

Exhibit No. 211

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 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.

Rebuttal Testimony of
Cedric E. Cunigan, PE

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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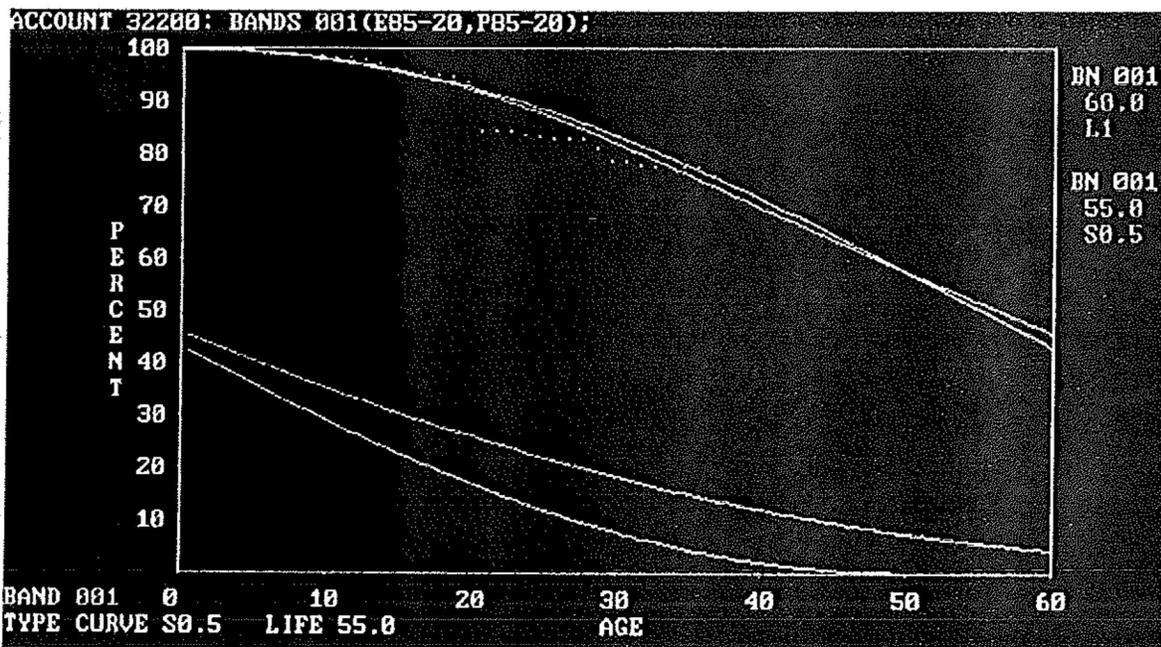
Rebuttal Testimony of
Cedric E. Cumigan, PE

| 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 |

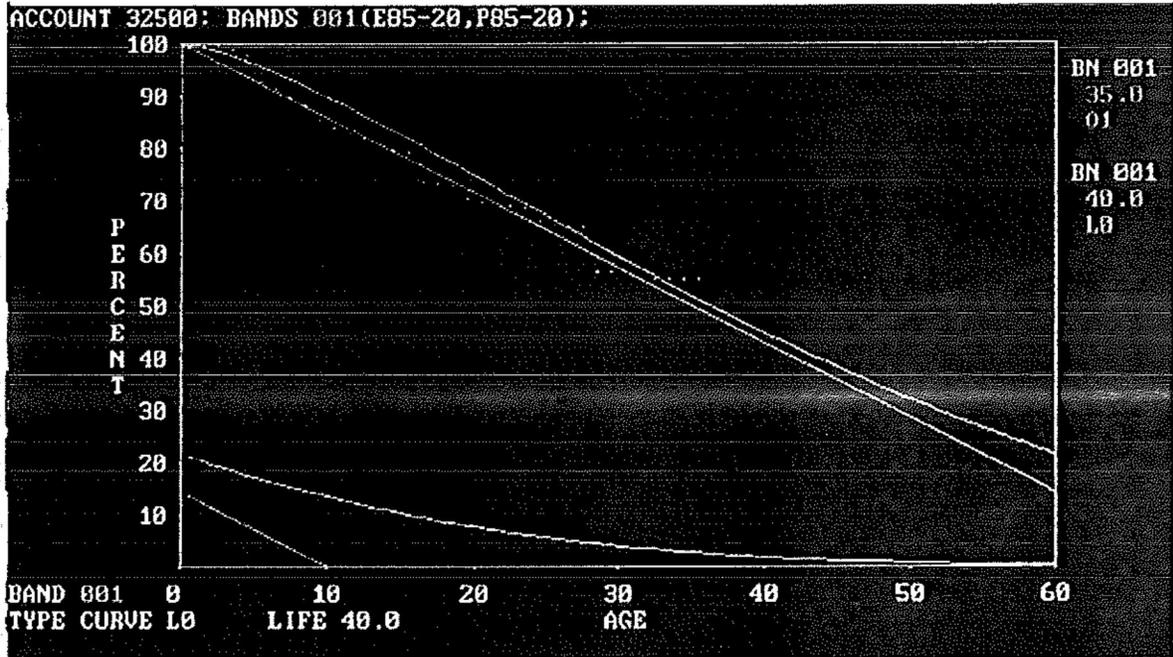
1 Q. Why should the Commission order Staff's proposed depreciation rates in this case?

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**

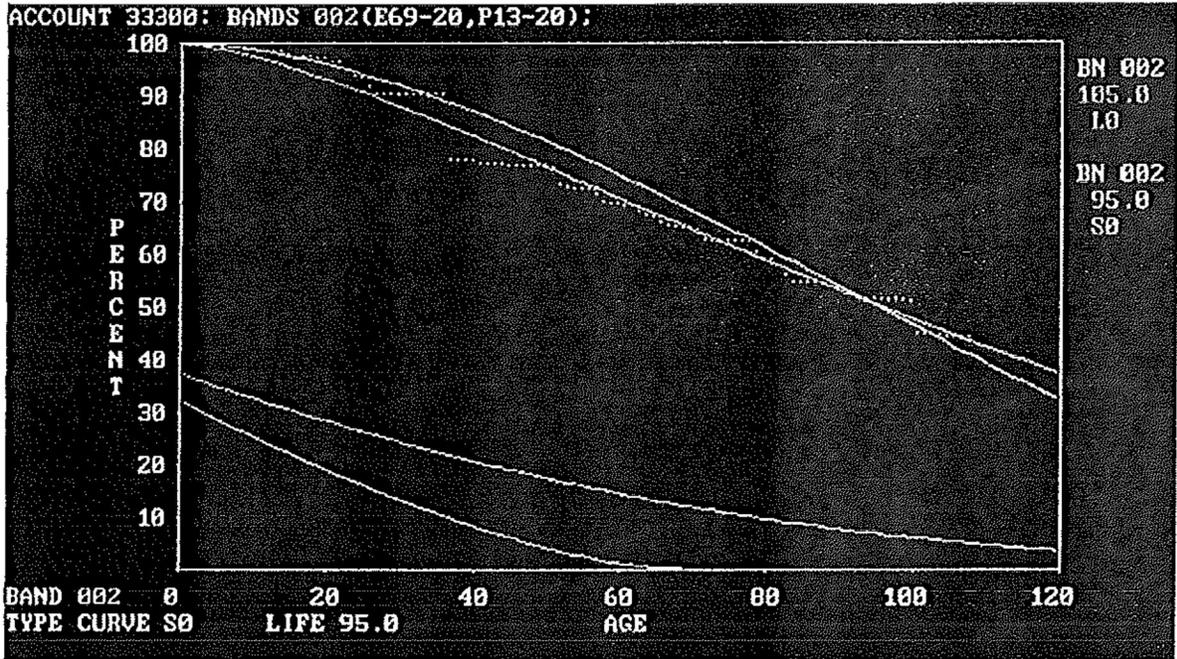


1 325 MISCELLANEOUS POWER PLANT EQUIPMENT



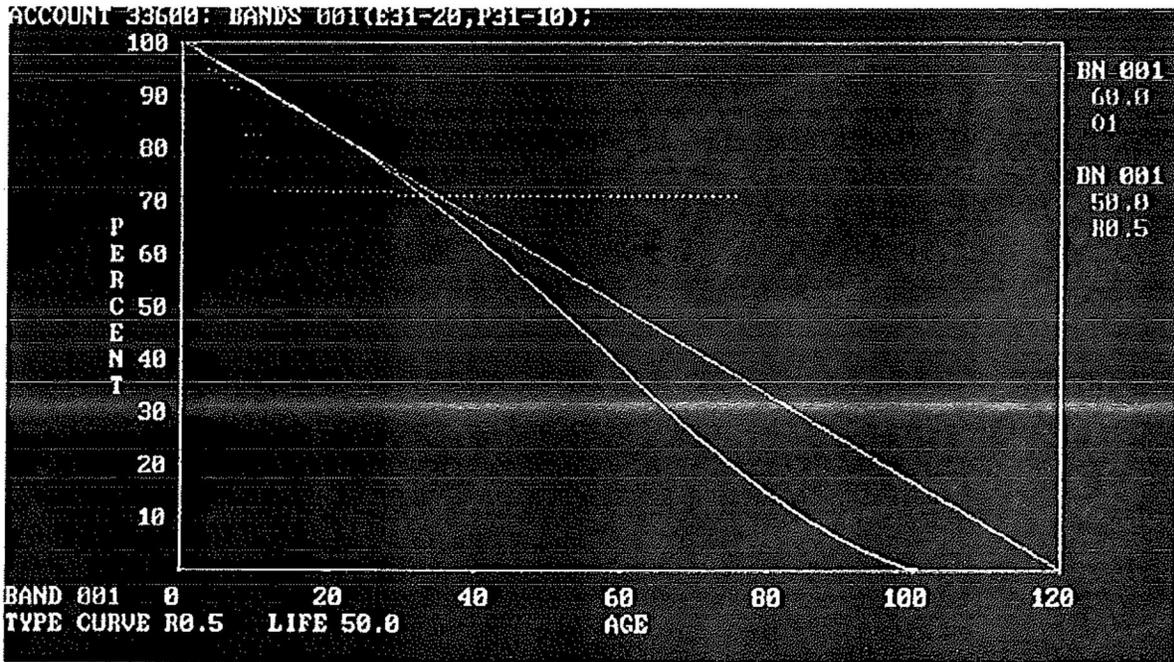
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3 333 WATER WHEELS, TURBINES AND GENERATORS



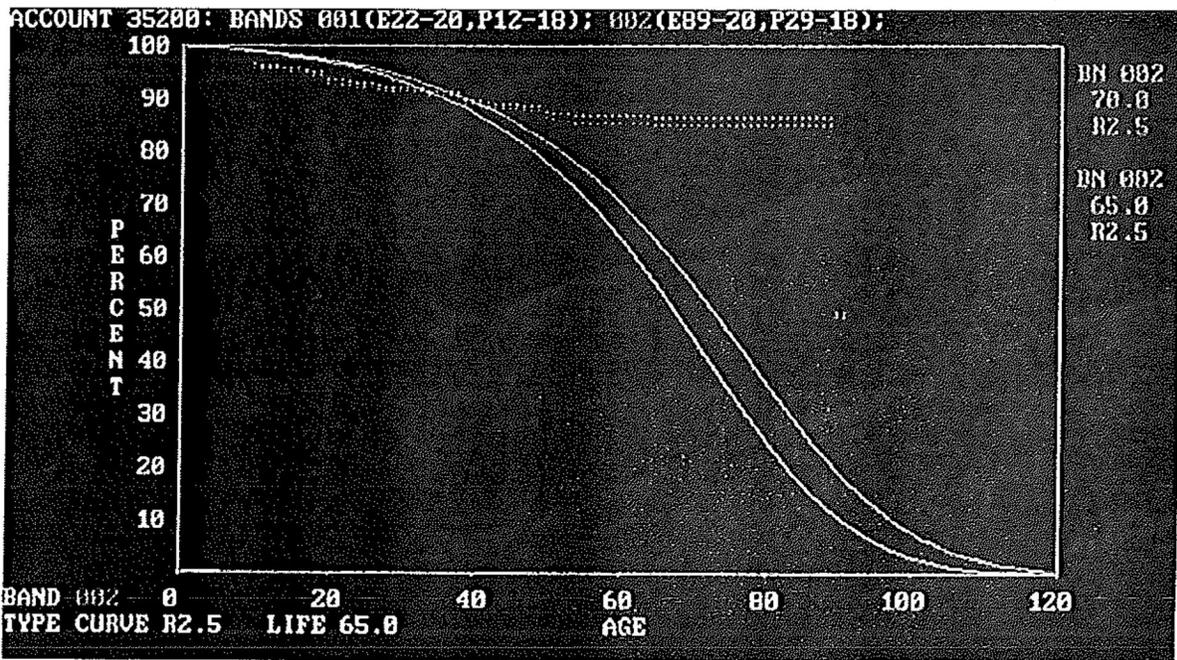
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1 336 ROADS, RAILROADS AND BRIDGES



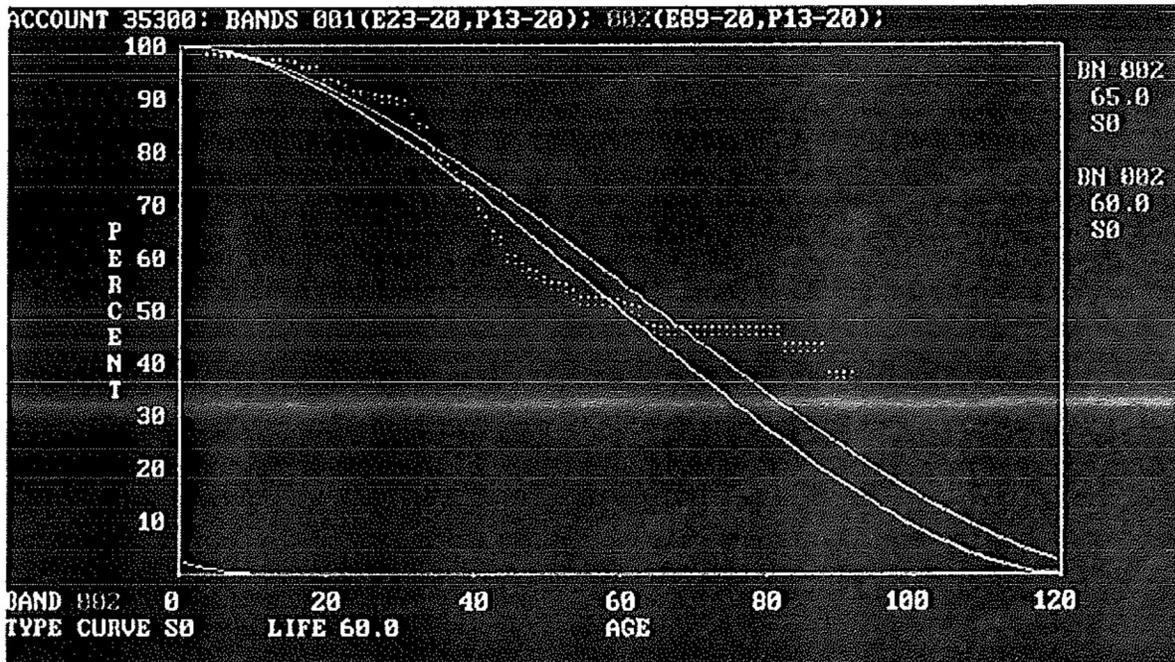
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3 352 STRUCTURES AND IMPROVEMENTS



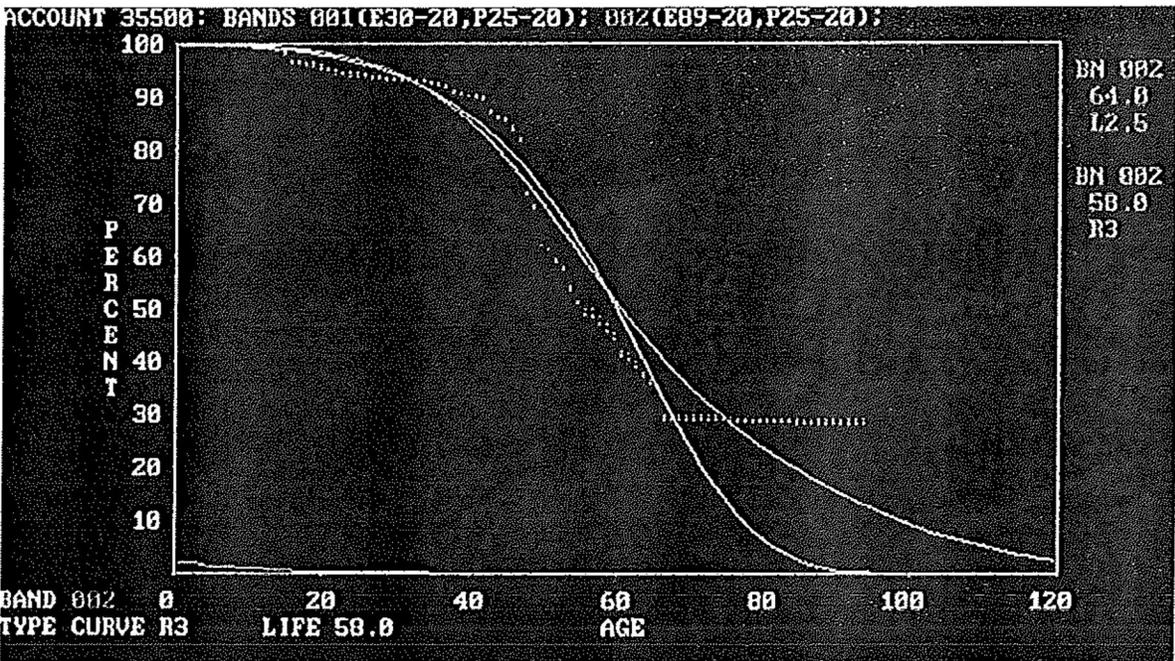
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1 | 353 STATION EQUIPMENT



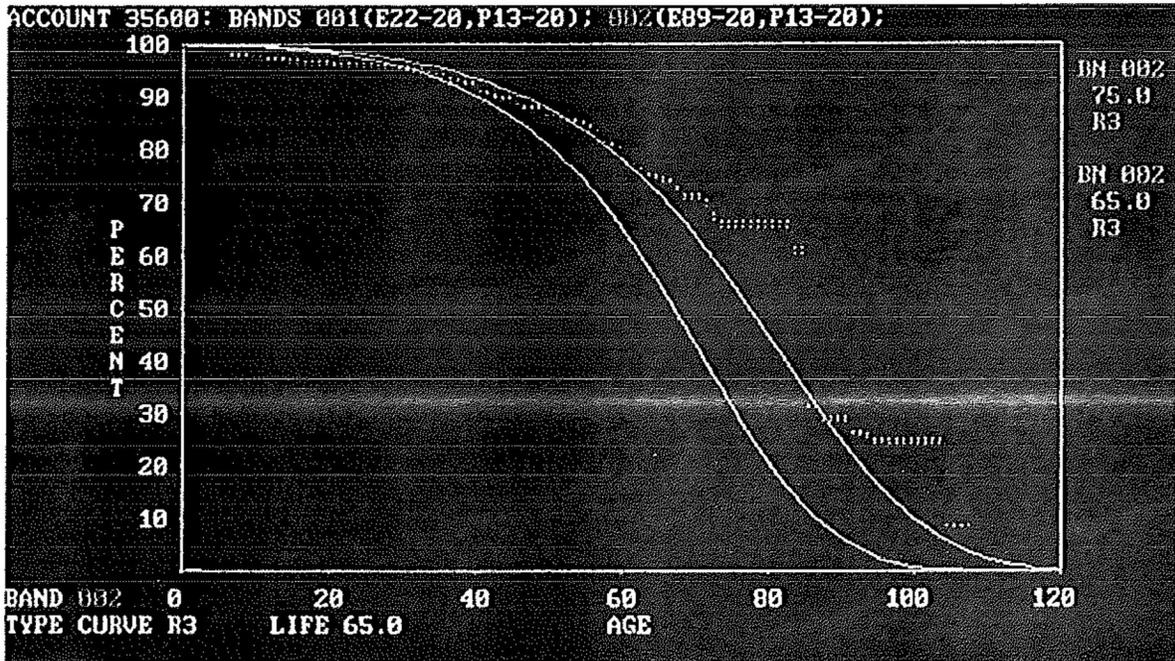
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3 | 355 POLES AND FIXTURES



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1 356 OVERHEAD CONDUCTORS AND DEVICES



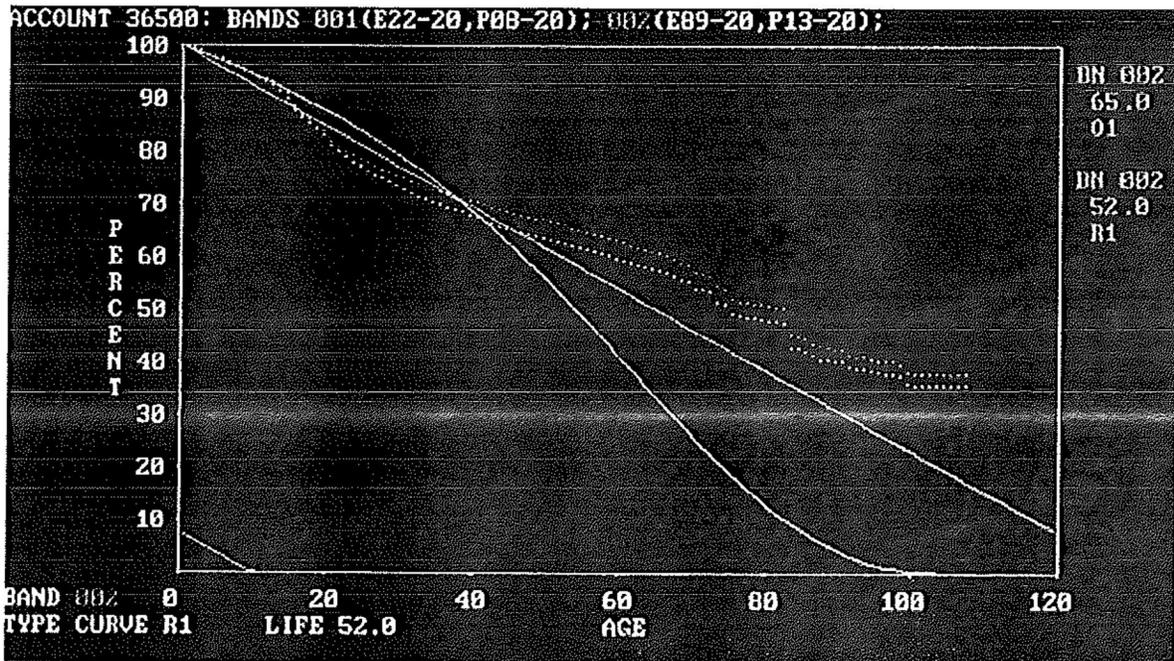
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3 364 POLES, TOWERS & FIXTURES

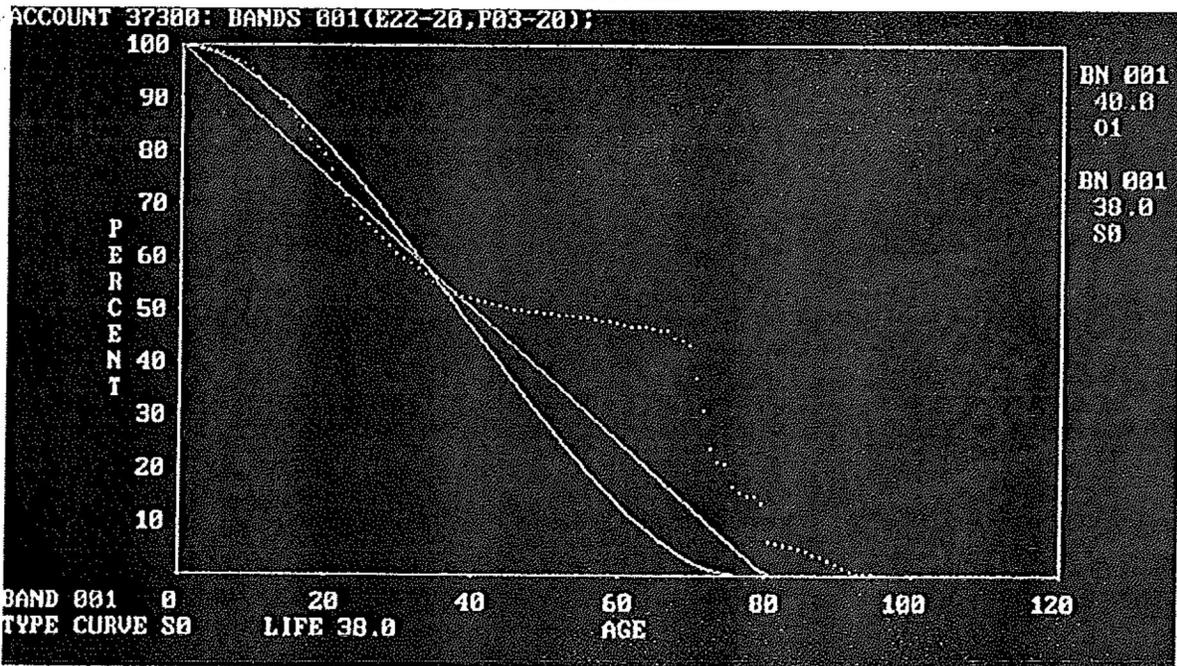


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1 **365 OVERHEAD CONDUCTORS AND DEVICES**



3 **373 STREET LIGHTING AND SIGNAL SYSTEMS**



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 Marceline | 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 |