

**SOAH DOCKET NO. 473-19-3864
PUC DOCKET NO. 49421**

APPLICATION OF CENTERPOINT	§	BEFORE THE STATE OFFICE
ENERGY HOUSTON ELECTRIC,	§	OF
LLC FOR AUTHORITY TO	§	ADMINISTRATIVE HEARINGS
CHANGE RATES	§	

DIRECT TESTIMONY AND EXHIBITS

OF

DAVID J. GARRETT

EXHIBIT DJG-4:

Detailed Rate Comparison

Detailed Rate Comparison

Exhibit DJG-4

		[1]	[2]		[3]		[4]		[5]		[6]		
Account No.	Description	Original Cost	Current Parameters		Company Proposal		TCUC Proposal		TCUC Adjustment from Current Parameters		TCUC Adjustment to Company Proposal		
			Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual	
TRANSMISSION PLANT													
E35002	LAND RIGHTS	92,262,041	1 32%	1,217,859	1 31%	1,208,633	1 31%	1,211,744	-0 01%	-6,115	0 00%	3,111	
E35201	STRUCT & IMPROVEMTS	173,702,369	1 65%	2,866,089	1 74%	3,022,421	1 74%	3,018,318	0 09%	152,229	0 00%	-4,103	
E35301	STATION EQUIPMENT	955,050,688	2 21%	21,106,620	2 05%	19,578,539	1 93%	18,434,817	-0 28%	-2,671,804	-0 12%	-1,143,722	
E35401	TOWERS & FIXTURES	653,563,739	1 89%	12,352,355	2 15%	14,051,620	1 85%	12,071,203	-0 04%	-281,152	-0 30%	-1,980,417	
E35501	POLES AND FIXTURES	123,402,914	3 35%	4,133,998	2 47%	3,048,052	2 47%	3,050,203	-0 88%	-1,083,795	0 00%	2,151	
E35601	O/H CONDUCT/DEVICES	553,862,290	3 34%	18,499,000	3 21%	17,778,980	3 21%	17,800,384	-0 13%	-698,616	0 00%	21,405	
E35701	UNDERGROUND CONDUIT	38,059,656	1 64%	624,178	1 73%	658,432	1 73%	658,070	0 09%	33,891	0 00%	-362	
E35801	U/G CONDUCT/DEVICES	14,661,444	2 45%	359,205	2 35%	344,544	2 35%	343,864	-0 10%	-15,342			
E35901	ROADS AND TRAILS	72,604,215	1 71%	1,241,532	1 90%	1,379,480	1 90%	1,382,333	0 19%	140,801	0 00%	2,853	
Total Transmission Plant		2,677,169,356	2 33%	62,400,837	2 28%	61,070,701	2 17%	57,970,935	-0 17%	-4,429,902	-0 12%	-3,099,766	
DISTRIBUTION PLANT													
E36002	LAND RIGHTS	2,210,688	1 42%	31,392	1 55%	34,266	1 55%	34,316	0 13%	2,924	0 00%	50	
E36101	STRUCT & IMPROVEMTS	93,660,689	1 62%	1,517,303	1 68%	1,573,500	1 68%	1,570,520	0 06%	53,217	0 00%	-2,980	
E36201	STATION EQUIPMENT	1,144,183,142	1 84%	21,052,970	2 14%	24,485,519	1 76%	20,165,356	-0 08%	-887,614	-0 38%	-4,320,163	
E36401	POLES,TOWERS,FXITURE	793,286,815	3 64%	28,875,640	3 84%	30,462,214	2 84%	22,568,969	-0 80%	-6,306,671	-1 00%	-7,893,245	
E36501	O/H CONDUCT DEVICES	963,499,466	2 74%	26,399,885	3 24%	31,217,383	3 05%	29,339,028	0 31%	2,939,142	-0 19%	-1,878,355	
E36601	UNDERGROUND CONDUIT	552,884,183	2 53%	13,987,970	1 96%	10,836,530	1 83%	10,145,092	-0 70%	-3,842,878	-0 13%	-691,438	
E36701	U/G CONDUCT/DEVICES	999,076,687	3 27%	32,669,808	3 34%	33,369,161	2 87%	28,714,072	-0 40%	-3,955,736	-0 47%	-4,655,090	
E36801	LINE TRANSFORMERS	1,317,489,957	3 07%	40,446,942	3 71%	48,878,877	2 87%	37,875,814	-0 20%	-2,571,128	-0 84%	-11,003,064	
E36901	SERVICES	193,687,517	2 97%	5,752,519	3 76%	7,282,651	3 76%	7,289,344	0 79%	1,536,825	0 00%	6,694	
E37001	METERS	76,538,374	4 66%	3,566,688	3 32%	2,541,074	3 32%	2,542,925	-1 34%	-1,023,763	0 00%	1,851	
E37003	AMS METERS	107,252,469	14 29%	15,326,378	4 77%	5,115,943	4 77%	5,120,764	-9 52%	-10,205,614	0 00%	4,821	
E37301,401	STREET LT/SIGNAL SYS & SECURITY LIGHTING	575,732,496	3 45%	19,862,771	3 09%	17,790,134	3 09%	17,785,406	-0 36%	-2,077,366	0 00%	-4,729	
Total Distribution Plant		6,819,502,483	3 07%	209,490,266	3 13%	213,587,251	2 69%	183,151,605	-0 39%	-26,338,661	-0 45%	-30,435,646	
GENERAL PLANT													
E38902	LAND RIGHTS	154,400	2 01%	3,103	1 80%	2,779	1 80%	2,778	-0 21%	-325	0 00%	-1	
E39001	STRUCT & IMPROVEMTS	213,821,555	2 45%	5,238,628	2 05%	4,383,342	1 56%	3,335,954	-0 89%	-1,902,674	-0 49%	-1,047,388	
E39201	TRANSPORTATION EQUIP	121,651,326	7 63%	9,281,996	6 73%	8,187,134	6 73%	8,193,118	-0 90%	-1,088,879	0 00%	5,983	
E39601	POWER OPERATED EQUIP	20,956,362	4 40%	922,080	5 10%	1,068,774	5 10%	1,068,918	0 70%	146,838	0 00%	144	
E39701	MICROWAVE EQUIPMENT	327,013,512	4 21%	13,767,269	5 08%	16,612,286	5 08%	16,612,079	0 87%	2,844,810	0 00%	-207	
E39101	OFFICE F/F	9,731,996	4 80%	467,136	4 17%	405,824	4 17%	405,824	-0 63%	-61,312	0 00%	0	
E39301	STORES EQUIPMENT	388,487	5 44%	21,134	5 26%	20,434	5 26%	20,434	-0 18%	-699	0 00%	0	
E39401	TOOLS,SHOP,GAR EQUIP	13,945,470	5 66%	789,314	5 56%	775,368	5 56%	775,368	-0 10%	-13,945	0 00%	0	
E39501	LAB EQUIPMENT	20,043,154	4 03%	807,739	4 00%	801,726	4 00%	801,726	-0 03%	-6,013	0 00%	0	
E39702	COMPUTER EQUIPMENT	146,939,952	12 55%	18,440,964	12 50%	18,367,494	12 50%	18,367,494	-0 05%	-73,470	0 00%	0	
E39801	MISC EQUIPMENT	9,595,750	5 02%	481,707	5 00%	479,787	5 00%	479,787	-0 02%	-1,919	0 00%	0	
Total General Plant		884,241,963	5 68%	50,221,069	5 78%	51,104,951	5 66%	50,063,481	-0 02%	-157,588	-0 12%	-1,041,470	
Reserve Difference Amortization						-476,652		-476,652					
TOTAL Depreciable Plant Studied		10,380,913,802	3 10%	322,112,172	3 13%	325,286,250	2 80%	290,709,368	-0 30%	-31,402,804	-0 33%	-34,576,882	

[1], [2], [3] From Company depreciation study

[4] From DJG rate development exhibit

[5] = [4] - [2]

[6] = [4] - [3]

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DIRECT TESTIMONY AND EXHIBITS

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EXHIBIT DJG-5:

Depreciation Rate Development

Depreciation Rate Development

Exhibit DJG-5

Account No	Description	[1]	[2]		[3]	[4]	[5]	[6]	[7]	[8]		[9]	[10]		[11]	[12]		[13]
		Original Cost	Type	AL	Net Salvage	Depreciable Base	Book Reserve	Future Accruals	Remaining Life	Service Life			Net Salvage			Total		
										Accrual	Rate		Accrual	Rate		Accrual	Rate	
TRANSMISSION PLANT																		
E35002	LAND RIGHTS	92,262,041	R1	- 75	0%	92,262,041	17,243,243	75,018,798	61 91	1,211,744	1 31%		0	0 00%		1,211,744	1 31%	
E35201	STRUCT & IMPROVEMTS	173,702,369	R1 S	- 60	-5%	182,387,487	17,716,963	164,670,524	54 56	2,859,125	1 65%		159,193	0 09%		3,018,318	1 74%	
E35301	STATION EQUIPMENT	955,050,688	R0 S	- 56	-10%	1,050,555,757	155,914,106	894,641,651	48 53	16,466,857	1 72%		1,967,959	0 21%		18,434,817	1 93%	
E35401	TOWERS & FIXTURES	653,563,739	R2	- 66	-30%	849,632,860	218,550,369	631,082,491	52 28	8,320,837	1 27%		3,750,366	0 57%		12,071,203	1 85%	
E35501	POLES AND FIXTURES	123,402,914	R0 S	- 60	-50%	185,104,371	27,285,217	157,819,155	51 74	1,857,686	1 51%		1,192,517	0 97%		3,050,203	2 47%	
E35601	O/H CONDUIT/DEVICES	553,862,290	R1 S	- 61	-100%	1,107,724,581	258,915,942	848,808,638	47 68	6,185,326	1 12%		11,615,058	2 10%		17,800,384	3 21%	
E35701	UNDERGROUND CONDUIT	38,059,656	R5	- 60	-5%	39,962,639	6,199,080	33,763,559	51 31	620,980	1 63%		37,090	0 10%		658,070	1 73%	
E35801	U/G CONDUIT/DEVICES	14,661,444	S6	- 44	-5%	15,394,516	3,291,634	12,102,882	35 20	323,036	2 20%		20,828	0 14%		343,864	2 35%	
E35901	ROADS AND TRAILS	72,604,215	S6	- 52	0%	72,604,215	9,695,198	62,909,017	45 51	1,382,333	1 90%		0	0 00%		1,382,333	1 90%	
Total Transmission Plant		2,677,169,356			-34%	3,595,628,467	714,811,752	2,880,816,716	49 69	39,227,924	1 47%		18,743,011	0 70%		57,970,935	2 17%	
DISTRIBUTION PLANT																		
E36002	LAND RIGHTS	2,210,688	R1	- 60	0%	2,210,688	631,482	1,579,206	46 02	34,316	1 55%		0	0 00%		34,316	1 55%	
E36101	STRUCT & IMPROVEMTS	93,660,689	R4	- 60	-10%	103,026,758	34,649,076	68,377,683	43 54	1,355,397	1 45%		215,123	0 23%		1,570,520	1 68%	
E36201	STATION EQUIPMENT	1,144,183,142	R0 S	- 55	-10%	1,258,601,456	342,892,643	915,708,813	45 41	17,645,684	1 54%		2,519,672	0 22%		20,165,356	1 76%	
E36401	POLES, TOWERS, FIXTURE	793,286,815	R0 S	- 45	-45%	1,150,265,882	353,355,582	796,910,299	35 31	12,459,112	1 57%		10,109,857	1 27%		22,568,969	2 84%	
E36501	O/H CONDUIT/DEVICES	963,499,466	R0 S	- 40	-30%	1,252,549,306	362,109,819	890,439,487	30 35	19,815,145	2 06%		9,523,883	0 99%		29,339,028	3 05%	
E36601	UNDERGROUND CONDUIT	552,884,183	S1	- 65	-30%	718,749,438	200,436,711	518,312,727	51 09	6,898,561	1 25%		3,246,531	0 59%		10,145,092	1 83%	
E36701	U/G CONDUIT/DEVICES	999,076,687	L0	- 42	-35%	1,348,753,527	344,622,441	1,004,131,086	34 97	18,714,734	1 87%		9,999,338	1 00%		28,714,072	2 87%	
E36801	LINE TRANSFORMERS	1,317,489,957	L0	- 32	-15%	1,515,113,451	557,234,122	957,879,329	25 29	30,061,520	2 28%		7,814,294	0 59%		37,875,814	2 87%	
E36901	SERVICES	193,687,517	R0 S	- 46	-60%	309,900,027	75,571,082	234,328,945	32 15	3,674,285	1 90%		3,615,059	1 87%		7,289,344	3 76%	
E37001	METERS	76,538,374	R3	- 21	0%	76,538,374	54,424,753	22,113,621	8 70	2,542,925	3 32%		0	0 00%		2,542,925	3 32%	
E37003	AMS METERS	107,252,469	R2	- 20	0%	107,252,469	21,794,628	85,457,841	16 69	5,120,764	4 77%		0	0 00%		5,120,764	4 77%	
E37301, 401	STREET LT/SIGNAL SYS & SECURITY LIGHTING	575,732,496	R1	- 39	-30%	748,452,245	224,062,123	524,390,122	29 48	11,927,380	2 07%		5,858,026	1 02%		17,785,406	3 09%	
Total Distribution Plant		6,819,502,483			-26%	8,591,413,620	2,571,784,462	6,019,629,158	32 87	130,249,822	1 91%		52,901,782	0 78%		183,151,605	2 69%	
GENERAL PLANT																		
E38902	LAND RIGHTS	154,400	R2	- 55	0%	154,400	30,727	123,673	44 52	2,778	1 80%		0	0 00%		2,778	1 80%	
E39001	STRUCT & IMPROVEMTS	213,821,555	R2	- 58	-5%	224,512,633	81,300,132	143,212,501	42 93	3,086,919	1 44%		249,035	0 12%		3,335,954	1 56%	
E39201	TRANSPORTATION EQUIP	121,651,326	SQ	- 24	10%	109,486,193	43,673,043	65,813,151	8 03	9,707,562	7 98%		-1,514,444	-1 24%		8,193,118	6 73%	
E39601	POWER OPERATED EQUIP	20,956,362	L2	- 13	6%	19,698,980	7,531,102	12,167,878	11 38	1,179,376	5 63%		-110,458	-0 53%		1,068,918	5 10%	
E39701	MICROWAVE EQUIPMENT	327,013,512	SQ	- 19	2%	320,473,242	78,245,449	242,227,792	14 58	17,060,613	5 22%		-448,534	-0 14%		16,612,079	5 08%	
E39101	OFFICE F/F	9,731,996	SQ	- 18	0%	9,731,996	2,682,967	7,049,029	24 00	293,710	3 02%		112,115	1 15%		405,824	4 17%	
E39301	STORES EQUIPMENT	388,487	SQ	- 25	0%	388,487	182,926	205,561	19 00	10,819	2 78%		9,615	2 48%		20,434	5 26%	
E39401	TOOLS, SHOP, GAR EQUIP	13,945,470	L2	- 18	0%	13,945,470	1,944,774	12,000,696	18 00	666,705	4 78%		108,663	0 78%		775,368	5 56%	
E39501	LAB EQUIPMENT	20,043,154	R2	- 22	0%	20,043,154	7,724,066	12,319,088	25 00	492,764	2 46%		308,963	1 54%		801,726	4 00%	
E39702	COMPUTER EQUIPMENT	146,939,952	SQ	- 8	0%	146,939,952	49,560,154	97,379,798	8 00	12,172,475	8 28%		6,195,019	4 22%		18,367,494	12 50%	
E39801	MISC EQUIPMENT	9,595,750	SQ	- 20	0%	9,595,750	1,924,177	7,671,573	20 00	383,579	4 00%		96,209	1 00%		479,787	5 00%	
Total General Plant		884,241,963			1%	874,970,256	274,799,516	600,170,740	11 99	45,057,299	5 10%		5,006,182	0 57%		50,063,481	5 66%	
Reserve Difference Amortization																		-476,652
TOTAL PLANT STUDIED		10,380,913,802			-26%	13,062,012,344	3,561,395,730	9,500,616,614	32.68	214,535,045	2.07%		76,650,976	0.73%		290,709,368	2.80%	

[1] Company depreciation study

[2] Average life and Iowa curve shape developed through actuarial analysis and professional judgment

[3] Net salvage estimates developed through statistical analysis and professional judgment

[4] = [1] * [1] - [3]

[5] From depreciation study

[6] = [4] - [5]

[7] Composite remaining life based on Iowa curve in [2], see remaining life exhibit for detailed calculations

[8] = ([1] - [5]) / [7]

[9] = [8] / [1]

[10] = [12] - [8]

[11] = [13] - [9]

[12] = [6] / [7]

[13] = [12] / [1]

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DIRECT TESTIMONY AND EXHIBITS

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EXHIBIT DJG-6:

Account 390 Iowa Curve Fitting

Account 390 Iowa Curve Fitting

Exhibit DJG-6

Page 1 of 2

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	Exposures (Dollars)	Observed Life Table (OLT)	Company R4-50	TCUC R2-58	Company SSD	TCUC SSD
0.0	291,550,513	100.00%	100.00%	100.00%	0.0000	0.0000
0.5	292,448,293	100.00%	100.00%	99.92%	0.0000	0.0000
1.5	290,278,714	99.93%	100.00%	99.75%	0.0000	0.0000
2.5	245,904,218	99.90%	99.99%	99.57%	0.0000	0.0000
3.5	237,264,196	99.84%	99.99%	99.38%	0.0000	0.0000
4.5	234,186,360	99.73%	99.99%	99.17%	0.0000	0.0000
5.5	233,096,051	99.71%	99.98%	98.96%	0.0000	0.0001
6.5	233,067,039	99.61%	99.97%	98.73%	0.0000	0.0001
7.5	233,731,555	99.38%	99.96%	98.50%	0.0000	0.0001
8.5	232,693,154	99.34%	99.95%	98.24%	0.0000	0.0001
9.5	231,223,172	99.28%	99.93%	97.98%	0.0000	0.0002
10.5	230,818,808	99.07%	99.91%	97.70%	0.0001	0.0002
11.5	229,435,279	98.68%	99.88%	97.40%	0.0001	0.0002
12.5	213,989,664	98.53%	99.85%	97.09%	0.0002	0.0002
13.5	207,462,133	98.47%	99.81%	96.77%	0.0002	0.0003
14.5	205,795,944	98.30%	99.76%	96.42%	0.0002	0.0004
15.5	204,828,229	98.23%	99.70%	96.06%	0.0002	0.0005
16.5	205,117,874	97.97%	99.62%	95.69%	0.0003	0.0005
17.5	201,291,585	97.88%	99.53%	95.29%	0.0003	0.0007
18.5	200,980,401	97.75%	99.42%	94.87%	0.0003	0.0008
19.5	195,227,874	97.63%	99.30%	94.43%	0.0003	0.0010
20.5	179,182,889	97.38%	99.14%	93.98%	0.0003	0.0012
21.5	157,356,007	96.97%	98.96%	93.50%	0.0004	0.0012
22.5	156,921,517	96.82%	98.75%	93.00%	0.0004	0.0015
23.5	156,483,548	96.35%	98.50%	92.47%	0.0005	0.0015
24.5	153,602,744	94.77%	98.20%	91.92%	0.0012	0.0008
25.5	152,660,455	94.58%	97.86%	91.35%	0.0011	0.0010
26.5	149,997,796	93.66%	97.47%	90.74%	0.0015	0.0008
27.5	147,643,339	93.24%	97.02%	90.12%	0.0014	0.0010
28.5	141,124,958	91.35%	96.51%	89.46%	0.0027	0.0004
29.5	131,895,421	88.10%	95.92%	88.78%	0.0061	0.0000
30.5	115,480,568	86.67%	95.25%	88.07%	0.0074	0.0002
31.5	114,679,417	86.40%	94.50%	87.32%	0.0066	0.0001
32.5	94,309,829	84.97%	93.65%	86.55%	0.0075	0.0002
33.5	86,175,538	84.66%	92.70%	85.74%	0.0065	0.0001
34.5	81,066,114	84.47%	91.65%	84.90%	0.0051	0.0000
35.5	72,582,891	84.20%	90.47%	84.03%	0.0039	0.0000
36.5	64,320,664	84.07%	89.18%	83.12%	0.0026	0.0001
37.5	63,084,877	83.69%	87.76%	82.18%	0.0017	0.0002
38.5	62,587,150	83.56%	86.20%	81.19%	0.0007	0.0006
39.5	62,234,154	83.27%	84.50%	80.18%	0.0002	0.0010
40.5	42,868,494	83.23%	82.67%	79.12%	0.0000	0.0017
41.5	42,735,045	83.12%	80.68%	78.02%	0.0006	0.0026
42.5	39,751,477	79.63%	78.55%	76.88%	0.0001	0.0008
43.5	32,430,550	76.70%	76.25%	75.71%	0.0000	0.0001
44.5	29,015,161	76.20%	73.75%	74.49%	0.0006	0.0003
45.5	27,802,128	75.86%	71.02%	73.23%	0.0023	0.0007
46.5	27,628,945	75.84%	68.02%	71.92%	0.0061	0.0015
47.5	6,460,346	75.83%	64.75%	70.58%	0.0123	0.0028
48.5	4,981,085	75.27%	61.19%	69.19%	0.0198	0.0037
49.5	4,881,547	74.09%	57.37%	67.76%	0.0279	0.0040
50.5	3,656,547	56.67%	53.33%	66.29%	0.0011	0.0093
51.5	3,121,876	55.40%	49.11%	64.78%	0.0040	0.0088
52.5	2,998,477	54.52%	44.79%	63.23%	0.0095	0.0076
53.5	2,824,615	51.36%	40.43%	61.64%	0.0120	0.0106
54.5	2,436,653	43.75%	36.10%	60.01%	0.0058	0.0264
55.5	1,722,964	30.94%	31.88%	58.34%	0.0001	0.0751
56.5	1,670,029	29.99%	27.83%	56.64%	0.0005	0.0710

Account 390 Iowa Curve Fitting

Exhibit DJG-6

Page 2 of 2

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	Exposures (Dollars)	Observed Life Table (OLT)	Company R4-50	TCUC R2-58	Company SSD	TCUC SSD
57.5	1,653,834	29.74%	24.01%	54.90%	0.0033	0.0633
58.5	1,319,764	23.74%	20.44%	53.14%	0.0011	0.0864
59.5	1,262,294	22.70%	17.18%	51.34%	0.0030	0.0820
60.5	1,035,730	19.55%	14.22%	49.53%	0.0028	0.0899
61.5	1,033,560	19.51%	11.59%	47.69%	0.0063	0.0794
62.5	1,030,899	19.51%	9.27%	45.83%	0.0105	0.0693
63.5	1,030,414	19.50%	7.27%	43.96%	0.0150	0.0598
64.5	1,028,030	19.46%	5.56%	42.08%	0.0193	0.0512
65.5	1,024,819	19.40%	4.13%	40.19%	0.0233	0.0432
66.5	1,024,082	19.38%	2.96%	38.31%	0.0270	0.0358
67.5	540,786	17.92%	2.03%	36.43%	0.0253	0.0342
68.5	533,762	17.69%	1.32%	34.55%	0.0268	0.0284
69.5	528,295	17.51%	0.79%	32.70%	0.0279	0.0231
70.5	505,207	16.74%	0.44%	30.86%	0.0266	0.0199
71.5	505,207	16.74%	0.21%	29.05%	0.0273	0.0152
72.5	504,900	16.73%	0.09%	27.27%	0.0277	0.0111
73.5	504,900	16.73%	0.03%	25.52%	0.0279	0.0077
74.5	456,405	15.13%	0.00%	23.82%	0.0229	0.0075
75.5	456,405	15.13%	0.00%	22.16%	0.0229	0.0049
76.5	417,366	13.83%	0.00%	20.55%	0.0191	0.0045
77.5	415,538	13.77%	0.00%	18.99%	0.0190	0.0027
78.5	47,914	1.59%	0.00%	17.49%	0.0003	0.0253
79.5	37,163	1.23%	0.00%	16.05%	0.0002	0.0220
80.5	30,349	1.01%	0.00%	14.67%	0.0001	0.0187
81.5	30,349	1.01%	0.00%	13.36%	0.0001	0.0152
82.5	30,349	1.01%	0.00%	12.11%	0.0001	0.0123
83.5	30,349	1.01%	0.00%	10.93%	0.0001	0.0098
84.5	30,349	1.01%	0.00%	9.82%	0.0001	0.0078
85.5	30,349	1.01%	0.00%	8.77%	0.0001	0.0060
86.5	30,349	1.01%	0.00%	7.80%	0.0001	0.0046
87.5	30,349	1.01%	0.00%	6.88%	0.0001	0.0035
88.5	17,107	0.57%	0.00%	6.04%	0.0000	0.0030
89.5	17,107	0.57%	0.00%	5.26%	0.0000	0.0022
90.5			0.00%	4.54%		
Sum of Squared Differences				[8]	0.5488	1.1941
Up to 1% of Beginning Exposures				[9]	0.1442	0.0610

[1] Age in years using half-year convention

[2] Dollars exposed to retirement at the beginning of each age interval

[3] Observed life table based on the Company's property records. These numbers form the original survivor curve.

[4] The Company's selected Iowa curve to be fitted to the OLT.

[5] My selected Iowa curve to be fitted to the OLT.

[6] = ([4] - [3])². This is the squared difference between each point on the Company's curve and the observed survivor curve.

[7] = ([5] - [3])². This is the squared difference between each point on my curve and the observed survivor curve.

[8] = Sum of squared differences. The smallest SSD represents the best mathematical fit

**SOAH DOCKET NO. 473-19-3864
PUC DOCKET NO. 49421**

APPLICATION OF CENTERPOINT	§	BEFORE THE STATE OFFICE
ENERGY HOUSTON ELECTRIC,	§	OF
LLC FOR AUTHORITY TO	§	ADMINISTRATIVE HEARINGS
CHANGE RATES	§	

DIRECT TESTIMONY AND EXHIBITS

OF

DAVID J. GARRETT

EXHIBIT DJG-7:

Account 390 Remaining Life Development

Account 390 Remaining Life

Exhibit DJG-7

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Vintage	Age	Surviving Balance	Average Life	Average Annual Accrual	Remaining Life	Future Annual Accruals
2017	0.5	\$ 2,287,916	58	\$ 39,447	57.55	\$ 2,270,051
2016	1.5	6,288,178	58	108,417	56.64	6,141,236
2015	2.5	44,597,544	58	768,923	55.75	42,864,745
2014	3.5	29,675,696	58	511,650	54.85	28,065,334
2013	4.5	5,293,173	58	91,262	53.96	4,924,803
2012	5.5	2,445,120	58	42,157	53.08	2,237,671
2011	6.5	282,886	58	4,877	52.20	254,595
2010	7.5	726,486	58	12,526	51.32	642,872
2009	8.5	813,085	58	14,019	50.45	707,313
2008	9.5	182,281	58	3,143	49.59	155,851
2007	10.5	939,048	58	16,190	48.73	788,973
2006	11.5	45,588	58	786	47.88	37,631
2005	12.5	15,063,876	58	259,722	47.03	12,214,217
2004	13.5	6,382,177	58	110,038	46.18	5,082,065
2003	14.5	984,943	58	16,982	45.35	770,075
2002	15.5	678,554	58	11,699	44.52	520,796
2001	16.5	275,733	58	4,754	43.69	207,701
2000	17.5	2,606,578	58	44,941	42.87	1,926,601
1999	18.5	21,475	58	370	42.06	15,571
1998	19.5	121,579	58	2,096	41.25	86,464
1997	20.5	773,193	58	13,331	40.45	539,188
1995	22.5	166,376	58	2,869	38.86	111,480
1994	23.5	463,604	58	7,993	38.08	304,385
1993	24.5	755,040	58	13,018	37.31	485,636
1992	25.5	616,617	58	10,631	36.54	388,431
1991	26.5	1,190,207	58	20,521	35.78	734,133
1990	27.5	1,579,915	58	27,240	35.02	953,955
1989	28.5	3,444,143	58	59,382	34.27	2,035,188
1988	29.5	4,045,784	58	69,755	33.53	2,339,076
1987	30.5	11,979,715	58	206,547	32.80	6,774,776
1986	31.5	198,038	58	3,414	32.07	109,518
1985	32.5	16,372,328	58	282,282	31.36	8,851,541
1984	33.5	6,803,549	58	117,303	30.65	3,595,037
1983	34.5	3,145,244	58	54,228	29.95	1,623,909
1982	35.5	7,427,154	58	128,054	29.25	3,745,823
1981	36.5	7,153,656	58	123,339	28.57	3,523,301
1980	37.5	634,301	58	10,936	27.89	304,999
1979	38.5	201,278	58	3,470	27.22	94,462
1978	39.5	34,272	58	591	26.56	15,694
1977	40.5	19,196,704	58	330,978	25.91	8,574,963
1976	41.5	41,326	58	713	25.27	18,002
1975	42.5	996,052	58	17,173	24.63	423,006
1974	43.5	3,210,691	58	55,357	24.01	1,328,931
1973	44.5	2,817,896	58	48,584	23.39	1,136,469
1972	45.5	730,218	58	12,590	22.79	286,872
1971	46.5	94,863	58	1,636	22.19	36,292
1970	47.5	37,477	58	646	21.60	13,958
Total				\$ 3,686,579		\$ 158,263,589
Remaining Life		[8]	42.93 years			

[1] Vintage year

[2] Age

[3] Surviving balances from Company workpapers

[4] Average life based on Iowa curve selected in Exhibit DJG-6

[5] = [3] / [4]

[6] Remaining life based on Iowa curve selected in Exhibit DJG-6

[7] = [5] * [6]

[8] = Total [7] / Total [5]

**SOAH DOCKET NO. 473-19-3864
PUC DOCKET NO. 49421**

**APPLICATION OF CENTERPOINT §
ENERGY HOUSTON ELECTRIC, §
LLC FOR AUTHORITY TO §
CHANGE RATES §**

**BEFORE THE STATE OFFICE
OF
ADMINISTRATIVE HEARINGS**

DIRECT TESTIMONY AND EXHIBITS

OF

DAVID J. GARRETT

EXHIBIT DJG-8:

Peer Group Comparison

Peer Group Comparison

Exhibit DJG-8

Acct	Description	CEHE	Peer Group			Peer Avg	Peer Avg less CEHE	TCUC
			[1] SWEPCO	[2] OG&E	[3] PSO			
<u>TRANSMISSION PLANT</u>								
353	STATION EQUIPMENT	53	60	63	60	61	8	56
354	TOWERS & FIXTURES	59	60	75	75	70	11	66
<u>DISTRIBUTION PLANT</u>								
362	STATION EQUIPMENT	48	55	68	75	66	18	55
364	POLES,TOWERS,FIXTURE	35	55	55	53	54	19	45
365	O/H CONDUCT DEVICES	38	44	54	46	48	10	40
366	UNDERGROUND CONDUIT	62	70	65	78	71	9	65
367	U/G CONDUCT/DEVICES	38	45	64	65	58	20	42
368	LINE TRANSFORMERS	28	50	44	36	43	15	32
Average		45	55	61	61	59	14	50

[1] Application of Southwestern Electric Power Company, Docket No. 46449, Order on Rehearing, pp. 33-34 (March 19, 2018).

[2] Final Order No. 662059, p. 8, Application of Oklahoma Gas and Electric Company, Docket No. PUD 201500273, Before the Corporation Commission of Oklahoma (March 20, 2017).

[3] Final Order No. 672864, pp. 5-6, Application of Public Service Company of Oklahoma, Docket No. PUD 201700151, Before the Corporation Commission of Oklahoma (January 31, 2018).

**SOAH DOCKET NO. 473-19-3864
PUC DOCKET NO. 49421**

APPLICATION OF CENTERPOINT	§	BEFORE THE STATE OFFICE
ENERGY HOUSTON ELECTRIC,	§	OF
LLC FOR AUTHORITY TO	§	ADMINISTRATIVE HEARINGS
CHANGE RATES	§	

DIRECT TESTIMONY AND EXHIBITS

OF

DAVID J. GARRETT

EXHIBIT DJG-9:

Actuarial Observed Life Tables and Iowa Curve Charts

CEHE
Electric Division
390.01 Structures & Improvements
Observed Life Table
Retirement Expr. 1967 TO 2017
Placement Years 1919 TO 2017

Age Interval	\$ Surviving At Beginning of Age Interval	\$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
0.0 - 0.5	\$198,211,426.06	\$3,657.93	0.00002	100.00
0.5 - 1.5	\$200,123,614.21	\$185,277.87	0.00093	100.00
1.5 - 2.5	\$200,149,581.02	\$76,802.46	0.00038	99.91
2.5 - 3.5	\$199,734,459.68	\$152,258.84	0.00076	99.87
3.5 - 4.5	\$200,701,033.32	\$263,243.75	0.00131	99.79
4.5 - 5.5	\$200,195,955.61	\$41,281.65	0.00021	99.66
5.5 - 6.5	\$199,723,773.70	\$229,783.19	0.00115	99.64
6.5 - 7.5	\$199,039,450.42	\$542,083.91	0.00272	99.53
7.5 - 8.5	\$197,328,662.87	\$76,218.62	0.00039	99.25
8.5 - 9.5	\$196,292,064.01	\$151,438.52	0.00077	99.22
9.5 - 10.5	\$196,658,406.78	\$458,900.63	0.00233	99.14
10.5 - 11.5	\$195,310,083.09	\$926,866.81	0.00475	98.91
11.5 - 12.5	\$193,458,915.94	\$272,718.10	0.00141	98.44
12.5 - 13.5	\$177,960,397.49	\$146,913.15	0.00083	98.30
13.5 - 14.5	\$171,349,401.09	\$349,135.93	0.00204	98.22
14.5 - 15.5	\$170,642,186.13	\$156,961.07	0.00092	98.02
15.5 - 16.5	\$168,731,191.70	\$515,874.75	0.00306	97.93
16.5 - 17.5	\$168,257,521.55	\$205,356.09	0.00122	97.63
17.5 - 18.5	\$159,564,666.27	\$291,007.91	0.00182	97.51
18.5 - 19.5	\$144,683,748.80	\$242,768.62	0.00168	97.33
19.5 - 20.5	\$122,550,063.90	\$527,836.78	0.00431	97.17
20.5 - 21.5	\$121,112,134.34	\$447,123.25	0.00369	96.75
21.5 - 22.5	\$120,590,605.28	\$97,943.01	0.00081	96.39
22.5 - 23.5	\$120,328,690.01	\$398,252.58	0.00331	96.31
23.5 - 24.5	\$119,468,453.22	\$1,667,235.96	0.01396	96.00
24.5 - 25.5	\$116,775,815.36	\$196,976.27	0.00169	94.66
25.5 - 26.5	\$115,922,663.61	\$1,414,540.95	0.01220	94.50
26.5 - 27.5	\$113,264,528.29	\$538,474.48	0.00475	93.34
27.5 - 28.5	\$110,240,672.11	\$2,635,633.51	0.02391	92.90
28.5 - 29.5	\$104,089,909.19	\$4,834,600.54	0.04645	90.68
29.5 - 30.5	\$94,888,792.31	\$1,185,112.11	0.01249	86.47
30.5 - 31.5	\$81,568,413.63	\$30,656.33	0.00038	85.39
31.5 - 32.5	\$81,340,025.96	\$1,528,623.71	0.01879	85.35
32.5 - 33.5	\$62,068,857.21	\$270,129.05	0.00435	83.75
33.5 - 34.5	\$54,709,760.04	\$80,793.08	0.00148	83.39
34.5 - 35.5	\$51,426,158.67	\$170,467.43	0.00331	83.26
35.5 - 36.5	\$43,739,333.63	\$50,160.80	0.00115	82.99

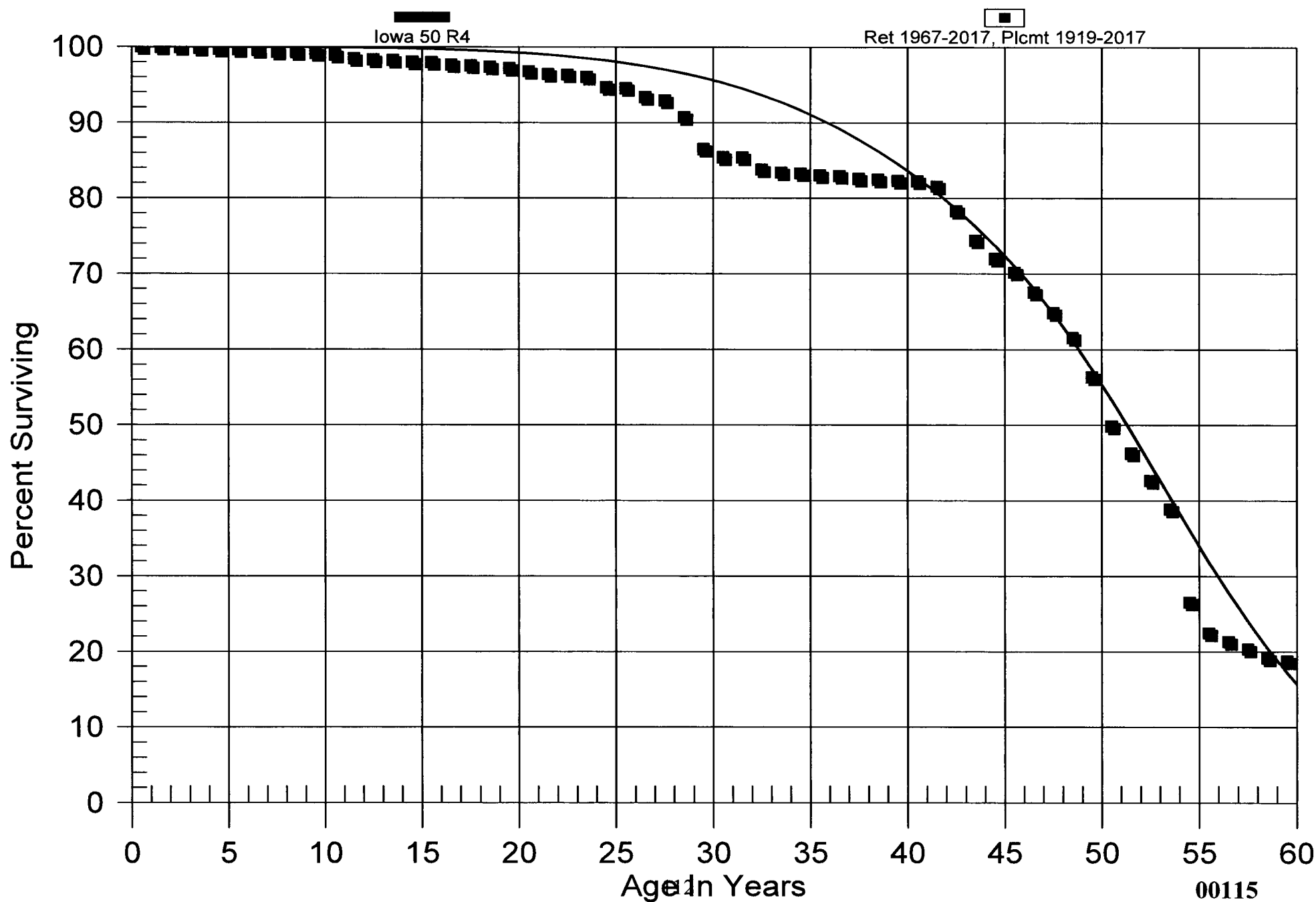
CEHE
Electric Division
390.01 Structures & Improvements
Observed Life Table
Retirement Expr. 1967 TO 2017
Placement Years 1919 TO 2017

Age Interval	\$ Surviving At Beginning of Age Interval	\$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
36.5 - 37.5	\$36,066,371.34	\$165,516.98	0.00459	82.89
37.5 - 38.5	\$35,540,930.96	\$42,353.05	0.00119	82.51
38.5 - 39.5	\$35,239,430.23	\$73,522.26	0.00209	82.41
39.5 - 40.5	\$35,120,495.78	\$11,297.41	0.00032	82.24
40.5 - 41.5	\$15,763,899.47	\$131,074.66	0.00831	82.21
41.5 - 42.5	\$15,504,082.83	\$615,478.92	0.03970	81.53
42.5 - 43.5	\$13,806,722.28	\$688,513.73	0.04987	78.29
43.5 - 44.5	\$9,830,802.28	\$319,554.33	0.03251	74.39
44.5 - 45.5	\$6,540,807.41	\$166,224.70	0.02541	71.97
45.5 - 46.5	\$5,644,364.64	\$211,111.23	0.03740	70.14
46.5 - 47.5	\$5,338,390.32	\$213,469.36	0.03999	67.52
47.5 - 48.5	\$5,114,216.19	\$259,089.21	0.05066	64.82
48.5 - 49.5	\$3,535,748.23	\$298,818.19	0.08451	61.54
49.5 - 50.5	\$2,345,063.62	\$271,455.07	0.11576	56.34
50.5 - 51.5	\$2,072,739.60	\$150,072.69	0.07240	49.81
51.5 - 52.5	\$1,922,666.91	\$150,168.77	0.07810	46.21
52.5 - 53.5	\$1,772,498.14	\$156,426.75	0.08825	42.60
53.5 - 54.5	\$1,616,071.39	\$513,603.18	0.31781	38.84
54.5 - 55.5	\$1,102,468.21	\$168,777.75	0.15309	26.50
55.5 - 56.5	\$933,690.46	\$46,830.51	0.05016	22.44
56.5 - 57.5	\$886,859.95	\$41,742.94	0.04707	21.31
57.5 - 58.5	\$845,117.01	\$50,517.60	0.05978	20.31
58.5 - 59.5	\$794,599.41	\$15,216.54	0.01915	19.10
59.5 - 60.5	\$779,382.87	\$181,795.36	0.23326	18.73
60.5 - 61.5	\$597,587.51	\$13,860.06	0.02319	14.36
61.5 - 62.5	\$583,727.45	\$11,869.46	0.02033	14.03
62.5 - 63.5	\$571,857.99	\$11,800.77	0.02064	13.74
63.5 - 64.5	\$560,057.22	\$12,005.60	0.02144	13.46
64.5 - 65.5	\$548,051.62	\$11,539.22	0.02105	13.17
65.5 - 66.5	\$536,512.40	\$11,218.17	0.02091	12.89
66.5 - 67.5	\$525,294.23	\$15,048.39	0.02865	12.62
67.5 - 68.5	\$510,245.84	\$7,639.02	0.01497	12.26
68.5 - 69.5	\$502,606.82	\$44,145.48	0.08783	12.08
69.5 - 70.5	\$458,461.34	\$44,263.71	0.09655	11.02
70.5 - 71.5	\$414,197.63	\$42,636.37	0.10294	9.95
71.5 - 72.5	\$371,561.26	\$42,636.37	0.11475	8.93
72.5 - 73.5	\$328,924.89	\$42,605.66	0.12953	7.91

CEHE
Electric Division
390.01 Structures & Improvements
Observed Life Table
Retirement Expr. 1967 TO 2017
Placement Years 1919 TO 2017

<i>Age Interval</i>	<i>\$ Surviving At Beginning of Age Interval</i>	<i>\$ Retired During The Age Interval</i>	<i>Retirement Ratio</i>	<i>% Surviving At Beginning of Age Interval</i>
73.5 - 74.5	\$286,319.23	\$91,100.71	0.31818	6.88
74.5 - 75.5	\$195,218.52	\$42,605.66	0.21825	4.69
75.5 - 76.5	\$152,612.86	\$42,605.66	0.27917	3.67
76.5 - 77.5	\$110,007.20	\$38,701.69	0.35181	2.64
77.5 - 78.5	\$71,305.51	\$38,518.96	0.54020	1.71
78.5 - 79.5	\$32,786.55	\$3,080.66	0.09396	0.79
79.5 - 80.5	\$29,705.89	\$2,005.53	0.06751	0.71
80.5 - 81.5	\$27,700.36	\$1,324.12	0.04780	0.67
81.5 - 82.5	\$26,376.24	\$1,324.12	0.05020	0.63
82.5 - 83.5	\$25,052.12	\$1,324.12	0.05285	0.60
83.5 - 84.5	\$23,728.00	\$1,324.12	0.05580	0.57
84.5 - 85.5	\$22,403.88	\$1,324.12	0.05910	0.54
85.5 - 86.5	\$21,079.76	\$1,324.12	0.06281	0.51
86.5 - 87.5	\$19,755.64	\$1,324.12	0.06702	0.47
87.5 - 88.5	\$18,431.52	\$1,324.12	0.07184	0.44
88.5 - 89.5	\$17,107.40	\$0.00	0.00000	0.41

CEHE
Electric Division
390.01 Structures & Improvements
Original And Smooth Survivor Curves



**SOAH DOCKET NO. 473-19-3864
PUC DOCKET NO. 49421**

APPLICATION OF CENTERPOINT	§	BEFORE THE STATE OFFICE
ENERGY HOUSTON ELECTRIC,	§	OF
LLC FOR AUTHORITY TO	§	ADMINISTRATIVE HEARINGS
CHANGE RATES	§	

DIRECT TESTIMONY AND EXHIBITS

OF

DAVID J. GARRETT

EXHIBIT DJG-10:

Simulated Plant Record Analysis and Graphical Balance Fit Summaries

CEHE
Electric Division
353.01 Station Equipment

Simulated Plant Record Analysis Calculated As Of 12/31/2017

Simulated Balances Method

No. Of Test Points - 93
Interval Between Test Points - 1
First Test Point - 1925
Last Test Point - 2017

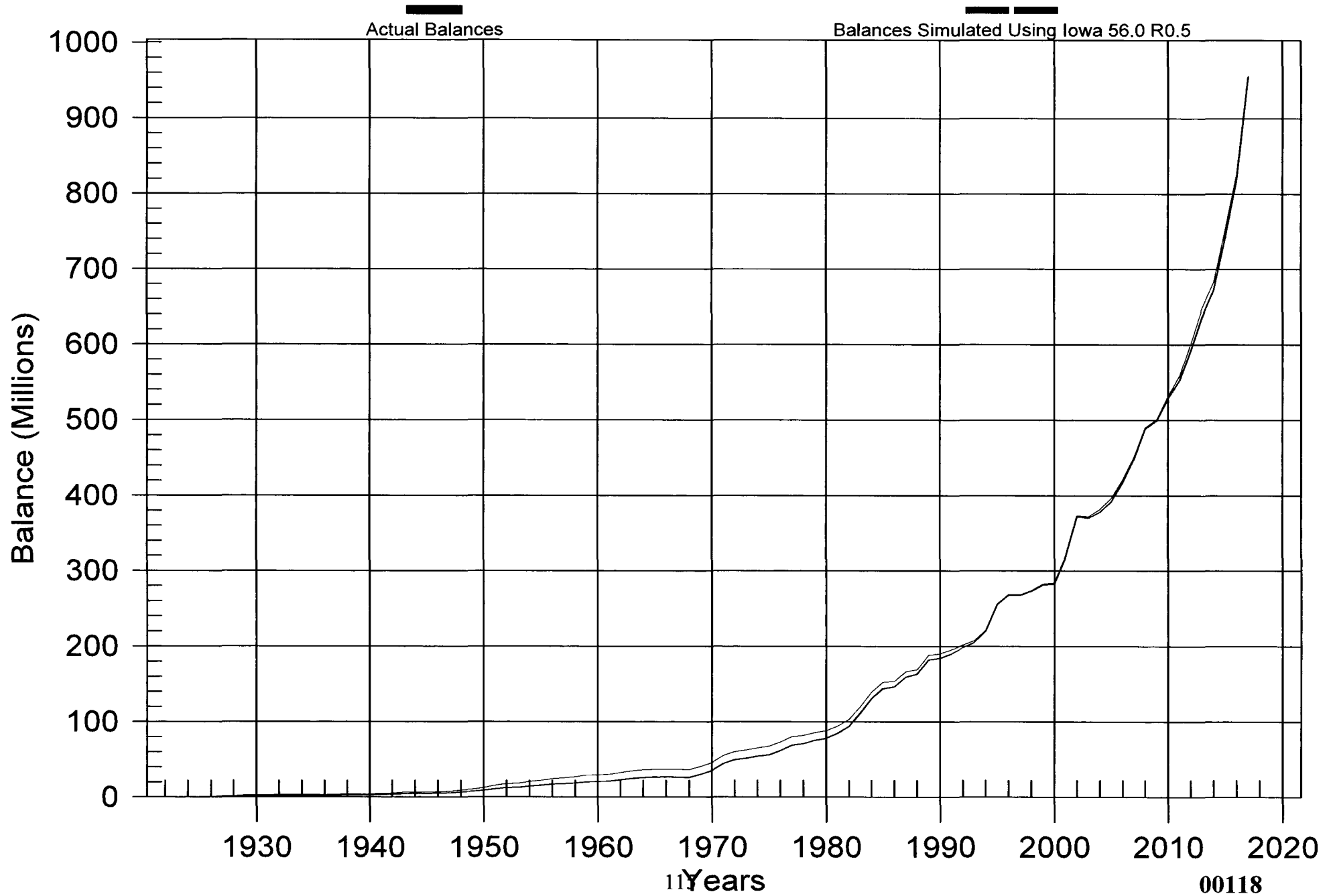
<i>Curve Type</i>	<i>Average Service Life</i>	<i>Sum Of Squares Difference</i>	<i>Conformance Index</i>	<i>Index Of Variation</i>	<i>Ret Exp Index</i>
O4	131.09 Yrs.	2.9959E+15	26.77	37.36	59.71
O3	95.47 Yrs.	3.0172E+15	26.67	37.49	63.04
O2	67.56 Yrs.	3.0771E+15	26.41	37.86	74.31
O1	60.16 Yrs.	3.0779E+15	26.41	37.87	76.88
SC	60.16 Yrs.	3.0779E+15	26.41	37.87	76.88
R0.5	52.50 Yrs.	3.2278E+15	25.79	38.78	92.42
L0	56.82 Yrs.	3.2955E+15	25.52	39.18	82.91
S.5	51.44 Yrs.	3.3044E+15	25.49	39.24	93.02
L0.5	51.03 Yrs.	3.4572E+15	24.92	40.13	90.13
R1	46.63 Yrs.	3.4706E+15	24.87	40.21	99.97
S0	45.31 Yrs.	3.6217E+15	24.34	41.08	100.00
L1	46.38 Yrs.	3.6642E+15	24.20	41.32	95.69
R1.5	43.03 Yrs.	3.7289E+15	23.99	41.68	100.00
S0.5	42.44 Yrs.	3.8340E+15	23.66	42.26	100.00
L1.5	43.22 Yrs.	3.8572E+15	23.59	42.39	98.34
R2	40.06 Yrs.	4.0081E+15	23.14	43.21	100.00
S1	40.00 Yrs.	4.0653E+15	22.98	43.52	100.00
L2	40.56 Yrs.	4.0728E+15	22.96	43.56	99.66
R2.5	38.19 Yrs.	4.2178E+15	22.56	44.33	100.00
S1.5	38.47 Yrs.	4.2242E+15	22.54	44.36	100.00
S2	37.06 Yrs.	4.3854E+15	22.12	45.20	100.00
L3	37.25 Yrs.	4.3995E+15	22.09	45.27	100.00
R3	36.50 Yrs.	4.4176E+15	22.04	45.37	100.00
S3	35.41 Yrs.	4.5922E+15	21.62	46.25	100.00
R4	34.78 Yrs.	4.6522E+15	21.48	46.56	100.00
L4	35.09 Yrs.	4.6562E+15	21.47	46.57	100.00
S4	34.22 Yrs.	4.7958E+15	21.16	47.27	100.00
L5	34.03 Yrs.	4.8523E+15	21.03	47.55	100.00
R5	33.72 Yrs.	4.8677E+15	21.00	47.62	100.00
S5	33.56 Yrs.	4.9513E+15	20.82	48.03	100.00
S6	33.25 Yrs.	5.1110E+15	20.49	48.80	100.00
SQ	33.00 Yrs.	5.8074E+15	19.23	52.01	100.00

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Electric Division

353.01 Station Equipment

Actual And Simulated Balances 1925-2017



CEHE
Electric Division
354.01 Towers and Fixtures

Simulated Plant Record Analysis Calculated As Of 12/31/2017

Simulated Balances Method

No. Of Test Points - 93
Interval Between Test Points - 1
First Test Point - 1925
Last Test Point - 2017

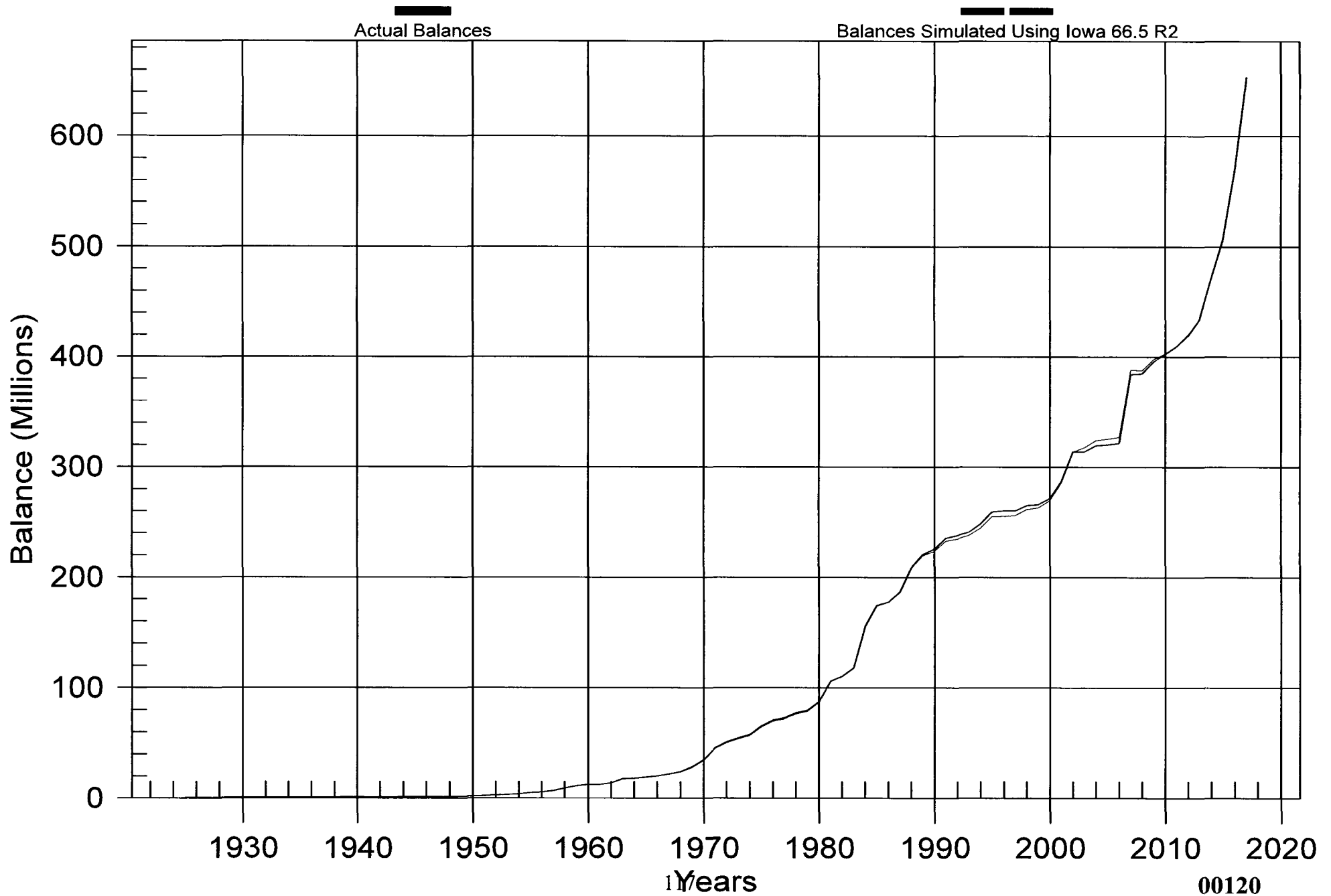
<i>Curve Type</i>	<i>Average Service Life</i>	<i>Sum Of Squares Difference</i>	<i>Conformance Index</i>	<i>Index Of Variation</i>	<i>Ret Exp Index</i>
S0.5	73.38 Yrs.	2.4657E+14	79.78	12.54	70.26
L1	82.94 Yrs.	2.5204E+14	78.91	12.67	61.78
S0	85.00 Yrs.	2.5237E+14	78.85	12.68	56.12
L1.5	72.22 Yrs.	2.7291E+14	75.83	13.19	73.53
R2	66.53 Yrs.	2.7828E+14	75.09	13.32	85.52
L0.5	100.81 Yrs.	2.7983E+14	74.88	13.35	49.64
R2.5	58.97 Yrs.	2.9165E+14	73.35	13.63	97.72
S1	64.25 Yrs.	2.9812E+14	72.55	13.78	85.45
L0	123.70 Yrs.	3.1268E+14	70.84	14.12	40.56
R1.5	80.50 Yrs.	3.4109E+14	67.83	14.74	60.24
S.5	115.13 Yrs.	3.7805E+14	64.43	15.52	38.32
S1.5	59.00 Yrs.	3.7965E+14	64.29	15.55	94.57
L2	63.50 Yrs.	3.8144E+14	64.14	15.59	84.37
R1	99.34 Yrs.	3.9871E+14	62.74	15.94	42.12
R3	53.38 Yrs.	4.1919E+14	61.18	16.34	100.00
R0.5	128.31 Yrs.	4.4934E+14	59.10	16.92	32.31
O2	181.00 Yrs.	4.7270E+14	57.62	17.36	28.72
O1	161.13 Yrs.	4.7308E+14	57.59	17.36	28.70
SC	161.13 Yrs.	4.7308E+14	57.59	17.36	28.70
S2	54.63 Yrs.	5.5409E+14	53.22	18.79	99.22
L3	54.09 Yrs.	6.5783E+14	48.84	20.47	96.65
R4	48.25 Yrs.	8.2731E+14	43.55	22.96	100.00
S3	49.72 Yrs.	8.7096E+14	42.45	23.56	100.00
L4	48.66 Yrs.	9.8565E+14	39.90	25.06	99.98
S4	46.41 Yrs.	1.1640E+15	36.72	27.24	100.00
L5	45.94 Yrs.	1.2319E+15	35.69	28.02	100.00
R5	45.28 Yrs.	1.2341E+15	35.66	28.04	100.00
S5	44.78 Yrs.	1.3144E+15	34.55	28.94	100.00
S6	44.19 Yrs.	1.4602E+15	32.78	30.51	100.00
SQ	44.00 Yrs.	1.8549E+15	29.09	34.38	100.00
O3	201.00 Yrs.	1.9085E+15	.00	.00	35.77
O4	201.00 Yrs.	9.9763E+15	.00	.00	45.52

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Electric Division

354.01 Towers and Fixtures

Actual And Simulated Balances 1925-2017



CEHE
Electric Division
362.01 Station Equipment

Simulated Plant Record Analysis Calculated As Of 12/31/2017

Simulated Balances Method

No. Of Test Points - 93
Interval Between Test Points - 1
First Test Point - 1925
Last Test Point - 2017

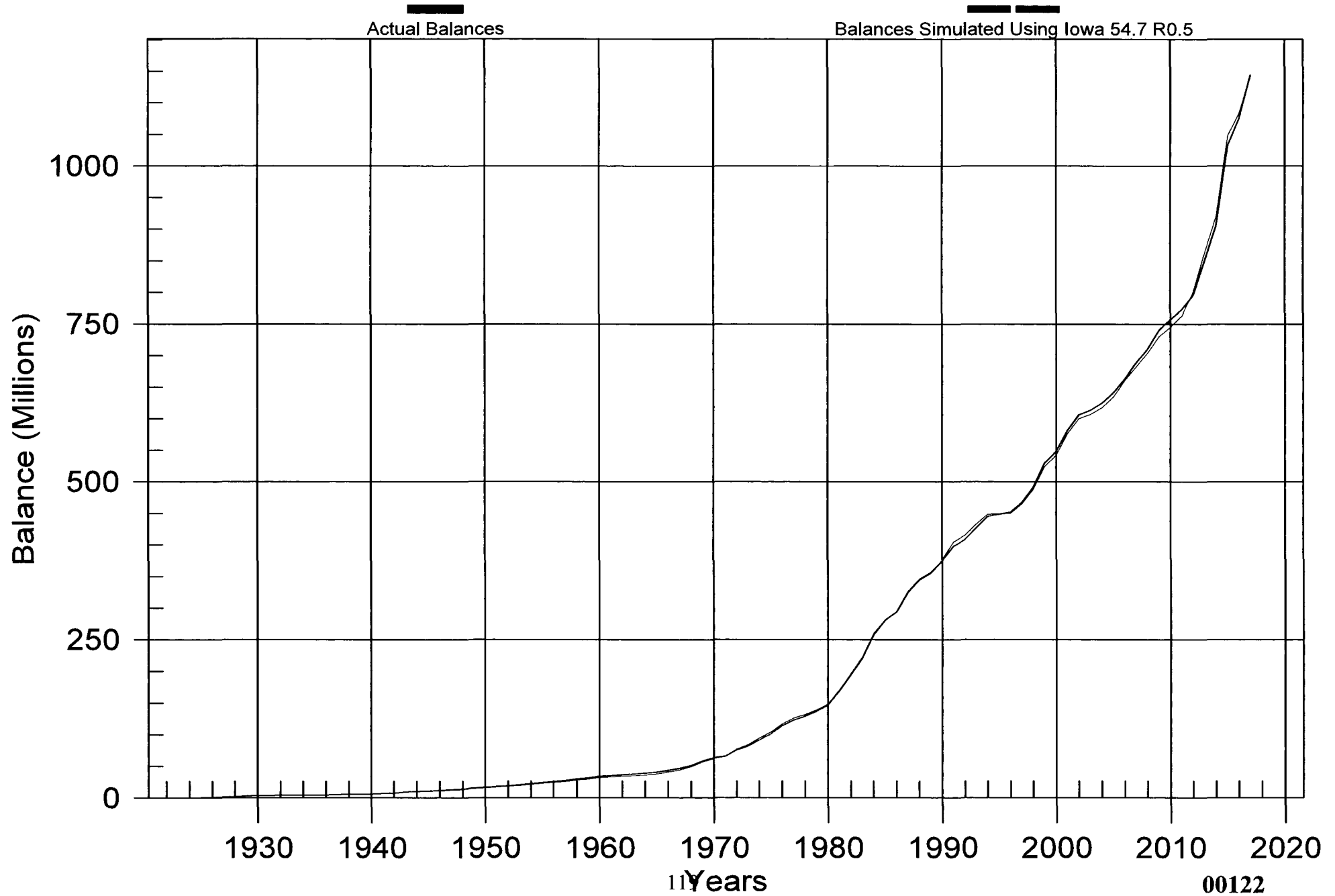
<i>Curve Type</i>	<i>Average Service Life</i>	<i>Sum Of Squares Difference</i>	<i>Conformance Index</i>	<i>Index Of Variation</i>	<i>Ret Exp Index</i>
R1	47.97 Yrs.	1.5403E+15	59.60	16.78	99.67
R1.5	43.91 Yrs.	1.5560E+15	59.30	16.86	100.00
S.5	53.75 Yrs.	1.6765E+15	57.13	17.50	89.68
L0.5	53.50 Yrs.	1.7779E+15	55.48	18.03	87.91
L0	59.95 Yrs.	1.7801E+15	55.44	18.04	80.03
R0.5	54.69 Yrs.	1.7821E+15	55.41	18.05	89.46
S0	47.16 Yrs.	1.9162E+15	53.44	18.71	99.78
R2	40.75 Yrs.	2.0389E+15	51.81	19.30	100.00
SC	63.47 Yrs.	2.0749E+15	51.35	19.47	72.87
O1	63.47 Yrs.	2.0749E+15	51.35	19.47	72.87
O2	71.31 Yrs.	2.0774E+15	51.32	19.48	71.22
O3	101.53 Yrs.	2.2258E+15	49.58	20.17	60.72
L1	48.47 Yrs.	2.2723E+15	49.07	20.38	94.17
O4	139.84 Yrs.	2.2904E+15	48.88	20.46	57.64
S0.5	43.88 Yrs.	2.3021E+15	48.75	20.51	100.00
R2.5	38.72 Yrs.	2.7655E+15	44.48	22.48	100.00
L1.5	44.91 Yrs.	2.8118E+15	44.11	22.67	97.58
S1	41.25 Yrs.	3.2026E+15	41.33	24.19	100.00
S1.5	39.50 Yrs.	3.9473E+15	37.23	26.86	100.00
L2	42.06 Yrs.	4.0753E+15	36.64	27.29	99.38
R3	37.09 Yrs.	4.1807E+15	36.18	27.64	100.00
S2	38.03 Yrs.	5.2183E+15	32.38	30.88	100.00
L3	38.34 Yrs.	6.3646E+15	29.32	34.10	100.00
R4	35.41 Yrs.	7.1277E+15	27.71	36.09	100.00
S3	36.22 Yrs.	7.4267E+15	27.14	36.84	100.00
L4	35.88 Yrs.	8.4896E+15	25.39	39.39	100.00
S4	34.91 Yrs.	1.0019E+16	23.37	42.79	100.00
R5	34.38 Yrs.	1.0607E+16	22.71	44.03	100.00
L5	34.75 Yrs.	1.0732E+16	22.58	44.29	100.00
S5	34.22 Yrs.	1.1680E+16	21.64	46.20	100.00
S6	33.84 Yrs.	1.2557E+16	20.88	47.90	100.00
SQ	34.00 Yrs.	1.4334E+16	19.54	51.18	100.00

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Electric Division

362.01 Station Equipment

Actual And Simulated Balances 1925-2017



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Electric Division
364.01 Poles, Towers, and Fixtures
Simulated Plant Record Analysis Calculated As Of 12/31/2017

Simulated Balances Method

No. Of Test Points - 105
Interval Between Test Points - 1
First Test Point - 1913
Last Test Point - 2017

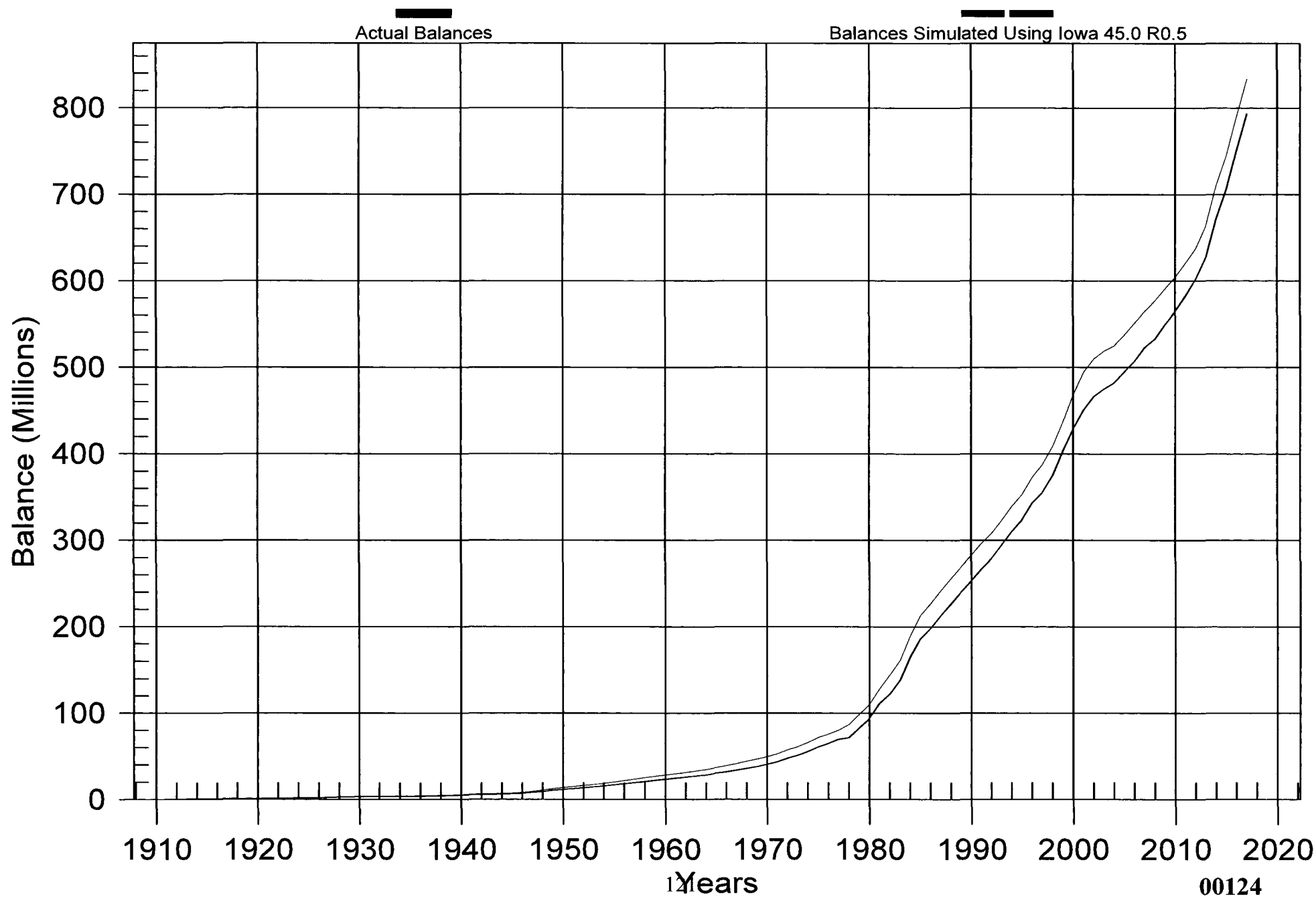
<i>Curve Type</i>	<i>Average Service Life</i>	<i>Sum Of Squares Difference</i>	<i>Conformance Index</i>	<i>Index Of Variation</i>	<i>Ret Exp Index</i>
O4	79.13 Yrs.	6.0968E+15	20.34	49.17	76.55
O3	58.59 Yrs.	6.4737E+15	19.74	50.67	82.64
O2	43.16 Yrs.	7.4280E+15	18.42	54.28	94.86
SC	38.69 Yrs.	7.5505E+15	18.27	54.72	100.00
O1	38.69 Yrs.	7.5505E+15	18.27	54.72	100.00
R0.5	35.44 Yrs.	9.3357E+15	16.43	60.85	100.00
S.5	35.41 Yrs.	1.0572E+16	15.44	64.75	100.00
L0	38.97 Yrs.	1.0584E+16	15.43	64.79	99.04
R1	32.91 Yrs.	1.1994E+16	14.50	68.97	100.00
L0.5	36.25 Yrs.	1.3106E+16	13.87	72.10	99.79
S0	32.97 Yrs.	1.4752E+16	13.07	76.49	100.00
R1.5	31.38 Yrs.	1.5120E+16	12.91	77.44	100.00
L1	34.06 Yrs.	1.6393E+16	12.40	80.63	100.00
S0.5	31.63 Yrs.	1.7761E+16	11.92	83.93	100.00
R2	30.13 Yrs.	1.9300E+16	11.43	87.49	100.00
L1.5	32.50 Yrs.	1.9702E+16	11.31	88.40	100.00
S1	30.50 Yrs.	2.1527E+16	10.82	92.40	100.00
R2.5	29.38 Yrs.	2.3594E+16	10.34	96.73	100.00
L2	31.19 Yrs.	2.3900E+16	10.27	97.36	100.00
S1.5	29.75 Yrs.	2.4729E+16	10.10	99.03	100.00
S2	29.09 Yrs.	2.8584E+16	9.39	106.47	100.00
R3	28.69 Yrs.	2.8888E+16	9.34	107.04	100.00
L3	29.38 Yrs.	3.1170E+16	8.99	111.18	100.00
S3	28.31 Yrs.	3.5267E+16	8.46	118.27	100.00
R4	28.03 Yrs.	3.8047E+16	8.14	122.84	100.00
L4	28.22 Yrs.	3.8697E+16	8.07	123.88	100.00
S4	27.78 Yrs.	4.3193E+16	7.64	130.88	100.00
L5	27.72 Yrs.	4.5750E+16	7.42	134.70	100.00
R5	27.63 Yrs.	4.7800E+16	7.26	137.69	100.00
S5	27.53 Yrs.	5.0068E+16	7.10	140.91	100.00
S6	27.41 Yrs.	5.5060E+16	6.77	147.77	100.00
SQ	27.00 Yrs.	5.9970E+16	6.48	154.22	100.00

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Electric Division

364.01 Poles, Towers, and Fixtures

Actual And Simulated Balances 1913-2017



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Electric Division

365.01 Overhead Conductors and Devices

Simulated Plant Record Analysis Calculated As Of 12/31/2017

Simulated Balances Method

No. Of Test Points - 105
Interval Between Test Points - 1
First Test Point - 1913
Last Test Point - 2017

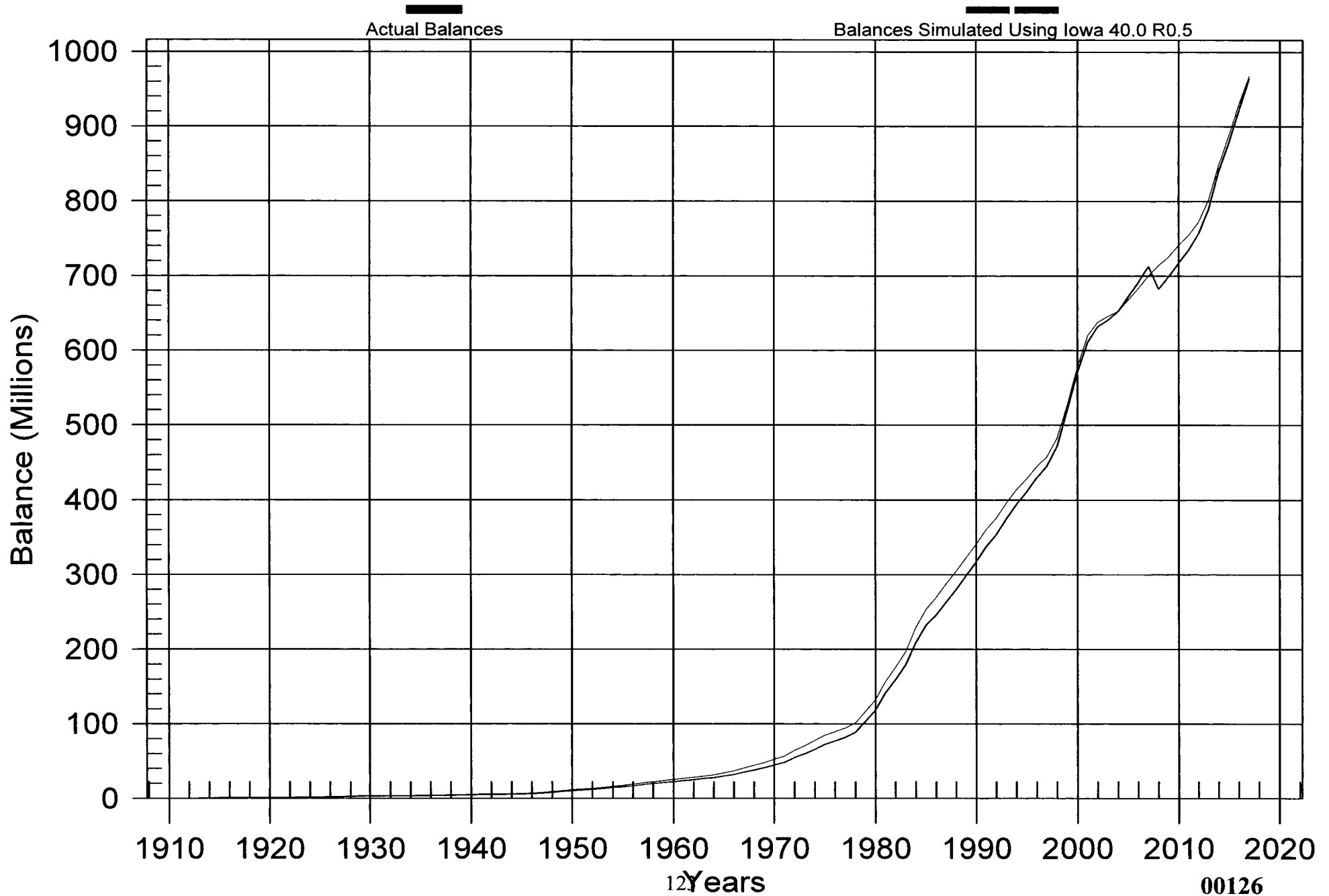
Curve Type	Average Service Life	Sum Of Squares Difference	Conformance Index	Index Of Variation	Ret Exp Index
O4	87.69 Yrs.	7.6671E+15	22.96	43.56	74.20
O3	64.50 Yrs.	7.7918E+15	22.77	43.91	80.04
O2	46.75 Yrs.	8.1528E+15	22.26	44.92	93.00
SC	41.78 Yrs.	8.1976E+15	22.20	45.04	100.00
O1	41.78 Yrs.	8.1976E+15	22.20	45.04	100.00
R0.5	37.69 Yrs.	9.2209E+15	20.93	47.77	100.00
S.5	37.63 Yrs.	1.0316E+16	19.79	50.53	100.00
L0	41.66 Yrs.	1.0641E+16	19.49	51.32	98.20
R1	34.59 Yrs.	1.1327E+16	18.89	52.95	100.00
L0.5	38.44 Yrs.	1.2764E+16	17.79	56.21	99.56
S0	34.66 Yrs.	1.4208E+16	16.86	59.30	100.00
R1.5	32.75 Yrs.	1.4275E+16	16.82	59.44	100.00
L1	35.84 Yrs.	1.5983E+16	15.90	62.90	100.00
S0.5	33.06 Yrs.	1.7237E+16	15.31	65.32	100.00
R2	31.28 Yrs.	1.8632E+16	14.73	67.91	100.00
L1.5	34.00 Yrs.	1.9171E+16	14.52	68.88	100.00
S1	31.72 Yrs.	2.1347E+16	13.76	72.69	100.00
R2.5	30.34 Yrs.	2.3125E+16	13.22	75.65	100.00
L2	32.47 Yrs.	2.3602E+16	13.08	76.43	100.00
S1.5	30.84 Yrs.	2.4742E+16	12.78	78.25	100.00
R3	29.56 Yrs.	2.8900E+16	11.82	84.57	100.00
S2	30.06 Yrs.	2.8974E+16	11.81	84.68	100.00
L3	30.38 Yrs.	3.1257E+16	11.37	87.96	100.00
S3	29.13 Yrs.	3.5931E+16	10.60	94.30	100.00
R4	28.75 Yrs.	3.8644E+16	10.23	97.80	100.00
L4	29.00 Yrs.	3.9242E+16	10.15	98.55	100.00
S4	28.47 Yrs.	4.3961E+16	9.59	104.31	100.00
L5	28.41 Yrs.	4.6439E+16	9.33	107.21	100.00
R5	28.28 Yrs.	4.8717E+16	9.11	109.81	100.00
S5	28.19 Yrs.	5.0945E+16	8.91	112.29	100.00
S6	28.03 Yrs.	5.5910E+16	8.50	117.63	100.00
SQ	28.00 Yrs.	6.0311E+16	8.18	122.18	100.00

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Electric Division

365.01 Overhead Conductors and Devices

Actual And Simulated Balances 1913-2017



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Electric Division
366.01 Underground Conduit

Simulated Plant Record Analysis Calculated As Of 12/31/2017

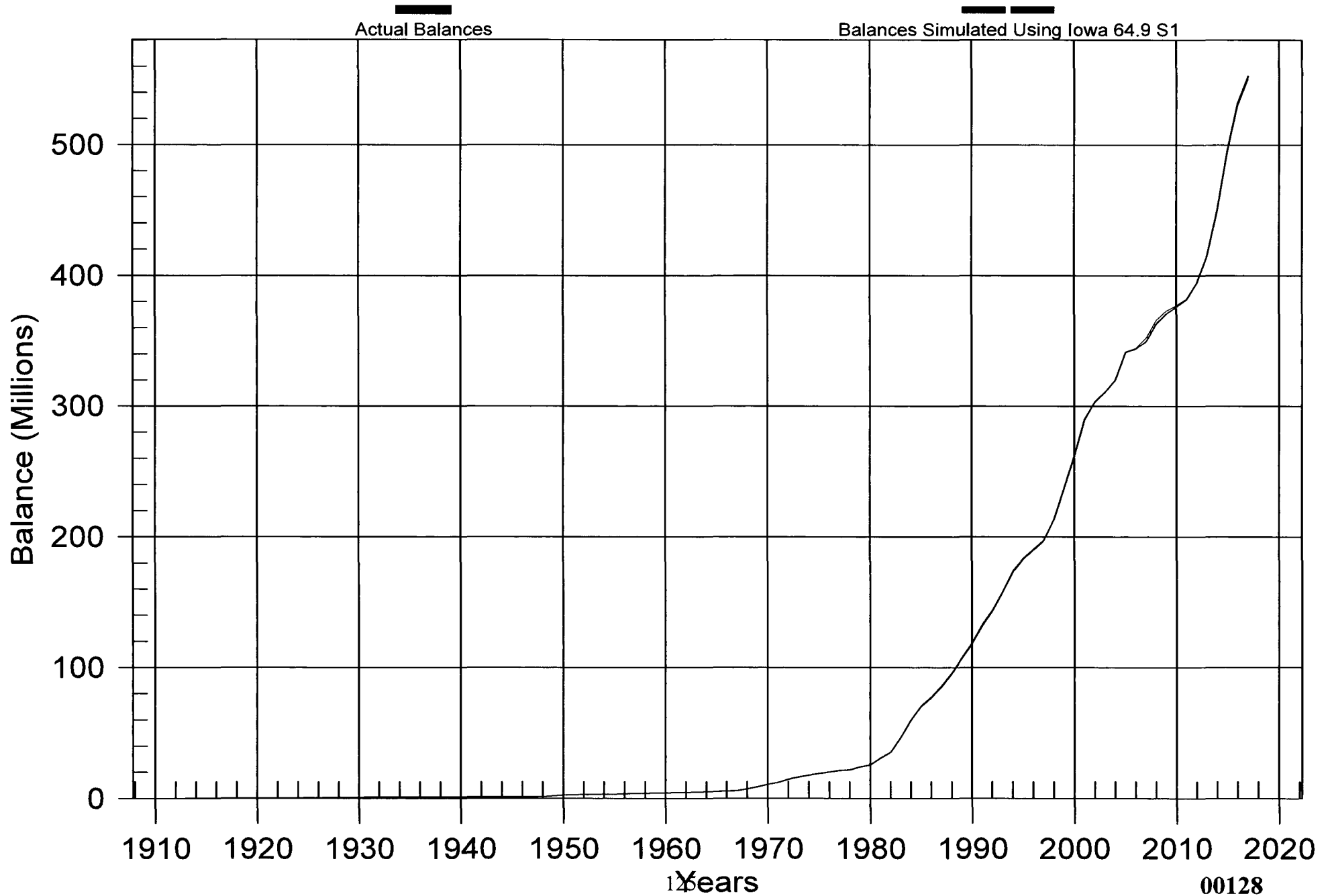
Simulated Balances Method

No. Of Test Points - 105
Interval Between Test Points - 1
First Test Point - 1913
Last Test Point - 2017

<i>Curve Type</i>	<i>Average Service Life</i>	<i>Sum Of Squares Difference</i>	<i>Conformance Index</i>	<i>Index Of Variation</i>	<i>Ret Exp Index</i>
R2	74.13 Yrs.	2.0732E+13	203.85	4.91	86.98
L0	146.35 Yrs.	2.0773E+13	203.65	4.91	38.51
L0.5	115.00 Yrs.	2.1211E+13	201.53	4.96	49.08
R1.5	97.66 Yrs.	2.2015E+13	197.82	5.06	52.87
S.5	144.38 Yrs.	2.2662E+13	194.98	5.13	33.68
R2.5	62.16 Yrs.	2.3988E+13	189.51	5.28	99.44
R1	126.97 Yrs.	2.4168E+13	188.81	5.30	34.81
S0	94.06 Yrs.	2.5276E+13	184.62	5.42	57.69
R0.5	170.94 Yrs.	2.6429E+13	180.55	5.54	26.60
L1	88.28 Yrs.	2.8249E+13	174.63	5.73	65.91
S0.5	78.09 Yrs.	3.0803E+13	167.24	5.98	75.73
L1.5	74.53 Yrs.	3.5602E+13	155.56	6.43	79.72
R3	52.84 Yrs.	4.0949E+13	145.05	6.89	100.00
S1	64.88 Yrs.	5.1649E+13	129.15	7.74	94.04
O1	201.00 Yrs.	5.7062E+13	.00	.00	26.00
SC	201.00 Yrs.	5.7062E+13	.00	.00	26.00
L2	62.47 Yrs.	5.8176E+13	121.69	8.22	91.93
S1.5	58.22 Yrs.	5.9273E+13	120.56	8.29	99.37
SQ	38.00 Yrs.	7.6967E+13	105.80	9.45	100.00
S6	38.84 Yrs.	8.0782E+13	103.27	9.68	100.00
R4	45.00 Yrs.	8.0852E+13	103.23	9.69	100.00
S2	52.22 Yrs.	8.2269E+13	102.33	9.77	100.00
L3	50.94 Yrs.	8.5899E+13	100.15	9.99	99.80
S5	39.97 Yrs.	1.0228E+14	91.78	10.90	100.00
S3	46.06 Yrs.	1.0397E+14	91.03	10.99	100.00
L4	44.59 Yrs.	1.0792E+14	89.35	11.19	100.00
L5	41.28 Yrs.	1.1276E+14	87.41	11.44	100.00
S4	42.00 Yrs.	1.1411E+14	86.89	11.51	100.00
R5	40.78 Yrs.	1.1563E+14	86.32	11.58	100.00
O2	201.00 Yrs.	2.1485E+14	.00	.00	29.22
O3	201.00 Yrs.	2.3797E+15	.00	.00	39.79
O4	201.00 Yrs.	8.2148E+15	.00	.00	49.62

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Electric Division 366.01 Underground Conduit Actual And Simulated Balances 1913-2017



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367.01 Underground Conductors and Devices
Simulated Plant Record Analysis Calculated As Of 12/31/2017

Simulated Balances Method

No. Of Test Points - 105
Interval Between Test Points - 1
First Test Point - 1913
Last Test Point - 2017

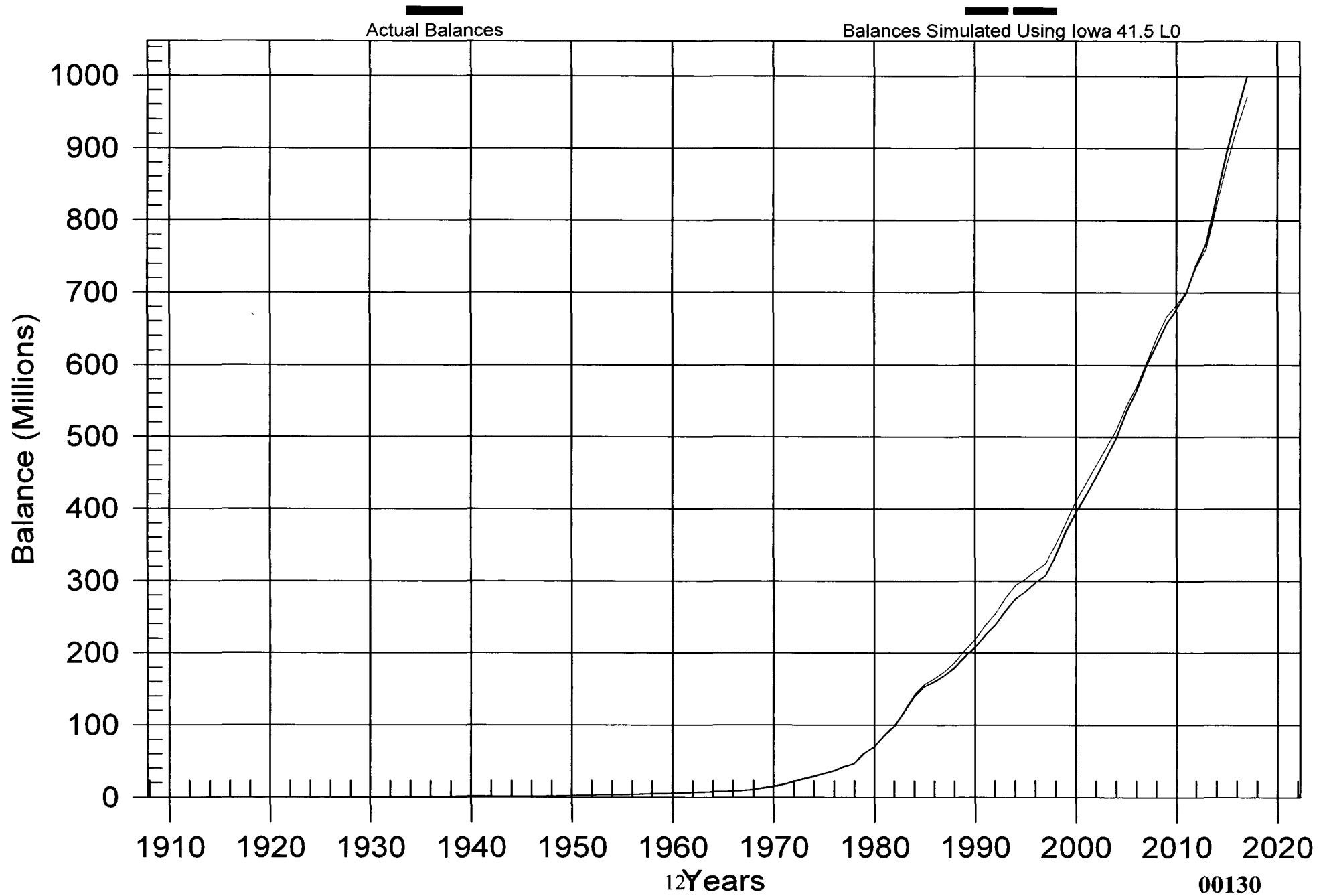
<i>Curve Type</i>	<i>Average Service Life</i>	<i>Sum Of Squares Difference</i>	<i>Conformance Index</i>	<i>Index Of Variation</i>	<i>Ret Exp Index</i>
O4	92.38 Yrs.	3.2218E+15	28.19	35.47	72.96
O3	67.47 Yrs.	3.3945E+15	27.47	36.41	78.75
O2	48.03 Yrs.	3.8408E+15	25.82	38.73	92.33
O1	42.78 Yrs.	3.8415E+15	25.82	38.73	100.00
SC	42.78 Yrs.	3.8415E+15	25.82	38.73	100.00
R0.5	37.72 Yrs.	5.0050E+15	22.62	44.21	100.00
S.5	37.34 Yrs.	5.7998E+15	21.01	47.59	100.00
L0	41.51 Yrs.	5.8261E+15	20.97	47.69	98.26
R1	33.91 Yrs.	7.1300E+15	18.95	52.76	100.00
L0.5	37.69 Yrs.	7.5704E+15	18.39	54.37	99.65
S0	33.56 Yrs.	8.8553E+15	17.01	58.80	100.00
L1	34.63 Yrs.	9.9143E+15	16.07	62.22	100.00
R1.5	31.66 Yrs.	9.9392E+15	16.05	62.30	100.00
S0.5	31.69 Yrs.	1.1397E+16	14.99	66.71	100.00
L1.5	32.53 Yrs.	1.2590E+16	14.26	70.11	100.00
R2	29.94 Yrs.	1.3753E+16	13.65	73.28	100.00
S1	30.16 Yrs.	1.4608E+16	13.24	75.52	100.00
L2	30.81 Yrs.	1.5938E+16	12.68	78.89	100.00
S1.5	29.19 Yrs.	1.7560E+16	12.08	82.80	100.00
R2.5	28.88 Yrs.	1.7730E+16	12.02	83.20	100.00
S2	28.34 Yrs.	2.0985E+16	11.05	90.52	100.00
L3	28.59 Yrs.	2.2277E+16	10.72	93.26	100.00
R3	27.97 Yrs.	2.2411E+16	10.69	93.54	100.00
S3	27.38 Yrs.	2.6933E+16	9.75	102.55	100.00
L4	27.22 Yrs.	2.9096E+16	9.38	106.59	100.00
R4	27.03 Yrs.	2.9892E+16	9.26	108.03	100.00
S4	26.69 Yrs.	3.3360E+16	8.76	114.13	100.00
L5	26.59 Yrs.	3.4669E+16	8.60	116.35	100.00
R5	26.44 Yrs.	3.6545E+16	8.37	119.45	100.00
S5	26.34 Yrs.	3.7883E+16	8.22	121.62	100.00
S6	26.19 Yrs.	4.0329E+16	7.97	125.48	100.00
SQ	26.00 Yrs.	4.2166E+16	7.79	128.31	100.00

CEHE

Electric Division

367.01 Underground Conductors and Devices

Actual And Simulated Balances 1913-2017



CEHE
Electric Division
368.01 Line Transformers

Simulated Plant Record Analysis Calculated As Of 12/31/2017

Simulated Balances Method

No. Of Test Points - 105
Interval Between Test Points - 1
First Test Point - 1913
Last Test Point - 2017

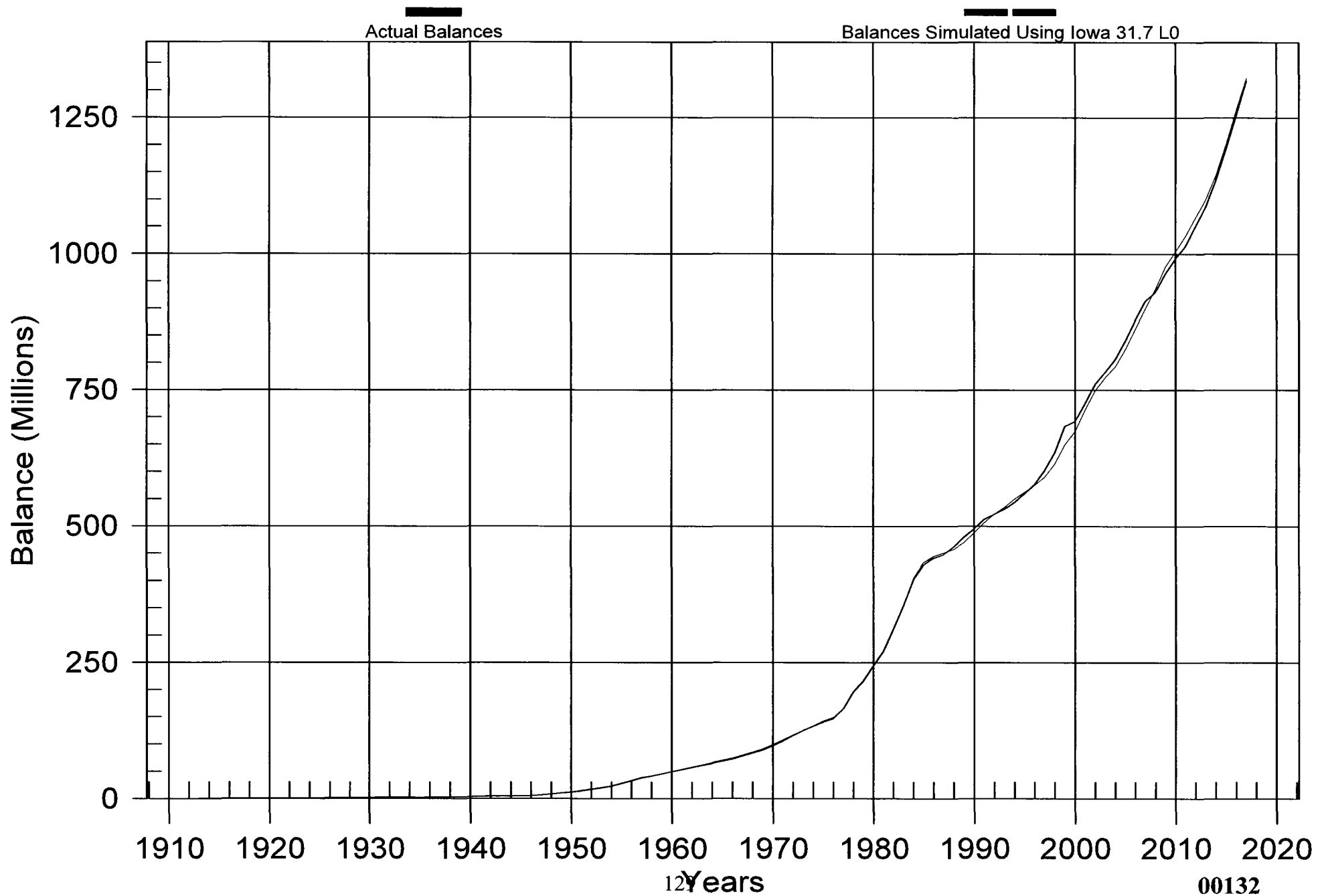
<i>Curve Type</i>	<i>Average Service Life</i>	<i>Sum Of Squares Difference</i>	<i>Conformance Index</i>	<i>Index Of Variation</i>	<i>Ret Exp Index</i>
R1	27.81 Yrs.	3.1205E+15	51.24	19.52	100.00
R0.5	29.19 Yrs.	3.6070E+15	47.66	20.98	100.00
S.5	29.22 Yrs.	3.7063E+15	47.02	21.27	100.00
S0	27.91 Yrs.	3.8841E+15	45.93	21.77	100.00
L0.5	30.09 Yrs.	4.0880E+15	44.77	22.34	99.99
L1	28.75 Yrs.	4.5595E+15	42.39	23.59	100.00
R1.5	27.03 Yrs.	4.6428E+15	42.01	23.81	100.00
L0	31.70 Yrs.	5.0727E+15	40.19	24.88	99.96
S0.5	27.19 Yrs.	5.3110E+15	39.28	25.46	100.00
L1.5	27.88 Yrs.	5.9646E+15	37.06	26.98	100.00
SC	30.91 Yrs.	6.2202E+15	36.29	27.55	100.00
O1	30.91 Yrs.	6.2202E+15	36.29	27.55	100.00
O2	34.28 Yrs.	7.1717E+15	33.80	29.59	99.73
S1	26.56 Yrs.	8.1967E+15	31.62	31.63	100.00
R2	26.38 Yrs.	8.2795E+15	31.46	31.79	100.00
L2	27.09 Yrs.	9.1497E+15	29.92	33.42	100.00
S1.5	26.16 Yrs.	1.1553E+16	26.63	37.55	100.00
O3	45.06 Yrs.	1.1870E+16	26.27	38.06	89.03
R2.5	25.97 Yrs.	1.3200E+16	24.91	40.14	100.00
O4	60.03 Yrs.	1.4162E+16	24.05	41.58	82.31
S2	25.78 Yrs.	1.6167E+16	22.51	44.42	100.00
L3	26.00 Yrs.	1.7373E+16	21.72	46.05	100.00
R3	25.59 Yrs.	1.9919E+16	20.28	49.31	100.00
S3	25.38 Yrs.	2.5944E+16	17.77	56.27	100.00
L4	25.34 Yrs.	2.9587E+16	16.64	60.09	100.00
R4	25.22 Yrs.	3.2836E+16	15.80	63.31	100.00
S4	25.09 Yrs.	3.9106E+16	14.47	69.09	100.00
L5	25.06 Yrs.	4.2247E+16	13.93	71.81	100.00
R5	24.97 Yrs.	4.7367E+16	13.15	76.04	100.00
S5	24.94 Yrs.	5.0812E+16	12.70	78.75	100.00
S6	24.88 Yrs.	5.9364E+16	11.75	85.12	100.00
SQ	25.00 Yrs.	6.8811E+16	10.91	91.65	100.00

CEHE

Electric Division

368.01 Line Transformers

Actual And Simulated Balances 1913-2017



**SOAH DOCKET NO. 473-19-3864
PUC DOCKET NO. 49421**

APPLICATION OF CENTERPOINT	§	BEFORE THE STATE OFFICE
ENERGY HOUSTON ELECTRIC,	§	OF
LLC FOR AUTHORITY TO	§	ADMINISTRATIVE HEARINGS
CHANGE RATES	§	

DIRECT TESTIMONY AND EXHIBITS

OF

DAVID J. GARRETT

EXHIBIT DJG-11:

Simulated Plant Record Remaining Life Development

CEHE
Electric Division
353.01 Station Equipment

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 56

Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1925	18,228.90	56.00	325.51	8.75	2,847.23
1926	10,928.47	56.00	195.15	9.15	1,785.14
1927	61,009.26	56.00	1,089.43	9.55	10,402.35
1928	19,897.86	56.00	355.31	9.95	3,533.63
1929	168,990.44	56.00	3,017.63	10.34	31,205.87
1930	33,463.52	56.00	597.55	10.74	6,415.83
1931	25,755.73	56.00	459.91	11.13	5,119.98
1932	123,912.23	56.00	2,212.67	11.53	25,510.53
1933	4,584.88	56.00	81.87	11.92	976.29
1934	6,388.52	56.00	114.08	12.32	1,405.56
1935	6.32	56.00	0.11	12.72	1.44
1936	1,484.77	56.00	26.51	13.12	347.81
1937	99,285.98	56.00	1,772.93	13.52	23,965.94
1938	69,755.66	56.00	1,245.61	13.92	17,337.70
1939	3,476.74	56.00	62.08	14.32	889.18
1940	46,367.01	56.00	827.97	14.73	12,194.01
1941	216,437.90	56.00	3,864.88	15.14	58,498.54
1942	83,423.94	56.00	1,489.68	15.55	23,157.96
1943	430,470.05	56.00	7,686.81	15.96	122,664.91
1944	13,973.00	56.00	249.51	16.37	4,085.24
1945	67,772.36	56.00	1,210.20	16.79	20,320.10
1946	128,845.10	56.00	2,300.76	17.21	39,600.21
1947	241,196.95	56.00	4,307.00	17.64	75,956.20
1948	641,266.24	56.00	11,450.95	18.06	206,832.37
1949	482,097.75	56.00	8,608.71	18.49	159,198.49
1950	786,256.78	56.00	14,040.02	18.93	265,727.17
1951	1,185,677.74	56.00	21,172.39	19.36	409,970.29

CEHE
Electric Division
353.01 Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 56

Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1952	1,059,141.28	56.00	18,912.85	19.80	374,551.18
1953	229,747.31	56.00	4,102.55	20.25	83,069.68
1954	1,118,711.40	56.00	19,976.58	20.70	413,441.06
1955	634,815.10	56.00	11,335.75	21.15	239,726.78
1956	1,170,144.55	56.00	20,895.01	21.60	451,404.53
1957	527,101.86	56.00	9,412.34	22.06	207,664.15
1958	766,515.86	56.00	13,687.51	22.53	308,330.28
1959	1,126,037.06	56.00	20,107.40	22.99	462,345.56
1960	474,554.48	56.00	8,474.02	23.46	198,842.08
1961	519,960.22	56.00	9,284.82	23.94	222,283.40
1962	1,378,371.64	56.00	24,613.28	24.42	601,061.21
1963	1,356,939.91	56.00	24,230.58	24.90	603,437.09
1964	876,785.27	56.00	15,656.56	25.39	397,539.88
1965	451,058.28	56.00	8,054.45	25.88	208,476.85
1966	302,353.63	56.00	5,399.06	26.38	142,425.84
1967	70,361.04	56.00	1,256.42	26.88	33,772.78
1968	139,117.96	56.00	2,484.20	27.38	68,028.82
1969	2,564,681.74	56.00	45,796.96	27.89	1,277,397.50
1970	3,481,154.91	56.00	62,162.22	28.41	1,765,751.46
1971	5,715,074.40	56.00	102,052.83	28.92	2,951,620.29
1972	3,578,702.69	56.00	63,904.11	29.44	1,881,554.29
1973	1,690,803.80	56.00	30,192.31	29.97	904,811.51
1974	2,284,520.83	56.00	40,794.19	30.50	1,244,082.32
1975	1,714,026.22	56.00	30,606.99	31.03	949,720.15
1976	4,244,331.75	56.00	75,790.10	31.57	2,392,410.51
1977	5,178,929.89	56.00	92,479.02	32.11	2,969,197.97
1978	1,708,949.69	56.00	30,516.34	32.65	996,361.86

CEHE**Electric Division****353.01 Station Equipment****Original Cost Of Utility Plant In Service****And Development Of Composite Remaining Life as of December 31, 2017****Based Upon Broad Group/Remaining Life Procedure and Technique****Average Service Life: 56****Survivor Curve: R0.5**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1979	3,084,069.37	56.00	55,071.55	33.20	1,828,272.65
1980	2,286,003.37	56.00	40,820.66	33.75	1,377,682.00
1981	4,902,254.33	56.00	87,538.48	34.30	3,002,962.44
1982	7,026,298.55	56.00	125,467.07	34.86	4,374,112.32
1983	12,881,044.17	56.00	230,013.98	35.42	8,147,872.65
1984	15,195,488.14	56.00	271,342.50	35.99	9,765,105.18
1985	10,722,500.60	56.00	191,469.34	36.56	6,999,314.00
1986	2,069,680.01	56.00	36,957.82	37.13	1,372,107.02
1987	10,807,194.54	56.00	192,981.71	37.70	7,275,313.37
1988	3,090,836.61	56.00	55,192.39	38.27	2,112,480.91
1989	16,504,141.58	56.00	294,710.84	38.85	11,450,517.40
1990	2,401,074.20	56.00	42,875.46	39.43	1,690,760.38
1991	5,771,937.98	56.00	103,068.23	40.02	4,124,505.26
1992	6,451,199.04	56.00	115,197.65	40.60	4,677,222.87
1993	6,211,624.38	56.00	110,919.62	41.19	4,568,662.00
1994	12,959,030.94	56.00	231,406.58	41.78	9,667,687.71
1995	30,120,968.89	56.00	537,863.54	42.37	22,788,494.89
1996	11,977,483.44	56.00	213,879.30	42.96	9,188,399.71
1997	1,828,957.92	56.00	32,659.30	43.55	1,422,437.89
1998	6,550,062.45	56.00	116,963.03	44.15	5,163,789.79
1999	9,507,371.25	56.00	169,771.05	44.75	7,596,435.09
2000	3,195,164.72	56.00	57,055.36	45.34	2,587,036.86
2001	34,491,785.68	56.00	615,912.26	45.94	28,295,664.98
2002	51,136,335.25	56.00	913,130.33	46.54	42,497,392.77
2003	2,118,339.57	56.00	37,826.73	47.14	1,783,195.60
2004	11,744,428.59	56.00	209,717.69	47.74	10,012,572.80
2005	16,596,214.06	56.00	296,354.96	48.35	14,327,640.49

CEHE
Electric Division
353.01 Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 56 Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
2006	26,194,358.00	56.00	467,746.91	48.95	22,896,265.67
2007	30,709,646.25	56.00	548,375.42	49.56	27,175,233.17
2008	40,425,153.82	56.00	721,863.11	50.16	36,210,775.72
2009	14,088,859.52	56.00	251,581.68	50.77	12,773,136.08
2010	34,082,181.16	56.00	608,598.04	51.38	31,270,418.11
2011	30,249,993.86	56.00	540,167.51	51.99	28,084,285.41
2012	45,375,666.38	56.00	810,263.33	52.60	42,623,550.01
2013	51,661,579.59	56.00	922,509.51	53.22	49,094,808.72
2014	40,128,895.88	56.00	716,572.90	53.83	38,576,290.09
2015	75,587,922.93	56.00	1,349,756.98	54.45	73,496,399.80
2016	78,869,811.28	56.00	1,408,360.94	55.07	77,558,341.37
2017	136,711,283.25	56.00	2,441,223.43	55.69	135,952,587.93
Total	955,050,688.42	56.00	17,054,130.89	48.53	827,688,990.10

Composite Average Remaining Life ... 48.53 Years

CEHE
Electric Division
354.01 Towers and Fixtures

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 66 Survivor Curve: R2

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1925	28,096.73	66.00	425.71	8.41	3,579.21
1926	10,411.95	66.00	157.76	8.71	1,374.27
1927	10,095.08	66.00	152.96	9.01	1,378.08
1928	5,515.22	66.00	83.56	9.32	778.71
1929	16,579.06	66.00	251.20	9.62	2,417.54
1930	8,328.06	66.00	126.18	9.94	1,254.27
1931	465.13	66.00	7.05	10.25	72.27
1932	2,647.36	66.00	40.11	10.58	424.34
1933	1,297.03	66.00	19.65	10.90	214.28
1934	346.78	66.00	5.25	11.24	59.05
1935	181.35	66.00	2.75	11.58	31.81
1936	722.01	66.00	10.94	11.92	130.40
1937	31,543.63	66.00	477.93	12.27	5,865.33
1938	15,253.83	66.00	231.12	12.63	2,919.15
1939	46,004.33	66.00	697.03	13.00	9,059.26
1940	10,798.55	66.00	163.61	13.37	2,187.51
1941	16,230.00	66.00	245.91	13.75	3,381.55
1942	15,778.49	66.00	239.07	14.14	3,380.43
1943	7,226.23	66.00	109.49	14.54	1,591.65
1944	19,755.61	66.00	299.33	14.94	4,472.71
1945	3,912.41	66.00	59.28	15.36	910.30
1946	18,039.41	66.00	273.32	15.78	4,312.71
1947	35,295.68	66.00	534.78	16.21	8,668.51
1948	105,783.29	66.00	1,602.77	16.65	26,685.63
1949	123,427.15	66.00	1,870.10	17.10	31,974.63
1950	121,795.34	66.00	1,845.38	17.56	32,397.44
1951	183,721.22	66.00	2,783.65	18.02	50,166.37

CEHE
Electric Division
354.01 Towers and Fixtures

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 66 Survivor Curve: R2

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
(1)	(2)	(3)	(4)	(5)	(6)
1952	371,936.28	66.00	5,635.38	18.50	104,244.40
1953	246,162.78	66.00	3,729.73	18.98	70,797.29
1954	262,610.19	66.00	3,978.93	19.48	77,495.75
1955	689,812.15	66.00	10,451.67	19.98	208,804.99
1956	378,754.89	66.00	5,738.70	20.49	117,591.73
1957	899,520.52	66.00	13,629.07	21.01	286,353.59
1958	1,478,026.78	66.00	22,394.29	21.54	482,407.08
1959	1,401,692.90	66.00	21,237.72	22.08	468,902.66
1960	764,691.41	66.00	11,586.21	22.63	262,169.49
1961	70,996.20	66.00	1,075.70	23.18	24,937.40
1962	1,006,947.26	66.00	15,256.74	23.75	362,335.21
1963	2,718,368.89	66.00	41,187.31	24.32	1,001,729.34
1964	335,501.38	66.00	5,083.34	24.91	126,602.39
1965	907,799.65	66.00	13,754.51	25.49	350,663.98
1966	800,149.10	66.00	12,123.44	26.10	316,367.90
1967	1,419,709.65	66.00	21,510.70	26.70	574,364.79
1968	1,631,865.51	66.00	24,725.18	27.32	675,469.11
1969	3,307,076.78	66.00	50,107.10	27.94	1,400,178.67
1970	5,305,629.61	66.00	80,388.14	28.58	2,297,095.92
1971	8,571,756.34	66.00	129,874.79	29.22	3,794,387.05
1972	4,299,373.24	66.00	65,141.86	29.86	1,945,316.91
1973	3,076,598.87	66.00	46,615.02	30.52	1,422,647.13
1974	2,561,279.31	66.00	38,807.17	31.18	1,210,061.49
1975	6,446,159.26	66.00	97,668.85	31.85	3,111,033.39
1976	4,633,600.08	66.00	70,205.89	32.53	2,283,801.85
1977	1,916,035.96	66.00	29,030.78	33.22	964,295.29
1978	4,047,466.06	66.00	61,325.10	33.91	2,079,407.42

CEHE
Electric Division
354.01 Towers and Fixtures

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 66 Survivor Curve: R2

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1979	2,050,772.83	66.00	31,072.24	34.61	1,075,364.37
1980	7,147,977.26	66.00	108,302.43	35.31	3,824,613.80
1981	16,485,617.84	66.00	249,781.49	36.03	8,999,305.09
1982	3,899,874.00	66.00	59,088.86	36.75	2,171,398.58
1983	7,123,552.80	66.00	107,932.36	37.48	4,044,878.67
1984	34,076,948.53	66.00	516,316.17	38.21	19,727,724.91
1985	17,041,479.12	66.00	258,203.61	38.95	10,056,972.38
1986	3,115,321.24	66.00	47,201.72	39.70	1,873,682.10
1987	8,370,942.66	66.00	126,832.16	40.45	5,130,248.44
1988	20,275,567.92	66.00	307,204.84	41.21	12,659,003.65
1989	11,114,371.51	66.00	168,399.17	41.97	7,068,273.53
1990	4,327,506.69	66.00	65,568.13	42.74	2,802,605.49
1991	9,353,712.62	66.00	141,722.58	43.52	6,168,010.17
1992	2,345,359.79	66.00	35,535.67	44.30	1,574,358.00
1993	3,638,059.54	66.00	55,121.98	45.09	2,485,647.22
1994	6,895,518.68	66.00	104,477.31	45.89	4,794,142.56
1995	10,518,258.98	66.00	159,367.18	46.69	7,440,571.21
1996	1,234,518.80	66.00	18,704.79	47.49	888,341.13
1997	1,456,004.20	66.00	22,060.62	48.31	1,065,638.46
1998	6,125,073.42	66.00	92,803.92	49.12	4,558,558.08
1999	2,469,124.49	66.00	37,410.89	49.94	1,868,422.46
2000	7,094,211.42	66.00	107,487.80	50.77	5,457,056.05
2001	16,886,834.86	66.00	255,860.53	51.60	13,203,011.53
2002	28,045,931.09	66.00	424,937.34	52.44	22,283,683.81
2003	5,240,234.88	66.00	79,397.31	53.28	4,230,417.88
2004	7,532,768.74	66.00	114,132.59	54.13	6,177,890.00
2005	2,608,282.81	66.00	39,519.34	54.98	2,172,790.04

CEHE
Electric Division
354.01 Towers and Fixtures

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 66 Survivor Curve: R2

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
2006	2,906,569.72	66.00	44,038.83	55.84	2,459,014.14
2007	61,453,262.75	66.00	931,107.83	56.70	52,792,050.85
2008	1,323,224.71	66.00	20,048.81	57.56	1,154,096.15
2009	11,458,764.35	66.00	173,617.23	58.43	10,145,156.23
2010	6,973,760.70	66.00	105,662.79	59.31	6,266,769.17
2011	8,973,794.77	66.00	135,966.26	60.19	8,183,476.26
2012	12,000,731.10	66.00	181,828.83	61.07	11,104,504.94
2013	15,770,445.84	66.00	238,945.58	61.96	14,804,586.55
2014	39,755,739.50	66.00	602,358.26	62.85	37,858,127.27
2015	35,444,770.75	66.00	537,040.70	63.74	34,233,478.86
2016	65,397,203.91	66.00	990,864.37	64.64	64,053,845.86
2017	85,242,871.99	66.00	1,291,555.59	65.55	84,657,480.27
Total	653,563,738.79	66.00	9,902,457.32	52.28	517,734,345.76

Composite Average Remaining Life ... 52.28 Years

CEHE
Electric Division
362.01 Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 55

Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1925	24,302.27	55.00	441.85	7.92	3,501.16
1926	14,661.27	55.00	266.56	8.33	2,220.10
1927	82,323.32	55.00	1,496.76	8.73	13,071.13
1928	26,993.84	55.00	490.79	9.13	4,481.94
1929	230,401.10	55.00	4,189.02	9.53	39,921.07
1930	45,835.86	55.00	833.36	9.93	8,272.51
1931	35,433.10	55.00	644.22	10.32	6,650.16
1932	171,173.24	55.00	3,112.18	10.72	33,357.74
1933	6,358.17	55.00	115.60	11.12	1,284.94
1934	8,891.61	55.00	161.66	11.51	1,860.82
1935	8.82	55.00	0.16	11.91	1.91
1936	2,080.39	55.00	37.82	12.30	465.37
1937	139,548.07	55.00	2,537.18	12.70	32,225.70
1938	98,332.40	55.00	1,787.82	13.10	23,423.72
1939	4,914.70	55.00	89.36	13.50	1,206.51
1940	65,717.71	55.00	1,194.84	13.90	16,613.84
1941	307,544.15	55.00	5,591.59	14.31	80,010.52
1942	118,827.99	55.00	2,160.46	14.72	31,792.84
1943	614,574.53	55.00	11,173.85	15.12	169,002.43
1944	189,355.89	55.00	3,442.76	15.54	53,489.70
1945	232,269.57	55.00	4,222.99	15.95	67,360.37
1946	277,221.65	55.00	5,040.29	16.37	82,498.15
1947	323,429.91	55.00	5,880.42	16.79	98,718.29
1948	416,650.81	55.00	7,575.31	17.21	130,375.74
1949	548,529.37	55.00	9,973.05	17.64	175,894.82
1950	392,211.19	55.00	7,130.96	18.07	128,830.68
1951	471,592.84	55.00	8,574.24	18.50	158,616.50

CEHE
Electric Division
362.01 Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 55 Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1952	625,862.01	55.00	11,379.07	18.94	215,469.15
1953	679,959.78	55.00	12,362.65	19.38	239,532.97
1954	726,119.01	55.00	13,201.89	19.82	261,650.86
1955	700,862.03	55.00	12,742.68	20.27	258,249.55
1956	692,464.26	55.00	12,590.00	20.72	260,836.54
1957	733,334.87	55.00	13,333.08	21.17	282,300.41
1958	1,198,757.17	55.00	21,795.13	21.63	471,473.42
1959	809,294.27	55.00	14,714.13	22.10	325,111.47
1960	1,345,829.69	55.00	24,469.12	22.56	552,072.20
1961	558,233.38	55.00	10,149.48	23.03	233,776.79
1962	817,910.21	55.00	14,870.78	23.51	349,595.30
1963	541,384.32	55.00	9,843.14	23.99	236,122.48
1964	852,165.62	55.00	15,493.60	24.47	379,164.50
1965	1,210,914.64	55.00	22,016.17	24.96	549,530.94
1966	1,934,131.94	55.00	35,165.30	25.45	895,030.31
1967	1,974,231.03	55.00	35,894.36	25.95	931,411.38
1968	3,157,881.02	55.00	57,414.81	26.45	1,518,591.53
1969	4,756,464.47	55.00	86,479.36	26.95	2,331,002.58
1970	3,421,141.40	55.00	62,201.27	27.46	1,708,268.93
1971	2,194,623.20	55.00	39,901.40	27.98	1,116,290.60
1972	7,523,531.74	55.00	136,788.62	28.49	3,897,636.93
1973	4,988,016.51	55.00	90,689.31	29.02	2,631,404.70
1974	6,960,148.06	55.00	126,545.49	29.54	3,738,326.21
1975	6,761,692.91	55.00	122,937.29	30.07	3,696,859.79
1976	9,291,744.13	55.00	168,937.26	30.60	5,170,285.72
1977	6,692,129.29	55.00	121,672.53	31.14	3,789,096.31
1978	4,451,838.05	55.00	80,940.81	31.68	2,564,477.12

CEHE
Electric Division
362.01 Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 55 Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1979	5,902,011.39	55.00	107,307.05	32.23	3,458,363.94
1980	6,946,767.13	55.00	126,302.21	32.78	4,139,884.72
1981	16,966,319.11	55.00	308,472.06	33.33	10,281,399.67
1982	19,504,928.64	55.00	354,627.63	33.89	12,016,668.76
1983	20,569,255.08	55.00	373,978.61	34.44	12,881,634.68
1984	28,662,507.70	55.00	521,125.57	35.01	18,243,344.35
1985	17,906,906.78	55.00	325,573.29	35.57	11,581,749.34
1986	11,151,856.01	55.00	202,756.77	36.14	7,328,075.36
1987	25,293,059.16	55.00	459,864.16	36.71	16,883,381.92
1988	17,275,620.83	55.00	314,095.61	37.29	11,711,914.85
1989	10,635,766.00	55.00	193,373.51	37.86	7,322,077.79
1990	19,592,870.51	55.00	356,226.54	38.44	13,694,983.35
1991	25,130,572.44	55.00	456,909.91	39.03	17,831,610.73
1992	11,270,675.07	55.00	204,917.07	39.61	8,116,893.71
1993	17,335,543.73	55.00	315,185.09	40.20	12,669,255.45
1994	15,948,838.31	55.00	289,972.80	40.78	11,826,386.65
1995	3,897,189.52	55.00	70,856.50	41.37	2,931,647.83
1996	3,934,602.46	55.00	71,536.73	41.97	3,002,110.04
1997	16,292,726.34	55.00	296,225.17	42.56	12,607,064.65
1998	23,404,000.51	55.00	425,518.36	43.15	18,362,602.13
1999	35,256,662.02	55.00	641,016.77	43.75	28,043,761.55
2000	19,317,503.59	55.00	351,219.97	44.35	15,575,189.00
2001	34,776,338.82	55.00	632,283.81	44.94	28,417,478.62
2002	25,980,888.58	55.00	472,369.88	45.54	21,513,372.92
2003	10,964,149.52	55.00	199,343.99	46.14	9,198,509.08
2004	14,571,825.03	55.00	264,936.72	46.75	12,384,481.14
2005	20,677,639.59	55.00	375,949.20	47.35	17,800,429.44

CEHE
Electric Division
362.01 Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 55 Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
2006	29,415,511.56	55.00	534,816.26	47.95	25,645,570.42
2007	26,113,929.84	55.00	474,788.76	48.56	23,054,572.32
2008	26,563,396.09	55.00	482,960.71	49.16	23,744,408.37
2009	31,538,733.74	55.00	573,419.49	49.77	28,540,441.90
2010	20,794,357.42	55.00	378,071.29	50.38	19,047,799.27
2011	24,156,469.45	55.00	439,199.32	50.99	22,395,903.87
2012	42,647,150.50	55.00	775,386.47	51.61	40,013,901.32
2013	68,460,589.36	55.00	1,244,711.88	52.22	64,997,748.61
2014	65,771,907.09	55.00	1,195,827.77	52.83	63,181,120.08
2015	134,523,533.38	55.00	2,445,831.12	53.45	130,732,685.93
2016	44,602,791.95	55.00	810,942.84	54.07	43,847,700.90
2017	69,977,898.69	55.00	1,272,298.74	54.69	69,582,505.84
Total	1,144,183,141.72	55.00	20,802,893.46	45.41	944,577,347.85

Composite Average Remaining Life ... 45.41 Years

CEHE
Electric Division
364.01 Poles, Towers, and Fixtures
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 45 Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1928	1,327.29	45.00	29.49	0.50	14.75
1929	3,303.25	45.00	73.40	0.83	60.73
1930	4,053.79	45.00	90.08	1.28	115.17
1931	5,320.06	45.00	118.22	1.74	206.25
1932	2,393.47	45.00	53.19	2.21	117.62
1933	1,247.18	45.00	27.71	2.68	74.17
1934	2,380.94	45.00	52.91	3.14	165.97
1935	5,852.46	45.00	130.05	3.59	466.63
1936	10,528.92	45.00	233.97	4.03	943.76
1937	15,766.99	45.00	350.37	4.47	1,566.68
1938	23,463.38	45.00	521.39	4.90	2,555.89
1939	29,823.12	45.00	662.72	5.32	3,527.93
1940	42,985.69	45.00	955.21	5.74	5,483.68
1941	57,799.00	45.00	1,284.39	6.15	7,902.95
1942	28,327.04	45.00	629.47	6.56	4,130.00
1943	29,454.18	45.00	654.52	6.97	4,558.99
1944	54,425.07	45.00	1,209.41	7.36	8,906.72
1945	75,324.54	45.00	1,673.83	7.76	12,994.61
1946	125,070.42	45.00	2,779.27	8.16	22,680.94
1947	193,460.21	45.00	4,299.00	8.56	36,787.35
1948	251,908.84	45.00	5,597.82	8.95	50,109.84
1949	335,132.94	45.00	7,447.19	9.35	69,612.01
1950	287,246.58	45.00	6,383.08	9.74	62,195.25
1951	304,896.55	45.00	6,775.29	10.14	68,709.05
1952	286,609.68	45.00	6,368.93	10.54	67,127.45
1953	324,182.60	45.00	7,203.86	10.94	78,803.73
1954	383,557.92	45.00	8,523.27	11.34	96,666.02

CEHE
Electric Division
364.01 Poles, Towers, and Fixtures
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 45

Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1955	431,484.91	45.00	9,588.29	11.75	112,625.27
1956	503,101.56	45.00	11,179.73	12.15	135,872.76
1957	587,601.30	45.00	13,057.45	12.56	164,043.13
1958	556,865.54	45.00	12,374.45	12.98	160,577.03
1959	581,909.50	45.00	12,930.96	13.39	173,187.19
1960	609,408.11	45.00	13,542.03	13.81	187,062.92
1961	568,931.96	45.00	12,642.58	14.24	179,999.51
1962	660,201.07	45.00	14,670.73	14.67	215,151.12
1963	717,384.08	45.00	15,941.43	15.10	240,674.45
1964	762,107.94	45.00	16,935.26	15.53	263,068.40
1965	1,004,649.45	45.00	22,324.93	15.97	356,629.12
1966	1,048,605.29	45.00	23,301.70	16.42	382,608.99
1967	1,232,716.60	45.00	27,392.94	16.87	462,110.69
1968	1,298,897.62	45.00	28,863.59	17.32	500,042.17
1969	1,321,463.44	45.00	29,365.04	17.78	522,220.40
1970	1,617,143.90	45.00	35,935.54	18.25	655,753.16
1971	1,768,833.16	45.00	39,306.32	18.72	735,723.94
1972	2,411,841.55	45.00	53,595.00	19.19	1,028,600.77
1973	2,360,818.22	45.00	52,461.18	19.67	1,031,992.51
1974	2,831,769.93	45.00	62,926.48	20.16	1,268,350.46
1975	3,312,013.22	45.00	73,598.26	20.65	1,519,524.77
1976	2,543,111.15	45.00	56,512.02	21.14	1,194,729.38
1977	3,014,189.27	45.00	66,980.13	21.64	1,449,531.98
1978	4,286,342.11	45.00	95,249.41	22.15	2,109,430.64
1979	7,169,444.23	45.00	159,316.58	22.66	3,609,577.74
1980	7,468,108.62	45.00	165,953.38	23.17	3,845,587.83
1981	11,730,007.69	45.00	260,659.63	23.69	6,175,870.05

CEHE
Electric Division

364.01 Poles, Towers, and Fixtures

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 45

Survivor Curve: R0.5

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1982	10,702,018.93	45.00	237,816.07	24.22	5,759,598.15
1983	11,592,250.22	45.00	257,598.44	24.75	6,375,315.18
1984	18,979,629.09	45.00	421,757.88	25.28	10,664,077.95
1985	16,477,441.89	45.00	366,155.25	25.82	9,455,914.38
1986	10,691,047.75	45.00	237,572.27	26.37	6,264,657.81
1987	11,428,636.49	45.00	253,962.68	26.92	6,836,301.92
1988	11,288,430.18	45.00	250,847.07	27.47	6,891,241.93
1989	11,411,308.27	45.00	253,577.62	28.03	7,107,827.48
1990	11,123,765.07	45.00	247,187.95	28.59	7,067,578.06
1991	12,091,401.84	45.00	268,690.39	29.16	7,834,331.99
1992	10,417,050.89	45.00	231,483.62	29.73	6,881,234.13
1993	13,689,986.41	45.00	304,213.51	30.30	9,217,638.01
1994	14,643,979.74	45.00	325,412.78	30.88	10,047,441.13
1995	13,341,303.34	45.00	296,465.21	31.46	9,325,347.36
1996	18,235,085.04	45.00	405,212.91	32.04	12,981,837.69
1997	14,647,059.83	45.00	325,481.22	32.62	10,617,734.68
1998	20,162,977.86	45.00	448,053.79	33.21	14,879,530.71
1999	25,849,031.38	45.00	574,407.04	33.80	19,414,165.68
2000	29,460,778.51	45.00	654,665.87	34.39	22,513,950.68
2001	25,208,393.05	45.00	560,171.03	34.98	19,596,567.04
2002	17,926,448.16	45.00	398,354.50	35.58	14,172,837.71
2003	12,126,494.75	45.00	269,470.21	36.17	9,748,076.56
2004	10,101,081.28	45.00	224,462.27	36.77	8,254,126.23
2005	16,163,874.73	45.00	359,187.29	37.37	13,423,603.80
2006	17,413,941.45	45.00	386,965.78	37.97	14,694,166.55
2007	17,458,727.78	45.00	387,961.00	38.58	14,965,716.14
2008	16,361,139.40	45.00	363,570.82	39.18	14,244,344.48

CEHE
Electric Division
364.01 Poles, Towers, and Fixtures
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 45 Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
2009	19,268,860.75	45.00	428,185.07	39.78	17,035,026.28
2010	18,631,401.74	45.00	414,019.70	40.39	16,722,716.46
2011	21,256,839.08	45.00	472,361.14	41.00	19,366,843.88
2012	23,222,257.04	45.00	516,035.89	41.61	21,472,508.90
2013	31,686,872.00	45.00	704,133.24	42.22	29,730,393.86
2014	51,305,351.59	45.00	1,140,087.41	42.84	48,837,548.81
2015	40,622,549.04	45.00	902,698.36	43.45	39,224,517.08
2016	51,748,708.40	45.00	1,149,939.51	44.07	50,678,742.41
2017	51,265,898.31	45.00	1,139,210.69	44.69	50,912,019.18
Total	793,286,814.81	45.00	17,628,108.54	35.31	622,502,510.83

Composite Average Remaining Life ... 35.31 Years

CEHE
Electric Division
365.01 Overhead Conductors and Devices
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 40

Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1938	921.96	40.00	23.05	0.50	11.52
1939	3,111.69	40.00	77.79	0.83	64.20
1940	6,737.30	40.00	168.43	1.28	215.14
1941	12,083.50	40.00	302.08	1.74	525.55
1942	4,834.64	40.00	120.86	2.20	266.43
1943	5,840.91	40.00	146.02	2.66	389.09
1944	13,396.33	40.00	334.90	3.12	1,044.86
1945	20,597.53	40.00	514.92	3.56	1,835.46
1946	41,641.16	40.00	1,040.99	4.00	4,166.59
1947	71,003.26	40.00	1,775.02	4.43	7,863.48
1948	98,511.48	40.00	2,462.71	4.85	11,949.95
1949	162,902.92	40.00	4,072.44	5.27	21,446.02
1950	123,923.99	40.00	3,098.00	5.68	17,585.68
1951	147,681.26	40.00	3,691.91	6.08	22,448.34
1952	127,801.62	40.00	3,194.93	6.48	20,711.64
1953	200,920.14	40.00	5,022.84	6.88	34,559.78
1954	276,710.54	40.00	6,917.53	7.28	50,346.97
1955	256,964.67	40.00	6,423.90	7.67	49,292.18
1956	339,487.43	40.00	8,486.90	8.07	68,483.35
1957	395,211.16	40.00	9,879.95	8.46	83,627.21
1958	376,184.92	40.00	9,404.31	8.86	83,334.63
1959	367,331.06	40.00	9,182.97	9.26	85,021.61
1960	449,234.58	40.00	11,230.49	9.66	108,471.33
1961	450,390.65	40.00	11,259.39	10.06	113,270.61
1962	471,207.68	40.00	11,779.80	10.46	123,274.60
1963	584,653.27	40.00	14,615.85	10.87	158,904.96
1964	621,041.47	40.00	15,525.52	11.28	175,176.95

CEHE
Electric Division
365.01 Overhead Conductors and Devices
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 40

Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1965	889,658.56	40.00	22,240.72	11.70	260,158.59
1966	1,086,538.15	40.00	27,162.55	12.12	329,098.98
1967	1,510,632.47	40.00	37,764.56	12.54	473,503.17
1968	1,576,747.58	40.00	39,417.38	12.97	511,057.52
1969	1,555,704.86	40.00	38,891.33	13.40	521,016.71
1970	1,956,213.92	40.00	48,903.72	13.83	676,487.48
1971	2,178,469.80	40.00	54,459.93	14.27	777,378.23
1972	3,537,303.22	40.00	88,429.64	14.72	1,301,742.33
1973	3,112,101.95	40.00	77,799.96	15.17	1,180,409.37
1974	3,599,563.84	40.00	89,986.10	15.63	1,406,419.90
1975	3,993,311.74	40.00	99,829.47	16.09	1,606,450.41
1976	2,652,918.79	40.00	66,320.76	16.56	1,098,266.47
1977	3,071,503.17	40.00	76,785.03	17.03	1,307,945.41
1978	4,328,254.06	40.00	108,202.75	17.51	1,894,975.32
1979	9,088,433.37	40.00	227,203.28	18.00	4,089,356.07
1980	9,262,060.30	40.00	231,543.81	18.49	4,281,138.73
1981	14,870,353.34	40.00	371,746.47	18.99	7,058,228.61
1982	12,456,283.66	40.00	311,396.73	19.49	6,068,858.14
1983	13,614,859.04	40.00	340,360.15	20.00	6,806,490.76
1984	21,321,758.50	40.00	533,026.23	20.51	10,933,393.30
1985	16,894,896.75	40.00	422,358.37	21.03	8,883,104.26
1986	12,140,731.59	40.00	303,508.19	21.56	6,542,869.51
1987	13,731,118.55	40.00	343,266.55	22.09	7,582,366.85
1988	13,733,328.27	40.00	343,321.79	22.63	7,767,700.04
1989	15,004,489.02	40.00	375,099.75	23.17	8,690,021.96
1990	15,311,187.25	40.00	382,766.95	23.71	9,076,905.98
1991	17,063,219.88	40.00	426,566.31	24.27	10,351,116.62

CEHE
Electric Division
365.01 Overhead Conductors and Devices
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 40

Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1992	14,330,111.36	40.00	358,240.87	24.82	8,892,465.18
1993	18,118,069.69	40.00	452,936.68	25.38	11,497,416.71
1994	17,234,182.81	40.00	430,840.24	25.95	11,180,118.35
1995	14,831,297.35	40.00	370,770.10	26.52	9,832,682.34
1996	17,093,729.20	40.00	427,329.02	27.09	11,577,649.85
1997	14,782,313.25	40.00	369,545.54	27.67	10,225,549.03
1998	24,641,947.95	40.00	616,028.21	28.25	17,403,443.11
1999	41,054,653.88	40.00	1,026,332.21	28.84	29,594,321.92
2000	47,157,373.46	40.00	1,178,895.12	29.42	34,684,757.54
2001	41,164,121.53	40.00	1,029,068.81	30.01	30,883,141.16
2002	22,107,140.27	40.00	552,660.12	30.60	16,912,521.67
2003	14,033,287.85	40.00	350,820.53	31.20	10,944,106.21
2004	12,973,748.25	40.00	324,332.92	31.79	10,310,855.37
2005	21,016,609.12	40.00	525,397.75	32.39	17,016,695.18
2006	22,230,865.19	40.00	555,753.14	32.99	18,332,476.10
2007	23,940,789.63	40.00	598,499.83	33.59	20,101,879.56
2008	22,212,925.65	40.00	555,304.67	34.19	18,985,192.21
2009	20,084,922.68	40.00	502,106.37	34.79	17,469,534.19
2010	24,176,808.80	40.00	604,400.12	35.40	21,394,351.21
2011	22,986,493.31	40.00	574,643.22	36.01	20,690,037.74
2012	27,031,204.12	40.00	675,757.63	36.61	24,742,168.63
2013	40,055,555.15	40.00	1,001,355.57	37.23	37,275,721.21
2014	56,663,989.83	40.00	1,416,552.63	37.84	53,599,876.33
2015	50,697,177.43	40.00	1,267,387.28	38.45	48,735,734.12
2016	55,693,350.46	40.00	1,392,287.45	39.07	54,397,995.48
2017	52,014,829.09	40.00	1,300,327.48	39.69	51,610,978.47

CEHE
Electric Division
365.01 Overhead Conductors and Devices
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 40 Survivor Curve: R0.5

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
Total	963,499,466.06	40.00	24,086,685.48	30.35	731,012,417.76

Composite Average Remaining Life ... 30.35 Years

CEHE
Electric Division
366.01 Underground Conduit
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 65

Survivor Curve: S1

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1913	8,460.72	65.00	130.16	7.10	924.59
1914	35.31	65.00	0.54	7.40	4.02
1915	721.15	65.00	11.09	7.70	85.47
1916	341.90	65.00	5.26	8.00	42.09
1917	190.76	65.00	2.93	8.31	24.39
1919	94.00	65.00	1.45	8.93	12.91
1920	376.24	65.00	5.79	9.23	53.45
1921	996.34	65.00	15.33	9.55	146.34
1922	1,821.17	65.00	28.02	9.86	276.38
1923	11,159.12	65.00	171.68	10.18	1,747.81
1924	5,693.70	65.00	87.60	10.50	919.99
1925	7,796.53	65.00	119.95	10.82	1,298.25
1926	11,143.28	65.00	171.44	11.15	1,911.59
1927	15,136.44	65.00	232.87	11.48	2,672.42
1928	24,217.18	65.00	372.57	11.81	4,399.36
1929	14,228.99	65.00	218.91	12.14	2,657.25
1930	16,173.57	65.00	248.82	12.48	3,104.31
1931	21,632.98	65.00	332.82	12.81	4,263.99
1932	842.20	65.00	12.96	13.15	170.44
1933	1,482.71	65.00	22.81	13.50	307.86
1934	988.44	65.00	15.21	13.84	210.49
1935	1,208.96	65.00	18.60	14.19	263.96
1936	1,548.06	65.00	23.82	14.54	346.38
1937	4,563.87	65.00	70.21	14.90	1,046.19
1938	12,631.12	65.00	194.32	15.26	2,965.04
1939	8,679.12	65.00	133.52	15.62	2,085.79
1940	16,180.43	65.00	248.93	15.99	3,979.27

CEHE
Electric Division
366.01 Underground Conduit
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 65 Survivor Curve: S1

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1941	7,795.44	65.00	119.93	16.36	1,961.46
1942	3,538.91	65.00	54.44	16.73	910.67
1943	36.77	65.00	0.57	17.10	9.68
1944	414.26	65.00	6.37	17.48	111.42
1945	3,370.81	65.00	51.86	17.87	926.50
1946	2,383.88	65.00	36.68	18.25	669.40
1947	17,281.06	65.00	265.86	18.64	4,956.53
1948	79,282.80	65.00	1,219.74	19.04	23,221.96
1949	265,731.10	65.00	4,088.17	19.44	79,464.44
1950	308,128.08	65.00	4,740.43	19.84	94,056.41
1951	110,894.63	65.00	1,706.07	20.25	34,546.41
1952	109,396.50	65.00	1,683.02	20.66	34,773.80
1953	63,920.28	65.00	983.39	21.08	20,728.28
1954	48,344.69	65.00	743.76	21.50	15,990.93
1955	31,963.15	65.00	491.74	21.93	10,782.17
1956	152,030.42	65.00	2,338.93	22.36	52,293.11
1957	157,161.18	65.00	2,417.86	22.79	55,113.67
1958	116,715.98	65.00	1,795.63	23.24	41,722.62
1959	114,526.94	65.00	1,761.95	23.68	41,728.28
1960	66,106.40	65.00	1,017.02	24.14	24,546.41
1961	81,425.25	65.00	1,252.70	24.59	30,808.03
1962	142,019.05	65.00	2,184.91	25.06	54,748.24
1963	192,561.12	65.00	2,962.48	25.53	75,622.43
1964	167,166.91	65.00	2,571.80	26.00	66,874.20
1965	104,176.10	65.00	1,602.71	26.48	42,446.55
1966	208,064.61	65.00	3,200.99	26.97	86,340.82
1967	261,147.55	65.00	4,017.66	27.47	110,353.63

CEHE
Electric Division
366.01 Underground Conduit
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 65

Survivor Curve: S1

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1968	921,137.99	65.00	14,171.36	27.97	396,364.99
1969	1,273,112.33	65.00	19,586.35	28.48	557,757.11
1970	1,386,265.55	65.00	21,327.17	28.99	618,343.06
1971	1,119,074.46	65.00	17,216.53	29.51	508,139.43
1972	1,933,737.68	65.00	29,749.81	30.05	893,858.51
1973	1,420,368.42	65.00	21,851.82	30.58	668,315.57
1974	1,143,062.31	65.00	17,585.58	31.13	547,417.33
1975	1,083,299.53	65.00	16,666.15	31.68	528,031.02
1976	911,716.09	65.00	14,026.40	32.24	452,261.63
1977	1,022,329.89	65.00	15,728.15	32.81	516,110.49
1978	441,856.45	65.00	6,797.79	33.39	226,991.25
1979	1,918,797.36	65.00	29,519.96	33.98	1,003,099.63
1980	1,375,602.65	65.00	21,163.12	34.58	731,723.68
1981	4,499,705.86	65.00	69,226.25	35.18	2,435,544.00
1982	3,951,802.16	65.00	60,796.96	35.80	2,176,276.49
1983	10,127,317.17	65.00	155,804.90	36.42	5,674,750.14
1984	11,915,649.33	65.00	183,317.71	37.05	6,792,810.36
1985	9,204,348.42	65.00	141,605.38	37.70	5,338,733.71
1986	6,575,826.83	65.00	101,166.58	38.36	3,880,479.95
1987	7,631,767.70	65.00	117,411.83	39.02	4,581,654.73
1988	9,505,463.24	65.00	146,237.92	39.70	5,805,574.25
1989	10,851,325.43	65.00	166,943.49	40.39	6,742,145.58
1990	10,675,306.32	65.00	164,235.50	41.09	6,747,730.25
1991	13,256,700.01	65.00	203,949.26	41.79	8,523,926.80
1992	10,800,598.58	65.00	166,163.08	42.52	7,064,854.47
1993	14,134,204.81	65.00	217,449.33	43.25	9,404,560.61
1994	15,072,393.03	65.00	231,883.00	44.00	10,202,112.47

CEHE
Electric Division
366.01 Underground Conduit

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 65 Survivor Curve: S1

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1995	9,306,151.14	65.00	143,171.57	44.75	6,407,299.32
1996	6,753,225.52	65.00	103,895.79	45.52	4,729,836.51
1997	7,172,168.47	65.00	110,341.07	46.31	5,109,366.38
1998	16,051,924.25	65.00	246,952.71	47.10	11,632,178.80
1999	23,366,544.02	65.00	359,485.34	47.91	17,223,610.05
2000	25,340,253.05	65.00	389,850.10	48.73	18,998,106.16
2001	28,121,492.78	65.00	432,638.41	49.57	21,444,495.39
2002	14,141,187.47	65.00	217,556.76	50.41	10,967,542.23
2003	8,029,141.10	65.00	123,525.26	51.27	6,333,549.24
2004	9,660,496.94	65.00	148,623.05	52.14	7,749,855.56
2005	22,340,340.79	65.00	343,697.60	53.03	18,226,664.70
2006	3,690,242.31	65.00	56,772.97	53.93	3,061,611.03
2007	9,005,816.63	65.00	138,551.04	54.84	7,598,005.72
2008	14,549,029.40	65.00	223,831.25	55.76	12,480,704.67
2009	7,924,752.83	65.00	121,919.29	56.69	6,912,208.32
2010	5,417,568.26	65.00	83,347.21	57.64	4,803,976.26
2011	6,235,512.92	65.00	95,930.98	58.60	5,621,111.25
2012	13,893,719.84	65.00	213,749.56	59.56	12,731,201.57
2013	21,486,215.67	65.00	330,557.21	60.54	20,010,310.30
2014	36,465,072.26	65.00	561,001.18	61.52	34,511,702.64
2015	47,217,507.13	65.00	726,423.28	62.51	45,406,363.30
2016	36,966,885.60	65.00	568,721.39	63.50	36,114,863.01
2017	22,592,237.15	65.00	347,572.92	64.50	22,418,428.71
Total	552,884,183.29	65.00	8,505,911.62	51.09	434,554,186.75

Composite Average Remaining Life ... 51.09 Years

CEHE
Electric Division
367.01 Underground Conductors and Devices
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 42

Survivor Curve: L0

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1913	3,215.51	42.00	76.56	10.49	803.11
1914	14.35	42.00	0.34	10.65	3.64
1921	22.15	42.00	0.53	11.83	6.24
1922	13.36	42.00	0.32	12.00	3.82
1923	2,145.31	42.00	51.08	12.18	622.12
1924	3,886.21	42.00	92.53	12.36	1,143.49
1925	4,463.57	42.00	106.28	12.53	1,332.03
1926	4,711.49	42.00	112.18	12.71	1,426.32
1927	6,560.48	42.00	156.21	12.89	2,014.15
1928	5,893.54	42.00	140.33	13.08	1,835.12
1929	6,588.09	42.00	156.86	13.26	2,080.53
1930	5,118.59	42.00	121.87	13.45	1,638.89
1931	7,919.31	42.00	188.56	13.64	2,571.16
1932	694.52	42.00	16.54	13.83	228.65
1933	1,395.68	42.00	33.23	14.02	465.74
1934	1,455.90	42.00	34.67	14.21	492.55
1935	3,558.71	42.00	84.73	14.40	1,220.31
1936	2,953.66	42.00	70.33	14.60	1,026.66
1937	8,461.83	42.00	201.48	14.80	2,981.38
1938	14,304.44	42.00	340.59	15.00	5,107.32
1939	11,607.57	42.00	276.38	15.20	4,200.34
1940	9,733.15	42.00	231.75	15.40	3,569.52
1941	2,938.32	42.00	69.96	15.61	1,091.81
1942	1,717.46	42.00	40.89	15.81	646.68
1943	260.23	42.00	6.20	16.02	99.27
1944	979.41	42.00	23.32	16.23	378.57
1945	2,309.81	42.00	55.00	16.45	904.59

CEHE
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367.01 Underground Conductors and Devices
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 42

Survivor Curve: L0

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1946	5,603.73	42.00	133.43	16.66	2,223.11
1947	13,719.68	42.00	326.67	16.88	5,514.13
1948	42,410.73	42.00	1,009.81	17.10	17,266.29
1949	112,320.90	42.00	2,674.38	17.32	46,322.02
1950	64,145.65	42.00	1,527.32	17.55	26,797.47
1951	77,518.40	42.00	1,845.73	17.77	32,799.35
1952	79,777.36	42.00	1,899.52	18.00	34,190.03
1953	54,860.29	42.00	1,306.23	18.23	23,814.02
1954	30,073.82	42.00	716.06	18.46	13,220.51
1955	37,676.40	42.00	897.08	18.70	16,774.44
1956	147,916.80	42.00	3,521.93	18.94	66,691.25
1957	160,101.15	42.00	3,812.04	19.18	73,102.44
1958	137,691.77	42.00	3,278.47	19.42	63,669.00
1959	98,366.94	42.00	2,342.14	19.66	46,057.66
1960	132,243.45	42.00	3,148.74	19.91	62,701.86
1961	104,367.39	42.00	2,485.01	20.16	50,109.64
1962	231,442.36	42.00	5,510.69	20.42	112,511.58
1963	180,231.77	42.00	4,291.36	20.67	88,717.71
1964	148,518.35	42.00	3,536.25	20.93	74,019.99
1965	150,817.20	42.00	3,590.99	21.19	76,106.43
1966	178,006.48	42.00	4,238.37	21.46	90,950.58
1967	331,992.06	42.00	7,904.80	21.73	171,735.44
1968	659,097.43	42.00	15,693.24	22.00	345,192.25
1969	927,052.72	42.00	22,073.31	22.27	491,555.06
1970	923,183.39	42.00	21,981.18	22.55	495,584.06
1971	1,219,399.51	42.00	29,034.15	22.83	662,727.82
1972	1,644,141.17	42.00	39,147.34	23.11	904,615.02

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And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 42

Survivor Curve: L0

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1973	1,733,670.04	42.00	41,279.04	23.39	965,686.35
1974	1,632,817.23	42.00	38,877.71	23.68	920,769.05
1975	1,979,485.40	42.00	47,131.95	23.98	1,130,015.28
1976	1,882,710.07	42.00	44,827.71	24.27	1,088,044.27
1977	3,063,357.82	42.00	72,939.17	24.57	1,792,159.81
1978	2,208,632.36	42.00	52,587.99	24.87	1,308,046.04
1979	7,652,284.03	42.00	182,202.44	25.18	4,587,863.27
1980	4,866,430.06	42.00	115,870.69	25.49	2,953,483.00
1981	8,799,459.14	42.00	209,516.91	25.80	5,406,191.35
1982	7,608,440.64	42.00	181,158.52	26.12	4,731,969.05
1983	13,204,517.09	42.00	314,402.24	26.44	8,313,145.82
1984	13,296,604.95	42.00	316,594.87	26.77	8,473,994.28
1985	9,415,451.96	42.00	224,183.83	27.09	6,074,139.13
1986	6,239,106.18	42.00	148,554.39	27.43	4,074,418.93
1987	7,239,695.27	42.00	172,378.62	27.76	4,785,894.92
1988	9,758,095.07	42.00	232,342.23	28.10	6,529,805.68
1989	12,241,740.67	42.00	291,478.33	28.45	8,292,297.59
1990	11,817,188.51	42.00	281,369.66	28.80	8,102,868.49
1991	15,072,841.66	42.00	358,887.42	29.15	10,461,990.62
1992	13,438,467.83	42.00	319,972.65	29.51	9,441,994.30
1993	18,479,419.40	42.00	439,998.73	29.87	13,143,007.38
1994	15,587,879.75	42.00	371,150.59	30.24	11,222,453.88
1995	9,630,002.82	42.00	229,292.33	30.61	7,018,136.19
1996	11,827,404.11	42.00	281,612.90	30.98	8,725,267.04
1997	11,154,052.06	42.00	265,580.25	31.36	8,329,466.05
1998	23,998,218.98	42.00	571,402.47	31.75	18,141,105.68
1999	28,365,524.18	42.00	675,388.90	32.14	21,706,534.38

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Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 42

Survivor Curve: L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
2000	30,004,826.01	42.00	714,421.01	32.54	23,245,047.55
2001	25,381,994.17	42.00	604,350.44	32.94	19,908,845.73
2002	26,589,610.93	42.00	633,104.04	33.36	21,118,052.92
2003	27,206,275.32	42.00	647,786.95	33.78	21,881,854.37
2004	28,037,433.38	42.00	667,576.99	34.21	22,840,350.76
2005	36,075,428.33	42.00	858,963.28	34.66	29,770,506.38
2006	31,490,163.61	42.00	749,787.20	35.12	26,330,175.77
2007	39,116,200.95	42.00	931,364.70	35.59	33,145,322.97
2008	41,090,376.54	42.00	978,370.22	36.07	35,293,207.28
2009	37,167,615.36	42.00	884,968.48	36.58	32,369,745.59
2010	24,494,949.67	42.00	583,229.73	37.10	21,636,521.49
2011	28,066,566.37	42.00	668,270.65	37.64	25,153,797.79
2012	45,342,029.62	42.00	1,079,602.94	38.20	41,245,666.64
2013	35,428,837.22	42.00	843,567.82	38.79	32,725,789.66
2014	71,667,360.89	42.00	1,706,414.43	39.42	67,264,769.84
2015	70,973,711.22	42.00	1,689,898.49	40.08	67,727,840.56
2016	63,779,710.20	42.00	1,518,607.87	40.78	61,934,202.27
2017	56,964,500.11	42.00	1,356,336.33	41.57	56,378,334.27
Total	999,076,686.73	42.00	23,788,219.04	34.97	831,823,642.84

Composite Average Remaining Life ... 34.97 Years

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368.01 Line Transformers
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2017
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 32

Survivor Curve: L0

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1913	111.25	32.00	3.48	4.38	15.23
1914	10.02	32.00	0.31	4.51	1.41
1915	15.16	32.00	0.47	4.64	2.20
1916	24.29	32.00	0.76	4.78	3.63
1917	21.65	32.00	0.68	4.91	3.32
1918	53.62	32.00	1.68	5.05	8.46
1919	85.13	32.00	2.66	5.19	13.80
1920	118.81	32.00	3.71	5.32	19.77
1921	245.77	32.00	7.68	5.46	41.96
1922	191.56	32.00	5.99	5.60	33.51
1923	417.14	32.00	13.04	5.74	74.83
1924	578.85	32.00	18.09	5.88	106.41
1925	603.18	32.00	18.85	6.03	113.60
1926	999.41	32.00	31.23	6.17	192.76
1927	803.57	32.00	25.11	6.32	158.67
1928	1,380.36	32.00	43.14	6.47	278.94
1929	1,555.47	32.00	48.61	6.62	321.58
1930	1,771.71	32.00	55.37	6.76	374.37
1931	1,034.57	32.00	32.33	6.91	223.51
1932	399.51	32.00	12.48	7.07	88.22
1933	474.04	32.00	14.81	7.22	106.97
1934	886.84	32.00	27.71	7.38	204.45
1935	1,532.82	32.00	47.90	7.53	360.92
1936	3,917.50	32.00	122.42	7.69	941.91
1937	6,259.50	32.00	195.61	7.85	1,536.48
1938	7,360.28	32.00	230.01	8.01	1,843.17
1939	9,462.41	32.00	295.71	8.18	2,418.00

CEHE
Electric Division
368.01 Line Transformers

Original Cost Of Utility Plant In Service
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Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 32

Survivor Curve: L0

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1940	8,795.71	32.00	274.87	8.34	2,293.11
1941	17,152.96	32.00	536.04	8.51	4,561.54
1942	12,328.07	32.00	385.26	8.68	3,343.55
1943	4,011.15	32.00	125.35	8.85	1,109.29
1944	8,490.87	32.00	265.34	9.02	2,393.96
1945	14,068.07	32.00	439.64	9.20	4,043.13
1946	21,994.47	32.00	687.34	9.37	6,440.34
1947	67,750.66	32.00	2,117.25	9.55	20,215.39
1948	97,228.61	32.00	3,038.45	9.73	29,558.09
1949	104,385.74	32.00	3,262.12	9.91	32,327.95
1950	107,382.30	32.00	3,355.76	10.09	33,874.08
1951	169,245.55	32.00	5,289.02	10.28	54,374.38
1952	212,688.83	32.00	6,646.65	10.47	69,584.26
1953	223,750.49	32.00	6,992.33	10.66	74,536.27
1954	275,213.21	32.00	8,600.57	10.85	93,318.25
1955	451,380.28	32.00	14,105.90	11.05	155,802.13
1956	489,670.98	32.00	15,302.50	11.24	172,038.15
1957	584,689.37	32.00	18,271.88	11.44	209,070.57
1958	397,838.99	32.00	12,432.70	11.64	144,770.99
1959	525,181.69	32.00	16,412.23	11.85	194,469.31
1960	556,097.91	32.00	17,378.38	12.06	209,518.31
1961	575,701.38	32.00	17,991.00	12.27	220,679.01
1962	664,498.01	32.00	20,765.95	12.48	259,090.21
1963	700,777.54	32.00	21,899.71	12.69	277,943.30
1964	738,847.73	32.00	23,089.42	12.91	298,070.52
1965	808,231.70	32.00	25,257.71	13.13	331,633.55
1966	889,183.18	32.00	27,787.49	13.35	371,059.77

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368.01 Line Transformers
Original Cost Of Utility Plant In Service
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Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 32

Survivor Curve: L0

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1967	1,285,494.45	32.00	40,172.45	13.58	545,538.92
1968	1,468,302.04	32.00	45,885.29	13.81	633,647.55
1969	1,457,724.85	32.00	45,554.75	14.04	639,675.55
1970	2,153,821.41	32.00	67,308.17	14.28	960,903.96
1971	2,388,661.36	32.00	74,647.06	14.51	1,083,494.32
1972	2,877,369.13	32.00	89,919.46	14.76	1,326,932.85
1973	3,169,994.03	32.00	99,064.16	15.00	1,486,187.81
1974	3,053,903.61	32.00	95,436.27	15.25	1,455,504.87
1975	3,203,598.01	32.00	100,114.30	15.50	1,552,108.25
1976	2,701,048.67	32.00	84,409.34	15.76	1,330,225.30
1977	6,276,904.24	32.00	196,156.91	16.02	3,142,181.43
1978	10,916,669.33	32.00	341,152.28	16.28	5,554,283.77
1979	7,922,820.62	32.00	247,592.76	16.55	4,097,129.75
1980	11,110,336.96	32.00	347,204.50	16.82	5,839,514.23
1981	11,619,750.95	32.00	363,123.99	17.09	6,207,034.32
1982	17,777,370.67	32.00	555,553.19	17.37	9,651,217.26
1983	20,026,828.59	32.00	625,850.06	17.66	11,049,530.42
1984	24,132,067.68	32.00	754,141.17	17.94	13,531,121.61
1985	15,341,808.51	32.00	479,440.45	18.23	8,742,084.05
1986	8,487,589.95	32.00	265,242.13	18.53	4,914,729.52
1987	6,771,856.33	32.00	211,624.46	18.83	3,984,794.58
1988	7,959,120.40	32.00	248,727.15	19.13	4,759,268.59
1989	10,863,958.82	32.00	339,505.04	19.44	6,601,380.76
1990	14,296,603.80	32.00	446,777.20	19.76	8,827,672.31
1991	15,710,704.23	32.00	490,968.66	20.08	9,857,602.58
1992	14,889,356.11	32.00	465,301.05	20.40	9,493,146.53
1993	13,866,542.24	32.00	433,337.52	20.73	8,983,752.91

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Average Service Life: 32 Survivor Curve: L0

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1994	16,162,086.37	32.00	505,074.61	21.07	10,639,811.62
1995	15,311,054.93	32.00	478,479.39	21.41	10,242,175.91
1996	16,331,423.41	32.00	510,366.49	21.75	11,100,954.77
1997	18,545,497.93	32.00	579,557.61	22.10	12,809,229.54
1998	25,666,321.51	32.00	802,087.50	22.46	18,013,400.65
1999	34,222,763.13	32.00	1,069,481.28	22.82	24,405,881.95
2000	27,711,445.25	32.00	865,998.81	23.19	20,081,040.05
2001	41,407,980.58	32.00	1,294,023.51	23.56	30,490,124.05
2002	39,142,524.51	32.00	1,223,226.69	23.94	29,286,881.18
2003	31,659,105.99	32.00	989,365.50	24.33	24,070,426.40
2004	29,811,256.74	32.00	931,619.14	24.72	23,033,586.50
2005	40,317,728.63	32.00	1,259,952.51	25.13	31,661,517.33
2006	47,088,890.31	32.00	1,471,555.25	25.55	37,591,369.91
2007	48,426,371.20	32.00	1,513,352.31	25.97	39,308,411.31
2008	49,172,736.35	32.00	1,536,676.66	26.42	40,595,891.59
2009	55,823,214.83	32.00	1,744,507.98	26.88	46,888,706.14
2010	45,015,053.98	32.00	1,406,746.66	27.36	38,484,815.73
2011	47,891,090.01	32.00	1,496,624.46	27.86	41,691,299.52
2012	54,186,701.32	32.00	1,693,365.98	28.38	48,058,343.38
2013	55,161,504.55	32.00	1,723,829.15	28.93	49,873,087.96
2014	69,079,537.32	32.00	2,158,775.78	29.52	63,717,643.76
2015	82,068,928.60	32.00	2,564,701.83	30.14	77,299,929.33
2016	89,853,129.28	32.00	2,807,962.63	30.82	86,530,737.02
2017	86,936,503.79	32.00	2,716,816.39	31.57	85,763,295.12

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Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 32 Survivor Curve: L0

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
Total	1,317,489,957.38	32.00	41,172,328.64	25.29	1,041,174,832.21

Composite Average Remaining Life ... 25.29 Years

**SOAH DOCKET NO. 473-19-3864
PUC DOCKET NO. 49421**

APPLICATION OF CENTERPOINT	§	BEFORE THE STATE OFFICE
ENERGY HOUSTON ELECTRIC,	§	OF
LLC FOR AUTHORITY TO	§	ADMINISTRATIVE HEARINGS
CHANGE RATES	§	

DIRECT TESTIMONY AND EXHIBITS

OF

DAVID J. GARRETT

WORKPAPERS

Provided on the attached CD

Summary Depreciation Accrual Adjustment

Plant Function	Plant Balance 12/31/2017	Company Proposal	TCUC Proposal	TCUC Adjustment
Transmission	2,677,169,356	61,070,701	57,970,935	(3,099,766)
Distribution	6,819,502,483	213,587,251	183,151,605	(30,435,646)
General	884,241,963	51,104,951	50,063,481	(1,041,470)
Total	\$ 10,380,913,802	\$ 325,286,250	\$ 290,709,368	\$ (34,576,882)

Depreciation Parameter Comparison

Exhibit DJG-3

Account No.	Description	Company's Position				TCUC's Position			
		Iowa Curve		Depr Rate	Annual Accrual	Iowa Curve		Depr Rate	Annual Accrual
		Type	AL			Type	AL		
	<u>TRANSMISSION PLANT</u>								
E35301	STATION EQUIPMENT	R0.5	- 53	2.05%	19,578,539	R0.5	- 56	1.93%	18,434,817
E35401	TOWERS & FIXTURES	R2.5	- 59	2.15%	14,051,620	R2	- 66	1.85%	12,071,203
	<u>DISTRIBUTION PLANT</u>								
E36201	STATION EQUIPMENT	R1	- 48	2.14%	24,485,519	R0.5	- 55	1.76%	20,165,356
E36401	POLES,TOWERS, FIXTURE	R0.5	- 35	3.84%	30,462,214	R0.5	- 45	2.84%	22,568,969
E36501	O/H CONDUCT DEVICES	R0.5	- 38	3.24%	31,217,383	R0.5	- 40	3.05%	29,339,028
E36601	UNDERGROUND CONDUIT	R2.5	- 62	1.96%	10,836,530	S1	- 65	1.83%	10,145,092
E36701	U/G CONDUCT/DEVICES	R0.5	- 38	3.34%	33,369,161	L0	- 42	2.87%	28,714,072
E36801	LINE TRANSFORMERS	R1	- 28	3.71%	48,878,877	L0	- 32	2.87%	37,875,814
	<u>GENERAL PLANT</u>								
E39001	STRUCT. & IMPROVEMTS	R4	- 50	2.05%	4,383,342	R2	- 58	1.56%	3,335,954

Detailed Rate Comparison

Exhibit DJG-4

		[1]	[2]		[3]		[4]		[5]		[6]		
Account No.	Description	Original Cost	Current Parameters		Company Proposal		TCUC Proposal		TCUC Adjustment from Current Parameters		TCUC Adjustment to Company Proposal		
			Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual	
TRANSMISSION PLANT													
E35002	LAND RIGHTS	92,262,041	1 32%	1,217,859	1 31%	1,208,633	1 31%	1,211,744	-0 01%	-6,115	0 00%	3,111	
E35201	STRUCT & IMPROVEMTS	173,702,369	1 65%	2,866,089	1 74%	3,022,421	1 74%	3,018,318	0 09%	152,229	0 00%	-4,103	
E35301	STATION EQUIPMENT	955,050,688	2 21%	21,106,620	2 05%	19,578,539	1 93%	18,434,817	-0 28%	-2,671,804	-0 12%	-1,143,722	
E35401	TOWERS & FIXTURES	653,563,739	1 89%	12,352,355	2 15%	14,051,620	1 85%	12,071,203	-0 04%	-281,152	-0 30%	-1,980,417	
E35501	POLES AND FIXTURES	123,402,914	3 35%	4,133,998	2 47%	3,048,052	2 47%	3,050,203	-0 88%	-1,083,795	0 00%	2,151	
E35601	O/H CONDUCT/DEVICES	553,862,290	3 34%	18,499,000	3 21%	17,778,980	3 21%	17,800,384	-0 13%	-698,616	0 00%	21,405	
E35701	UNDERGROUND CONDUIT	38,059,656	1 64%	624,178	1 73%	658,432	1 73%	658,070	0 09%	33,891	0 00%	-362	
E35801	U/G CONDUCT/DEVICES	14,661,444	2 45%	359,205	2 35%	344,544	2 35%	343,864	-0 10%	-15,342			
E35901	ROADS AND TRAILS	72,604,215	1 71%	1,241,532	1 90%	1,379,480	1 90%	1,382,333	0 19%	140,801	0 00%	2,853	
Total Transmission Plant		2,677,169,356	2 33%	62,400,837	2 28%	61,070,701	2 17%	57,970,935	-0 17%	-4,429,902	-0 12%	-3,099,766	
DISTRIBUTION PLANT													
E36002	LAND RIGHTS	2,210,688	1 42%	31,392	1 55%	34,266	1 55%	34,316	0 13%	2,924	0 00%	50	
E36101	STRUCT & IMPROVEMTS	93,660,689	1 62%	1,517,303	1 68%	1,573,500	1 68%	1,570,520	0 06%	53,217	0 00%	-2,980	
E36201	STATION EQUIPMENT	1,144,183,142	1 84%	21,052,970	2 14%	24,485,519	1 76%	20,165,356	-0 08%	-887,614	-0 38%	-4,320,163	
E36401	POLES,TOWERS, FIXTURE	793,286,815	3 64%	28,875,640	3 84%	30,462,214	2 84%	22,568,969	-0 80%	-6,306,671	-1 00%	-7,893,245	
E36501	O/H CONDUCT DEVICES	963,499,466	2 74%	26,399,885	3 24%	31,217,383	3 05%	29,339,028	0 31%	2,939,142	-0 19%	-1,878,355	
E36601	UNDERGROUND CONDUIT	552,884,183	2 53%	13,987,970	1 96%	10,836,530	1 83%	10,145,092	-0 70%	-3,842,878	-0 13%	-691,438	
E36701	U/G CONDUCT/DEVICES	999,076,687	3 27%	32,669,808	3 34%	33,369,161	2 87%	28,714,072	-0 40%	-3,955,736	-0 47%	-4,655,090	
E36801	LINE TRANSFORMERS	1,317,489,957	3 07%	40,446,942	3 71%	48,878,877	2 87%	37,875,814	-0 20%	-2,571,128	-0 84%	-11,003,064	
E36901	SERVICES	193,687,517	2 97%	5,752,519	3 76%	7,282,651	3 76%	7,289,344	0 79%	1,536,825	0 00%	6,694	
E37001	METERS	76,538,374	4 66%	3,566,688	3 32%	2,541,074	3 32%	2,542,925	-1 34%	-1,023,763	0 00%	1,851	
E37003	AMS METERS	107,252,469	14 29%	15,326,378	4 77%	5,115,943	4 77%	5,120,764	-9 52%	-10,205,614	0 00%	4,821	
E37301,401	STREET LT/SIGNAL SYS & SECURITY LIGHTING	575,732,496	3 45%	19,862,771	3 09%	17,790,134	3 09%	17,785,406	-0 36%	-2,077,366	0 00%	-4,729	
Total Distribution Plant		6,819,502,483	3 07%	209,490,266	3 13%	213,587,251	2 69%	183,151,605	-0 39%	-26,338,661	-0 45%	-30,435,646	
GENERAL PLANT													
E38902	LAND RIGHTS	154,400	2 01%	3,103	1 80%	2,779	1 80%	2,778	-0 21%	-325	0 00%	-1	
E39001	STRUCT & IMPROVEMTS	213,821,555	2 45%	5,238,628	2 05%	4,383,342	1 56%	3,335,954	-0 89%	-1,902,674	-0 49%	-1,047,388	
E39201	TRANSPORTATION EQUIP	121,651,326	7 63%	9,281,996	6 73%	8,187,134	6 73%	8,193,118	-0 90%	-1,088,879	0 00%	5,983	
E39601	POWER OPERATED EQUIP	20,956,362	4 40%	922,080	5 10%	1,068,774	5 10%	1,068,918	0 70%	146,838	0 00%	144	
E39701	MICROWAVE EQUIPMENT	327,013,512	4 21%	13,767,269	5 08%	16,612,286	5 08%	16,612,079	0 87%	2,844,810	0 00%	-207	
E39101	OFFICE F/F	9,731,996	4 80%	467,136	4 17%	405,824	4 17%	405,824	-0 63%	-61,312	0 00%	0	
E39301	STORES EQUIPMENT	388,487	5 44%	21,134	5 26%	20,434	5 26%	20,434	-0 18%	-699	0 00%	0	
E39401	TOOLS,SHOP,GAR EQUIP	13,945,470	5 66%	789,314	5 56%	775,368	5 56%	775,368	-0 10%	-13,945	0 00%	0	
E39501	LAB EQUIPMENT	20,043,154	4 03%	807,739	4 00%	801,726	4 00%	801,726	-0 03%	-6,013	0 00%	0	
E39702	COMPUTER EQUIPMENT	146,939,952	12 55%	18,440,964	12 50%	18,367,494	12 50%	18,367,494	-0 05%	-73,470	0 00%	0	
E39801	MISC EQUIPMENT	9,595,750	5 02%	481,707	5 00%	479,787	5 00%	479,787	-0 02%	-1,919	0 00%	0	
Total General Plant		884,241,963	5 68%	50,221,069	5 78%	51,104,951	5 66%	50,063,481	-0 02%	-157,588	-0 12%	-1,041,470	
Reserve Difference Amortization						-476,652		-476,652					
TOTAL Depreciable Plant Studied		10,380,913,802	3 10%	322,112,172	3 13%	325,286,250	2 80%	290,709,368	-0 30%	-31,402,804	-0 33%	-34,576,882	

Depreciation Rate Development

Exhibit DJG-5

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	
Account No	Description	Original Cost	Iowa Curve Type	AL	Net Salvage	Depreciable Base	Book Reserve	Future Accruals	Remaining Life	Service Life Accrual	Rate	Net Salvage Accrual	Rate	Total Accrual	Rate
TRANSMISSION PLANT															
E35002	LAND RIGHTS	92,262,041	R1	- 75	0%	92,262,041	17,243,243	75,018,798	*****	1,211,744	1.31%	0	0.00%	1,211,744	1.31%
E35201	STRUCT & IMPROVEMTS	173,702,369	R1	5 - 60	-5%	182,387,487	17,716,963	164,670,524	*****	2,859,125	1.65%	159,193	0.09%	3,018,318	1.74%
E35301	STATION EQUIPMENT	955,050,688	R0	5 - 56	-10%	1,050,555,757	155,914,106	894,641,651	*****	16,466,857	1.72%	1,967,959	0.21%	18,434,817	1.93%
E35401	TOWERS & FIXTURES	653,563,739	R2	- 66	-30%	849,632,860	218,550,369	631,082,491	*****	8,320,837	1.27%	3,750,366	0.57%	12,071,203	1.85%
E35501	POLES AND FIXTURES	123,402,914	R0	5 - 60	-50%	185,104,371	27,285,217	157,819,155	*****	1,857,686	1.51%	1,192,517	0.97%	3,050,203	2.47%
E35601	O/H CONDUCT/DEVICES	553,862,290	R1	5 - 61	*****	1,107,724,581	258,915,942	848,808,638	*****	6,185,376	1.12%	11,615,058	2.10%	17,800,384	3.21%
E35701	UNDERGROUND CONDUIT	38,059,656	R5	- 60	-5%	39,962,639	6,199,080	33,763,559	*****	620,980	1.63%	37,090	0.10%	658,070	1.73%
E35801	U/G CONDUCT/DEVICES	14,661,444	S6	- 44	-5%	15,394,516	3,291,634	12,102,882	*****	323,036	2.20%	20,828	0.14%	343,864	2.35%
E35901	ROADS AND TRAILS	72,604,215	S6	- 52	0%	72,604,215	9,695,198	62,909,017	*****	1,382,333	1.90%	0	0.00%	1,382,333	1.90%
Total Transmission Plant		2,677,169,356			-34%	3,595,628,467	714,811,752	2,880,816,716	*****	39,227,924	1.47%	18,743,011	0.70%	57,970,935	2.17%
DISTRIBUTION PLANT															
E36002	LAND RIGHTS	2,210,688	R1	- 60	0%	2,210,688	631,482	1,579,206	*****	34,316	1.55%	0	0.00%	34,316	1.55%
E36101	STRUCT & IMPROVEMTS	93,660,689	R4	- 60	-10%	103,026,758	34,649,076	68,377,683	*****	1,355,397	1.45%	215,123	0.23%	1,570,520	1.68%
E36201	STATION EQUIPMENT	1,144,183,142	R0	5 - 55	-10%	1,258,601,456	342,892,643	915,708,813	*****	17,645,684	1.54%	2,519,672	0.22%	20,165,356	1.76%
E36401	POLES, TOWERS, FIXTURE	793,286,815	R0	5 - 45	-45%	1,150,265,882	353,355,582	796,910,299	*****	12,459,112	1.57%	10,109,857	1.27%	22,568,969	2.84%
E36501	O/H CONDUCT DEVICES	963,499,466	R0	5 - 40	-30%	1,252,549,306	362,109,819	890,439,487	*****	19,815,145	2.06%	9,523,883	0.99%	29,339,028	3.05%
E36601	UNDERGROUND CONDUIT	552,884,183	S1	- 65	-30%	718,749,438	200,436,711	518,312,727	*****	6,898,561	1.25%	3,246,531	0.59%	10,145,092	1.83%
E36701	U/G CONDUCT/DEVICES	999,076,687	L0	- 42	-35%	1,348,753,527	344,622,441	1,004,131,086	*****	18,714,734	1.87%	9,999,338	1.00%	28,714,072	2.87%
E36801	LINE TRANSFORMERS	1,317,489,957	L0	- 32	-15%	1,515,113,451	557,234,122	957,879,329	*****	30,061,520	2.28%	7,814,294	0.59%	37,875,814	2.87%
E36901	SERVICES	193,687,517	R0	5 - 46	-60%	309,900,027	75,571,082	234,328,945	*****	3,674,285	1.90%	3,615,059	1.87%	7,289,344	3.76%
E37001	METERS	76,538,374	R3	- 21	0%	76,538,374	54,424,753	22,113,621	*****	2,542,925	3.32%	0	0.00%	2,542,925	3.32%
E37003	AMS METERS	107,252,469	R2	- 20	0%	107,252,469	21,794,628	85,457,841	*****	5,120,764	4.77%	0	0.00%	5,120,764	4.77%
E37301,401	STREET LT/SIGNAL SYS & SECURITY LIGHTING	575,732,496	R1	- 39	-30%	748,452,245	224,062,123	524,390,122	*****	11,927,380	2.07%	5,858,026	1.02%	17,785,406	3.09%
Total Distribution Plant		6,819,502,483			-26%	8,591,413,620	2,571,784,462	6,019,629,158	*****	130,249,822	1.91%	52,901,782	0.78%	183,151,605	2.69%
GENERAL PLANT															
E38902	LAND RIGHTS	154,400	R2	- 55	0%	154,400	30,727	123,673	*****	2,778	1.80%	0	0.00%	2,778	1.80%
E39001	STRUCT & IMPROVEMTS	213,821,555	R2	- 58	-5%	224,512,633	81,300,132	143,212,501	*****	3,086,919	1.44%	249,035	0.12%	3,335,954	1.56%
E39201	TRANSPORTATION EQUIP	121,651,326	SQ	- 24	10%	109,486,193	43,673,043	65,813,151	*****	9,707,562	7.98%	-1,514,444	-1.24%	8,193,118	6.73%
E39601	POWER OPERATED EQUIP	20,956,362	L2	- 13	6%	19,698,980	7,531,102	12,167,878	*****	1,179,376	5.63%	-110,458	-0.53%	1,068,918	5.10%
E39701	MICROWAVE EQUIPMENT	327,013,512	SQ	- 19	2%	320,473,242	78,245,449	242,227,792	*****	17,060,613	5.22%	-448,534	-0.14%	16,612,079	5.08%
E39101	OFFICE F/F	9,731,996	SQ	- 18	0%	9,731,996	7,049,029	2,682,967	*****	293,710	3.02%	112,115	1.15%	405,824	4.17%
E39301	STORES EQUIPMENT	388,487	SQ	- 25	0%	388,487	182,926	205,561	*****	10,819	2.78%	9,615	2.48%	20,434	5.26%
E39401	TOOLS, SHOP, GAR EQUIP	13,945,470	L2	- 18	0%	13,945,470	1,944,774	12,000,696	*****	666,705	4.78%	108,663	0.78%	775,368	5.56%
E39501	LAB EQUIPMENT	20,043,154	R2	- 22	0%	20,043,154	7,724,066	12,319,088	*****	492,764	2.46%	308,963	1.54%	801,726	4.00%
E39702	COMPUTER EQUIPMENT	146,939,952	SQ	- 8	0%	146,939,952	49,560,154	97,379,798	*****	12,172,475	8.28%	6,195,019	4.22%	18,367,494	*****
E39801	MISC EQUIPMENT	9,595,750	SQ	- 20	0%	9,595,750	1,924,177	7,671,573	*****	383,579	4.00%	96,209	1.00%	479,787	5.00%
Total General Plant		884,241,963			1%	874,970,256	274,799,516	600,170,740	*****	45,057,299	5.10%	5,006,182	0.57%	50,063,481	5.66%
Reserve Difference Amortization														-476,652	
TOTAL PLANT STUDIED		10,380,913,802			-26%	13,062,012,344	3,561,395,730	9,500,616,614	*****	214,535,045	2.07%	76,650,976	0.73%	290,709,368	2.80%

[1] Company depreciation study

[2] Average life and Iowa curve shape developed through actuarial analysis and professional judgment

[3] Net salvage estimates developed through statistical analysis and professional judgment

[4] = [1]*[1]-[3]

[5] From depreciation study

[6] = [4] - [5]

[7] Composite remaining life based on Iowa curve in [2], see remaining life exhibit for detailed calculations

[8] = ([1] - [5]) / [7]

[9] = [8] / [1]

[10] = [12] - [8]

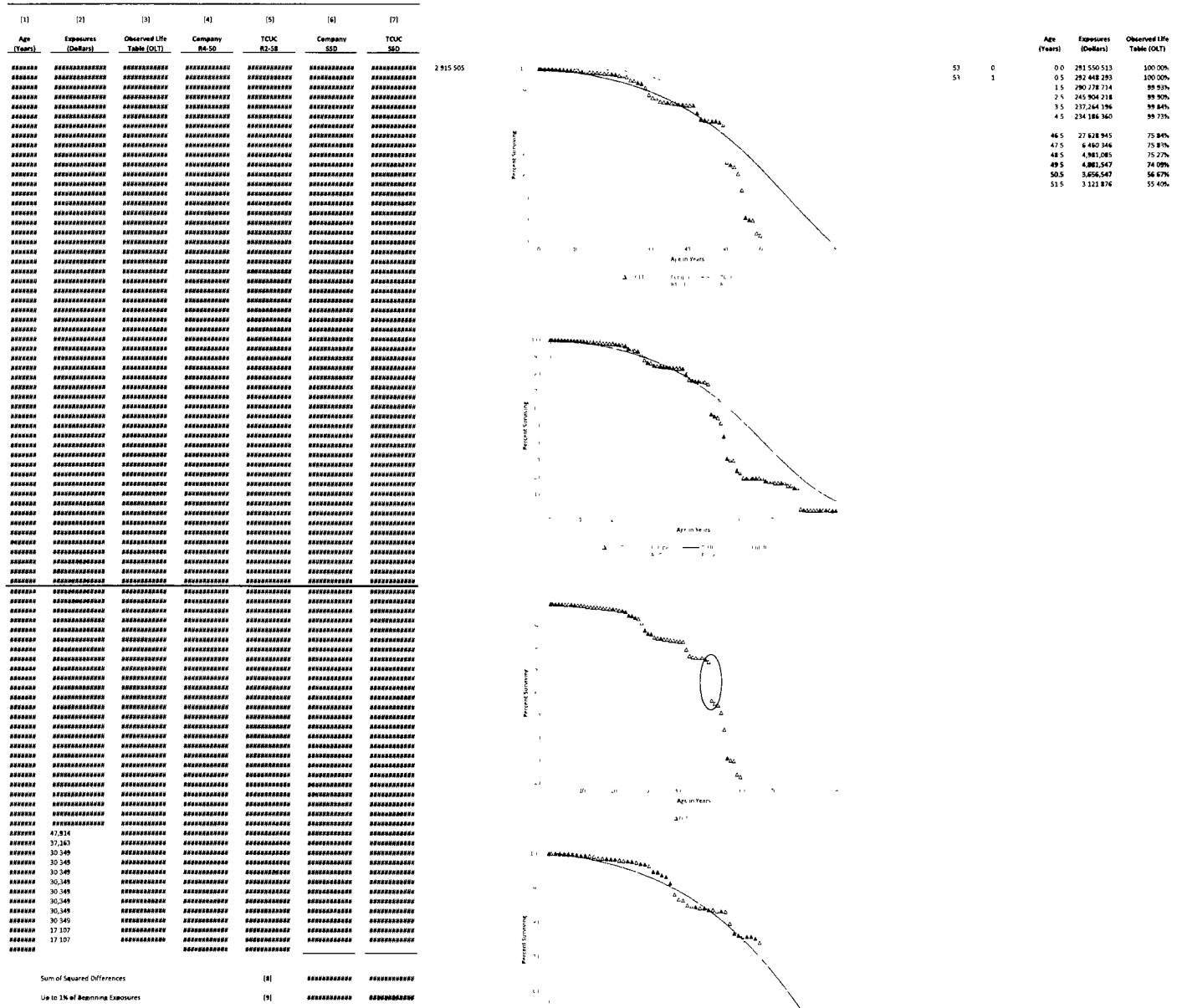
[11] = [13] - [9]

[12] = [6] / [7]

[13] = [12] / [1]

Account 390 Iowa Curve Fitting

Exhibit DJG-6



[1] Age in years using half-year convention.
 [2] Dollars received in retirement at the beginning of each age in year.
 [3] Observed life table based on the Company's property records. These numbers form the original survivor curve.
 [4] The Company's selected survivor curve to be fitted to the OLT.
 [5] The selected survivor curve to be fitted to the OLT.
 [6] $([4] - [3])^2$. This is the squared difference between each point on the Company's curve and the observed survivor curve.
 [7] $([5] - [3])^2$. This is the squared difference between each point on the Company's curve and the observed survivor curve.
 [8] Sum of squared differences. The number 552 represents the best mathematical fit.
 [9] Sum of squared differences up to the 1% of beginning exposures (OLT).
 *The bold horizontal line represents the 1% of beginning exposures (OLT).

Account 390 Remaining Life

Exhibit DJG-7

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Vintage	Age	Surviving Balance	Average Life	Average Annual Accrual	Remaining Life	Future Annual Accruals
#####	0.5	\$ 2,287,916	58	\$ 39,447	57.55	\$ 2,270,051
#####	1.5	6,288,178	58	108,417	56.64	6,141,236
#####	2.5	44,597,544	58	768,923	55.75	42,864,745
#####	3.5	29,675,696	58	511,650	54.85	28,065,334
#####	4.5	5,293,173	58	91,262	53.96	4,924,803
#####	5.5	2,445,120	58	42,157	53.08	2,237,671
#####	6.5	282,886	58	4,877	52.20	254,595
#####	7.5	726,486	58	12,526	51.32	642,872
#####	8.5	813,085	58	14,019	50.45	707,313
#####	9.5	182,281	58	3,143	49.59	155,851
#####	10.5	939,048	58	16,190	48.73	788,973
#####	11.5	45,588	58	786	47.88	37,631
#####	12.5	15,063,876	58	259,722	47.03	12,214,217
#####	13.5	6,382,177	58	110,038	46.18	5,082,065
#####	14.5	984,943	58	16,982	45.35	770,075
#####	15.5	678,554	58	11,699	44.52	520,796
#####	16.5	275,733	58	4,754	43.69	207,701
#####	17.5	2,606,578	58	44,941	42.87	1,926,601
#####	18.5	21,475	58	370	42.06	15,571
#####	19.5	121,579	58	2,096	41.25	86,464
#####	20.5	773,193	58	13,331	40.45	539,188
#####	22.5	166,376	58	2,869	38.86	111,480
#####	23.5	463,604	58	7,993	38.08	304,385
#####	24.5	755,040	58	13,018	37.31	485,636
#####	25.5	616,617	58	10,631	36.54	388,431
#####	26.5	1,190,207	58	20,521	35.78	734,133
#####	27.5	1,579,915	58	27,240	35.02	953,955
#####	28.5	3,444,143	58	59,382	34.27	2,035,188
#####	29.5	4,045,784	58	69,755	33.53	2,339,076
#####	30.5	11,979,715	58	206,547	32.80	6,774,776
#####	31.5	198,038	58	3,414	32.07	109,518
#####	32.5	16,372,328	58	282,282	31.36	8,851,541
#####	33.5	6,803,549	58	117,303	30.65	3,595,037
#####	34.5	3,145,244	58	54,228	29.95	1,623,909
#####	35.5	7,427,154	58	128,054	29.25	3,745,823
#####	36.5	7,153,656	58	123,339	28.57	3,523,301
#####	37.5	634,301	58	10,936	27.89	304,999
#####	38.5	201,278	58	3,470	27.22	94,462
#####	39.5	34,272	58	591	26.56	15,694
#####	40.5	19,196,704	58	330,978	25.91	8,574,963
#####	41.5	41,326	58	713	25.27	18,002
#####	42.5	996,052	58	17,173	24.63	423,006
#####	43.5	3,210,691	58	55,357	24.01	1,328,931
#####	44.5	2,817,896	58	48,584	23.39	1,136,469
#####	45.5	730,218	58	12,590	22.79	286,872
#####	46.5	94,863	58	1,636	22.19	36,292
#####	47.5	37,477	58	646	21.60	13,958
Total				\$ 3,686,579	#####	
Remaining Life		[8]	42.93 years			

[1] Vintage year

[2] Age

[3] Surviving balances from Company workpapers.

[4] Average life based on Iowa curve selected in Exhibit DJG-6

[5] = [3] / [4]

[6] Remaining life based on Iowa curve selected in Exhibit DJG-6

[7] = [5] * [6]

[8] = Total [7] / Total [5]

Peer Group Comparison

Exhibit DJG-8

Acct	Description	CEHE	Peer Group			Peer Avg	Peer Avg less CEHE	TCUC
			[1] SWEPCO	[2] OG&E	[3] PSO			
	<u>TRANSMISSION PLANT</u>							
353	STATION EQUIPMENT	53	60	63	60	61	8	56
354	TOWERS & FIXTURES	59	60	75	75	70	11	66
	<u>DISTRIBUTION PLANT</u>							
362	STATION EQUIPMENT	48	55	68	75	66	18	55
364	POLES,TOWERS,FIXTURE	35	55	55	53	54	19	45
365	O/H CONDUCT DEVICES	38	44	54	46	48	10	40
366	UNDERGROUND CONDUIT	62	70	65	78	71	9	65
367	U/G CONDUCT/DEVICES	38	45	64	65	58	20	42
368	LINE TRANSFORMERS	28	50	44	36	43	15	32
	Average	45	55	61	61	59	14	50

[1] Application of Southwestern Electric Power Company, Docket No. 46449, Order on Rehearing, pp. 33-34 (March 19, 2018).

[2] Final Order No. 662059, p. 8, Application of Oklahoma Gas and Electric Company, Docket No. PUD 201500273, Before the Corporation Commission of Oklahoma (March 20, 2017).

[3] Final Order No. 672864, pp. 5-6, Application of Public Service Company of Oklahoma, Docket No. PUD 201700151, Before the Corporation Commission of Oklahoma (January 31, 2018).

**SOAH DOCKET NO. 473-19-3864
PUC DOCKET NO. 49421**

**Workpapers to the
Direct Testimony & Exhibits of
David J. Garrett**

June 6, 2019