MOSER CT	0	0	0	0	0	0	15,000
PLY MTG CT	0	0	0	0	0	0	0
RICH GE CT	942,000	67,000	167,000	125,000	101,000	146,000	2,949,000
RICH ME CT	0	0	0	0	0	0	0
RICH MO CT	0	0	0	0	0	0	0
RICHMOND CT	942,000	67,000	167,000	125,000	101,000	146,000	2,949,000
CROYDON	2,520,000	605,000	671,000	322,000	302,000	365,000	8,702,000
SALEM CT	0	0	0	0	0	0	0
GAS TURBINES	3,462,000	672,000	838,000	447,000	403,000	511,000	11,778,000
TOTAL IC	3,467,100	676,900	854,800	452,600	405,400	515,500	11,838,400

FUEL COST 4 OF 4 (SUMMARY)

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
TOTAL OIL	12,820,000	13,455,000	11,000,000	6,432,000	5,875,000	12,839,000
TOTAL PECOAL	5,859,000	5,770,000	4,196,000	3,566,000	3,638,000	5,788,000
TOTAL GAS	605,000	586,000	390,000	126,000	0	0
MINEMOUTH	5,279,000	5,008,000	3,659,000	5,554,000	5,607,000	5,359,000
TOTAL IC	1,206,200	1,378,700	1,439,400	252,700	273,200	915,900
NUCLEAR	8,048,142	10,448,242	9,390,328	8,806,499	8,360,685	9,102,629
OTHER	0	0	0	0	0	0
NET INTCH	24,537,000	7,731,000	8,269,000	7,952,000	9,177,000	(1,205,000)
PUR POWER	75,280	113,280	98,280	147,280	265,280	753,280
2PARTY TRANS	5,646,000	5,703,000	5,322,000	5,584,000	5,493,000	6,075,000
CONTRACT CAP	0	0	0	0	0	0
FUEL HANDL'G	0	0	0	0	0	10,585,211
OIL, COAL, GAS, MINEMOUTH AND IC						
TOTAL FOSSIL	25,769,200	26,197,700	20,684,400	15,930,700	15,393,200	24,901,900
FOSSIL AND NUCLEAR						
TOTAL FUEL	33,817,342	36,645,942	30,074,728	24,737,199	23,753,885	34,004,529
INTERCHANGE AND PURCHASE						
INTCH & PUR	30,258,280	13,547,280	13,689,280	13,683,280	14,935,280	5,623,280
FOSSIL, NUCLEAR, INTERCHANGE, PURCHASE AND OTHER						
TOTAL ENERGY	64,075,622	50,193,222	43,764,008	38,420,479	38,689,165	39,627,809
TOTAL ENERGY AND CONTRCT CAPACITY						
SUBTOT	64,075,622	50,193,222	43,764,008	38,420,479	38,689,165	39,627,809
ENERGY, CONTRACT CAPACITY AND FUEL HANDLING						
GRAND TOTAL	64,075,622	50,193,222	43,764,008	38,420,479	38,689,165	50,213,020

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FUEL COST 4 OF 4 (SUMMARY)

	JANUARY 1988	FEBRUARY 1988	MARCH 1988	APRIL 1988	MAY 1988	JUNE 1988	TOTAL
TOTAL OIL	21,617,000	9,619,000	12,790,000	6,326,000	6,917,000	6,888,000	126,578,000
TOTAL PECOAL	7,069,000	6,122,000	3,700,000	3,521,000	3,422,000	5,437,000	58,088,000
TOTAL GAS	0	0	0	0	221,000	549,000	2,477,000
MINEMOUTH	5,870,000	5,834,000	5,398,000	4,156,000	4,257,000	5,870,000	61,851,000
TOTAL IC	3,467,100	676,900	854,800	452,600	405,400	515,500	11,838,400
NUCLEAR	8,572,139	10,385,008	9,373,755	9,150,577	10,581,079	11,559,377	113,778,460
OTHER	0	0	0	0	0	0	0
NET INTCH	5,787,000	(4,875,000)	1,981,000	367,000	2,657,000	(994,000)	61,384,000
PUR POWER	1,114,369	708,369	740,369	218,369	71,369	63,369	4,368,894
2PARTY TRANS	5,849,000	5,159,000	5,695,000	5,695,000	5,705,000	4,960,000	66,886,000
CONTRACT CAP	0	0	0	0	0	0	0
FUEL HANDL'G	0	0	0	0	0	0	10,585,211
OIL, COAL, GAS, MINEMOUTH AND IC TOTAL FOSSIL	38,023,100	22,251,900	22,742,800	14,455,600	15,222,400	19,259,500	260,832,400
FOSSIL AND NUCLEAR TOTAL FUEL	46,595,239	32,636,908	32,116,555	23,606,177	25,803,479	30,818,877	374,610,860
INTERCHANGE AND PURCHASE INTCH & PUR	12,750,369	992,369	8,416,369	6,280,369	8,433,369	4,029,369	132,638,894
FOSSIL, NUCLEAR, INTERCHANGE, PURCHASE AND OTHER TOTAL ENERGY	59,345,608	33,629,277	40,532,924	29,886,546	34,236,848	34,848,246	507,249,754
TOTAL ENERGY AND CONTRCT CAPACITY SUBTOT	59,345,608	33,629,277	40,532,924	29,886,546	34,236,848	34,848,246	507,249,754
ENERGY, CONTRACT CAPACITY AND FUEL HANDLING GRAND TOTAL	59,345,608	33,629,277	40,532,924	29,886,546	34,236,848	34,848,246	517,834,965

STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 1 OF 5

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
OPERATING STATISTICS - MWH OUTPUT						
STEAM						
PHILADELPHIA AREA STATIONS						
COAL-PE STM.	302,000	299,000	218,000	181,000	185,000	295,000
OIL-PE STM.	259,000	269,000	219,000	113,000	99,000	244,000
PHILA STEAM	561,000	568,000	437,000	294,000	284,000	539,000
MINEMOUTH						
KEYSTONE STA	178,000	195,000	123,000	179,000	196,000	192,000
CONEMAUGHSTA	171,000	142,000	119,000	181,000	171,000	158,000
COAL-MINEMTH	349,000	337,000	242,000	360,000	367,000	350,000
FOSSIL STEAM	910,000	905,000	679,000	654,000	651,000	889,000
NUCLEAR (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).						
PEACH BOT#2	287,591	290,270	288,484	291,164	239,361	292,950
PEACH BOT#3	0	0	0	0	0	0
SALEM#1	260,000	271,000	123,000	0	0	0
SALEM #2	260,000	247,000	214,000	249,000	300,000	271,000
LIMERICK #1	101,000	563,000	627,000	646,000	572,000	684,000
LIMERICK #2	0	0	0	0	0	0
MWH.NUCLEAR	908,591	1,371,270	1,252,484	1,186,164	1,111,361	1,247,950
INTERNAL COMBUSTION						
DIESEL	50	180	40	30	70	80
GAS TURBINE	5,090	6,040	6,950	830	900	2,880
CROYDON	13,900	15,900	16,100	3,400	3,300	11,800
INT.COMB.	19,040	22,120	23,090	4,260	4,270	14,760
TOTAL FOSSIL, NUCLEAR & I. C. (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).						
TOTAL F&N	1,837,631	2,298,390	1,954,574	1,844,424	1,766,631	2,151,710

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STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 1 OF 5

	JANUARY 1988	FEBRUARY 1988	MARCH 1988	APRIL 1988	MAY 1988	JUNE 1988	TOTAL
OPERATING STATISTICS - MWH OUTPUT							
STEAM							
PHILADELPHIA AREA STATIONS							
COAL-PE STH.	352,000	304,000	183,000	174,000	167,000	265,000	2,925,000
OIL-PE STH.	435,000	168,000	250,000	110,000	127,000	128,000	2,421,000
PHILA STEAM	787,000	472,000	433,000	284,000	294,000	393,000	5,346,000
MINEMOUTH							
KEYSTONE STA	183,000	200,000	199,000	179,000	82,000	197,000	2,103,000
CONEMAUGHSTA	187,000	173,000	147,000	91,000	174,000	172,000	1,886,000
COAL-MINEMTH	370,000	373,000	346,000	270,000	256,000	369,000	3,989,000
FOSSIL STEAM	1,157,000	845,000	779,000	554,000	550,000	762,000	9,335,000
NUCLEAR (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).							
PEACH BOT#2	294,736	269,728	229,537	290,270	289,377	289,377	3,352,845
PEACH BOT#3	0	0	0	0	146,884	290,249	437,133
SALEM#1	0	216,000	221,000	288,000	269,000	252,000	1,900,000
SALEM #2	268,000	270,000	248,000	0	0	0	2,327,000
LIMERICK #1	546,000	616,000	510,000	631,000	662,000	637,000	6,795,000
LIMERICK #2	0	0	0	0	0	0	0
MWH.NUCLEAR	1,108,736	1,371,728	1,208,537	1,209,270	1,367,261	1,468,626	14,811,978
INTERNAL COMBUSTION							
DIESEL	80	80	290	90	40	80	1,110
GAS TURBINE	14,110	1,010	2,510	1,890	1,530	2,200	45,940
CROYDON	40,900	9,800	10,900	5,400	5,100	5,800	142,300
INT.COMB.	55,090	10,890	13,700	7,380	6,670	8,080	189,350
TOTAL FOSSIL, NUCLEAR & I. C. (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).							
TOTAL F&N	2,320,826	2,227,618	2,001,237	1,770,650	1,923,931	2,238,706	24,336,328

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STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 2 OF 5

	JULY 1987	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987
OPERATING STATISTICS - MWH OUTPUT (CONTINUED)						
INTERCHANGE & PURCHASE						
INTERCHANGE POWER						
RECEIVED PJM	831,000	367,000	353,000	326,000	365,000	223,000
DELIV'D PJM	(35,000)	(83,000)	(62,000)	(48,000)	(42,000)	(156,000)
NET INTCH	796,000	284,000	291,000	278,000	323,000	67,000
PURCHASED POWER						
PUR POWER	2,116	3,016	2,716	4,516	8,116	18,916
THD PARTY TRANSACTIONS						
ALLGH'Y PWR	201,000	204,000	188,000	194,000	192,000	217,000
CENTL HDS'N	0	0	0	0	0	0
TOTAL INTERCHANGE & PURCHASE						
INTCH & PUR	999,116	491,016	481,716	476,516	523,116	302,916
HYDRO						
HYDRO-RIVER FLOW GENERATION						
CONOWINGO	77,000	57,000	51,000	85,000	129,000	181,000
PUMP STORAGE GENERATION						
MUDDY RUN	138,000	107,000	113,000	120,000	91,000	112,000
PUMP STORAGE INPUT						
M R INPUT	(195,000)	(164,000)	(160,000)	(170,000)	(139,000)	(150,000)
NET HYDRO	20,000	0	4,000	35,000	81,000	143,000
OTHER PRODUCTION (PRECOMMERCIAL)						
OTHER	0	0	0	0	0	0
(NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED IN TOTAL.OUTPUT)						
TOTAL.OUTPUT	2,856,747	2,789,406	2,440,290	2,355,940	2,370,747	2,597,626
SALES	2,707,900	2,752,200	2,654,500	2,364,200	2,287,600	2,560,800
COMPANY USE	2,723	2,635	2,926	2,323	3,324	4,231
(NOTE: SALEM 2 MWH SOLD TO GPU EXCLUDED IN "LOSS" CALCULATIONS)						
LOSSES	146,124	34,571	(217,136)	(10,583)	79,823	32,595
%LOSS-OUTPUT	5.12	1.24	(8.90)	(0.45)	3.37	1.25

STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 2 OF 5

	JANUARY 1988	FEBRUARY 1988	MARCH 1988	APRIL 1988	MAY 1988	JUNE 1988	TOTAL
OPERATING STATISTICS - MWH OUTPUT (CONTINUED)							
INTERCHANGE & PURCHASE							
INTERCHANGE POWER							
RECEIVED PJM	350,000	152,000	254,000	212,000	249,000	202,000	3,884,000
DELIV'D PJM	(120,000)	(226,000)	(149,000)	(132,000)	(140,000)	(208,000)	(1,401,000)
NET INTCH	230,000	(74,000)	105,000	80,000	109,000	(6,000)	2,483,000
PURCHASED POWER							
PUR POWER	25,116	18,416	18,916	5,916	2,016	1,916	111,692
TWO PARTY TRANSACTIONS							
ALLGH'Y PWR	206,000	181,000	198,000	199,000	198,000	165,000	2,343,000
CENTL HDS'N	0	0	0	0	0	0	0
TOTAL INTERCHANGE & PURCHASE							
INTCH & PUR	461,116	125,416	321,916	284,916	309,016	160,916	4,937,692
HYDRO							
HYDRO-RIVER FLOW GENERATION							
CONOWINGO	134,000	183,000	266,000	255,000	199,000	121,000	1,738,000
PUMP STORAGE GENERATION							
MUDDY RUN	82,000	101,000	109,000	101,000	111,000	110,000	1,295,000
PUMP STORAGE INPUT							
M R INPUT	(132,000)	(143,000)	(150,000)	(151,000)	(161,000)	(152,000)	(1,867,000)
NET HYDRO	84,000	141,000	225,000	205,000	149,000	79,000	1,166,000
OTHER PRODUCTION (PRECOMMERCIAL)							
OTHER	0	0	0	0	0	0	0
(NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED IN TOTAL OUTPUT)							
TOTAL OUTPUT	2,865,942	2,494,034	2,548,153	2,260,566	2,381,947	2,478,622	30,440,020
SALES	2,778,600	2,644,500	2,501,000	2,407,600	2,218,400	2,403,000	30,280,300
COMPANY USE	4,950	5,153	5,464	4,640	3,423	2,723	44,515
(NOTE: SALEM 2 MWH SOLD TO GPU EXCLUDED IN "LOSS" CALCULATIONS)							
LOSSES	82,392	(155,619)	41,689	(151,674)	160,124	72,899	115,205
%LOSS-OUTPUT	2.87	(6.24)	1.64	(6.71)	6.72	2.94	0.38

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ELECTRIC GENERATION AND FUEL COST ESTIMATES

MWH	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
OIL-PE STM.	178,000	178,000	71,000	118,000	177,000	270,000
COAL-PE STM.	280,000	278,000	278,000	235,000	204,000	259,000
COAL-MINEMTH	366,000	387,000	352,000	221,000	266,000	344,000
INT.COMB.	16,060	14,640	3,140	1,620	4,990	27,190
TOTAL FOSSIL	840,060	857,640	704,140	575,620	651,990	900,190
MWH NUCLEAR	1,658,642	1,487,524	1,411,912	1,469,008	1,266,249	1,690,457
NET HYDRO	3,000	9,000	4,000	48,000	105,000	129,000
OTHER	0	0	0	0	0	0
RECEIVED PJM	331,000	359,000	278,000	187,000	229,000	62,000
DELIV'D PJM	(109,000)	(101,000)	(97,000)	(121,000)	(124,000)	(377,000)
STEAM-HT PP	1,400	2,200	1,600	4,500	11,500	18,900
ME,PPL & DPL	16	16	16	16	16	16
2PARTY TRANS	179,000	187,000	177,000	187,000	200,000	206,000
INTCH & PUR	402,416	447,216	359,616	257,516	316,516	(90,084)
TOTAL OUTPUT	2,904,118	2,801,380	2,479,668	2,350,144	2,339,755	2,629,563
$						
OIL-PE STM	9,073,000	9,087,000	3,906,000	6,316,000	9,111,000	13,355,000
COAL-PE STM	6,566,000	6,496,000	6,544,000	5,690,000	4,923,000	6,237,000
MINEMOUTH	5,974,000	6,302,000	5,700,000	3,710,000	4,289,000	5,714,000
INT.COMB	1,022,600	929,700	194,000	103,500	298,200	1,738,900
TOTAL FOSSIL	22,635,600	22,814,700	16,344,000	15,819,500	18,621,200	27,044,900
(NUCLEAR EXCLUDING INTEREST, BUT INCLUDING OIL)						
NUCLEAR.	11,193,390	10,322,253	9,350,763	9,654,939	8,481,705	11,127,756
OTHER	0	0	0	0	0	0
RECEIVED PJM	10,048,000	11,056,000	9,335,000	6,349,000	8,423,000	2,084,000
DELIV'D PJM	(5,322,000)	(4,574,000)	(3,302,000)	(4,781,000)	(5,643,000)	(18,904,000)
STEAM-HT PP	47,000	75,000	52,000	154,000	447,000	778,000
ME,PPL & DPL	1,369	1,369	1,369	1,369	1,369	1,369
2PARTY TRANS	5,391,000	5,574,000	5,298,000	5,641,000	5,913,000	6,076,000
INTCH & PUR	10,165,369	12,132,369	11,384,369	7,364,369	9,141,369	(9,964,631)
INFORMATION FOR RATE DIVISION ($'S EXCLUDE FUEL HANDLING)						
$-FIN.CHGS	43,994,359	45,269,322	37,079,132	32,838,808	36,244,274	28,208,025
FIN.CHGS	1,910,622	1,833,758	1,756,893	1,698,268	1,639,645	2,000,948
$&FIN.CHGS	45,904,981	47,103,080	38,836,025	34,537,076	37,883,919	30,208,973
(GAS $ INCLUDED IN COAL-PE STM)						
TOTAL GAS	586,000	563,000	567,000	176,000	0	0
INFORMATION FOR GEN. ACC. BUDGET GRP. (TOTAL FUEL HAND. $)						
FUEL HANDL'G	0	0	0	0	0	11,278,256

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ELECTRIC GENERATION AND FUEL COST ESTIMATES

MWH	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
OIL-PE STM.	406,000	152,000	102,000	138,000	114,000	201,000	2,105,000
COAL-PE STM.	330,000	260,000	199,000	214,000	269,000	279,000	3,085,000
COAL-MINEMTH	303,000	300,000	382,000	350,000	278,000	324,000	3,873,000
INT.COMB.	50,020	1,000	1,440	6,260	2,640	18,230	147,230
TOTAL FOSSIL	1,089,020	713,000	684,440	708,260	663,640	822,230	9,210,230
MWH NUCLEAR	1,831,805	1,578,532	1,529,421	759,702	777,866	1,047,399	16,508,517
NET HYDRO	93,000	130,000	206,000	218,000	178,000	76,000	1,199,000
OTHER	0	0	0	0	0	0	0
RECEIVED PJM	112,000	161,000	187,000	430,000	597,000	429,000	3,362,000
DELIV'D PJM	(396,000)	(233,000)	(209,000)	(14,000)	(7,000)	(66,000)	(1,854,000)
STEAM-HT PP	0	0	0	0	0	0	40,100
ME,PPL & DPL	16	16	16	16	16	16	192
2PARTY TRANS	199,000	170,000	184,000	181,000	191,000	185,000	2,254,000
INTCH & PUR	(84,984)	106,016	162,016	597,016	781,016	548,016	3,802,292
TOTAL OUTPUT	2,928,841	2,527,548	2,581,877	2,282,978	2,400,522	2,493,645	30,720,039
$							
OIL-PE STM	19,307,000	7,825,000	5,578,000	7,141,000	6,335,000	10,019,000	107,053,000
COAL-PE STM	8,050,000	6,418,000	4,907,000	5,250,000	6,679,000	6,925,000	74,685,000
MINEMOUTH	5,242,000	5,154,000	6,503,000	6,032,000	4,659,000	5,494,000	64,773,000
INT.COMB	3,187,500	59,000	86,000	381,400	151,400	1,154,500	9,306,700
TOTAL FOSSIL	35,786,500	19,456,000	17,074,000	18,804,400	17,824,400	23,592,500	255,817,700
(NUCLEAR EXCLUDING INTEREST, BUT INCLUDING OIL)							
NUCLEAR.	12,084,502	10,526,225	10,466,982	5,534,811	5,708,467	7,018,750	111,470,543
OTHER	0	0	0	0	0	0	0
RECEIVED PJM	4,097,000	5,459,000	5,957,000	15,075,000	20,904,000	14,605,000	113,392,000
DELIV'D PJM	(22,555,000)	(10,688,000)	(8,183,000)	(725,000)	(327,000)	(3,414,000)	(88,418,000)
STEAM-HT PP	0	0	0	0	0	0	1,553,000
ME,PPL & DPL	1,465	1,465	1,465	1,465	1,465	1,465	17,004
2PARTY TRANS	5,977,000	5,349,000	5,630,000	5,549,000	5,828,000	5,662,000	67,888,000
INTCH & PUR	(12,479,535)	121,465	3,405,465	19,900,465	26,406,465	16,854,465	94,432,004
INFORMATION FOR RATE DIVISION ($'S EXCLUDE FUEL HANDLING)							
$-FIN.CHGS	35,391,467	30,103,690	30,946,447	44,239,676	49,939,332	47,465,715	461,720,247
FIN.CHGS	1,913,315	1,825,683	1,738,049	1,650,415	1,580,525	1,516,267	21,064,388
$&FIN.CHGS	37,304,782	31,929,373	32,684,496	45,890,091	51,519,857	48,981,982	482,784,635
(GAS $ INCLUDED IN COAL-PE STM)							
TOTAL GAS	0	0	0	0	197,000	538,000	2,627,000
INFORMATION FOR GEN. ACC. BUDGET GRP. (TOTAL FUEL HAND. $)							
FUEL HANDL'G	0	0	0	0			

OIL	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
PE REHEAT OIL						
SCHUYLKILL#1	19,000	23,000	7,000	14,000	18,000	32,000
EDDYSTONE#3	39,000	33,000	1,000	30,000	39,000	64,000
EDDYSTONE#4	51,000	45,000	10,000	17,000	40,000	66,000
CROMBY#2	34,000	45,000	39,000	43,000	52,000	60,000
DELAWARE#7	20,000	17,000	7,000	5,000	15,000	25,000
DELAWARE#8	15,000	15,000	7,000	9,000	13,000	23,000
MMH R H OIL	178,000	178,000	71,000	118,000	177,000	270,000
PE MARGINAL OIL						
RICHMOND#9	0	0	0	0	0	0
SOUTHWARK#1	0	0	0	0	0	0
SOUTHWARK#2	0	0	0	0	0	0
MMH MARG OIL	0	0	0	0	0	0
REHEAT & MARGINAL OIL						
MMH OIL	178,000	178,000	71,000	118,000	177,000	270,000
PE COAL						
EDDYSTONE#1	121,000	109,000	114,000	103,000	99,000	109,000
EDDYSTONE#2	118,000	121,000	117,000	124,000	105,000	129,000
CROMBY#1	41,000	48,000	47,000	8,000	0	21,000
MMH COAL	280,000	278,000	278,000	235,000	204,000	259,000
PHILA. AREA OIL AND COAL.						
PHILA STEAM	458,000	456,000	349,000	353,000	381,000	529,000
MEMO - STATION TOTALS						
EDDYSTONE	329,000	308,000	242,000	274,000	283,000	368,000
CROMBY	75,000	93,000	86,000	51,000	52,000	81,000
DELAWARE7&8	35,000	32,000	14,000	14,000	28,000	48,000
SOUTHWARK1&2	0	0	0	0	0	0

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MNH DISTRIBUTION 1 OF 4

	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
OIL							
PE REHEAT OIL							
SCHUYLKILL#1	52,000	20,000	13,000	16,000	15,000	28,000	257,000
EDDYSTONE#3	93,000	36,000	25,000	24,000	35,000	35,000	454,000
EDDYSTONE#4	102,000	36,000	17,000	26,000	37,000	49,000	496,000
CROMBY#2	86,000	40,000	34,000	45,000	6,000	47,000	531,000
DELAWARE#7	39,000	9,000	9,000	17,000	13,000	24,000	200,000
DELAWARE#8	34,000	11,000	4,000	10,000	8,000	18,000	167,000
MNH R H OIL	406,000	152,000	102,000	138,000	114,000	201,000	2,105,000
PE MARGINAL OIL							
RICHMOND#9	0	0	0	0	0	0	0
SOUTHWARK#1	0	0	0	0	0	0	0
SOUTHWARK#2	0	0	0	0	0	0	0
MNH MARG OIL	0	0	0	0	0	0	0
REHEAT & MARGINAL OIL							
MNH OIL	406,000	152,000	102,000	138,000	114,000	201,000	2,105,000
PE COAL							
EDDYSTONE#1	126,000	83,000	21,000	0	91,000	96,000	1,072,000
EDDYSTONE#2	120,000	122,000	124,000	142,000	125,000	123,000	1,470,000
CROMBY#1	84,000	55,000	54,000	72,000	53,000	60,000	543,000
MNH COAL	330,000	260,000	199,000	214,000	269,000	279,000	3,085,000
PHILA. AREA OIL AND COAL.							
PHILA STEAM	736,000	412,000	301,000	352,000	383,000	480,000	5,190,000
MEMO - STATION TOTALS							
EDDYSTONE	441,000	277,000	187,000	192,000	288,000	303,000	3,492,000
CROMBY	170,000	95,000	88,000	117,000	59,000	107,000	1,074,000

	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
MINEMOUTH (PE SHARE)						
KEYSTONE#1	100,000	107,000	101,000	96,000	95,000	98,000
KEYSTONE#2	89,000	95,000	87,000	9,000	77,000	78,000
KEYSTONE STA	189,000	202,000	188,000	105,000	172,000	176,000
CONEMAUGH#1	77,000	90,000	87,000	40,000	10,000	83,000
CONEMAUGH#2	100,000	95,000	77,000	76,000	84,000	85,000
CONEMAUGHSTA	177,000	185,000	164,000	116,000	94,000	168,000
MINEMOUTH	366,000	387,000	352,000	221,000	266,000	344,000
PHILA. AREA OIL & COAL, AND MINEMOUTH COAL.						
FOSSIL STEAM	824,000	843,000	701,000	574,000	647,000	873,000
NUCLEAR (PE SHARE)						
PEACH BOT#2	246,507	268,913	73,797	0	0	138,437
PEACH BOT#3	305,135	287,611	240,115	292,008	290,249	270,020
PCH BOT STA	551,642	556,524	313,912	292,008	290,249	408,457
SALEM#1	285,000	269,000	228,000	229,000	260,000	287,000
SALEM#2	263,000	289,000	293,000	313,000	239,000	299,000
SALEM STA	548,000	558,000	521,000	542,000	499,000	586,000
LIM1	559,000	373,000	577,000	635,000	477,000	696,000
LIM2	0	0	0	0	0	0
LIM STA	559,000	373,000	577,000	635,000	477,000	696,000
MWH NUCLEAR	1,658,642	1,487,524	1,411,912	1,469,008	1,266,249	1,690,457
OTHER (PRECOMMERCIAL)						
LIMERICK 1	0	0	0	0	0	0
LIMERICK 2	0	0	0	0	0	0
OTHER	0	0	0	0	0	0

	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
MINEMOUTH (PE SHARE)							
KEYSTONE#1	28,000	55,000	108,000	93,000	93,000	106,000	1,080,000
KEYSTONE#2	106,000	92,000	98,000	85,000	89,000	95,000	1,000,000
KEYSTONE STA	134,000	147,000	206,000	178,000	182,000	201,000	2,080,000
CONEMAUGH#1	84,000	78,000	82,000	80,000	95,000	67,000	873,000
CONEMAUGH#2	85,000	75,000	94,000	92,000	1,000	56,000	920,000
CONEMAUGHSTA	169,000	153,000	176,000	172,000	96,000	123,000	1,793,000
MINEMOUTH	303,000	300,000	382,000	350,000	278,000	324,000	3,873,000
PHILA. AREA OIL & COAL, AND MINEMOUTH COAL.							
FOSSIL STEAM	1,039,000	712,000	683,000	702,000	661,000	804,000	9,063,000
NUCLEAR (PE SHARE)							
BEACH BOT#2	260,797	263,476	261,690	271,514	207,208	242,934	2,235,273
BEACH BOT#3	292,008	277,056	286,731	254,188	272,658	259,465	3,327,244
PCH BOT STA	552,805	540,532	548,421	525,702	479,866	502,399	5,562,517
SALEM#1	286,000	241,000	265,000	0	0	0	2,350,000
SALEM#2	286,000	251,000	304,000	234,000	298,000	260,000	3,329,000
SALEM STA	572,000	492,000	569,000	234,000	298,000	260,000	5,679,000
LIM1	707,000	546,000	412,000	0	0	285,000	5,267,000
LIM2	0	0	0	0	0	0	0
LIM STA	707,000	546,000	412,000	0	0	285,000	5,267,000
TOTAL NUCLEAR	1,831,805	1,578,532	1,529,421	759,702	777,866	1,047,399	16,508,517
OTHER (PRECOMMERCIAL)							
HOMERICK 1	0	0	0	0	0	0	0
HOMERICK 2	0	0	0	0	0	0	0
OTHER	0	0	0	0	0	0	0

	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
DIESELS						
CROMBY D 1&2	50	80	0	40	30	0
DELAWARE D	0	20	0	0	40	0
SOUTHWARK D	0	0	0	0	0	0
SCHUYLKILL D	50	0	0	0	0	80
PE DIESELS	100	100	0	40	70	80
KEYSTONE D	0	0	0	0	0	10
CONEMAUGH D	0	0	0	0	0	10
DIESEL	100	100	0	40	70	100
GAS TURBINES						
RICH GE CT	4,050	3,780	240	480	720	4,610
RICH NE CT	0	0	0	0	0	0
RICH NO CT	0	0	0	0	0	0
RICHCT TOTAL	4,050	3,780	240	480	720	4,610
SOUTHWARK CT	170	60	0	0	0	320
EDDYSTONE CT	220	100	0	0	0	460
DELAWARE CT	210	30	0	0	0	320
SCHUYLKILLCT	110	50	0	0	0	130
CHESTER CT	120	40	0	0	0	320
FALLS CT	180	90	0	0	0	390
MOSER CT	180	90	0	0	0	340
PLY MTG CT	0	0	0	0	0	0
SUBTOTAL	5,240	4,240	240	480	720	6,890
CROYDON	10,700	10,300	2,900	1,100	4,200	20,200
GAS TURBINES	15,940	14,540	3,140	1,580	4,920	27,090
SALEM CT	20	0	0	0	0	0
TOTAL CT	15,960	14,540	3,140	1,580	4,920	27,090
TOTAL CT AND DIESEL						
TOTAL IC	16,060	14,640	3,140	1,620	4,990	27,190
SIMPLE CYCLE (INC. SALEM CT)						
CT TOTAL	5,260	4,240	240	480	720	6,890

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MWH DISTRIBUTION 3 OF 4

	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
DIESELS							
CROMBY D 1&2	0	0	0	0	0	40	240
DELAWARE D	0	0	0	0	40	0	100
SOUTHWARK D	0	0	0	0	0	0	0
SCHUYLKILL D	30	0	0	40	0	0	200
PE DIESELS	30	0	0	40	40	40	540
KEYSTONE D	20	0	0	0	0	10	40
CONEMAUGH D	10	0	0	0	0	10	30
DIESEL	60	0	0	40	40	60	610
GAS TURBINES							
RICH OE CT	9,220	0	240	1,420	0	4,700	29,460
RICH NE CT	0	0	0	0	0	0	0
RICH NO CT	0	0	0	0	0	0	0
RICHCT TOTAL	9,220	0	240	1,420	0	4,700	29,460
SOUTHWARK CT	720	0	0	0	0	0	1,270
EDDYSTONE CT	800	0	0	0	0	120	1,700
DELAWARE CT	610	0	0	0	0	140	1,310
SCHUYLKILLCT	450	0	0	0	0	110	850
CHESTER CT	560	0	0	0	0	70	1,110
FALLS CT	500	0	0	0	0	150	1,310
MOSER CT	630	0	0	0	0	180	1,420
PLY MTG CT	0	0	0	0	0	0	0
SUBTOTAL	13,490	0	240	1,420	0	5,470	38,430
CROYDON	36,400	1,000	1,200	4,800	2,600	12,700	108,100
GAS TURBINES	49,890	1,000	1,440	6,220	2,600	18,170	146,530
SALEM CT	70	0	0	0	0	0	90
TOTAL CT	49,960	1,000	1,440	6,220	2,600	18,170	146,620
TOTAL CT AND DIESEL TOTAL IC	50,020	1,000	1,440	6,260	2,640	18,230	147,230
SIMPLE CYCLE (INC. SALEM CT)							

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MAIN DISTRIBUTION 4 OF 4 (SUMMARY)

	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
OIL STEAM	178,000	178,000	71,000	118,000	177,000	270,000
PECOAL STEAM	280,000	278,000	278,000	235,000	204,000	259,000
MINEMOUTH	366,000	387,000	352,000	221,000	266,000	344,000
FOSSIL STEAM	824,000	843,000	701,000	574,000	647,000	873,000
MAIN NUCLEAR	1,658,642	1,487,524	1,411,912	1,469,008	1,266,249	1,690,457
OTHER	0	0	0	0	0	0
DIESEL	100	100	0	40	70	100
TOTAL CT	15,960	14,540	3,140	1,580	4,920	27,090
NET INTCH	222,000	258,000	181,000	66,000	105,000	(315,000)
PUR POWER	1,416	2,216	1,616	4,516	11,516	18,916
2PARTY TRANS	179,000	187,000	177,000	187,000	200,000	206,000
CONOWINGO	71,000	59,000	50,000	89,000	137,000	174,000
MUDDY RUN	125,000	134,000	92,000	75,000	89,000	99,000
H R INPUT	(193,000)	(184,000)	(138,000)	(116,000)	(121,000)	(144,000)
TOTAL OUTPUT	2,904,118	2,801,380	2,479,668	2,350,144	2,339,755	2,629,563

NOTE: THIS PAGE EXCLUDES SALEM #2 WHILE SOLD TO J.C.

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MWH DISTRIBUTION 4 OF 4 (SUMMARY)

	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
OIL STEAM	406,000	152,000	102,000	138,000	114,000	201,000	2,105,000
PECOAL STEAM	330,000	260,000	199,000	214,000	269,000	279,000	3,085,000
MINEMOUTH	303,000	300,000	382,000	350,000	278,000	324,000	3,873,000
FOSSIL STEAM	1,039,000	712,000	683,000	702,000	661,000	804,000	9,063,000
MWH NUCLEAR	1,831,805	1,578,532	1,529,421	759,702	777,866	1,047,399	16,508,517
OTHER	0	0	0	0	0	0	0
DIESEL	60	0	0	40	40	60	610
TOTAL CT	49,960	1,000	1,440	6,220	2,600	18,170	146,620
NET INTCH	(284,000)	(72,000)	(22,000)	416,000	590,000	363,000	1,508,000
PUR POWER	16	16	16	16	16	16	40,292
2PARTY TRANS	199,000	178,000	184,000	181,000	191,000	185,000	2,254,000
CONOWINGO	144,000	170,000	252,000	257,000	209,000	123,000	1,735,000
MUDDY RUN	100,000	92,000	103,000	64,000	93,000	105,000	1,171,000
M P INPUT	(151,000)	(132,000)	(149,000)	(103,000)	(124,000)	(152,000)	(1,707,000)
TOTAL OUTPUT	2,928,841	2,527,548	2,581,877	2,282,978	2,400,522	2,493,645	30,720,039

NOTE: THIS PAGE EXCLUDES SALEM #2 WHILE SOLD TO J.C.

	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
OIL (NO.6 & NO. 2)						
SCHUYLKILL#1	823,000	1,024,000	309,000	640,000	824,000	1,409,000
EDDYSTONE1&2	163,000	178,000	182,000	203,000	191,000	202,000
EDDYSTONE3&4	5,001,000	4,459,000	1,046,000	2,892,000	4,574,000	7,000,000
EDDY 1,2,3,4	5,164,000	4,637,000	1,228,000	3,095,000	4,765,000	7,202,000
ED (SULFUR)	0	0	0	423,000	553,000	648,000
EDDYSTONE	5,164,000	4,637,000	1,228,000	3,518,000	5,318,000	7,850,000
CROMBY#1	15,000	16,000	13,000	7,000	0	7,000
CROMBY#2	1,466,000	1,914,000	1,653,000	1,846,000	2,198,000	2,511,000
CR (SULFUR)	108,000	126,000	123,000	22,000	0	56,000
CROMBY	1,589,000	2,056,000	1,789,000	1,875,000	2,198,000	2,574,000
DELAWARE 7&8	1,605,000	1,496,000	703,000	728,000	1,324,000	2,226,000
RICHMOND	0	0	0	0	0	0
SOUTHWARK1&2	0	0	0	0	0	0
TOTAL OIL	9,181,000	9,213,000	4,029,000	6,761,000	9,664,000	14,059,000
COAL						
EDDYSTONE#1	2,526,000	2,262,000	2,397,000	2,222,000	2,105,000	2,328,000
EDDYSTONE#2	2,496,000	2,556,000	2,483,000	2,654,000	2,249,000	2,748,000
EDDYSTONE	5,022,000	4,818,000	4,880,000	4,876,000	4,354,000	5,076,000
CROMBY#1	850,000	989,000	974,000	193,000	16,000	457,000
TOTAL PECOAL	5,872,000	5,807,000	5,854,000	5,069,000	4,370,000	5,533,000
GAS FOR SCRUBBER						
EDDYSTONE#1	297,000	266,000	279,000	80,000	0	0
EDDYSTONE#2	289,000	297,000	288,000	96,000	0	0
TOTAL GAS	586,000	563,000	567,000	176,000	0	0
TOTAL OIL, TOTAL COAL & TOTAL GAS						
PHILA STEAM	15,639,000	15,583,000	10,450,000	12,006,000	14,034,000	19,592,000

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FUEL COST 1 OF 4

	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
OIL (NO.6 & NO. 2)							
SCHUYLKILL#1	2,258,000	924,000	605,000	719,000	675,000	1,254,000	11,464,000
EDDYSTONE1&2	218,000	195,000	178,000	157,000	201,000	246,000	2,314,000
EDDYSTONE3&4	10,045,000	4,067,000	2,657,000	3,077,000	4,122,000	4,640,000	53,580,000
EDDY 1,2,3,4	10,263,000	4,262,000	2,835,000	3,234,000	4,323,000	4,886,000	55,894,000
ED (SULFUR)	670,000	561,000	396,000	388,000	374,000	0	4,013,000
EDDYSTONE	10,933,000	4,823,000	3,231,000	3,622,000	4,697,000	4,886,000	59,907,000
CROMBY#1	7,000	11,000	14,000	9,000	14,000	12,000	125,000
CROMBY#2	3,510,000	1,692,000	1,469,000	1,905,000	286,000	1,976,000	22,426,000
CR (SULFUR)	220,000	144,000	142,000	188,000	139,000	157,000	1,425,000
CROMBY	3,737,000	1,847,000	1,625,000	2,102,000	439,000	2,145,000	23,976,000
DELAWARE 7&8	3,269,000	936,000	655,000	1,274,000	1,037,000	1,891,000	17,144,000
RICHMOND	0	0	0	0	0	0	0
SOUTHWARK1&2	0	0	0	0	0	0	0
TOTAL OIL	20,197,000	8,530,000	6,116,000	7,717,000	6,848,000	10,176,000	112,491,000
COAL							
EDDYSTONE#1	2,741,000	1,856,000	462,000	0	2,038,000	2,191,000	23,128,000
EDDYSTONE#2	2,635,000	2,679,000	2,742,000	3,130,000	2,783,000	2,739,000	31,894,000
EDDYSTONE	5,376,000	4,535,000	3,204,000	3,130,000	4,821,000	4,930,000	55,022,000
CROMBY#1	1,784,000	1,178,000	1,165,000	1,544,000	1,148,000	1,300,000	11,598,000
TOTAL PECOAL	7,160,000	5,713,000	4,369,000	4,674,000	5,969,000	6,230,000	66,620,000
GAS FOR SCRUBBER							
EDDYSTONE#1	0	0	0	0	84,000	236,000	1,242,000
EDDYSTONE#2	0	0	0	0	113,000	302,000	1,385,000
TOTAL GAS	0	0	0	0	197,000	538,000	2,627,000
TOTAL OIL, TOTAL COAL & TOTAL GAS							
PHILA STEAM	27,357,000	14,243,000	10,485,000	12,391,000	13,014,000	16,944,000	181,738,000

	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
MINEMOUTH (PE SHARE)						
KEYSTN1 COAL	1,456,000	1,556,000	1,473,000	1,422,000	1,403,000	1,452,000
KEYSTN2 COAL	1,298,000	1,388,000	1,263,000	133,000	1,137,000	1,152,000
KEYSTONE C	2,754,000	2,944,000	2,736,000	1,555,000	2,540,000	2,604,000
KEYST1&2 OIL	8,000	8,000	0	8,000	16,000	16,000
KEYSTONE	2,762,000	2,952,000	2,736,000	1,563,000	2,556,000	2,620,000
CON1 COAL	1,387,000	1,630,000	1,565,000	736,000	183,000	1,515,000
CON2 COAL	1,811,000	1,713,000	1,392,000	1,390,000	1,536,000	1,558,000
CONEMAUGH C	3,198,000	3,343,000	2,957,000	2,126,000	1,719,000	3,073,000
CON1&2 OIL	14,000	7,000	7,000	21,000	14,000	21,000
CONEMAUGH	3,212,000	3,350,000	2,964,000	2,147,000	1,733,000	3,094,000
MINEMOUTH	5,974,000	6,302,000	5,700,000	3,710,000	4,289,000	5,714,000
NUCLEAR (PE SHARE)						
PB2 NUCLEAR	1,785,637	1,953,731	536,211	0	0	957,902
PB3 NUCLEAR	2,179,901	2,054,670	1,715,367	2,086,087	2,073,520	1,929,002
PB2&3INTREST	984,786	943,102	901,417	877,974	854,531	1,251,015
PB ATOMIC	4,950,324	4,951,503	3,152,995	2,964,061	2,928,051	4,137,919
AUX BOILER	28,034	28,034	27,130	28,034	27,130	28,034
PB DIESEL	4,434	4,434	4,290	4,434	4,290	4,434
SALEM 1	2,206,000	2,079,000	1,760,000	1,767,000	2,008,000	2,219,000
SALEM 2	1,978,000	2,174,000	2,202,000	2,356,000	1,795,000	2,251,000
SLM1INTEREST	408,281	390,539	372,797	355,054	337,312	319,570
SLM2INTEREST	517,555	500,117	482,679	465,240	447,802	430,363
SALEM AUXBLR	0	0	0	0	0	0
SALEM DIESEL	200	200	200	200	200	200
LM1 NUCLEAR	2,961,000	1,978,000	3,057,000	3,363,000	2,525,000	3,688,000
LM2 NUCLEAR	0	0	0	0	0	0
LM NUC TOTAL	2,961,000	1,978,000	3,057,000	3,363,000	2,525,000	3,688,000
LIMAUXBOILER	43,158	43,158	41,766	43,158	41,766	43,158
LIM DIESEL	7,026	7,026	6,799	7,026	6,799	7,026
NUCLEAR	13,104,012	12,156,011	11,107,656	11,353,207	10,121,350	13,128,704
NOTE: FOR JIM MILLER						
SALEM JC2	0	0	0	0	0	0
OTHER (PRECOMMERCIAL)						
OTHER	0	0	0	0	0	0

	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
MINEMOUTH (PE SHARE)							
KEYSTN1 COAL	419,000	843,000	1,650,000	1,427,000	1,432,000	1,635,000	16,168,000
KEYSTN2 COAL	1,619,000	1,402,000	1,498,000	1,310,000	1,362,000	1,462,000	15,024,000
KEYSTONE C	2,038,000	2,245,000	3,148,000	2,737,000	2,794,000	3,097,000	31,192,000
KEYST1&2 OIL	0	8,000	0	16,000	25,000	0	105,000
KEYSTONE	2,038,000	2,253,000	3,148,000	2,753,000	2,819,000	3,097,000	31,297,000
CON1 COAL	1,586,000	1,469,000	1,551,000	1,522,000	1,801,000	1,285,000	16,230,000
CON2 COAL	1,604,000	1,418,000	1,783,000	1,750,000	25,000	1,065,000	17,045,000
CONEMAUGH C	3,190,000	2,887,000	3,334,000	3,272,000	1,826,000	2,350,000	33,275,000
CON1&2 OIL	14,000	14,000	21,000	7,000	14,000	47,000	201,000
CONEMAUGH	3,204,000	2,901,000	3,355,000	3,279,000	1,840,000	2,397,000	33,476,000
MINEMOUTH	5,242,000	5,154,000	6,503,000	6,032,000	4,659,000	5,494,000	64,773,000
NUCLEAR (PE SHARE)							
PB2 NUCLEAR	1,804,563	1,823,103	1,810,743	1,878,724	1,433,763	1,680,963	15,665,340
PB3 NUCLEAR	2,086,087	1,979,269	2,048,387	1,815,902	1,947,852	1,853,602	23,769,646
PB2&3INTREST	1,198,563	1,146,111	1,093,658	1,041,205	988,753	941,934	12,223,049
PB ATOMIC	5,089,213	4,948,483	4,952,788	4,735,831	4,370,368	4,476,499	51,658,035
AUX BOILER	28,034	25,320	28,034	27,130	28,034	27,130	330,078
PB DIESEL	4,434	4,006	4,434	4,290	4,434	4,290	52,204
SALEM 1	2,214,000	1,861,000	2,051,000	0	0	0	18,165,000
SALEM 2	2,153,000	1,687,000	2,286,000	1,760,000	2,244,000	1,957,000	25,043,000
SLM1INTEREST	301,827	284,085	266,343	248,600	248,600	248,600	3,781,608
SLM2INTEREST	412,925	395,487	378,048	360,610	343,172	325,733	5,059,731
SALEM AUXBLR	0	0	0	0	0	0	0
SALEM DIESEL	200	200	200	200	200	200	2,400
LM1 NUCLEAR	3,744,000	2,901,000	2,188,000	0	0	1,447,000	27,852,000
LM2 NUCLEAR	0	0	0	0	0	0	0
LM NUC TOTAL	3,744,000	2,901,000	2,188,000	0	0	1,447,000	27,852,000
LIMAUXBOILER	43,158	36,981	43,158	41,766	43,158	41,766	508,151
LIM DIESEL	7,026	6,346	7,026	6,799	7,026	6,799	82,724
NUCLEAR	13,997,817	12,351,908	12,205,031	7,185,226	7,288,992	8,535,017	132,534,931
NOTE: FOR JIM MILLER							
SALEM JC2	0	0	0	0	0	0	0
OTHER (PRECOMMERCIAL)							
OTHER	0	0	0	0	0	0	0

FUEL COST 3 OF 4

	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
DIESELS						
CROMBY D 1&2	2,800	4,900	0	2,500	1,800	0
DELAWARE D	0	1,400	0	0	2,400	0
SOUTHWARK D	0	0	0	0	0	0
SCHUYLKILL D	2,800	0	0	0	0	4,900
KEYSTONE D	0	200	0	0	0	600
CONEMAUGH D	0	200	0	0	0	400
DIESEL	5,600	6,700	0	2,500	4,200	5,900
GAS TURBINES						
SOUTHWARK CT	13,000	6,000	0	0	0	25,000
EDDYSTONE CT	17,000	8,000	0	0	0	37,000
DELAWARE CT	16,000	2,000	0	0	0	25,000
SCHUYLKILLCT	8,000	4,000	0	0	0	10,000
CHESTER CT	10,000	4,000	0	0	0	25,000
FALLS CT	14,000	7,000	0	0	0	31,000
MOSER CT	14,000	7,000	0	0	0	28,000
PLY MTG CT	0	0	0	0	0	0
RICH GE CT	267,000	249,000	16,000	31,000	47,000	308,000
RICH ME CT	0	0	0	0	0	0
RICH MO CT	0	0	0	0	0	0
RICHMOND CT	267,000	249,000	16,000	31,000	47,000	308,000
CROYDON	657,000	636,000	178,000	70,000	247,000	1,244,000
SALEM CT	1,000	0	0	0	0	0
GAS TURBINES	1,017,000	923,000	194,000	101,000	294,000	1,733,000
TOTAL IC	1,022,600	929,700	194,000	103,500	298,200	1,738,900

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FUEL COST 3 OF 4

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	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
DIESELS							
CROMBY D 1&2	0	0	0	0	0	2,500	14,500
DELAWARE D	0	0	0	0	2,400	0	6,200
SOUTHWARK D	0	0	0	0	0	0	0
SCHUYLKILL D	1,700	0	0	2,400	0	0	11,800
KEYSTONE D	1,000	0	0	0	0	600	2,400
CONEMAUGH D	800	0	0	0	0	400	1,800
DIESEL	3,500	0	0	2,400	2,400	3,500	36,700
GAS TURBINES							
SOUTHWARK CT	57,000	0	0	0	0	0	101,000
EDDYSTONE CT	64,000	0	0	0	0	9,000	135,000
DELAWARE CT	49,000	0	0	0	0	11,000	103,000
SCHUYLKILLCT	37,000	0	0	0	0	9,000	68,000
CHESTER CT	45,000	0	0	0	0	6,000	90,000
FALLS CT	42,000	0	0	0	0	11,000	105,000
MOSER CT	52,000	0	0	0	0	13,000	114,000
PLY MTG CT	0	0	0	0	0	0	0
RICH GE CT	615,000	0	16,000	94,000	0	309,000	1,952,000
RICH NE CT	0	0	0	0	0	0	0
RICH NO CT	0	0	0	0	0	0	0
RICHMOND CT	615,000	0	16,000	94,000	0	309,000	1,952,000
CROYDON	2,217,000	59,000	70,000	285,000	149,000	783,000	6,595,000
SALEM CT	6,000	0	0	0	0	0	7,000
GAS TURBINES	3,184,000	59,000	86,000	379,000	149,000	1,151,000	9,270,000
TOTAL IC	3,187,500	59,000	86,000	381,400	151,400	1,154,500	9,306,700

FUEL COST 4 OF 4 (SUMMARY)

	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
TOTAL OIL	9,161,000	9,213,000	4,029,000	6,761,000	9,664,000	14,059,000
TOTAL PECOAL	5,872,000	5,807,000	5,854,000	5,069,000	4,370,000	5,533,000
TOTAL GAS	586,000	563,000	567,000	176,000	0	0
MINEMOUTH	5,974,000	6,302,000	5,700,000	3,710,000	4,289,000	5,714,000
TOTAL IC	1,022,600	929,700	194,000	103,500	298,200	1,738,900
NUCLEAR	13,104,012	12,156,011	11,107,656	11,353,207	10,121,350	13,128,704
OTHER	0	0	0	0	0	0
NET INTCH	4,726,000	6,482,000	6,033,000	1,568,000	2,780,000	(16,820,000)
OUR POWER	48,369	76,369	53,369	155,369	448,369	779,369
3PARTY TRANS	5,391,000	5,574,000	5,298,000	5,641,000	5,913,000	6,076,000
CONTRACT CAP	0	0	0	0	0	0
FUEL HANDL'G	0	0	0	0	0	11,278,256
OIL, COAL, GAS, MINEMOUTH AND IC						
TOTAL FOSSIL	22,635,600	22,814,700	16,344,000	15,819,500	18,621,200	27,044,900
FOSSIL AND NUCLEAR						
TOTAL FUEL	35,739,612	34,970,711	27,451,656	27,172,707	28,742,550	40,173,604
INTERCHANGE AND PURCHASE						
NTCH & PUR	10,165,369	12,132,369	11,384,369	7,364,369	9,141,369	(9,964,631)
FOSSIL, NUCLEAR, INTERCHANGE, PURCHASE AND OTHER						
TOTAL ENERGY	45,904,981	47,103,080	38,836,025	34,537,076	37,883,919	30,208,973
TOTAL ENERGY AND CONTRCT CAPACITY						
NTOT	45,904,981	47,103,080	38,836,025	34,537,076	37,883,919	30,208,973
ENERGY, CONTRACT CAPACITY AND FUEL HANDLING						
AND TOTAL	45,904,981	47,103,080	38,836,025	34,537,076	37,883,919	41,487,229

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FUEL COST 4 OF 4 (SUMMARY)

	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
TOTAL OIL	20,197,000	8,530,000	6,116,000	7,717,000	6,848,000	10,176,000	112,491,000
TOTAL PECOAL	7,160,000	5,713,000	4,369,000	4,674,000	5,969,000	6,230,000	66,620,000
TOTAL GAS	0	0	0	0	197,000	538,000	2,627,000
MINEMOUTH	5,242,000	5,154,000	6,503,000	6,032,000	4,659,000	5,494,000	64,773,000
TOTAL IC	3,187,500	59,000	86,000	381,400	151,400	1,154,500	9,306,700
NUCLEAR	13,997,817	12,351,908	12,205,031	7,185,226	7,288,992	8,535,017	132,534,931
OTHER	0	0	0	0	0	0	0
NET INTCH	(18,458,000)	(5,229,000)	(2,226,000)	14,350,000	20,577,000	11,191,000	24,974,000
PUR POWER	1,465	1,465	1,465	1,465	1,465	1,465	1,570,004
2PARTY TRANS	5,977,000	5,349,000	5,630,000	5,549,000	5,828,000	5,662,000	67,888,000
CONTRACT CAP	0	0	0	0	0	0	0
FUEL HANDL'G	0	0	0	0	0	0	11,278,256
OIL, COAL, GAS, MINEMOUTH AND IC TOTAL FOSSIL	35,786,500	19,456,000	17,074,000	18,804,400	17,824,400	23,592,500	255,817,700
FOSSIL AND NUCLEAR TOTAL FUEL	49,784,317	31,807,908	29,279,031	25,989,626	25,113,392	32,127,517	388,352,631
INTERCHANGE AND PURCHASE INTCH & PUR	(12,479,535)	121,465	3,405,465	19,900,465	26,406,465	16,854,465	94,432,004
FOSSIL, NUCLEAR, INTERCHANGE, PURCHASE AND OTHER TOTAL ENERGY	37,304,782	31,929,373	32,684,496	45,890,091	51,519,857	48,981,982	482,784,635
TOTAL ENERGY AND CONTRCT CAPACITY SUBTOT	37,304,782	31,929,373	32,684,496	45,890,091	51,519,857	48,981,982	482,784,635
ENERGY, CONTRACT CAPACITY AND FUEL HANDLING GRAND TOTAL	37,304,782	31,929,373	32,684,496	45,890,091	51,519,857	48,981,982	494,062,891

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STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 1 OF 5

OPERATING STATISTICS - MWH OUTPUT

	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
STEAM						
PHILADELPHIA AREA STATIONS						
COAL-PE STM.	280,000	278,000	278,000	235,000	204,000	259,000
OIL-PE STM.	178,000	178,000	71,000	118,000	177,000	270,000
PHILA STEAM	458,000	456,000	349,000	353,000	381,000	529,000
MINEMOUTH						
KEYSTONE STA	189,000	202,000	188,000	105,000	172,000	176,000
CONEMAUGHSTA	177,000	185,000	164,000	116,000	94,000	168,000
COAL-MINEMTH	366,000	387,000	352,000	221,000	266,000	344,000
FOSSIL STEAM	824,000	843,000	701,000	574,000	647,000	873,000
NUCLEAR (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).						
PEACH BOT#2	246,507	268,913	73,797	0	0	138,437
PEACH BOT#3	305,135	287,611	240,115	292,008	290,249	270,020
SALEM#1	285,000	269,000	228,000	229,000	260,000	287,000
SALEM #2	263,000	289,000	293,000	313,000	239,000	299,000
LIMERICK #1	559,000	373,000	577,000	635,000	477,000	696,000
LIMERICK #2	0	0	0	0	0	0
MWH.NUCLEAR	1,658,642	1,487,524	1,411,912	1,469,008	1,266,249	1,690,457
INTERNAL COMBUSTION						
DIESEL	100	100	0	40	70	100
GAS TURBINE	5,260	4,240	240	480	720	6,890
CROYDON	10,700	10,300	2,900	1,100	4,200	20,200
INT.COMB.	16,060	14,640	3,140	1,620	4,990	27,190
TOTAL FOSSIL, NUCLEAR & I. C. (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).						
TOTAL F&N	2,498,702	2,345,164	2,116,052	2,044,628	1,918,239	2,590,647

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STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 1 OF 5

OPERATING STATISTICS - MWH OUTPUT

	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
STEAM							
PHILADELPHIA AREA STATIONS							
COAL-PE STM.	330,000	260,000	199,000	214,000	269,000	279,000	3,085,000
OIL-PE STM.	406,000	152,000	102,000	138,000	114,000	201,000	2,105,000
PHILA STEAM	736,000	412,000	301,000	352,000	383,000	480,000	5,190,000
MINEMOUTH							
KEYSTONE STA	134,000	147,000	206,000	178,000	182,000	201,000	2,080,000
CONEMAUGHSTA	169,000	153,000	176,000	172,000	96,000	123,000	1,793,000
COAL-MINEMTH	303,000	300,000	382,000	350,000	278,000	324,000	3,873,000
FOSSIL STEAM	1,039,000	712,000	683,000	702,000	661,000	804,000	9,063,000
NUCLEAR (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).							
PEACH BOT#2	260,797	263,476	261,690	271,514	207,208	242,934	2,235,273
PEACH BOT#3	292,008	277,056	286,731	254,188	272,658	259,465	3,327,244
SALEM#1	286,000	241,000	265,000	0	0	0	2,350,000
SALEM #2	286,000	251,000	304,000	234,000	298,000	260,000	3,329,000
LIMERICK #1	707,000	546,000	412,000	0	0	285,000	5,267,000
LIMERICK #2	0	0	0	0	0	0	0
MWH.NUCLEAR	1,831,805	1,578,532	1,529,421	759,702	777,866	1,047,399	16,508,517
INTERNAL COMBUSTION							
DIESEL	60	0	0	40	40	60	610
GAS TURBINE	13,560	0	240	1,420	0	5,470	38,520
CROYDON	36,400	1,000	1,200	4,800	2,600	12,700	108,100
INT.COMB.	50,020	1,000	1,440	6,260	2,640	18,230	147,230
TOTAL FOSSIL, NUCLEAR & I. C. (NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED).							
TOTAL F&N	2,920,825	2,291,532	2,213,861	1,467,962	1,441,506	1,869,629	25,718,747

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STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 2 OF 5

	JULY 1988	AUGUST 1988	SEPTEMBER 1988	OCTOBER 1988	NOVEMBER 1988	DECEMBER 1988
OPERATING STATISTICS - MWH OUTPUT (CONTINUED)						
INTERCHANGE & PURCHASE						
INTERCHANGE POWER						
RECEIVED PJM	331,000	359,000	278,000	187,000	229,000	62,000
DELIV'D PJM	(109,000)	(101,000)	(97,000)	(121,000)	(124,000)	(377,000)
NET INTCH	222,000	258,000	181,000	66,000	105,000	(315,000)
PURCHASED POWER						
PUR POWER	1,416	2,216	1,616	4,516	11,516	18,916
TWO PARTY TRANSACTIONS						
ALLGH'Y PWR	179,000	187,000	177,000	187,000	200,000	206,000
CENTL HDS'N	0	0	0	0	0	0
TOTAL INTERCHANGE & PURCHASE						
INTCH & PUR	402,416	447,216	359,616	257,516	316,516	(90,084)
HYDRO						
HYDRO-RIVER FLOW GENERATION						
CONOWINGO	71,000	59,000	50,000	89,000	137,000	174,000
PUMP STORAGE GENERATION						
MUDDY RUN	125,000	134,000	92,000	75,000	89,000	99,000
PUMP STORAGE INPUT						
M R INPUT	(193,000)	(184,000)	(138,000)	(116,000)	(121,000)	(144,000)
NET HYDRO	3,000	9,000	4,000	48,000	105,000	129,000
OTHER PRODUCTION (PRECOMMERCIAL)						
OTHER	0	0	0	0	0	0
(NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED IN TOTAL OUTPUT)						
TOTAL OUTPUT	2,904,118	2,801,380	2,479,668	2,350,144	2,339,755	2,629,563
SALES	2,731,500	2,776,200	2,677,700	2,384,800	2,307,500	2,583,000
COMPANY USE	2,723	2,635	2,926	2,323	3,324	4,231
(NOTE: SALEM 2 MWH SOLD TO GPU EXCLUDED IN "LOSS" CALCULATIONS)						
LOSSES	169,895	22,545	(200,958)	(36,979)	28,931	42,332
%LOSS-OUTPUT	5.85	0.80	(8.10)	(1.57)	1.24	1.61

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STATEMENT OF OPERATIONS - ELECTRIC PRODUCTION 2 OF 5

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	JANUARY 1989	FEBRUARY 1989	MARCH 1989	APRIL 1989	MAY 1989	JUNE 1989	TOTAL
OPERATING STATISTICS - MWH OUTPUT (CONTINUED)							
INTERCHANGE & PURCHASE							
INTERCHANGE POWER							
RECEIVED PJM	112,000	161,000	187,000	430,000	597,000	429,000	3,362,000
DELIV'D PJM	(396,000)	(233,000)	(209,000)	(14,000)	(7,000)	(66,000)	(1,854,000)
NET INTCH	(284,000)	(72,000)	(22,000)	416,000	590,000	363,000	1,508,000
PURCHASED POWER							
PUR POWER	16	16	16	16	16	16	40,292
TWO PARTY TRANSACTIONS							
ALLGH'Y PWR	199,000	178,000	184,000	181,000	191,000	185,000	2,254,000
CENTL HDS'N	0	0	0	0	0	0	0
TOTAL INTERCHANGE & PURCHASE							
INTCH & PUR	(84,984)	106,016	162,016	597,016	781,016	548,016	3,802,292
HYDRO							
HYDRO-RIVER FLOW GENERATION							
CONOWINGO	144,000	170,000	252,000	257,000	209,000	123,000	1,735,000
PUMP STORAGE GENERATION							
MUDDY RUN	100,000	92,000	103,000	64,000	93,000	105,000	1,171,000
PUMP STORAGE INPUT							
M R INPUT	(151,000)	(132,000)	(149,000)	(103,000)	(124,000)	(152,000)	(1,707,000)
NET HYDRO	93,000	130,000	206,000	218,000	178,000	76,000	1,199,000
OTHER PRODUCTION (PRECOMMERCIAL)							
OTHER	0	0	0	0	0	0	0
(NOTE: SALEM 2 MWH SOLD TO GPU INCLUDED IN TOTAL OUTPUT)							
TOTAL OUTPUT	2,928,841	2,527,548	2,581,877	2,282,978	2,400,522	2,493,645	30,720,039
SALES	2,812,700	2,677,000	2,531,700	2,437,100	2,245,600	2,432,500	30,597,300
COMPANY USE	4,950	5,153	5,464	4,640	3,423	2,723	44,515
(NOTE: SALEM 2 MWH SOLD TO GPU EXCLUDED IN "LOSS" CALCULATIONS)							
LOSSES	111,191	(154,605)	44,713	(158,762)	151,499	58,422	78,224
LOSS-OUTPUT	3.80	(6.12)	1.73	(6.95)	6.31	2.34	0.25

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IR-OCA-29-1 Q. For Mr. Carroll:

a) Please state the oil and coal prices for the years 1986, 1987, and 1988 used in the PRODCOST run presented in St. 22D and Exh. JJC-2.

b) Please state the length of time required to change the 1 year PRODCOST oil and coal prices and produce a new energy cost calculation.

IR-OCA-29-1 A. 1a) The following tabulation lists the fuel prices used in PECO's ProdCost program for developing the Total Fuel and Interchange Expense projections submitted in PECO Exhibit JJC-2. The oil prices were constant for the entire three years.

No. 6 Oil 0.5% S	$27.108/BBL
1.0% S	$26.107/BBL
No. 2 Oil	$32.088/BBL

Coal Prices - Average Cost/Year

	$/Ton - Year Ending 6/30		
Station	1987	1988	1989
Eddystone	50.74	53.88	58.74
Cromby	45.90	48.90	53.73
Keystone	32.11	34.15	37.29
Conemaugh	40.13	42.70	46.58

1b) The time required to produce a new ProdCost projection, with revised fuel prices only, is really a function of the complexity of the change in fuel prices. For a minor change, with reasonable uniformity in escalation rates, a new projection can be produced and verified in approximately 5 working days. However, a major change which would impact the dispatching order of the various classes of units on PJM could require as long as 10 or more working days.

Responsible Witness: J. J. Carroll, Staff Engineer, Services Division

Staff Statement ECR-2
Witnesses: R. Rosenthal
D. Hosler
Date: 3-12-86

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R-850152

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

PHILADELPHIA ELECTRIC COMPANY

DOCKET NO. R-850152

Joint Surrebuttal Testimony

of

Robert A. Rosenthal

and

Dennis P. Hosler

Regarding:

Energy Cost Rate

Prepared March 10, 1986

Q. Mr. Rosenthal, please state your full name and business address.

A. My name is Robert A. Rosenthal, my business address is P.O. Box 3265, Harrisburg, Pa. 17120.

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

A. I am employed by the Pennsylvania Public Utility Commission as Supervisor of the Valuation and Rate Structure Section in the Electric Division of the Bureau of Rates.

Q. Mr. Hosler, Please state your full name and business address.

A. My name is Dennis P. Hosler, my business address is P. O. Box 3265 Harrisburg, Pa. 17120.

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

A. I am employed by the Pennsylvania Public Utility Commission as a Fixed Utility Financial Analyst in the Financial Section of the Electric Division in the Bureau of Rates.

Q. Have you previously submitted joint testimony in this proceeding

A. Yes, we previously submitted Staff Statement ECR-1.

Q. What is the purpose of this surrebuttal testimony?

A. The purpose of this surrebuttal testimony is to respond to certain rebuttal statements of PECO witnesses Carroll and Hill regarding the 80/20 energy cost rate.

Q. What general comments do you have concerning Witness Hill's

lengthy discussion in PECO Statement 18F regarding Staff's interpretation of the Commission's ECR #8 order?

A. Witness Hill has misinterpreted the Commission's ECR #8 order in several instances, resulting in PECO's presentation of an ECRF which is not in compliance with the Commission's order. Witness Hill is correct that it is Staff's opinion that the 20% unreconciliable portion of the energy costs should be recovered in base rates upon a normalized level of energy costs, and that this level should remain unchanged until revised by the Commission in a future base rate proceeding. This was clearly the intent of the Commission's ECR #8 order.

While it is true that the Commission's order does not mandate use of a three-year period to determine the projected level of energy cost, it does require that the prospective data shall be based upon one-year projections for a period of three prospective years. Clearly, the Commission wished that the three-year data be considered in setting the level of projected energy cost. After review of this data, Staff felt it would be appropriate to develop the normalized energy cost from this three-year period.

At page 3 of PECO Statement 18F Witness Hill misinterprets the Commission's use of the phrase "subsequent Commission proceeding." The Commission's current energy clause procedures do not include before the fact energy cost proceedings. Only after the fact reconciliation (Section 1307(e)) proceeding occurs without a special Commission Order directing investigation of specific energy cost areas. Of course, the Commission

can initiate an investigation into any area it deems appropriate. The question at hand is whether in its ECR #8 Order the Commission has indicated it wishes to burden itself with annual energy costs hearings to support energy cost projections. The Order at page 163 states that PECO has been "directed to provide such full support for its expected energy costs in all future general rate filings." Under the Company's proposal, the Commission would have hearings for the ECRF annually and again every time (since January 1979, averaging every 15 months) the Company elects to file a rate request. It should be obvious that this was not the Commission's intent.

Q. Do you have further comment with respect to the phrase "subsequent Commission proceedings"?

A. Mr. Hill has neglected to note that the referenced subsequent Commission proceedings are footnoted to the expression regarding general rate filings. To contend that the reference relates to other than general rate filings demonstrates PECO's unwillingness to fully comply with the Commission's intention.

Q. Please comment on Mr. Hill's discussion on page 3, "therefore, on the same basis, the 20% element not subject to reconciliation should be subject to similar modification."

A. Mr. Hill again has neglected to read page 160 of the Order where it is quite clear that the 20% is not to be part of 1307 proceeding the only vehicle available to change the 20% therefore is provided under Section 1308. General rate

filing or Section 1310 - Temporary/Emergency rate relief. As the 20% is not to be considered within Section 1307 proceeding it cannot be modified by the 1307 procedures.

Q. Please comment on the second point concerning two separate energy cost forecasts for an 80/20 ECR itemized on page 5 of Mr. Hill's Statement 18F.

A. By following the annual change procedure outlined in PECO's proposal whereby the 20% is revalued annually, it appears that dealing with the 20% also in general rate proceedings would be extreme duplication of effort. However, it is the direct expression of the order at page 164 that energy costs information be evaluated in "any subsequent general rate filing." Certainly, to deal with the 20% unreconcilable portion on both an annual basis and general rate filing basis is excessive and not the expression of the Commission Order.

Q. Please comment on the third point regarding changing the base cost of fuel itemized on page 5 of PECO Statement 18F.

A. Mr. Hill demonstrates a lack of knowledge of PECO's method of designing compliance rates in the past. Modifications are always made to the cost allocation study to comply with the Commission ordered ratemaking adjustments and rate structure modification. This is necessary in order to properly develop the HT and PD energy prices based upon PECO's methods. The fact that PECO proferred its case with a built-in $100

million base energy over-collection is an element which colors all of the rate structure proposals. The proper setting of the base rate energy related revenue requirement is a necessary element for final Commission determination. It should be remembered that PECO has yet to reflect in base rates the reduced fuel costs associated with the Salem 2 unit. The lack of base rate fuel component adjustment for Salem 2 has produced the substantial mismatch of fuel costs and base fuel revenues.

Q. Please comment on Mr. Hill's statements on pages 7-9 of PECO Statement 18F regarding a "cap" on the level of unreconcilable energy cost.

A. Mr. Hill's statements represent a continuation of PECO's dialogue which seeks to avoid the Commission's intention of providing incentives to improve PECO's operation of its generating facilities. It is not Staff's position that a "cap" cannot be implemented if Staff's proposal is adopted, only that Staff believes that such action is unwarranted and inappropriate in light of the Commission Order. First, the cap which would function on a year to year basis could not effectively deal with the swings resulting from scheduled nuclear refueling outages. The cap would lessen the incentive for the Company to seek and negotiate responsible replacement power contracts during the course of such outages. Second, it is quite clear from the Commission Order on page 161, that the Commission believes that an unencumbered

exclusion of 20% from reconcilable energy cost "should provide PECO with a sufficient incentive to achieve efficient, cost effective generation and economical purchased power costs while at the same time producing no undue risk of substantial financial harm to the Company."

Q. Please comment on Witness Hill's concerns regarding the interim rate change provisions you have recommended be included in the ECRF tariff.

A. Witness Hill has several concerns regarding the proposed interim rate change provision. First, Witness Hill expresses concern about how one defines the word "substantial." The Commission in its Gas Cost Rate No. 5 Order, Docket Nos. M-78050055, D-79500192, Folder GCR-5, expressed desire "to retain its flexibility" (p. 11) regarding interim adjustments to adjustment clause rates. A review of all the current ECR tariffs of electric utilities regulated by the Pennsylvania Public Utility Commission showed that none, other than PECO's, includes language defining when interim revisions may be made. PECO's current ECR tariff includes the following language:

> However, such rate may be revised if the then effective rate is estimated to result in a net over or under collection such that the E for the current twelve-month period ending January 31 will have an absolute value greater than $10 million.

As was the case during the ECR #7 period, (resulting in ECR #8's "E" factor) where 12 times the amount of undercollection was experienced without an interim revision request by PECO,

this does not guarantee better use of the interim rate provision. This was one of the major contributing factors which lead to the ECR #8 Investigation and the ALJ's conclusion adopted by the Commission that PECO has been unable to effectively administer and ECR tariff.

Witness Hill also has stated that the Commission's Bureau of Audits "recommends that prospective changes be based upon review of the remaining months of the 1307(e) year." While this is at times a consideration used when reviewing a Company's interim rate request, the determinative factor always has been how closely the projected cost revenue level is expected to track the updated projected energy costs for the remainder of the ECR computation period. As was discussed at much length in the ECR #8 Investigation, merely looking at a Company's absolute over or under collection balance will not indicate how well the current ECR is matching actual cost to actual current period revenue collections. To add Witness Hill's recommended "10% of total estimated energy expenses" language to the ECRF tariff will not correct PECO's apparent continued confusion on how to properly monitor its energy clause, but will deprive the Commission of some of its flexibility.

Witness Hill is also concerned that the rate revisions be calculated on the remaining months of the ECRF computation year, rather than the Staff recommendation to use a prospective 12-month basis. This Staff recommendation also comes from the Commission's GCR #5 Order (M-78050055), pages 11 and

12, where the Commission's concern to minimize seasonal mismatches between sales and costs is discussed. The Commission there stated "adjustments should be calculated on a 12-month basis; that is, sales and gas costs for a full annual cycle will be utilized to calculate any proposed interim GCR. This should minimize seasonal mismatches between sales and costs."

It is especially appropriate that PECO should have this guidance included in its ECRF tariff as the Commission in its ECR #8 Order (p. 160) stated: "While we concur with the ALJ's opinion that PECO is not effectively administering its ECR, ..."

Q. Do you have any further comment regarding the interim rate revision to the proposed ECRF?

A. Yes. If the Company's proposal allowing revision of the 20% unreconcilable portion of energy costs outside the context of a rate case proceeding is adopted, the interim rate revision as propossed is no longer appropriate. It is Staff's opinion that the unreconcilable 20% should under no circumstances be subject to interim rate revisions. As PECO's ECRF proposal does not identify the amount of this unreconcilable 20% of energy costs, any revision to the "F" factor would effectively adjust both the 80% and the 20% of energy costs. Thus, any interim rate revision would not operate in harmony with the proposal as presented by PECO.

Further, after reviewing Witness Hill's concerns, Staff has made a few minor revisions to its proposed interim rate

revision tariff language. Staff recommends the following language be used in the new ECRF tariff regarding the interim rate revision:

> However, such rate may be revised on an interim basis subject to approval of the Pennsylvania Public Utility Commission upon determination that the then effective rate will result in substantial over or under collection, the "F" factor of the rate may be revised on a prospective twelve-month basis effective for the remainder of the ECRF computation year. Such revision shall become effective 30 days from the date of the revised filing unless otherwise ordered by the Commission.

Q. Please comment on Witness Hill's discussion at pages 10 and 11 of PECO Statement 18F, on the transition from the existing ECR to the proposed ECRF clause.

A. Witness Hill obviously is confused as to to the timing of the required 1307(e) reconciliation statements. According to the Public Utility Code the Company must file this statement within 30 days following the end of such 12-month period as the Commission shall designate. The currently designated period is February 1 through January 31 and PECO is required to file a reconciliation statement for the period ending January 31, 1986 by March 2, 1986. Thus with Commission permission granted as a result of this proceeding, to accomodate the transition, the 15-month reconciliation period would be for the period February 1, 1986 through April 30, 1987.

The Staff proposed transition would result in one less 1307(e) hearing being necessary, thereby requiring the expenditure of less Commission and Company resources. Staff is in agreement with Witness Hill that the "E" factor of the

first ECRF should include the actual reconciliations balance as of April 30, 1986.

Q. Are there other concerns with regard to the updated "E" factor to be used in the first ECRF, as discussed by Witness Hill on pages 11 and 12 of PECO Statement 18F, regarding the data submitted after closing of the record in the instant proceeding?

A. Yes. The first "E" factor should include any balance of unrealized guaranteed Salem II energy savings resulting from PECO's last rate case (R-842590). Also, this first "E" factor would include the balance of the $45 million undercollections withheld by the Commission in the ECR #9 Investigation (M-850010). It is possible that the Commission could issue its final order in the ECR #9 Investigation prior to April 30, 1986, the difference in any ultimate energy cost disallowance would be reflected in the first ECRF "E" factor.

Q. Has Staff reviwed the Company's updated energy cost projects and recalculation of proposed ECRF Statement No. 1 found in PECO Exhibit JJC-2 and Appendix A of PECO Statement No. 18F?

A. Yes, the Company has lowered its energy cost projection both on the first computation year basis and the three year normalized basis. These energy costs projections are now acceptable to Staff for use in development of the first

80/20 ECR.

Staff has recalculated its pro forma ECRF (Schedule 1) based on these revised energy costs and updated "E" factor information with one minor adjustment. Staff's pro forma "E" factor does not reflect recovery of any of the $45 million undercollections withheld pending final Commission action in the ECR #9 Investigation, whereas the Company's recalculation included recoupment of the entire $45 million previously withheld.

Q. Please comment on Mr. Carroll's statement on Staff's criteria for comparison on page 2, line 22 of PECO Statement 22D.

A. Mr. Carroll is misinformed as to the criteria used in Staff's analysis. An added factor was the age or vintage of the units as mentioned on page 10 of Staff Statement ECR-1. Units of similar age are designed based upon similar experience and hence bear many resemblances. Their current operating performance is also a result of how well they have been maintained over the years and what modifications and additions have been made to the units. While Staff's analysis is developed from the best available published data, the Company has been unable to provide any comprison whatsover for the record, though ordered to do so.

Q. Do you agree with Mr. Carroll's discussion on 2-party purchases beginning on page 3 of PECO Statement 22D?

A. No, while for the purpose of the development of the normalized

cost, Staff has accepted the estimate, Staff believes that 2-party purchases will approach the 3,000,000 MWH level. First, it should be remembered that PECO's largest amount of 2-Party purchases occurred in the year ending 6/82 at a level of 4,036,944 MWH. That time period was a good operating year overall for PECO generating units. Second, even under Mr. Carroll's revised analysis, 2-Party purchase rates are below PJM receipt rates. Further, Mr. Carroll may not have captured the full price decline being experienced in the market. During January, Met Ed purchased 21% of its needs through 2-party purchases at a cost of 21.8 mills/KWH. At that rate, which is below the cost for Eddystone coal-fired production, greater 2-party purchases would be expected than Mr. Carroll has forecasted. However, such economics will only be achieved through aggressive participation in the market by PECO.

Q. Please comment on Mr. Carroll's discussion of flexible pricing agreements on page 8 and 9 of PECO Statement 22D.

A. Mr. Carroll is underinformed as to the extent of flexibility contained in the November 19 filing of AEP and APS. He apparently only reviewed Section 1 which deals with Short-Term Power reservation rates and not Section 2 which adds flexibility to the energy rate and Section 3 which establishes a lower limit of "110% of out-of-pocket costs" for total transaction revenue. While capacity factor will affect any transaction of power, the additional flexibility and

aggressive stance of AEP and APS should encourage greater transactions than in the past.

Q. Does this conclude your surebuttal statement of testimony?

A. Yes, it does.

PHILADELPHIA ELECTRIC COMPANY
R-850152

Pro Forma Computation of Energy Cost Rate Factor
for the Period July 1986 through June 1987

$$\text{Energy Cost Rate Factor} = \left[\frac{.8F}{S_t} - .8B - \frac{E}{A_a} \right] \times \frac{1}{1 - T}$$

1.	F = Cost of Energy	$458,380,771(a)
2.	E = Experienced Net Under-Collection	$(12,138,709)(b)
3.	S_t = Projected Sales for Computation Period	28,298,319 MWH(a)
4.	S_a = Projected Retail Sales of Computation Period	27,686,269 MWH(a)
5.	B = Base Rate Revenue Energy Component	16.525 mills/KWH(c)
6.	$\frac{.8F}{S_t}$	12.959 mills
7.	.8B	-13.220
8.	$\frac{.8F}{S_t} - .8B$	(.261)
9.	$\frac{E}{S_a}$	- (.438)
8.	Excess Cost	.177
9.	Gross Receipt Tax Factor	x1.04712
10.	ECRF	.185 mills/KWH

(a) From: PECO Statement No. 18F Appendix A, Schedule E-1.

(b) See: Schedule page 3.

(c) See: Schedule page 2.

PHILADELPHIA ELECTRIC COMPANY
R-850152

Pro Forma Computation of Base Rate Energy Cost
and Base Rate Revenue Requirement Energy Component
for General Rate Case Effective June 27, 1986

Normalized Energy Cost Calculation

1.	Projected Energy Cost 7/86 - 6/89	$1,408,924,635	(a)
2.	Projected Sales 7/86 - 6/89	85,252,135 MWH	(a)
3.	Projected Cost per KWH Sale (line 1 ÷ line 2)	16.527 mills	
4.	20% of Energy Cost to be included as base rate energy cost and not reconciled (line 3 x .20)	3.305 mills	
5.	Base Rate Revenue Requirement Energy Cost Component per KWH Sales Projected (line 4 ÷ .20)	16.525 mills	

(a) From: PECO Statement No. 22D, Schedule 3, page 1.

PHILADELPHIA ELECTRIC COMPANY
R-850152

Pro Forma Reconciliation of Correction Factor
for General Rate Case Effective June 27, 1986

Balance @ 1/31/86	$(86,917,875)(a)
ECR #9 Disallowance	45,000,000
Effective Balance @ 1/31/86	$(41,917,875)
Amount Recovered through "E" Factor	
FEB-MAR 1986	28,328,643(b)
APR 1986 (2,185,418(b) x 1.516(c))	3,313,094
Undercollecton at 4/30/86	(1,862,571)(b)
Estimated Balance @ 4/30/86	$(12,138,709)

(a) From: PECO's ECR #10

(b) From: PECO Statement No. 18F, Appendix A, Schedule E-4, Sheet 7

(c) $41,917,875 ÷ 27,657,689 MWH

1.D

3-12-
R-850

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
v.	)	Docket No. R-850152
Philadelphia Electric Company	)	

SURREBUTTAL TESTIMONY

OF

DR. JOHN W. WILSON

February 1986

GEC Statement No. 1D

J. W. WILSON & ASSOCIATES, INC.
ECONOMIC COUNSEL
THIRD FLOOR • WATERGATE OFFICE BUILDING
2600 VIRGINIA AVENUE, N.W. • WASHINGTON, D.C. 20037

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
v.	)	Docket No. R-850152
Philadelphia Electric Company	)	

Surrebuttal Testimony

of

Dr. John W. Wilson

Q. ARE YOU THE SAME JOHN W. WILSON WHO PREVIOUSLY SUBMITTED DIRECT TESTIMONY IN THIS PROCEEDING IDENTIFIED AS GEC STATEMENT NOS. 1A, 1B, AND 1C?

A. Yes, I am.

Q. WERE YOU QUALIFICATIONS SET FORTH IN GEC STATEMENT NO. 1A?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to arguments on incentives and phase-in that have been made by PECO witnesses Carroll, Farling, Hieronymus, Hill, Paquette, Sanders and Wroblewski.

Q. HOW IS YOUR SURREBUTTAL TESTIMONY ORGANIZED?

A. My surrebuttal testimony is divided into two parts. In the first part I respond to PECO's arguments pertaining to the regulatory incentives that I suggested in my Statement 1A, and in the second part I respond to the Company's arguments concerning the phase-in proposals I presented for the Commission's consideration.

I. Regulatory Incentives

Q. WHAT ARE THE ARGUMENTS THAT THE PECO WITNESSES HAVE MADE WITH RESPECT TO THE REGULATORY INCENTIVE YOU SUGGESTED IN YOUR STATEMENT 1A?

A. PECO's criticisms of the regulatory incentive testimony can be categorized under five headings. First, the Company contends that the proposed nuclear capacity

factor standard is too high and that the neutral zone (where there is neither an incentive reward or penalty) is too narrow. Second, the Company's witnesses argue that my testimony lacks "symmetry" in that the potential rewards and penalties are not equal. Third, the Company contends that penalty caps should be established so as to avoid the imposition of severe financial impacts on the Company's stockholders. Fourth, the PECO witnesses argue that the nuclear incentive formula is duplicative and unnecessary in view of the Commission's imposition of an 80/20 ECR approach. Fifth, PECO contends that there are various data errors in my analysis.

Q. HOW DO YOU RESPOND TO THE CONTENTION THAT THE NUCLEAR CAPACITY FACTOR STANDARD YOU SUGGEST IS TOO HIGH AND THAT YOUR PROPOSED NEUTRAL ZONE IS TOO NARROW?

A. The 65 percent capacity factor that I have suggested as a minimum operating standard is reasonable. While it is true that in recent years the national average has been slightly below that level, these averages understate the level of performance that should reasonably be expected in the future. That is so because the recent averages contain major post-TMI outages that were

required to modify plants to meet new safety standards. Those outages should not be expected to continue in the future and they should not be required for new plants, like Limerick, that have been built to modern specifications. Even PECO witness Hieronymus acknowledged that, except for the TVA units which were all taken off line in 1985 due to internal TVA management problems, the 1985 average capacity factor for all nuclear plants was 65 percent -- and that includes plants that were inoperative for extended periods because of major repair and retrofit requirements.

Likewise, the Company's argument that the proposed 60 to 70 percent neutral zone is too narrow is without merit. Dr. Hieronymus, for example, addresses this proposed zone as if it were to be applied on an individual plant basis. All of his conclusions in this regard are irrelevant to my actual proposal which would be applied to all of PECO's nuclear units as a group. Given the fact that, with a group-based application, the outages of one plant will be offset by the operations of another, the proposed ten percent neutral zone, if anything, may actually be a bit large.

Q. IN THEIR REBUTTAL TESTIMONY, MR. CARROLL AND MR. HILL CONTENDED THAT THE 60 TO 70 PERCENT RANGE FAILED TO TAKE PECO'S OWN HISTORICAL OPERATING RECORD INTO ACCOUNT. HOW DO YOU RESPOND TO THAT CONTENTION?

A. I have fully considered PECO's actual historical operating record, and I commented on it in my direct testimony. One reason for proposing the implementation of an incentive program now is to motivate PECO to improve upon its historical record. Clearly, then, it would be perverse to use PECO's historical record as the sole basis for an operating incentive in the future.

Q. DO YOU AGREE WITH THE PECO WITNESSES EMPHASIS ON SYMMETRY?

A. No. The PECO witnesses apparently misunderstand the significance of the 65 percent operating standard and the 60 to 70 percent neutral zones. I view these as <u>minimal</u> satisfactory operating results. They are not an average good performance target. It is, of course, true that during recent years many utilities have experienced operating records for nuclear plants below the 65 percent level because of major plant failures

and the need to meet new safety requirements. That does not mean, however, that continued extensive outages for these purposes should be built into operating expectations for the future. Looking forward, a 65 percent capacity factor for nuclear plants is a reasonable minimal operating standard. Viewed in that context, the symmetry which PECO advocates would be unwarranted.

Under the plan that I have presented for Commission consideration, if the nuclear capacity factor is below 60 percent, the Company would absorb all replacement fuel costs, whereas, at capacity factors above 70 percent, the Company's extra reward would be 50 percent of the realized fuel savings. There is no reasonable basis to support PECO's claim that an incentive program should be symmetrical -- i.e., that performance rewards and penalties should have equal size and probabilities of occurrence. Under traditional regulatory ground rules, a public utility company that is granted a service franchise is entitled to recover its cost and earn a fair rate of return on investments if it performs satisfactorily in meeting its public service obligations. To the extent that excessive costs are incurred, they are not properly recoverable from rate-

payers. Under these ground rules, there is no provision at all for extra profit rewards. Thus, the incentive program that I have discussed in my testimony actually offers PECO more than the Company would be entitled to under traditional regulation.

In this proceeding, PECO seems to be contending that if its performance exceeds a minimum acceptable standard, there should be an extra reward over and above the normal fair rate of return in an amount equal to disallowances that would occur if minimal operating standards failed to be achieved. In reality, the Commission would be entirely justified in disallowing all excess costs incurred due to poor operations, while providing no extra reward at all for good performance. Good performance is what the utility is expected and obligated to deliver in exchange for the privilege of its public utility franchise. The fact that the performance incentive program proposed here contains the additional carrot of some special reward for performance above a minimal acceptable standard constitutes more favorable regulatory treatment than, in theory, would be afforded under sound conventional rate regulation. The more favorable regulatory treatment could

lead to greater benefits for the utility and ratepayers alike.

Q. THE COMPANY WITNESSES HAVE ALSO CONTENDED THAT PENALTY CAPS SHOULD BE IMPLEMENTED AS PART OF ANY INCENTIVE PROGRAM SO THAT POOR PERFORMANCE WILL NOT RESULT IN SEVERLY ADVERSE FINANCIAL RESULTS FOR THE COMPANY AND ITS STOCKHOLDERS. DO YOU AGREE WITH THAT CONTENTION?

A. No. Poor performance will result in financial losses. The only question is who will bear them -- ratepayers or the Company and its stockholders. PECO's argument for a cap would greatly undermine any serious incentive program because it would assure the Company that ratepayers, not stockholders, will be called upon to shoulder the financial consequences of any major failures. Not only would this undermine productivity and efficiency incentives, it would also be grossly inequitable. Major performance failures will surely create major financial burdens. Both from a traditional consumer protection viewpoint and from an efficiency incentive perspective, it should be understood that stockholders (not ratepayers) will be financially responsible for carrying these burdens.

As for the contention that an incentive program may depress the company's profitability in the event that it is unable to achieve the established incentive standards, it should be recognized that without such a penalty, no meaningful incentive will exist. The point of an incentive program is to encourage a level of performance that is above the level which would be achieved absent an incentive program. To argue that the Company's rate of return and its stockholders' financial circumstances will be inpaired in the event that reasonable operating efficiency is not achieved is hardly a valid basis for objecting to the incentive program.

Of course, depending on the specific factual situation, there may be circumstances under which the Commission would decide to lift incentive disallowance provisions for some period to accommodate certain unforeseen events. For example, Mr. Carroll contrives an illustration at page 7-8 of his Statement 22C under which he assumes that in 1988 the NRC orders a 6-month shutdown of all GE reactors (including Limerick No. 1 and Peach Bottom No. 2) so as to coincide with an extended outage of Peach Bottom No. 3 for pipe replacement. Under the extreme hypothetical, Mr. Carroll calculates that there

could be a $240 million revenue shortfall. While the hypothetical is improbable, if it occurred (and depending on the factual basis for the ordered shutdown) the Commission may decide to modify the incentive formula for that period. In any event, the answer to Mr. Carroll's concern is to maintain reasonable regulatory flexibility -- not to discard sound regulatory principles because there may be some unusual unforseen circumstances where a variance is warranted.

Q. DO YOU AGREE THAT YOUR INCENTIVE TESTIMONY IS DUPLICATIVE AND UNNECESSARY IN VIEW OF THE COMMISSION'S NEW 80/20 ECR APPROACH?

A. No. The nuclear incentive that I suggest is substantively separate and distinct from whatever ECR methodology the Commission may adopt. For ease of implementation, I did show in GEC Exhibit 1C how the 80 percent ECR and my nuclear incentive approach could be administered jointly. But, it would be entirely wrong to mischaracterize the two approaches as being redundant. The 80/20 ECR approach deals generally with all aspects of fuel and purchased power cost recovery, whereas my nuclear incentive proposal focuses on a specific performance problem area. It would be

possible to implement the nuclear performance standard using a mechanism that is separate and independent from the ECR. For purposes of administrative ease and economy, I have suggested (in GEC Statement No. 1C) one way in which the nuclear performance incentive can be implemented jointly with the ECR. But it is wrong to miscontrue the possibility of joint implementation as evidence of duplication.

Q. WHAT ARE THE DATA ERRORS THAT PECO CONTENDS ARE INCORPORATED IN YOUR ANALYSIS?

A. Mr. Carroll characterizes the inclusion of reactors that operated for less than one year (and one small 70 MW reactor) in my computations as "errors or misrepresentations". The data for each of these reactors (and for all of the others in my analysis) is factually accurate and correct. Moreover, since I clearly showed the commercial operation date and size of each of these units in my exhibits, the representations are also entirely accurate. Likewise, Mr. Carroll labels my computation of an arithmetic average (rather than a weighted average) as an "error or misrepresentation." Again, my computation is entirely accurate. No doubt, what Mr. Carroll intended to convey was simply his view

that certain plants should be excluded from the analysis and that a weighted average rather than an arithmetic average should be computed. That, of course, is a matter of judgment; I included all plants for completeness. I certainly acknowledge that computations can also be made for subgroups and that weighted averages as well as arithmetic averages can be computed. I have presented all of the necessary data so that the Commission may make any of these computations which it deems relevant. In any event, my opinion as to the appropriateness of a 65 percent capacity factor standard and a 60 to 70 percent neutral zone is not affected by Mr. Carrolls' choice of plants and weighting.

Mr. Carroll also contends that there are two additional "errors or misrepresentations." First, he states that PECO's nuclear capacity is 2,871.84 MW rather than the 2,863.84 MW that I have used in Exhibit__(J.W.-4). My total is based on the following plant statistics:

Limerick 1	1,055 MW
Peach Bottom 2	447 MW
Peach Bottom 3	440 MW
Salem 1	456 MW
Salem 2	466 MW
	2,864 MW

If Mr. Carroll can now show which of these figures is wrong and that 2,872 MW is the correct total, then, of course, the corrected figure should be used. However, all of these figures were obtained from PECO's "Production Cost Model Imput Data" (sheet 5) which is contained in Exhibit JJC-1. I have rechecked each of these amounts, and they appear to correspond with PECO's own data. Since the difference between the two numbers is less than 3/10 of one percent (.00279), a change of this magnitude will have no significant impact on any of my results or conclusions.

Finally, Mr. Carroll construes my 1990 generation value in Exhibit__(J.W.-4) as an "error of misrepresentation" because it was not supplied by PECO. As I have already explained in previous testimony, PECO did not supply a 1990 value and, consequently, I used the average of PECO's 1987, 1988, and 1989 values as an estimate for 1990. If PECO is now in the position to supply a more accurate 1990 value to replace this estimate, they should certainly do that so as to assist the Commission with its determination in this case.

Q. WOULD YOU PLEASE SUMMARIZE THE WAYS IN WHICH YOUR INCENTIVE PLAN DIFFERS FROM PECO'S PROPOSAL AND COMMENT BRIEFLY ON THE DIFFERENCES?

A. There are three major differences. First, my proposal contemplates a 65 percent capacity factor standard with a 60 to 70 percent neutral zone, whereas PECO is advocating a 60 to 65 percent standard and a 55 to 70 percent zone. I believe that 65 percent is a reasonable standard -- especially in view of the fact that recent low levels of plant performance attributable to outages for post-TMI retrofits should not be expected to repeat in the future. I also believe that a 10 percentage point neutral zone is more than ample for a standard that applies to multiple plants as a group rather than to units individually.

Second, my testimony would require the Company to bear the full burden of increased energy costs attributable to nuclear performance rates below the neutral zone, whereas (in the interest of "symmetry") PECO would split these increased costs between its stockholders and ratepayers. In my opinion, PECO's symmetry arguments have no basis in logic or regulatory policy. Traditional regulatory policy could disallow the re-

covery of all excessive costs and pass through all of the benefits of good performance to ratepayers. That is part of the social contract (i.e., the quid pro quo) that a utility accepts for the privilege of its franchise. The proposal here, to share half of the extra benefits of superior performance with the Company is more than fair. In short, PECO's symmetry argument is entirely out of balance.

Third, the Company urges that a cap be established to limit cost disallowances that could result from poor performance. In my opinion such a cap would both undermine incentives and unfairly impose excessive costs on ratepayers. In the event of major unforeseen events that may necessitate reconsideration of any particular incentive program (e.g., a federal mandate to shut down all nuclear plants), the Commission would of course be free to consider the specific facts at hand and alter regulatory procedures as it deemed fit.

In short, PECO's proposed standards are too wide, too soft, and their impact is too limited to achieve optimal performance results.

II. Phase-In

Q. WHAT ARE THE ARGUMENTS THAT THE PECO WITNESSES HAVE MADE WITH RESPECT TO YOUR PHASE-IN TESTIMONY?

A. PECO's criticisms of my phase-in testimony can be categorized under three headings. First, the Company's witnesses contend that the phase-in proposals that I presented for Commission consideration will raise ratepayers' total nominal costs over time. Second, PECO implies that the sinking fund depreciation approach (which I used in two of the phase-in alternatives that I presented) "may" be inconsistent with generally accepted accounting principles (GAAP) and FASB-71. Third, PECO's witnesses maintain that my phase-in proposals worsen PECO's internal cash flow.

Q. HOW DO YOU RESPOND TO THE CONTENTION THAT THE PHASE-IN PROPOSAL YOU DISCUSS WILL RAISE TOTAL NOMINAL COSTS OVER TIME?

A. Any phase-in which defers cost recovery to the future and does not impose a return disallowance will raise total nominal revenue collections. But it will not necessarily raise the present value of revenue collec-

tions, and may decrease it. Neither regulation nor any other rational economic policy has ever been designed to minimize nominal costs over time. If we wished to minimize nominal rate totals, all investments would be expensed immediately (i.e., depreciated 100 percent at the time of plant acquisition), and then there would be no need for a rate base, a return or income taxes. But that is not the purpose of regulation. Rather, one purpose of regulation is to spread cost recovery over time so as to better match the time-distribution of benefits. Thus, investments are not expensed immediately -- they are capitalized, and a return is allowed on the undepreciated balance. A phase-in, with the capitalization of remaining balances, is a logical extension of this regulatory practice. PECO's inference that the objective should be to minimize nominal values (without giving proper allowance for the time value of money) is without merit.

Q. COMPANY WITNESSES WROBLEWSKI, FARLING, SANDERS AND PAQUETTE HAVE ALL OBJECTED TO THE SINKING FUND APPROACH WHICH YOU HAVE USED IN SEVERAL OF YOUR PHASE-IN ALTERNATIVES. ARE THEIR OBJECTIONS REASONABLE?

A. No. Mr. Wroblewski, for example, contends that the sinking fund approach is inappropriate because it fails to track loss of service value. For that reason, he would prefer the application of straight line depreciation. His argument fails, however, because straight line depreciation is certainly not reflective of loss of service value in a situation where service value increases over time. PECO has not denied that the value of its nuclear capacity (assuming that it functions properly throughout its economic life) will increase over time. Since that is the case, a sinking fund approach to depreciation will more closely mirror loss of service value than will the straight line approach. Naturally, PECO would prefer the straight line approach because that method permits the Company to recover costs more quickly from ratepayers, but that should not be the standard upon which a determination is made for ratemaking purposes in this proceeding.

Mr. Wroblewski also points out that under a sinking fund approach more dollars will be required from ratepayers at later dates whereas fewer dollars will be required currently. That, of course, is true. Indeed, it is the reason for implementing a phase-in. Given the circumstances pertaining to PECO's nuclear capacity

in this case, the adoption of a phase-in plan which includes a sinking fund approach for depreciation will improve the equity and time distribution of cost principles in electric utility ratemaking.

Q. MR. FARLING AND MR. SANDERS HAVE IMPLIED THAT A SINKING FUND APPROACH IS NOT CONSISTENT WITH GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP) AND THAT IT MAY NOT QUALIFY UNDER THE PROPOSED REVISIONS TO FASB NO. 71. ARE THEIR CONCERNS VALID?

A. No. There is nothing whatsoever in the proposed revisions to FASB No. 71 which suggests that sinking fund depreciation procedures are unacceptable or inappropriate. Mr. Farling and Mr. Sanders have carefully qualified their statements in this regard with the use of words such as "may". In my opinion, the concerns which they are attempting to raise in this manner are unfounded, and their objections are unsubstantiated. There is no GAAP prohibition of sinking fund depreciation procedures, and, in fact, the materials which I supplied to PECO through discovery demonstrate that there are occasions on which investor-owned utilities have used sinking fund depreciation for generation capacity in the past.

Q. HOW DO YOU RESPOND TO THE COMPANY'S CONTENTION THAT A SINKING FUND PHASE-IN WILL REDUCE PECO'S INTERNAL CASH FLOW?

A. I have completed and presented a detailed analysis showing precisely how my phase-in (and performance incentive) proposals will affect PECO's cash flow and other financial indicators. This analysis was the subject of GEC Statement 1B. It shows conclusively that although under certain phase-in proposals cash flow will be reduced, PECO nevertheless will remain financially viable and the Company's ratepayers will receive significant benefits.

Because the Company's own phase-in plan is so limited, Mr. Paquette is certainly right in stating that my proposals will produce less revenue for PECO over the next ten years. That is exactly the point -- to reduce ratepayer burdens while maintaining PECO's financial viability. My proposals will defer revenue recovery until a later date so as to better match costs and benefits. My proposal will, indeed, result in less revenue to PECO and lower rates to PECO's customers during the next ten years than will the Company's plan.

In my opinion, however, that is a positive feature of the proposal, not a weakness.

Q. DOES THIS CONCLUDE THIS PORTION OF YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

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R-850152

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
v.	)	Docket No. R-850152
Philadelphia Electric Company	)	

SURREBUTTAL TESTIMONY

OF

DR. JOHN W. WILSON

March 1986

GEC Statement No. 1E

J. W. WILSON & ASSOCIATES, INC.
ECONOMIC COUNSEL
THIRD FLOOR • WATERGATE OFFICE BUILDING
2600 VIRGINIA AVENUE, N.W. • WASHINGTON, D.C. 20037

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
v.	)	Docket No. R-850152
Philadelphia Electric Company	)	

Surrebuttal Testimony

of

Dr. John W. Wilson

Q. STATE YOUR NAME AND ADDRESS?

A. My name is John W. Wilson. My address is 2600 Virginia Avenue, N.W., Washington, D.C. 20037.

Q. HAVE YOU SUBMITTED TESTIMONY PREVIOUSLY IN THIS PROCEEDING ON BEHALF OF THE GOVERNOR'S ENERGY COUNCIL?

A. Yes, I have.

Q. WERE YOUR QUALIFICATIONS SET FORTH IN GEC STATEMENT NO. 1A?

A. Yes, they were.

Q. WHAT IS THE PURPOSE OF THIS SURREBUTTAL TESTIMONY?

A. The purpose of this surrebuttal testimony is to respond to several arguments concerning ECR matters that were raised in the rebuttal testimony of PECO witnesses Hill and Carroll.

Q. AT PAGE 14 OF HIS REBUTTAL TESTIMONY, PECO WITNESS HILL ARGUES THAT THE NECESSITY FOR A FUEL ADJUSTMENT CLAUSE IS AS GREAT TODAY AS IT WAS IN THE 1970s. DO YOU AGREE WITH HIS ARGUMENT?

A. No. I stated the basic reasons why his argument is wrong in my direct testimony. Between the early 1970s and the early 1980s, the price of petroleum fuels increased by more than 10 times, nuclear fuel prices tripled and coal prices moved up dramatically as rail carriers exploited the wide margin that developed between oil and coal costs. Today's petroleum and nuclear fuel prices are substantially below the inflated

levels that were reached during the past decade and coal prices have also stabilized. While some price movement should always be expected in the future, even in view of the recent dramatic oil price reductions there is no basis for anticipating the same magnitude of fuel price volatility during the next decade that was experienced between the early 1970s and the early 1980s.

Q. AT THE BOTTOM OF PAGE 14 OF HIS REBUTTAL TESTIMONY, MR. HILL STATES THAT THE ECR DISADVANTAGES WHICH YOU OUTLINED IN YOUR DIRECT TESTIMONY, HAVE NOT MATERIALIZED IN THE REAL WORLD AND THAT THERE IS NO PRACTICAL SUPPORT FOR THE CONCLUSION THAT FUEL AND OTHER COSTS MAY, AT TIMES, MOVE IN OPPOSITE DIRECTIONS SO AS TO CREATING OFFSETS TO EACH OTHER. IS HE CORRECT?

A. No. The oil price reductions that have been experienced in recent months are a case in point. While inflationary forces in other sectors have not been large by some past standards, reductions in oil costs have produced a direct offset to other cost increases. As for the disadvantages of ECR procedures more generally, Mr. Hill presents no evidence to support his assertion. While Mr. Hill's unsupported opinion on this

matter may be viewed as valuable by the Commission because of his operating experience, the fact that utility capital and operating costs have increased dramatically over the past decade, during which perverse incentives were present in most automatic fuel adjustment clauses, is empirical evidence that should not be overlooked. Moreover, even though management has no control over general inflationary factors, there is no doubt that system planning and operating decisions do influence cost levels.

Q AT THE TOP OF PAGE 15 OF HIS REBUTTAL TESTIMONY, MR. HILL POINTS OUT THAT OVER THE LAST 16 YEARS PECO HAS HAD A NUMBER OF DIFFERENT ECR PROCEDURES AND THIS HAS NOT IN ANY WAY AFFECTED THE PJM ECONOMIC DISPATCH. DOES THIS OBSERVATION SUPPORT MR. HILL'S CONTENTION THAT ECR CLAUSES HAVE NO EFFECT ON A UTILITY'S EFFICIENCY?

A. No. Economic dispatch of available generating units is not the point. In fact, I agree with Mr. Hill that there is no reason to believe that economic dispatch will be significantly influenced by the choice of ECR procedures. What can be influenced by the choice of ECR procedures, however, is a utility's generation

maintenance and construction program and its other operating policies which determine the plants that will be available for dispatch.

Q. AT THE BOTTOM OF PAGE 15, MR. HILL SUGGESTS THAT YOUR TESTIMONY HAS LED HIM TO BELIEVE THAT YOU ARE SAYING A UTILITY HAS A FINANCIAL INCENTIVE TO USE MORE FUEL OR MORE EXPENSIVE FUEL. IS HIS INTERPRETATION CORRECT?

A. No. Mr. Hill deserves some clarification on this point. Utilities will always have some incentive to hold costs down, merely because of price elasticity affects. That is, the higher their prices (for whatever reason) the less power and energy they will be able to market. Thus, it is not that ECRs totally eliminate financial incentives to economize on cost, but that they distort the priorities that a utility will follow in the pursuit of cost containment. With an ECR a utility will have relatively less concern about generation mix changes that cause fuel costs to rise than would exist in the absence of an ECR. In short, it is the distortion of incentives rather than total incentive elimination that is the issue here.

Q. IS MR. HILL CORRECT IN STATING AT PAGE 16 THAT YOUR TESTIMONY SUGGESTS THAT SOME SUB-OPTIMAL LEVEL OF PERFORMANCE IS ACHIEVED IF A UTILITY IS ALLOWED TO REFLECT CHANGES IN ITS GENERATION MIX THROUGH A FUEL ADJUSTMENT CLAUSE?

A. Where high cost replacement fuel or high purchased power costs that are attributable to excessive nuclear outages can be automatically passed through to customers through an ECR, a utility will have less incentive to improve nuclear performance than it would absent this ability to automatically charge customers for the effects of such outages.

Q. AT THE TOP OF PAGE 17 MR. HILL HAS STATED THAT YOU ASSUMED THAT ALL UNSCHEDULED OUTAGES ARE WITHIN THE CONTROL OF MANAGEMENT. IS THAT CORRECT?

A. While it is true that management should always be held accountable for the operation of its facilities, my recommendation of a 65 percent nuclear capacity factor certainly does not imply that management or stockholders should be penalized for all unscheduled outages. If only planned outages for refueling and scheduled maintenance were to be accommodated, capacity

factors in the 80 to 90 percent range could easily be established. It is precisely because of the need to accommodate a certain amount of unscheduled outages that a capacity factor as low as 65 percent may be viewed as a reasonable target at this time. Hopefully, as recent design and operational problems are ironed out, capacity factor targets (including unscheduled outages) can ultimately be increased to the 70 to 80 percent range. All of the empirical data, upon which the 60 to 70 percent range which I have proposed in this case is based, include substantial amounts of unscheduled outages. Therefore, the standards which I am suggesting here do not in any way penalize management for a "reasonable" amount of unscheduled outages.

It is, of course, recognized that in the short-run outages may occur over which management has no immediate control. That does not always mean, however, that such unscheduled outages are entirely beyond the bounds of management influence or responsibility. Planning decisions as to what type of plant to build, specific plant design characteristics, and provisions for adequate water supply are all, at their inception, matters for which management is responsible. For management to

make such decisions and, at some subsequent date after the investment of billions of dollars of capital, claim that the failure of an adequate water supply to materialize is a matter beyond management's control is hardly a "responsible" managerial attitude.

Q. ALSO AT PAGE 17 OF HIS REBUTTAL TESTIMONY, MR. HILL SAYS THAT YOUR PROPOSAL WOULD FORCE A UTILITY TO "FIGHT" ONLY TO BREAK EVEN. IS THAT CORRECT?

A. In our economy, either in the regulated or competitive sector, all business enterprises should be required to give their best effort in order to receive a fair profit. Traditionally, the fair rate of return which Commissions establish in routine rate cases is based on the presumption that the utility will perform at an optimal level so as to be worthy of earning that return. Mr. Hill's suggestion that PECO is entitled to rewards for less is inconsistent with traditional regulatory principles, and it is also out of step with the way the rest of the economy works.

Q. AT PAGE 18 OF HIS REBUTTAL TESTIMONY, MR. HILL STATES THAT YOUR NUCLEAR INCENTIVE PROPOSAL DOES NOT WORK IN

CONCERT WITH THE COMMISSION'S 80%/20% MECHANISM. IS THAT CORRECT?

A. No. I have explained fully in GEC Statement No. 1C, precisely how the nuclear performance incentive which I have proposed and the 80%/20% mechanism can be integrated. The essence of Mr. Hill's contention seems to be that with a 60 to 70 percent nuclear performance band, there should be no 80%/20% split within the band. I disagree with that conclusion. The Commission's 80%/20% mechanism does not contemplate a neutral zone as a general component of the mechanism. The fact that I have incorporated such a zone for purposes of designing a nuclear plant performance standard in no way conflicts with or undermines the Commission's approach, nor should the band which I have proposed for nuclear performance be used as a device to undermine the Commission's general 80%/20% mechanism.

Q. AT PAGE 19 OF HIS REBUTTAL TESTIMONY, MR. HILL STATES THAT YOU HAVE NOT PROPOSED "A DOUBLE BENEFIT TO STOCKHOLDERS UNDER FAVORABLE OPERATING PERFORMANCE". IS HE CORRECT?

A. No. Under favorable operating performance PECO would earn both its allowed rate of return and, in addition, a further profit increment attributable to the favorable performance level.

Q. MR. HILL CONTENDS THAT THE 90-DAY MINIMUM WHICH YOU HAVE RECOMMENDED FOR ECR IMPLEMENTATION IS UNNECESSARY AND WOULD NECESSITATE LONGER TERM PROJECTIONS. WOULD YOU COMMENT ON THAT CONTENTION?

A. Mr. Hill makes reference to review by the Commission's Bureau of Audits and suggests that with such a review the existing 30-day period is adequate. While the time requirements in this regard are surely a matter that is within the Commission's discretion, I am unpersuaded by Mr. Hill's argument that the 30 days is an adequate period for all interested parties to have an adequate opportunity for meaningful participation. As to the contention that longer term projections would be required, that is not necessarily the case. Rather, projections could be done on the same basis as they are presently, and the implementation of cost recovery (i.e., an increased recovery lag) could be adopted to accommodate essential time requirements.

Q. MR. HILL OPPOSES YOUR PROPOSAL TO EXEMPT "UNIT" SALES RATHER THAN "FIRM" SALES FROM THE COST RECOVERY COMPUTATION. DO YOU AGREE WITH HIS REASONING?

A. No. I have explained in GEC Statement No. 1C the affirmative reasons for adopting the "unit" sales terminology. Mr. Hill, on the other hand, has not set forth any reasons for retaining the "firm" classification. He merely states that given the way in which PECO "currently" implements the "current" energy cost rate, the computations have been done properly -- that is on the same basis as they would be done under a "unit" sales approach. Since Mr. Hill appears to be in essential agreement with the approach, and the dispute appears to focus on choice of language, it would seem a prudent regulatory move to adopt the technically correct terminology so that there is no ambiguity in the future.

Q. AT PAGES 11 AND 12 OF HIS REBUTTAL TESTIMONY, MR. CARROLL ARGUES THAT YOUR 65 PERCENT NUCLEAR CAPACITY FACTOR PROPOSAL IS INAPPROPRIATE IN VIEW OF PECO'S 61 PERCENT FORECAST FOR THE YEAR ENDING 6/30/87. DO YOU AGREE WITH HIS CONTENTION?

A. No. The essence of Mr. Carroll's argument is that the appropriate nuclear performance standard should be whatever the Company may project in advance. That approach, of course, would totally defeat the purpose of an incentive standard. The Company's projections are determined in accordance with the assumptions that PECO selects in its ProdCost runs. Under such an arrangement, the Company would have very strong incentives to establish conservatively low operating levels so that there would be little danger of performance penalties and maximum opportunity for extra rewards. The determination of an appropriate performance level should be independent of the Company's potentially self-serving forecasts. The fact that the management of a particular company anticipates that its performance will be relatively low is scarcely a valid reason for requiring customers to shoulder the excessive cost burden that would result if that anticipation materializes.

Q. AT PAGES 13 AND 14 OF HIS REBUTTAL TESTIMONY, MR. CARRROLL CONTENDS THAT YOU HAVE NOT PROPOSED ANY METHOD FOR DETERMINING THE VALUE OF NUCLEAR GENERATION DEVIATIONS AROUND YOUR PROPOSED OPERATING STANDARD. IS THAT A VALID CRITICISM?

A. No. There are a number of ways in which implementation can be achieved which may be specified by the Commission if it elects to implement the approach that I have described and recommended. One approach would be to run a production cost model with the actual level of nuclear performance in one run and the specified standard in a comparable run. The cost difference between the two runs would be a measure of the extent to which actual nuclear performance produced costs which varied with those that would have been achievable had the performance standard been attained.

Of course, runs of this type would have to be reviewed for reasonableness by the Commission Staff and interested parties. In particular, the run which includes nuclear performance at the specified standard level should be examined closely to assure that the nuclear outages incorporated on the hypothetical dispatch are reasonably distributed as well as being at the appropriate levels. Reasonableness in this regard should be assured at the implementation stage since it may be impractical to anticipate and specify all possible conditions in advance.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

COMMONWEALTH OF PENNSYLVANIA
BEFORE THE PUBLIC UTILITIES COMMISSION

RECEIVED

MAR 14

THE PENNSYLVANIA
PUBLIC UTILITIES COMMISSION
V. PHILADELPHIA ELECTRIC
COMPANY

Docket No. R-850152

UP/UUC STATEMENT #2A

SURREBUTTAL TESTIMONY OF DR. S.L. FELDMAN
ON BEHALF OF THE
UTILITY USERS COMMITTEE/
UNIVERSITY OF PENNSYLVANIA

March 5, 1986

Q. ARE YOU THE SAME DR. FELDMAN WHO PROVIDED DIRECT TESTIMONY IN UUC/UP STATEMENT NO. 2?

A. Yes, I am.

Q. DR. FELDMAN, WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to the criticisms of Dr. Frank Clemente concerning my assertion that the proposed PECo rate increase will lead to large potential job losses in the non-manufacturing sector of the Philadelphia economy and will have a severe impact on the future location of service industries in the Philadelphia area, and to respond to Mr. Sundermeir's claims that I have omitted certain utility rate information in my calculations.

Q. CAN YOU SUMMARIZE YOUR RESPONSE TO DR. CLEMENTE?

A. Dr. Clemente stated that he has found no historical evidence to suggest that there is a correlation between commercial electric rate increases and significant harm to a metropolitan economy. He goes on to conclude that because he found no evidence to suggest such a correlation, none exists. This is reminiscent of the medical profession's general disregard of the germ theory in the spread of disease in the early 1800's; because most doctors found no evidence of the existence of microorganisms, they concluded that they did not exist. I intend to show that Dr. Clemente found no evidence of the detrimental effects of large electric rate increases to regional economies because first, he did not look hard enough, and second, he did not look in the right place.

Clemente's conclusions are all highly suspicious due to the extreme inadequacy of his methodology. Thus, I will focus on pointing out the errors in his methodology and show that his conclusions are not supported even by PECo witnesses.

Q. DR. CLEMENTE STATES THAT THERE IS HISTORICAL SUPPORT FOR THE CONCLUSION THAT CHANGES IN COMMERCIAL RATES ARE NOT SIGNIFICANT DETRIMENTS TO A METROPOLITAN ECONOMY, AND HE USES HIS OWN EMPIRICAL ANALYSIS AS EVIDENCE. DO YOU AGREE WITH HIS CONTENTION?

A. No. Dr. Clemente's analysis is exceptionally weak and produces questionable results which reflect an inadequate methodology. Dr. Clemente himself admits (p. 3) that "....such factors as access to transportation, educational facilities, relative wage rates, and overall living conditions play a much more significant role in a firm's decision to locate or expand in a particular area." Yet his methodology accounts for none of these factors. I make the statement on p. 5 of my testimony (in full agreement with Professsor Summers, who has testified on behalf of PECo previously) that "the location of services is sensitive to many factors, an important one of which is the cost of office space."

If, as he states and as we both agree, that location of services depends on a host of variables, none of which are accounted for in his analysis, then his conclusion that commercial electric rates have no impact must be questioned. His criticisms of Dr. Schinnar's STARLOC model, which is based on a regional input-output model are unwarranted, especially since input-output analysis, by its very nature takes the impact of

Q. YOU SAY THAT DR. CLEMENTE PRESENTS RESULTS WHICH REFLECT AN INADEQUATE METHODOLOGY. CAN YOU ELABORATE?

A. The conclusions of Dr. Clemente are unsupportable due to the inadequacy of his methodology. He merely takes historical sales, employment and income growth variables and the average increases in commercial electric rates over a period of eleven years for a number of cities in the Northeast and visually examines these to determine the existence of a relationship.

This represents an extremely unrigorous analysis. Not only is his data incomplete and grossly aggregated, he omits a number of important variables, performs no statistical analyses (not even a simple mean) and does not even adjust for inflation. In fact, it appears that the commercial rate increases in his study roughly parallel the rate of inflation, which in inflation-adjusted terms, translate to minimal average increases in commercial rates.

The only way to arrive at a correct conclusion is to look at inflation adjusted figures for the entire range of variables, hold those variables constant, then look at the marginal impact of commercial electric rates. This must be done using a statistical analysis. This is precisely why the analysis of Dr. Schinnar is so valuable. Dr. Schinnar examines a wide range of social and economic variables (such data is not difficult to collect) for the Philadelphia region. Dr. Schinnar's analysis is specific and predictive for the Philadelphia region.

Dr. Clemente also fails to recognize the magnitude of PECo's proposed rate request. The net effect, taking current low

experienced during the period of Dr. Clemente's study (1972-1983), increases the relative magnitude of PECo's proposal. Dr. Schinnar's model recognizes the interaction between the rate increase and the inflation rate as having a major influence on the Philadelphia economy.

To summarize, Dr. Clemente neglects to account for the following factors in his analysis: inflation; non-employment variables; holding other variables constant to determine the effect of electric price; and the inclusion of Philadelphia specific variables.

Q. DR. CLEMENTE (P. 1 PECO STATEMENT NO. 36A) HAS STATED THAT YOUR ASSERTIONS LACK EMPIRICAL FOUNDATIONS. IS THIS THE CASE?

A. No. The empirical foundations of my testimony are based upon the work of Company witness Professor Anita Summers in the Limerick II case heard before this Commission last year (Docket No. I-840381) and the adaptation of Dr. Lewis Perl's testimony for the Company in the Lukens Steel case (Docket No. P-810310) in 1982. In addition, I have adopted the calculations of Dr. Arie P. Schinnar, the witness for the City of Philadelphia in this case (City Statement No. 1) as having the most sophisticated, methodologically valid, and accurate model using Philadelphia specific data. Furthermore, I have used data from an in-depth analysis of the Building Owners and Managers Association which reports on some sixty cost variables to reach my conclusions.

Q. YOU SAY THAT DR. SCHINNAR'S MODEL TAKES INTO ACCOUNT THE WIDE RANGE OF VARIABLES THAT ARE NECESSARY TO SHOW THE EFFECT OF COMMERCIAL RATE INCREASES UPON COMMERCIAL SECTOR JOBS. WHAT SPECIFIC VARIABLES DOES HE ACCOUNT FOR IN HIS ANALYSIS?

A. STARLOC, Dr. Schinnar's model, accounts for twenty-three

variables, government sector expenses, infation, socio-economic variables, taxes, investment, etc. both on a cross-sectional and time-series basis. One would need hundreds of pages to view Dr. Schinnar's data base.

On the other hand, all of Dr. Clemente's data can fit legibly on a piece of legal size note paper. In addition, Dr. Clemente does not perform one statistical test of his data base.

Q. IS DR. CLEMENTE'S ANALYSIS CONSISTENT WITH OTHER PECO WITNESSES?

A. No, it is not. Fortunately, I had the opportunity to represent the University of Pennsylvania and the Utility Users Committee in the recent Limerick II case. The Company proffered testimony by Dr. Schink that verified the sensitivity of local employment to changes in the local electricity price (PECO Statement No. 5A, Docket No. I-840381, p. 12).

If we used Dr. Schink's testimony in that case, coupled with Dr. Schinnar's empirical findings that the service sector is more electricity intensive than manufacturing, then the following results would occur: if local electricity prices were to rise by one percent, then local employment would decline by .0194 percent. Dr. Clemente's results are not in agreement with Dr. Schink, the Company's own witness.

Q. ARE DR. CLEMENTE'S RESULTS CONSISTENT WITH COMPANY WITNESS DR. LEWIS PERL'S RESULTS IN THE LUKENS STEEL CASE?

A. No, they are not. If I apply Dr. Perl's calculations (PECo Statement No. 6, Docket No. 810310, Petition of Lukens Steel Company) to sixty percent (i.e., the service related portion) of

employment elasticity of .625% for the non-manufacturing versus the manufacturing sector (an underestimate considering the figures in PECo Exhibit 25 which would increase the non-manufacturing employment elasticity), I obtain consistent results. The resultant job loss of nearly 14,000 is similar to Dr. Schinnar's job loss of 12,000 for the non-manufacturing sector. Exhibit SLF__8 shows the results of the analysis.

Q. ARE DR. CLEMENTE'S RESULTS CONSISTENT WITH DR. HOGAN'S ANALYSIS OF THE IMPACT OF THE PECO RATE INCREASE?

A. No. Once again Dr. Clemente contradicts another Company witness, Dr. Hogan, (PECO Statement 37, Docket No. I-840381, p. 18), who admits that a loss of job growth will result from an inflationary effect of the price increase.

In fact, given their prior testimony before this Commission, Drs. Perl, Schink, Hogan and Professor Summers all appear to disagree with Dr. Clemente.

Q. MR. SUNDERMEIR STATES THAT YOU FAIL TO POINT OUT RATE INCREASES FILED BY THE UTILITIES WHICH SERVE HARTFORD AND NEWARK. TAKING INTO ACCOUNT THE PROPOSED RATE INCREASES OF HARTFORD AND NEWARK, WHAT EFFECT DOES THIS HAVE ON PHILADELPHIA'S RANKING?

A. After taking into account the Company's proposed rate increase and the proposals of Hartford and Newark utilities, Philadelphia's ranking remains the same. Both Hartford and Newark have similar operating costs than Philadelphia, but the utility rate requests are significantly lower than the rates requested by PECo.

Q. MR. SUNDERMEIR CLAIMS THAT YOUR COMPARISONS OF REVENUE ON PECO'S RATE TO THE RATES OF OTHER UTILITIES ARE MADE USING THE PRESENT RATES OF OTHER UTILITIES AND THE RATE THAT PECO PROPOSED TO BE EFFECTIVE IN JUNE 1988. HE ALSO CLAIMS THAT THEY DO NOT INCLUDE THE PROPOSED RATE INCREASES OF AT LEAST FOUR OTHER

A. It is true. However, after taking into account the proposed rates of not only the four other utilities, but two additional utilities, and the total bill comparisons, PECo still emerges as having the highest commercial rates for the PJM (and Duquesne) utilities examined (Exhibit SLF__9). The percentages calculated in the exhibit were based on the total non-manufacturing bills from the UUC/UP sample analyzed. Therefcre, all of my statements regarding PECo's ranking remain valid. None of the proposed rate increases are close in magnitude to PECo's proposed rate increase.

Dr. Wirtshafter's surrebuttal testimony contains additional responses to Mr. Sundermeir's criticisms of our calculations of utility bills.

Q. DOES THIS CONCLUDE YOUR SURREBUTAL TESTIMONY?

A. Yes it does.

EXHIBIT SLF 8

EFFECT OF PECO RATE HIKE ON PHILADELPHIA EMPLOYMENT

Industrial Elasticity	-0.14 (1)
Non-manufacturing elasticity is of manufacturing elasticity	62.50% (2) (3)
Non-manufacturing elasticity	-0.09
Percent Philadelphia labor force in non-manufacturing	80.00%
Percent Philadelphia labor force in manufacturing	20.00%
Total weighted average Philadelphia SMSA employment elasticity (-.14 x .2) + (-.09 x .8) =	-0.10
Estimate of total Philadelphia SMSA labor force	2000000
Estimated inflation (by PECo)	6.50%
Inflation over 3 year period	20.79%
Requested electric rate increase	29.60%
Real requested electric rate increase	8.81%
Percent production loss	-0.86%
Total Philadelphia job loss	17258
Non-manufacturing job loss	13806

(1) DR-NCW6-UUC/UP (12/13/85), PECo statement no. 6 Commonwealth of Pennsylvania, Pennsylvania Public Utility Commission, Docket No. P-810310, Petition of Lukens Steel Company, A Division of Lukens, Inc., for an Order Declaring the Acquisition of Certain Property of Pennsylvania Power & Light Company for the Purpose of Taking Delivery of Pennsylvania Power & Light Service to be in the Public Interest. Direct Testimony of Lewis J. Perl on Behalf of Philadelphia Electric Company, December 22, 1982.

(2) Uri, 1982, "The Demand for Energy and Conservation in the United States", Connecticut, JAI Press.

(3) Asher and Habermann, 1978, "Analysis of Recent Fluctuations in Electricity Consumption", Report CFESR-77-3, Washington D.C.: General Electric Co., Center for Energy Studies.

EXHIBIT SLF 9

PERCENTAGE BY WHICH PECO'S RATES EXCEED THOSE OF OTHER UTILITIES AFTER THEIR RATE INCREASES ARE APPLIED

	% INCREASE	% DIFFERENCE BELOW PECO
Jersey Central Power & Light	4.60%	8.62%
Public Service Electric & Gas	18.76%	9.81%
Atlantic Electric	16.10%	14.04%
Metropolitan Edison	7.60%	37.52%
Pennsylvania Electric	8.30%	37.88%
Duquesne Light	6.40%	39.22%

ERRATA PAGE

City Statement No. 1 (Schinnar)
PUC v. PECO, Docket No. R-850152

page 14: Table 4, change the number "28.2" to "28.6" and the number "31.8" to "31.6"

page 16: fifth line up from the bottom of the page, change the number "6.5%" to "6.55%"

page 24: lines 6, 10, and 12, change "educational" to "education"

page 27: line 10, change "increase in demand" to "increase in price"

page 30: eighth line up from the bottom of the page, change "residential rates" to "residential ratepayers"

page 34: fifth line up from the bottom of the page, change "usually observed long-run elasticities to be" to "observed long-run elasticities usually to be"

ERRATA PAGE
City Statement No. 1A (Schinnar)
PUC v. PECO, Docket No. R-850152

page 3: third line up from bottom of page, change "Clement" to "Clemente"

page 4: second line up from bottom of page, change "but which are not" to "but most of which are not"

page 5: Table 1, fourth column, row no. 3 and last row, change "5,888" to "3,954"

fourth line up from bottom of page, change "submodel of STARLOC." to "submodel of STARLOC, and account for 3,142 of the loss in potential job growth."

page 6: fourth line up from the bottom of the page, change "the labor intensity" to "the employment of labor"

page 7: line 4, change "an amount" to "a proportion"

last line, change the number "0.284%" to "0.190%"

Comment: The above change is the result of miscopying a number from the computer printout. Since this number is used in several calculations on pages 8, 9 and 10, the results of these calculations are altered. These changes do not alter the testimony or its conclusions.

page 8: line 3, change "between 0.214% and 0.284%" to "between 0.190% and 0.214%"

line 10, change the number "0.284%" to "0.190%" and the number "5,888" to "3,954"

line 11, change the phrase "somewhere between 4,442 and 5,888" to "somewhat higher than 4,442"

page 9: line 11, change the phrase "at the low end, or 3,555 plus 5,888 equals 9,438 at the upper end." to "at the upper end, or 3,555 plus 3,954 equals 7,509 at the low end."

page 10: line 16, change "from 7,997 to 9,438" to "from 7,509 to 7,997"

line 18, change "from 11,137 to 12,583" to "from 10,651 to 11,137"

line 21, change "from 18,376 to 20,762" to "from 17,574 to 18,376"

line 22, change "well within" to "820 above"

page 11: line 16, change "disposible" to disposable"

last line, change "electric" to "electricity"

page 21: lines 6 and 12, change "2A" to "3A"

City Statement No. 1A

5000
5-12-86
H89
R-850152

PENNSYLVANIA PUBLIC UTILITY COMMISSION
v.
PHILADELPHIA ELECTRIC COMPANY

Docket No. R-850152

SURREBUTTAL TESTIMONY
OF
ARIE P. SCHINNAR

COMMENTS ON THE REBUTTAL TESTIMONIES OF

DR. FRANK CLEMENTE	PECO STATEMENT NO. 36
DR. WILLIAM W. HOGAN	PECO STATEMENT NO. 37
DR. GEORGE R. SCHINK	PECO STATEMENT NO. 38
DR. LEWIS J. PERL	PECO STATEMENT NO. 11A
DR. WILLIAM H. HIERONYMUS	PECO STATEMENT NO. 15A

REGARDING ECONOMIC IMPACT OF THE PROPOSED RATE INCREASE

February 1986

Surrebuttal Testimony of Arie P. Schinnar

Q. Please state your name and business address for the record.

A. My name is Arie P. Schinnar. I am Associate Professor of Public Policy and Management and Director of the Policy Modeling Workshop of the Wharton School, University of Pennsylvania.

Q. Have you previously filed direct testimony in this proceeding?

A. Yes. I have previously submitted direct testimony identified as City Statement No. 1.

Q. What is the purpose of this additional testimony?

A. The purpose of my surrebuttal testimony is to comment on the rebuttal testimonies of PECO witnesses Drs. Frank Clemente, William W. Hogan, George R. Schink, Lewis J. Perl, and William H. Hieronymus.

Q. Would you please summarize your main points?

A. Yes. In this surrebuttal testimony I will:

1. dispel the misperceptions of some PE experts about the purpose of my direct testimony,
2. show that the PE experts' calculations of economic impact are incomplete, excluding important and well-known steps, and that the STARLOC forecasts are both consistent with and corraborated by PE experts' calculations,
3. explain why I believe the PE experts were provided with sufficient access to the model and its databases to be able to adequately test its performance,
4. dismiss Dr. Clemente's study because it does not meet the most elementary standards of data analysis, and
5. provide an appendix dispelling other concerns raised by PE experts in their rebuttal testimonies.

Rate Policy Design and Economic Impact

Q. Was the primary purpose of your testimony to show that electric rate increases adversely affect economic growth, as suggested by PECO witnesses in their rebuttal testimonies?

A. No. The primary object of my testimony has been to show that as long as electric rate increases track the inflation rate of the Philadelphia economy, the possible adverse effects of rate increases on the growth of jobs can be averted.

Through simulations using a model of the Philadelphia economy (the STARLOC Model), I explained in my testimony that PECO's Rate Proposal (the "Rate Proposal") would result in a loss of area job growth of about 19,000 jobs. In order to ameliorate the adverse economic effect of the rate increase, I proposed that the PECO increase be phased-in over a six-year period, with the increase tracking inflation.

Q. Why is tracking inflation so critical?

A. Because as long as rate increases are commensurate with inflation, neither the economy nor the Company should be adversely affected by the increase.

Q. Can you give an example?

A. As I explained during my cross-examination, with annual rates of 4% inflation and 3% U.S. job growth, a 16% electric rate increase over three years (5.1% annual increase) would result in a 25% revenue gain for PECO, with no adverse impact on job growth in the Philadelphia region. Or assuming 5% inflation, with the increase limited to 18% (5.7% annually) PECO would realize a 29% revenue increase in the third year, still with no ill effects on the economy.

Q. How is this possible?

A. When the electric rate increase is commensurate with inflation, the regional economy is able to sustain sufficiently high growth to benefit PECO's revenue level. Furthermore, past trends indicate that as long as the price rise of electricity is commensurate with inflation, electricity's share of total energy demand may grow, further increasing PECO's revenues. As Dr. William W. Hogan explained in his March 18, 1985, Limerick II testimony before the Pennsylvania PUC (PECO Statement No. 4A, Docket No. I-840381, pp. 3-4): "Although the growth in demand for all energy products fell after 1970, the electricity share of total [energy] demand continued to grow, increasing to 12.7% by 1982. As relative prices changed, consumers substituted electricity for other fuels. If the price of electricity rises more rapidly than the price of other fuels in the future, we would expect the reverse substitution to occur. Conversely, if electricity prices fall relative to other energy products, then the trend towards greater electricity use should continue."

Q. The PE experts challenge your analysis regarding the economic impact of the Rate Proposal. Does PE dispute that the Rate Proposal will have an adverse economic impact on job growth?

A. No. PE experts, except for Dr. Clemente, and I agree that the Rate Proposal would have an adverse economic impact on the Philadelphia area, but we differ on the magnitude and nature of the impact. Dr. Schink estimates that loss in job growth in the PECO service area would be 3,555 jobs and Dr. Hogan offers a figure of up to 3,000. Even Dr. Clement concedes that "certain [electric rate] increases may have inhibited economic growth and even led to some loss in potential new job growth." (PECO Statement No. 36, p. 10).

And while I portray the adverse economic impact of the Rate Proposal in terms of a 19,000 loss in job growth, Dr. Hogan describes the effect of the proposed rate increase as a combination of higher production costs, reduced wages, loss of output, loss of job growth, and the "blow of unemployment." (William W. Hogan Rebuttal Testimony, PECO Statement No. 37, p. 18).

Incomplete Calculations of Economic Impact by Hogan and Schink

Q. Will you explain this difference in numbers?

A. First, Drs. Schink and Hogan provide only partial calculations of economic impact. Their omission of key steps in calculating economic impact is inexplicable. When the limited calculations they performed are compared with the corresponding calculations of STARLOC, the results are similar. The table below sets forth four factors contributing to job growth loss, all of which are included in STARLOC, but which are not included in the calculations by Hogan and Schink.

TABLE 1: LOSS OF JOB GROWTH BY CAUSE (28.2% rate increase, 5% inflation)

CAUSE	STARLOC	SCHINK	HOGAN
1. Energy Conservation & Interfuel Substitution (16.3%)	3,142	Not Included	Not Included
2. PECO's Direct Impact on Cost-of-Doing-Business (16.0%)	3,066	3,555	Not Included
3. Secondary Inflation Economy-wide (PECO excluded) (28.3%)	5,426	Not Included	4,442 or[1] 5,888
4. Employment Multiplier (Income-Induced & Interindustry) (39.4%)	7,562	Not Included	Not Included
TOTAL (100%)	19,196	3,550	4,442 or 5,888

Q. Has either Dr. Schink or Dr. Hogan considered the effect of PECO's rate increase on electricity demand, that is, energy conservation and interfuel substitution, in their calculations of economic impact as described in their rebuttal testimonies?

A. No, they have not.

Q. Are the effects of a rate increase on residential, commercial and industrial electricity demand, energy conservation, and interfuel substitution important to regional economic forecasting?

A. Yes, most definitely. These factors are considered in the demand submodel of STARLOC. The professional literature on this is large, with a number of references cited in City Statement No. 1 and PECO Exhibit No. 22 (Wharton PMW Report No. 8618). Dr. Schink, in PECO Statement Nos. 5 and 5A presented during the Limerick II hearings (Docket No. I-840381, March 18,

1985), uses similar procedures, which are also described in the WEFA/PECO Energy Model (See Philadelphia Electric Company Service Area Energy Forecasts: 1981-1991, Vol. II: Forecast and Methodology, Wharton Econometric Forecasting Associates, Inc., April 1981). Many of the parameters used in the Demand Submodel of STARLOC are similar in magnitude to those in the WEFA/PECO Energy Model.

In addition to Dr. Schink's use of similar procedures, Dr. Hogan, in PECO Statement No. 4A submitted in the Limerick II hearing (Docket No. I-840381, March 18, 1985), describes his approach to modeling and forecasting electricity demand using an energy model which he has used in these hearings: "My approach is based on an analysis of the historical data. A review of the data reveals that the patterns of energy use have been dominated by three principal factors: (1) inter-fuel substitution, (2) energy conservation, and (3) economic growth. Historically, these three factors have had important but distinct effects on the growth in electricity demand" (p. 3). He later explains his electricity demand projections: "Faced with projected increases in electricity prices for the next several years, the effects of energy conservation and interfuel substitution greatly moderate the growth in electricity demand." (p. 11).

Q. How does Dr. Schink arrive at his calculation of a 3,555 loss in job growth?

A. Dr. Schink assumes that the burden of the entire increase in the cost-of-doing-business is being borne by labor, and therefore industry will reduce the labor intensity proportionately. He explains that the basis for his calculation is the share of electricity in total cost of production across all 23 sectors of the Philadelphia economy. (PECO Statement No. 38, pp. 8-9). He then multiplies this by the real price increase to obtain the

percentage loss in job growth, which he then multiplies by 1981 employment to obtain 3,555 jobs lost.

The logic that drives this calculation is simple: Industry will cut the level of employment by an amount comparable to the increased cost-of-doing-business in Philadelphia.

Q. What are the comparable calculations done by the STARLOC model?

A. Similar calculations computed by the STARLOC model to trace the inflationary impact of the increase of the cost-of-doing-business on the Philadelphia economy show 3,066 loss in job growth. Thus Dr. Schink actually overestimates the direct loss of job growth by 484 jobs, or 15.8%. This is due partly to the fact that the entire inflationary effect will not be borne by the labor component of the primary input. At any rate, the STARLOC model does reflect the procedure alluded to by Dr. Schink, but this is only one aspect of the economic impact. Unfortunately, Dr. Schink stops at this point and does not consider other factors.

Q. How does Dr. Hogan arrive at his estimate of potential loss of job growth?

A. Dr. Hogan's approach to computing economic impacts is completely different; it is based entirely on the secondary inflationary effect of PECO's rate increase. His calculations show the secondary inflationary effect to produce a 0.214% real inflation rate induced by the 12.44% real electric rate increase. (PECO Statement No. 37, pp. 7-11).

Q. Is there an alternative way to compute the aggregate indirect real price increase?

A. Yes, by using the sector output levels rather than employment levels as weights. This gives an indirect price increase or secondary inflation, of 0.284% for a 12.44% real electric price increase. Since it is

not readily apparent which is the correct procedure, although I prefer the latter, I take the secondary inflation to be somewhere between 0.214% and 0.284%.

Q. How is the real secondary inflation rate used to compute the loss of job growth?

A. Dr. Hogan suggests that it "might be a percentage reduction in jobs of the same magnitude as the price increase" (p. 18). This then implies that the loss of job growth is obtained by multiplying 0.214 by 2,076,087 (1981 employment), or 4,442 loss of job growth. Using the secondary inflation rate of 0.284%, however, we obtain a 5,888 loss of job growth. The correct number is somewhere between 4,442 and 5,888.

Q. Are these the exact figures of Dr. Hogan?

A. No. Dr. Hogan adds a number of unsupported assumptions to his calculations to reduce the secondary real price increase to 0.11%, resulting in a reduced, 2,284 loss in job growth. He suggests that as a result of "a slight reduction in wages" induced by PECO's rate increase, "the slightly lower prices of labor would protect all the jobs, although incomes would fall somewhat." (PECO Statement No. 37, p. 18). I know of no support for his assertion that a workable response to the Rate Proposal would be reduced wages.

Q. Are Dr. Schink's method and calculations the same as Dr. Hogan's?

A. No, they are completely different. Dr. Schink's method deals with the direct effect of PECO's rate increase on the cost-of-doing-business, while Dr. Hogan's deals with the indirect inflationary effect of PECO's rate increase on the price of commodities in other sectors of the economy. The two procedures thus capture different aspects of the impact of PECO's rate increase on the economy.

Q. Does Dr. Schink give any consideration to the secondary inflation effects of PECO's rate increase on employment growth?

A. No, he does not.

Q. Does Dr. Hogan include in his calculations the direct effect of PECO's rate increase on the cost-of-doing-business?

A. No, he does not.

Q. What do you conclude from these observations?

A. That the two forecasts of loss of job growth by Drs. Schink and Hogan are to be added together to get a truer picture. That is, the combined direct and indirect price effect of PECO's rate increase is 3,555 plus 4,442, or 7,997 potential jobs lost at the low end, or 3,555 plus 5,888 equals 9,438 at the upper end. The comparable number obtained using STARLOC is 3,066 plus 5,426, or 8,492. Thus the difference between my estimate of loss of job growth for these two categories and the comparable calculation methods of the PE experts is ±500 jobs. While I am quite confident that my estimate is more accurate, I will not quibble over the difference.

Q. What else have Dr. Hogan and Dr. Schink failed to consider in their calculations of economic impact?

A. The "employment multipliers" of the Philadelphia economy.

Q. Are these important steps in computing job gain or loss?

A. Yes, it is a well known fundamental concept in labor economics. The Company has explained that: "For every manufacturing job created in the [Philadelphia] regional economy, three other jobs are created to serve the needs of the employee and the employee's family." (Docket No. R-832357, April 1983, p. 9). This snowball effect is what we mean by "economic" or "employment multipliers." Neither Dr. Schink nor Dr. Hogan makes use of job multipliers in his calculations.

Q. How is the employment multiplier used in STARLOC's calculation of job loss?

A. As shown so far, the cumulative direct loss of job growth is 3,142 due to energy conservation and interfuel substitution, 3,066 due to the impact of PECO's real price increase on the cost-of-doing-business, and 5,426 due to the impact of secondary inflation on the economy, for a total of 11,634 jobs, or 60.6% of the job loss. Computing from PECO Exhibit No. 22, the average employment multiplier for the Philadelphia economy is about 1.65. That is, 1.65 jobs are gained or lost in the economy with the gain or loss of a single job. So when we multiply 11,634 (the sum of the first three factors) by 1.65, we have the total number of jobs lost: 19,196. The number lost due to the multiplier effect is therefore 7,562.

Q. What are the implications of adding the employment multiplier to the computations of Dr. Hogan and Dr. Schink?

A. When the computations done earlier on Dr. Schink's and Dr. Hogan's two different impacts are combined, we have an estimate ranging from 7,997 to 9,438 potential jobs lost. Add the effect of energy conservation and interfuel substitution (3,145), and the number rises to from 11,137 to 12,583. Finally, apply a multiplier of 1.65, and a forecast based on the approaches of the two PE experts corrected for omitted calculations yields from 18,376 to 20,762 job-growth loss. The 19,196 forecast of STARLOC is well within this range.

Dr. Perl's Calculations Corraborate Economic Impact Estimates

Q. Dr. Perl contends in his rebuttal testimony that his calculations of the employment effect of rate increases in the Lukens Steel case, 58 Pa. PUC 256(1984), are not applicable to the current proceedings. (PECO

Statement No. 11A, pp. 20-21). Please comment on his reasons for excluding his analysis from this case.

A. I agree with Dr. Perl that his Lukens figures cannot be simply extrapolated to this case. But rather than completely dismiss Dr. Perl's procedure, I propose that we follow his own advice and adjust his calculations, as he says we must, in a most conservative fashion in order to obtain some estimates for the Philadelphia area.

Q. What adjustments does Dr. Perl say his Lukens analysis requires?

A. He calls for three adjustments: 1) that only 36% of Pennsylvania manufacturing jobs be considered because the base of economic activities is much smaller in the PECO service territory; 2) that the employment elasticity be lower for the Philadelphia SMSA since the percentage of employment in electric intensive industries is smaller in Philadelphia; and 3) that the economic multiplier effects in the Philadelphia SMSA be smaller than 1.5 because Philadelphia SMSA residents spend a much smaller percentage of disposible income on goods and services in the Philadelphia SMSA than do residents in the Commonwealth as a whole.

Q. Have you performed these adjustments?

A. Yes. First I applied Dr. Perl's calculations to only 20% of the 1981 employment level in the Philadelphia SMSA, or 415,200 manufacturing jobs. Second, I reduced the employment elasticities of manufacturing industries in Philadelphia from -0.14 to -0.134 to adjust for the fact that the average share of expenditures on electricity in Philadelphia is 1.15%, compared to a national average of 1.2% (see Rebuttal Testimony of Dr. Schink, PECO Statement No. 5A, Docket No. I-840381, p. 5A-12).

Furthermore, although non-manufacturing sectors in Philadelphia are more electric intensive than manufacturing, to satisfy the concern of Dr.

Perl regarding the plausibility of high employment elasticities in the service sector, I used (for the purpose of these calculations only) an employment elasticity of -0.067 for the service sector -- half the size of the elasticity proposed by Dr. Perl for the manufacturing sector.

Third, to satisfy Dr. Perl's concern about reducing the employment multiplier for the Philadelphia area, I use the lowest possible multiplier: 1.0. Fourth, unlike Dr. Perl, who used a rate increase not adjusted for inflation, I apply the real electric price increase of 12.44%.

Finally, in order to facilitate comparisons with the static analysis in City Statement No. 1, I use the 1981 employment figures for the Philadelphia SMSA.

Table 2 shows the calculations following Dr. Perl's method. Despite my extremely conservative adjustments, the calculations following Dr. Perl's method still estimate a job loss of 20,764 for the Philadelphia SMSA: 1,568 more jobs lost than STARLOC's estimate of 19,196. The results of Dr. Perl's procedure provide strong corraboration to STARLOC's independent forecasts.

TABLE 2: JOB LOSS CALCULATIONS FOR THE PHILADELPHIA REGION USING DR. PERL'S METHOD, WITH ADJUSTMENTS FOR AN SMSA-LEVEL ECONOMY

	Phila SMSA Manufacturing	Phila SMSA Non-Manufacturing
1. Percent Real Rate Increase	12.44%	12.44%
2. Employment Elasticity	-0.134	-0.067
3. Percent Production Lost	-1.667	-0.833
4. 1981 Employment	415,200 jobs	1,660,800 jobs
5. Estimated Job Loss	6,921 jobs	13,843 jobs
6. TOTAL EMPLOYMENT JOB LOSS		20,764 jobs

Model Evaluation and Testing by PE Experts

Q. Would you comment on Dr. Schink's and Dr. Hogan's assertions that they have not had adequate access to the STARLOC model?

A. Dr. Schink and Dr. Hogan and their colleagues have had the benefit of my responses to five sets of interrogatories and two-and-a-half days of on-site access to:

- complete and final mathematical specifications of the model structure (PECO Exhibit No. 22),
- printouts of complete model data and parameter estimates,
- a complete listing of the computer code,
- complete access to the model in order to run sensitivity analyses with a broad range of input parameters, that is, to test the sensitivity of the model to different scenarios.

The following five PE experts spent an entire day examining, discussing, and questioning me on the model's formulation:

Howard W. Pifer III	Putnam, Hayes & Bartlett
William W. Hogan	Putnam, Hayes & Bartlett
Kirby C. Owen	Putnam, Hayes & Bartlett
George Schink	Wharton Econometric Forecasting Associates
John A. Del Roccili	Wharton Econometric Forecasting Associates

On the second day Dr. Schink and Mr. Owen conducted sensitivity analysis runs with the model, reviewed working papers referenced in the model's technical report, and inspected computer printouts containing the entire model computer code and all parameters and databases of the model. On the third day Mr. Owen completed the sensitivity analysis runs with the model. In addition to the 75 sensitivity analysis runs made under the supervision

of Mr. Owen, I provided him with copies of 370 test runs of the model conducted by me and my staff.

Q. In your estimation did the Company take full advantage of this access to you and the model?

A. No. In my opinion the PE experts made only limited use of the University and model availability. For example, of the two-and-a-half days access to me and my lab, Dr. Hogan visited for only one afternoon; Dr. Schink, having asked to inspect the model parameters and code, devoted only two hours to the task; and Mr. Owen, who conducted the sensitivity analysis tests with the model, limited the initial runs to a one- to two-hour session.

Q. Have the Company experts requested all intermediate computer calculations from you?

A. Yes, and I have informed them as well as the City of Philadelphia that this would impose an undue burden. These intermediate computer calculations were verified by me and my staff over many months and were completely internalized in the computer memory as the model was assembled. As I explained during my cross-examination, this is a necessary step when large models are built using the interactive APL computer language. To fully respond to the Company's request would require modification of the computer code and re-testing of the model, incurring expenses in the range of $20,000.

Q. In your opinion, has PECO had sufficient information to complete its review of the model's performance?

A. Yes.

Rebuttal of Clemente's Study

Q. Have you reviewed Dr. Clemente's study and rebuttal testimony (PECO Statement No. 36)?

A. Yes. I have read it carefully several times, and I am still perplexed that he can arrive at such definite conclusions from such a poorly designed and executed empirical study.

Q. What methodological issues perplex you most?

A. First, his omission of major social and economic control variables, which are necessary in any attempt to explain relationships between patterns of regional growth and local prices, such as electric rates, wages, etc; second, the total absence of data on the Philadelphia region; third, his attempt at generalization from data plagued by small-sample-size problems and without any statistical testing of his hypotheses; and fourth, the inconsistencies of his conclusions with the evidence and studies offered by other PE experts.

Q. Would you elaborate on your first concern?

A. Dr. Clemente introduces four measures of the socioeconomic well-being of a metropolitan area: manufacturing job growth, unemployment, retail sales ranking, and the Rand-McNally rating on "economic promise." These are all dependent variables whose variance across SMSAs is considerable, yet he offers only <u>one</u> explanatory (independent) variable to explain this variance, the electricity rate increase, which accounts for only 1% to 3% of consumer and industry expenditures. I find it difficult to believe that such obvious variables as wage rates, inflation rates, interest rates and population growth rates, for example, which are both elementary and widely available to any such interregional analysis, are not included.

Major variables must be controlled for, before secondary variables can be shown to play a role in an empirical analysis.

Let me illustrate the importance of controlling for major variables by reference to Dr. Clemente's testimony, where he explains that

> "Table 2, for example, presents data on how SMSAs with varying absolute increases in industrial rates have been changing in terms of manufacturing as a percentage of employment. Table 2 demonstrates several important points: (1) manufacturing as a percentage of employment is declining in most SMSAs but actually is doing so at a slower rate in areas that have experienced the greatest rate increases. (2) of the 7 SMSAs with an increase in manufacturing as a percentage of employment, 6 were served by the utilities with the greatest absolute rate increases over 1972-83." (PECO Statement No. 36, p. 7).

It is quite possible that the differences in growth rates observed by Dr. Clemente are due entirely to regional differences in wage rates: regions with lower wage rates have higher growth rates than regions with high wage rates. In Dr. Hogan's approach to estimating the magnitude of economic impact of the proposed electric rate increase, higher electricity rate increases in a region would precipitate lower wages and a fall in income in that region. (PECO Statement No. 37, p. 18). Wages constitute about 20% of the cost-of-doing-business (CDB) in manufacturing and more than 30% of the CDB in services, so low wages would attract new businesses and stimulate employment. This could explain, for example, why Dr. Clemente obtains higher growth rates in regions with higher electricity rates. However, without observing wage rates and incomes, for example, his analysis masks the potential hardship that high rate increases may impose on the local

economy. The final resolution of this issue I leave to Dr. Clemente and Dr. Hogan.

Q. Do you consider PECO Statement No. 36 to contain "a wide range of socioeconomic variables," as Dr. Clemente claims on page 3?

A. No. It is evident from Tables 1 through 16 in Exhibit FC-1 that if Dr. Clemente were to add the Philadelphia SMSA data to his analysis, it would include only:

- Manufacturing and Total Employment for 1972 and 1984,
- Unemployment for 1976 and 1984,
- The Rank of Retail Sales for 1983,
- The Rand-McNally ranking of the area on "Personal Economic Outlook" for 1985, and
- PECO's Industrial and Commercial rates for 1972 and 1983.

A total of 12 data points on 7 economic variables hardly reflects "the complexity of the Philadelphia SMSA." (PECO Statement No. 36, p. 5). As an economic database on Philadelphia, it is remarkably limited: The business section of the "Philadelphia Inquirer" on any Monday contains more economic data on PECO's service area than Dr. Clemente would have included in his study. But what perplexes me most is the "socio" prefix that Dr. Clemente attaches to his database, which contains nothing more sociological than aggregate figures on employment and unemployment.

In contrast, consider the database of the STARLOC model on the Philadelphia region. Its "sociological" variables include many characteristics of households such as income, consumption patterns on 17 products, public assistance benefits, age, race, and gender of head of household, number of children and level of education, and participation rate in the economy. The characteristics of the laborforce include type of

skill, sector of employment, wage rates. The economic data includes employment levels by 23 manufacturing and non-manufacturing sectors of the Philadelphia economy, growth rates of the local and national economy, output (sales) of each sector, their trade within the region and level of exports and imports, government expenditures, investment, taxes, and price inflation by sector. Other variables include climatic conditions, characteristics of the residential housing stock and many details on the appliance stock or end-use variables of energy. These energy variables include information on industrial, commercial and residential consumption of electricity, and gas and fuel oil with their respective prices. To obtain estimates of the sensitivity of demand for electricity and other energy fuels to changes in relative prices, both time series and cross-sectional data from many regions of the country were considered (see, for example, figure 12 of City Statement No. 1). These data are used to obtain estimates of over a thousand social and economic parameters specific to the Philadelphia economy, which are then entered into the STARLOC model equations. There is simply no comparison between the STARLOC database and Clemente's data.

Q. What else do you find limiting in Dr. Clemente's testimony?

A. A third concern deals with the lack of statistical analysis in his handling of the variance in the data. In an undated paper by Dr. Clemente (prepared prior to his rebuttal testimony of February 19, 1986) entitled "Electric Rate Increases and the Socioeconomic Health of the Local Economy: Destroying Some Myths," the author claims that his "analysis tests the rate shock hypothesis that major increases in rates lead to economic stagnation, social problems and depressed socioeconomic well-being of a service area" (p. 3), yet not a single statistical test of the hypothesis is presented. PECO Statement No. 36, also authored by Dr. Clemente, contains similar

claims without applying even the most rudimentary statistical tests. It is apparent that Dr. Clemente's rigorous data analysis technique is limited to "eyeballing" the data in the 16 tables presented.

For example, in Table 2 of Dr. Clemente's rebuttal testimony, he displays 6 SMSAs served by a subset of the 13 utilities with least actual increase in industrial electric rates between 1972 and 1983. These six SMSAs are then distributed over four categories of percent change in manufacturing as percentages of total employment, 1972-1984. So few observations make any conclusions drawn extremely unreliable. It is not clear why Dr. Clemente chose, from the 112 utilities in the 1985 NARUC study, only 13 to represent the least actual increase in industrial rates. Why not the bottom 24 or 37? Why does he use only 39 of the 112 utilities, and why only 43 of the hundreds of SMSAs?

As an example of the problems a small sample size can create, I reproduce Table 2 (my Table 3) of Dr. Clemente's rebuttal testimony and below it an exact copy, except for one slight change in the breakdown of the categories of growth: "0.01 or more" is changed to "0 or more."

TABLE 3: (Clemente's Table 2, PECO Statement No. 36, Exhibit FC-1, p. 3)

% Change in Manufacturing as Percentage of Total Employment October, 1972-October, 1984	Metro areas served by the 13 utilities with the least actual increase in industrial rates, 1972-1983		Metro areas served by the 13 utilities with the greatest actual increase in industrial rates, 1972-1983	
	N	%	N	%
0.01 or more	1	16.7	6	25.0
0.0 to -5.0	2	33.3	11	45.8
-5.1 to -10.0	3	50.0	6	25.0
-10.1 or more	0	0.0	1	4.2
TOTAL	6	100.0	24	100.0

TABLE 3A: (Table 2 with a slight change in category of growth*)

% Change in Manufacturing as Percentage of Total Employment October, 1972-October, 1984	Metro areas served by the 13 utilities with the least actual increase in industrial rates, 1972-1983		Metro areas served by the 13 utilities with the greatest actual increase in industrial rates, 1972-1983	
	N	%	N	%
0.0 or more	2	**33.3**	6	25.0
-0.01 to -5.0	1	**16.7**	11	45.8
-5.1 to -10.0	3	50.0	6	25.0
-10.0 or more	0	0.0	1	4.2
TOTAL	6	100.0	24	100.0

* differences between the two tables are in bold face

Now let us review the two conclusions Dr. Clemente draws from Table 3 in light of the same data in Table 3A.

(1) Dr. Clemente concludes that "manufacturing as a percentage of employment is declining in most SMSAs but actually is doing so at a slower rate in areas that have experienced the greatest rate increase." This no longer appears conclusive from Table 2A, where a smaller proportion of the SMSAs in areas served by utilities with least actual rate increases are declining.

(2) Dr. Clemente also concludes from the table that "of the 7 SMSAs with an increase in manufacturing as a percentage of employment, 6 were served by the utilities with the greatest absolute rate increases over 1972-1983." But Table 2A now shows that of the 8 SMSAs showing no decline in manufacturing jobs, 2 are in areas served by utilities with least actual rate increase, and 6 are served by utilities with greatest actual rate increase. That is, 33.3% of the SMSAs in areas served by utilities with least actual rate increase show no decline in manufacturing jobs whereas only 25% of the SMSAs served by utilities with the greatest actual rate increase show no decline.

Similar minor changes in the categorization of employment growth will result in significant redistribution of SMSAs in Table 2 of Dr. Clemente's rebuttal testimony. For example, changing the second category from "-0.01 to -5.0" to "-0.01 to -4.0" would leave the percentage of SMSAs in areas served by utilities with least actual rate increase unchanged, but would reduce the percentage of SMSAs with greatest actual rate increase from 45.8% to 33.3%. This serves to illustrate that the small sample size makes just such arbitrary decisions far too significant. Moreover, it seems

likely that this problem plagues the remaining 15 tables in Exhibit FC-1 as well.

These and other similar problems in Dr. Clemente's manipulation of data and selection of variables in his study involve elementary principles of statistical and economic analysis, principles that Dr. Clemente must either be unaware of or which he chose to ignore.

Q. And what about Dr. Clemente's finding that his study "reveals no empirical support for the conclusion that electric rate increases, lead to economic stagnation, trigger economic decline or have similar severe economic consequences." (PECO Statement 36, p. 3)?

A. Dr. Clemente may wish to consult DR-RCW6-UUC/UP (12/13/85) where Dr. Lewis Perl explains that "considerable evidence exists that the locational patterns for industrial customers are significantly affected by electric prices. A study done by NERA suggests that for the manufacturing sector, each 10 percent increase in electric price is associated with a 1.4 percent decline in manufacturing output." (Docket No. P-810310, PECO Statement No. 6, December 22, 1982, p. 19).

Dr. Clemente may also find of interest Dr. Schink's rebuttal testimony before the PUC in the Limerick II hearings, where he offers an explanation of the sensitivity of local employment to changes in the local electricity price:

> "Q. How sensitive is local employment to changes in the local electricity price?
>
> A. Electricity costs are only one component of the relative cost-of-doing business in the PECO service a[rea] relative to other areas. If the cost-of-doing-business (CDB) in the PECO service area were to rise by one percent relative to

the CDB in a competing region, then it would be reasonable to expect that PECO service area employment would decline by as much as one percent in the long-run. These jobs would move to the competing regions.

As shown in Exhibit GRS-4, electricity costs constitute only 1.2 percent of total CDB for manufacturing. Therefore, if local electricity prices rise by one percent, the local CDB would increase by 0.012 percent. If electricity prices in the competing regions were unchanged, then the local CDB would rise relative to competing region CDB's by 0.012 percent. Finally, if a one percent rise in the relative CDB would cause a one percent decline in local employment, then a one percent increase in local electricity prices relative to electricity prices in competing areas would cause a 0.012 percent decline in local employment" (PECO Statement No. 5A, Docket No. I-840381, March 18, 1985, p. 12).

Although Dr. Schink contends that this is a small effect, it is nevertheless a systematic relationship that requires a very refined empirical design. I doubt that Dr. Clemente's research design and execution would have identified Dr. Schink's interregional competition factor. In fact, Dr. Clemente does not see any such factor, as he readily concludes.

Q. What do you conclude from these few observations about Dr. Clemente's study?

A. Dr. Clemente delivers his message with great enthusiasm but with little support or substantiation. On technical grounds alone I feel compelled to dismiss his study as described in PECO Statement No. 36. Dr.

Clemente's results appear to be largely rhetoric and, as I have shown above, are as reliable as the outcome of a flip of a coin.

Q. Does this conclude your surrebuttal testimony?

A. Yes, with the exception of certain matters discussed in the Appendix.

Endnote

[1] Dr. Hogan modifies certain price parameters to produce a range from 0 to 2,000 or 3,000. These numbers were obtained by using his exact method, applied in a manner consistent with Dr. Schink's and STARLOC's calculations.

Schink's Remarks on Counterintuition and Contradiction

Q. Dr. Schink charges that "both the level and pattern of loss in job growth are counterintuitive." He continues, "the manufacturing sector is generally most sensitive to changes in local costs because manufacturing firms compete with firms outside of the region. Therefore, an economist would expect logically that the real increase in local electric rates would have the biggest percentage impact on manufacturing sector job growth." (PECO Statement No. 38, p. 7). Does your analysis run contrary to reasonable expectations?

A. No. An increase in Philadelphia's real electric rates would in fact have a larger impact on job growth in the service sector than in the manufacturing sector. This is not counterintuitive in light of several important factors:

(1) Though manufacturing is more energy-intensive than the service sector, the service sector is more electricity-intensive than manufacturing. In the Philadelphia area the cost-shares of electricity are 1.15% for manufacturing and 1.94% for the service sector.

(2) The service sector also shows less propensity for energy (electricity) conservation than the manufacturing sector (see City Statement No. 1, figure 11, and the WEFA/PECO Energy Model), so the increase in the share of electricity in cost of production due to a rate hike will be higher in the service sector, on average, than in manufacturing.

(3) Though the manufacturing sector does export a greater share of its output than the service sector, in the Philadelphia area the manufacturing sector also imports 50% of all of its purchases, compared to only 15% for the service sector. This means that the service sector's purchases are harder hit by the secondary inflation resulting from a rate increase within the region.

(4) Most importantly, the service employment multiplier of manufacturing activities is greater than the manufacturing employment multiplier of the service sector; for every manufacturing job lost, more jobs are lost in the service sector. This is so because manufacturers buy more from local services than services purchase from local manufacturers.

It is certainly true that manufacturing is hurt by rising electricity rates because of having to compete with firms outside the region, as Dr. Schink points out. But the service sector is doubly exposed to the rising electricity rates: once because its own cost-of-doing-business is affected, and again because it suffers directly from a decline in manufacturing.

Q. Dr. Schink says that his "main areas of concern are related to the price submodel of STARLOC" (PECO Statement No. 38, p. 9), and that you contradict yourself in your cross-examination in relation to it. Is he correct?

A. No. My statements about price behavior in the STARLOC model are correct and consistent, both in the Technical Report and in cross-examination. There are three aspects of price behavior in the STARLOC model: (1) computation of real electric rate increases in each sector, (2) computation of the impact of real rate increases on intermediate and final demand for goods and services, and (3) computation of the secondary inflationary effect of real rate increases. In STARLOC, these three aspects of price behavior are processed simultaneously; considering them separately

as I was required to do on cross-examination misrepresents the function of the Price and Demand submodels in STARLOC.

Hogan's "Conceptual Errors"

Q. Dr. Hogan identifies what he calls "four conceptual flaws or errors" (p. 2) in your formulation of the model. Would you comment on these?

A. Yes, I will. Dr. Hogan states that "the first error in the model logic is that it assumes that expenditures on net export and investments ... remain constant in the face of higher prices for goods and services." (p. 11). This is absolutely not true. Net exports consist of the difference between imports and exports. In STARLOC, the level of imports varies in proportion to the level of actual output in the economy, which in turn responds to price increases; therefore, net exports vary as well. Exports and investment also change with growth of the economy, sector by sector. Dr. Hogan expresses concern that, in the STARLOC model, "the final demand elasticity for consumption of non-energy products must be unity for each household." (p. 12). The model does not assume this. Dr. Hogan arrives at this conclusion by assuming that "each consuming household appears to maintain the same level of expenditures on the non-energy final demand categories." (p. 12). This is incorrect. Equation (5.1) of PECO Exhibit No. 22 (Wharton PMW Report No. 8618) shows that the expenditures on non-energy commodities do indeed change, after the effect of own- and cross-price electric elasticities modify the household expenditure patterns on electricity, gas and fuel oil.

Q. What is the second so-called "error" that Dr. Hogan finds in your model?

A. Dr. Hogan charges that "there is a double counting of the deflation of expenditures on final demand" (p. 13) in the STARLOC model. There is no double counting here. Dr. Hogan and I discussed this issue at length on the afternoon of February 10, 1986, in my office. I will try to explain it again, using an example. Consider the expenditures on electricity of a particular industry, with an own-price elasticity of -0.3. With a 12.44% real price increase, electricity demand in that sector will drop by approximately -3.7%. But because price is rising by 12.44% and demand is dropping by 3.7%, the net change in expenditures is $(1 - 0.037) \times (1 + 0.1244) = 1.083$, or an 8.3% increase in expenditures. Equation (6.3) in PECO Exhibit No. 22 performs this adjustment directly in terms of a change in the technical coefficients of the table of interindustry transactions. However, the 8.3% increase in expenditures does not accurately reflect the level of economic activity, and since the employment coefficients are keyed on actual levels of economic activity, the number has to be deflated, $1.083/1.124 = 0.963$, and only then used to drive employment. This helps to preserve the intermediate demand transaction in real terms; otherwise employment will fluctuate excessively with variations in price rather than economic activity.

Q. What does Dr. Hogan describe as the third "conceptual flaw"?

A. His third point deals with the concept of economic multipliers, which consist of economic activites inducing employment, in turn inducing expenditures, which in turn induce more economic activities, and so forth. Dr. Hogan argues that the skill structure of workers in each sector and the income levels by skill groups do not change in the model. There is no literature that claims that the occupational structure of a sector, the income brackets of different occupational groups, or the number of dependents in a household will be sensitive to electric rates. In the

absence of any studies to the contrary, I assume that these variables will remain stable, particularly over such a relatively short (3 year) period. Dr. Hogan also mentions the absence of a "dampening effect" on the multiplier. There is a considerable dampening effect. The multiplier, 1.65, is constructed from a coefficient of 0.4; the dampening effect is rather quick because of the small size of the coefficient.

Q. And finally, the fourth "conceptual flaw?"

A. Dr. Hogan's last conceptual problem deals with PECO's service area and the Philadelphia SMSA. I turn to this question below.

PECO's Service Area and the Philadelphia SMSA

Q. Dr. Schink contends in his rebuttal testimony (PECO Statement No. 38, pp. 12-13) that the PECO service area is only 80% of the Philadelphia SMSA, hence application of a 28.2% rate increase for the entire SMSA overestimates the employment impact by 25%. Is this conclusion correct?

A. No. The Philadelphia SMSA economy cannot be artificially partitioned because economic activities in the region are highly interdependent. It is correct, however, that PECO's service area is smaller than the Philadelphia SMSA. PECO does not serve the three New Jersey counties (Burlington, Camden, and Gloucester), which comprise 16.7% of the SMSA employment (County Business Patterns, 1981 Employment figures). But PECO does serve 97.4% of the five Pennsylvania counties in the SMSA. A quick calculation shows that PECO's service area includes 82.1% of the region's employment opportunities.

It is not correct that the STARLOC model overestimates by 25% the impact on employment in PECO's service area. Figure 6 in City Statement No. 1 clearly shows that of the 19,196 loss in job growth, only 15,783, or about 82.2%, would occur in the Pennsylvania part of the SMSA, with about 97.4% of that figure, or 15,373, in PECO's service area. Thus the loss in job growth within PECO's service area is 80% of the 19,196 figure.

Q. Is a 15,373 loss in job growth in PECO's service area an overestimation?

A. No, and if the Cost-of-Doing-Business theory advanced by Dr. Schink on March 18, 1986, bears out under empirical analysis, the above figure is actually an underestimation.[1]

I believe that Dr. Schink's approach used in appendix note 1 overestimates job loss somewhat, however, because it is applied to the entire level of employment in the service area rather than only to those jobs induced by export activities. Adjusted accordingly, the loss of additional jobs in PECO's service area attributable to interregional competition alone is 1,200 jobs. This additional job loss of 1,200 should be added to the 15,373 forgone job opportunities forecasted by STARLOC.

Q. Does the projected loss in job growth for the portion of the SMSA that is outside PECO's service area need revision in view of the effect of interregional competition?

A. Yes, somewhat. As new jobs are located in areas such as the three New Jersey counties where the cost-of-doing-business is lower, the loss in job growth in such areas may be mitigated. But this intercounty relocation of job growth would not be sufficient to completely compensate for the intercounty cost spillover effects resulting from trade flows within the Philadelphia SMSA economy.

Q. Are you aware of the electricity rates and their pending rate increase requests in counties adjacent to PECO's service area?

A. Yes. I note that the average commercial rates for HT customers of Pennsylvania Power & Light (PP&L) and Public Service Electric & Gas (PSE&G) are 22% lower than PECO's rate. (Table SLF-3 of Dr. Feldman's testimony, UP/UUC Statement No. 2, Docket No. R-850152, January 22, 1986). Furthermore, a recent issue of Public Utilities Fortnightly reports that PSE&G has an 18.8% rate increase pending. Should both PECO's 28.2% increase and PSE&G's 18.8% increase be granted, the commercial rates in the three New Jersey counties of the Philadelphia SMSA will be 28% below those of the PECO's service area portion of the Philadelphia SMSA.

Q. Dr. Hogan suggests in his rebuttal testimony (PECO Statement No. 37, p. 17) that the 28.2% rate increase used to simulate the impact of electric rate increases in the Philadelphia economy is out of line with the average rate increase for the region. He argues that the average rate increase for the region should be 80% of 28.2%, or 22.6%. Would you comment on this?

A. Yes. In computing the 22.6% average rate increase, Dr. Hogan assumes that PECO will be granted its full 28.2% rate request while PSE&G is not awarded even a small fraction of its pending 18.8%. If the full rate hikes are averaged for both PECO and PSE&G, the average rate increase for the region would be 26.4%, a mere 1.8% below PECO's rate request. Furthermore, figure 6 in City Statement No. 1 clearly delineates the impact of the rate increase on the portion of the SMSA most pertinent to PECO.

Q. What are your conclusions about Dr. Schink's and Dr. Hogan's proposed 80% adjustment to the Philadelphia SMSA in order to reflect PECO's smaller service area?

A. I have two conclusions. First, if we follow Dr. Schink's method of analyzing the effect of regional competition, our estimate of the economic impact of rate increases on PECO's service area economy may be too low. Second, if we follow Dr. Hogan's proposed adjustment in the average nominal price increase for the region and interpret revenue increase for the region's utilities in a similar manner, we converge on a rate increase policy that is commensurate with inflation and significantly lower than PECO's request.

Appendix Endnote

[1] The shares of total expenditures on electricity in the Philadelphia region are:

Construction and Agriculture	0.2%
Manufacturing	1.15%
Transportation, Utilities & Commerce	3.11%
Services	1.94%
TOTAL ECONOMY (weighted average)	1.37%

(source: PECO Exhibit No. 25).

The elasticity of local employment with respect to local relative electricity prices is -0.0137%, implying, according to Dr. Schink, that a one percent increase in PECO electricity prices in PECO's service area relative to those in competing areas would cause a 0.0137% decline in local

employment. Thus, if PECO's rate increase is 28.2% and the rates of competing regions, such as the New Jersey counties served by PSE&G or portions of the Pennsylvania counties served by PP&L, remain unchanged, then the PECO service area would experience a drop in job growth of 0.39%, or 6,411 jobs. If rate changes in competing regions follow inflation closely (say at 5% annually), then the relative price change is 12.44%, implying a 0.170% loss of job growth, or 2,830 jobs.

City Statement No. 2-A

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R-850152

PENNSYLVANIA PUBLIC UTILITY COMMISSION

VS.

PHILADELPHIA ELECTRIC COMPANY

DOCKET NO. R-85-0152

SURREBUTTAL TESTIMONY

OF

GREGORY A PALAST

ECONOMIC IMPACT; FINANCIAL ANALYSIS

OF PHASE-IN

FEBRUARY, 1986

SURREBUTTAL TESTIMONY OF

GREGORY A. PALAST

Q. Are you the same Gregory A. Palast who previously filed direct testimony in this proceeding?

A. Yes. I have previously submitted direct testimony identified as City Statement No. 2.

Q. What is the purpose of your surrebuttal testimony?

A. I will respond to certain statements contained in the rebuttal testimony of Company witnesses Messrs. Farling and Paquette.

REGARDING STATEMENTS OF MR. FARLING

Q. Mr. Farling states that his rebuttal testimony has the purpose of giving an "update" of the status of FASB-71 (Financial Accounting Standards Board Statement 71) and "to explain the consequences of non-compliance." (Rebuttal of Mr. Farling, Page 1.) What are, in fact, the "consequences of non-compliance" with proposed amendments to FASB-71?

A. None at all. There are no consequences to non-compliance with a change which has been merely proposed. It would be unreasonable for this Commission to raise Philadelphia Electric Company rates under the Company's proposed plan on the basis of Mr. Farling's guess about what may or may not change in accounting rules for financial reporting purposes. I note that Mr. Farling used the opportunity to correct his previous guesses about the future of FASB-71, which he put forward in his original testimony. In that testimony, Mr. Farling urged this Commission to adopt, as a rule for regulation, FASB-71 changes proposed in an AICPA Issues Paper. Mr. Farling's guesses about the actions of the FASB in his original testimony were dead wrong. As it turned out, virtually every recommendation of the AICPA was rejected by the FASB in the Exposure Draft since issued.

Mr. Farling was dead wrong on guessing the future of FASB-71 in his original testimony -- and there is no reason to believe he fixed his crystal ball. It would be unreasonable for this Commission to adopt PECO's Phase-In and deferred revenue recovery plan and raise rates in the Company's service territory by hundreds of millions of dollars over a short period of time on the basis of Mr. Farling's hunches about future

accounting changes.

(I will note that the FASB issued the Exposure Draft on a vote of 4 to 3, hardly the basis for assuming that the Exposure Draft will become the rule.)

Q. How should the Commission respond to potential or unknown changes in accounting rules for financial reporting?

A. I have stated in my original testimony and under cross-examination that this Commission should not allow the Financial Accounting Standards Board to act as an ersatz Supreme Court over regulators. I need not repeat my arguments here.

As a general rule, regulators should not (and do not) raise rates due to changes in reporting requirements.

Nevertheless, should the Commission decide to take into account changes in FASB-71, now is not the time to do so. This Commission may adjust its rate order, if appropriate, if and when FASB-71 is changed.

One Commission, the Arkansas PSC, has included in a recent phase-in order, provision to reconsider the order following any changes in rules for reporting of income. In that case, regarding Arkansas Power and Light, the Arkansas Commission will permit the utility to recover deferred revenue for the Grand Gulf 1 plant beginning in the 11th

year of the rate plan. This provision "violates" proposed FASB-71 amendments. The Arkansas Commission has provided for re-negotiation (or rehearing) of the rate plan if FASB-71 is, in fact, changed to affect the reporting of the deferred revenue. (APSC Order in Docket No. 84-249-U, September 5, 1985.)

I would add that the Arkansas Order, in providing for future negotiations between the utility and intervenors, or new hearings, does not in any way commit the Commission to adopting changes to permit the utility to "conform" to a new FASB-71.

There is no reason why this Commission can not, as Arkansas, reconsider any decision it makes if and when the FASB introduces changes -- and if those changes can be incorporated without conflicting with the Commission's mandate to balance consumer and investor interests.

Q. What if, by chance, the FASB adopts the Exposure Draft without amendment. Should the Commission then change regulatory accounting to reflect Statement 71?

A. The Commission may, in its Order, leave the door open for reconsideration based on future FASB-71 changes. However,

the Company would have the burden of showing that changing its rates to permit it to account for deferred revenue as current is in the public interest.

Q. If the FASB changes Statement 71 to prohibit Phase-In/Phase Out plans of more than ten (10) years, would you suggest alternatives to your proposal for a seven (7) year Phase-In with a ten (10) year deferred recovery?

A. My first sentiment is that the Commission should not alter rates in any way, even if FASB-71 is changed. The change in the reporting of income should have no major effect on investors who will know that, through a quirk of accounting, reported earnings are temporarily depressed. (More on this below.)

However, the Commission could adopt a plan which approximates Dr. Schinnar's proposal: Phase-In Limerick I costs over five (5) years and permit recovery of deferred revenues by the tenth year -- but prohibit any increase in rates (base rates of fuel charges) during the entire period except for the Limerick I increases. By this alternative, the Company could book all the deferred revenue as if it were current revenue even under the proposed rules predicted by Mr. Farling.

Q. Does Mr. Farling accurately and fully characterize the

effect of proposed changes to FASB-71?

A. No. Mr. Farling's statement includes a half-truth that can be very mis-leading. He states that, if a rate order does not conform to a set of criteria, under the proposed amendment,

> "...all costs previously deferred under the (rate phase-in) plan would have to be written off."

This is only half of the truth. It is true that revenue previously deferred which had been reported as current would have to be written off. What Mr. Farling did not say is that whatever revenue is excluded from reported income in one year will be added to income in a later year, the year in which the revenue is recovered. Let us say a new FASB-71 takes effect in 1988. If PECO reported deferred revenue of say, $600 million, as if it were current revenue in 1986 and 1987, and then had to restate its income for those years, the result would be that PECO's future income, beginning in some later years, would be increased by $600 million. The proposed changes, if adopted, may shift the year in which revenue is reported. The FASB has not considered any amendment in which funds received are permanently

"written off."

REGARDING STATEMENTS BY MR. PAQUETTE

Q. Mr. Paquette indicates in his Table 2 of his rebuttal testimony that, under your proposal, the Company's earnings would decline to $1.59 per share by 1989, slightly above the amounts that would result from the Staff and OCA proposals. (See also the witness' rebuttal testimony at Page 7.) Is this accurate?

A. No. Mr. Paquette is fighting a straw man. Setting aside the question of whether $1.59 a share is low -- and there is no indication that it is -- Mr. Paquette's calculation assumes that Mr. Farling's hunch about FASB-71 is correct. (The City's Phase-In proposal of seven (7) years would be unaffected by the FASB-71 proposal; but the City's proposed deferred revenue recovery period is longer than the arbitrary cut-off time of ten (10) years discussed in the Exposure Draft).

As a result of this unsupported assumption, Mr. Paquette subtracts all of the deferred revenue from his calculation of future company income. If one were to subtract all

deferred income from PECO's own plan, the results would not be much different than under the City's plan. Thus, Mr. Paquette compares apples and oranges: the PECO plan, which includes deferred revenues, with the City plan -- from which he subtracts deferred revenues. In fact, as described in my original testimony, the City plan, whose principle component is extending the Phase-In to seven years from three, is relatively benign compared to recent rate plans ordered or negotiated in Mississippi, Kansas, and elsewhere.

Q. Assume that Mr. Paquette and Mr. Farling are correct in their assumptions in regards to the future of FASB-71. Would PECO's earnings of $1.50 a share be too low to raise needed captial?

A. Were all he predicts to come to pass, investors would know that the lower earnings, in comparison to other utilities, are the result of a change in the method of reporting income, not a change in the Company's financial condition. Mr. Paquette begs the central question: he provides no evidence that investors change their perception of an event because the rules for financial reporting of that

event have changed. In fact, there is ample evidence that investors are rational: it's hard to fool them by changing reporting tenchniques.

For example, PECO has included AFUDC charges as a major portion of its reported income over the fast few years. As PECO's own witnesses have stated, the AFUDC has been heavily discounted. Investors generally believe that AFUDC charges result in overstated income. To the extent FASB-71 changes result in under-reporting income, investors will take that into account in comparing PECO to other utilities.

According to Mr. Paquette, reported earnings will be about the same under the City plan as under OCA plans. Under the OCA plans, much of the rate reduction is due to a write-off of Limerick I for imprudence, whereas, under the City plan, the reduction in reported income is due to a change in accounting of deferred revenues. Does Mr. Paquette truly believe that investors will see no differences between a permanent write-off -- a loss -- and an accounting change which merely shifts the year in which income is reported?

If he did not subtract deferred revenue in analyzing my recommendation, Mr. Paquette would find that, as

discussed in my original testimony, most major indicators are not seriously eroded by extending the Phase-In period by four years.

Q. At page 8 of his rebuttal, Mr. Paquette states that the Company would "lose $2 billion as a result of the denial of all carrying charges over the 17 year period" of the City's plan. Is he correct?

A. His characteristion of a "loss" is mis-leading. During the 17 year period of our plan, the public will pay approximately $13 billion to PECO for Limerick I charges, most of which represents profit or interest. PECO will be selling power, at least during the first decade of the plant's life, at prices well above what it would earn if there were a free market for electricity. In return for the public bearing the cost of Limerick I investment, the Company is asked to forego a small portion of the profit on the plant -- the carrying charges (return/profit) on the revenues deferred during a Phase-In.

This is first, and foremost, a simple matter of equity: the investors should forego some profit in return for the

public's guarantee to pay for the "prudent" portion of the Limerick I investment. Investors must share in the cost of Limerick I.

Second, the economic impact of permitting a return on deferrals would be devastating. Based on economic studies, we can reasonably extrapolate that the $2 billion surcharge (increased by the tax multiplier), if charged to PECO's rate-payers, would cost the region thousands of jobs.

Third, PECO's stating that the utility is giving up some potential profit by virtue of foregoing a return on deferrals is not a reason, of itself, to permit charging a return. PECO does not provide any calculation showing that its financial condition requires this boost to profits.

Q. Mr. Paquette states, at page 8 of his rebuttal testimony, that the Company will have to borrow $1.5 billion in additional capital to replace lost cash flow and carrying charges thereon under Palast's plan". Is this true?

A. No. The utility does not "have to" borrow this sum. It goes without saying that, the longer rate increases are deferred, the less cash the utility has in the meantime.

However, prudent managers do not invest beyond their firm's means. If prevention of "rate shock" prohibits a huge and swift increase in rates, then a prudent manager will adjust spending accordingly.

To complete Limerick II, PECO will have to borrow approximately $2 billion in the next four (4) years. (PECO response to Ir-OCA-I-26; Financial Analysts Forecast.) There is little doubt that the Company can finance the $1.5 billion required to fund a phase-in program. There is some doubt that the Company can easily finance Limerick II. It may be that the Company can not easily finance both. If so, the Commission should not reject a much-needed phase-in of Limerick I rates over an appropriate period of time in order to subsidize the Company's Limerick II financing.

Q. Does this complete your testimony?

A. Yes.