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**Con Edison and NYPA
Standby Rate Design Workpapers**

Load Research and Cost Data Used for Standby Rate Design

YEAR 1984 ELECTRIC ECOS
PRIMARY: HT 80 CYCLE AND HT 25 CYCLE
REQUIRED REVENUE BY SUBSTATIONS AND FEEDERS

I. SUMMARY OF REQUIRED REVENUES BY SUBSTATIONS & FEEDERS FOR 138KV & BELOW & 138KV ONLY (FROM II. BELOW)

SUBSTATIONS	138KV & BELOW		138KV ONLY	
	REQUIRED REVENUE	PERCENT	REQUIRED REVENUE	PERCENT
TRANSMISSION 138kv SUBSTATIONS	14,444,488			
DISTRIBUTION SUBSTATIONS	240,416,508			
SUB-TOTAL SUBSTATIONS	254,861,974			
CHECK	254,861,974			
FEEDERS				
TRANSMISSION 138kv FEEDERS	38,718,930			
DISTRIBUTION FEEDERS	479,099,755			
SUB-TOTAL FEEDERS	517,218,685			
CHECK	517,218,685			
GRAND TOTAL	772,078,659	100.00%		
CHECK TOTAL	772,078,659			

+ 16.33%
TOTAL Substation 16.00%

II. ALLOCATION OF TOTAL HT80CY & HT25CY REQUIRED REVENUES TO SUBSTATIONS & FEEDERS BASED ON BOOK COST

	(FROM III. BELOW)	REQUIRED BOOK COST	REQUIRED REVENUE
PRIMARY: HT80CY & HT25CY			
TRANSMISSION 138kv SUBSTATIONS	54,680,000	14,444,488	
TRANSMISSION 138kv FEEDERS	144,029,000	38,718,930	
SUB-TOTAL TRANSMISSION 138 KV	198,809,000	52,861,398	
CHECK	198,809,000	52,861,398	
DISTRIBUTION SUBSTATIONS	608,436,368	240,416,508	
DISTRIBUTION FEEDERS	1,810,330,878	479,099,755	
SUB-TOTAL DISTRIBUTION	2,718,767,344	719,515,283	
CHECK	2,718,767,344	719,515,283	
TOTAL HT80 CY & HT25 CY	2,917,376,344	772,078,659	1984 STONE & WEBSTER MODEL TABLE 9
CHECK	2,917,376,344	772,078,659	
CHECK	2,917,376,344		
CHECK	2,917,376,344		

III. BOOK COST OF HT80 CY & HT25CY BY SUBSTATIONS AND FEEDERS FROM YEAR 1984 ELECTRIC ECOS WORKPAPER

	TOTAL HT 80 CY	TOTAL HT 25 CY	TOTAL SUBSTATIONS	TOTAL 138KV FEEDERS
138 kv TRANSMISSION				
350 LAND AND LAND RIGHTS	462,000		462,000	
352 STRUCTURES & IMPROVEMENTS				
353 STATION EQUIPMENT				
354 TOWERS & FIXTURES	54,128,000		54,128,000	
356 OH CONDUCTORS				
357 UG CONDUIT				
358 UG CONDUCTORS & DEVICES	87,227,000			
TOTAL TRANSMISSION	56,802,000			87,227,000
CHECK	198,809,000	0	54,680,000	56,802,000
TOTAL HT80CY & HT25CY	198,809,000			144,029,000
CHECK TOTAL HT80CY & HT25CY	198,809,000			
DISTRIBUTION				
360 LAND & LAND RIGHTS	27,832,484	487,877	28,430,331	
360.1 LAND & LAND RIGHTS LEASEHOLD	3,867,112	0	3,867,112	
361 STRUCTURES & IMPROVEMENTS	113,816,104	5,880,139	119,806,243	
362 STATION EQUIPMENT	737,819,847	18,712,836	756,632,682	
364 POLES, TOWERS & FIXTURES	110,967,584	0		
366 OH CONDUCTORS	236,223,823	0		110,987,584
367 UG CONDUIT	535,837,281	1,352,186		236,223,823
367 UG CONDUCTORS	820,814,477	0,116,846		537,188,447
TOTAL DISTRIBUTION	2,688,198,482	32,568,862	908,436,368	526,830,322
CHECK	2,688,198,482	32,568,862		1,810,330,878
TOTAL HT80CY & HT25CY	2,718,767,344			
CHECK TOTAL HT80CY & HT25CY	2,718,767,344			
TOTAL T&D	2,884,807,492	32,568,862	963,016,368	1,954,368,976
CHECK	2,884,807,492	32,568,862		
TOTAL HT 80CY & HT25 CY	2,917,376,344			
CHECK TOTAL HT 80CY & HT25CY	2,917,376,344			

Final 2

SC4, SC5, SC8, SC9, SC12 & SC13 MAX AND TOTAL ANNUAL BILLING DEMAND

FROM RESPIN 12 MONTHS ENDING 12/31/01

<u>SERVICE CLASS</u>	<u>MAX MONTHLY BILL KW</u>	<u>TOTAL ANNUAL BILLING KW</u>	<u>RATIO-CONTRACT BILLABLE KW</u>
SC4 & 4D CONV	510,461	4,578,704	133.78% ✓
SC4 TODL	1,160,297	11,670,610	119.30% ✓
SC5 CONV *	1,065	9,948	128.52%
SC5 TODL	28,686	265,884	129.47% ✓
SC8 CONV	484,808	3,908,709	148.84% ✓
SC8 TODL	44,867	362,247	148.63% ✓
SC9 CONV	4,378,209	38,746,486	135.60% ✓
SC9D CONV	55,684	469,092	142.45%
SC9 TODL	828,755	7,836,919	126.90% ✓
SC12 CONV	49,259	389,858	151.62% ✓
SC12 TODL	70,278	549,976	153.34% ✓
SC13 TODL	25,240	282,580	107.18% ✓

* Based on further analysis of SC5 Conventional data.

EDDS Conv (4&4D & 9 Conv & 9D)	4,944,353	43,794,282	135.48%
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EDDS TODL (4 TODL & 9 TODL)	1,989,052	19,507,529	122.36%
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Summary of Load Research Data-Relationship between Monthly Peak and Average Demand

	(9)=(5)/(1)	(10)=(6)/(2)	(11)=(7)/(3)	(12)=(8)/(4)
<u>Service Class</u>	Relationship Summer Transmission Peak Demand to Average Summer Daily Demand	Relationship Winter Transmission Peak Demand to Average Winter Daily Demand	Relationship Summer Distribution Peak Demand to Average Summer Daily Demand	Relationship Winter Distribution Peak Demand to Average Winter Daily Demand
4 Conv.	118.22%	117.96%	118.10%	117.96%
4 TOD	114.23%	112.78%	114.22%	112.78%
5 TOD***	115.32%	122.02%	114.93%	122.02%
8 Conv.	134.49%	111.84%	133.00%	111.84%
8 TOD	134.86%	110.11%	133.92%	110.11%
9 Conv.****	122.67%	122.72%	122.09%	122.72%
9 TOD	114.85%	113.64%	114.77%	113.64%
12 Conv.	131.36%	132.24%	129.34%	132.24%
12 TOD	131.99%	126.73%	134.22%	126.73%
13 TOD	109.79%	106.30%	107.68%	106.30%
<u>Additional Analysis</u>				
Edds Conv - 4 & 9	122.16%	122.26%	121.65%	122.26%
Edds TOD - 4 & 9	114.49%	113.15%	114.46%	113.15%
NYPA Conv	118.64%	116.07%	117.64%	116.07%
NYPA TOD	121.35%	117.04%	121.26%	117.04%

*Summer Transmission Period = Monday through Friday 8am-6pm. Winter Transmission Period = Monday through Friday 8am-10pm.

**Summer and Winter Distribution Period = Monday through Friday 8am-10pm.

***Used SC 5 TOD characteristics for SC 5 Conventional.

****Excludes SC 9D.

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DEVELOPMENT OF REVENUE REQUIREMENT ADJUSTMENTS TO ALIGN 1994 ECOS TABLE 9 WITH

12/09/97	Total System including TAX	Net Total System	Net Total System	Total Cap Exp	Total MCPA	AGEI	AGEI WHITE	SGSE	SCASH	SGM4	TDD-SCM	SCM5
Production	2,853,108,881	2,747,587,441	2,747,587,441	2,747,587,441	0	788,885,387	3,781,198	188,308,791	102,354	120,836,835	330,888,384	3,028,028
LESS												
Blackstart-D01	6,800,000	6,326,777	6,326,777	6,326,777	0	1,741,857	8,719	378,917	300	283,184	780,410	6,340
Scheduling-Prod-D01	5,424,483	5,046,970	5,046,969	5,046,969	0	1,888,507	8,958	302,268	239	225,900	822,645	5,088
Reliable Supply-D01	14,000,000	13,028,086	13,028,086	13,028,086	0	3,586,281	17,982	780,148	818	583,042	1,608,723	18,064
Supplemental Voltage Control-D01	18,000,000	14,888,586	14,888,584	14,888,584	0	4,089,047	20,818	891,691	706	686,405	1,828,508	14,921
REG and Frequency Control-D01	18,000,000	17,877,932	17,877,831	17,877,831	0	4,895,974	24,393	1,088,743	838	791,252	2,180,886	17,718
Operating Spinning Reserve-D01	13,000,000	12,098,900	12,098,298	12,098,298	0	3,380,018	18,888	724,400	573	841,380	1,481,868	12,121
Total Production	2,878,882,488	2,878,525,801	2,878,525,807	2,878,525,807	0	736,871,872	3,886,020	184,173,566	99,080	117,845,372	322,170,802	2,888,818
Transmission	380,033,082	353,584,838	353,584,839	306,808,243	46,781,896	82,638,808	383,917	21,312,011	2,420	15,182,182	35,840,190	346,588
Blackstart-D01	6,800,000	6,326,777	6,326,777	6,326,777	0	1,741,857	8,719	378,917	300	283,184	780,410	6,340
Scheduling-D03	(18,575,517)	(18,421,945)	(18,421,945)	(13,177,883)	(2,243,862)	(3,512,748)	(16,345)	(832,283)	(484)	(886,511)	(1,858,178)	(10,880)
T&D Revenue Adj.-D04	6,742,428	9,064,384	9,064,384	7,712,333	1,352,051	2,480,884	11,488	445,074	282	383,843	875,127	5,894
Total Transmission/Blackstart	380,000,000	353,554,185	353,554,156	307,994,970	46,898,768	83,358,912	387,780	21,308,719	2,518	15,182,708	35,837,848	347,132
Transmission Auxiliary Services	18,575,517	15,421,945	15,421,945	18,177,983	2,243,862	3,512,748	16,345	832,283	484	885,511	1,858,178	10,880
DISTRIBUTION												
80 Cycle System	812,886,797	756,108,728	756,108,728	880,180,828	86,848,801	208,817,886	871,833	40,828,182	5,885	30,185,370	71,727,144	721,015
T&D Revenue Adj.-D04	(8,742,428)	(9,064,384)	(9,064,384)	(7,712,333)	(1,352,051)	(2,480,884)	(11,488)	(445,074)	(282)	(383,843)	(875,127)	(5,894)
Total 80 Cycle System	802,824,312	747,044,345	747,044,345	872,468,495	84,500,850	206,336,972	860,444	40,381,108	5,603	29,821,527	70,852,017	715,131
25 cycle system	17,181,257	15,888,830	15,888,830	0	15,888,830	0	0	0	0	0	0	0
O.H. Trans.& Rect.	31,787,136	28,874,931	28,874,931	27,480,482	2,114,478	14,284,978	87,085	2,177,709	21	546,481	86,418	882
O.H. Trans.& Rect.	236,822,207	220,340,721	220,340,721	204,509,581	15,831,130	67,814,820	357,378	15,283,744	1,793	6,214,273	20,812,700	147,073
O.H. Lines Demand	19,340,842	17,894,843	17,894,843	18,881,884	1,302,889	8,875,778	82,872	1,313,513	17	333,821	59,202	881
I.G. Lines Demand	321,844,238	288,258,819	288,258,819	277,879,718	21,278,804	91,871,280	488,084	20,879,043	1,888	12,483,202	28,064,784	205,131
Total Demand	4,705,137,807	4,377,884,180	4,377,884,186	4,178,458,467	199,225,729	1,211,488,840	8,034,107	288,284,888	111,081	188,082,895	478,351,850	4,386,828
Customer Components												
O.H. Lines Customer	28,288,038	26,287,951	26,287,951	28,280,882	17,898	24,788,242	187,888	828,158	28	2,383	0	0
U.G. Lines Customer	80,024,703	74,455,438	74,455,438	89,348,021	5,107,415	124,114,555	48,027	8,825,239	1,602	2,855,898	3,144,811	17,070
Service Costs - OH	18,801,887	14,816,056	14,816,056	14,808,277	8,779	13,417,882	88,485	423,871	0	845	0	5
Service Costs - UG	108,072,307	100,851,086	100,851,086	84,312,200	6,238,886	86,122,808	111,883	18,212,872	0	1,754,808	737,847	32,802
Meters & Meters Inst.	68,882,177	64,089,798	64,089,788	61,881,887	2,088,882	35,021,958	103,284	10,222,402	6,203	637,401	806,838	22,120
Inst. on Cust Premis	3,887,877	3,817,308	3,817,308	943,887	2,873,438	0	0	0	0	17,498	41,577	0
Services on cust prem	28,088,238	26,112,984	26,112,984	25,205,014	907,970	16,680,467	80,272	2,227,957	544	431,071	807,953	5,378
Street Lighting NYC	16,888,484	16,807,084	16,807,084	0	16,807,084	0	0	0	0	0	0	0
Street Lighting other	4,021,832	3,741,935	3,741,935	241,007	3,500,828	0	0	0	0	0	0	0
Cust Acct. and Collect	288,660,288	288,888,087	288,888,087	287,836,473	952,614	228,275,356	522,812	28,181,807	5,840	181,817	81,728	2,424
Customer Attz. other	0	0	0	0	0	0	0	0	0	0	0	0
Uncollectables	30,338,886	28,228,094	28,228,094	28,228,094	0	18,385,373	98,214	4,186,888	1,880	0	4,887	0
Customer Service	6,200,250	7,829,559	7,829,559	7,458,478	171,084	4,431,428	12,987	834,598	187	183,720	382,408	3,708
Total Customer	681,021,888	633,828,335	633,828,335	596,141,448	37,484,889	402,125,289	1,211,088	88,423,888	15,364	6,034,493	6,186,898	82,204
DSM												
System Benefits												
Total Demand	4,705,137,807	4,377,884,180	4,377,884,186	4,178,458,467	199,225,729	1,211,488,840	8,034,107	288,284,888	111,081	188,082,895	478,351,850	4,386,828
Total customer	681,021,888	633,828,335	633,828,335	596,141,448	37,484,889	402,125,289	1,211,088	88,423,888	15,364	6,034,493	6,186,898	82,204
Total DSM												
Total System Benefits												
SUB-TOTAL	6,386,158,899	6,011,310,825	6,011,310,831	4,774,888,813	236,710,818	1,618,821,808	7,245,198	334,718,054	126,465	182,087,388	485,548,348	4,469,833
TOTAL (including ancillary)	5,483,883,876	5,074,048,288	5,074,048,288	4,837,334,870	236,710,818	1,630,883,737	7,381,895	338,475,302	128,429	184,905,367	483,286,701	4,632,703

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PERC TRANSMISSION AND ANCILLARY REVENUE REQUIREMENTS

SCB	SCF	NTD-SCB	TOD-SCB	NTD-SCB	TOD-SCB	NTD-SCM1	TOD-SCM1	TOD-SCM2	TOD-SCM3	STEAM DEPT. COMPANY USE	
										ELC. FAC	GAS/STEAM
101,570	11,369,488	112,150,273	9,811,845	922,733,154	291,911,993	11,733,818	14,888,858	7,773,700	10,726,800	2,094,260	
393	26,451	262,787	24,046	2,118,478	508,808	28,730	35,812	18,942	0	0	8,113
308	21,100	209,829	19,582	1,889,944	484,059	21,323	28,568	15,110	0	0	4,878
788	84,480	541,047	50,841	4,381,889	1,349,342	88,095	73,732	38,999	0	0	12,888
801	82,248	618,406	57,768	4,988,338	1,427,873	82,903	84,274	44,875	0	0	14,385
1,088	73,908	734,290	69,590	5,918,362	1,995,494	74,888	100,062	52,926	0	0	17,080
732	50,588	502,386	48,930	4,050,029	1,190,089	51,102	68,483	38,212	0	0	11,686
157,596	11,080,783	108,281,788	9,543,886	899,508,357	254,988,150	11,442,037	14,498,047	7,588,888	10,726,800	2,027,834	
4,348	811,191	11,512,260	828,034	106,418,883	29,400,240	743,580	971,416	548,365	0	0	51,087
383	26,451	262,787	24,548	2,118,478	608,808	28,730	35,812	18,942	0	0	6,113
(205)	(35,708)	(520,823)	(48,591)	(4,457,859)	(1,279,388)	(30,278)	(48,872)	(28,154)	0	0	(9,878)
717	24,710	239,145	30,872	2,378,138	678,816	20,058	28,988	18,540	0	0	5,274
5,244	828,847	11,593,368	831,583	108,488,807	29,404,486	780,087	987,321	658,718	0	0	82,808
205	35,708	520,823	48,591	4,457,859	1,279,388	30,278	48,872	28,154	0	0	9,878
52,854	2,017,845	28,038,129	1,962,545	210,468,246	59,940,923	1,834,878	2,184,183	1,484,883	0	0	145,385
(717)	(24,710)	(538,145)	(30,572)	(2,378,138)	(678,816)	(20,058)	(28,988)	(18,540)	0	0	(5,274)
52,137	1,993,135	27,898,984	1,831,873	208,091,111	59,264,108	1,814,822	2,165,197	1,466,143	0	0	140,112
0	0	0	0	0	0	0	0	0	0	0	0
5,301	408,168	772,733	23,744	8,078,322	795,248	155,784	54,085	0	0	0	2,434
9,788	1,429,163	8,198,143	824,827	83,803,187	16,078,731	1,222,480	1,307,004	0	0	0	16,408
3,380	248,136	473,025	15,038	4,908,488	478,332	94,330	33,491	0	0	0	1,986
13,180	1,837,785	11,002,082	817,801	86,898,472	20,487,201	1,889,418	1,747,782	0	0	0	15,108
248,515	17,980,481	188,476,918	13,838,024	1,381,940,438	380,747,827	17,188,187	20,838,790	9,588,945	10,726,800	2,266,045	
0	130,284	2,088	0	965,983	83	1,481	0	0	0	0	809
0	349,505	2,068,932	83,254	24,941,824	2,412,945	232,837	250,269	0	0	0	2,184
0	32,712	1,378	0	531,458	88	887	0	0	0	0	405
0	1,021,985	2,479,508	0	34,388,742	1,184,942	283,518	8,818	735	0	0	4,133
0	360,781	884,286	35,922	13,080,520	874,818	83,118	70,180	4,084	0	0	2,283
0	0	0	0	842,418	342,493	0	0	0	0	0	0
725	190,478	384,334	58,824	3,563,728	875,838	54,028	82,978	0	0	0	3,580
0	0	0	0	0	0	0	0	0	0	0	0
241,007	0	0	0	0	0	0	0	0	0	0	0
22,414	1,488,884	227,888	3,960	10,532,101	-84,732	48,487	3,993	184	0	0	1,756
0	0	0	0	0	0	0	0	0	0	0	0
1,849	300,428	87,888	0	5,243,282	0	878	0	0	0	0	0
772	37,314	141,209	11,325	1,288,447	311,892	14,881	17,174	8,486	0	0	0
295,767	3,928,348	5,837,508	170,874	94,792,483	5,828,851	888,459	411,172	13,488	0	0	15,109
248,515	17,980,481	188,476,918	13,838,024	1,381,940,438	380,747,827	17,188,187	20,838,790	9,588,945	10,726,800	2,266,045	
295,767	3,928,348	5,837,508	170,874	94,792,483	5,828,851	888,459	411,172	13,488	0	0	15,109
513,282	21,888,830	175,414,424	14,008,998	1,476,932,821	386,874,278	17,878,646	21,250,962	9,802,434	10,728,800	2,281,164	
517,077	22,151,112	178,020,152	14,252,409	1,497,939,230	382,691,218	18,143,897	21,606,061	9,790,258	10,726,800	2,341,787	