

Exhibit No.:
Issue(s): Depreciation
Witness: David T. Buttig, PE
Sponsoring Party: MoPSC Staff
Type of Exhibit: Surrebuttal Testimony
Case No.: GR-2021-0241
Date Testimony Prepared: November 5, 2021

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENGINEERING ANALYSIS DEPARTMENT

SURREBUTTAL TESTIMONY

OF

DAVID T. BUTTIG, PE

**UNION ELECTRIC COMPANY,
d/b/a Ameren Missouri**

CASE NO. GR-2021-0241

*Jefferson City, Missouri
November 2021*

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TABLE OF CONTENTS
SURREBUTTAL TESTIMONY
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INTRODUCTION..... 1
RESPONSE TO OPC REBUTTAL 2
RESPONSE TO AMEREN MISSOURI REBUTTAL..... 2
AMI SMART METER 5

1 **RESPONSE TO OPC REBUTTAL**

2 Q. What will you be addressing from the Rebuttal Testimony of OPC witness
3 John Robinett?

4 A. Mr. Robinett was concerned that Staff had not included a standalone
5 depreciation rate schedule with its direct testimony and instead included the depreciation rates
6 in the Staff accounting schedule.

7 Q. Does Staff agree with this concern?

8 A. Staff does not see this as an issue since the same information that would have
9 been included in a standalone depreciation schedule was included in the Staff accounting
10 schedules¹ and was sponsored by Staff's depreciation witness. Staff has included the
11 information requested by Mr. Robinett with this testimony as Schedule dtb-s1. Schedule dtb-s1
12 is a depreciation schedule with plant accounts, plant descriptions, average service lives, net
13 salvage percentages, and average life.

14 **RESPONSE TO AMEREN MISSOURI REBUTTAL**

15 Q. Mr. Spanos states in his rebuttal testimony², that Staff did not conduct a proper
16 life analysis. Is Mr. Spanos correct in its assumption?

17 A. No, he is not. Mr. Spanos claims that Staff makes its life estimate
18 recommendations purely based on a mathematical representation of the data. The depreciation
19 software used by Staff does calculate a survivor curve and life estimate, but this is not the
20 methodology used by Staff. Basing a survivor curve off a mathematical fit is best used for data
21 sets that have regular retirements and a low percentage surviving assets. For accounts where

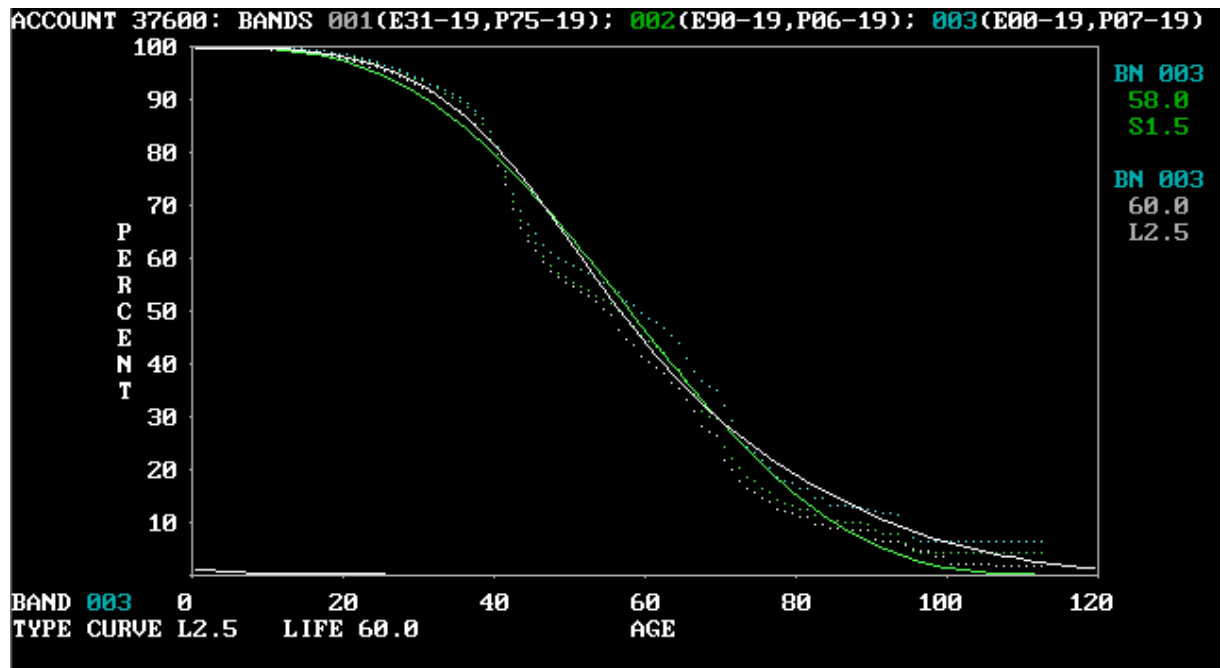
¹ Case No. GR-2021-0241: Item 54 Staff Accounting Schedules. Accounting Schedule 05.

² Case No. GR-2021-0241 Item 82: Rebuttal Testimony of John S. Spanos page 4 lines 1-3.

1 this is not the case, Staff looks at previous cases to better understand the accounts. Staff uses
2 the information from previous cases and information provided by Ameren Missouri in this case
3 to visually fit a curve that represents the retirement data in those accounts. Schedule dtb-s2 has
4 been included with this testimony to show a comparison of the survivor curves recommended
5 by Staff and those by Ameren Missouri.

6 Q. Can you provide an example of one of these comparisons?

7 A. Yes. Below is the comparison for Account 376 Mains. The dotted lines represent
8 the survival data for the account graphed according to different experience and placement
9 bands. These bands were used by Ameren Missouri and Staff to make their recommendations.
10 Ameren Missouri's recommendation is the solid green line and Staff's is the solid white line.



11
12 The other curve comparisons are in Schedule dtb-s2.

13 Q. Did Mr. Spanos have issues with any other aspects of Staff's recommended
14 depreciation rates?

1 A. Yes. In Mr. Spanos's rebuttal testimony, on page 10 line 9 through page 11,
2 line 2, Mr. Spanos points out that Staff and Ameren Missouri have proposed different net rates
3 for Accounts 376 (Mains) and 381 (Meters).

4 Q. What are those differences?

5 A. For Account 376, Staff has proposed a net salvage rate of negative five percent
6 while Ameren Missouri has proposed a negative ten percent rate. For Account 381, Staff has
7 proposed a net salvage rate of positive three percent and Ameren Missouri a positive
8 two percent.

9 Q. How did Staff come to its net salvage rate recommendations?

10 A. Staff reviews the historical data for cost of removal and gross salvage for the
11 accounts individually. From this information, Staff looks at the individual years as well as the
12 rolling three-year averages and the most recent five-year average. The net salvage information
13 for Accounts 376 and 381 has been included as Schedule dtb-s3. This information can be used
14 to find trends in salvage value of the assets to better reflect what the future salvage percentages
15 could be. Staff makes its net salvage rate recommendation based off of this information and its
16 informed judgement.

17 Q. Why are Staff's values for these two accounts more reasonable than
18 Mr. Spanos's recommendation?

19 A. When Staff reviewed the net salvage data, Staff put more emphasis on the more
20 recent data. Staff based their recommendation of these more recent trends as a way to estimate
21 what the net salvage will be in the coming years.

1 **AMI SMART METER**

2 Q. In Mr. Spanos's Rebuttal testimony, Mr. Spanos recommends a depreciation rate
3 for Ameren Missouri AMI gas meters. Is his recommendation consistent with what was
4 provided by Ameren Missouri's Smart Meter Program Director, Mr. Jeff Esserman in
5 Data Request No. 0521?

6 A. No it is not. Mr. Esserman states that the AMI gas modules will have a 20-year
7 operating life. Mr. Spanos, in his rebuttal testimony³, recommends an average life of 15-years
8 and a depreciation rate of 6.67%.

9 Q. Does Mr. Spanos offer any reasoning or explanation for his recommendation?

10 A. No he does not.

11 Q. What does Staff recommend for the average life and depreciation rate for
12 the AMI meters?

13 A. Staff recommends an average life of 20 years, a 0% net salvage, and a
14 resulting 5.0% depreciation rate. This depreciation rate is consistent with Ameren Missouri's
15 Smart Meter Program Director's assessment of the AMI meters average life and the
16 Commissions previous orders on AMI meters for Spire Missouri in Case Nos. GO-2020-0416
17 and GR-2021-0108.

18 Q. Does this conclude your surrebuttal testimony?

19 A. Yes, it does.

³ Case No. GR-2021-0241 Item 82: Rebuttal Testimony of John S. Spanos page 14 lines 19-21.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

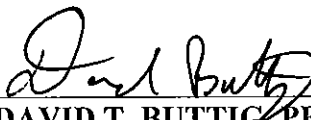
In the Matter of Union Electric Company)
d/b/a Ameren Missouri's Tariffs to Adjust Its)
Revenues for Natural Gas Service) Case No. GR-2021-0241

AFFIDAVIT OF DAVID T. BUTTIG, PE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW DAVID T. BUTTIG, PE, and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Surrebuttal Testimony of David T. Buttig, PE*; and that the same is true and correct according to his best knowledge and belief.

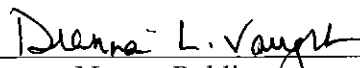
Further the Affiant sayeth not.



DAVID T. BUTTIG, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 3rd day of November, 2021.



Notary Public

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2023
Commission Number: 15207377

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri
SCHEDULE of DEPRECIATION RATES
(GAS)
GR-2021-0241

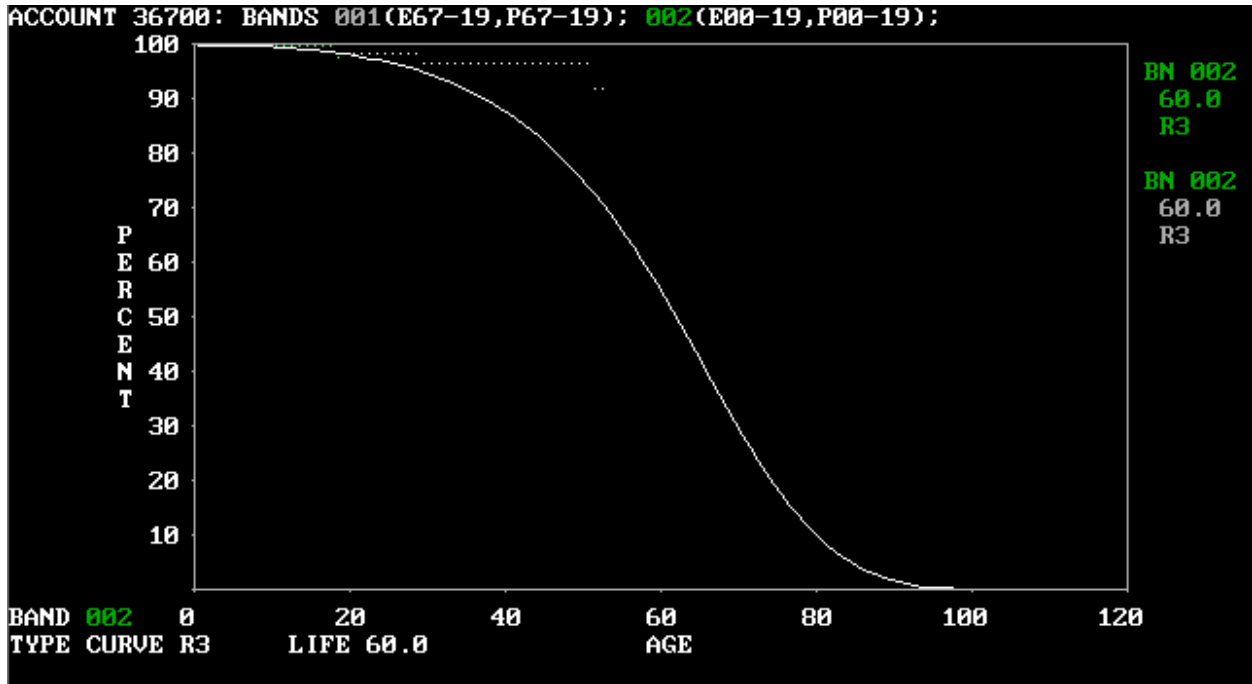
ACCOUNT NUMBER	ACCOUNT NAME	AVERAGE SERVICE LIFE	NET SALV. PCT.	DEPRECIATION RATE	AVERAGE AGE
TRANSMISSION PLANT					
367	MAINS	60	-10%	1.41%	19.2
369	MEASURING AND REGULATING STATION EQUIPMENT	50	-5%	0.25%	37.1
DISTRIBUTION PLANT					
375	STRUCTURES AND IMPROVEMENTS	50	-5%	2.79%	11.9
376	MAINS	60	-5%	1.54%	16.3
378	MEASURING AND REGULATING STATION EQUIPMENT - GENERAL	45	-5%	2.21%	18.6
379	MEASURING AND REGULATING STATION EQUIPMENT - CITY GATE	45	-5%	2.29%	16.2
380	SERVICES	50	-10%	1.43%	17.0
381	METERS	30	3%	4.51%	14.4
383	HOUSE REGULATORS	47	-25%	3.00%	14.8
385	INDUSTRIAL MEASURING AND REGULATING STATION EQUIPMENT	40	0%	1.96%	18.3
GENERAL PLANT					
390	STRUCTURES AND IMPROVEMENTS	38	-5%	2.86%	7.2
391	OFFICE FURNITURE AND EQUIPMENT	15	0%	6.67%	5.6
391.02	OFFICE FURNITURE AND EQUIPMENT - COMPUTERS	5	0%	20.00%	1.5
392	TRANSPORTATION EQUIPMENT	13	15%	4.62%	6.2
393	STORES	20	0%	5.00%	
394	TOOLS, SHOP AND GARAGE EQUIPMENT	20	0%	5.00%	8.3
395	LABORATORY EQUIPMENT	20	0%	5.00%	9.9
396	POWER OPERATED EQUIPMENT	15	20%	5.79%	6.7
397	COMMUNICATION EQUIPMENT	15	0%	6.67%	8.7
398	MISCELLANEOUS EQUIPMENT	15	0%	6.67%	11.5

Case No. GR-2021-0241
Schedule DTB-s1

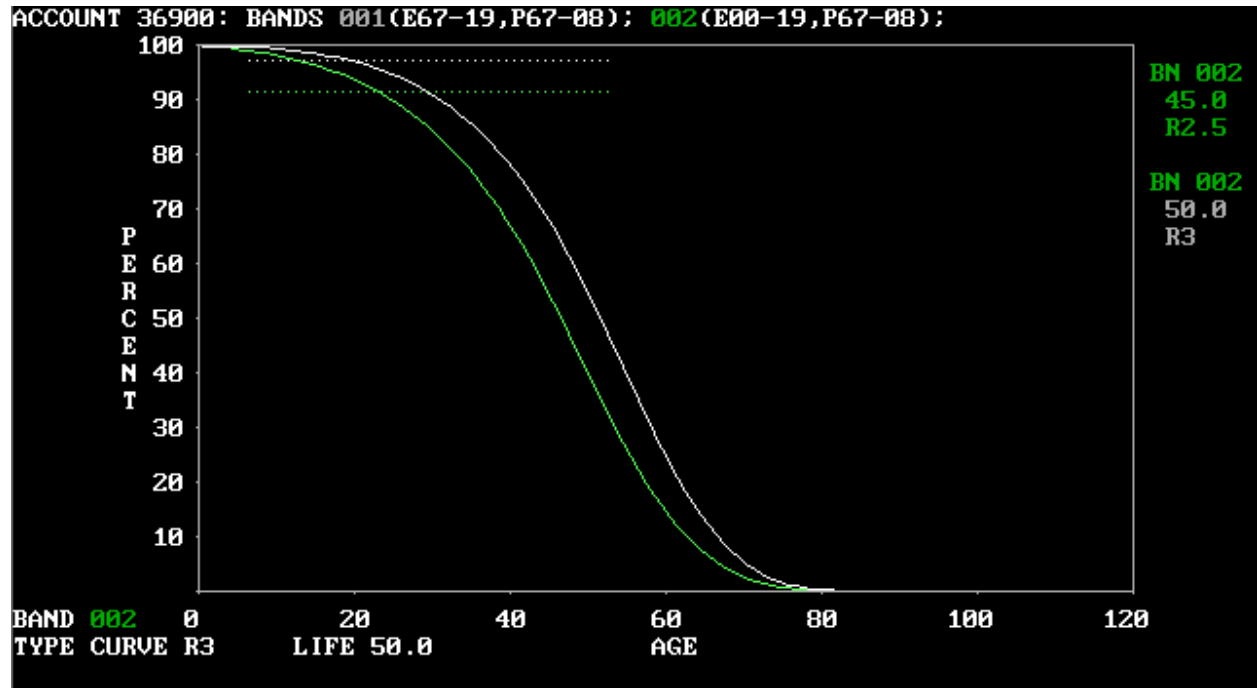
Staff's recommended curves are in white, Ameren Missouri's recommended curves are in green.

Account 367 - Mains

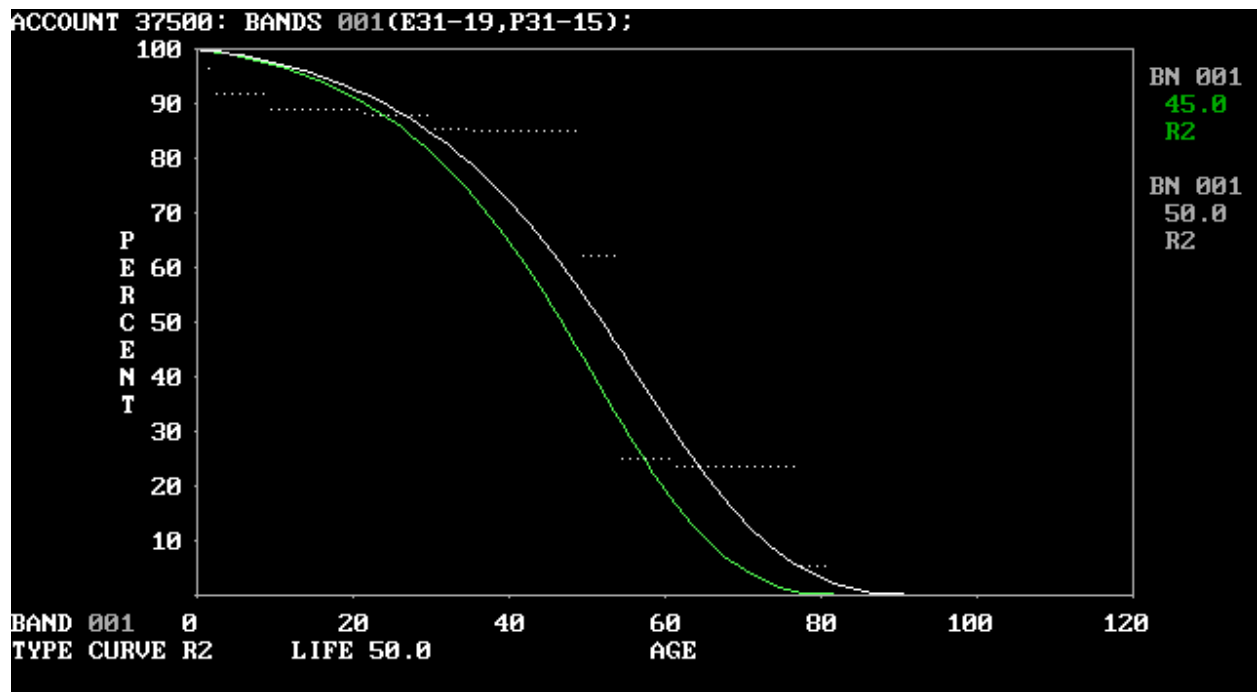
Both Staff and Ameren Missouri recommended the same curve.



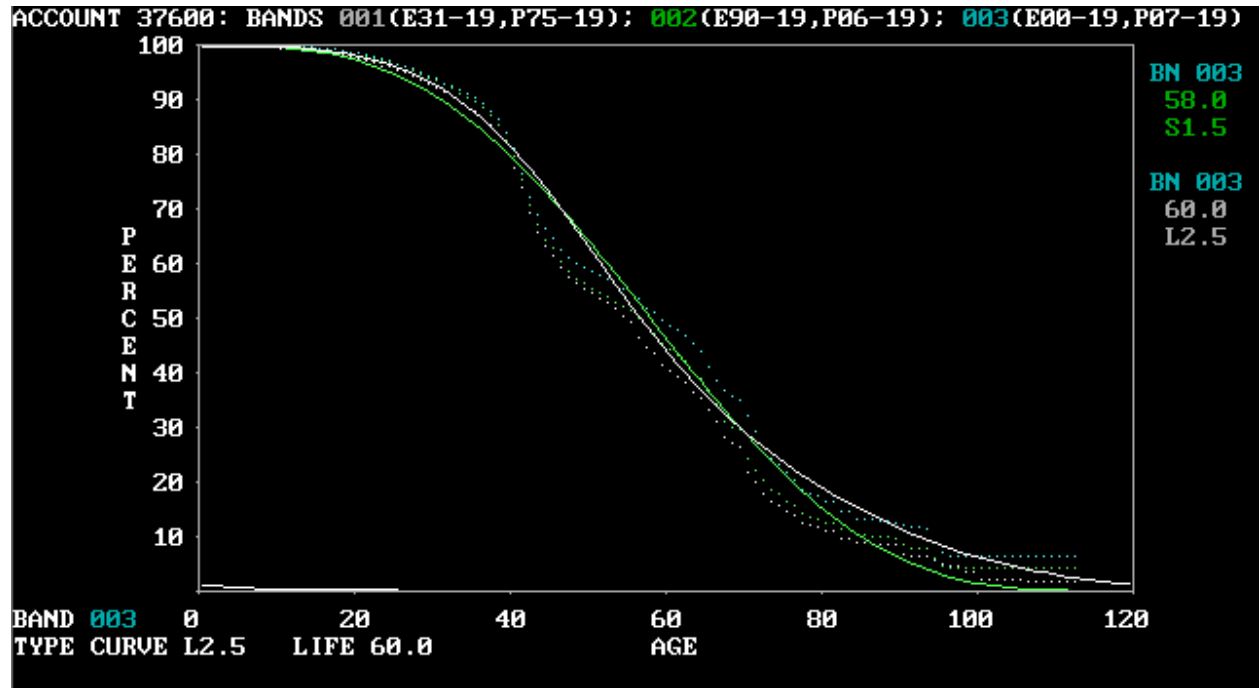
Account 369 – Measuring and Regulating Equipment



Account 375 – Structures and Improvements

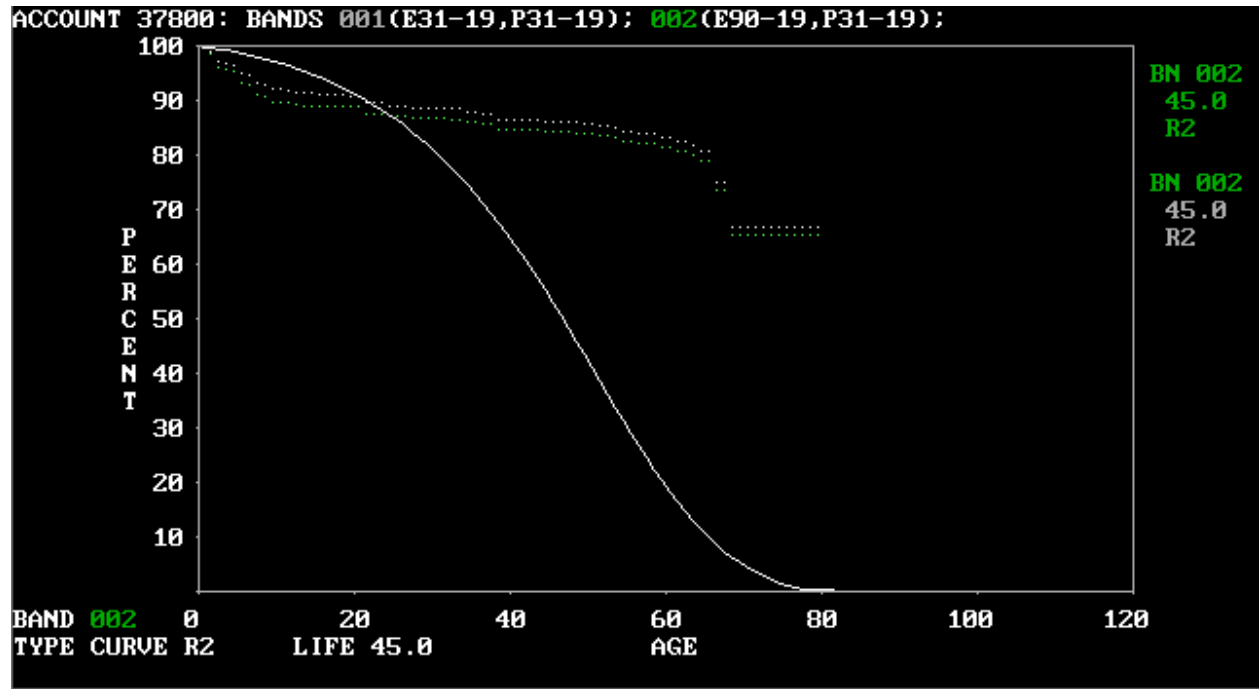


Account 376 – Mains



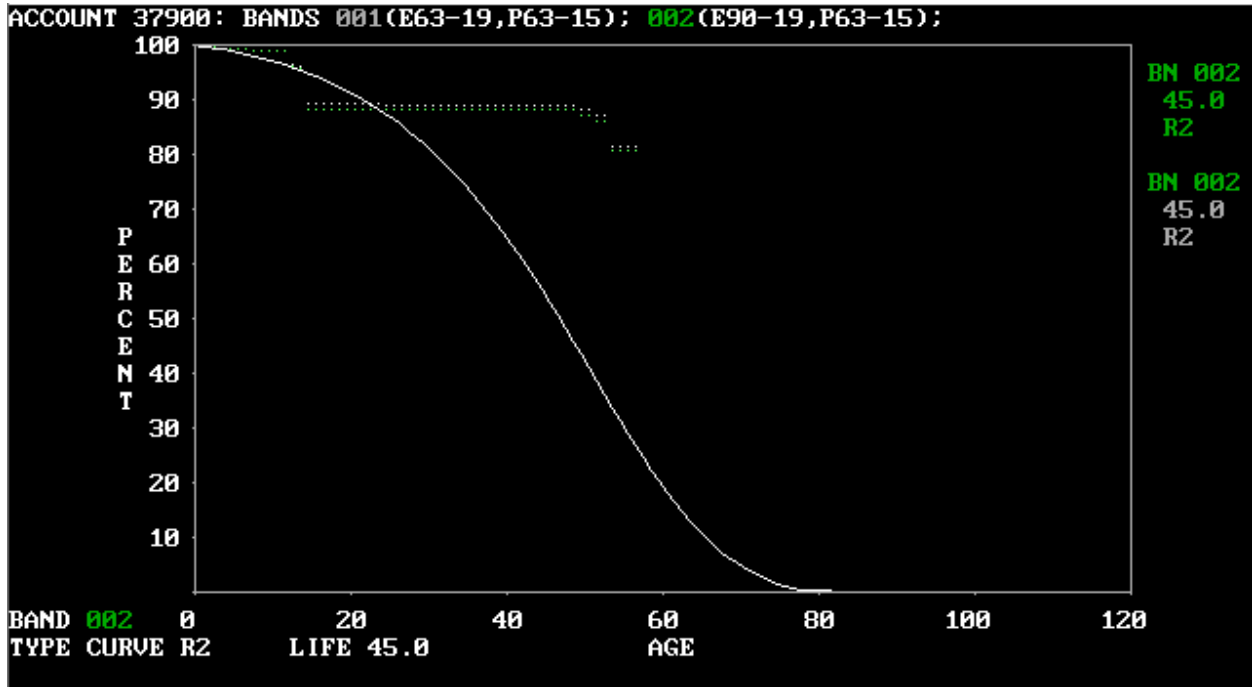
Account 378 – Measuring and Regulating Station Equipment – General

Both Staff and Ameren Missouri recommended the same curve.

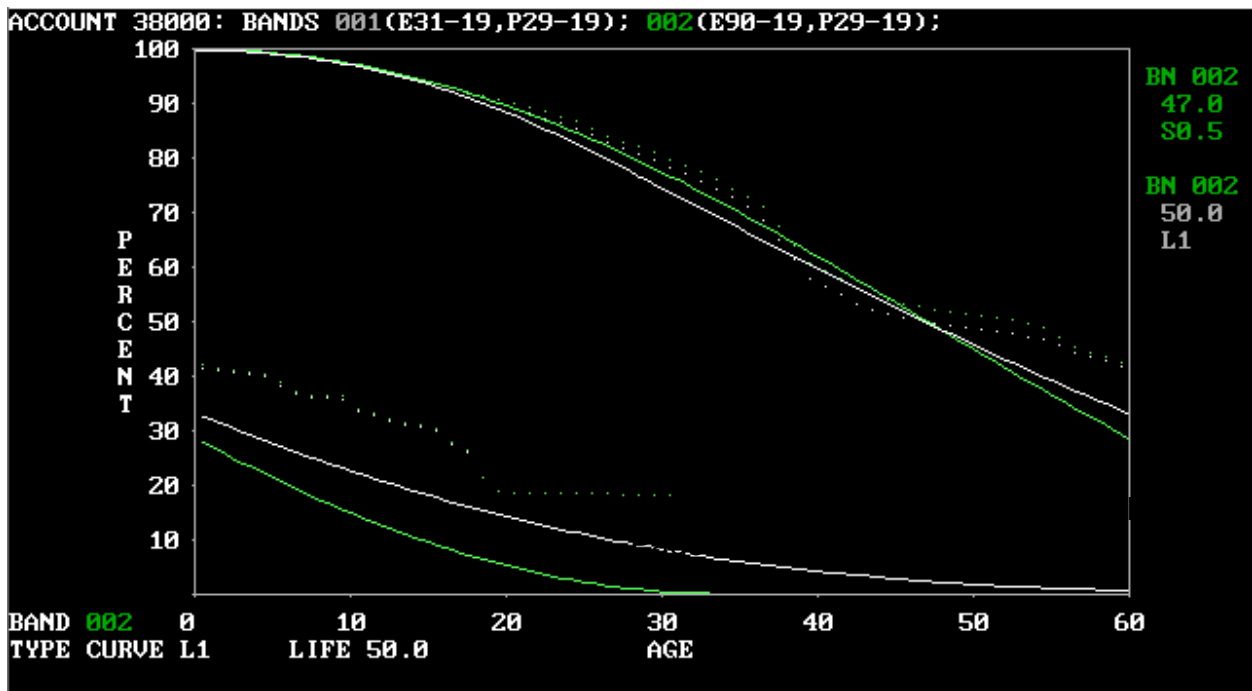


Account 379 – Measuring and Regulating Station Equipment – City Gate

Both Staff and Ameren Missouri recommended the same curve.

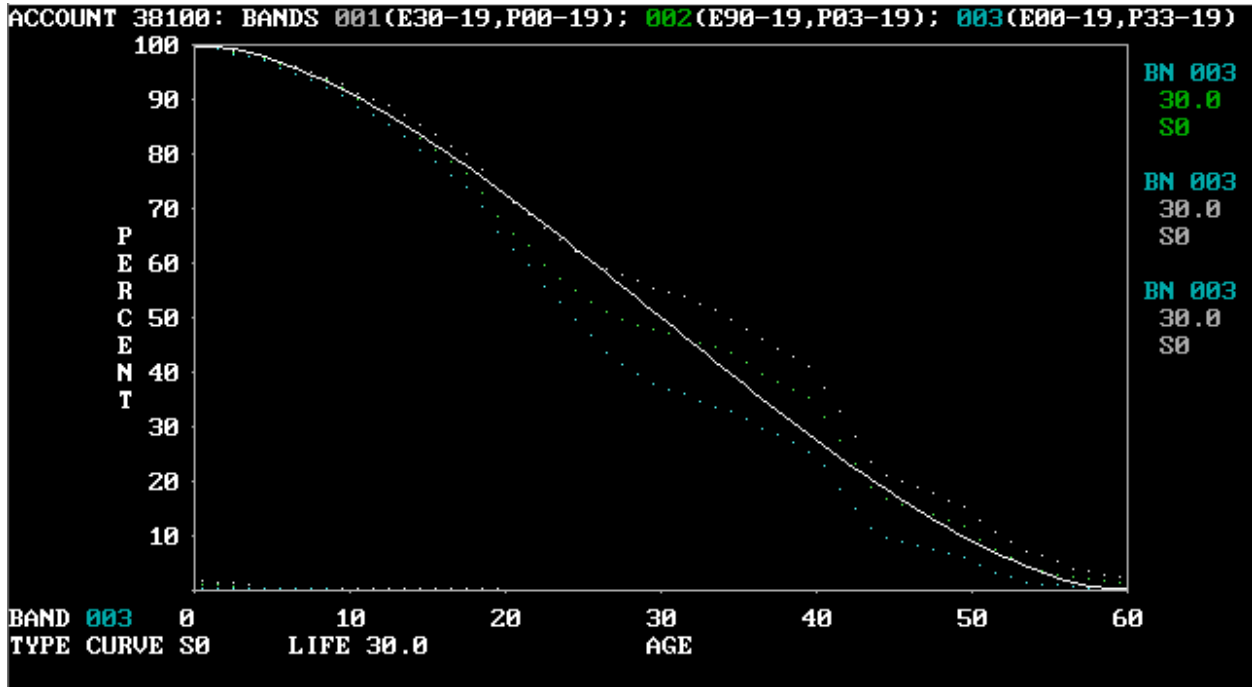


Account 380 – Services

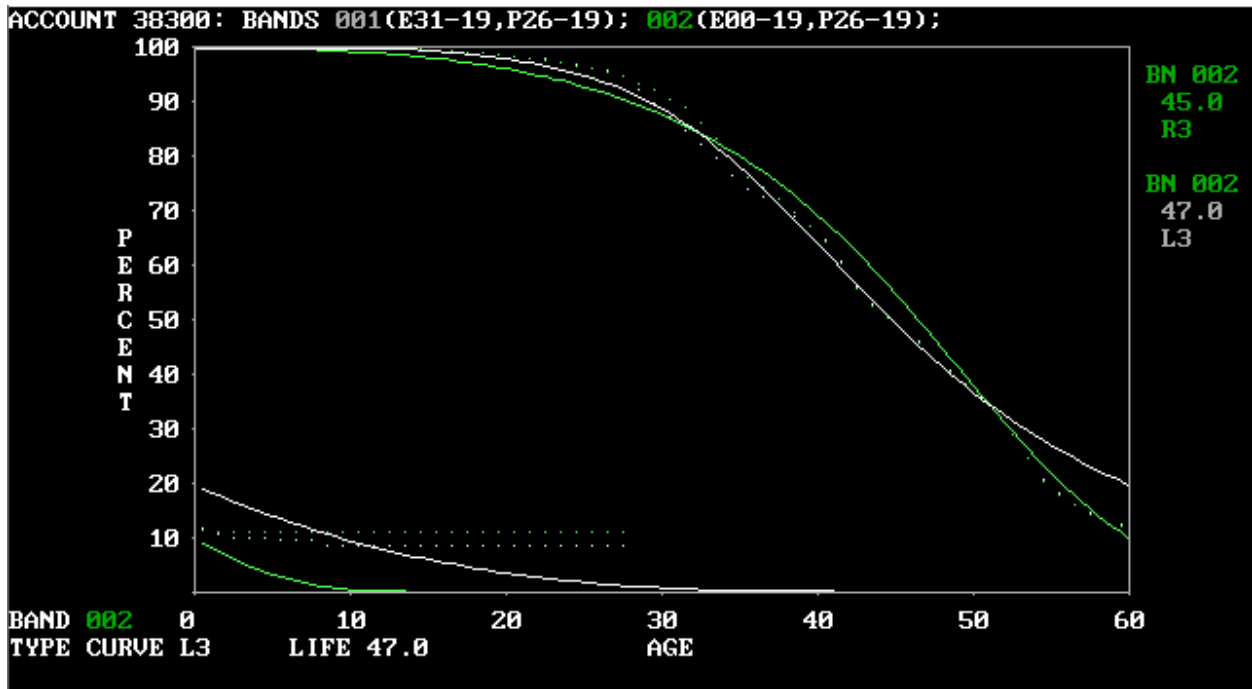


Account 381 – Meters

Both Staff and Ameren Missouri recommended the same curve.

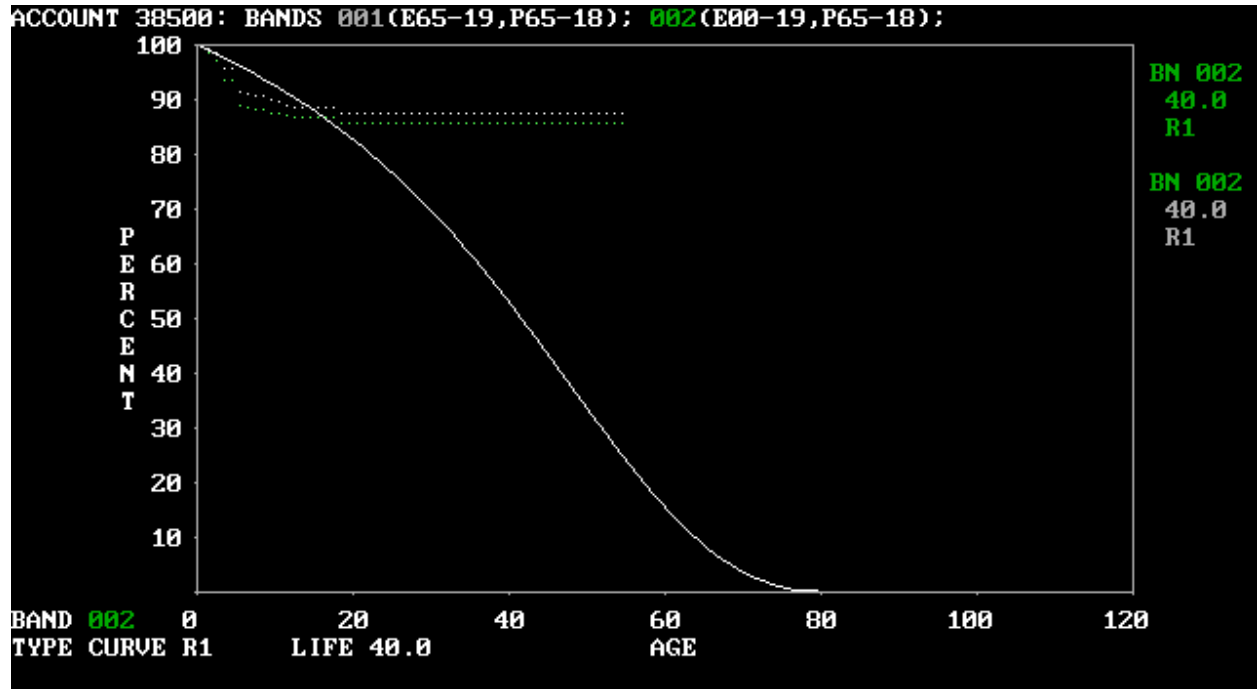


Account 383 – House Regulators

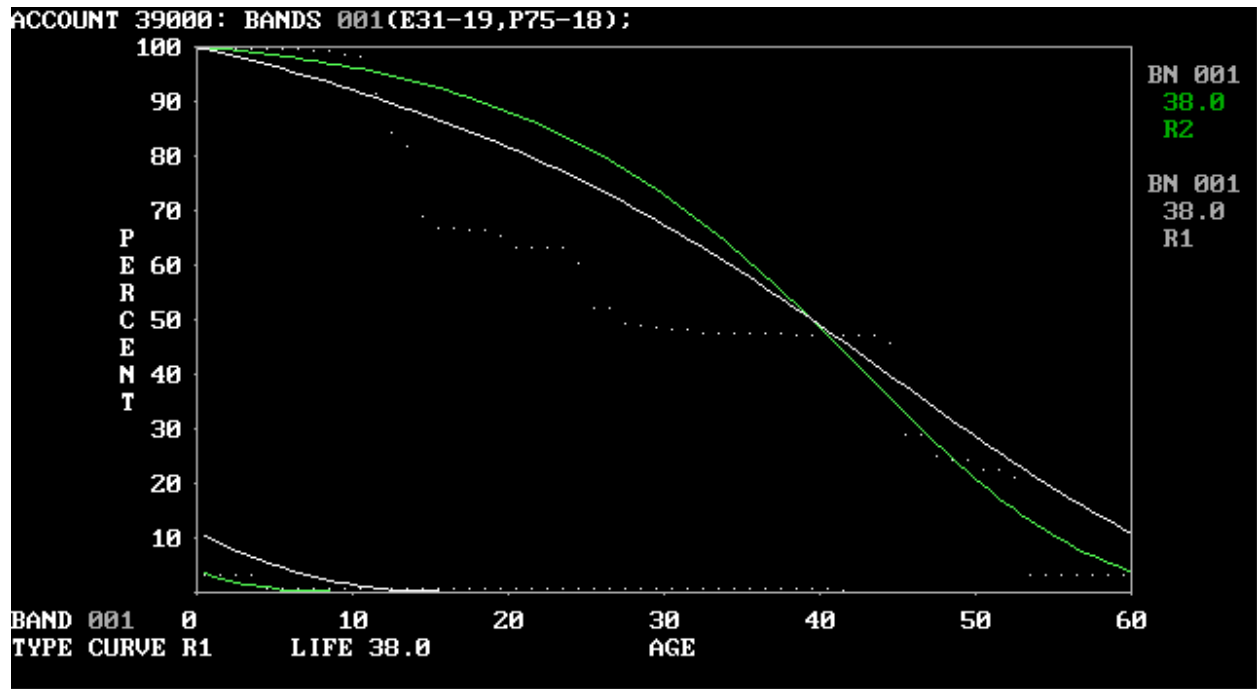


Account 385 – Industrial Measuring and Regulating Station Equipment

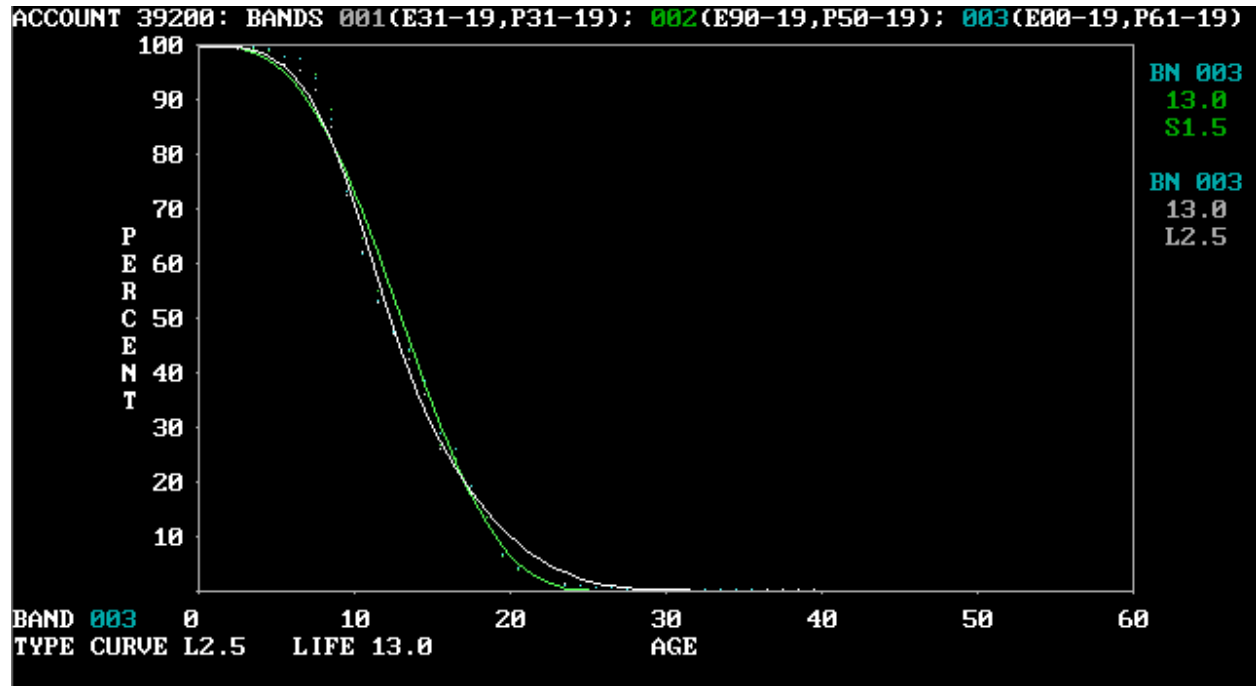
Both Staff and Ameren Missouri recommended the same curve.



Account 390 – Structures and Improvements

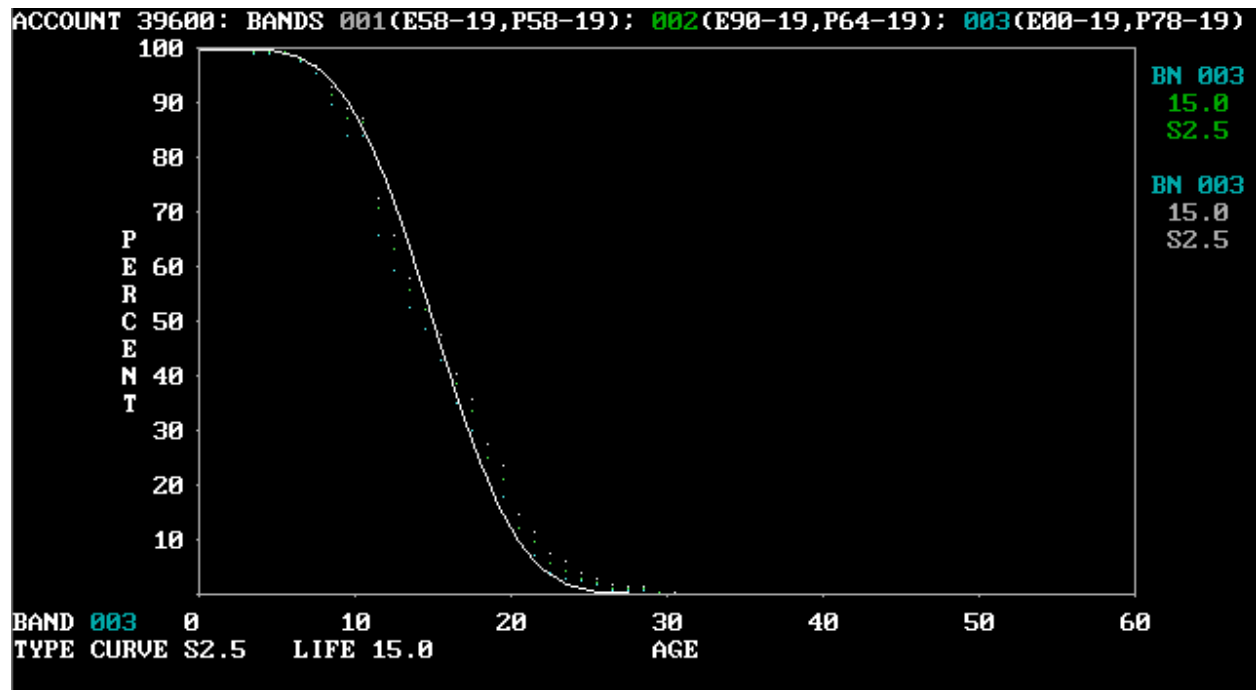


Account 392 – Transportation Equipment



Account 396 – Power Operated Equipment

Both Staff and Ameren Missouri recommended the same curve.



ACCOUNT 376

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
1984	40,972	24,142	59	206	1	-23,936	-58
1985	238,037	32,908	14	280	0	-32,628	-14
1986	236,119	31,873	13	139	0	-31,734	-13
1987	404,690	34,272	8		0	-34,272	-8
1988	255,710	50,291	20	7	0	-50,284	-20
1989	278,047	58,001	21		0	-58,001	-21
1990	401,049	47,083	12		0	-47,083	-12
1991	327,184	52,269	16		0	-52,269	-16
1992	331,217	36,489	11	-997	0	-37,486	-11
1993	409,223	45,191	11		0	-45,191	-11
1994	649,681	31,046	5		0	-31,046	-5
1995	355,147	19,952	6	46	0	-19,906	-6
1996	331,435	312	0	440	0	128	0
1997	279,086	4,643	2	54,749	20	50,106	18
1998	276,474	3,025	1	31,618	11	28,593	10
1999	619,568	6,708	1	81,318	13	74,610	12
2000	410,818	4,026	1	419	0	-3,607	-1
2001	484,413	3,641	1	143,535	30	139,894	29
2002	915,096	23,210	3	314,758	34	291,548	32
2003	540,090	3,315	1	5,479	1	2,164	0
2004	442,179	5,397	1	54,278	12	48,881	11
2005	950,651	926	0	5,539	1	4,613	0
2006	852,204	1,914	0	170	0	-1,744	0
2007	976,197	10,372	1		0	-10,372	-1
2008	1,627,733	4,524	0	6,222	0	1,698	0
2009	601,378	13,490	2	19,686	3	6,196	1
2010	790,103	103	0	58,075	7	57,972	7
2011	790,924	9,905	1	4,451	1	-5,454	-1
2012	306,882	19,284	6	-5,208	-2	-24,492	-8
2013	310,335	4,091	1	-10,365	-3	-14,456	-5
2014	334,502	10,061	3	-8,501	-3	-18,562	-6
2015	295,963	3,058	1	-11,408	-4	-14,466	-5
2016	468,936	-3,259	-1	1,582	0	4,841	1
2017	383,820	2,540	1	-15,160	-4	-17,700	-5
2018	683,341	20,931	3	802	0	-20,129	-3
2019	680,844	5,540	1	-7,116	-1	-12,656	-2
TOTAL	18,280,048	621,274	3	725,044	4	103,770	1

ACCOUNT 376

SUMMARY OF BOOK SALVAGE

THREE-YEAR MOVING AVERAGES

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
84-86	171,709	29,641	17	208	0	-29,433	-17
85-87	292,949	33,018	11	140	0	-32,878	-11
86-88	298,840	38,812	13	49	0	-38,763	-13
87-89	312,816	47,521	15	2	0	-47,519	-15
88-90	311,602	51,792	17	2	0	-51,790	-17
89-91	335,427	52,451	16		0	-52,451	-16
90-92	353,150	45,280	13	-332	0	-45,612	-13
91-93	355,875	44,650	13	-332	0	-44,982	-13
92-94	463,374	37,575	8	-332	0	-37,907	-8
93-95	471,350	32,063	7	15	0	-32,048	-7
94-96	445,421	17,103	4	162	0	-16,941	-4
95-97	321,889	8,302	3	18,412	6	10,110	3
96-98	295,665	2,660	1	28,936	10	26,276	9
97-99	391,709	4,792	1	55,895	14	51,103	13
98-00	435,620	4,586	1	37,785	9	33,199	8
99-01	504,933	4,791	1	75,091	15	70,300	14
00-02	603,442	10,292	2	152,904	25	142,612	24
01-03	646,533	10,055	2	154,591	24	144,536	22
02-04	632,455	10,641	2	124,839	20	114,198	18
03-05	644,307	3,213	0	21,765	3	18,552	3
04-06	748,345	2,746	0	19,996	3	17,250	2
05-07	926,351	4,404	0	1,903	0	-2,501	0
06-08	1,152,045	5,603	0	2,131	0	-3,472	0
07-09	1,068,436	9,462	1	8,636	1	-826	0
08-10	1,006,405	6,039	1	27,994	3	21,955	2
09-11	727,468	7,833	1	27,404	4	19,571	3
10-12	629,303	9,764	2	19,106	3	9,342	1
11-13	469,380	11,093	2	-3,707	-1	-14,800	-3
12-14	317,240	11,145	4	-8,025	-3	-19,170	-6
13-15	313,600	5,737	2	-10,091	-3	-15,828	-5
14-16	366,467	3,287	1	-6,109	-2	-9,396	-3
15-17	382,906	780	0	-8,329	-2	-9,109	-2
16-18	512,032	6,737	1	-4,259	-1	-10,996	-2
17-19	582,668	9,670	2	-7,158	-1	-16,828	-3

FIVE-YEAR AVERAGE

15-19	502,581	5,762	1	-6,260	-1	-12,022	-2
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ACCOUNT 381

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
1984				451		451	
1985				427		427	
1986	21,617	1,436	7	546	3	-890	-4
1987	263,870		0	112	0	112	0
1988		2,434				-2,434	
1989	151,882	1,750	1		0	-1,750	-1
1990	8,368	422	5		0	-422	-5
1991	78,260		0	5	0	5	0
1992				1,667		1,667	
1993				-200		-200	
1994							
1995	26,256		0	934	4	934	4
1996	30,247		0	415	1	415	1
1997	9,112		0	5,481	60	5,481	60
1998	42,228		0	3,560	8	3,560	8
1999	106,496		0	-22	0	-22	0
2000	89,185		0		0		0
2001	338,570		0		0		0
2002	264,408		0		0		0
2003	225,621		0	8,616	4	8,616	4
2004	325,793		0	1,616	0	1,616	0
2005	151,951		0	6,478	4	6,478	4
2006	8,185		0	31,422	384	31,422	384
2007	2,708,322		0	27,223	1	27,223	1
2008	384,109		0	28,311	7	28,311	7
2009	451,829		0	9,616	2	9,616	2
2010	538,122		0	23,441	4	23,441	4
2011	564,346		0	31,124	6	31,124	6
2012	834,327		0	44,654	5	44,654	5
2013	619,553		0	63,376	10	63,376	10
2014	1,039,289		0	86,094	8	86,094	8
2015	576,940		0	14,598	3	14,598	3
2016	523,643		0	9,183	2	9,183	2
2017	305,062		0	7,220	2	7,220	2
2018	284,743		0	7,484	3	7,484	3
2019	319,792		0	4,554	1	4,554	1
TOTAL	11,292,126	6,042	0	418,386	4	412,344	4

ACCOUNT 381

SUMMARY OF BOOK SALVAGE

THREE-YEAR MOVING AVERAGES

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
84-86	7,206	479	7	475	7	-4	0
85-87	95,162	479	1	362	0	-117	0
86-88	95,162	1,290	1	219	0	-1,071	-1
87-89	138,584	1,395	1	37	0	-1,358	-1
88-90	53,417	1,535	3		0	-1,535	-3
89-91	79,503	724	1	2	0	-722	-1
90-92	28,876	141	0	557	2	416	1
91-93	26,087		0	491	2	491	2
92-94				489		489	
93-95	8,752		0	245	3	245	3
94-96	18,834		0	450	2	450	2
95-97	21,872		0	2,276	10	2,276	10
96-98	27,196		0	3,152	12	3,152	12
97-99	52,612		0	3,006	6	3,006	6
98-00	79,303		0	1,179	1	1,179	1
99-01	178,084		0	-7	0	-7	0
00-02	230,721		0		0		0
01-03	276,200		0	2,872	1	2,872	1
02-04	271,941		0	3,411	1	3,411	1
03-05	234,455		0	5,570	2	5,570	2
04-06	161,977		0	13,172	8	13,172	8
05-07	956,153		0	21,708	2	21,708	2
06-08	1,033,539		0	28,985	3	28,985	3
07-09	1,181,420		0	21,716	2	21,716	2
08-10	458,020		0	20,456	4	20,456	4
09-11	518,099		0	21,393	4	21,393	4
10-12	645,598		0	33,073	5	33,073	5
11-13	672,742		0	46,385	7	46,385	7
12-14	831,056		0	64,708	8	64,708	8
13-15	745,260		0	54,689	7	54,689	7
14-16	713,290		0	36,625	5	36,625	5
15-17	468,548		0	10,333	2	10,333	2
16-18	371,149		0	7,962	2	7,962	2
17-19	303,199		0	6,419	2	6,419	2

FIVE-YEAR AVERAGE

15-19	402,036		0	8,608	2	8,608	2
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