

Exhibit No.:
Issue: Depreciation
Witness: Cedric E. Cunigan, PE
Sponsoring Party: MoPSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: ER-2021-0312
Date Testimony Prepared: January 20, 2022

MISSOURI PUBLIC SERVICE COMMISSION
INDUSTRY ANALYSIS DIVISION
ENGINEERING ANALYSIS DEPARTMENT

SURREBUTTAL TESTIMONY

OF

CEDRIC E. CUNIGAN, PE

**THE EMPIRE DISTRICT ELECTRIC COMPANY,
d/b/a Liberty**

CASE NO. ER-2021-0312

Jefferson City, Missouri
January 2022

1 **SURREBUTTAL TESTIMONY**

2 **OF**

3 **CEDRIC E. CUNIGAN, PE**

4 **THE EMPIRE DISTRICT ELECTRIC COMPANY,**
5 **d/b/a Liberty**

6 **CASE NO. ER-2021-0312**

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 a
12 Professional Engineer.

13 Q. Are you the same Cedric E. Cunigan that contributed to Staff’s Cost of Service
14 Report (“COS Report”) filed in this case on October 29, 2021?

15 A. Yes.

16 Q. What is the purpose of your surrebuttal testimony?

17 A. I will address statements made in Dane A. Watson’s rebuttal regarding
18 Staff’s proposed depreciation schedule.

19 **Discussion of Proposed Depreciation Schedule**

20 Q. What is the difference between Staff and Empire regarding proposed life rates?

21 A. Mr. Watson provided two tables, DAW-RR-1R and DAW-RR-2R on page 12 of
22 his rebuttal testimony, showing the differences in proposed survival curves between Staff and
23 Empire. They are copied below for reference.

1

Table DAW-RR-1R
Summary of Approved and Proposed Lives
for Accounts Analyzed via Actuarial Analysis
for Interim Retirements

Account	Description	Empire Proposed Life	Staff Proposed Life
311	Structures	90 R1.5	77 L1.5
312	Boiler Plant	55 R0.5	40 S0.5
314	Turbogenerators	60 L1	52 S1.5
331	Structures	100 R1.5	70 O3
332	Dams	85 R0.5	35 L1.5
334	Access. Electric	70 L2.5	60 L2.5
335	Misc. Equipment	45 R0.5	80 O4
343	Prime Movers	50 R1.5	50 R2
344	Generators	55 R1	50 R1
346	Misc. Equipment	55 R2.5	60 R2.5

2

3

Table DAW-RR-2R
Summary of Approved and Proposed Lives
for Transmission, Distribution, and General
Accounts Analyzed via Actuarial Analysis

Account	Description	Empire Proposed Life	Staff Proposed Life
352	Structure and Improvements	70 R2.5	80 R3
353	Station Equipment	50 R1.5	50 S1
356	OH Conductors and Devices	65 R3	70 L3
361	Structures and Improvements	52 R2	55 R1.5
362	Station Equipment	55 R1.5	51 R1.5
370.1	AMI Meters	20 R2	NA
392	Transportation Equipment	11 L3	13 L2
396	Power Operated Equipment	13 L3	17 L3

4

1 Q. Is the information on these tables correct?

2 A. Prior to filing rebuttal testimony, Staff provided Mr. Watson with those numbers
3 after receiving a corrected data file and running it with Staff's previous lead sheet. After reviewing
4 the curves and life estimates again, Staff adopted Empire's curve and life estimates for Accounts
5 331, 332, 334, and 335. This change was made in time for Staff's rebuttal testimony. As Staff
6 adopted Empire's curve and life estimates for accounts 331, 332, 334, and 335, there is no longer
7 a difference, so those rows in Mr. Watson's Schedules are no longer accurate. The major
8 differences between Staff and Empire are as follows.

FERC Account	Staff Curve	Empire Curve
311 STRUCTURES AND IMPROVEMENTS	77-L1.5	90-R1.5
312 BOILER PLANT EQUIPMENT	40-S0.5	55-R0.5
314TURBOGENERATOR UNITS	52-S1.5	60-L1
343 PRIME MOVERS	50-R2	50-R1.5
344 GENERATORS	50-R1	55-R1
346 MISC. POWER PLANT EQUIPMENT	60-R2.5	55-R2.5
352 STRUCTURES AND IMPROVEMENTS	80-R3	70-R2.5
353 STATION EQUIPMENT	50-S1	50-R1.5
356 OVERHEAD CONDUCTORS & DEVICES	70-L3	65-R3
362 STATION EQUIPMENT	51-R1.5	55-R1.5
392 TRANSPORTATION EQUIPMENT	13-L3	11-L3
396 POWER OPERATED EQUIPMENT	17-L3	13-L3

9

1 Q. Are there accounts listed above where both Staff's and Empire's estimates could
2 be considered reasonable?

3 A. For Accounts 343 Prime Movers, 344 Generators, 346 Misc. Power Plant
4 Equipment, 353 Station Equipment, and 362 Station Equipment, Staff agrees with Mr. Watson that
5 both Staff's and the Empire's estimates are reasonable. In addition, Staff would consider
6 Empire's estimate for Account 392 Transportation Equipment to be reasonable.

7 Q. What are the reasons for the differences in the remaining accounts?

8 A. For most of the accounts, the difference in curve choice is due to the reviewer's
9 judgement when making a visual fit. There can also be differences in the chosen experience or
10 placement bands to use for the final determination of the curve. The placement band is the selection
11 of years where assets were installed. The experience band is the selection of years where
12 assets were retired. For accounts where there have been changes in technology used or mass
13 replacements, the use of a shorter placement and/or experience band will provide a better
14 estimate of future activity. There can also be instances where a longer placement and/or experience
15 band will be better, such as for long lived assets. In Staff's rebuttal testimony, Staff provided
16 the full experience band shown against Empire's experience band and the chosen curves for
17 Accounts 314 Turbogenerator Units, 343 Prime Movers, and 344 Generators. The inclusion of a
18 wider or shorter band can change estimates of lives. In the absence of information signifying a
19 major change in the make-up of an asset group, Staff uses a wider band, while Empire uses a
20 narrower band. This appears to be the case for many of the accounts where there are still
21 differences.

22 Q. What is the effect on depreciation expense due to the different survival curve
23 choices?

Surrebuttal Testimony of
Cedric E. Cunigan, PE

1 A. Using Empire's proposed annual accruals in Rebuttal Schedule DAW-1, Staff's
2 proposed rates are roughly \$1.7 million higher in annual depreciation expense for these accounts
3 than Empire's proposed rates.

4 Q. What is Staff's recommendation for depreciation rates in this case?

5 A. Though the recommendations are similar for many of the accounts, it is Staff's
6 opinion that a wider experience and placement band provides a better estimate of the plant in
7 service, unless the make-up of the asset group has had major changes. Staff recommends that the
8 commission approve Staff's rates in this case as listed in Schedule CEC-s2.

9 Q. Does this conclude your surrebuttal testimony?

10 A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Request of The Empire)
District Electric Company d/b/a Liberty for) Case No. ER-2021-0312
Authority to File Tariffs Increasing Rates for)
Electric Service Provided to Customers in its)
Missouri Service Area)

AFFIDAVIT OF CEDRIC E. CUNIGAN, PE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW CEDRIC E. CUNIGAN, PE, and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Surrebuttal Testimony of Cedric E. Cunigan, PE*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

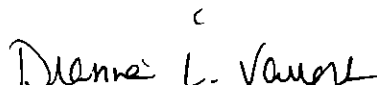


CEDRIC E. CUNIGAN, PE

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 18th day of January, 2022.

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



Notary Public

EMPIRE DISTRICT ELECTRIC COMPANY
DEPRECIATION SCHEDULE

<u>DEPRECIABLE GROUP</u>	<u>PROB.</u> <u>RET. DATE</u>	<u>SURVIVOR</u> <u>CURVE</u>	<u>NET SALV.</u> <u>PCT.</u>	<u>REM. LIFE</u> <u>RATE</u>	<u>COMP.</u> <u>REM. LIFE.</u>
311 Structures & Improvements					
IATAN 1	Dec-40	77-L1.5	-7	1.99	19.1
IATAN 2	Dec-70	77-L1.5	-7	2.08	44.2
IATAN COMMON	Dec-70	77-L1.5	-7	2.22	44.6
PLUM POINT	Dec-60	77-L1.5	-7	2.41	37.3
312 Boiler Plant Equipment					
IATAN 1	Dec-40	40-S0.5	-10	3.57	17.6
IATAN 2	Dec-70	40-S0.5	-10	3.10	31.2
IATAN COMMON	Dec-70	40-S0.5	-10	3.11	30.5
PLUM POINT	Dec-60	40-S0.5	-10	3.23	28.6
312.1 Unit Train/Train Lease					
IATAN 1 UNIT TRAIN		15-SQ	0	17.89	2.5
PLUM POINT TRAIN LEASE		15-SQ	0	7.98	5
UNIT TRAIN PLUM POINT		15-SQ	0	8.45	8.5
314 Turbogenerator Units					
IATAN 1	Dec-40	52-S1.5	-15	4.00	18.8
IATAN 2	Dec-70	52-S1.5	-15	2.58	38.9
IATAN COMMON	Dec-70	52-S1.5	-15	2.68	38.3
PLUM POINT	Dec-60	52-S1.5	-15	2.84	34.5
315 Accessory Electric Equipment					
IATAN 1	Dec-40	50-S0.5	-8	3.37	18.5
IATAN 2	Dec-70	50-S0.5	-8	2.56	36.9
IATAN COMMON	Dec-70	50-S0.5	-8	2.62	36.6
PLUM POINT	Dec-60	50-S0.5	-8	2.72	32.6
316 Misc. Power Plant Equipment					
IATAN 1	Dec-40	40-L0.5	-4	2.96	16.9
IATAN 2	Dec-70	40-L0.5	-4		
IATAN COMMON	Dec-70	40-L0.5	-4	3.15	30.7
PLUM POINT	Dec-60	40-L0.5	-4	3.01	27.2
331 Structures & Improvements	Dec-53	100-R1.5	-10	2.94	32.1
332 Reservoirs, Dams,& Waterways Water Wheels, Turbines,&	Dec-53	85-R0.5	-10	2.15	29.7
333 Generators	Dec-53	90-S6	-10	6.60	13.7
334 Accessory Electric Equipment	Dec-53	70-L2.5	-10	2.72	29.2
335 Misc. Power Plant Equipment	Dec-53	45-R0.5	0	3.56	26.7
341 Structures & Improvements					
ASBURY WIND SERVICES	Dec-57	75-R3	-2	2.07	35.4
ENERGY CENTER	Dec-26	75-R3	-2	7.33	7
ENERGY CENTER FT8	Dec-43	75-R3	-2	3.37	23.5
RIVERTON 12	Dec-57	75-R3	-2	2.57	37.2

<u>DEPRECIABLE GROUP</u>	<u>PROB.</u> <u>RET. DATE</u>	<u>SURVIVOR</u> <u>CURVE</u>	<u>NET SALV.</u> <u>PCT.</u>	<u>REM. LIFE</u> <u>RATE</u>	<u>COMP.</u> <u>REM. LIFE.</u>
RIVERTON 9, 10, 11	Dec-33	75-R3	-2	6.57	11.9
STATE LINE 1	Dec-40	75-R3	-2	0.73	20.4
STATE LINE CC	Dec-51	75-R3	-2	2.36	30.8
STATE LINE COMMON	Dec-51	75-R3	-2	2.31	30.7
342 Fuel Holders, Producers & Access.					
ASBURY WIND SERVICES	Dec-57	75-R2.5	-2	1.29	34.9
ENERGY CENTER	Dec-26	75-R2.5	-2		
ENERGY CENTER FT8	Dec-43	75-R2.5	-2	2.95	23.3
RIVERTON 12	Dec-57	75-R2.5	-2	2.20	35.9
RIVERTON 9, 10, 11	Dec-33	75-R2.5	-2	4.18	13.7
STATE LINE 1	Dec-40	75-R2.5	-2	1.51	20.2
STATE LINE CC	Dec-51	75-R2.5	-2		31
STATE LINE COMMON	Dec-51	75-R2.5	-2		
343 Prime Movers					
ENERGY CENTER	Dec-26	50-R2	-2	5.34	6.7
ENERGY CENTER FT8	Dec-43	50-R2	-2	4.06	21.8
RIVERTON 12	Dec-57	50-R2	-2	2.84	33.8
RIVERTON 9, 10, 11	Dec-33	50-R2	-2	5.77	13
STATE LINE 1	Dec-40	50-R2	-2	2.92	18.7
STATE LINE CC	Dec-51	50-R2	-2	2.80	26.8
STATE LINE COMMON	Dec-51	50-R2	-2	3.38	29.7
344 Generators					
ENERGY CENTER	Dec-26	50-R1	-1	5.79	6.8
ENERGY CENTER FT8	Dec-43	50-R1	-1	4.61	22.1
RIVERTON 12	Dec-57	50-R1	-1	2.86	31.7
RIVERTON 9, 10, 11	Dec-33	50-R1	-1	4.21	12.5
STATE LINE 1	Dec-40	50-R1	-1	3.69	18.9
STATE LINE CC	Dec-51	50-R1	-1	2.96	26.6
345 Accessory Electric Equipment					
ASBURY WIND SERVICES	Dec-57	55-R0.5	-5	0.63	27
ENERGY CENTER	Dec-26	55-R0.5	-5	5.67	6.7
ENERGY CENTER COMMON	Dec-43	55-R0.5	-5	3.45	21.3
RIVERTON 12	Dec-57	55-R0.5	-5	2.91	31.9
RIVERTON 9, 10, 11	Dec-33	55-R0.5	-5	5.45	13.1
STATE LINE 1	Dec-40	55-R0.5	-5	2.97	18.9
STATE LINE CC	Dec-51	55-R0.5	-5	2.58	27
STATE LINE COMMON	Dec-51	55-R0.5	-5	2.99	27.5
346 Misc. Power Plant Equipment					
ASBURY WIND SERVICES	Dec-57	60-R2.5	-5	1.96	33.8
ENERGY CENTER	Dec-26	60-R2.5	-5	0.44	7
ENERGY CENTER FT8	Dec-43	60-R2.5	-5	3.20	22.7
RIVERTON 12	Dec-57	60-R2.5	-5	2.39	35.2
RIVERTON 9, 10, 11	Dec-33	60-R2.5	-5	6.27	13.8

<u>DEPRECIABLE GROUP</u>	<u>PROB.</u> <u>RET. DATE</u>	<u>SURVIVOR</u> <u>CURVE</u>	<u>NET SALV.</u> <u>PCT.</u>	<u>REM. LIFE</u> <u>RATE</u>	<u>COMP.</u> <u>REM. LIFE.</u>
STATE LINE 1	Dec-40	60-R2.5	-5	3.59	20.6
STATE LINE CC	Dec-51	60-R2.5	-5	2.80	29.1
STATE LINE COMMON	Dec-51	60-R2.5	-5	1.80	46.4
352 Structures & Improvements		80-R3	-10	1.07	71.3
353 Station Equipment		50-S1	-20	2.44	39.1
354 Towers & Fixtures		75-R4	-10	1.17	64.2
355 Poles & Fixtures		59-L4	-100	3.60	47.2
356 Overhead Conductors & Devices		70-L3	-25	1.82	52.9
361 Structures & Improvements		55-R1.5	-10	1.94	47.4
362 Station Equipment		51-R1.5	-15	2.11	42.3
364 Poles, Towers & Fixtures		51-R4	-125	5.05	34.9
365 Overhead Conductors & Devices		64-R2.5	-100	3.10	48.4
366 Underground Conduit		53 -L3	-20	1.76	43.9
367 Underground Conductors & Devices		54-R2	-25	1.56	44.7
368 Line Transformers		50-L1.5	-10	1.88	39.2
369 Overhead Services		54-R5	-100	3.32	38.6
370 Meters		30-R1.5	-2	4.39	16
371 Installations on Customers' Premises		28-R2	-40	3.48	17.6
373 Street Lighting & Signal Systems		45-R0.5	-60	3.90	34.7
375 Charging Stations		20-SQ	0	5.00	17.5
390 Structures & Improvements		45-R1	-10	1.73	35.9
391.1 Office Furniture & Equipment		20-SQ	0	5.00	12.2
391.3 COMPUTER EQUIPMENT		5-SQ	0	20.00	3.5
392 Transportation Equipment		13-L2	10	5.20	10.3
393 Stores Equipment		35-SQ	0	2.86	31.9
394 Tools, Shop & Garage Equipment		20-SQ	0	5.00	15
395 Laboratory Equipment		20-SQ	0	5.00	16.8
396 Power Oper. Eqpt.		17-L3	5	4.62	12.6
397 Communication Equipment		15-SQ	0	6.67	6
398 Miscellaneous Equipment		34-SQ	0	2.94	27.3