

Exhibit No.:
Issue: Depreciation
Witness: Cedric E. Cunigan, PE
Sponsoring Party: MoPSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: ER-2021-0240
Date Testimony Prepared: October 15, 2021

MISSOURI PUBLIC SERVICE COMMISSION
INDUSTRY ANALYSIS DIVISION
ENGINEERING ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY
OF
CEDRIC E. CUNIGAN, PE

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

CASE NO. ER-2021-0240

Jefferson City, Missouri
October 2021

1 **REBUTTAL TESTIMONY**

2 **OF**

3 **CEDRIC E. CUNIGAN, PE**

4 **UNION ELECTRIC COMPANY**
5 **d/b/a AMEREN MISSOURI**

6 **CASE NO. ER-2021-0240**

7 Q. Please state your name and business address.

8 A. My name is Cedric E. Cunigan. My business address is 200 Madison Street,
9 Jefferson City, Missouri 65101.

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

11 A. I am employed by the Missouri Public Service Commission (“Commission”) as
12 a Professional Engineer.

13 Q. Please provide your educational background and work experience.

14 A. My credentials attached to Staff’s Direct Cost of Service Report had
15 typographical errors. Also since submission of direct testimony, I am now a licensed
16 Professional Engineer. An updated version of my educational background and work experience
17 is included as Schedule CEC-r1.

18 Q. What is the purpose of your rebuttal testimony?

19 A. I will be addressing corrections to Accounting Schedule 5 and responding to the
20 Direct Testimony of Missouri Industrial Energy Consumers’ witness Brian C. Andrews
21 regarding depreciation rates for the Callaway Energy Center and Ameren Missouri witness
22 John J. Spanos regarding depreciation rates.

23 **Corrections to Staff Accounting Schedule 5**

24 Q. What corrections were made to Accounting Schedule 5 and why?

1 A. A correction was made to the depreciation rate for account 364 Poles, Towers,
2 & Fixtures – DP changing the rate from 6.12% to 3.76%. While inputting the reserve balances
3 into the software to calculate the depreciation rate, Staff originally entered the data 1 column
4 off from the correct position which lowered the reserve balance by a magnitude of 10 and
5 inflated the amount of future accruals. Staff witness Lisa M. Ferguson has corrected this error
6 in the corrected accounting schedules.

7 The other error relates to general plant accounts receiving amortization treatment. Staff
8 intended to continue amortization treatment of these accounts and listed remaining life rates in
9 error. The affected accounts are 316.21, 316.22, 316.23, 325.21, 325.22, 325.23, 335.21,
10 335.22, 335.23, 346.21, 346.22, 346.23, 391, 391.2, 391.3, 393, 394, 395, 397, and 398. The
11 corrections are listed in Accounting Schedule 5.

12 **Response to Direct Testimony of Brian C. Andrews regarding Callaway Energy**
13 **Center depreciation rates**

14 Q. What does Mr. Andrews recommend on page 9 of his direct testimony?

15 A. Mr. Andrews recommends that the Commission maintain the currently ordered
16 rates for Nuclear Production plant related to the Callaway Energy Center as listed in
17 Schedule BCA-2 attached to his testimony¹. These accounts are accounts 321 Structures and
18 Improvements, 322 Reactor Plant Equipment, 323 Turbogenerator Units, 324 Accessory
19 Electric Equipment, 325 Miscellaneous Power Plant Equipment, 325.21 Miscellaneous Power
20 Plant Equipment – Office Furniture, 325.22 Miscellaneous Power Plant Equipment - Office
21 Equipment, 325.23 Miscellaneous Power Plant Equipment – Computers².

¹ Direct Testimony of Brian C. Andrews page 9, lines 15-16.

² Schedule BCA-2 attached to the Direct Testimony of Brian C. Andrews.

1 Q. What is Mr. Andrews reasoning for this?

2 A. Mr. Andrews references Ameren Missouri's 2020 IRP and the assumption that
3 the Callaway Energy Center would operate beyond 2050. Mr. Andrews also states:

4 It is likely that Ameren Missouri will file for an operating license
5 extension for Callaway, to be consistent with its IRP. Rather than allow
6 Ameren Missouri to increase its depreciation rates for Callaway now and
7 burden customers with excessive rates, I am recommending that no
8 change to the currently approved depreciation rates be allowed.³

9 Q. Do you think it is reasonable to maintain the currently ordered depreciation rates
10 for the Callaway Energy Center?

11 A. No. Ameren Missouri has stated an intent to operate beyond the current
12 expiration date of its operating license in 2044.⁴ However, Ameren Missouri has not yet applied
13 for, nor is Ameren Missouri guaranteed to receive a renewal of the Callaway Energy Center
14 operating license beyond October 2044. Mr. Andrews is putting more weight to the anticipated
15 renewal of the operating license than Staff is comfortable with at this time. Rate payers would
16 be better served by paying for the plant while it is used for service. Should Ameren Missouri
17 choose not to, or fail to, obtain an operating license renewal the cost of the plant would not be
18 recovered during its useful life under the currently approved depreciation rates. Staff is
19 unaware when Ameren Missouri plans to file a renewal application. The earliest Ameren
20 Missouri would be able to apply for a license renewal is 20 years prior to the expiration of its
21 current license, which would be 2024. Staff does not recommend extending plant closure dates
22 until more information is known. It is Staff's recommendation that depreciation rates should
23 be set as outlined in the corrected Accounting Schedule 5.

³ Direct Testimony of Brian C. Andrews page 9, lines 3-7.

⁴ Case No. EO-2021-0021, Ameren Missouri Request for Waiver of 60-Day Requirement and Motion for Protective Order and 2020 IRP Filing page 4.

1 **Response to Direct Testimony of John J. Spanos regarding depreciation rates**

2 Q. Did Staff utilize the same method as Mr. Spanos in recommending depreciation
3 rates?

4 A. Staff used a similar method to Mr. Spanos when determining depreciation rates.
5 However, when choosing survival curves and lives for certain accounts Staff's recommendation
6 differs from Mr. Spanos.

7 Q. Please summarize the differences between Staff's recommendation and
8 Mr. Spanos' recommendation.

9 A. The following table compares Staff's recommendation to Mr. Spanos'
10 recommendation in instances where the recommended depreciation rates differ:

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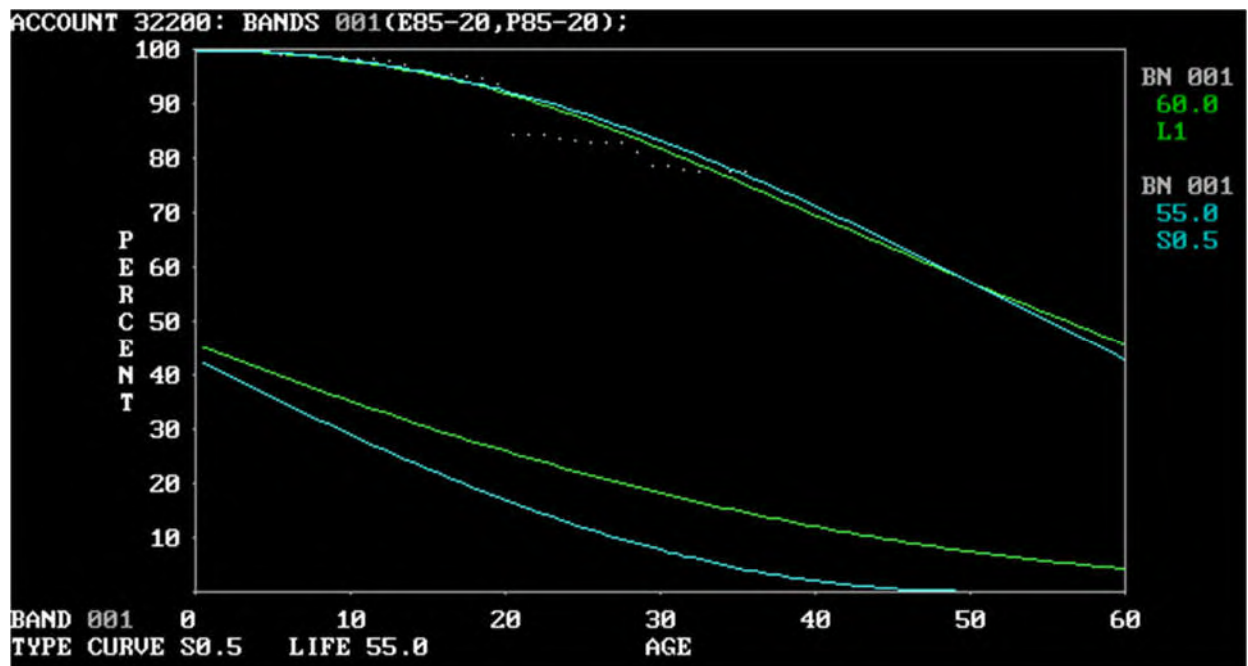
Rebuttal Testimony of
Cedric E. Cunigan, PE

AMEREN MISSOURI											
SUMMARY OF SERVICE LIFE ESTIMATES AND CALCULATED REMAINING LIFE ACCRUALS AS OF 12-31-2020											
Account	DEPRECIABLE GROUP	STAFF					Ameren Missouri (Spanos)				
		SURVIVOR CURVE	NET SALV. PCT.	Annual Accrual Amount	ACCRUAL RATE, PCT.	COMP. REM. LIFE	SURVIVOR CURVE	NET SALV. PCT.	Annual Accrual Amount	ACCRUAL RATE, PCT.	COMP. REM. LIFE
322.00	REACTOR PLANT EQUIPMENT	60-L1	-3	37,862,334	2.78	20.7	55-S0.5	-3	37,993,562	2.79	20.7
325.00	MISCELLANEOUS POWER PLANT EQUIPMENT	35-O1	0	6,669,926	4.19	17.8	40-LO	0	6,505,663	4.09	18.3
333.00	WATER WHEELS, TURBINES AND GENERATORS OSAGE	105-L0	-7	1,891,667	2.88	24.7	95-S0	-7	1,859,969	2.83	25.2
336.00	ROADS, RAILROADS AND BRIDGES										
	OSAGE	60-O1	0				50-R-0.5	0			
	TAUM SAUK	60-O1	0	2,808	1.21	46.8	50-R-0.5	0	3,167	1.36	41.5
	KEOKUK	60-O1	0	1,218	1.06	27.6	50-R-0.5	0	1,350	1.17	24.9
352.00	STRUCTURES AND IMPROVEMENTS	70-R2.5	-5	160,797	1.61	46.5	65-R2.5	-5	182,378	1.83	41.0
353.00	STATION EQUIPMENT	65-S0	-5	6,263,204	1.52	54.2	60-S0	-5	6,903,247	1.67	49.2
355.00	POLES AND FIXTURES	64-L2.5	-100	17,446,129	3.12	55.5	58-R3	-100	19,805,517	3.55	48.9
356.00	OVERHEAD CONDUCTORS AND DEVICES	75-R3	-30	5,604,197	1.63	61.3	65-R3	-30	6,829,364	1.99	50.3
364.00	POLES, TOWERS, & FIXTURES	58-L2.5	-150	48,177,555	3.76	44.1	52-R2.5	-150	55,183,680	4.30	38.5
365.00	OVERHEAD CONDUCTORS AND DEVICES	65-O1	-50	28,463,410	1.97	57.6	52-R1	-50	40,699,560	2.82	40.3
373.00	STREET LIGHTING AND SIGNAL SYSTEMS	40-O1	-30	4,658,595	2.42	35.2	38-S0	-30	5,516,205	2.87	29.7

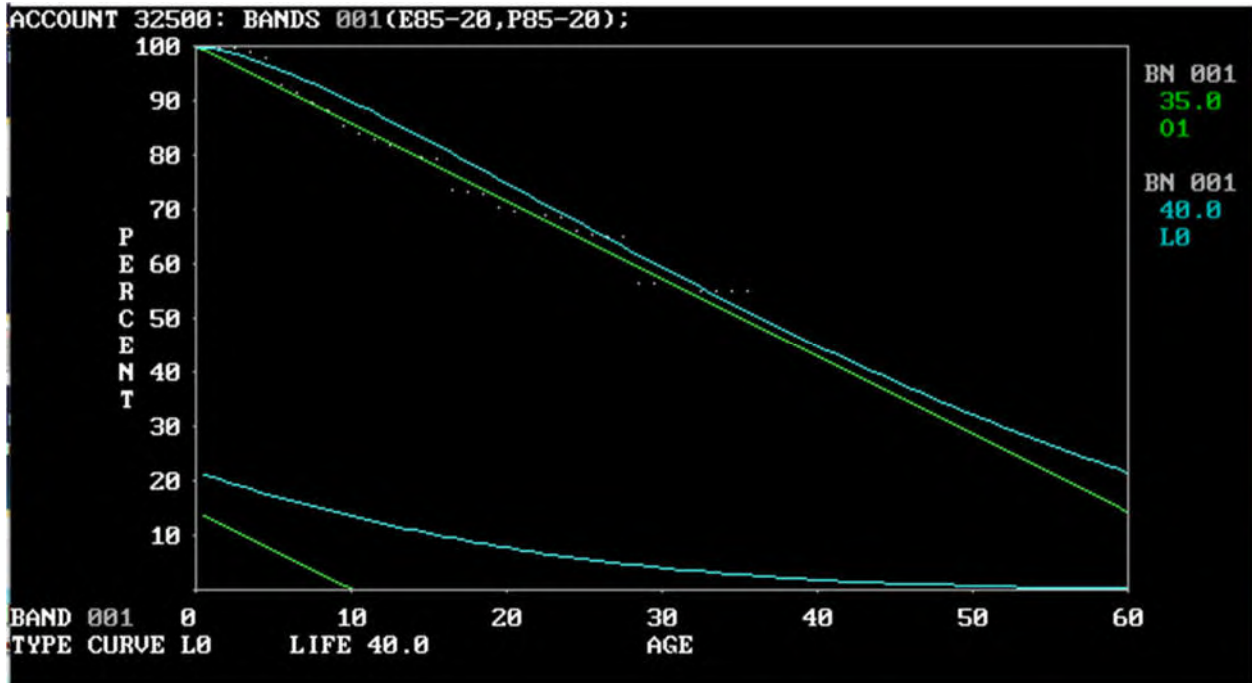
1 Q. Why should the Commission order Staff's proposed depreciation rates in this case?

2 A. The estimates of average service life made by Staff are more accurate. The main
3 source of differences between Staff's recommendation and Mr. Spanos is the choice of survivor
4 curves, which determine the average service life of the asset group. One aspect of fitting of curves
5 is choosing the best visual fit. The accounts mentioned above are graphed below. The percent of
6 assets surviving (y-axis) is graphed against the age of the assets (x-axis). The white dots represent
7 the actual data points for the full data set. The green dots represent a subset of the data with certain
8 years removed. The experience band (years of retirements included) and the placement bands
9 (vintage year of assets) included in each data set can be seen at the top next to "BANDS 001" or
10 "BANDS 002". The green curve is the Iowa curve chosen by Staff that best fits the given data
11 points. The cyan curve is the curve chosen by Mr. Spanos.

12 **322 REACTOR PLANT EQUIPMENT**

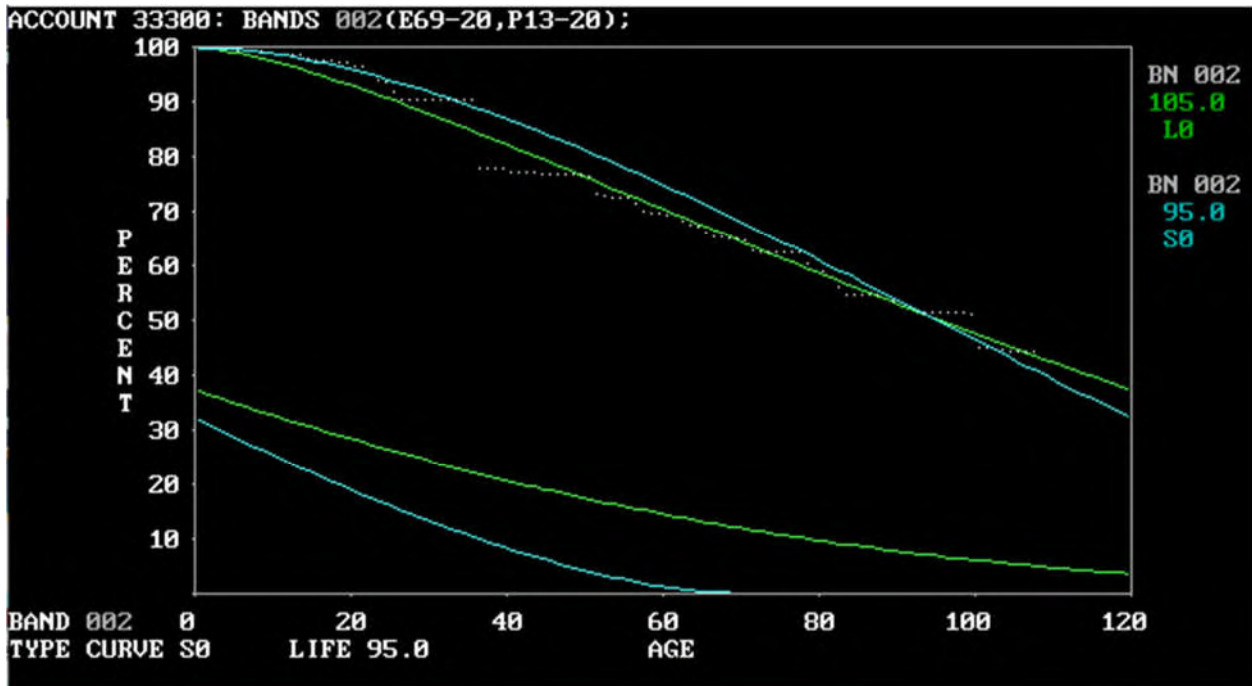


1 **325 MISCELLANEOUS POWER PLANT EQUIPMENT**



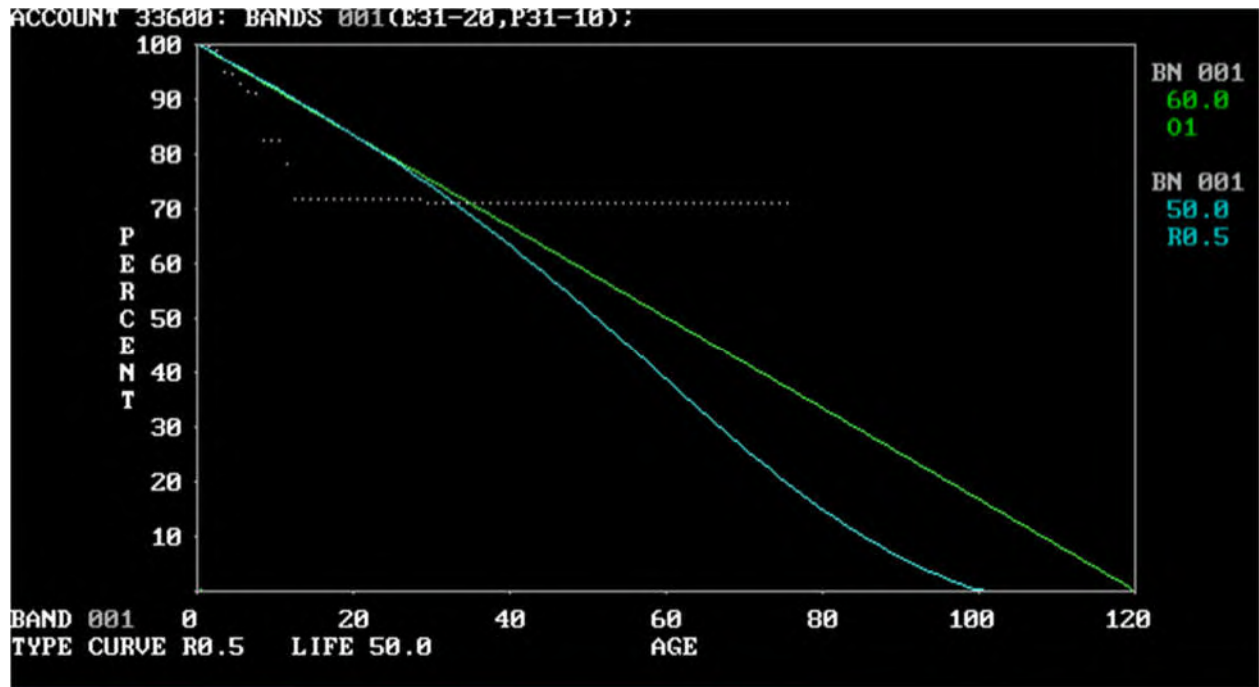
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3 **333 WATER WHEELS, TURBINES AND GENERATORS**

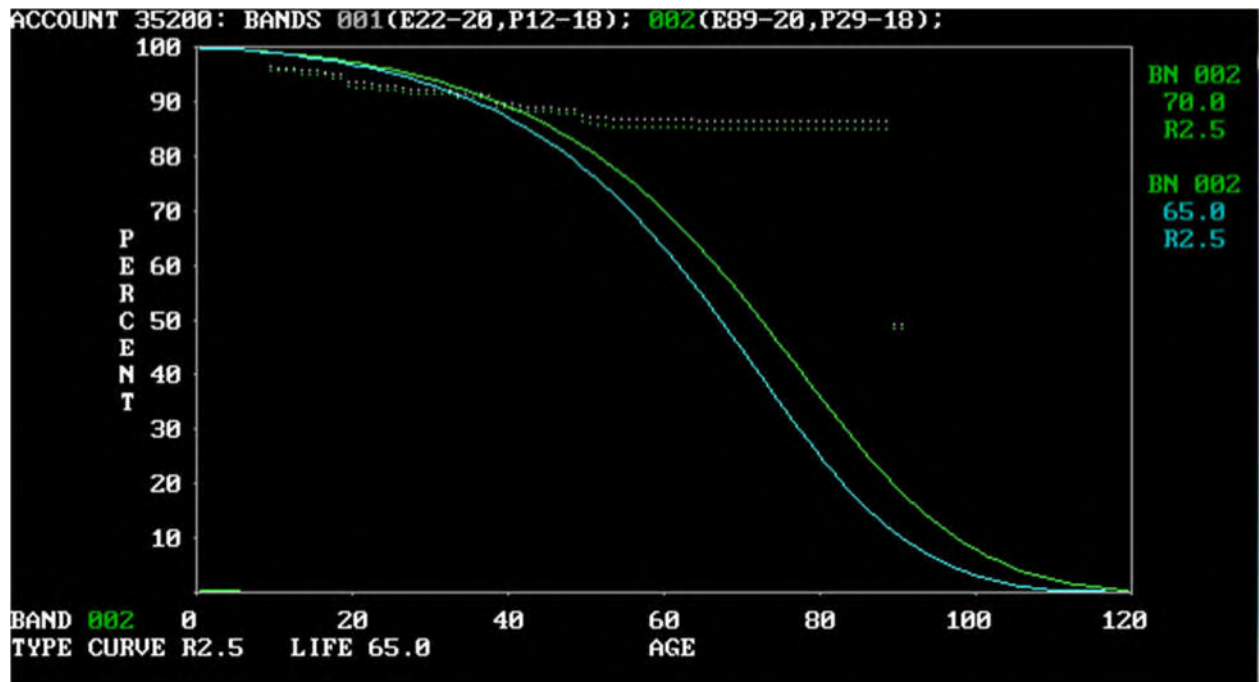


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1 **336 ROADS, RAILROADS AND BRIDGES**



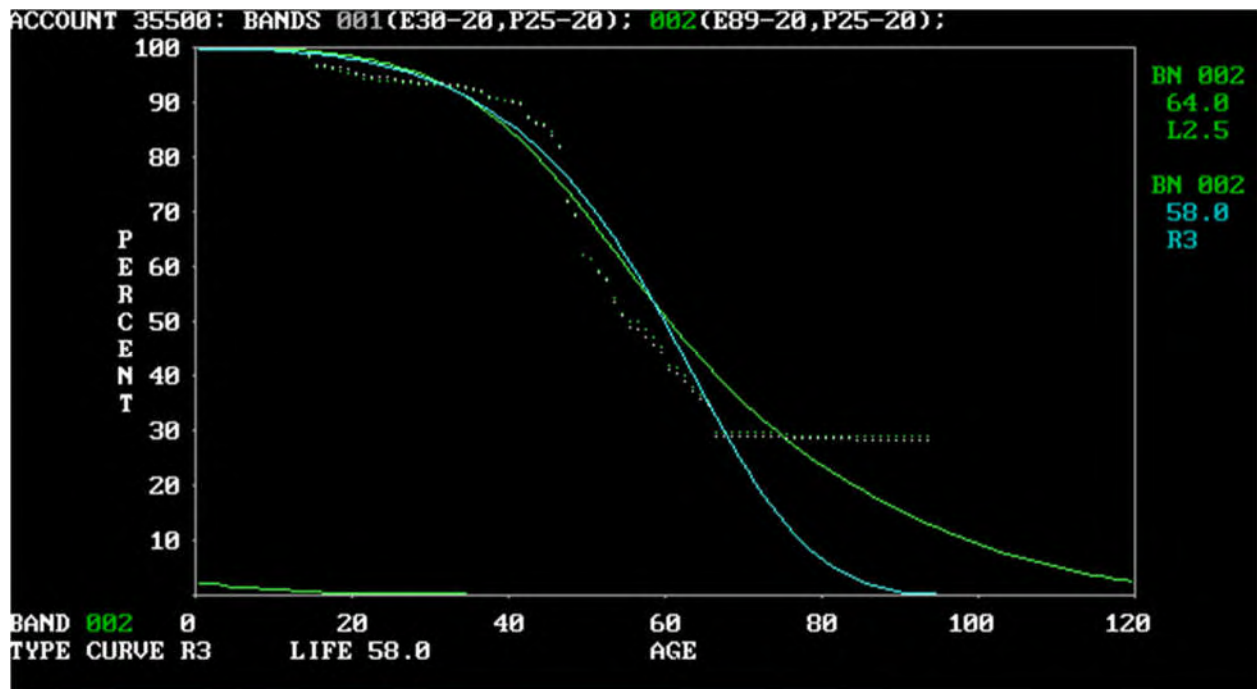
3 **352 STRUCTURES AND IMPROVEMENTS**



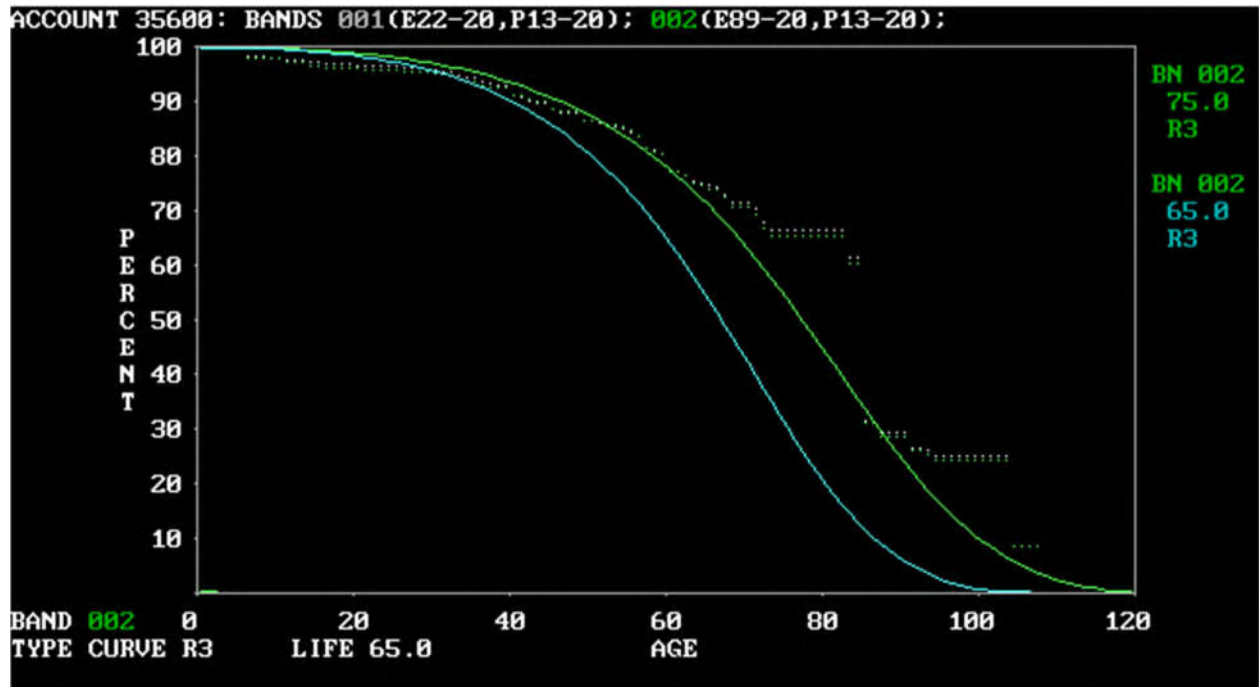
1 **353 STATION EQUIPMENT**



3 **355 POLES AND FIXTURES**

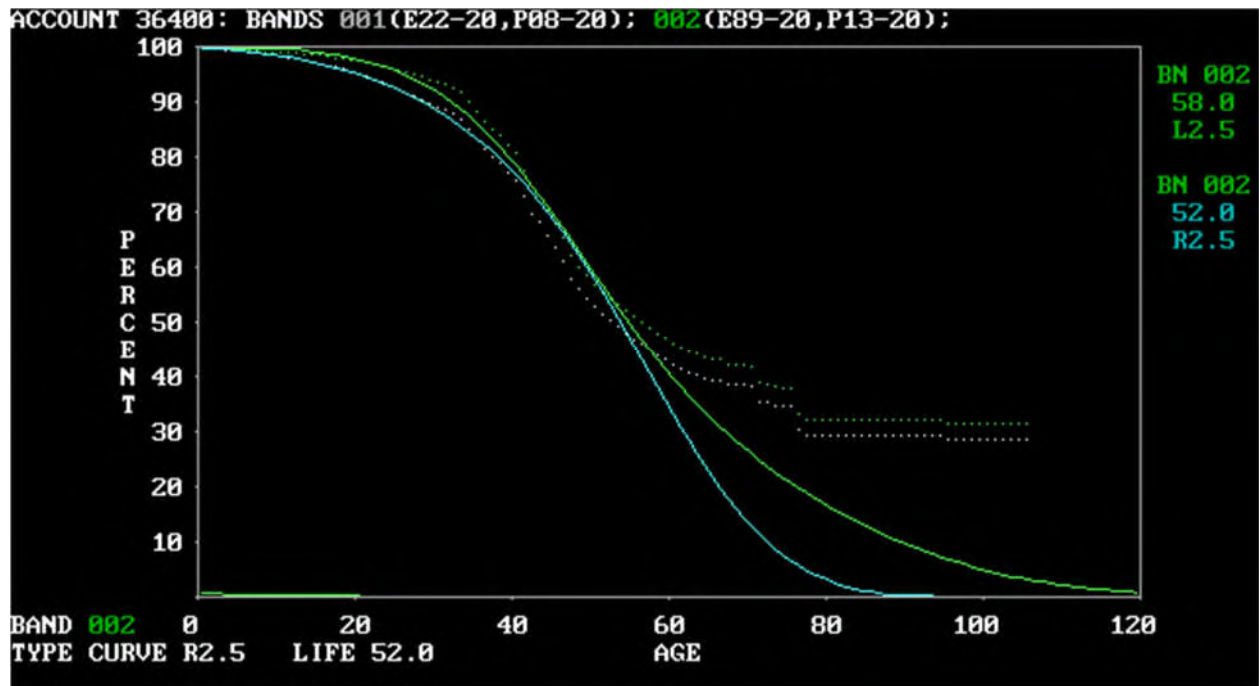


1 **356 OVERHEAD CONDUCTORS AND DEVICES**



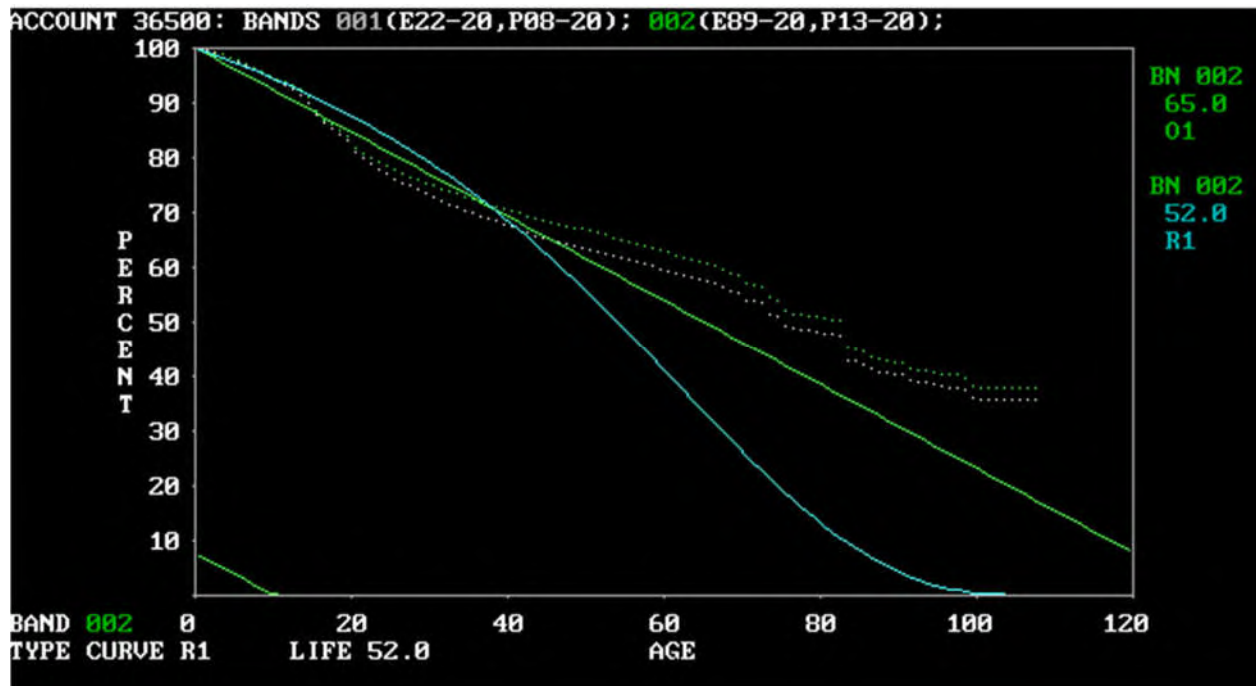
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3 **364 POLES, TOWERS & FIXTURES**

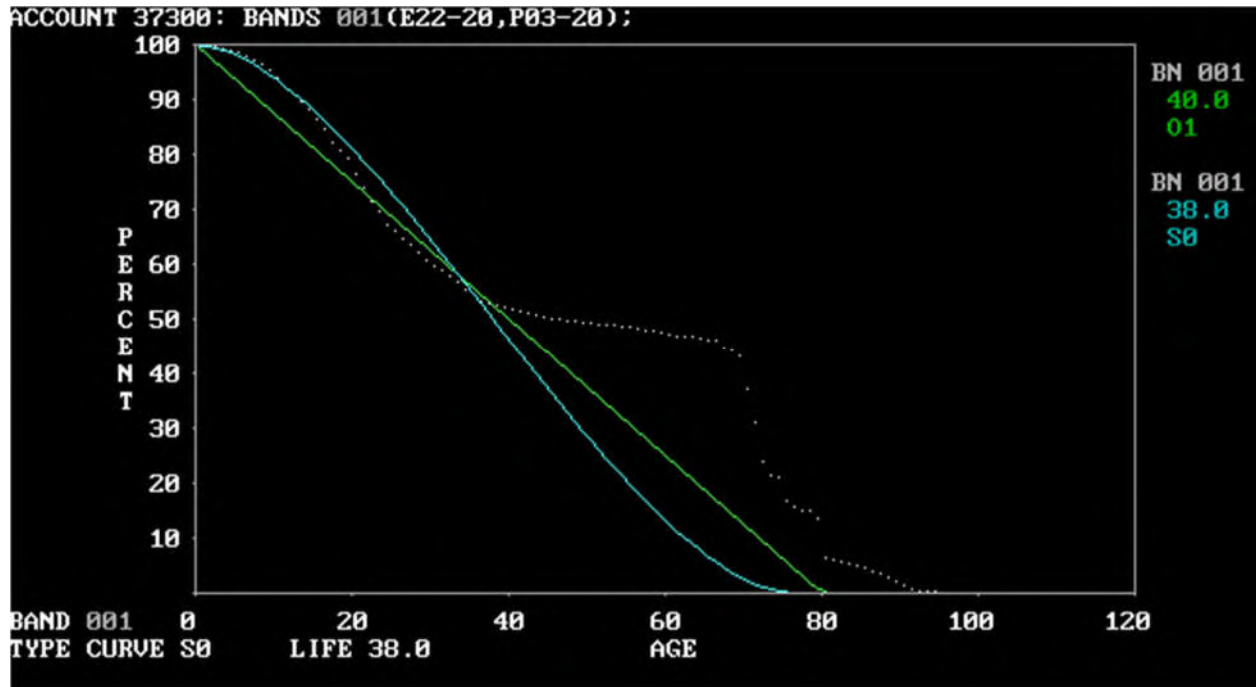


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1 **365 OVERHEAD CONDUCTORS AND DEVICES**



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3 **373 STREET LIGHTING AND SIGNAL SYSTEMS**



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5 The curves chosen by Staff provide a better visual fit and mathematical for the selected accounts
6 and therefore lead to a better estimation of the average service life.

7 Q. Does this conclude your rebuttal testimony?
8 A. Yes.

Cedric E. Cunigan, PE

PRESENT POSITION:

I am Professional Engineer in the Engineering Analysis Department, Industry Analysis Division, of the Missouri Public Service Commission.

EDUCATIONAL BACKGROUND AND WORK EXPERIENCE:

In May 2011, I earned a Bachelor of Science in Biological Engineering from the University of Missouri, in Columbia. In May 2013, I earned a Master of Business Administration, also from the University of Missouri. I began work with the Missouri Department of Natural Resources Solid Waste Management Program in August 2013. I started as a Technician and was promoted to an Environmental Engineer I in January 2014. I transferred to the Hazardous Waste Program in September 2014. In January 2015, I was promoted to an Environmental Engineer II. I ended employment with the Department of Natural Resources in January of 2017 and began work with the Missouri Public Service Commission as a Utility Engineering Specialist III.

Summary of Case Involvement:

Case Number	Utility	Type	Issue
EO-2017-0267	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2017-0270	KCP&L Greater Missouri Operations Company	Memorandum	RES Compliance Report
EO-2017-0272	KCP&L Greater Missouri Operations Company	Memorandum	RES Compliance Plan
EO-2018-0111	Macon Electric Cooperative & City of Marcelline	Memorandum	Change of Supplier
EC-2018-0089	Union Electric Company d/b/a Ameren Missouri	Staff Report	Complaint Investigation
EO-2018-0285	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2018-0289	KCP&L Greater Missouri Operations Company	Memorandum	RES Compliance Report

continued Cedric E. Cunigan, PE

Case Number	Utility	Type	Issue
EO-2018-0291	KCP&L Greater Missouri Operations Company	Memorandum	RES Compliance Plan
ER-2018-0145 & ER-2018-0146	KCPL & KCP&L Greater Missouri Operations Company	Cost of Service Report, Rebuttal, & Surrebuttal	Renewable Energy
WR-2018-0328	Middlefork Water Company	Depreciation Workpapers	Depreciation
EA-2018-0202	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements
EC-2018-0376	Union Electric Company d/b/a Ameren Missouri	Staff Report	Complaint Investigation
EA-2019-0010 & EA-2019-0118	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements
EA-2019-0021	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements
EE-2019-0305	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2019-0320	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Report and Plan
EO-2019-0371	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements
EE-2020-0411	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Plan
ET-2020-0259	Empire District Electric Company	Memorandum	Renewable Energy Tariff
EO-2020-0323	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2020-0328	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Report and Plan
EA-2020-0371	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements
WR-2020-0344	Missouri American Water Company	Cost of Service Report, Rebuttal, and Surrebuttal	Depreciation

continued Cedric E. Cunigan, PE

Case Number	Utility	Type	Issue
SA-2021-0017	Missouri American Water Company	Staff Report	Depreciation
EO-2021-0032	Evergy	Staff Report	Solar Requirements 393.1665 RSMo
SA-2021-0120	Missouri American Water Company	Staff Report	Depreciation
EO-2021-0344	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2021-0352	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Report and Plan