STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF INDIANAPOLIS POWER & LIGHT COMPANY D/B/A AES INDIANA ("AES INDIANA") FOR AUTHORITY TO INCREASE RATES AND CHARGES FOR ELECTRIC UTILITY SERVICE, AND FOR APPROVAL OF RELATED RELIEF, INCLUDING (1) REVISED DEPRECIATION RATES, (2) ACCOUNTING RELIEF, INCLUDING DEFERRALS AND AMORTIZATIONS, (3) INCLUSION OF CAPITAL INVESTMENTS, (4) RATE ADJUSTMENT MECHANISM PROPOSALS, INCLUDING NEW ECONOMIC DEVELOPMENT RIDER, (5) REMOTE DISCONNECT/RECONNECT PROCESS, AND (6) NEW SCHEDULES OF RATES, RULES AND REGULATIONS FOR SERVICE.	)	**CAUSE NO. 45911**

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

PUBLIC'S EXHIBIT NO. 11

TESTIMONY OF OUCC WITNESS

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OCTOBER 12, 2023

Respectfully submitted,

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I. INTRODUCTION

Q. State your name and occupation.

A. My name is David J. Garrett. I am a consultant specializing in public utility regulation. I am the managing member of Resolve Utility Consulting, PLLC.

Q. Summarize your educational background and professional experience.

A. I received a B.B.A. degree with a major in Finance, an M.B.A. degree, and a Juris Doctor degree from the University of Oklahoma. I worked in private legal practice for several years before accepting a position as assistant general counsel at the Oklahoma Corporation Commission where I worked in the Office of General Counsel and the Public Utility Division in regulatory proceedings. In 2016 I formed Resolve Utility Consulting, PLLC, where I have represented various consumer groups and state agencies in utility regulatory proceedings, primarily in the areas of cost of capital and depreciation. I am a Certified Depreciation Professional with the Society of Depreciation Professionals. I am also a Certified Rate of Return Analyst with the Society of Utility and Regulatory Financial Analysts. A more complete description of my qualifications and regulatory experience is included in my curriculum vitae.[1]

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of the Indiana Office of Utility Consumer Counselor ("OUCC").

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[1] Attachment DJG-2.

Q. Describe the scope and organization of your testimony.

A. My direct testimony here addresses depreciation issues and related issues in response to the direct testimonies of Company witnesses John J. Spanos and Paula M. Guletsky on behalf of Indianapolis Power & Light Company d/b/a AES Indiana ("AES Indiana" or the "Company").

II. EXECUTIVE SUMMARY

Q. Summarize the key points of your testimony.

A. In the context of utility ratemaking, "depreciation" refers to a cost allocation system designed to measure the rate by which a utility may recover its capital investments in a systematic and rational manner over the average service life of the capital investment. I employed a depreciation system using actuarial plant analysis to statistically analyze the Company's depreciable assets and develop reasonable depreciation rates and annual accruals. In this case, Mr. Spanos conducted a depreciation study on AES Indiana's electric plant as of December 31, 2022. Mr. Spanos calculated his proposed depreciation rates under the Equal Life Group ("ELG") method. This approach is contrary to the Indiana Utility Regulatory Commission's ("IURC" or "Commission") more recent preference for the Average Life Group ("ALG") method, which is also the approach adopted by the majority of regulatory commissions nationwide. The following table (Figure 1) compares the proposed depreciation accruals in this case.[2]

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[2] *See* Attachment DJG-2; *see also* Attachment DJG-4 and DJG-5 for supporting calculations.

Figure 1:
Summary Depreciation Accrual Adjustment

Plant Function	AES Accrual	OUCC Accrual	OUCC Adjustment
Intangible Plant	$ 11,105,187	$ 11,130,667	$ 25,480
Steam Production	124,828,618	95,290,897	(29,537,721)
Other Production	10,698,344	7,661,364	(3,036,980)
Transmission	12,653,627	9,261,084	(3,392,543)
Distribution	52,426,516	34,832,753	(17,593,763)
General	13,331,494	12,742,341	(589,153)
Total	$ 225,043,786	$ 170,919,106	$ (54,124,680)

As shown in Figure 1 above, the OUCC's proposed depreciation rates would result in an adjustment reducing the Company's proposed depreciation accrual by $54.1 million.[3]

Q. Summarize the primary factors driving the OUCC's adjustment to depreciation.

A. The OUCC's proposed depreciation adjustment comprises several key issues: (1) calculating rates under the ALG method instead of the ELG method; (2) using present value decommissioning cost estimates rather than inflated future values; (3) removing contingency costs from AES Indiana's decommissioning cost estimates; and (4) adjusting the Company's proposed service lives for several of its transmission and distribution accounts. The estimated impact of these issues on the OUCC's proposed adjustment to the depreciation accrual are summarized in Figure 2 below.

[3] The annual depreciation accrual amounts stated in my testimony are based on plant balances as of the depreciation study date, December 31, 2022.

Figure 2:
Broad Issue Impacts

Issue	Impact
1. Calculate depreciation rates under the ALG method	$24.8 million
2. Use present value decommissioning costs	$18.5 million
3. Remove contigencies from decommissioning costs	$8.5 million
4. Adjust service lives for mass property accounts	$2.3 million
Total	**$54.1 million**

A narrative summary of these issues is presented below.

1. <u>Calculate Depreciation Rates Under ALG Procedure</u>

AES Indiana calculated its proposed depreciation rates under the ELG method. Under the ELG method, depreciation rates are higher in earlier years relative to later years. In this context, the ELG method acts as a form of accelerated cost recovery. In contrast, depreciation rates calculated under the ALG method for a particular vintage group of property will be the same each year. The IURC has recently adopted depreciation rates under the ALG procedure, noting service affordability as a concern. As noted in the figure above, adopting the ALG method alone in this case would result in a significant savings for customers.

2. <u>Use Present Value Decommissioning Cost Estimates</u>

The Company's decommissioning cost estimates are based on present-day dollars. However, the Company escalated those costs estimates to the future retirement date of each generating unit by applying an annual cost inflation factor. The Company uses this escalated amount as the basis for current-day cost recovery. The problem with this approach is that current ratepayers are forced to pay for a future-value cost with present-day dollars. If future, escalated costs are allowed, they should then be discounted back to present-day dollars by the Company's weighted average cost of capital. A similar approach is used to account for asset retirement obligations. However, it would be more straight-forward and reasonable to simply disallow the escalation factors and base the Company's decommissioning costs on present value. Periodic decommissioning studies going forward can incorporate any updated cost estimate increases.

3. <u>Remove Contingency Costs</u>

The decommissioning studies include contingency costs that purportedly reflect uncertainties in future decommissioning estimates. However, contingency costs are unknown by definition, and therefore are not known and measurable. Contingency costs represent an arbitrary increase based on unknown amounts to an already speculative future cost estimate, and thus they should be removed from the company's production net salvage estimates.

4. <u>Propose Longer Service Lives for Mass Property Accounts</u>

The term "mass property" refers to the Company's grouped assets, such as those in its transmission and distribution accounts. Several of the average service lives proposed by Mr. Spanos for AES Indiana's mass property accounts were shorter than what was otherwise indicated by the historical retirement data for these assets as provided by the Company, which would result in depreciation rates that are unreasonably high. Thus, I propose longer average service life estimates for these accounts, which results in a reduction of the Company's proposed depreciation accrual.

Each of these issues will be discussed in more detail in my testimony.

Q. Please describe why it is important not to overestimate depreciation rates.

A. Under the rate-base rate of return model, the utility is allowed to recover the original cost of its prudent investments required to provide service. Depreciation systems are designed to allocate those costs in a systematic and rational manner – specifically, over the service lives of the utility's assets. If depreciation rates are overestimated (i.e., service lives are underestimated), it may unintentionally incent economic inefficiency. When an asset is fully depreciated and no longer in rate base, but still used by a utility, a utility may be incented to retire and replace the asset to increase rate base, even though the retired asset may not have reached the end of its economic useful life. If, on the other hand, an asset must be retired before it is fully depreciated, there are regulatory mechanisms that can ensure the utility fully recovers its prudent investment in the retired asset. Thus, in my opinion, it is preferable for regulators to ensure that assets are not depreciated before the end of their economic useful lives.

Q. What is your recommendation to the Commission?

A. I recommend the Commission adopt my proposed depreciation rates, as provided in Attachment DJG-4. To the extent the Commission adopts one or more, but not all of my proposed adjustments, the appropriate depreciation rates can be calculated accordingly.

Q. If the Commission does not adopt all of your proposed adjustments, do you have an alternative recommendation?

A. Yes. It is common in rate proceedings for regulators to adopt certain proposed depreciation parameters and adjustments while rejecting others. For example, if the Commission rejects my proposed adjustment to escalated decommissioning costs but accepts other adjustments, the appropriate depreciation rates can be calculated according to the Commission's findings.

III. REGULATORY STANDARDS

Q. Discuss the standard by which regulated utilities are allowed to recover depreciation expense.

A. In *Lindheimer v. Illinois Bell Telephone Co.*, the U.S. Supreme Court stated that "depreciation is the loss, not restored by current maintenance, which is due to all the factors causing the ultimate retirement of the property. These factors embrace wear and tear, decay, inadequacy, and obsolescence."[4] The *Lindheimer* Court also recognized that the

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[4] *Lindheimer v. Illinois Bell Tel. Co.*, 292 U.S. 151, 167 (1934).

original cost of plant assets, rather than present value or some other measure, is the proper basis for calculating depreciation expense. Moreover, the *Lindheimer* Court found:

> [T]he company has the burden of making a convincing showing that the amounts it has charged to operating expenses for depreciation have not been excessive. That burden is not sustained by proof that its general accounting system has been correct. The calculations are mathematical, but the predictions underlying them are essentially matters of opinion.[5]

Thus, the Commission must ultimately determine if AES Indiana has met its burden of proof by making a convincing showing that its proposed depreciation rates are not excessive.

A. Depreciation System

Q. Discuss the definition and general purpose of a depreciation system, as well as the specific depreciation system you employed for this project.

A. The legal standards set forth above do not mandate a specific procedure for conducting depreciation analysis. These standards, however, direct that analysts use a system for estimating depreciation rates that will result in the "systematic and rational" allocation of capital recovery for the utility. Over the years, analysts have developed "depreciation systems" designed to analyze grouped property in accordance with this standard. A depreciation system may be defined by several primary parameters: 1) a <u>method</u> of allocation; 2) a <u>procedure</u> for applying the method of allocation; 3) a <u>technique</u> of applying the depreciation rate; and 4) a <u>model</u> for analyzing the characteristics of vintage property groups.[6] In this case, I used the straight-line method, the average life procedure, the

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[5] *Id*. at 169.
[6] *See* Wolf *supra* n. 7, at 70, 140.

remaining life technique, and the broad group model; this system would be denoted as an "SL-AL-RL-BG" system. This depreciation system conforms to the legal standards set forth above and is commonly used by depreciation analysts in regulatory proceedings. I provide a more detailed discussion of depreciation system parameters, theories, and equations in Appendix A.

B. Average Life vs Equal Life Procedure

Q. Explain the primary difference between the ALG and ELG methods.

A. In the ALG method, a constant accrual rate based on the average life of all property in the group is applied to the surviving property.[7] In the ELG method, property is divided into subgroups that each have a common life. Pertinently, the ELG method results in higher depreciation rates in the early years of a vintage's life. This fact is confirmed by authoritative depreciation literature. According to Wolf:

> When contrasted with the average life procedure, the equal life group procedure results in annual accruals that are higher during the early years and lower in the later years.[8]

The NARUC Public Utility Depreciation Practices also makes the same conclusion about the equal life procedure:

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[7] *Id*. at 74-75.
[8] *Id*. at 93 (emphasis added).

> [T]he ELG method results in annual accruals that are higher during the early years of a vintage's life, thereby causing an increase in depreciation expense and revenue requirements during these years.[9]

In contrast, use of the average life results in the same depreciation rate applied to each age interval.

Q. Has the IURC recently adopted the ALG method?

A. Yes. In Duke Energy Indiana's ("DEI") last rate case, the company proposed ELG depreciation rates. The OUCC and Industrial Group argued that the ALG method should be used. The Commission found as follows:

> First, with respect to the question of whether the ELG or ALG method should be used, we find the evidence presented by OUCC witness Mr. Garrett and Industrial Group witness Mr. Andrews persuasive, as both witnesses showed that the ELG method results in unreasonably high depreciation rates. ALG depreciation rates result in systematical and rational cost recovery with near term customer rate relief and full cost recovery of utility investments. While we have determined in the past that the ELG methodology was appropriate and acknowledge the weight given to precedent in many prior decisions, we always evaluate each case as it comes before us and do not need to approve the same methodology based on prior decisions, especially in light of a changed landscape. The use of ELG in a higher than average investment cycle has the effect of unnecessarily increasing the near term depreciation expense as compared to the use of ALG.[10]

In the DEI case, the Commission correctly noted that the ELG method can result in unreasonably high depreciation rates. In order for the ELG method to be properly applied, a utility would need to revise depreciation each year. However, given the logistical realities involved with prosecuting rate cases, this would be impractical and inefficient. When a

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[9] National Association of Regulatory Utility Commissioners, *Public Utility Depreciation Practices* 176 (NARUC 1996) (emphasis added).
[10] Cause No. 45253, Order of the Commission, p. 90, (June 29, 2020).

utility has made substantial, recent capital investments, depreciation expense calculated under the ELG method will always be higher than the expense calculated under the ALG method. The larger the amount of the investments, the larger the discrepancy will be between the two procedures. The Commission's criticism of the ELG method would also apply here. In this case, the difference in the annual depreciation accrual between the ELG and ALG methods alone is about $25 million.[11] The Company has increased its depreciable plant by more than $500 million since its previous depreciation study.[12] This highlights the reality of the ELG method, which will inevitably result in higher depreciation expense when plant is increasing.

Q. Did the IURC also approve depreciation rates calculated under the ALG method for other Indiana electric utilities?

A. Yes. In Indiana Michigan Power Company's ("I&M") last rate case, Cause No. 45235, I&M proposed depreciation rates based on the ALG method.[13] In fact, no party in that case proposed ELG depreciation rates, and I&M's proposed depreciation method was adopted by the Commission.[14] Also, in Northern Indiana Public Service Company's ("NIPSCO") last rate case, Cause No. 45772, NIPSCO proposed depreciation rates based on the ALG method, changing from using the ELG method.[15] Again, no party in that case contested

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[11] Attachment DJG-15: AES Indiana's response to IG Data Request 2-14 (showing ALG annual accrual for depreciable plant of $200 million).
[12] Attachment DJG-15: AES Indiana's response to OUCC Data Request 7 -10 (Attach. 1, p. 60 of 358, showing total electric plant balance of $5,371,141,939).
[13] Cause No. 45235, Direct Testimony of Jason A. Cash, Attachment JAC-1, p. 23 of 34 (May 14, 2019).
[14] Cause No. 45235, Final Order at 119, Ordering Paragraph 6.
[15] Cause No. 45772, Direct Testimony of John Spanos, p. 25, lines 1-5 (September 19, 2022).

this proposal, which the Commission approved.[16] Thus, recent Commission precedent in multiple cases indicates a preference for the ALG method.

Q. Which method is more commonly used in utility regulatory proceedings?

A. In my experience, the ALG method is the most commonly used procedure by analysts in depreciation proceedings. Thus, the majority of depreciation rates approved by regulators around the country are based on the ALG method.

Q. Please provide an example of how the ELG method results in higher depreciation rates in earlier years relative to the ALG method.

A. For the following illustration, assume a group of property containing two units, one with an original cost of $4,000 and a 4-year life and the second with an original cost of $6,000 and an 8-year life.[17] Thus, the average life of this group is 6.4 years.[18] Under the ALG method, the depreciation rate is 15.625% per year (1/6.4 = 15.625%). The following table illustrates this example.

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[16] Cause No. 45772, Final Order at 44, Ordering Paragraph 4.
[17] *See* Wolf *supra* n. 7, at 82.
[18] AL = [($4,000 x 4) + ($6,000 x 8)] / $10,000 = 6.4 years.

Figure 3:
ALG Procedure

Year	Balance	Retired	Rate	Annual Accrual	Accum. Deprec.
1974	10000		15.625%	1563	0
1975	10000		15.625%	1563	1563
1976	10000		15.625%	1563	3125
1977	10000	4000	15.625%	1563	4688
1978	6000		15.625%	938	2250
1979	6000		15.625%	938	3188
1980	6000		15.625%	938	4125
1981	6000	6000	15.625%	938	5063
1982	0				0

As shown in the annual accrual column above, the full $10,000 is depreciated after eight years. Now, considering the same assumptions presented above, the following tables illustrates the same scenario except that the rate is calculated under the ELG method.

Figure 4:
ELG Procedure

Year	Balance	Retired	Rate	Annual Accrual	Accum. Deprec.
1974	10000		17.50%	1750	0
1975	10000		17.50%	1750	1750
1976	10000		17.50%	1750	3500
1977	10000	4000	17.50%	1750	5250
1978	6000		12.50%	750	3000
1979	6000		12.50%	750	3750
1980	6000		12.50%	750	4500
1981	6000	6000	12.50%	750	5250
1982	0				0

As with the ALG example presented above, the full $10,000 investment is still fully depreciated after eight years. However, there are higher rate and accrual amounts during the earlier years. The reason there is a 17.5% depreciation rate instead of a 15.625%

depreciation rate in the early years is because the two units in this group are treated separately under the ELG method. The following table shows how the rates in this example are calculated.

Figure 5:
ELG Rate Development

				Annual Accrual	
	Group	Group	Group		
Group	Amount	Life	Rate	1974-77	1978-81
A	4000	4	25.00%	1000	
B	6000	8	12.50%	750	750
Annual accruals				1750	750
Balance during interval				10000	6000
Annual accrual rate %				17.50%	12.50%

This example is simplified in an attempt to explain the complexities of the ELG method. In this example, the higher rate of 17.5% stayed the same for four years because there are only two units in this simple example, and the rate drops to 12.5% after the first unit retires. In reality, when the ELG method is applied to large groups of property such as AES Indiana's the depreciation rate would decline each year and result in reduced depreciation expense.

Q. What is your recommendation?

A. As with the recently decided DEI case, it is appropriate to apply the ALG method to AES Indiana, in light of the significant increase in depreciable plant since the last depreciation study and the Commission's recognition that "use of ELG in a higher than average investment cycle has the effect of unnecessarily increasing the near term depreciation expense as compared to the use of ALG."[19]

IV. LIFE SPAN PROPERTY ANALYSIS

Q. Describe life span property.

A. "Life span" property accounts usually consist of property within a production plant. The assets within a production plant will be retired concurrently at the time the plant is retired, regardless of their individual ages or remaining economic lives. For example, a production plant will contain property from several accounts, such as structures, fuel holders, and generators. When the plant is ultimately retired, all of the property associated with the plant will be retired together, regardless of the age of each individual unit. Analysts often use the analogy of a car to explain the treatment of life span property. Throughout the life of a car, the owner will retire and replace various components, such as tires, belts, and brakes. When the car reaches the end of its useful life and is finally retired, all of the car's individual components are retired together. Some of the components may still have some useful life remaining, but they are nonetheless retired along with the car. Thus, the various accounts of life span property are scheduled to retire concurrently as of the production unit's probable retirement date.

[19] Cause No. 45253, Order of the Commission, p. 90, (June 29, 2020).

A. Interim Retirements

Q. Discuss the concept of interim retirements.

A. The individual components within a generating unit are retired and replaced throughout the life of the unit. This retirement rate is measured by "interim" survivor curves. Thus, a production plant's remaining life and depreciation rate are not only affected by the terminal retirement date of the entire plant, but also by the retirement rate of the plant's individual components, which are retired during the "interim" of the plant's useful life.

Q. Did you make any adjustments to the Company's proposed interim retirements?

A. No. I accepted the Company's proposed interim retirement curves as well as the Company's proposed weighting of interim and terminal retirements.

B. Terminal Net Salvage and Decommissioning Costs

Q. Describe the meaning of terminal net salvage.

A. When a production plant reaches the end of its useful life, a utility may decide to decommission the plant. In that case, the utility may sell some of the remaining assets. The proceeds from this transaction are called "gross salvage." The corresponding expense associated with demolishing plant is called "cost of removal." The term "net salvage" equates to gross salvage less the cost of removal. When net salvage refers to production plants, it is often called "terminal net salvage," because the transaction will occur at the end of the plant's life.

Q. Describe how electric utilities typically support terminal net salvage recovery for production assets.

A. Typically, when a utility is requesting the recovery of a substantial amount of terminal net salvage costs, it supports those costs with site-specific decommissioning studies.

Q. Did AES Indiana provide decommissioning studies for its production units in this case?

A. Yes. The Company provided decommissioning studies conducted by Sargent & Lundy and sponsored in the direct testimony of Ms. Guletsky.

Q. What is the total amount of present-value terminal net salvage included in the Company's proposed depreciation rates?

A. AES Indiana is proposing more than $400 million of present-value terminal net salvage to be included in its depreciation rates.[20]

Q. Did you identify any unreasonable assumptions included in the Company's proposed terminal net salvage costs?

A. Yes. The Company's proposed terminal net salvage costs include contingency costs. According to Ms. Guletsky, contingency is included at 20% of the total labor, material, and *negative* 20% for scrap value.[21] Applying a 20% increase for these removal costs and a negative 20% for scrap value both have an increasing effect on depreciation rates. In addition, Mr. Spanos applies an annual inflation rate of 2.5% to the decommissioning cost estimates, thus proposing to charge current customers with inflated future costs. These issues are further discussed below.

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[20] *See* Direct Testimony of John J. Spanos, Attachment JJS-1, p. 198 (Table 3); *see also* Attachment DJG-7.
[21] Direct Testimony of Paula M. Guletsky, p. 16, lines 5-9.

1. Contingency Costs

Q. Please describe the contingency costs included in the decommissioning studies.

A. The Company's decommissioning studies include labor and material cost estimates to demolish its generating units. In addition, the decommissioning studies include contingency factors that increase the base decommissioning cost estimates by 20%. The contingency costs alone account for more than $90 million of the present value demolition cost estimates.[22] According to the decommissioning study, contingency costs are included to "account for unpredictable project events."[23]

Q. Is it fair to include contingency costs in customer rates?

A. No. Contingency costs are, by definition, unknown. Speculative, unknown costs are not known and measurable, and they should not be included in rates. Moreover, contingency costs represent a percentage increase on a future cost that is already speculative: demolition costs. This exacerbates the speculative nature of contingency costs. Furthermore, contingency costs are clearly arbitrary; they are not directly tied to any specific cost estimate. The inclusion of a 20% contingency factor by the Company also calls into question the accuracy of the decommissioning cost estimates. Essentially, the Company is suggesting that their cost estimates could be incorrect by as much as 20%. However, since the contingency factors are positive (i.e., increasing the cost estimates), the Company is suggesting that their cost estimates are underestimated, which is a dubious assumption. I

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[22] *See* Attachment DJG-7.
[23] Direct Testimony of Paula M. Guletsky, Attachment PMG-1 (2022 Decommissioning Study), p. 5.

cannot think of any other costs included in rate proceedings in which it is recognized that the utility is consistently, and significantly, underestimating their costs. For example, utilities estimate their cost of equity in rate proceedings. I have reviewed numerous cases regarding this issue, and I have not found a single case in which a regulator determined that a utility underestimated this cost.

Q. Could the same argument in support of increased contingency costs be used to support decreased contingency costs?

A. Yes. If one were to approach this issue objectively, the same arguments used in support of increased contingency costs could be used to support decreased contingency costs. In other words, if a future cost is unknown (which decommissioning costs are), then it would be just as fair to ratepayers to decrease the cost estimates by 20% to account for "unknown" factors that might ultimately cause the decommissioning costs to be overestimated. However, the most fair and reasonable approach is to disallow contingency factors in either direction.

Q. Did the Commission approve including contingency within the depreciation study in previous cases?

A. Yes. The Commission approved including contingency in two recently litigated rate cases, Cause No. 45235 (I&M) and Cause No. 45253 (DEI). In both cases, the OUCC proposed removing contingency from the decommissioning study. However, in Cause No. 45235, the rebuttal to this proposal mainly indicated including contingency within the depreciation study is Commission precedent.[24] In Cause No. 45253, Mr. Spanos' rebuttal testimony,

[24] Cause No. 45235, Rebuttal Testimony of Jason Cash, p. 7, line 13 to p. 8, line 11 (September 17, 2019).

other to refute a proposal which is not an issue here, solely relied on Commission precedent.[25] In both cases, the Commission agreed with including contingency.[26] What was not included, either in rebuttal or in the Commission's decision, was a substantive response to the arguments against including contingency. The Commission found in Cause No. 45235 that I was "asking the Commission to disregard our prior acceptance of contingency,"[27] and that is exactly what I am doing. As the Commission reconsidered its position on ELG in Cause No. 45235, I now ask the Commission to conduct a substantive review of this issue, based on the arguments against this proposal, and reconsider its position on allowing contingency in the depreciation study.

Q. Do your proposed net salvage rates exclude the Company's proposed contingency factors?

A. Yes, for the reasons discussed above, my proposed terminal net salvage rates exclude the contingency costs proposed in the Company's decommissioning studies.[28]

2. <u>Escalation Factors</u>

Q. Please describe the cost escalation factors the Company applied to its present-value decommissioning cost estimates.

A. To calculate his proposed net salvage rates for the Company's production plant, Mr. Spanos applied a 2.5% annual cost inflation rate to the probable retirement date of each generating facility.[29]

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[25] Cause No. 45253, Rebuttal Testimony of John Spanos, p. 31, line 1 to p. 36, line 10 (December 4, 2019).
[26] Cause No. 45235, Final Order at 32 (March 11, 2020); Cause No. 45253, Final Order at 91 (June 29, 2020).
[27] Cause No. 45235, Final Order at 32.
[28] *See* Attachments DJG-6 and DJG-7.
[29] Direct Testimony of John J. Spanos, p. 13, lines 1-2.

Q. What is the dollar impact of applying the annual escalation rate?

A. The present value decommissioning cost estimate is $405 million, and the total escalated decommissioning costs is $652 million.[30] Thus, the escalation rate increases the total decommissioning cost estimate by nearly $250 million. The corresponding impact to the annual depreciation accrual for current customers is $18.6 million per year.

Q. Does the Company's proposal related to escalated decommissioning costs effectively charge current customers for a future inflated cost?

A. Yes. Under the Company's proposal, current ratepayers are charged for a future cost that has not been discounted to present value. The concept of the time value of money is a cornerstone of finance and valuation. For example, in the Discounted Cash Flow Model that is often used in regulatory proceedings to estimate the utility's cost of equity, an annual growth rate (i.e., escalation rate) is applied to the utility's dividends for many years into the future. However, that dividend stream is then discounted back to the current year by a discount rate to present value. In contrast to this approach, the Company has escalated the present value of its decommissioning costs decades into the future and is essentially asking current ratepayers to pay the future value of a cost with present-day dollars.

Q. Have other jurisdictions consistently rejected contingency and escalation factors you discussed above?

A. Yes. The Oklahoma Corporation Commission has rejected the use of contingency and escalation factors in production net salvage rates. For example, in the 2015 rate case for Public Service Company of Oklahoma ("PSO"), the company proposed the inclusion of

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[30] *Id*. at Attachment JJS-1, p. 198 (Table 3).

escalation and contingency factors in calculating PSO's terminal net salvage. Like AES Indiana, PSO hired Sargent & Lundy ("S&L") to conduct its decommissioning studies. In rejecting PSO's proposed escalation factor, the ALJ found as follows:

> The ALJ adopts Staff witness Garrett's recommendation that the Commission should deny the proposed escalation of decommissioning costs in this case because (1) the escalated costs do not appear to be calculated in the same manner as other calculations; (2) the Company did not offer any testimony in support of the escalation factor; (3) an escalation factor that does not consider any improvements in technology or economic efficiencies likely overstates future costs; (4) it is inappropriate to apply an escalation factor to decommissioning costs that are likely overstated; (5) asking ratepayers to pay for future costs that may not occur, are not known and measurable changes within the meaning of 17 O.S. § 284; and (6) the Commission has not approved escalated decommissioning costs in previous cases.[31]

Likewise, in rejecting PSO's proposed contingency factors, the ALJ found as follows:

> In its decommissioning cost study, S&L applied a 15% contingency factor to its cost estimates, and a negative 15% contingency factor to its scrap metal value estimates. The Company provides little justification for this contingency factor other than the plants might experience uncertainties and unplanned occurrences. <u>This reasoning fails to consider the fact that certain occurrences could reduce estimated costs</u>.[32]

Based on the same reasoning, the IURC should also reject AES Indiana's proposed contingency and escalation factors in this case.

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[31] Report and Recommendation of the Administrative Law Judge p. 164, filed May 31, 2016 in Cause No. PUD 201500208.
[32] *Id*. (emphasis added).

V. MASS PROPERTY LIFE ANALYSIS

Q. Describe the methodology used to estimate the service lives of grouped depreciable assets.

A. The process used to study the industrial property retirement is rooted in the actuarial process used to study human mortality. Just as actuarial analysts study historical human mortality data to predict how long a group of people will live, depreciation analysts study historical plant data to estimate the average lives of property groups. The most common actuarial method used by depreciation analysts is called the "retirement rate method." In the retirement rate method, original property data, including additions, retirements, transfers, and other transactions, are organized by vintage and transaction year.[33] The retirement rate method is ultimately used to develop an "observed life table," ("OLT") which shows the percentage of property surviving at each age interval. This pattern of property retirement is described as a "survivor curve." The survivor curve derived from the observed life table, however, must be fitted and smoothed with a complete curve in order to determine the ultimate average life of the group.[34] The most widely used survivor curves for this curve fitting process were developed at Iowa State University in the early 1900s and are commonly known as the "Iowa curves."[35] A more detailed explanation of how the Iowa curves are used in the actuarial analysis of depreciable property is set forth in Appendix C.

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[33] The "vintage" year refers to the year that a group of property was placed in service (aka "placement" year). The "transaction" year refers to the accounting year in which a property transaction occurred, such as an addition, retirement, or transfer (aka "experience" year).
[34] *See* Appendix C for a more detailed discussion of the actuarial analysis used to determine the average lives of grouped industrial property.
[35] *See* Appendix B for a more detailed discussion of the Iowa curves.

Q. Describe how you statistically analyzed AES Indiana's historical retirement data in order to determine the most reasonable Iowa curve to apply to each account.

A. The data points in the OLT can be plotted to form a curve (the "OLT curve"). The OLT curve is not a theoretical curve; it is actual observed data from the Company's records that indicate the rate of retirement for each property group. An OLT curve by itself, however, is rarely a smooth curve, and is often not a "complete" curve (i.e., it does not end at zero percent surviving). In order to calculate average life (the area under a curve), a complete survivor curve is required. The Iowa curves are empirically derived curves based on the extensive studies of the actual mortality patterns of many different types of industrial property. The curve-fitting process involves selecting the best Iowa curve to fit the OLT curve. This can be accomplished through a combination of visual and mathematical curve-fitting techniques, as well as professional judgment. The first step of my approach to curve-fitting involves visually inspecting the OLT curve for any irregularities. For example, if the "tail" end of the curve is erratic and shows a sharp decline over a short period of time, it may indicate that this portion of the data is less reliable, as further discussed below. After inspecting the OLT curve, I use a mathematical curve-fitting technique which essentially involves measuring the distance between the OLT curve and the selected Iowa curve to get an objective, mathematical assessment of how well the curve fits. After selecting an Iowa curve, I observe the OLT curve along with the Iowa curve on the same graph to determine how well the curve fits. As part of my analysis, I may repeat this process several times for any given account to ensure that the most reasonable Iowa curve is selected.

Q. Do you always select the mathematically best-fitting curve?

A. Not necessarily. Professional judgment should also be considered in the curve selection process. Mathematical fitting is an important part of the curve-fitting process because it promotes objective, unbiased results. While mathematical curve-fitting is important, it may not always yield the optimum result. For example, if there is insufficient historical data in a particular account and the OLT curve derived from that data is relatively short and flat, the mathematically "best" curve may be one with a very long average life. However, when there is sufficient data available, mathematical curve fitting can be used as part of an objective service life analysis. For several accounts discussed below, I primarily rely on the objective, statistical analysis, but I also use professional judgment by selecting Iowa curves that are shorter than what the data otherwise indicate, to ensure I do not estimate an unreasonably long service life.

Q. Should every portion of the OLT curve be given equal weight?

A. Not necessarily. Many analysts have observed that the points towards the end of the OLT curve may often have less analytical value than other portions of the curve. In fact, "[p]oints at the end of the curve are often based on fewer exposures and may be given less weight than points based on larger samples. The weight placed on those points will depend on the size of the exposures."[36] Pursuant to this standard, an analyst may decide to "truncate" the tail end of the OLT curve at a certain percent of initial exposures, such as one percent. Using this approach puts greater emphasis on the most valuable portions of

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[36] Wolf *supra* n. 7, at 46.

the curve. For my analysis in this case, I not only considered the entirety of the OLT curve, but also conducted further analyses that involved fitting Iowa curves to the most significant part of the OLT curve for certain accounts. In other words, to verify the accuracy of my curve selection, I narrowed the focus of my additional calculation to consider approximately the top 99% of the "exposures" (i.e., dollars exposed to retirement) and to eliminate the tail end of the curve representing the bottom 1% of exposures for some accounts, if necessary. I will illustrate an example of this approach in the discussion below.

Q. Generally, describe the differences between the Company's service life proposals and your service life proposals.

A. For each of the accounts to which I propose adjustments, the Company's proposed average service life, as estimated through an Iowa curve, is too short to provide the most reasonable mortality characteristics of the account. Generally, for the accounts in which I propose a longer service life, that proposal is based on the objective approach of choosing an Iowa curve that provides a better mathematical fit to the observed historical retirement pattern derived from the Company's plant data.

Q. In support of its service life estimates, did AES Indiana present substantial evidence in addition to the historical plant data for each account?

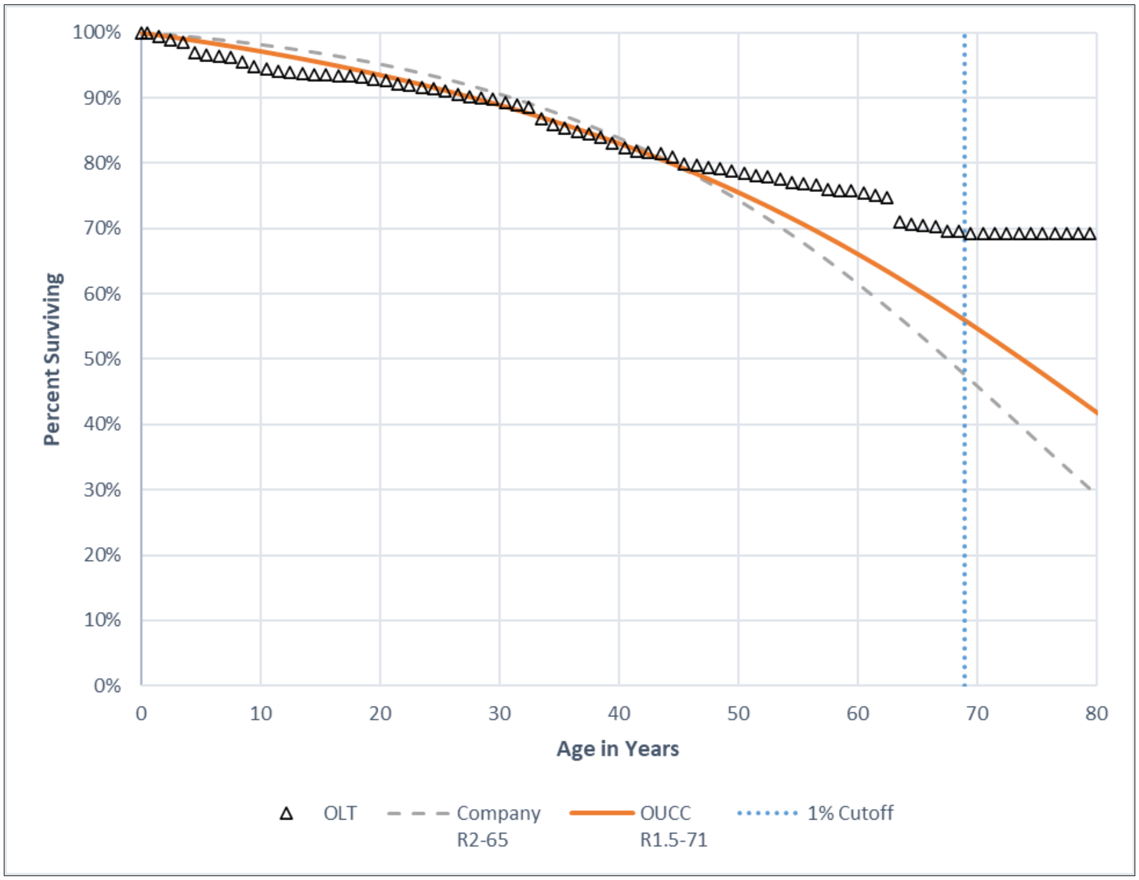
A. No. It appears that AES Indiana is relying primarily on its historical retirement data in order to make predictions about the remaining average life for the assets in each account. Therefore, the Commission should focus primarily on this historical data and objective Iowa curve fitting when assessing fair and reasonable depreciation rates for AES Indiana. The service lives I propose in this case are based on Iowa curves that provide better mathematical fits to AES Indiana's historical retirement data, and they result in more reasonable service life estimates and depreciation rates for the accounts to which I propose adjustments.

A. Account 355 – Poles and Fixtures

Q. Please describe your service life estimate for this account and compare it with the Company's estimate.

A. The OLT curve derived from the Company's data for this account is presented in the graph below. The graph also shows the Iowa curves that Mr. Spanos and I selected to represent the average remaining life of the assets in this account. For this account, Mr. Spanos selected the R2-65 Iowa curve, and I selected the R1.5-71 Iowa curve. Both of these curves are shown in the graph below with the OLT curve.

Figure 6:
Account 355 – Poles and Fixtures



The vertical line in the graph represents the truncation point based on the 1% exposure benchmark discussed above. Both of the Iowa curves effectively ignore the data occurring after (to the right of) the truncation line. However, the R2 curve selected by Mr. Spanos appears to ignore too much of the relevant OLT data occurring from ages 45-65, which is a significant portion of the OLT curve. The OLT curve implies a lower-mode, or flatter retirement trajectory than what is reflected in an R2 curve shape. The flatter trajectory represented in the R1.5 curve shape I selected appears to result in a closer it to the OLT curve at this time. We can use mathematical curve fitting techniques to further assess the results.

Q. Does the Iowa curve you selected result in a closer mathematical fit to the OLT curve for this account?

A. Yes. While visual curve fitting techniques can aid in narrowing the reasonable range of potential Iowa curves for a particular account, as well as identifying the most statistically relevant portions of the curve, mathematical curve fitting can confirm the goodness of fit for a particular curve and can also help in deciding between two or more closely-fitting Iowa curves. The closest fitting curve is the one that minimizes the distance between the OLT curve and the Iowa curve, thus providing the closest fit. The "distance" between the curves is calculated using the "sum-of-squared differences" ("SSD") technique. For this account, the SSD, or "distance" between the Company's Iowa curve and the truncated OLT curve is 0.3374, and the SSD between the R1.5-71 curve I selected, and the truncated OLT curve is only 0.1536, which means it results in the closer fit.[37]

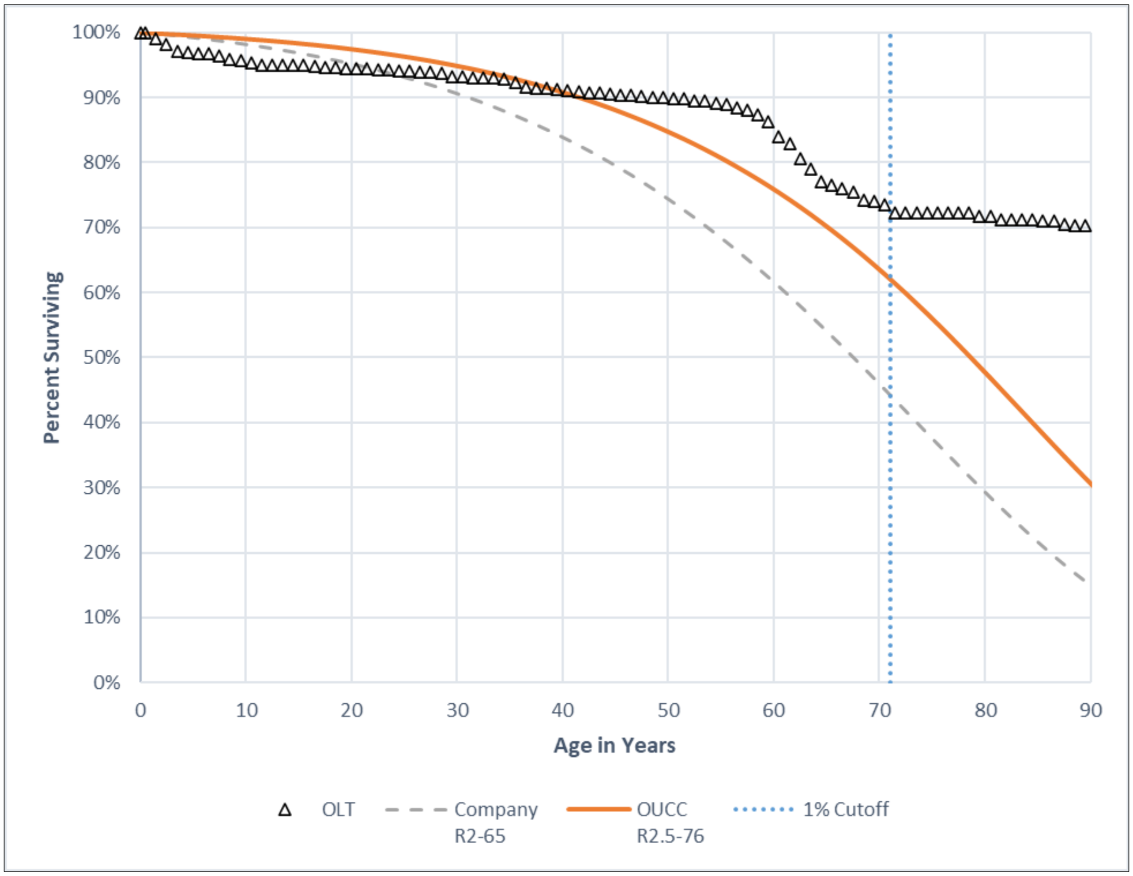
B. Account 356 – Overhead Conductors and Devices

Q. Please describe your service life estimate for this account and compare it with the Company's estimate.

A. Mr. Spanos selected the R2-65 curve for this account, and I selected the R2.5-76 curve. Both of these Iowa curves are shown with the OLT curve in the following graph.

[37] Attachment DJG-8.

Figure 7:
Account 356 – Overhead Conductors and Devices



As shown in this graph, the Iowa curve selected by Mr. Spanos is clearly too short to accurately represent the retirement rate in this account given the data presented. In order for the R2 curve shape selected by Mr. Spanos to result in a relatively closer fit to the OLT curve, it would require a very long average service life estimate. For this account the R2.5 curve shape and longer average service life results in a much closer fit, and thus, a more reasonable depreciation rate.

Q. Does the Iowa curve you selected result in a closer mathematical fit to the OLT curve for this account?

A. Yes. The SSD between the Company's Iowa curve and the truncated OLT curve is 1.2518, and the SSD between the R2.5-76 curve I selected, and the truncated OLT curve is 0.1759, which means it results in the closer fit.[38]

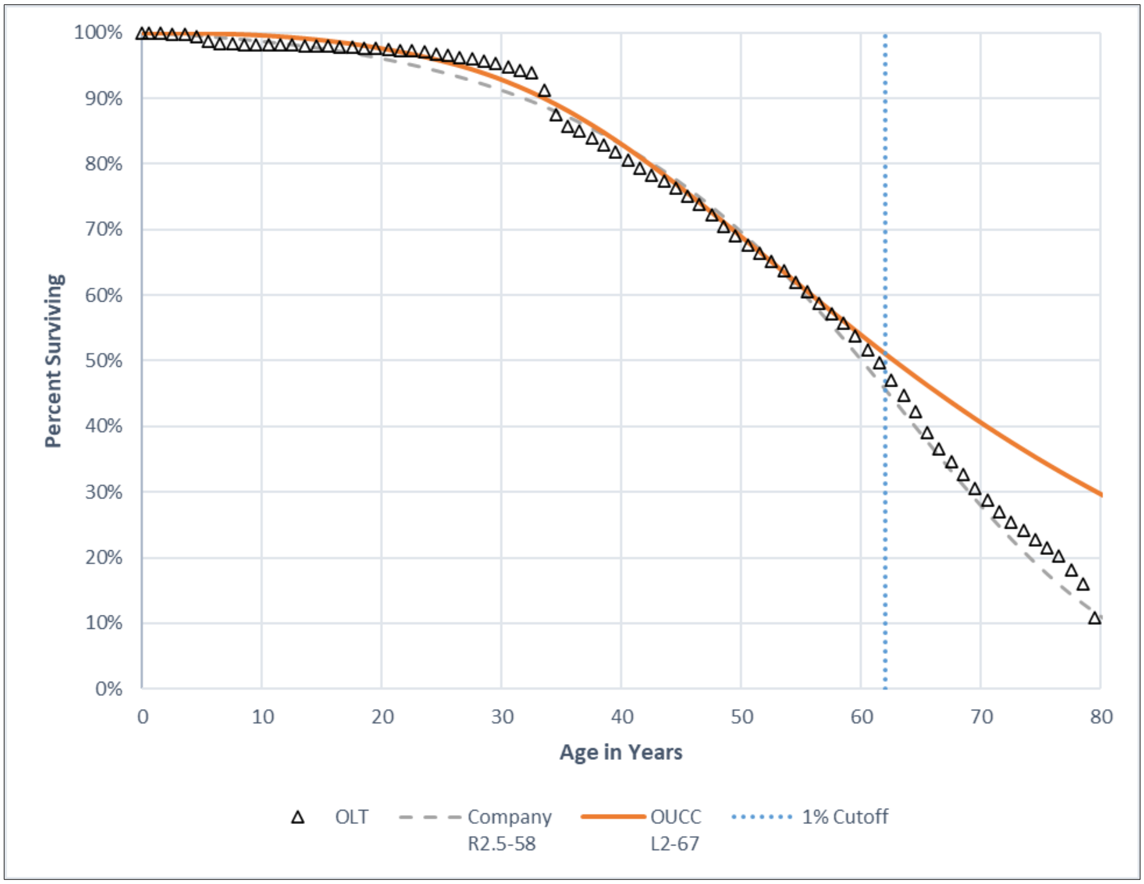
C. Account 364 – Poles, Towers, and Fixtures

Q. Please describe your service life estimate for this account and compare it with the Company's estimate.

A. Mr. Spanos selected the R2.5-58 curve for this account, and I selected the L2-67 curve. Both of these Iowa curves are shown with the OLT curve in the following graph.

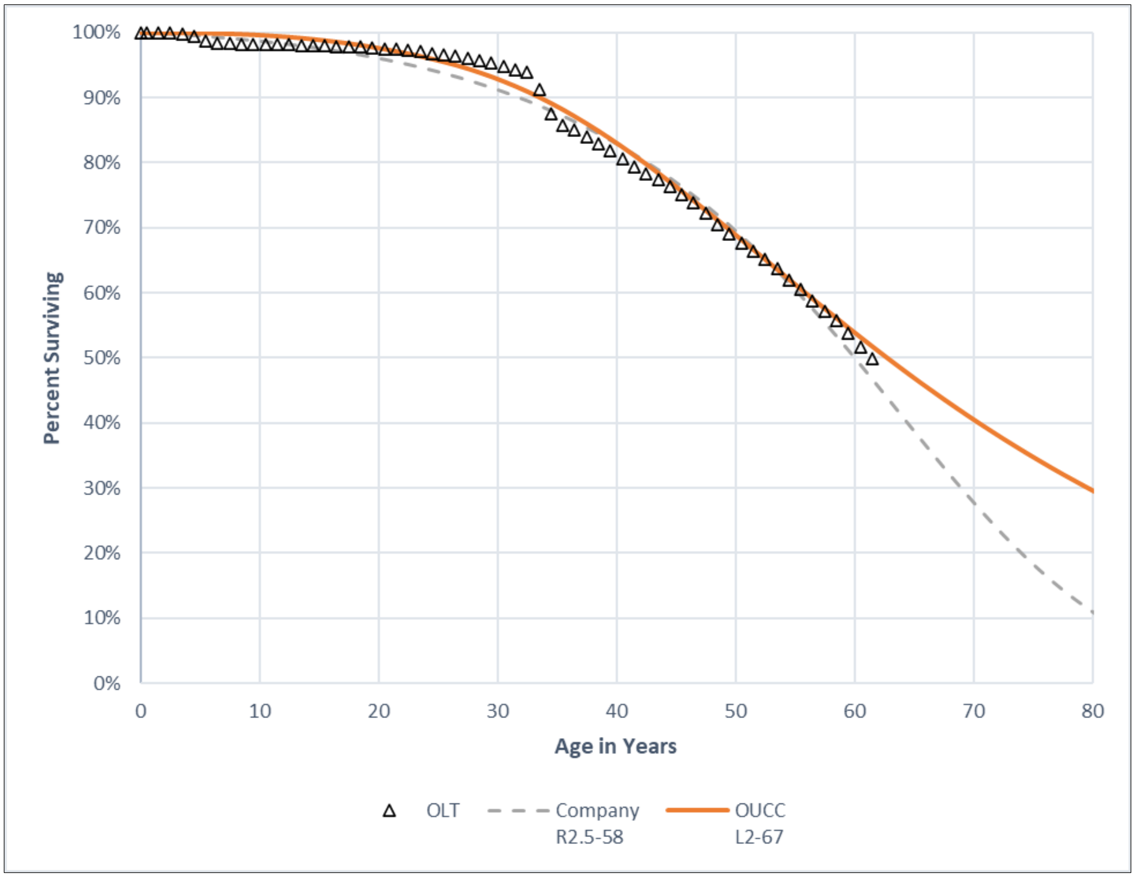
[38] Attachment DJG-9.

Figure 8:
Account 364 – Poles, Towers, and Fixtures



As shown in this graph, both Iowa curves closely track with the relevant portions OLT curve. After the truncation line, the L2-67 deviates from the observed retirement pattern. The dollar amounts associated with the upper portion of this OLT curve are around $100 million, while many of the data points occurring after the truncation line are associated with less than $1 million, which confirms that they are not statistically relevant. Regardless, unlike Account 356 discussed above, the Company's Iowa curve is unreasonable given the data presented. However, the L2-67 curve is also a reasonable alternative because it results in closer fits to the truncated OLT curve. The truncated OLT curve is shown in the following graph.

Figure 9:
Account 364 – With Truncated OLT Curve



As discussed above, the Iowa curve selected by Mr. Spanos for this account is not unreasonable in my opinion. However, given the substantial rate increase proposed by the Company in this case, the Commission might consider a reasonable alternative to mitigate the rate impact to customers. In addition, the L2-67 Iowa curve results in a closer fit to the truncated OLT curve, as further discussed below.

Q. Does the Iowa curve you selected result in a closer mathematical fit to the OLT curve for this account?

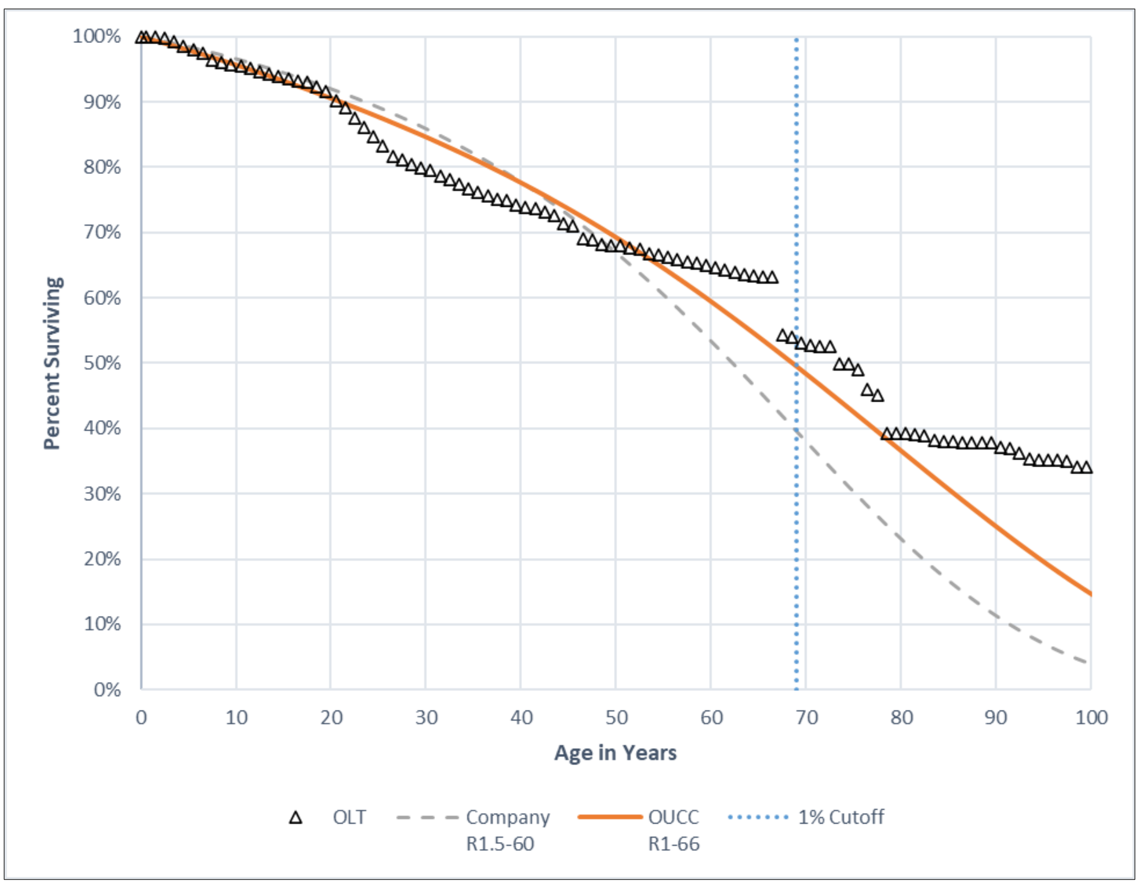
A. Yes, it does for the truncated OLT curve, but not for the entire OLT curve. The SSD between the Company's Iowa curve and the truncated OLT curve is 0.0218, and the SSD between the L2-67 curve I selected, and the truncated OLT curve is 0.0100, which means it results in the closer fit.[39]

D. <u>Account 366 – Underground Conduit</u>

Q. Please describe your service life estimate for this account and compare it with the Company's estimate.

A. Mr. Spanos selected the R1.5-60 curve for this account, and I selected the R1-66 curve. Both of these Iowa curves are shown with the OLT curve in the following graph.

Figure 10:
Account 366 – Underground Conduit



[39] Attachment DJG-10.

The flatter trajectory of this OLT curve is more reflective of a lower-modal Iowa curve such as the R1 curve shape. Interestingly, the truncation line occurs near a point in the OLT curve where there is a sudden decline, which indicates that the curve is becoming more erratic and statistically less relevant after age 66. The R1-66 curve appears to provide a better fit to the OLT curve through nearly all portions of the curve. We can use mathematical curve fitting to further assess the results.

Q. Does the Iowa curve you selected result in a closer mathematical fit to the OLT curve for this account?

A. Yes. The SSD between the Company's Iowa curve and the truncated OLT curve is 0.3107, and the SSD between the R1-66 curve I selected, and the truncated OLT curve is 0.1004, which means it results in the closer fit.[40]

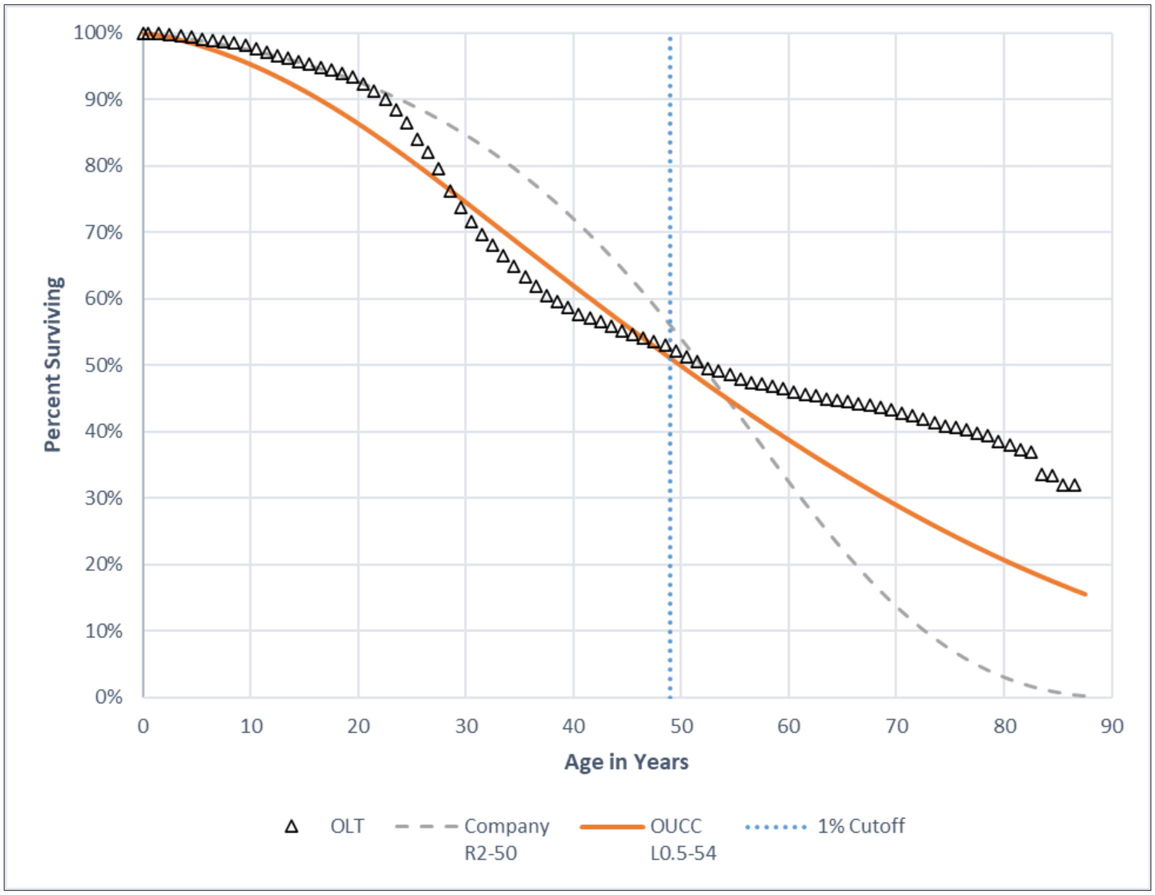
E. Account 367 – Underground Conductors and Devices

Q. Please describe your service life estimate for this account and compare it with the Company's estimate.

A. Mr. Spanos selected the R2-50 curve for this account, and I selected the L0.5-54 curve. Both of these Iowa curves are shown with the OLT curve in the following graph.

[40] Attachment DJG-11.

Figure 11:
Account 367 – Underground Conductors and Devices



The shape of the OLT curve for this account is relatively unusual, which can present a challenge for Iowa curve fitting. However, there is adequate retirement history in the account. The R2-50 curve selected by Mr. Spanos results in a close fit to the OLT curve in the earliest age intervals; but after age 25, it results in a poor fit to the rest of the OLT curve. The L0.5 curve I selected attempts to give credit to all portions of the truncated OLT curve.

Q. Does the Iowa curve you selected result in a closer mathematical fit to the OLT curve for this account?

A. Yes. The SSD between the Company's Iowa curve and the truncated OLT curve is 0.3242, and the SSD between the L0.5-54 curve I selected, and the truncated OLT curve is 0.0627, which means it results in the closer fit.[41]

F. Account 370.01 – Smart Meters

Q. Please describe your service life estimate for this account and compare it with the Company's estimate.

A. Mr. Spanos selected the S1-15 curve for this account, and I selected the L1-18 curve. Both of these Iowa curves are shown with the OLT curve in the following graph.

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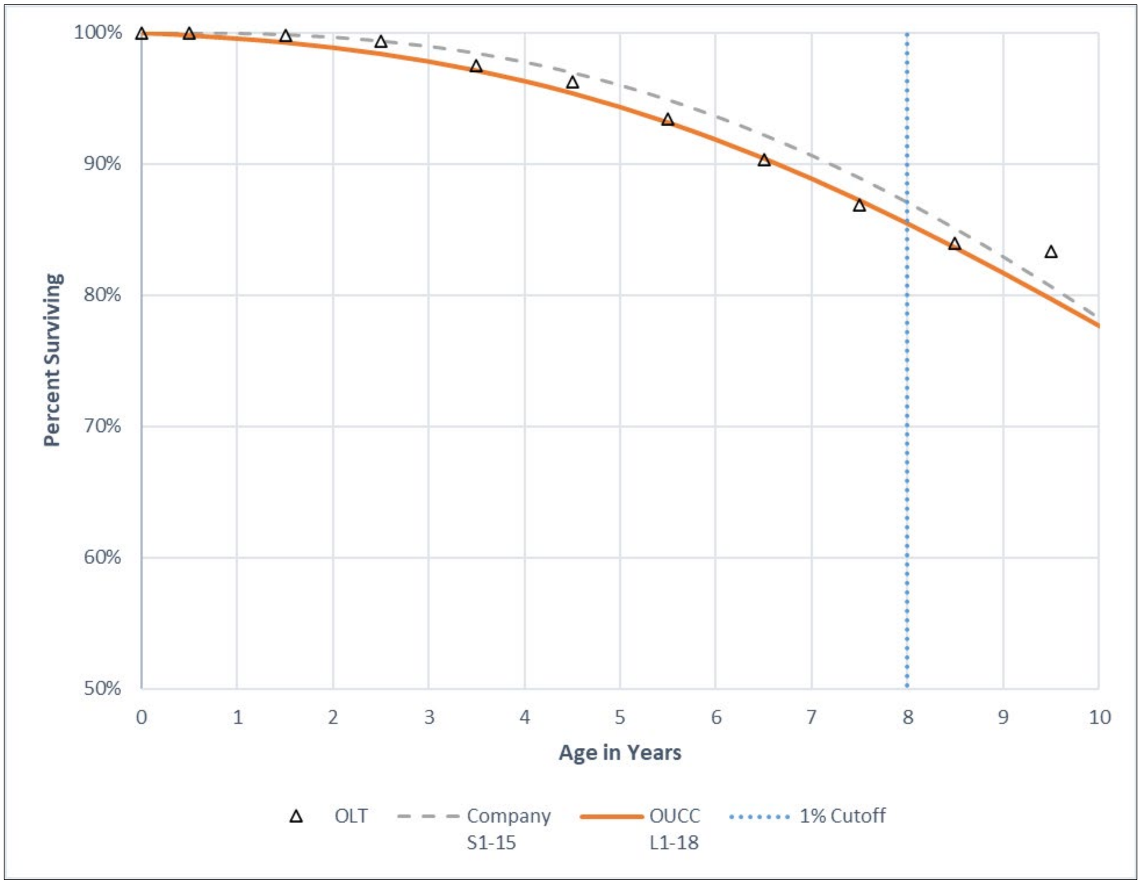
[41] Attachment DJG-12.

Figure 12:
Account 370.01 – Smart Meters



Given the limited amount of retirement experience in this account so far, it can be instructive to consider industry averages in addition to the utility-specific retirement data. The 15-year average life proposed by Mr. Spanos is not uncommon for this account, and it not outside the range of reasonableness. However, an 18-year average life is also within a reasonable range for this account and is a reasonable alternative for the Commission to consider. In addition, although the data is limited, the L1-18 curve also results in a closer fit to the truncated OLT curve.

Q. Does the Iowa curve you selected result in a closer mathematical fit to the OLT curve for this account?

A. Yes. The SSD between the Company's Iowa curve and the truncated OLT curve is 0.0011, and the SSD between the L1-18 curve I selected, and the truncated OLT curve is 0.0002, which means it results in the closer fit.[42]

Q. Does this conclude your depreciation testimony?

A. Yes.

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[42] Attachment DJG-12.

APPENDIX A:

THE DEPRECIATION SYSTEM

A depreciation accounting system may be thought of as a dynamic system in which estimates of life and salvage are inputs to the system, and the accumulated depreciation account is a measure of the state of the system at any given time.[1] The primary objective of the depreciation system is the timely recovery of capital. The process for calculating the annual accruals is determined by the factors required to define the system. A depreciation system should be defined by four primary factors: 1) a method of allocation; 2) a procedure for applying the method of allocation to a group of property; 3) a technique for applying the depreciation rate; and 4) a model for analyzing the characteristics of vintage groups comprising a continuous property group.[2] The figure below illustrates the basic concept of a depreciation system and includes some of the available parameters.[3]

There are hundreds of potential combinations of methods, procedures, techniques, and models, but in practice, analysts use only a few combinations. Ultimately, the system selected must result in the systematic and rational allocation of capital recovery for the utility. Each of the four primary factors defining the parameters of a depreciation system is discussed further below.

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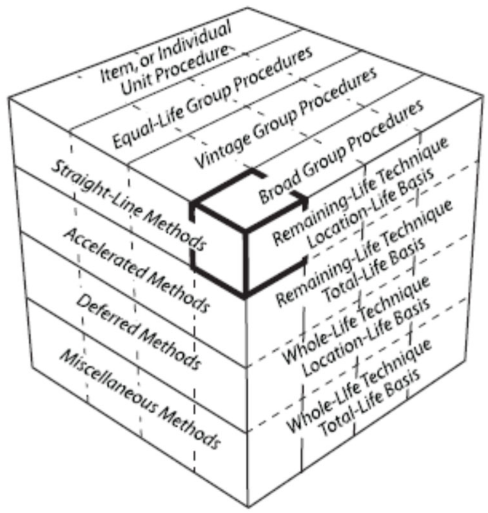
[1] Wolf & W. Chester Fitch, Depreciation Systems 69-70 (Iowa State University Press 1994).

[2] *Id.* at 70, 139–40.

[3] Edison Electric Institute, *Introduction to Depreciation* (inside cover) (EEI April 2013). Some definitions of the terms shown in this diagram are not consistent among depreciation practitioners and literature because depreciation analysis is a relatively small and fragmented field. This diagram simply illustrates some of the available parameters of a depreciation system.

Figure 1:
The Depreciation System Cube



1. <u>Allocation Methods</u>

The "method" refers to the pattern of depreciation in relation to the accounting periods. The method most commonly used in the regulatory context is the "straight-line method"—a type of age-life method in which the depreciable cost of plant is charged in equal amounts to each accounting period over the service life of plant.[4] Because group depreciation rates and plant balances often change, the amount of the annual accrual rarely remains the same, even when the straight-line method is employed.[5] The basic formula for the straight-line method is as follows:[6]

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[4] National Association of Regulatory Utility Commissioners, Public Utility Depreciation Practices 56 (NARUC 1996).

[5] *Id*.

[6] *Id*.

Equation 1:
Straight-Line Accrual

$$Annual\ Accrual = \frac{Gross\ Plant - Net\ Salvage}{Service\ Life}$$

Gross plant is a known amount from the utility's records, while both net salvage and service life must be estimated to calculate the annual accrual. The straight-line method differs from accelerated methods of recovery, such as the "sum-of-the-years-digits" method and the "declining balance" method. Accelerated methods are primarily used for tax purposes and are rarely used in the regulatory context for determining annual accruals.[7] In practice, the annual accrual is expressed as a rate which is applied to the original cost of plant to determine the annual accrual in dollars. The formula for determining the straight-line rate is as follows:[8]

Equation 2:
Straight-Line Rate

$$Depreciation\ Rate\ \% = \frac{100 - Net\ Salvage\ \%}{Service\ Life}$$

2. <u>Grouping Procedures</u>

The "procedure" refers to the way the allocation method is applied through subdividing the total property into groups.[9] While single units may be analyzed for depreciation, a group plan of depreciation is particularly adaptable to utility property. Employing a grouping procedure allows for a composite application of depreciation rates to groups of similar property, rather than conducting calculations for each unit. Whereas an individual unit of property has a single life, a group of property displays a dispersion of lives and the life characteristics of the group must be

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7 *Id*. at 57.

8 *Id*. at 56.

9 Wolf *supra* n. 1, at 74-75.

described statistically.[10] When analyzing mass property categories, it is important that each group contains homogenous units of plant that are used in the same general manner throughout the plant and operated under the same general conditions.[11]

The "average life" and "equal life" grouping procedures are the two most common. In the average life procedure, a constant annual accrual rate based on the average life of all property in the group is applied to the surviving property. While property having shorter lives than the group average will not be fully depreciated, and likewise, property having longer lives than the group average will be over-depreciated, the ultimate result is that the group will be fully depreciated by the time of the final retirement.[12] Thus, the average life procedure treats each unit as though its life is equal to the average life of the group. By contrast, the equal life procedure treats each unit in the group as though its life was known.[13] Under the equal life procedure the property is divided into subgroups that each has a common life.[14]

3. Application Techniques

The third factor of a depreciation system is the "technique" for applying the depreciation rate. There are two commonly used techniques: "whole life" and "remaining life." The whole life technique applies the depreciation rate on the estimated average service life of a group, while the remaining life technique seeks to recover undepreciated costs over the remaining life of the plant.[15]

In choosing the application technique, consideration should be given to the proper level of the accumulated depreciation account. Depreciation accrual rates are calculated using estimates

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[10] *Id*. at 74.

[11] NARUC *supra* n. 4, at 61–62.

[12] Wolf *supra* n. 1, at 74-75.

[13] *Id*. at 75.

[14] *Id*.

[15] NARUC *supra* n. 4, at 63–64.

of service life and salvage. Periodically these estimates must be revised due to changing conditions, which cause the accumulated depreciation account to be higher or lower than necessary. Unless some corrective action is taken, the annual accruals will not equal the original cost of the plant at the time of final retirement.[16] Analysts can calculate the level of imbalance in the accumulated depreciation account by determining the "calculated accumulated depreciation," (a.k.a. "theoretical reserve" and referred to in these appendices as "CAD"). The CAD is the calculated balance that would be in the accumulated depreciation account at a point in time using current depreciation parameters.[17] An imbalance exists when the actual accumulated depreciation account does not equal the CAD. The choice of application technique will affect how the imbalance is dealt with.

Use of the whole life technique requires that an adjustment be made to accumulated depreciation after calculation of the CAD. The adjustment can be made in a lump sum or over a period of time. With use of the remaining life technique, however, adjustments to accumulated depreciation are amortized over the remaining life of the property and are automatically included in the annual accrual.[18] This is one reason that the remaining life technique is popular among practitioners and regulators. The basic formula for the remaining life technique is as follows:[19]

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[16] Wolf *supra* n. 1, at 83.

[17] NARUC *supra* n. 4, at 325.

[18] NARUC *supra* n. 4, at 65 ("The desirability of using the remaining life technique is that any necessary adjustments of [accumulated depreciation] . . . are accrued automatically over the remaining life of the property. Once commenced, adjustments to the depreciation reserve, outside of those inherent in the remaining life rate would require regulatory approval.").

[19] *Id*. at 64.

Equation 3:
Remaining Life Accrual

$$Annual\ Accrual = \frac{Gross\ Plant - Accumulated\ Depreciation - Net\ Salvage}{Average\ Remaining\ Life}$$

The remaining life accrual formula is similar to the basic straight-line accrual formula above with two notable exceptions. First, the numerator has an additional factor in the remaining life formula: the accumulated depreciation. Second, the denominator is "average remaining life" instead of "average life." Essentially, the future accrual of plant (gross plant less accumulated depreciation) is allocated over the remaining life of plant. Thus, the adjustment to accumulated depreciation is "automatic" in the sense that it is built into the remaining life calculation.[20]

4. <u>Analysis Model</u>

The fourth parameter of a depreciation system, the "model," relates to the way of viewing the life and salvage characteristics of the vintage groups that have been combined to form a continuous property group for depreciation purposes.[21] A continuous property group is created when vintage groups are combined to form a common group. Over time, the characteristics of the property may change, but the continuous property group will continue. The two analysis models used among practitioners, the "broad group" and the "vintage group," are two ways of viewing the life and salvage characteristics of the vintage groups that have been combined to form a continuous property group.

The broad group model views the continuous property group as a collection of vintage groups that each have the same life and salvage characteristics. Thus, a single survivor curve and a single salvage schedule are chosen to describe all the vintages in the continuous property group.

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[20] Wolf *supra* n. 1, at 178.

[21] *See* Wolf *supra* n. 1, at 139 (I added the term "model" to distinguish this fourth depreciation system parameter from the other three parameters).

By contrast, the vintage group model views the continuous property group as a collection of vintage groups that may have different life and salvage characteristics. Typically, there is not a significant difference between vintage group and broad group results unless vintages within the applicable property group experienced dramatically different retirement levels than anticipated in the overall estimated life for the group. For this reason, many analysts utilize the broad group procedure because it is more efficient.

APPENDIX B:

IOWA CURVES

Early work in the analysis of the service life of industrial property was based on models that described the life characteristics of human populations.[1] This history explains why the word "mortality" is often used in the context of depreciation analysis. In fact, a group of property installed during the same accounting period is analogous to a group of humans born during the same calendar year. Each period the group will incur a certain fraction of deaths / retirements until there are no survivors. Describing this pattern of mortality is part of actuarial analysis and is regularly used by insurance companies to determine life insurance premiums. The pattern of mortality may be described by several mathematical functions, particularly the survivor curve and frequency curve. Each curve may be derived from the other so that if one curve is known, the other may be obtained. A survivor curve is a graph of the percent of units remaining in service expressed as a function of age.[2] A frequency curve is a graph of the frequency of retirements as a function of age. Several types of survivor and frequency curves are illustrated in the figures below.

1. Development

The survivor curves used by analysts today were developed over several decades from extensive analysis of utility and industrial property. In 1931, Edwin Kurtz and Robley Winfrey used extensive data from a range of 65 industrial property groups to create survivor curves representing the life characteristics of each group of property.[3] They generalized the 65 curves into 13 survivor curve types and published their results in *Bulletin 103: Life Characteristics of Physical Property*. The 13 type curves were designed to be used as valuable aids in forecasting

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[1] Wolf & W. Chester Fitch, Depreciation Systems 276 (Iowa State University Press 1994).

[2] *Id*. at 23.

[3] *Id*. at 34.

probable future service lives of industrial property. Over the next few years, Winfrey continued gathering additional data, particularly from public utility property and expanded the examined property groups from 65 to 176.[4] This research resulted in 5 additional survivor curve types for a total of 18 curves. In 1935, Winfrey published *Bulletin 125: Statistical Analysis of Industrial Property Retirements*. According to Winfrey, "[t]he 18 type curves are expected to represent quite well all survivor curves commonly encountered in utility and industrial practices."[5] These curves are known as the "Iowa curves" and are used extensively in depreciation analysis in order to obtain the average service lives of property groups. (Use of Iowa curves in actuarial analysis is further discussed in Appendix C.)

In 1942, Winfrey published *Bulletin 155: Depreciation of Group Properties*. In Bulletin 155, Winfrey made some slight revisions to a few of the 18 curve types, and published the equations, tables of the percent surviving, and probable life of each curve at five-percent intervals.[6] Rather than using the original formulas, analysts typically rely on the published tables containing the percentages surviving. This reliance is necessary because, absent knowledge of the integration technique applied to each age interval, it is not possible to recreate the exact original published table values. In the 1970s, John Russo collected data from over 2,000 property accounts reflecting observations during the period 1965 – 1975 as part of his Ph.D. dissertation at Iowa State. Russo essentially repeated Winfrey's data collection, testing, and analysis methods used to develop the original Iowa curves, except that Russo studied industrial property in service several decades after

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[4] *Id*.

[5] Robley Winfrey, *Bulletin 125: Statistical Analyses of Industrial Property Retirements* 85, Vol. XXXIV, No. 23 (Iowa State College of Agriculture and Mechanic Arts 1935).

[6] Robley Winfrey, Bulletin 155: Depreciation of Group Properties 121-28, Vol XLI, No. 1 (The Iowa State College Bulletin 1942); see also Wolf supra n.7, at 305–38 (publishing the percent surviving for each Iowa curve, including "O" type curve, at one percent intervals).

Winfrey published the original Iowa curves. Russo drew three major conclusions from his research:[7]

1. No evidence was found to conclude that the Iowa curve set, as it stands, is not a valid system of standard curves;

2. No evidence was found to conclude that new curve shapes could be produced at this time that would add to the validity of the Iowa curve set; and

3. No evidence was found to suggest that the number of curves within the Iowa curve set should be reduced.

Prior to Russo's study, some had criticized the Iowa curves as being potentially obsolete because their development was rooted in the study of industrial property in existence during the early 1900s. Russo's research, however, negated this criticism by confirming that the Iowa curves represent a sufficiently wide range of life patterns and that, though technology will change over time, the underlying patterns of retirements remain constant and can be adequately described by the Iowa curves.[8]

Over the years, several more curve types have been added to Winfrey's 18 Iowa curves. In 1967, Harold Cowles added four origin-modal curves. In addition, a square curve is sometimes used to depict retirements which are all planned to occur at a given age. Finally, analysts commonly rely on several "half curves" derived from the original Iowa curves. Thus, the term "Iowa curves" could be said to describe up to 31 standardized survivor curves.

2. Classification

The Iowa curves are classified by three variables: modal location, average life, and variation of life. First, the mode is the percent life that results in the highest point of the frequency

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[7] *See* Wolf *supra* n. 1, at 37.

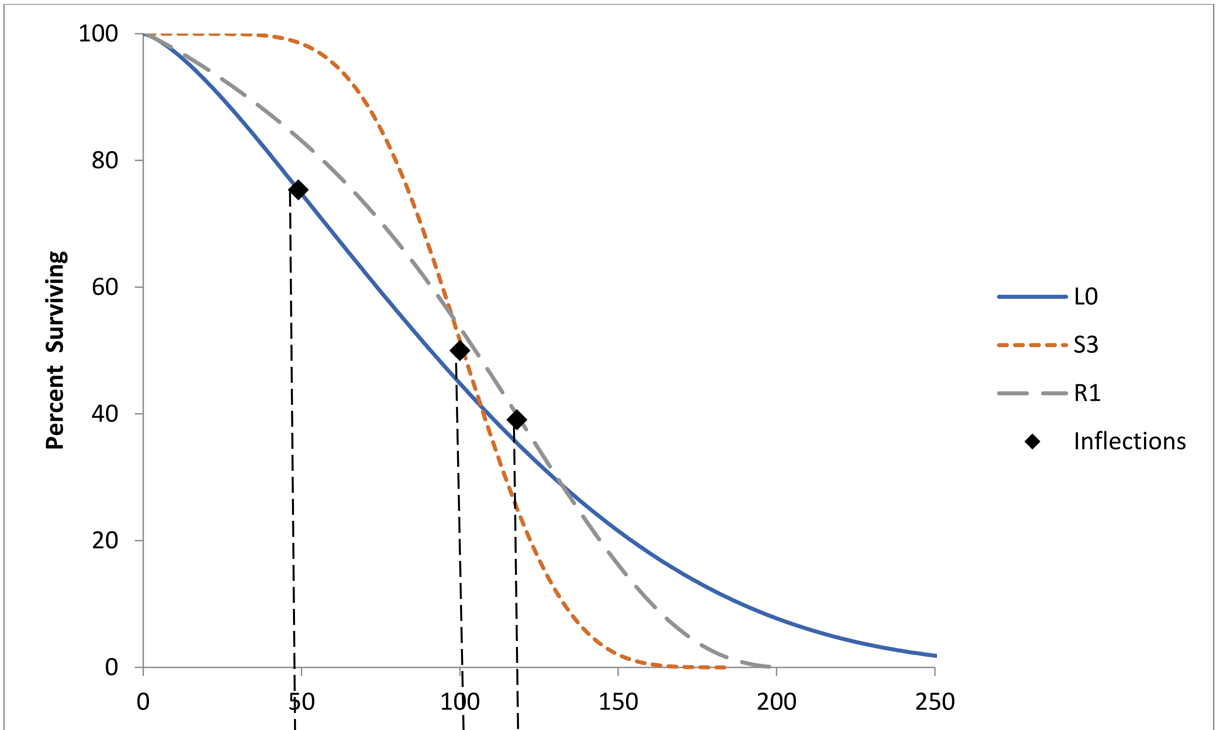
[8] *Id*.

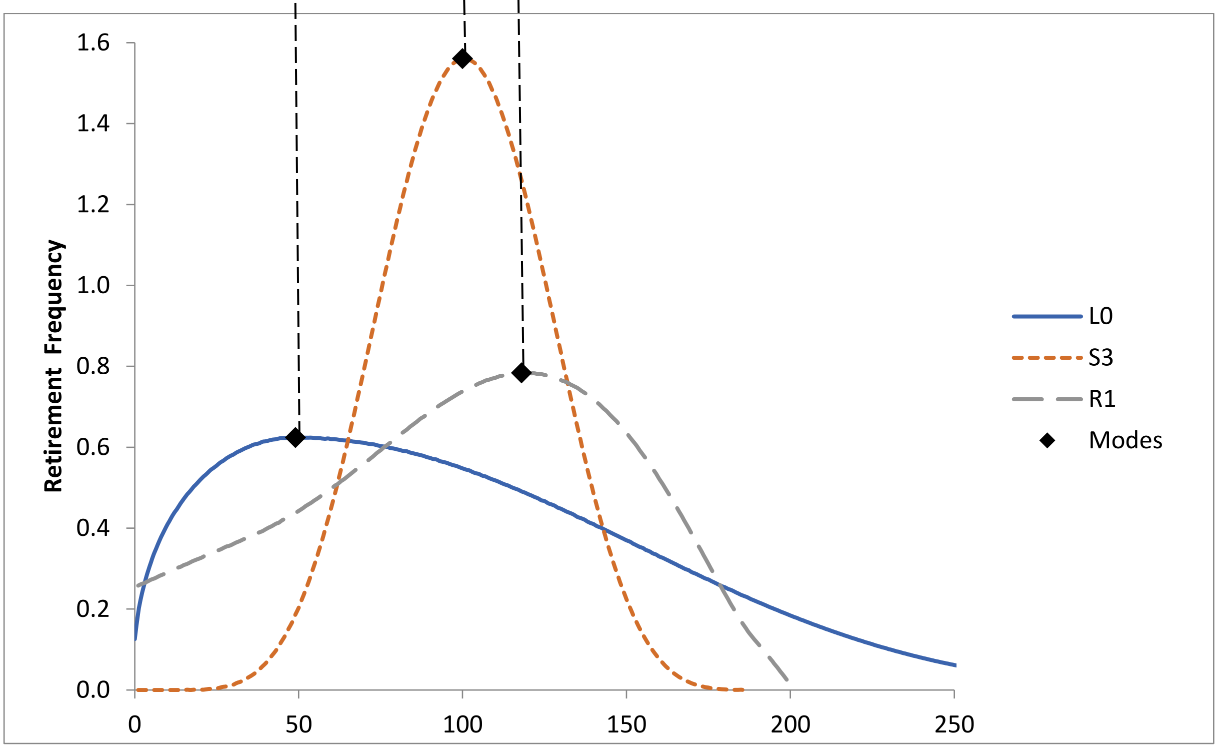
curve and the "inflection point" on the survivor curve. The modal age is the age at which the greatest rate of retirement occurs. As illustrated in the figure below, the modes appear at the steepest point of each survivor curve in the top graph, as well as the highest point of each corresponding frequency curve in the bottom graph.

The classification of the survivor curves was made according to whether the mode of the retirement frequency curves was to the left, to the right, or coincident with average service life. There are three modal "families" of curves: six left modal curves (L0, L1, L2, L3, L4, L5); five right modal curves (R1, R2, R3, R4, R5); and seven symmetrical curves (S0, S1, S2, S3, S4, S5, S6).[9] In the figure below, one curve from each family is shown: L0, S3 and R1, with average life at 100 on the x-axis. It is clear from the graphs that the modes for the L0 and R1 curves appear to the left and right of average life respectively, while the S3 mode is coincident with average life.

[9] In 1967, Harold A. Cowles added four origin-modal curves known as "O type" curves. There are also several "half" curves and a square curve, so the total amount of survivor curves commonly called "Iowa" curves is about 31.

Figure 1:
Modal Age Illustration





The second Iowa curve classification variable is average life. The Iowa curves were designed using a single parameter of age expressed as a percent of average life instead of actual age. This design was necessary for the curves to be of practical value. As Winfrey notes:

> Since the location of a particular survivor on a graph is affected by both its span in years and the shape of the curve, it is difficult to classify a group of curves unless one of these variables can be controlled. This is easily done by expressing the age in percent of average life."[10]

Because age is expressed in terms of percent of average life, any particular Iowa curve type can be modified to forecast property groups with various average lives.

The third variable, variation of life, is represented by the numbers next to each letter. A lower number (e.g., L1) indicates a relatively low mode, large variation, and large maximum life; a higher number (e.g., L5) indicates a relatively high mode, small variation, and small maximum life. All three classification variables – modal location, average life, and variation of life – are used to describe each Iowa curve. For example, a 13-L1 Iowa curve describes a group of property with a 13-year average life, with the greatest number of retirements occurring before (or to the left of) the average life, and a relatively low mode. The graphs below show these 18 survivor curves, organized by modal family.

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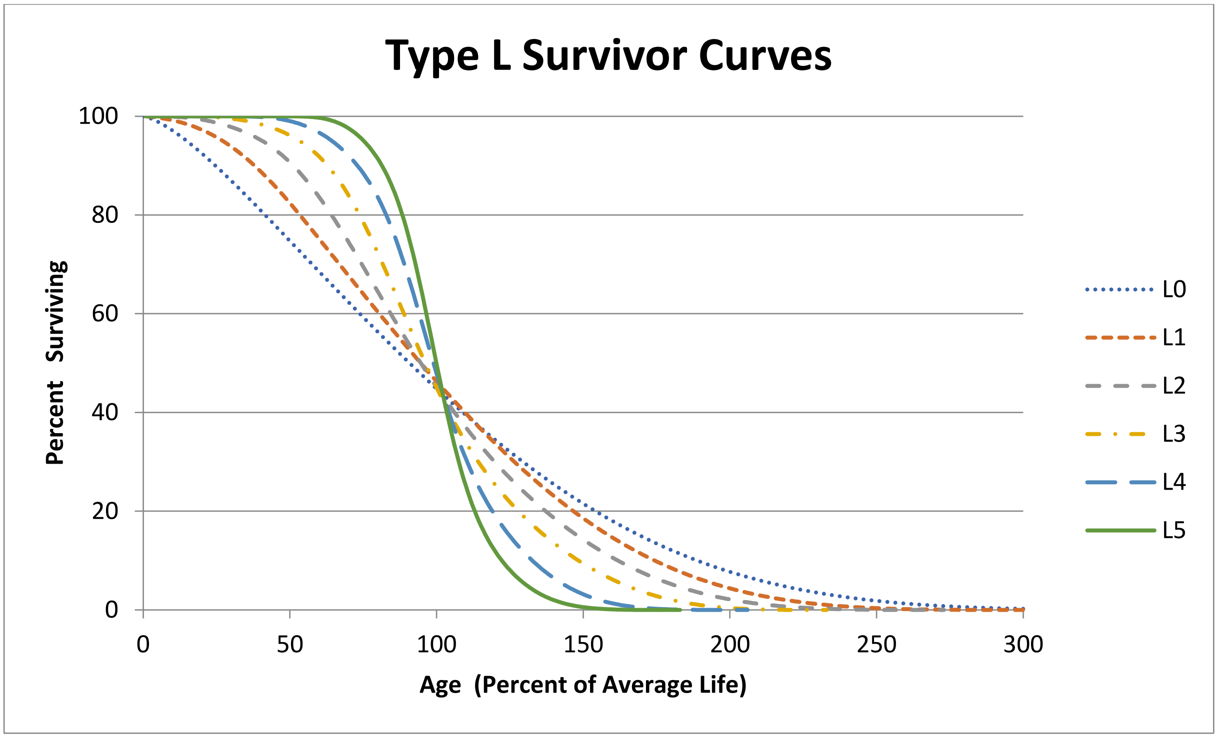
[10] Winfrey *supra* n. 6, at 60.

Figure 2:
Type L Survivor and Frequency Curves



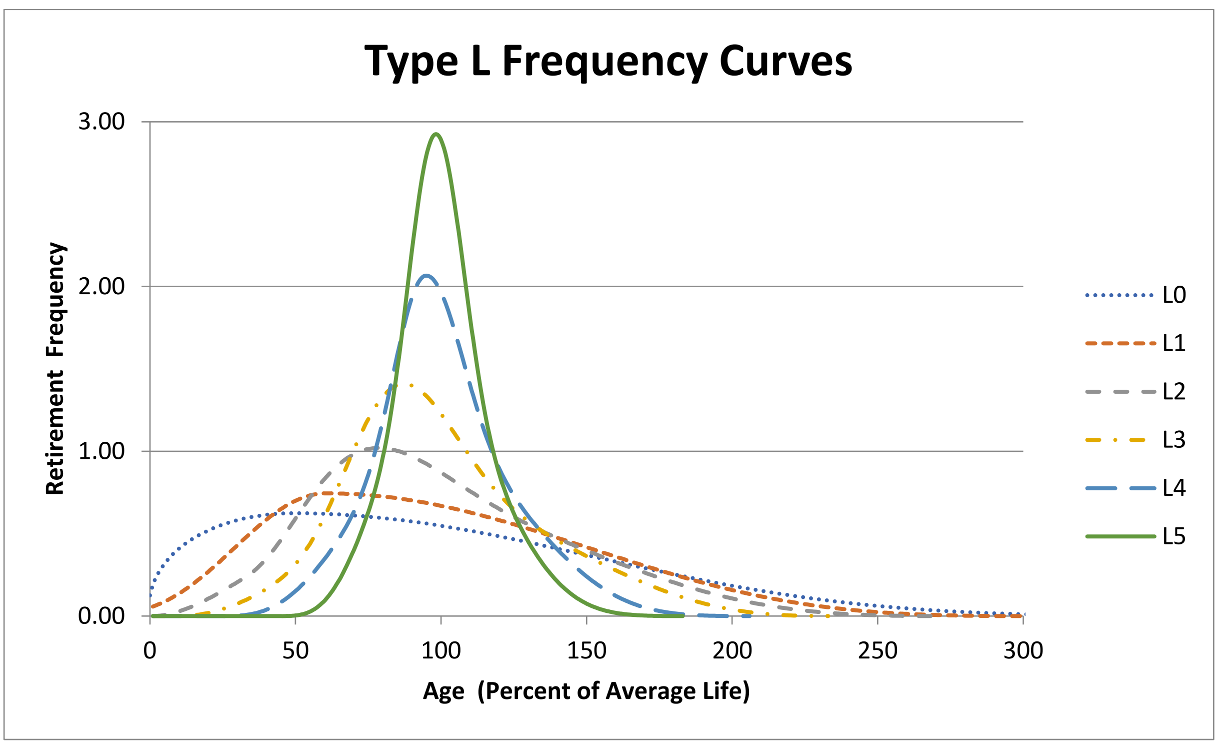
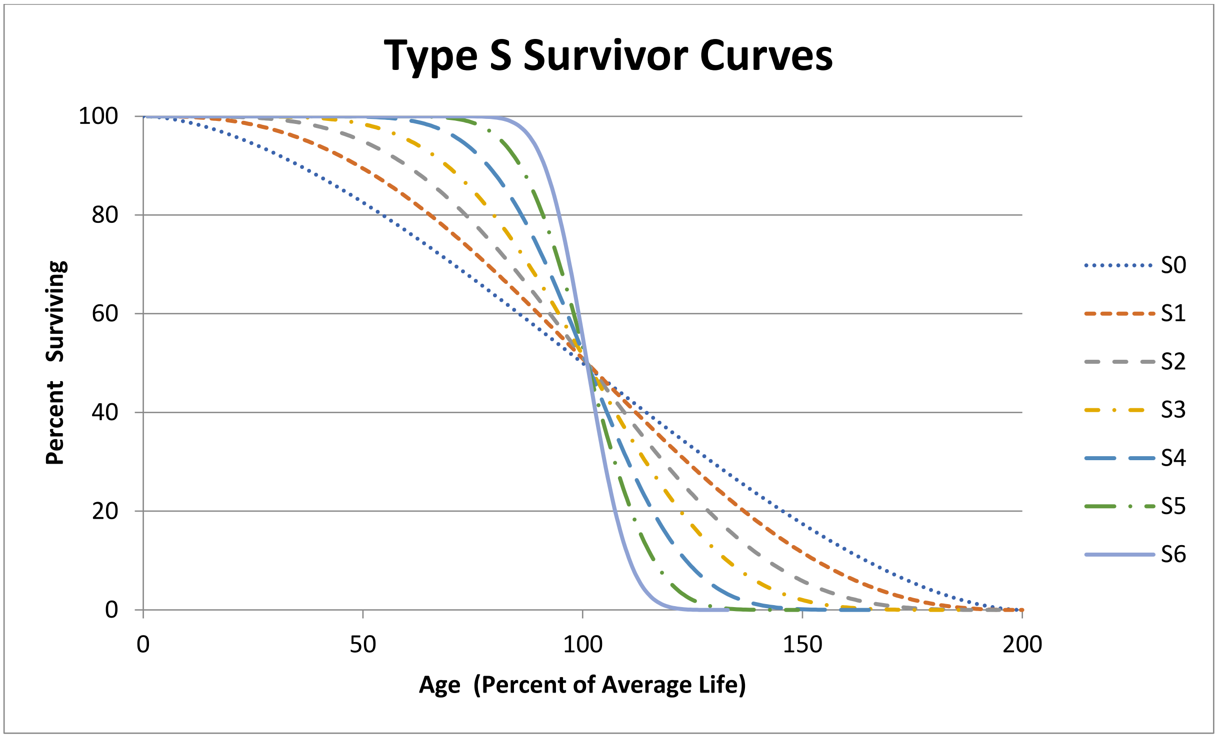


**Figure 3:
Type S Survivor and Frequency Curves**



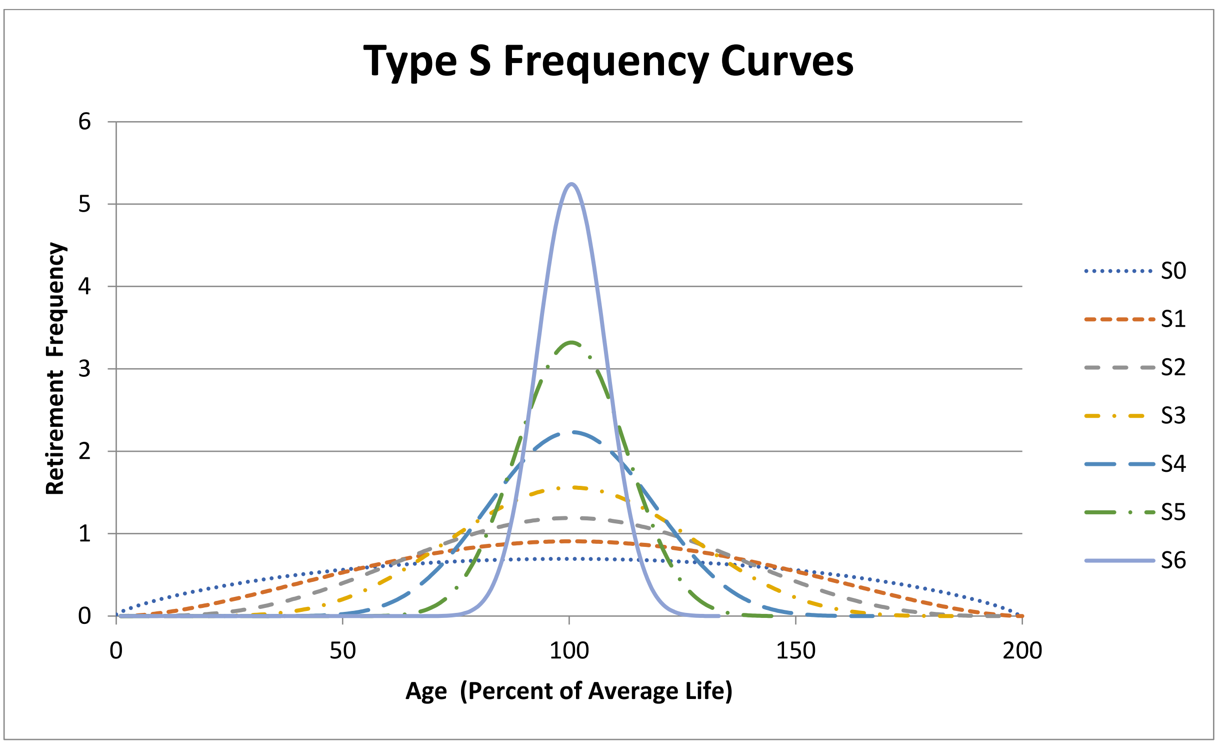
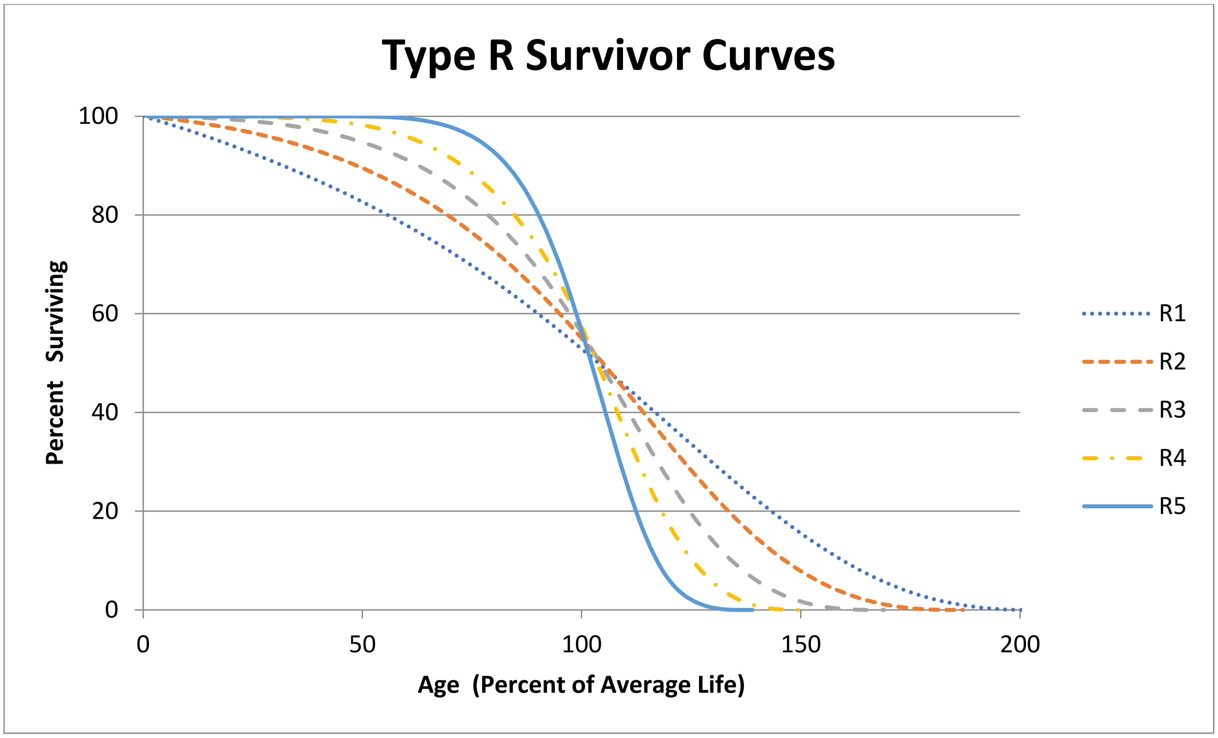
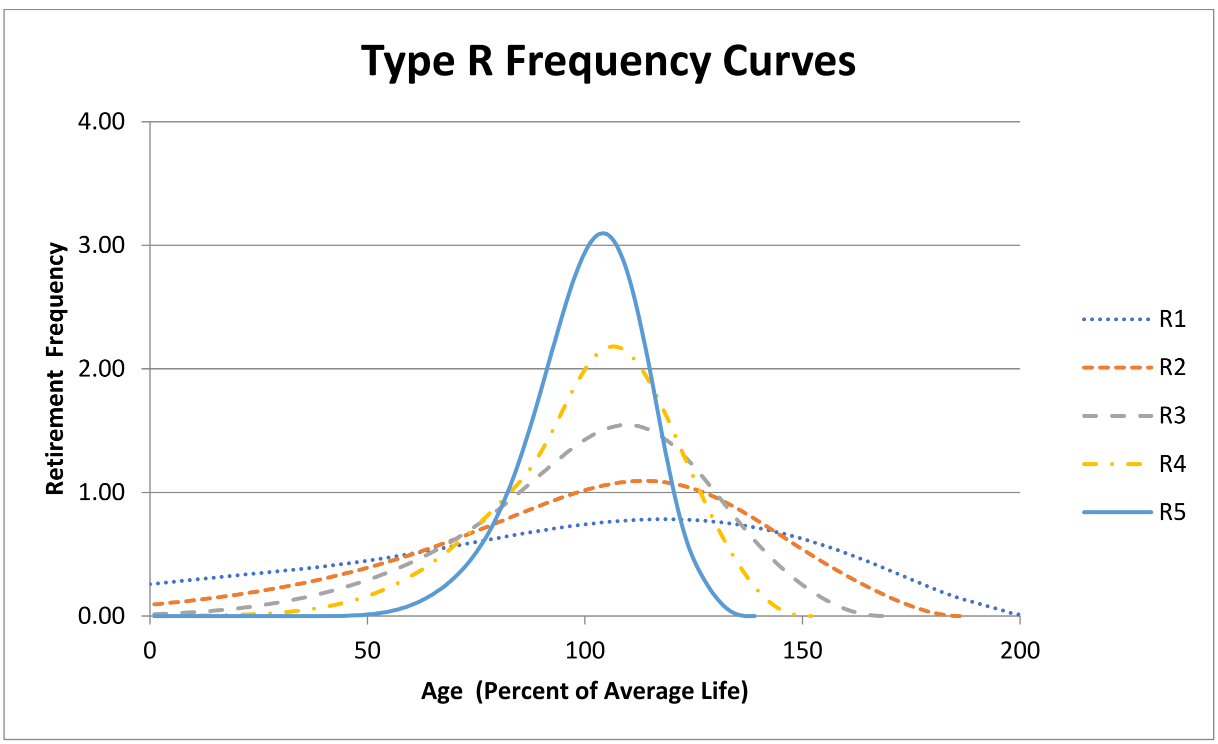


Figure 4:
Type R Survivor and Frequency Curves





As shown in the graphs above, the modes for the L family frequency curves occur to the left of average life (100% on the x-axis), while the S family modes occur at the average, and the R family modes occur after the average.

3. Types of Lives

Several other important statistical analyses and types of lives may be derived from an Iowa curve. These include: 1) average life; 2) realized life; 3) remaining life; and 4) probable life. The figure below illustrates these concepts. It shows the frequency curve, survivor curve, and probable life curve. Age M_x on the x-axis represents the modal age, while age AL_x represents the average age. Thus, this figure illustrates an "L type" Iowa curve since the mode occurs before the average.[11]

First, average life is the area under the survivor curve from age zero to maximum life. Because the survivor curve is measured in percent, the area under the curve must be divided by 100% to convert it from percent-years to years. The formula for average life is as follows:[12]

Equation 1:
Average Life

$$Average\ Life = \frac{Area\ Under\ Survivor\ Curve\ from\ Age\ 0\ to\ Max\ Life}{100\%}$$

Thus, average life may not be determined without a complete survivor curve. Many property groups being analyzed will not have experienced full retirement. This dynamic results in a "stub" survivor curve. Iowa curves are used to extend stub curves to maximum life in order to make the average life calculation (see Appendix C).

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[11] From age zero to age M_x on the survivor curve, it could be said that the percent surviving from this property group is decreasing at an increasing rate. Conversely, from point M_x to maximum on the survivor curve, the percent surviving is decreasing at a decreasing rate.

[12] National Association of Regulatory Utility Commissioners, Public Utility Depreciation Practices 71 (NARUC 1996).

Realized life is similar to average life, except that realized life is the average years of service experienced to date from the vintage's original installations.[13] As shown in the figure below, realized life is the area under the survivor curve from zero to age RL_X. Likewise, unrealized life is the area under the survivor curve from age RL_X to maximum life. Thus, it could be said that average life equals realized life plus unrealized life.

Average remaining life represents the future years of service expected from the surviving property.[14] Remaining life is sometimes referred to as "average remaining life" and "life expectancy." To calculate average remaining life at age x, the area under the estimated future portion of the survivor curve is divided by the percent surviving at age x (denoted S_X). Thus, the average remaining life formula is:

Equation 2:
Average Remaining Life

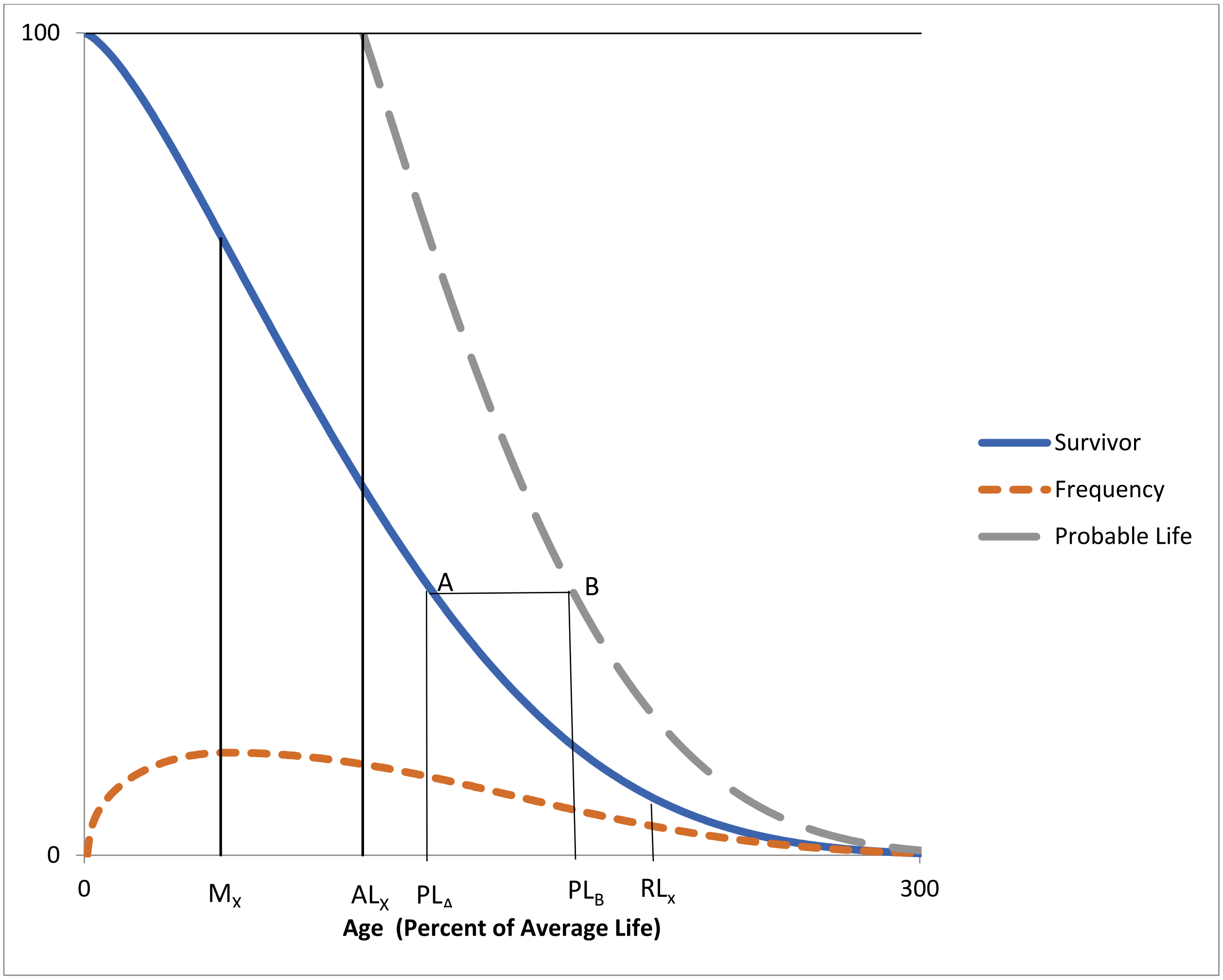
$$Average\ Remaining\ Life = \frac{Area\ Under\ Survivor\ Curve\ from\ Age\ x\ to\ Max\ Life}{S_X}$$

It is necessary to determine average remaining life to calculate the annual accrual under the remaining life technique.

[13] *Id*. at 73.

[14] *Id*. at 74.

Figure 5:
Iowa Curve Derivations



Finally, the probable life may also be determined from the Iowa curve. The probable life of a property group is the total life expectancy of the property surviving at any age and is equal to the remaining life plus the current age.[15] The probable life is also illustrated in this figure. The probable life at age PL_A is the age at point PL_B. Thus, to read the probable life at age PL_A, see the corresponding point on the survivor curve above at point "A," then horizontally to point "B" on

[15] Wolf *supra* n. 1, at 28.

the probable life curve, and back down to the age corresponding to point "B." It is no coincidence that the vertical line from AL_X connects at the top of the probable life curve. This connection occurs because at age zero, probable life equals average life.

APPENDIX C:

ACTUARIAL ANALYSIS

Actuarial science is a discipline that applies various statistical methods to assess risk probabilities and other related functions. Actuaries often study human mortality. The results from historical mortality data are used to predict how long similar groups of people who are alive today will live. Insurance companies rely on actuarial analysis in determining premiums for life insurance policies.

The study of human mortality is analogous to estimating service lives of industrial property groups. While some humans die solely from chance, most deaths are related to age; that is, death rates generally increase as age increases. Similarly, physical plant is also subject to forces of retirement. These forces include physical, functional, and contingent factors, as shown in the table below.[1]

Figure 1:
Forces of Retirement

Physical Factors	Functional Factors	Contingent Factors
Wear and tear Decay or deterioration Action of the elements	Inadequacy Obsolescence Changes in technology Regulations Managerial discretion	Casualties or disasters Extraordinary obsolescence

While actuaries study historical mortality data in order to predict how long a group of people will live, depreciation analysts must look at a utility's historical data in order to estimate the average lives of property groups. A utility's historical data is often contained in the Continuing

[1] National Association of Regulatory Utility Commissioners, Public Utility Depreciation Practices 14-15 (NARUC 1996).

Property Records ("CPR"). Generally, a CPR should contain 1) an inventory of property record units; 2) the association of costs with such units; and 3) the dates of installation and removal of plant. Since actuarial analysis includes the examination of historical data to forecast future retirements, the historical data used in the analysis should not contain events that are anomalous or unlikely to recur.[2] Historical data is used in the retirement rate actuarial method, which is discussed further below.

<u>The Retirement Rate Method</u>

There are several systematic actuarial methods that use historical data to calculate observed survivor curves for property groups. Of these methods, the retirement rate method is superior, and is widely employed by depreciation analysts.[3] The retirement rate method is ultimately used to develop an observed survivor curve, which can be fitted with an Iowa curve discussed in Appendix B to forecast average life. The observed survivor curve is calculated by using an observed life table ("OLT"). The figures below illustrate how the OLT is developed. First, historical property data are organized in a matrix format, with placement years on the left forming rows, and experience years on the top forming columns. The placement year (a.k.a. "vintage year" or "installation year") is the year of placement into service of a group of property. The experience year (a.k.a. "activity year") refers to the accounting data for a particular calendar year. The two matrices below use aged data—that is, data for which the dates of placements, retirements, transfers, and other transactions are known. Without aged data, the retirement rate actuarial method may not be employed. The first matrix is the exposure matrix, which shows the exposures

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[2] *Id*. at 112–13.

[3] Anson Marston, Robley Winfrey & Jean C. Hempstead, *Engineering Valuation and Depreciation* 154 (2nd ed., McGraw-Hill Book Company, Inc. 1953).

at the beginning of each year.[4] An exposure is simply the depreciable property subject to retirement during a period. The second matrix is the retirement matrix, which shows the annual retirements during each year. Each matrix covers placement years 2003–2015, and experience years 2008–2015. In the exposure matrix, the number in the 2012 experience column and the 2003 placement row is $192,000. This means at the beginning of 2012, there was $192,000 still exposed to retirement from the vintage group placed in 2003. Likewise, in the retirement matrix, $19,000 of the dollars invested in 2003 were retired during 2012.

Figure 2:
Exposure Matrix

	Experience Years Exposures at January 1 of Each Year (Dollars in 000's)									
Placement Years	2008	2009	2010	2011	2012	2013	2014	2015	Total at Start of Age Interval	Age Interval
2003	261	245	228	211	**192**	173	152	131	131	11.5 - 12.5
2004	267	252	236	220	202	**184**	165	145	297	10.5 - 11.5
2005	304	291	277	263	248	232	**216**	198	536	9.5 - 10.5
2006	345	334	322	310	298	284	270	**255**	**847**	8.5 - 9.5
2007	367	357	347	335	324	312	299	286	1,201	7.5 - 8.5
2008	375	366	357	347	336	325	314	302	1,581	6.5 - 7.5
2009		377	366	356	346	336	327	319	1,986	5.5 - 6.5
2010			381	369	358	347	336	327	2,404	4.5 - 5.5
2011				386	372	359	346	334	2,559	3.5 - 4.5
2012					395	380	366	352	2,722	2.5 - 3.5
2013						401	385	370	2,866	1.5 - 2.5
2014							410	393	2,998	0.5 - 1.5
2015								416	3,141	0.0 - 0.5
Total	1919	2222	2514	2796	3070	3333	3586	3827	23,268	

[4] Technically, the last numbers in each column are "gross additions" rather than exposures. Gross additions do not include adjustments and transfers applicable to plant placed in a previous year. Once retirements, adjustments, and transfers are factored in, the balance at the beginning of the next accounting period is called an "exposure" rather than an addition.

Figure 3:
Retirement Matrix

	Experience Years Retirements During the Year (000's)									
Placement Years	2008	2009	2010	2011	2012	2013	2014	2015	Total at Start of Age Interval	Age Interval
2003	16	17	18	19	19	20	21	23	23	11.5 - 12.5
2004	15	16	17	17	18	19	20	21	43	10.5 - 11.5
2005	13	14	14	15	16	17	17	18	59	9.5 - 10.5
2006	11	12	12	13	13	14	15	15	71	8.5 - 9.5
2007	10	11	11	12	12	13	13	14	82	7.5 - 8.5
2008	9	9	10	10	11	11	12	13	91	6.5 - 7.5
2009		11	10	10	9	9	9	8	95	5.5 - 6.5
2010			12	11	11	10	10	9	100	4.5 - 5.5
2011				14	13	13	12	11	93	3.5 - 4.5
2012					15	14	14	13	91	2.5 - 3.5
2013						16	15	14	93	1.5 - 2.5
2014							17	16	100	0.5 - 1.5
2015								18	112	0.0 - 0.5
Total	74	89	104	121	139	157	175	194	1,052	

These matrices help visualize how exposure and retirement data are calculated for each age interval. An age interval is typically one year. A common convention is to assume that any unit installed during the year is installed in the middle of the calendar year (i.e., July 1st). This convention is called the "half-year convention" and effectively assumes that all units are installed uniformly during the year.[5] Adoption of the half-year convention leads to age intervals of 0–0.5 years, 0.5–1.5 years, etc., as shown in the matrices.

The purpose of the matrices is to calculate the totals for each age interval, which are shown in the second column from the right in each matrix. This column is calculated by adding each number from the corresponding age interval in the matrix. For example, in the exposure matrix, the total amount of exposures at the beginning of the 8.5–9.5 age interval is $847,000. This number was calculated by adding the numbers shown on the "stairs" to the left (192+184+216+255=847).

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[5] Frank K. Wolf & W. Chester Fitch, Depreciation Systems 22 (Iowa State University Press 1994).

The same calculation is applied to each number in the column. The amounts retired during the year in the retirements matrix affect the exposures at the beginning of each year in the exposures matrix. For example, the amount exposed to retirement in 2008 from the 2003 vintage is $261,000. The amount retired during 2008 from the 2003 vintage is $16,000. Thus, the amount exposed to retirement at the beginning of 2009 from the 2003 vintage is $245,000 ($261,000 - $16,000). The company's property records may contain other transactions which affect the property, including sales, transfers, and adjusting entries. Although these transactions are not shown in the matrices above, they would nonetheless affect the amount exposed to retirement at the beginning of each year.

The totaled amounts for each age interval in both matrices are used to form the exposure and retirement columns in the OLT, as shown in the chart below. This chart also shows the retirement ratio and the survivor ratio for each age interval. The retirement ratio for an age interval is the ratio of retirements during the interval to the property exposed to retirement at the beginning of the interval. The retirement ratio represents the probability that the property surviving at the beginning of an age interval will be retired during the interval. The survivor ratio is simply the complement to the retirement ratio (1 – retirement ratio). The survivor ratio represents the probability that the property surviving at the beginning of an age interval will survive to the next age interval.

Figure 4:
Observed Life Table

Age at Start of Interval	Exposures at Start of Age Interval	Retirements During Age Interval	Retirement Ratio	Survivor Ratio	Percent Surviving at Start of Age Interval
A	B	C	D = C / B	E = 1 - D	F
0.0	3,141	112	0.036	0.964	**100.00**
0.5	2,998	100	0.033	0.967	**96.43**
1.5	2,866	93	0.032	0.968	**93.21**
2.5	2,722	91	0.033	0.967	**90.19**
3.5	2,559	93	0.037	0.963	**87.19**
4.5	2,404	100	0.042	0.958	**84.01**
5.5	1,986	95	0.048	0.952	**80.50**
6.5	1,581	91	0.058	0.942	**76.67**
7.5	1,201	82	0.068	0.932	**72.26**
8.5	847	71	0.084	0.916	**67.31**
9.5	536	59	0.110	0.890	**61.63**
10.5	297	43	0.143	0.857	**54.87**
11.5	131	23	0.172	0.828	**47.01**
					38.91
Total	23,268	1,052			

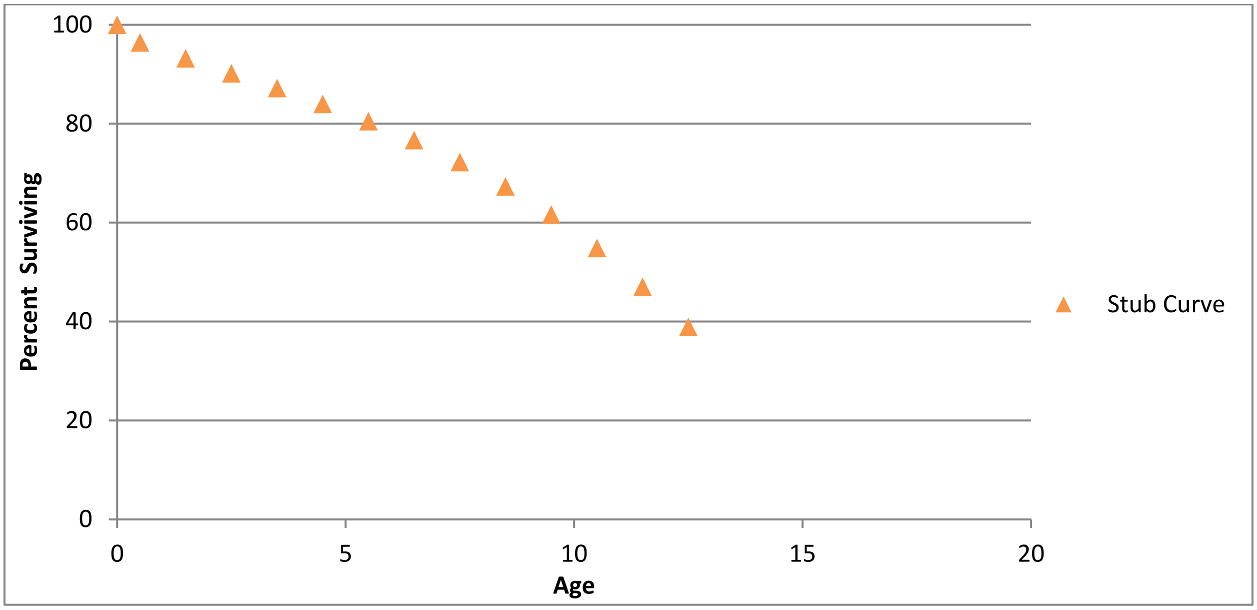
Column F on the right shows the percentages surviving at the beginning of each age interval. This column starts at 100 percent surviving. Each consecutive number below is calculated by multiplying the percent surviving from the previous age interval by the corresponding survivor ratio for that age interval. For example, the percent surviving at the start of age interval 1.5 is 93.21 percent, which was calculated by multiplying the percent surviving for age interval 0.5 (96.43 percent) by the survivor ratio for age interval 0.5 (0.967).[6]

The percentages surviving in Column F are the numbers that are used to form the original survivor curve. This particular curve starts at 100 percent surviving and ends at 38.91 percent surviving. An observed survivor curve such as this that does not reach zero percent surviving is

[6] Multiplying 96.43 by 0.967 does not equal 93.21 exactly due to rounding.

called a "stub" curve. The figure below illustrates the stub survivor curve derived from the OLT above.

Figure 5:
Original "Stub" Survivor Curve



The matrices used to develop the basic OLT and stub survivor curve provide a basic illustration of the retirement rate method in that only a few placement and experience years were used. In reality, analysts may have several decades of aged property data to analyze. In that case, it may be useful to use a technique called "banding" in order to identify trends in the data.

<u>Banding</u>

The forces of retirement and characteristics of industrial property are constantly changing. A depreciation analyst may examine the magnitude of these changes. Analysts often use a technique called "banding" to assist with this process. Banding refers to the merging of several years of data into a single data set for further analysis, and it is a common technique associated with the retirement rate method.[7] There are three primary benefits of using bands in depreciation analysis:

1. Increasing the sample size. In statistical analyses, the larger the sample size in relation to the body of total data, the greater the reliability of the result;

2. Smooth the observed data. Generally, the data obtained from a single activity or vintage year will not produce an observed life table that can be easily fit; and

3. Identify trends. By looking at successive bands, the analyst may identify broad trends in the data that may be useful in projecting the future life characteristics of the property.[8]

Two common types of banding methods are the "placement band" method and the "experience band" method." A placement band, as the name implies, isolates selected placement years for analysis. The figure below illustrates the same exposure matrix shown above, except that only the placement years 2005–2008 are considered in calculating the total exposures at the beginning of each age interval.

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[7] NARUC *supra* n. 1, at 113.

[8] *Id*.

Figure 6:
Placement Bands

Placement Years	Experience Years Exposures at January 1 of Each Year (Dollars in 000's) 2008	2009	2010	2011	2012	2013	2014	2015	Total at Start of Age Interval	Age Interval
2003	261	245	228	211	192	173	152	131		11.5 - 12.5
2004	267	252	236	220	202	184	165	145		10.5 - 11.5
2005	304	291	277	263	248	232	216	198	198	9.5 - 10.5
2006	345	334	322	310	298	284	270	255	471	8.5 - 9.5
2007	367	357	347	335	324	312	299	286	788	7.5 - 8.5
2008	375	366	357	347	336	325	314	302	1,133	6.5 - 7.5
2009		377	366	356	346	336	327	319	1,186	5.5 - 6.5
2010			381	369	358	347	336	327	1,237	4.5 - 5.5
2011				386	372	359	346	334	1,285	3.5 - 4.5
2012					395	380	366	352	1,331	2.5 - 3.5
2013						401	385	370	1,059	1.5 - 2.5
2014							410	393	733	0.5 - 1.5
2015								416	375	0.0 - 0.5
Total	1919	2222	2514	2796	3070	3333	3586	3827	9,796	

The shaded cells within the placement band equal the total exposures at the beginning of age interval 4.5–5.5 ($1,237). The same placement band would be used for the retirement matrix covering the same placement years of 2005–2008. This use of course would result in a different OLT and original stub survivor curve than those that were calculated above without the restriction of a placement band.

Analysts often use placement bands for comparing the survivor characteristics of properties with different physical characteristics.[9] Placement bands allow analysts to isolate the effects of changes in technology and materials that occur in successive generations of plant. For example, if in 2005 an electric utility began placing transmission poles into service with a special chemical treatment that extended the service lives of those poles, an analyst could use placement bands to isolate and analyze the effect of that change in the property group's physical characteristics. While placement bands are very useful in depreciation analysis, they also possess an intrinsic dilemma.

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[9] Wolf *supra* n. 5, at 182.

A fundamental characteristic of placement bands is that they yield fairly complete survivor curves for older vintages. However, with newer vintages, which are arguably more valuable for forecasting, placement bands yield shorter survivor curves. Longer "stub" curves are considered more valuable for forecasting average life. Thus, an analyst must select a band width broad enough to provide confidence in the reliability of the resulting curve fit yet narrow enough so that an emerging trend may be observed.[10]

Analysts also use "experience bands." Experience bands show the composite retirement history for all vintages during a select set of activity years. The figure below shows the same data presented in the previous exposure matrices, except that the experience band from 2011–2013 is isolated, resulting in different interval totals.

Figure 7:
Experience Bands

Placement Years	Experience Years Exposures at January 1 of Each Year (Dollars in 000's) 2008	2009	2010	2011	2012	2013	2014	2015	Total at Start of Age Interval	Age Interval
2003	261	245	228	211	192	173	152	131		11.5 - 12.5
2004	267	252	236	220	202	184	165	145		10.5 - 11.5
2005	304	291	277	263	248	232	216	198	173	9.5 - 10.5
2006	345	334	322	310	298	284	270	255	376	8.5 - 9.5
2007	367	357	347	335	324	312	299	286	645	7.5 - 8.5
2008	375	366	357	347	336	325	314	302	752	6.5 - 7.5
2009		377	366	356	346	336	327	319	872	5.5 - 6.5
2010			381	369	358	347	336	327	959	4.5 - 5.5
2011				386	372	359	346	334	1,008	3.5 - 4.5
2012					395	380	366	352	1,039	2.5 - 3.5
2013						401	385	370	1,072	1.5 - 2.5
2014							410	393	1,121	0.5 - 1.5
2015								416	1,182	0.0 - 0.5
Total	1919	2222	2514	2796	3070	3333	3586	3827	9,199	

The shaded cells within the experience band equal the total exposures at the beginning of age interval 4.5–5.5 ($1,237). The same experience band would be used for the retirement matrix

[10] NARUC *supra* n. 1, at 114.

covering the same experience years of 2011–2013. This use of course would result in a different OLT and original stub survivor than if the band had not been used. Analysts often use experience bands to isolate and analyze the effects of an operating environment over time.[11] Likewise, the use of experience bands allows analysis of the effects of an unusual environmental event. For example, if an unusually severe ice storm occurred in 2013, destruction from that storm would affect an electric utility's line transformers of all ages. That is, each of the line transformers from each placement year would be affected, including those recently installed in 2012, as well as those installed in 2003. Using experience bands, an analyst could isolate or even eliminate the 2013 experience year from the analysis. In contrast, a placement band would not effectively isolate the ice storm's effect on life characteristics. Rather, the placement band would show an unusually large rate of retirement during 2013, making it more difficult to accurately fit the data with a smooth Iowa curve. Experience bands tend to yield the most complete stub curves for recent bands because they have the greatest number of vintages included. Longer stub curves are better for forecasting. The experience bands, however, may also result in more erratic retirement dispersion making the curve-fitting process more difficult.

Depreciation analysts must use professional judgment in determining the types of bands to use and the band widths. In practice, analysts may use various combinations of placement and experience bands in order to increase the data sample size, identify trends and changes in life characteristics, and isolate unusual events. Regardless of which bands are used, observed survivor curves in depreciation analysis rarely reach zero percent. They rarely reach zero percent because, as seen in the OLT above, relatively newer vintage groups have not yet been fully retired at the

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[11] *Id*.

time the property is studied. An analyst could confine the analysis to older, fully retired vintage groups to get complete survivor curves, but such analysis would ignore some of the property currently in service and would arguably not provide an accurate description of life characteristics for current plant in service. Because a complete curve is necessary to calculate the average life of the property group, however, curve-fitting techniques using Iowa curves or other standardized curves may be employed in order to complete the stub curve.

Curve Fitting

Depreciation analysts typically use the survivor curve rather than the frequency curve to fit the observed stub curves. The most commonly used generalized survivor curves in the curve-fitting process are the Iowa curves discussed above. As Wolf notes, if "the Iowa curves are adopted as a model, an underlying assumption is that the process describing the retirement pattern is one of the 22 [or more] processes described by the Iowa curves."[12]

Curve fitting may be done through visual matching or mathematical matching. In visual curve fitting, the analyst visually examines the plotted data to make an initial judgment about the Iowa curves that may be a good fit. The figure below illustrates the stub survivor curve shown above. It also shows three different Iowa curves: the 10-L4, the 10.5-R1, and the 10-S0. Visually, the 10.5-R1 curve is clearly a better fit than the other two curves.

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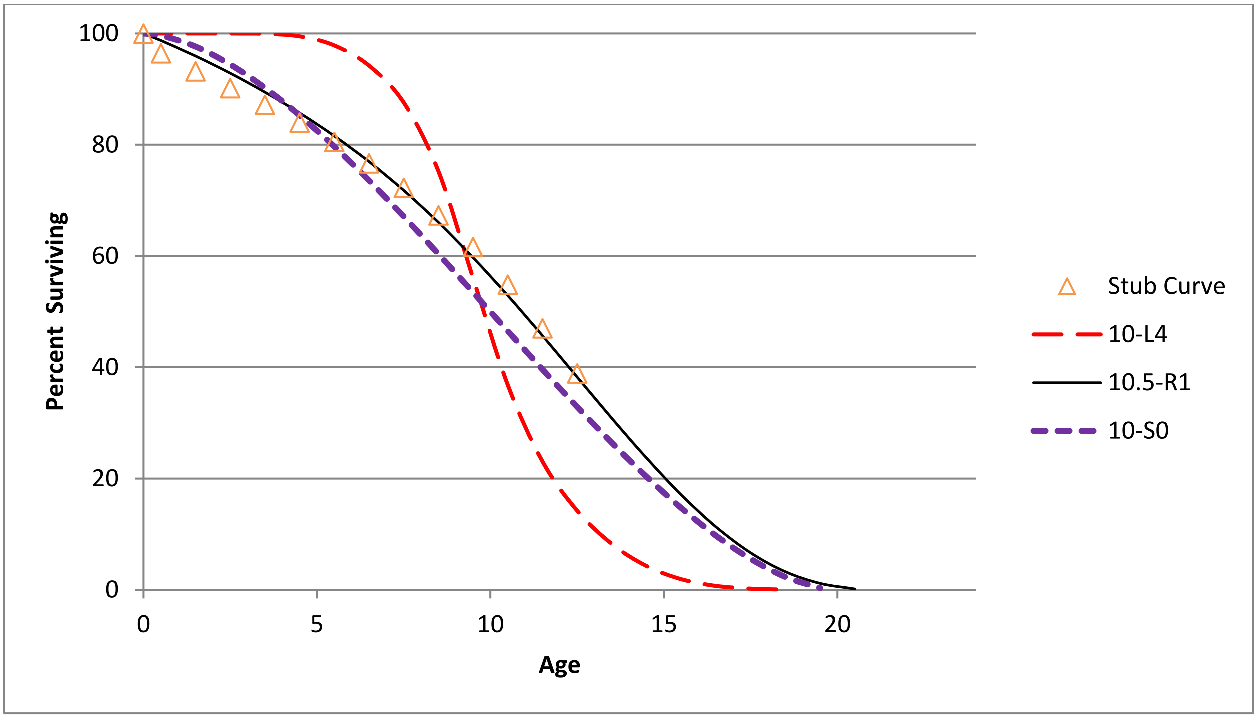
[12] Wolf *supra* n. 5, at 46 (22 curves includes Winfrey's 18 original curves plus Cowles's four "O" type curves).

**Figure 8:
Visual Curve Fitting**



In mathematical fitting, the least squares method is used to calculate the best fit. This mathematical method would be excessively time consuming if done by hand. With the use of modern computer software however, mathematical fitting is an efficient and useful process. The typical logic for a computer program, as well as the software employed for the analysis in this testimony is as follows:

> First (an Iowa curve) curve is arbitrarily selected. . . . If the observed curve is a stub curve, . . . calculate the area under the curve and up to the age at final data point. Call this area the realized life. Then systematically vary the average life of the theoretical survivor curve and calculate its realized life at the age corresponding to the study date. This trial and error procedure ends when you find an average life such that the realized life of the theoretical curve equals the realized life of the observed curve. Call this the average life.
>
> Once the average life is found, calculate the difference between each percent surviving point on the observed survivor curve and the corresponding point on the Iowa curve. Square each difference and sum them. The sum of squares is used as a measure of goodness of fit for that particular Iowa type curve. This procedure is

> repeated for the remaining 21 Iowa type curves. The "best fit" is declared to be the type of curve that minimizes the sum of differences squared.[13]

Mathematical fitting requires less judgment from the analyst and is thus less subjective. Blind reliance on mathematical fitting, however, may lead to poor estimates. Thus, analysts should employ both mathematical and visual curve fitting in reaching their final estimates. This way, analysts may utilize the objective nature of mathematical fitting while still employing professional judgment. As Wolf notes: "The results of mathematical curve fitting serve as a guide for the analyst and speed the visual fitting process. But the results of the mathematical fitting should be checked visually, and the final determination of the best fit be made by the analyst."[14]

In the graph above, visual fitting was sufficient to determine that the 10.5-R1 Iowa curve was a better fit than the 10-L4 and the 10-S0 curves. Using the sum of least squares method, mathematical fitting confirms the same result. In the chart below, the percentages surviving from the OLT that formed the original stub curve are shown in the left column, while the corresponding percentages surviving for each age interval are shown for the three Iowa curves. The right portion of the chart shows the differences between the points on each Iowa curve and the stub curve. These differences are summed at the bottom. Curve 10.5-R1 is the best fit because the sum of the squared differences for this curve is less than the same sum for the other two curves. Curve 10-L4 is the worst fit, which was also confirmed visually.

---

[13] Wolf *supra* n. 5, at 47.

[14] *Id*. at 48.

Figure 9:
Mathematical Fitting

Age	Stub	Iowa Curves			Squared Differences		
Interval	Curve	10-L4	10-S0	10.5-R1	10-L4	10-S0	10.5-R1
0.0	100.0	100.0	100.0	100.0	0.0	0.0	0.0
0.5	96.4	100.0	99.7	98.7	12.7	10.3	5.3
1.5	93.2	100.0	97.7	96.0	46.1	19.8	7.6
2.5	90.2	100.0	94.4	92.9	96.2	18.0	7.2
3.5	87.2	100.0	90.2	89.5	162.9	9.3	5.2
4.5	84.0	99.5	85.3	85.7	239.9	1.6	2.9
5.5	80.5	97.9	79.7	81.6	301.1	0.7	1.2
6.5	76.7	94.2	73.6	77.0	308.5	9.5	0.1
7.5	72.3	87.6	67.1	71.8	235.2	26.5	0.2
8.5	67.3	75.2	60.4	66.1	62.7	48.2	1.6
9.5	61.6	56.0	53.5	59.7	31.4	66.6	3.6
10.5	54.9	36.8	46.5	52.9	325.4	69.6	3.9
11.5	47.0	23.1	39.6	45.7	572.6	54.4	1.8
12.5	38.9	14.2	32.9	38.2	609.6	36.2	0.4
SUM					**3004.2**	**371.0**	**41.0**

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EDUCATION

University of Oklahoma — Norman, OK
Master of Business Administration — 2014
Areas of Concentration: Finance, Energy

University of Oklahoma College of Law — Norman, OK
Juris Doctor — 2007
Member, American Indian Law Review

University of Oklahoma — Norman, OK
Bachelor of Business Administration — 2003
Major: Finance

PROFESSIONAL DESIGNATIONS

Society of Depreciation Professionals
Certified Depreciation Professional (CDP)

Society of Utility and Regulatory Financial Analysts
Certified Rate of Return Analyst (CRRA)

WORK EXPERIENCE

Resolve Utility Consulting PLLC — Oklahoma City, OK
Managing Member — 2016 – Present
Provide expert analysis and testimony specializing in depreciation and cost of capital issues for clients in utility regulatory proceedings.

Oklahoma Corporation Commission — Oklahoma City, OK
Public Utility Regulatory Analyst — 2012 – 2016
Assistant General Counsel — 2011 – 2012
Represented commission staff in utility regulatory proceedings and provided legal opinions to commissioners. Provided expert analysis and testimony in depreciation, cost of capital, incentive compensation, payroll and other issues.

Perebus Counsel, PLLC — Oklahoma City, OK
Managing Member — 2009 – 2011
Represented clients in the areas of family law, estate planning, debt negotiations, business organization, and utility regulation.

Moricoli & Schovanec, P.C. — Oklahoma City, OK
Associate Attorney — 2007 – 2009
Represented clients in the areas of contracts, oil and gas, business structures and estate administration.

TEACHING EXPERIENCE

University of Oklahoma — Norman, OK
Adjunct Instructor – "Conflict Resolution" — 2014 – 2021
Adjunct Instructor – "Ethics in Leadership"

Rose State College — Midwest City, OK
Adjunct Instructor – "Legal Research" — 2013 – 2015
Adjunct Instructor – "Oil & Gas Law"

PROFESSIONAL ASSOCIATIONS

Oklahoma Bar Association — 2007 – Present

Society of Depreciation Professionals — 2014 – Present
Board Member – President — 2017
Participate in management of operations, attend meetings, review performance, organize presentation agenda.

Society of Utility Regulatory Financial Analysts — 2014 – Present

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
New Mexico Public Regulation Commission	Southwestern Public Service Company	22-00286-UT	Cost of capital, depreciation rates, net salvage	The New Mexico Large Customer Group; Occidental Permian
Public Utilities Commission of the State of California	Southern California Gas Company San Diego Gas & Electric Company	A.22-05-015 A.22-05-016	Depreciation rates, service lives, net salvage	The Utility Reform Network
Public Utilties Commission of the State of Colorado	Public Service Company of Colorado	22AL-0530E 22AL-0478E	Cost of capital, awarded rate of return, capital structure	Colorado Energy Consumers
New Mexico Public Regulatory Commission	Public Service Company of New Mexico	22-00270-UT	Cost of capital, depreciation rates, net salvage	The Albuquerque Bernalillo County Water Utility Authority
Florida Public Service Commission	Peoples Gas System	20230023-GU 20220219-GU 20220212-GU	Cost of capital, depreciation rates, net salvage	Florida Office of Public Counsel
Maryland Public Service Commission	Potomac Edison Company	9695	Cost of capital, depreciation rates, net salvage	Maryland Office of People's Counsel
Public Service Commission of the State of Montana	Montana-Dakota Utilities Company	2022.11.099	Depreciation rates, service lives, net salvage	Montana Consumer Counsel and Denbury Onshore
Indiana Utility Regulatory Commission	Indiana-American Water Company	45870	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Service Commission of South Carolina	Dominion Energy South Carolina	2023-70-G	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff
Maryland Public Service Commission	Columbia Gas of Maryland	9701	Cost of capital, awarded rate of return, capital structure	Maryland Office of People's Counsel
Pennsylvania Public Utility Commission	Columbia Water Company	R-2023-3040258	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Maryland Public Service Commission	Baltimore Gas and Electric Company	9692	Depreciation rates, service lives, net salvage	Maryland Office of People's Counsel
Arizona Corporation Commission	Arizona Public Service Company	E-01345A-22-0144	Cost of capital, awarded rate of return, capital structure	Residential Utility Consumer Office
Oklahoma Corporation Commission	Public Service Company of Oklahoma	PUD 2022-000093	Cost of capital, depreciation rates, net salvage	Oklahoma Industrial Energy Consumers

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Public Service Commission of the State of Montana	NorthWestern Energy	2022.07.078	Cost of capital, depreciation rates, net salvage	Montana Consumer Counsel and Montana Large Customer Group
Indiana Utility Regulatory Commission	Northern Indiana Public Service Company	45772	Cost of capital, depreciation rates, net salvage	Indiana Office of Utility Consumer Counselor
Public Service Commission of South Carolina	Duke Energy Progress	2022-254-E	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff
Wyoming Public Service Commission	Cheyenne Light, Fuel and Power Company D/B/A Black Hills Energy	20003-214-ER-22	Depreciation rates, service lives, net salvage	Wyoming Office of Consumer Advocate
Railroad Commission of Texas	Texas Gas Services Company	OS-22-00009896	Depreciation rates, service lives, net salvage	The City of El Paso
Public Utilities Commission of Nevada	Sierra Pacific Power Company	22-06014	Depreciation rates, service lives, net salvage	Bureau of Consumer Protection
Washington Utilities & Transportation Commission	Puget Sound Energy	UE-220066 UG-220067 UG-210918	Depreciation rates, service lives, net salvage	Washington Office of Attorney General
Public Utility Commission of Texas	Oncor Electric Delivery Company LLC	PUC 53601	Depreciation rates, service lives, net salvage	Alliance of Oncor Cities
Florida Public Service Commission	Florida Public Utilities Company	20220067-GU	Cost of capital, depreciation rates	Florida Office of Public Counsel
Public Utility Commission of Texas	Entergy Texas, Inc.	PUC 53719	Depreciation rates, decommissioning costs	Texas Municipal Group
Florida Public Service Commission	Florida City Gas	2020069-GU	Cost of capital, depreciation rates	Florida Office of Public Counsel
Connecticut Public Utilities Regulatory Authority	Aquarion Water Company of Connecticut	22-07-01	Depreciation rates, service lives, net salvage	PURA Staff
Washington Utilities & Transportation Commission	Avista Corporation	UE-220053 UG-220054 UE-210854	Cost of capital, awarded rate of return, capital structure	Washington Office of Attorney General
Federal Energy Regulatory Commission	ANR Pipeline Company	RP22-501-000	Depreciation rates, service lives, net salvage	Ascent Resources - Utica, LLC

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania, Inc.	R-2022-3031211	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Public Service Commission of South Carolina	Piedmont Natural Gas Company	2022-89-G	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff
Pennsylvania Public Utility Commission	UGI Utilities, Inc. - Gas Division	R-2021-3030218	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Public Utilities Commission of the State of California	Pacific Gas & Electric Company	A.21-06-021	Depreciation rates, service lives, net salvage	The Utility Reform Network
Pennsylvania Public Utility Commission	PECO Energy Company - Gas Division	R-2022-3031113	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Oklahoma Corporation Commission	Oklahoma Gas & Electric Company	PUD 202100164	Cost of capital, depreciation rates, net salvage	Oklahoma Industrial Energy Consumers
Massachusetts Department of Public Utilities	NSTAR Electric Company D/B/A Eversource Energy	D.P.U. 22-22	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Michigan Public Service Company	DTE Electric Company	U-20836	Cost of capital, awarded rate of return, capital structure	Michigan Environmental Council and Citizens Utility Board of Michigan
New York State Public Service Commission	Consolidated Edison Company of New York, Inc.	22-E-0064 22-G-0065	Depreciation rates, service lives, net salvage, depreciation reserve	The City of New York
Pennsylvania Public Utility Commission	Aqua Pennsylvania Wastewater / East Whiteland Township	A-2021-3026132	Fair market value estimates for wastewater assets	Pennsylvania Office of Consumer Advocate
Public Service Commission of South Carolina	Kiawah Island Utility, Inc.	2021-324-WS	Cost of capital, awarded rate of return, capital structure	South Carolina Office of Regulatory Staff
Pennsylvania Public Utility Commission	Aqua Pennsylvania Wastewater / Willistown Township	A-2021-3027268	Fair market value estimates for wastewater assets	Pennsylvania Office of Consumer Advocate
Indiana Utility Regulatory Commission	Northern Indiana Public Service Company	45621	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Arkansas Public Service Commission	Southwestern Electric Power Company	21-070-U	Cost of capital, depreciation rates, net salvage	Western Arkansas Large Energy Consumers

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Federal Energy Regulatory Commission	Southern Star Central Gas Pipeline	RP21-778-002	Depreciation rates, service lives, net salvage	Consumer-Owned Shippers
Railroad Commission of Texas	Participating Texas gas utilities in consolidated proceeding	OS-21-00007061	Securitization of extraordinary gas costs arising from winter storms	The City of El Paso
Public Service Commission of South Carolina	Palmetto Wastewater Reclamation, Inc.	2021-153-S	Cost of capital, awarded rate of return, capital structure, ring-fencing	South Carolina Office of Regulatory Staff
Public Utilties Commission of the State of Colorado	Public Service Company of Colorado	21AL-0317E	Cost of capital, depreciation rates, net salvage	Colorado Energy Consumers
Pennsylvania Public Utility Commission	City of Lancaster - Water Department	R-2021-3026682	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 51802	Depreciation rates, service lives, net salvage	The Alliance of Xcel Municipalities
Pennsylvania Public Utility Commission	The Borough of Hanover - Hanover Municipal Waterworks	R-2021-3026116	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Maryland Public Service Commission	Delmarva Power & Light Company	9670	Cost of capital and authorized rate of return	Maryland Office of People's Counsel
Oklahoma Corporation Commission	Oklahoma Natural Gas Company	PUD 202100063	Cost of capital, awarded rate of return, capital structure	Oklahoma Industrial Energy Consumers
Indiana Utility Regulatory Commission	Indiana Michigan Power Company	45576	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	El Paso Electric Company	PUC 52195	Depreciation rates, service lives, net salvage	The City of El Paso
Pennsylvania Public Utility Commission	Aqua Pennsylvania	R-2021-3027385	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Public Service Commission of the State of Montana	NorthWestern Energy	D2021.02.022	Cost of capital, awarded rate of return, capital structure	Montana Consumer Counsel
Pennsylvania Public Utility Commission	PECO Energy Company	R-2021-3024601	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
New Mexico Public Regulation Commission	Southwestern Public Service Company	20-00238-UT	Cost of capital and authorized rate of return	The New Mexico Large Customer Group; Occidental Permian
Oklahoma Corporation Commission	Public Service Company of Oklahoma	PUD 202100055	Cost of capital, depreciation rates, net salvage	Oklahoma Industrial Energy Consumers
Pennsylvania Public Utility Commission	Duquesne Light Company	R-2021-3024750	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Maryland Public Service Commission	Columbia Gas of Maryland	9664	Cost of capital and authorized rate of return	Maryland Office of People's Counsel
Indiana Utility Regulatory Commission	Southern Indiana Gas Company, d/b/a Vectren Energy Delivery of Indiana, Inc.	45447	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	Southwestern Electric Power Company	PUC 51415	Depreciation rates, service lives, net salvage	Cities Advocating Reasonable Deregulation
New Mexico Public Regulatory Commission	Avangrid, Inc., Avangrid Networks, Inc., NM Green Holdings, Inc., PNM, and PNM Resources	20-00222-UT	Ring fencing and capital structure	The Albuquerque Bernalillo County Water Utility Authority
Indiana Utility Regulatory Commission	Indiana Gas Company, d/b/a Vectren Energy Delivery of Indiana, Inc.	45468	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utilities Commission of Nevada	Nevada Power Company and Sierra Pacific Power Company, d/b/a NV Energy	20-07023	Construction work in progress	MGM Resorts International, Caesars Enterprise Services, LLC, and the Southern Nevada Water Authority
Massachusetts Department of Public Utilities	Boston Gas Company, d/b/a National Grid	D.P.U. 20-120	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Public Service Commission of the State of Montana	ABACO Energy Services, LLC	D2020.07.082	Cost of capital and authorized rate of return	Montana Consumer Counsel
Maryland Public Service Commission	Washington Gas Light Company	9651	Cost of capital and authorized rate of return	Maryland Office of People's Counsel
Florida Public Service Commission	Utilities, Inc. of Florida	20200139-WS	Cost of capital and authorized rate of return	Florida Office of Public Counsel
New Mexico Public Regulatory Commission	El Paso Electric Company	20-00104-UT	Cost of capital, depreciation rates, net salvage	City of Las Cruces and Doña Ana County

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Public Utilities Commission of Nevada	Nevada Power Company	20-06003	Cost of capital, awarded rate of return, capital structure, earnings sharing	MGM Resorts International, Caesars Enterprise Services, LLC, Wynn Las Vegas, LLC, Smart Energy Alliance, and Circus Circus Las Vegas, LLC
Wyoming Public Service Commission	Rocky Mountain Power	20000-578-ER-20	Cost of capital and authorized rate of return	Wyoming Industrial Energy Consumers
Florida Public Service Commission	Peoples Gas System	20200051-GU 20200166-GU	Cost of capital, depreciation rates, net salvage	Florida Office of Public Counsel
Wyoming Public Service Commission	Rocky Mountain Power	20000-539-EA-18	Depreciation rates, service lives, net salvage	Wyoming Industrial Energy Consumers
Public Service Commission of South Carolina	Dominion Energy South Carolina	2020-125-E	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff
Pennsylvania Public Utility Commission	The City of Bethlehem	2020-3020256	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Railroad Commission of Texas	Texas Gas Services Company	GUD 10928	Depreciation rates, service lives, net salvage	Gulf Coast Service Area Steering Committee
Public Utilities Commission of the State of California	Southern California Edison	A.19-08-013	Depreciation rates, service lives, net salvage	The Utility Reform Network
Massachusetts Department of Public Utilities	NSTAR Gas Company	D.P.U. 19-120	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Georgia Public Service Commission	Liberty Utilities (Peach State Natural Gas)	42959	Depreciation rates, service lives, net salvage	Public Interest Advocacy Staff
Florida Public Service Commission	Florida Public Utilities Company	20190155-El 20190156-El 20190174-El	Depreciation rates, service lives, net salvage	Florida Office of Public Counsel
Illinois Commerce Commission	Commonwealth Edison Company	20-0393	Depreciation rates, service lives, net salvage	The Office of the Illinois Attorney General
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 49831	Depreciation rates, service lives, net salvage	Alliance of Xcel Municipalities
Public Service Commission of South Carolina	Blue Granite Water Company	2019-290-WS	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Railroad Commission of Texas	CenterPoint Energy Resources	GUD 10920	Depreciation rates and grouping procedure	Alliance of CenterPoint Municipalities
Pennsylvania Public Utility Commission	Aqua Pennsylvania Wastewater / East Norriton Township	A-2019-3009052	Fair market value estimates for wastewater assets	Pennsylvania Office of Consumer Advocate
New Mexico Public Regulation Commission	Southwestern Public Service Company	19-00170-UT	Cost of capital and authorized rate of return	The New Mexico Large Customer Group; Occidental Permian
Indiana Utility Regulatory Commission	Duke Energy Indiana	45253	Cost of capital, depreciation rates, net salvage	Indiana Office of Utility Consumer Counselor
Maryland Public Service Commission	Columbia Gas of Maryland	9609	Depreciation rates, service lives, net salvage	Maryland Office of People's Counsel
Washington Utilities & Transportation Commission	Avista Corporation	UE-190334	Cost of capital, awarded rate of return, capital structure	Washington Office of Attorney General
Indiana Utility Regulatory Commission	Indiana Michigan Power Company	45235	Cost of capital, depreciation rates, net salvage	Indiana Office of Utility Consumer Counselor
Public Utilities Commission of the State of California	Pacific Gas & Electric Company	18-12-009	Depreciation rates, service lives, net salvage	The Utility Reform Network
Oklahoma Corporation Commission	The Empire District Electric Company	PUD 201800133	Cost of capital, authorized ROE, depreciation rates	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Arkansas Public Service Commission	Southwestern Electric Power Company	19-008-U	Cost of capital, depreciation rates, net salvage	Western Arkansas Large Energy Consumers
Public Utility Commission of Texas	CenterPoint Energy Houston Electric	PUC 49421	Depreciation rates, service lives, net salvage	Texas Coast Utilities Coalition
Massachusetts Department of Public Utilities	Massachusetts Electric Company and Nantucket Electric Company	D.P.U. 18-150	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Oklahoma Corporation Commission	Oklahoma Gas & Electric Company	PUD 201800140	Cost of capital, authorized ROE, depreciation rates	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Public Service Commission of the State of Montana	Montana-Dakota Utilities Company	D2018.9.60	Depreciation rates, service lives, net salvage	Montana Consumer Counsel and Denbury Onshore

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Indiana Utility Regulatory Commission	Northern Indiana Public Service Company	45159	Depreciation rates, grouping procedure, demolition costs	Indiana Office of Utility Consumer Counselor
Public Service Commission of the State of Montana	NorthWestern Energy	D2018.2.12	Depreciation rates, service lives, net salvage	Montana Consumer Counsel
Oklahoma Corporation Commission	Public Service Company of Oklahoma	PUD 201800097	Depreciation rates, service lives, net salvage	Oklahoma Industrial Energy Consumers and Wal-Mart
Nevada Public Utilities Commission	Southwest Gas Corporation	18-05031	Depreciation rates, service lives, net salvage	Nevada Bureau of Consumer Protection
Public Utility Commission of Texas	Texas-New Mexico Power Company	PUC 48401	Depreciation rates, service lives, net salvage	Alliance of Texas-New Mexico Power Municipalities
Oklahoma Corporation Commission	Oklahoma Gas & Electric Company	PUD 201700496	Depreciation rates, service lives, net salvage	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Maryland Public Service Commission	Washington Gas Light Company	9481	Depreciation rates, service lives, net salvage	Maryland Office of People's Counsel
Indiana Utility Regulatory Commission	Citizens Energy Group	45039	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	Entergy Texas, Inc.	PUC 48371	Depreciation rates, decommissioning costs	Texas Municipal Group
Washington Utilities & Transportation Commission	Avista Corporation	UE-180167	Depreciation rates, service lives, net salvage	Washington Office of Attorney General
New Mexico Public Regulation Commission	Southwestern Public Service Company	17-00255-UT	Cost of capital and authorized rate of return	HollyFrontier Navajo Refining; Occidental Permian
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 47527	Depreciation rates, plant service lives	Alliance of Xcel Municipalities
Public Service Commission of the State of Montana	Montana-Dakota Utilities Company	D2017.9.79	Depreciation rates, service lives, net salvage	Montana Consumer Counsel
Florida Public Service Commission	Florida City Gas	20170179-GU	Cost of capital, depreciation rates	Florida Office of Public Counsel

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Washington Utilities & Transportation Commission	Avista Corporation	UE-170485	Cost of capital and authorized rate of return	Washington Office of Attorney General
Wyoming Public Service Commission	Powder River Energy Corporation	10014-182-CA-17	Credit analysis, cost of capital	Private customer
Oklahoma Corporation Commission	Public Service Co. of Oklahoma	PUD 201700151	Depreciation, terminal salvage, risk analysis	Oklahoma Industrial Energy Consumers
Public Utility Commission of Texas	Oncor Electric Delivery Company	PUC 46957	Depreciation rates, simulated analysis	Alliance of Oncor Cities
Nevada Public Utilities Commission	Nevada Power Company	17-06004	Depreciation rates, service lives, net salvage	Nevada Bureau of Consumer Protection
Public Utility Commission of Texas	El Paso Electric Company	PUC 46831	Depreciation rates, interim retirements	City of El Paso
Idaho Public Utilities Commission	Idaho Power Company	IPC-E-16-24	Accelerated depreciation of North Valmy plant	Micron Technology, Inc.
Idaho Public Utilities Commission	Idaho Power Company	IPC-E-16-23	Depreciation rates, service lives, net salvage	Micron Technology, Inc.
Public Utility Commission of Texas	Southwestern Electric Power Company	PUC 46449	Depreciation rates, decommissioning costs	Cities Advocating Reasonable Deregulation
Massachusetts Department of Public Utilities	Eversource Energy	D.P.U. 17-05	Cost of capital, capital structure, and rate of return	Sunrun Inc.; Energy Freedom Coalition of America
Railroad Commission of Texas	Atmos Pipeline - Texas	GUD 10580	Depreciation rates, grouping procedure	City of Dallas
Public Utility Commission of Texas	Sharyland Utility Company	PUC 45414	Depreciation rates, simulated analysis	City of Mission
Oklahoma Corporation Commission	Empire District Electric Company	PUD 201600468	Cost of capital, depreciation rates	Oklahoma Industrial Energy Consumers
Railroad Commission of Texas	CenterPoint Energy Texas Gas	GUD 10567	Depreciation rates, simulated plant analysis	Texas Coast Utilities Coalition

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Arkansas Public Service Commission	Oklahoma Gas & Electric Company	160-159-GU	Cost of capital, depreciation rates, terminal salvage	Arkansas River Valley Energy Consumers; Wal-Mart
Florida Public Service Commission	Peoples Gas	160-159-GU	Depreciation rates, service lives, net salvage	Florida Office of Public Counsel
Arizona Corporation Commission	Arizona Public Service Company	E-01345A-16-0036	Cost of capital, depreciation rates, terminal salvage	Energy Freedom Coalition of America
Nevada Public Utilities Commission	Sierra Pacific Power Company	16-06008	Depreciation rates, net salvage, theoretical reserve	Northern Nevada Utility Customers
Oklahoma Corporation Commission	Oklahoma Gas & Electric Co.	PUD 201500273	Cost of capital, depreciation rates, terminal salvage	Public Utility Division
Oklahoma Corporation Commission	Public Service Co. of Oklahoma	PUD 201500208	Cost of capital, depreciation rates, terminal salvage	Public Utility Division
Oklahoma Corporation Commission	Oklahoma Natural Gas Company	PUD 201500213	Cost of capital, depreciation rates, net salvage	Public Utility Division

Summary Depreciation Accrual Adjustment

Plant Function	Plant Balance 12/31/2022	Company Proposal Rate	Company Proposal Annual Accrual	OUCC Proposal Rate	OUCC Proposal Annual Accrual	OUCC Adjustment Rate	OUCC Adjustment Annual Accrual
Intangible Plant	$ 153,606,027	7.23%	$ 11,105,187	7.25%	$ 11,130,667	0.02%	$ 25,480
Steam Production	2,680,023,139	4.66%	124,828,618	3.56%	95,290,897	-1.10%	(29,537,721)
Other Production	337,266,446	3.17%	10,698,344	2.27%	7,661,364	-0.90%	(3,036,980)
Transmission	460,465,749	2.75%	12,653,627	2.01%	9,261,084	-0.74%	(3,392,543)
Distribution	2,032,841,166	2.58%	52,426,516	1.71%	34,832,753	-0.87%	(17,593,763)
General	255,199,577	5.22%	13,331,494	4.99%	12,742,341	-0.23%	(589,153)
Total	$ 5,919,402,104	3.80%	$ 225,043,786	2.89%	$ 170,919,106	-0.91%	$ (54,124,680)

Mass Property Parameter Comparison

		Company Proposal			OUCC Proposal		
Account No.	Description	Iowa Curve	Depr Rate	Annual Accrual	Iowa Curve	Depr Rate	Annual Accrual
	Transmission						
355.00	POLES AND FIXTURES	R2 - 65	2.58%	1,337,940	R1.5 - 71	1.81%	941,213
356.00	OVERHEAD CONDUCTORS AND DEVICES	R2 - 65	2.77%	1,809,081	R2.5 - 76	1.92%	1,255,204
	Distribution						
364.00	POLES, TOWERS AND FIXTURES	R2.5 - 58	3.35%	8,770,466	L2 - 67	2.47%	6,484,520
366.00	UNDERGROUND CONDUIT	R1.5 - 60	2.48%	3,921,195	R1 - 66	1.60%	2,519,411
367.00	UNDERGROUND CONDUCTORS AND DEVICES	R2 - 50	2.14%	7,526,177	L0.5 - 54	1.54%	5,406,879
370.01	METERS - SMART METERS	S1 - 15	6.63%	6,349,673	L1 - 18	4.33%	4,144,726

Detailed Rate Comparison

Account No.	Description	[1] Plant 12/31/2022	[2] Company Proposal Rate	Company Proposal Annual Accrual	[3] OUCC Proposal Rate	OUCC Proposal Annual Accrual	[4] OUCC Adjustment Rate	OUCC Adjustment Annual Accrual
	Intangible Plant							
303.00	MISCELLANEOUS INTANGIBLE PLANT - SOFTWARE	145,325,118	7.23%	10,511,946	7.25%	10,530,716	0.01%	18,770
303.10	MISCELLANEOUS INTANGIBLE PLANT - SAAS SOFTWARE	2,450,602	21.02%	515,222	21.30%	521,932	0.27%	6,710
303.11	MISCELLANEOUS INTANGIBLE PLANT - SAAS SOFTWARE	5,830,307	1.34%	78,019	1.34%	78,019	0.00%	0
303.15	MISCELLANEOUS INTANGIBLE PLANT - ACE SOFTWARE						0.00%	0
	Total Intangible Plant	153,606,027	7.23%	11,105,187	7.25%	11,130,667	0.02%	25,480
	Steam Production Plant							
311.00	STRUCTURES AND IMPROVEMENTS							
	HARDING STREET STATION UNIT 5	3,068,389	6.17%	189,368	4.55%	139,688	-1.62%	-49,680
	HARDING STREET STATION UNIT 6	2,340,629	5.41%	126,587	3.80%	88,928	-1.61%	-37,659
	HARDING STREET STATION UNITS 5 AND 6	3,950,417	10.43%	411,907	8.59%	339,242	-1.84%	-72,665
	HARDING STREET STATION UNIT 7	20,390,549	6.07%	1,238,137	5.19%	1,057,630	-0.88%	-180,507
	HARDING STREET STATION COMMON	37,175,431	6.39%	2,376,529	5.35%	1,988,515	-1.04%	-388,014
	EAGLE VALLEY	419,451	3.58%	15,001	3.18%	13,320	-0.40%	-1,681
	EAGLE VALLEY CCGT	18,862,945	3.15%	594,084	2.93%	552,934	-0.22%	-41,150
	PETERSBURG UNIT 2	1,747,553	4.28%	74,805	3.54%	61,949	-0.74%	-12,856
	PETERSBURG UNITS 1 AND 2	9,928,095	3.57%	354,147	2.94%	291,477	-0.63%	-62,670
	PETERSBURG UNIT 3	27,788,101	3.16%	878,297	2.57%	715,490	-0.59%	-162,807
	PETERSBURG UNIT 4	39,678,653	3.28%	1,303,232	2.72%	1,078,946	-0.56%	-224,286
	PETERSBURG UNITS 3 AND 4	543,073	3.98%	21,597	3.30%	17,923	-0.68%	-3,674
	PETERSBURG COMMON	113,575,427	4.27%	4,846,135	3.63%	4,125,530	-0.64%	-720,605
	TOTAL ACCOUNT 311.00	279,468,711	4.45%	12,429,826	3.75%	10,471,572	-0.70%	-1,958,254
311.01	STRUCTURES AND IMPROVEMENTS - MPP							
	HARDING STREET STATION UNIT 5	1,022	7.63%	78	6.61%	68	-1.02%	-10
	HARDING STREET STATION UNIT 7	968,864	8.41%	81,509	5.11%	49,534	-3.30%	-31,975
	HARDING STREET STATION COMMON	1,891,012	8.96%	169,409	4.52%	85,439	-4.44%	-83,970
	EAGLE VALLEY CCGT	15,178	6.01%	912	5.83%	886	-0.18%	-26
	PETERSBURG UNIT 3	761,920	6.75%	51,430	0.47%	3,549	-6.28%	-47,881
	PETERSBURG UNIT 4	1,900,175	7.37%	139,990	5.83%	110,757	-1.54%	-29,233

Detailed Rate Comparison

		[1]	[2]		[3]		[4]	
			Company Proposal		OUCC Proposal		OUCC Adjustment	
Account No.	Description	Plant 12/31/2022	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual
	PETERSBURG COMMON	419,400	5.97%	25,058	5.27%	22,099	-0.70%	-2,959
	TOTAL ACCOUNT 311.01	5,957,571	7.86%	468,386	4.57%	272,331	-3.29%	-196,055
311.02	STRUCTURES AND IMPROVEMENTS - MATS							
	PETERSBURG UNIT 2	202,050	5.40%	10,914	4.68%	9,448	-0.72%	-1,466
	PETERSBURG UNIT 3	557,758	5.46%	30,456	4.89%	27,284	-0.57%	-3,172
	PETERSBURG UNIT 4	73,833	5.72%	4,220	5.10%	3,766	-0.62%	-454
	PETERSBURG COMMON	206,395	5.46%	11,270	4.84%	9,992	-0.62%	-1,278
	TOTAL ACCOUNT 311.02	1,040,036	5.47%	56,860	4.85%	50,490	-0.61%	-6,370
312.00	BOILER PLANT EQUIPMENT							
	HARDING STREET STATION UNIT 5	10,236,171	2.01%	205,735	0.46%	47,017	-1.55%	-158,718
	HARDING STREET STATION UNIT 6	9,569,522	2.22%	212,370	0.67%	63,948	-1.55%	-148,422
	HARDING STREET STATION UNITS 5 AND 6	29,168,319	7.81%	2,278,494	5.93%	1,729,862	-1.88%	-548,632
	HARDING STREET STATION UNIT 7	106,023,318	5.54%	5,876,764	4.61%	4,887,404	-0.93%	-989,360
	HARDING STREET STATION COMMON	60,362,499	5.04%	3,044,356	3.91%	2,359,663	-1.13%	-684,693
	EAGLE VALLEY	218,609	2.99%	6,526	2.55%	5,582	-0.44%	-944
	EAGLE VALLEY CCGT	176,224,510	3.38%	5,959,975	2.88%	5,069,127	-0.50%	-890,848
	PETERSBURG UNIT 2	8,170,948	4.09%	334,047	3.23%	264,090	-0.86%	-69,957
	PETERSBURG UNITS 1 AND 2	21,821,948	2.76%	603,189	2.08%	454,291	-0.68%	-148,898
	PETERSBURG UNIT 3	102,149,951	3.40%	3,475,991	2.70%	2,762,882	-0.70%	-713,109
	PETERSBURG UNIT 4	149,648,037	2.75%	4,117,770	2.10%	3,138,264	-0.65%	-979,506
	PETERSBURG UNITS 3 AND 4	790,546	4.71%	37,226	3.85%	30,458	-0.86%	-6,768
	PETERSBURG COMMON	454,112,928	3.89%	17,653,565	3.05%	13,864,110	-0.84%	-3,789,455
	TOTAL ACCOUNT 312.00	1,128,497,305	3.88%	43,806,008	3.07%	34,676,698	-0.81%	-9,129,310
312.01	BOILER PLANT EQUIPMENT - MPP							
	HARDING STREET STATION UNIT 5	2,087,851	2.48%	51,742	-0.19%	-3,934	-2.67%	-55,676
	HARDING STREET STATION UNIT 6	2,107,770	0.00%	0	0.00%	0	0.00%	0
	HARDING STREET STATION UNITS 5 AND 6	17,298	8.10%	1,402	6.63%	1,147	-1.47%	-255
	HARDING STREET STATION UNIT 7	67,894,222	12.49%	8,479,428	7.49%	5,086,573	-5.00%	-3,392,855
	HARDING STREET STATION COMMON	12,044,829	12.32%	1,483,851	5.01%	603,258	-7.31%	-880,593
	PETERSBURG UNIT 3	66,331,744	6.38%	4,232,735	2.63%	1,746,838	-3.75%	-2,485,897
	PETERSBURG UNIT 4	34,638,151	7.94%	2,749,177	6.44%	2,232,147	-1.50%	-517,030

Detailed Rate Comparison

		[1]	[2]		[3]		[4]	
			Company Proposal		OUCC Proposal		OUCC Adjustment	
Account No.	Description	Plant 12/31/2022	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual
	PETERSBURG COMMON	28,449,616	6.33%	1,799,905	0.53%	151,329	-5.80%	-1,648,576
	TOTAL ACCOUNT 312.01	213,571,481	8.80%	18,798,240	4.60%	9,817,358	-4.21%	-8,980,882
312.02	BOILER PLANT EQUIPMENT - MATS							
	HARDING STREET STATION COMMON	10	10.53%	1	9.04%	1	-1.49%	0
	PETERSBURG UNIT 3	127,336,246	5.95%	7,570,418	5.14%	6,541,256	-0.81%	-1,029,162
	PETERSBURG UNIT 4	174,436	6.15%	10,732	5.31%	9,255	-0.84%	-1,477
	PETERSBURG COMMON	11,055	6.06%	670	5.18%	573	-0.88%	-97
	TOTAL ACCOUNT 312.02	127,521,746	5.95%	7,581,821	5.14%	6,551,085	-0.81%	-1,030,736
312.30	ASH AND COAL HANDLING EQUIPMENT							
	HARDING STREET STATION UNIT 5	39,326	10.77%	4,235	8.48%	3,336	-2.29%	-899
	HARDING STREET STATION UNIT 6	59,223	10.98%	6,500	8.82%	5,225	-2.16%	-1,275
	HARDING STREET STATION UNITS 5 AND 6	24,773	12.03%	2,980	10.14%	2,512	-1.89%	-468
	HARDING STREET STATION UNIT 7	567,973	7.81%	44,343	6.67%	37,875	-1.14%	-6,468
	HARDING STREET STATION COMMON	4,051,917	8.63%	349,751	7.34%	297,253	-1.29%	-52,498
	PETERSBURG UNIT 3	362,587	5.75%	20,834	4.89%	17,740	-0.86%	-3,094
	PETERSBURG UNIT 4	1,077,879	6.30%	67,926	5.31%	57,227	-0.99%	-10,699
	PETERSBURG UNITS 3 AND 4	26,400	5.48%	1,448	4.56%	1,204	-0.92%	-244
	PETERSBURG COMMON	418,760	6.45%	27,029	5.36%	22,462	-1.09%	-4,567
	TOTAL ACCOUNT 312.30	6,628,839	7.92%	525,046	6.71%	444,834	-1.21%	-80,212
312.31	ASH AND COAL HANDLING EQUIPMENT - MPP							
	HARDING STREET STATION UNIT 7	96,529	0.00%	0	0.00%	0	0.00%	0
	HARDING STREET STATION COMMON	133,130	0.00%	0	0.00%	0	0.00%	0
	TOTAL ACCOUNT 312.31	229,659	0.00%	0	0.00%	0	0.00%	0
312.40	RAILROAD TRACK SYSTEM/CARS							
	PETERSBURG STATION	272,620	8.18%	22,301	6.57%	17,913	-1.61%	-4,388
	TOTAL ACCOUNT 312.40	272,620	8.18%	22,301	6.57%	17,913	-1.61%	-4,388
314.00	TURBOGENERATOR UNITS							

Detailed Rate Comparison

		[1]	[2]		[3]		[4]	
			Company Proposal		OUCC Proposal		OUCC Adjustment	
Account No.	Description	Plant 12/31/2022	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual
	HARDING STREET STATION UNIT 5	9,712,464	6.71%	651,286	5.07%	492,452	-1.64%	-158,834
	HARDING STREET STATION UNIT 6	7,593,125	5.93%	450,635	4.33%	328,681	-1.60%	-121,954
	HARDING STREET STATION UNITS 5 AND 6	743,622	11.02%	81,917	9.09%	67,606	-1.93%	-14,311
	HARDING STREET STATION UNIT 7	41,205,071	5.57%	2,296,766	4.64%	1,910,142	-0.93%	-386,624
	HARDING STREET STATION COMMON	7,646,881	4.71%	360,498	3.54%	270,560	-1.17%	-89,938
	EAGLE VALLEY CCGT	95,278,834	3.56%	3,387,214	3.02%	2,879,214	-0.54%	-508,000
	PETERSBURG UNIT 2	585,614	4.28%	25,053	3.40%	19,907	-0.88%	-5,146
	PETERSBURG UNIT 3	51,396,019	3.86%	1,982,068	3.16%	1,621,729	-0.70%	-360,339
	PETERSBURG UNIT 4	75,204,758	3.55%	2,666,970	2.87%	2,156,056	-0.68%	-510,914
	PETERSBURG UNITS 3 AND 4	181,784	3.00%	5,458	2.21%	4,012	-0.79%	-1,446
	PETERSBURG COMMON	29,860,713	3.09%	922,423	2.34%	698,797	-0.75%	-223,626
	TOTAL ACCOUNT 314.00	319,408,885	4.02%	12,830,288	3.27%	10,449,156	-0.75%	-2,381,132
314.01	TURBOGENERATOR UNITS - MPP							
	HARDING STREET STATION COMMON	57,280	14.89%	8,527	14.89%	8,527	0.00%	0
	TOTAL ACCOUNT 314.01	57,280	14.89%	8,527	14.89%	8,527	0.00%	0
315.00	ACCESSORY ELECTRIC EQUIPMENT							
	HARDING STREET STATION UNIT 5	1,753,260	7.26%	127,269	5.57%	97,621	-1.69%	-29,648
	HARDING STREET STATION UNIT 6	1,279,870	6.19%	79,193	4.44%	56,852	-1.75%	-22,341
	HARDING STREET STATION UNITS 5 AND 6	9,132,827	10.65%	972,333	8.80%	803,985	-1.85%	-168,348
	HARDING STREET STATION UNIT 7	12,480,675	7.78%	970,717	6.87%	857,594	-0.91%	-113,123
	HARDING STREET STATION COMMON	18,409,023	6.24%	1,148,740	5.14%	946,696	-1.10%	-202,044
	EAGLE VALLEY CCGT	83,536,791	3.21%	2,678,558	2.95%	2,468,445	-0.26%	-210,113
	PETERSBURG UNIT 2	5,970,066	4.71%	281,203	3.96%	236,222	-0.75%	-44,981
	PETERSBURG UNIT 3	21,429,992	4.69%	1,005,590	4.09%	875,994	-0.60%	-129,596
	PETERSBURG UNIT 4	18,721,644	4.40%	823,846	3.80%	710,869	-0.60%	-112,977
	PETERSBURG UNITS 3 AND 4	963	3.22%	31	2.43%	23	-0.79%	-8
	PETERSBURG COMMON	122,839,829	4.19%	5,150,565	3.52%	4,327,859	-0.67%	-822,706
	TOTAL ACCOUNT 315.00	295,554,940	4.48%	13,238,045	3.85%	11,382,160	-0.63%	-1,855,885
315.01	ACCESSORY ELECTRIC EQUIPMENT - MPP							
	HARDING STREET STATION UNIT 5	37,886	0.00%	0	0.00%	0	0.00%	0
	HARDING STREET STATION UNIT 6	33,660	0.00%	0	0.00%	0	0.00%	0

Detailed Rate Comparison

Account No.	Description	[1] Plant 12/31/2022	[2] Company Proposal Rate	[2] Company Proposal Annual Accrual	[3] OUCC Proposal Rate	[3] OUCC Proposal Annual Accrual	[4] OUCC Adjustment Rate	[4] OUCC Adjustment Annual Accrual
	HARDING STREET STATION UNIT 7	11,667,269	10.94%	1,275,821	7.02%	818,660	-3.92%	-457,161
	HARDING STREET STATION COMMON	13,407,653	12.02%	1,611,931	5.88%	789,020	-6.14%	-822,911
	PETERSBURG UNIT 3	3,000,448	7.01%	210,463	0.35%	10,433	-6.66%	-200,030
	PETERSBURG UNIT 4	12,218,359	7.89%	963,563	6.35%	775,588	-1.54%	-187,975
	PETERSBURG COMMON	7,945,746	6.49%	515,456	-0.56%	-44,693	-7.05%	-560,149
	TOTAL ACCOUNT 315.01	48,311,021	9.47%	4,577,234	4.86%	2,349,009	-4.61%	-2,228,225
315.02	ACCESSORY ELECTRIC EQUIPMENT - MATS							
	PETERSBURG UNIT 3	11,041,203	5.85%	646,415	5.26%	580,518	-0.59%	-65,897
	PETERSBURG COMMON	24,355	6.06%	1,475	5.38%	1,309	-0.68%	-166
	TOTAL ACCOUNT 315.02	11,065,558	5.86%	647,890	5.26%	581,827	-0.60%	-66,063
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT							
	HARDING STREET STATION UNIT 5	135,254	8.60%	11,638	6.93%	9,373	-1.67%	-2,265
	HARDING STREET STATION UNIT 6	480,656	8.35%	40,155	6.75%	32,421	-1.60%	-7,734
	HARDING STREET STATION UNITS 5 AND 6	306,931	11.45%	35,147	9.49%	29,135	-1.96%	-6,012
	HARDING STREET STATION UNIT 7	2,549,338	6.87%	175,155	5.89%	150,266	-0.98%	-24,889
	HARDING STREET STATION COMMON	4,224,680	8.11%	342,579	6.89%	290,994	-1.22%	-51,585
	EAGLE VALLEY	52,987	4.15%	2,197	3.37%	1,786	-0.78%	-411
	EAGLE VALLEY CCGT	205,682,211	3.72%	7,655,815	3.13%	6,442,745	-0.59%	-1,213,070
	PETERSBURG UNIT 2	434,312	4.70%	20,401	3.74%	16,233	-0.96%	-4,168
	PETERSBURG UNIT 3	4,695,732	4.97%	233,577	4.18%	196,200	-0.79%	-37,377
	PETERSBURG UNIT 4	1,598,649	4.26%	68,073	3.52%	56,322	-0.74%	-11,751
	PETERSBURG UNITS 3 AND 4	432,569	5.40%	23,357	4.45%	19,252	-0.95%	-4,105
	PETERSBURG COMMON	18,801,010	4.84%	909,102	3.97%	747,007	-0.87%	-162,095
	TOTAL ACCOUNT 316.00	239,394,328	3.98%	9,517,196	3.34%	7,991,735	-0.64%	-1,525,461
316.01	MISCELLANEOUS POWER PLANT EQUIPMENT - MPP							
	HARDING STREET STATION UNIT 6	38,501	0.00%	0	0.00%	0	0.00%	0
	HARDING STREET STATION UNIT 7	1,200,322	13.60%	163,273	9.66%	115,916	-3.94%	-47,357
	HARDING STREET STATION COMMON	636,775	12.74%	81,094	8.34%	53,075	-4.40%	-28,019
	PETERSBURG UNIT 3	17,837	5.86%	1,046	3.64%	650	-2.22%	-396
	PETERSBURG UNIT 4	105,047	8.38%	8,801	6.84%	7,185	-1.54%	-1,616
	PETERSBURG COMMON	856,249	6.59%	56,465	4.75%	40,712	-1.84%	-15,753

Detailed Rate Comparison

Account No.	Description	[1] Plant 12/31/2022	[2] Company Proposal Rate	[2] Company Proposal Annual Accrual	[3] OUCC Proposal Rate	[3] OUCC Proposal Annual Accrual	[4] OUCC Adjustment Rate	[4] OUCC Adjustment Annual Accrual
	TOTAL ACCOUNT 316.01	2,854,732	10.88%	310,679	7.62%	217,538	-3.26%	-93,141
316.02	MISCELLANEOUS POWER PLANT EQUIPMENT - MATS							
	PETERSBURG UNIT 3	131,335	5.45%	7,159	4.61%	6,059	-0.84%	-1,100
	PETERSBURG COMMON	57,092	5.45%	3,112	4.56%	2,604	-0.89%	-508
	TOTAL ACCOUNT 316.02	188,427	5.45%	10,271	4.60%	8,662	-0.85%	-1,609
	Total Steam Production Plant	2,680,023,139	4.66%	124,828,618	3.56%	95,290,897	-1.10%	-29,537,721
	Other Production Plant							
341.00	STRUCTURES AND IMPROVEMENTS							
	GEORGETOWN GTs COMMON	803,370	2.66%	21,392	2.17%	17,459	-0.49%	-3,933
	HARDING STREET STATION GTs 1 AND 2	227,129	61.90%	140,589	30.90%	70,179	-31.00%	-70,410
	HARDING STREET STATION GT 4	2,306,838	2.44%	56,398	1.29%	29,696	-1.15%	-26,702
	HARDING STREET STATION GT 5	1,985,804	2.47%	49,134	1.35%	26,821	-1.12%	-22,313
	HARDING STREET STATION GT 6	833,628	2.86%	23,807	1.96%	16,349	-0.90%	-7,458
	HARDING STREET STATION GTs COMMON	2,660,591	2.39%	63,620	1.46%	38,954	-0.93%	-24,666
	EAGLE VALLEY CCGT	337,559	3.22%	10,872	2.97%	10,025	-0.25%	-847
	TOTAL ACCOUNT 341.00	9,154,919	4.00%	365,812	2.29%	209,483	-1.71%	-156,329
342.00	FUEL HOLDERS, PRODUCERS AND ACCESSORIES							
	GEORGETOWN GTs COMMON	1,328,316	1.92%	25,481	1.51%	20,056	-0.41%	-5,425
	HARDING STREET STATION GT 4	196,495	1.82%	3,583	0.80%	1,574	-1.02%	-2,009
	HARDING STREET STATION GT 5	231,985	2.42%	5,611	1.49%	3,453	-0.93%	-2,158
	HARDING STREET STATION GT 6	1,642,050	2.39%	39,214	1.65%	27,073	-0.74%	-12,141
	HARDING STREET STATION GTs COMMON	2,140,583	2.02%	43,149	1.25%	26,859	-0.77%	-16,290
	TOTAL ACCOUNT 342.00	5,539,429	2.11%	117,038	1.43%	79,014	-0.69%	-38,024
343.00	PRIME MOVERS							
	GEORGETOWN GTs COMMON	41,482,494	2.39%	989,855	1.87%	777,125	-0.52%	-212,730
	HARDING STREET STATION GTs 1 AND 2	712,603	0.00%	0	0.00%	0	0.00%	0

Detailed Rate Comparison

Account No.	Description	[1] Plant 12/31/2022	[2] Company Proposal Rate	Company Proposal Annual Accrual	[3] OUCC Proposal Rate	OUCC Proposal Annual Accrual	[4] OUCC Adjustment Rate	OUCC Adjustment Annual Accrual
	HARDING STREET STATION GT 4	17,260,984	2.65%	457,030	1.50%	258,901	-1.15%	-198,129
	HARDING STREET STATION GT 5	16,729,268	2.62%	438,889	1.50%	251,570	-1.12%	-187,319
	HARDING STREET STATION GT 6	40,814,717	2.98%	1,216,148	2.09%	852,125	-0.89%	-364,023
	HARDING STREET STATION GTs COMMON	5,151,727	2.48%	127,613	1.55%	79,962	-0.93%	-47,651
	EAGLE VALLEY CCGT	2,930,212	3.05%	89,253	2.80%	82,026	-0.25%	-7,227
	TOTAL ACCOUNT 343.00	125,082,004	2.65%	3,318,788	1.84%	2,301,710	-0.81%	-1,017,078
344.00	GENERATORS							
	GEORGETOWN GTs COMMON	11,798,153	2.90%	341,673	2.33%	275,104	-0.57%	-66,569
	HARDING STREET STATION GTs 1 AND 2	2,253,719	0.00%	0	0.00%	0	0.00%	0
	HARDING STREET STATION GT 4	4,514,593	3.24%	146,294	2.05%	92,452	-1.19%	-53,842
	HARDING STREET STATION GT 5	4,380,246	3.31%	144,998	2.17%	95,140	-1.14%	-49,858
	HARDING STREET STATION GT 6	11,368,427	3.07%	349,372	2.03%	231,138	-1.04%	-118,234
	HARDING STREET STATION GTs COMMON	19,111,020	3.85%	736,705	3.05%	582,516	-0.80%	-154,189
	EAGLE VALLEY CCGT	109,983,838	3.22%	3,538,591	2.93%	3,225,615	-0.29%	-312,976
	TOTAL ACCOUNT 344.00	163,409,998	3.22%	5,257,633	2.76%	4,501,963	-0.46%	-755,670
345.00	ACCESSORY ELECTRIC EQUIPMENT							
	GEORGETOWN GTs COMMON	6,294,827	2.67%	168,372	2.00%	125,990	-0.67%	-42,382
	HARDING STREET STATION GTs 1 AND 2	2,630,035	26.88%	707,061	-4.12%	-108,250	-31.00%	-815,311
	HARDING STREET STATION GT 4	2,869,587	2.91%	83,393	1.49%	42,846	-1.42%	-40,547
	HARDING STREET STATION GT 5	2,283,717	2.95%	67,427	1.57%	35,957	-1.38%	-31,470
	HARDING STREET STATION GT 6	2,023,440	3.23%	65,324	2.15%	43,539	-1.08%	-21,785
	HARDING STREET STATION GTs COMMON	5,621,303	2.93%	164,470	1.80%	101,008	-1.13%	-63,462
	EAGLE VALLEY CCGT	9,323,508	3.07%	286,378	2.87%	267,635	-0.20%	-18,743
	TOTAL ACCOUNT 345.00	31,046,417	4.97%	1,542,425	1.64%	508,726	-3.33%	-1,033,699
346.00	MISCELLANEOUS POWER PLANT EQUIPMENT							
	GEORGETOWN GTs COMMON	242,043	2.90%	7,023	2.29%	5,537	-0.61%	-1,486
	HARDING STREET STATION GTs 1 AND 2	40,040	1.81%	724	-29.19%	-11,688	-31.00%	-12,412
	HARDING STREET STATION GT 4	110,634	4.24%	4,692	3.18%	3,522	-1.06%	-1,170
	HARDING STREET STATION GT 5	266,365	3.47%	9,234	2.23%	5,947	-1.24%	-3,287
	HARDING STREET STATION GT 6	131,437	3.27%	4,298	2.17%	2,855	-1.10%	-1,443
	HARDING STREET STATION GTs COMMON	1,373,028	3.12%	42,803	2.04%	28,052	-1.08%	-14,751

Detailed Rate Comparison

		[1]	[2]		[3]		[4]	
			Company Proposal		OUCC Proposal		OUCC Adjustment	
Account No.	Description	Plant 12/31/2022	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual
	EAGLE VALLEY CCGT	870,131	3.20%	27,874	3.02%	26,244	-0.18%	-1,630
	TOTAL ACCOUNT 346.00	3,033,679	3.19%	96,648	1.99%	60,469	-1.19%	-36,179
	Total Other Production Plant	337,266,446	3.17%	10,698,344	2.27%	7,661,364	-0.90%	-3,036,980
	Transmission Plant							
350.50	LAND RIGHTS	21,416,885	1.34%	287,446	1.23%	264,279	-0.11%	-23,167
351.00	ENERGY STORAGE EQUIPMENT	10,305,630	6.02%	620,716	5.07%	522,971	-0.95%	-97,745
352.00	STRUCTURES AND IMPROVEMENTS	21,576,195	2.02%	436,587	1.75%	378,249	-0.27%	-58,338
353.00	STATION EQUIPMENT	235,540,145	2.99%	7,046,257	2.07%	4,875,939	-0.92%	-2,170,318
353.01	STATION EQUIPMENT - MPP	2,502,990	7.01%	175,494	6.99%	175,073	-0.02%	-421
354.00	TOWERS AND FIXTURES	51,153,862	1.72%	879,237	1.58%	810,315	-0.14%	-68,922
355.00	POLES AND FIXTURES	51,932,491	2.58%	1,337,940	1.81%	941,213	-0.77%	-396,727
355.01	POLES AND FIXTURES - MPP	313,305	6.32%	19,808	6.35%	19,893	0.03%	85
356.00	OVERHEAD CONDUCTORS AND DEVICES	65,226,990	2.77%	1,809,081	1.92%	1,255,204	-0.85%	-553,877
357.00	UNDERGROUND CONDUIT	9,431	1.95%	184	1.65%	156	-0.30%	-28
358.00	UNDERGROUND CONDUCTORS AND DEVICES	487,825	8.38%	40,877	3.65%	17,790	-4.73%	-23,087
	Total Transmission Plant	460,465,749	2.75%	12,653,627	2.01%	9,261,084	-0.74%	-3,392,543
	Distribution Plant							
360.50	LAND RIGHTS	391,444	0.50%	1,965	0.46%	1,802	-0.04%	-163
361.00	STRUCTURES AND IMPROVEMENTS	11,604,182	0.84%	97,881	0.70%	81,690	-0.14%	-16,191
362.00	STATION EQUIPMENT	211,642,798	1.85%	3,922,974	1.20%	2,539,643	-0.65%	-1,383,331
364.00	POLES, TOWERS AND FIXTURES	262,046,873	3.35%	8,770,466	2.47%	6,484,520	-0.88%	-2,285,946
365.00	OVERHEAD CONDUCTORS AND DEVICES	374,332,907	3.06%	11,459,016	1.55%	5,791,328	-1.51%	-5,667,688
366.00	UNDERGROUND CONDUIT	157,819,431	2.48%	3,921,195	1.60%	2,519,411	-0.88%	-1,401,784
367.00	UNDERGROUND CONDUCTORS AND DEVICES	351,427,826	2.14%	7,526,177	1.54%	5,406,879	-0.60%	-2,119,298
368.00	LINE TRANSFORMERS	258,425,215	1.46%	3,767,485	0.97%	2,514,302	-0.49%	-1,253,183
369.00	SERVICES	158,416,611	2.36%	3,731,880	2.08%	3,301,080	-0.28%	-430,800
370.00	METERS	35,132,607	4.45%	1,565,135	3.10%	1,089,594	-1.35%	-475,541
370.01	METERS - SMART METERS	95,786,891	6.63%	6,349,673	4.33%	4,144,726	-2.30%	-2,204,947

Detailed Rate Comparison

		[1]	[2]		[3]		[4]	
			Company Proposal		OUCC Proposal		OUCC Adjustment	
Account No.	Description	Plant 12/31/2022	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual
371.00	INSTALLATIONS ON CUSTOMERS' PREMISES	46,502,244	0.85%	393,559	0.70%	323,838	-0.15%	-69,721
373.00	STREET LIGHTING AND SIGNAL SYSTEMS	68,777,058	1.32%	905,153	0.91%	622,872	-0.41%	-282,281
373.01	STREET LIGHTING AND SIGNAL SYSTEMS - LED	535,079	2.61%	13,957	2.07%	11,066	-0.54%	-2,891
	Total Distribution Plant	2,032,841,166	2.58%	52,426,516	1.71%	34,832,753	-0.87%	-17,593,763
	General Plant							
390.00	STRUCTURES AND IMPROVEMENTS							
	ELECTRICAL BUILDING	40,720,743	3.74%	1,523,800	3.34%	1,358,577	-0.40%	-165,223
	MORRIS STRET SERVICE CENTER	39,617,685	4.17%	1,650,520	3.97%	1,574,275	-0.20%	-76,245
	ARLINGTON SERVICE CENTER	10,614,956	5.57%	591,546	5.44%	577,431	-0.13%	-14,115
	CUSTOMER SERVICE CENTER	3,235,446	4.11%	133,009	3.98%	128,795	-0.13%	-4,214
	OTHER STRUCTURES	3,849,780	3.08%	118,606	2.57%	98,968	-0.51%	-19,638
	TOTAL ACCOUNT 390.00	98,038,610	4.10%	4,017,481	3.81%	3,738,046	-0.29%	-279,435
391.00	OFFICE FURNITURE AND EQUIPMENT	12,751,358	4.83%	615,703	4.82%	614,507	-0.01%	-1,196
391.60	OFFICE FURNITURE AND EQUIPMENT - COMPUTER EQUIPMENT	34,237,019	12.98%	4,444,143	13.05%	4,468,773	0.07%	24,630
392.00	TRANSPORTATION EQUIPMENT	52,428,191	2.72%	1,426,887	2.10%	1,098,886	-0.62%	-328,001
393.00	STORES EQUIPMENT	1,733,825	3.87%	67,183	3.87%	67,185	0.00%	2
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT	15,659,539	4.05%	633,887	4.05%	633,489	0.00%	-398
395.00	LABORATORY EQUIPMENT	4,499,732	4.33%	195,033	4.33%	194,754	0.00%	-279
396.00	POWER OPERATED EQUIPMENT	2,264,491	6.14%	139,124	6.15%	139,166	0.01%	42
397.00	COMMUNICATION EQUIPMENT	31,540,473	5.44%	1,715,827	5.43%	1,711,280	-0.01%	-4,547
398.00	MISCELLANEOUS EQUIPMENT	2,046,339	3.72%	76,226	3.73%	76,256	0.01%	30
	Total General Plant	255,199,577	5.22%	13,331,494	4.99%	12,742,341	-0.23%	-589,153
	TOTAL PLANT STUDIED	**5,919,402,104**	**3.80%**	**225,043,786**	**2.89%**	**170,919,106**	**-0.91%**	**-54,124,680**

[1], [2] From Company depreciation study
[3] From Attachment DJG-5

Detailed Rate Comparison

		[1]	[2]		[3]		[4]	
			Company Proposal		OUCC Proposal		OUCC Adjustment	
Account No.	Description	Plant 12/31/2022	Rate	Annual Accrual	Rate	Annual Accrual	Rate	Annual Accrual

[4] = [3] - [2]

Depreciation Rate Development

Account No.	Description	[1] Original Cost	[2] Iowa Curve Type	AL	[3] Net Salvage	[4] Depreciable Base	[5] Book Reserve	[6] Future Accruals	[7] Remaining Life	[8] Total Accrual	[9] Total Rate
	Intangible Plant										
303.00	MISC INTANGIBLE PLANT - SOFTWARE	145,325,118	SQ	7	0%	145,325,118	107,414,541	37,910,577	3.60	10,530,716	**7.25%**
303.10	MISC INTANGIBLE PLANT - SAAS SOFTWARE	2,450,602	SQ	5	0%	2,450,602	571,645	1,878,957	3.60	521,932	**21.30%**
303.11	MISC INTANGIBLE PLANT - SAAS SOFTWARE	5,830,307	SQ	3	0%	5,830,307	5,713,279	117,028	1.50	78,019	**1.34%**
303.15	MISC INTANGIBLE PLANT - ACE SOFTWARE		SQ	10							
	Total Intangible Plant	153,606,027			0%	153,606,027	113,699,465	39,906,562	3.59	11,130,667	**7.25%**
	Steam Production Plant										
311.00	STRUCTURES AND IMPROVEMENTS										
	HARDING STREET STATION UNIT 5	3,068,389	R2.5	80	-22%	3,743,434	2,667,838	1,075,596	7.70	139,688	**4.55%**
	HARDING STREET STATION UNIT 6	2,340,629	R2.5	80	-22%	2,855,567	2,179,718	675,849	7.60	88,928	**3.80%**
	HARDING STREET STATION UNITS 5 AND 6	3,950,417	R2.5	80	-22%	4,819,508	2,105,569	2,713,939	8.00	339,242	**8.59%**
	HARDING STREET STATION UNIT 7	20,390,549	R2.5	80	-22%	24,876,470	13,454,062	11,422,408	10.80	1,057,630	**5.19%**
	HARDING STREET STATION COMMON	37,175,431	R2.5	80	-22%	45,354,025	24,076,917	21,277,108	10.70	1,988,515	**5.35%**
	EAGLE VALLEY	419,451	R2.5	80	-4%	436,229	5,982	430,247	32.30	13,320	**3.18%**
	EAGLE VALLEY CCGT	18,862,945	R2.5	80	-5%	19,806,093	2,056,897	17,749,196	32.10	552,934	**2.93%**
	PETERSBURG UNIT 2	1,747,553	R2.5	80	-13%	1,974,735	772,924	1,201,811	19.40	61,949	**3.54%**
	PETERSBURG UNITS 1 AND 2	9,928,095	R2.5	80	-14%	11,318,028	5,692,520	5,625,508	19.30	291,477	**2.94%**
	PETERSBURG UNIT 3	27,788,101	R2.5	80	-15%	31,956,316	18,576,659	13,379,657	18.70	715,490	**2.57%**
	PETERSBURG UNIT 4	39,678,653	R2.5	80	-15%	45,630,450	25,130,481	20,499,969	19.00	1,078,946	**2.72%**
	PETERSBURG UNITS 3 AND 4	543,073	R2.5	80	-13%	613,672	267,754	345,918	19.30	17,923	**3.30%**
	PETERSBURG COMMON	113,575,427	R2.5	80	-14%	129,475,987	49,440,707	80,035,280	19.40	4,125,530	**3.63%**
	TOTAL ACCOUNT 311.00	279,468,711			-16%	322,860,515	146,428,028	176,432,487	16.85	10,471,572	**3.75%**
311.01	STRUCTURES AND IMPROVEMENTS - MPP										
	HARDING STREET STATION UNIT 5	1,022	SQ	18	-22%	1,247	477	770	11.40	68	**6.61%**
	HARDING STREET STATION UNIT 7	968,864	SQ	18	-22%	1,182,014	1,043,319	138,695	2.80	49,534	**5.11%**
	HARDING STREET STATION COMMON	1,891,012	SQ	18	-22%	2,307,035	2,093,438	213,597	2.50	85,439	**4.52%**
	EAGLE VALLEY CCGT	15,178	SQ	18	-5%	15,937	439	15,498	17.50	886	**5.83%**
	PETERSBURG UNIT 3	761,920	SQ	18	-15%	876,208	870,529	5,679	1.60	3,549	**0.47%**
	PETERSBURG UNIT 4	1,900,175	SQ	18	-15%	2,185,201	1,465,282	719,919	6.50	110,757	**5.83%**
	PETERSBURG COMMON	419,400	SQ	18	-14%	478,116	137,784	340,332	15.40	22,099	**5.27%**
	TOTAL ACCOUNT 311.01	5,957,571			-18%	7,045,758	5,611,268	1,434,490	5.27	272,331	**4.57%**
311.02	STRUCTURES AND IMPROVEMENTS - MATS										
	PETERSBURG UNIT 2	202,050	R2.5	80	-13%	228,317	42,193	186,124	19.70	9,448	**4.68%**
	PETERSBURG UNIT 3	557,758	R2.5	80	-15%	641,422	103,920	537,502	19.70	27,284	**4.89%**
	PETERSBURG UNIT 4	73,833	R2.5	80	-15%	84,908	10,342	74,566	19.80	3,766	**5.10%**
	PETERSBURG COMMON	206,395	R2.5	80	-14%	235,290	38,455	196,835	19.70	9,992	**4.84%**

Depreciation Rate Development

Attachment DJG-5
Page 2 of 8

Account No.	Description	[1] Original Cost	[2] Iowa Curve Type	AL	[3] Net Salvage	[4] Depreciable Base	[5] Book Reserve	[6] Future Accruals	[7] Remaining Life	[8] Total Accrual	[9] Total Rate
	TOTAL ACCOUNT 311.02	1,040,036			-14%	1,189,936	194,910	995,026	19.71	50,490	**4.85%**
312.00	BOILER PLANT EQUIPMENT										
	HARDING STREET STATION UNIT 5	10,236,171	R1.5	60	-22%	12,488,128	12,121,393	366,735	7.80	47,017	**0.46%**
	HARDING STREET STATION UNIT 6	9,569,522	R1.5	60	-22%	11,674,816	11,176,022	498,794	7.80	63,948	**0.67%**
	HARDING STREET STATION UNITS 5 AND 6	29,168,319	R1.5	60	-22%	35,585,349	21,919,443	13,665,906	7.90	1,729,862	**5.93%**
	HARDING STREET STATION UNIT 7	106,023,318	R1.5	60	-22%	129,348,448	77,053,225	52,295,223	10.70	4,887,404	**4.61%**
	HARDING STREET STATION COMMON	60,362,499	R1.5	60	-22%	73,642,249	48,393,855	25,248,394	10.70	2,359,663	**3.91%**
	EAGLE VALLEY	218,609	R1.5	60	-4%	227,354	59,323	168,031	30.10	5,582	**2.55%**
	EAGLE VALLEY CCGT	176,224,510	R1.5	60	-5%	185,035,735	30,934,269	154,101,466	30.40	5,069,127	**2.88%**
	PETERSBURG UNIT 2	8,170,948	R1.5	60	-13%	9,233,171	4,241,878	4,991,293	18.90	264,090	**3.23%**
	PETERSBURG UNITS 1 AND 2	21,821,948	R1.5	60	-14%	24,877,021	16,518,063	8,358,958	18.40	454,291	**2.08%**
	PETERSBURG UNIT 3	102,149,951	R1.5	60	-15%	117,472,444	66,082,834	51,389,610	18.60	2,762,882	**2.70%**
	PETERSBURG UNIT 4	149,648,037	R1.5	60	-15%	172,095,242	114,665,017	57,430,225	18.30	3,138,264	**2.10%**
	PETERSBURG UNITS 3 AND 4	790,546	R1.5	60	-13%	893,317	311,573	581,744	19.10	30,458	**3.85%**
	PETERSBURG COMMON	454,112,928	R1.5	60	-14%	517,688,737	257,043,471	260,645,266	18.80	13,864,110	**3.05%**
	TOTAL ACCOUNT 312.00	1,128,497,305			-14%	1,290,262,012	660,520,366	629,741,646	18.16	34,676,698	**3.07%**
312.01	BOILER PLANT EQUIPMENT - MPP										
	HARDING STREET STATION UNIT 5	2,087,851	SQ	18	-22%	2,547,178	2,564,879	-17,701	4.50	-3,934	**-0.19%**
	HARDING STREET STATION UNIT 6	2,107,770	SQ	18	-22%	2,571,480	2,824,412	-252,932			
	HARDING STREET STATION UNITS 5 AND 6	17,298	SQ	18	-22%	21,104	10,206	10,898	9.50	1,147	**6.63%**
	HARDING STREET STATION UNIT 7	67,894,222	SQ	18	-22%	82,830,951	74,183,776	8,647,175	1.70	5,086,573	**7.49%**
	HARDING STREET STATION COMMON	12,044,829	SQ	18	-22%	14,694,691	13,789,804	904,887	1.50	603,258	**5.01%**
	PETERSBURG UNIT 3	66,331,744	SQ	18	-15%	76,281,506	71,565,043	4,716,463	2.70	1,746,838	**2.63%**
	PETERSBURG UNIT 4	34,638,151	SQ	18	-15%	39,833,874	25,324,920	14,508,954	6.50	2,232,147	**6.44%**
	PETERSBURG COMMON	28,449,616	SQ	18	-14%	32,432,562	32,145,038	287,524	1.90	151,329	**0.53%**
	TOTAL ACCOUNT 312.01	213,571,481			-18%	251,213,345	222,408,078	28,805,267	2.93	9,817,358	**4.60%**
312.02	BOILER PLANT EQUIPMENT - MATS										
	HARDING STREET STATION COMMON	10	R1.5	60	-22%	12	3	9	10.00	1	**9.04%**
	PETERSBURG UNIT 3	127,336,246	R1.5	60	-15%	146,436,683	21,498,690	124,937,993	19.10	6,541,256	**5.14%**
	PETERSBURG UNIT 4	174,436	R1.5	60	-15%	200,601	23,837	176,764	19.10	9,255	**5.31%**
	PETERSBURG COMMON	11,055	R1.5	60	-14%	12,603	1,659	10,944	19.10	573	**5.18%**
	TOTAL ACCOUNT 312.02	127,521,746			-15%	146,649,898	21,524,189	125,125,709	19.10	6,551,085	**5.14%**
312.30	ASH AND COAL HANDLING EQUIPMENT										
	HARDING STREET STATION UNIT 5	39,326	R1.5	50	-22%	47,978	27,628	20,350	6.10	3,336	**8.48%**
	HARDING STREET STATION UNIT 6	59,223	R1.5	50	-22%	72,252	37,244	35,008	6.70	5,225	**8.82%**
	HARDING STREET STATION UNITS 5 AND 6	24,773	R1.5	50	-22%	30,223	10,627	19,596	7.80	2,512	**10.14%**
	HARDING STREET STATION UNIT 7	567,973	R1.5	50	-22%	692,927	325,542	367,385	9.70	37,875	**6.67%**
	HARDING STREET STATION COMMON	4,051,917	R1.5	50	-22%	4,943,339	1,941,081	3,002,258	10.10	297,253	**7.34%**

Depreciation Rate Development

Account No.	Description	[1] Original Cost	[2] Iowa Curve Type	[2] Iowa Curve AL	[3] Net Salvage	[4] Depreciable Base	[5] Book Reserve	[6] Future Accruals	[7] Remaining Life	[8] Total Accrual	[9] Total Rate
	PETERSBURG UNIT 3	362,587	R1.5	50	-15%	416,975	85,240	331,735	18.70	17,740	**4.89%**
	PETERSBURG UNIT 4	1,077,879	R1.5	50	-15%	1,239,561	157,979	1,081,582	18.90	57,227	**5.31%**
	PETERSBURG UNITS 3 AND 4	26,400	R1.5	50	-13%	29,832	7,432	22,400	18.60	1,204	**4.56%**
	PETERSBURG COMMON	418,760	R1.5	50	-14%	477,386	52,861	424,525	18.90	22,462	**5.36%**
	TOTAL ACCOUNT 312.30	6,628,839			-20%	7,950,474	2,645,634	5,304,840	11.93	444,834	**6.71%**
312.31	ASH AND COAL HANDLING EQUIPMENT - MPP										
	HARDING STREET STATION UNIT 7	96,529	SQ	18	-22%	117,766	126,453	-8,687			
	HARDING STREET STATION COMMON	133,130	SQ	18	-22%	162,419	177,063	-14,644			
	TOTAL ACCOUNT 312.31	229,659			-22%	280,184	303,516	-23,332	#DIV/0!	0	**0.00%**
312.40	RAILROAD TRACK SYSTEM/CARS										
	PETERSBURG STATION	272,620	S1	25	-14%	310,787	4,469	306,318	17.10	17,913	**6.57%**
	TOTAL ACCOUNT 312.40	272,620			-14%	310,787	4,469	306,318	17.10	17,913	**6.57%**
314.00	TURBOGENERATOR UNITS										
	HARDING STREET STATION UNIT 5	9,712,464	R1.5	60	-22%	11,849,207	8,106,574	3,742,633	7.60	492,452	**5.07%**
	HARDING STREET STATION UNIT 6	7,593,125	R1.5	60	-22%	9,263,613	6,798,504	2,465,109	7.50	328,681	**4.33%**
	HARDING STREET STATION UNITS 5 AND 6	743,622	R1.5	60	-22%	907,219	373,131	534,088	7.90	67,606	**9.09%**
	HARDING STREET STATION UNIT 7	41,205,071	R1.5	60	-22%	50,270,186	30,213,700	20,056,486	10.50	1,910,142	**4.64%**
	HARDING STREET STATION COMMON	7,646,881	R1.5	60	-22%	9,329,195	6,596,536	2,732,659	10.10	270,560	**3.54%**
	EAGLE VALLEY CCGT	95,278,834	R1.5	60	-5%	100,042,776	12,514,669	87,528,107	30.40	2,879,214	**3.02%**
	PETERSBURG UNIT 2	585,614	R1.5	60	-13%	661,744	293,461	368,283	18.50	19,907	**3.40%**
	PETERSBURG UNIT 3	51,396,019	R1.5	60	-15%	59,105,421	29,589,950	29,515,471	18.20	1,621,729	**3.16%**
	PETERSBURG UNIT 4	75,204,758	R1.5	60	-15%	86,485,472	47,460,853	39,024,619	18.10	2,156,056	**2.87%**
	PETERSBURG UNITS 3 AND 4	181,784	R1.5	60	-13%	205,416	136,412	69,004	17.20	4,012	**2.21%**
	PETERSBURG COMMON	29,860,713	R1.5	60	-14%	34,041,213	22,091,781	11,949,432	17.10	698,797	**2.34%**
	TOTAL ACCOUNT 314.00	319,408,885			-13%	362,161,461	164,175,571	197,985,890	18.95	10,449,156	**3.27%**
314.01	TURBOGENERATOR UNITS - MPP										
	HARDING STREET STATION COMMON	57,280	SQ	18	-33%	76,183	54,866	21,317	2.50	8,527	**14.89%**
	TOTAL ACCOUNT 314.01	57,280			-33%	76,183	54,866	21,317	2.50	8,527	**14.89%**
315.00	ACCESSORY ELECTRIC EQUIPMENT										
	HARDING STREET STATION UNIT 5	1,753,260	R2.5	70	-22%	2,138,977	1,387,296	751,681	7.70	97,621	**5.57%**
	HARDING STREET STATION UNIT 6	1,279,870	R2.5	70	-22%	1,561,441	1,135,051	426,390	7.50	56,852	**4.44%**
	HARDING STREET STATION UNITS 5 AND 6	9,132,827	R2.5	70	-22%	11,142,048	4,710,168	6,431,880	8.00	803,985	**8.80%**
	HARDING STREET STATION UNIT 7	12,480,675	R2.5	70	-22%	15,226,423	5,878,649	9,347,774	10.90	857,594	**6.87%**
	HARDING STREET STATION COMMON	18,409,023	R2.5	70	-22%	22,459,007	12,424,034	10,034,973	10.60	946,696	**5.14%**
	EAGLE VALLEY CCGT	83,536,791	R2.5	70	-5%	87,713,631	8,970,244	78,743,387	31.90	2,468,445	**2.95%**
	PETERSBURG UNIT 2	5,970,066	R2.5	70	-13%	6,746,174	2,187,097	4,559,077	19.30	236,222	**3.96%**

Depreciation Rate Development

Attachment DJG-5
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Account No.	Description	[1] Original Cost	[2] Iowa Curve Type	AL	[3] Net Salvage	[4] Depreciable Base	[5] Book Reserve	[6] Future Accruals	[7] Remaining Life	[8] Total Accrual	[9] Total Rate
	PETERSBURG UNIT 3	21,429,992	R2.5	70	-15%	24,644,491	7,737,797	16,906,694	19.30	875,994	**4.09%**
	PETERSBURG UNIT 4	18,721,644	R2.5	70	-15%	21,529,891	7,810,122	13,719,769	19.30	710,869	**3.80%**
	PETERSBURG UNITS 3 AND 4	963	R2.5	70	-13%	1,089	682	407	17.40	23	**2.43%**
	PETERSBURG COMMON	122,839,829	R2.5	70	-14%	140,037,406	57,808,077	82,229,329	19.00	4,327,859	**3.52%**
	TOTAL ACCOUNT 315.00	295,554,940			-13%	333,200,578	110,049,217	223,151,361	19.61	11,382,160	**3.85%**
315.01	ACCESSORY ELECTRIC EQUIPMENT - MPP										
	HARDING STREET STATION UNIT 5	37,886	SQ	18	-22%	46,221	50,767	-4,546			
	HARDING STREET STATION UNIT 6	33,660	SQ	18	-22%	41,065	45,104	-4,039			
	HARDING STREET STATION UNIT 7	11,667,269	SQ	18	-22%	14,234,068	12,269,284	1,964,784	2.40	818,660	**7.02%**
	HARDING STREET STATION COMMON	13,407,653	SQ	18	-22%	16,357,337	14,937,100	1,420,237	1.80	789,020	**5.88%**
	PETERSBURG UNIT 3	3,000,448	SQ	18	-15%	3,450,516	3,434,866	15,650	1.50	10,433	**0.35%**
	PETERSBURG UNIT 4	12,218,359	SQ	18	-15%	14,051,113	9,009,789	5,041,324	6.50	775,588	**6.35%**
	PETERSBURG COMMON	7,945,746	SQ	18	-14%	9,058,150	9,129,658	-71,508	1.60	-44,693	**-0.56%**
	TOTAL ACCOUNT 315.01	48,311,021			-18%	57,238,469	48,876,568	8,361,901	3.56	2,349,009	**4.86%**
315.02	ACCESSORY ELECTRIC EQUIPMENT - MATS										
	PETERSBURG UNIT 3	11,041,203	R2.5	70	-15%	12,697,384	1,319,232	11,378,152	19.60	580,518	**5.26%**
	PETERSBURG COMMON	24,355	R2.5	70	-14%	27,765	1,968	25,797	19.70	1,309	**5.38%**
	TOTAL ACCOUNT 315.02	11,065,558			-15%	12,725,148	1,321,200	11,403,948	19.60	581,827	**5.26%**
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT										
	HARDING STREET STATION UNIT 5	135,254	S0	60	-22%	165,010	92,839	72,171	7.70	9,373	**6.93%**
	HARDING STREET STATION UNIT 6	480,656	S0	60	-22%	586,401	336,757	249,644	7.70	32,421	**6.75%**
	HARDING STREET STATION UNITS 5 AND 6	306,931	S0	60	-22%	374,456	144,288	230,168	7.90	29,135	**9.49%**
	HARDING STREET STATION UNIT 7	2,549,338	S0	60	-22%	3,110,192	1,547,427	1,562,765	10.40	150,266	**5.89%**
	HARDING STREET STATION COMMON	4,224,680	S0	60	-22%	5,154,109	2,069,569	3,084,540	10.60	290,994	**6.89%**
	EAGLE VALLEY	52,987	S0	60	-4%	55,106	816	54,290	30.40	1,786	**3.37%**
	EAGLE VALLEY CCGT	205,682,211	S0	60	-5%	215,966,321	24,616,792	191,349,529	29.70	6,442,745	**3.13%**
	PETERSBURG UNIT 2	434,312	S0	60	-13%	490,772	196,948	293,824	18.10	16,233	**3.74%**
	PETERSBURG UNIT 3	4,695,732	S0	60	-15%	5,400,091	1,790,015	3,610,076	18.40	196,200	**4.18%**
	PETERSBURG UNIT 4	1,598,649	S0	60	-15%	1,838,447	835,908	1,002,539	17.80	56,322	**3.52%**
	PETERSBURG UNITS 3 AND 4	432,569	S0	60	-13%	488,803	126,868	361,935	18.80	19,252	**4.45%**
	PETERSBURG COMMON	18,801,010	S0	60	-14%	21,433,152	7,762,924	13,670,228	18.30	747,007	**3.97%**
	TOTAL ACCOUNT 316.00	239,394,328			-7%	255,062,860	39,521,151	215,541,709	26.97	7,991,735	**3.34%**
316.01	MISCELLANEOUS POWER PLANT EQUIPMENT - MPP										
	HARDING STREET STATION UNIT 6	38,501	SQ	18	-22%	46,972	51,592	-4,620			
	HARDING STREET STATION UNIT 7	1,200,322	SQ	18	-22%	1,464,393	1,209,378	255,015	2.20	115,916	**9.66%**
	HARDING STREET STATION COMMON	636,775	SQ	18	-22%	776,866	644,177	132,689	2.50	53,075	**8.34%**
	PETERSBURG UNIT 3	17,837	SQ	18	-15%	20,513	17,587	2,926	4.50	650	**3.64%**
	PETERSBURG UNIT 4	105,047	SQ	18	-15%	120,804	74,102	46,702	6.50	7,185	**6.84%**

Depreciation Rate Development

		[1]	[2]		[3]	[4]	[5]	[6]	[7]	[8]	[9]
Account No.	Description	Original Cost	Iowa Curve Type	AL	Net Salvage	Depreciable Base	Book Reserve	Future Accruals	Remaining Life	Total Accrual	Rate
	PETERSBURG COMMON	856,249	SQ	18	-14%	976,124	735,924	240,200	5.90	40,712	**4.75%**
	TOTAL ACCOUNT 316.01	2,854,732			-19%	3,405,671	2,732,760	672,911	3.09	217,538	**7.62%**
316.02	MISCELLANEOUS POWER PLANT EQUIPMENT - MATS										
	PETERSBURG UNIT 3	131,335	S0	60	-15%	151,035	36,527	114,508	18.90	6,059	**4.61%**
	PETERSBURG COMMON	57,092	S0	60	-14%	65,085	15,878	49,207	18.90	2,604	**4.56%**
	TOTAL ACCOUNT 316.02	188,427			-15%	216,120	52,405	163,715	18.90	8,662	**4.60%**
	Total Steam Production Plant	2,680,023,139			-14%	3,051,849,400	1,426,424,196	1,625,425,204	17.06	95,290,897	**3.56%**
	Other Production Plant										
341.00	STRUCTURES AND IMPROVEMENTS										
	GEORGETOWN GTs COMMON	803,370	R3	50	-9%	875,673	416,513	459,160	26.30	17,459	**2.17%**
	HARDING STREET STATION GTs 1 AND 2	227,129	R3	50	-29%	292,997	222,818	70,179	1.00	70,179	**30.90%**
	HARDING STREET STATION GT 4	2,306,838	R3	50	-20%	2,768,206	2,221,793	546,413	18.40	29,696	**1.29%**
	HARDING STREET STATION GT 5	1,985,804	R3	50	-20%	2,382,965	1,867,992	514,973	19.20	26,821	**1.35%**
	HARDING STREET STATION GT 6	833,628	R3	50	-20%	1,000,354	583,459	416,895	25.50	16,349	**1.96%**
	HARDING STREET STATION GTs COMMON	2,660,591	R3	50	-18%	3,139,497	2,255,250	884,247	22.70	38,954	**1.46%**
	EAGLE VALLEY CCGT	337,559	R3	50	-3%	347,686	30,882	316,804	31.60	10,025	**2.97%**
	TOTAL ACCOUNT 341.00	9,154,919			-18%	10,807,377	7,598,707	3,208,670	15.32	209,483	**2.29%**
342.00	FUEL HOLDERS, PRODUCERS AND ACCESSORIES										
	GEORGETOWN GTs COMMON	1,328,316	R4	55	-9%	1,447,864	908,363	539,501	26.90	20,056	**1.51%**
	HARDING STREET STATION GT 4	196,495	R4	55	-20%	235,794	204,625	31,169	19.80	1,574	**0.80%**
	HARDING STREET STATION GT 5	231,985	R4	55	-20%	278,382	204,151	74,231	21.50	3,453	**1.49%**
	HARDING STREET STATION GT 6	1,642,050	R4	55	-20%	1,970,460	1,225,958	744,502	27.50	27,073	**1.65%**
	HARDING STREET STATION GTs COMMON	2,140,583	R4	55	-18%	2,525,888	1,838,307	687,581	25.60	26,859	**1.25%**
	TOTAL ACCOUNT 342.00	5,539,429			-17%	6,458,388	4,381,404	2,076,984	26.29	79,014	**1.43%**
343.00	PRIME MOVERS										
	GEORGETOWN GTs COMMON	41,482,494	R3	50	-9%	45,215,918	25,943,213	19,272,705	24.80	777,125	**1.87%**
	HARDING STREET STATION GTs 1 AND 2	712,603	R3	50	-29%	919,258	1,140,165	-220,907			
	HARDING STREET STATION GT 4	17,260,984	R3	50	-20%	20,713,180	15,871,731	4,841,449	18.70	258,901	**1.50%**
	HARDING STREET STATION GT 5	16,729,268	R3	50	-20%	20,075,121	15,194,670	4,880,451	19.40	251,570	**1.50%**
	HARDING STREET STATION GT 6	40,814,717	R3	50	-20%	48,977,660	26,992,827	21,984,833	25.80	852,125	**2.09%**
	HARDING STREET STATION GTs COMMON	5,151,727	R3	50	-18%	6,079,038	4,255,896	1,823,142	22.80	79,962	**1.55%**
	EAGLE VALLEY CCGT	2,930,212	R3	50	-3%	3,018,118	450,692	2,567,426	31.30	82,026	**2.80%**
	TOTAL ACCOUNT 343.00	125,082,004			-16%	144,998,294	89,849,194	55,149,100	23.96	2,301,710	**1.84%**

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Depreciation Rate Development

Account No.	Description	[1] Original Cost	[2] Iowa Curve Type	AL	[3] Net Salvage	[4] Depreciable Base	[5] Book Reserve	[6] Future Accruals	[7] Remaining Life	[8] Total Accrual	[9] Total Rate
344.00	GENERATORS										
	GEORGETOWN GTs COMMON	11,798,153	S1.5	50	-9%	12,859,987	5,927,377	6,932,610	25.20	275,104	**2.33%**
	HARDING STREET STATION GTs 1 AND 2	2,253,719	S1.5	50	-29%	2,907,298	3,605,951	-698,653			
	HARDING STREET STATION GT 4	4,514,593	S1.5	50	-20%	5,417,511	3,679,422	1,738,089	18.80	92,452	**2.05%**
	HARDING STREET STATION GT 5	4,380,246	S1.5	50	-20%	5,256,296	3,382,039	1,874,257	19.70	95,140	**2.17%**
	HARDING STREET STATION GT 6	11,368,427	S1.5	50	-20%	13,642,113	8,094,804	5,547,309	24.00	231,138	**2.03%**
	HARDING STREET STATION GTs COMMON	19,111,020	S1.5	50	-18%	22,551,003	6,764,829	15,786,174	27.10	582,516	**3.05%**
	EAGLE VALLEY CCGT	109,983,838	S1.5	50	-3%	113,283,354	14,579,538	98,703,816	30.60	3,225,615	**2.93%**
	TOTAL ACCOUNT 344.00	163,409,998			-8%	175,917,562	46,033,960	129,883,602	28.85	4,501,963	**2.76%**
345.00	ACCESSORY ELECTRIC EQUIPMENT										
	GEORGETOWN GTs COMMON	6,294,827	S2.5	45	-9%	6,861,362	4,152,575	2,708,787	21.50	125,990	**2.00%**
	HARDING STREET STATION GTs 1 AND 2	2,630,035	S2.5	45	-29%	3,392,745	3,500,995	-108,250	1.00	-108,250	**-4.12%**
	HARDING STREET STATION GT 4	2,869,587	S2.5	45	-20%	3,443,504	2,762,260	681,244	15.90	42,846	**1.49%**
	HARDING STREET STATION GT 5	2,283,717	S2.5	45	-20%	2,740,460	2,139,973	600,487	16.70	35,957	**1.57%**
	HARDING STREET STATION GT 6	2,023,440	S2.5	45	-20%	2,428,128	1,444,142	983,986	22.60	43,539	**2.15%**
	HARDING STREET STATION GTs COMMON	5,621,303	S2.5	45	-18%	6,633,137	4,602,881	2,030,256	20.10	101,008	**1.80%**
	EAGLE VALLEY CCGT	9,323,508	S2.5	45	-3%	9,603,213	1,360,051	8,243,162	30.80	267,635	**2.87%**
	TOTAL ACCOUNT 345.00	31,046,417			-13%	35,102,550	19,962,877	15,139,673	29.76	508,726	**1.64%**
346.00	MISCELLANEOUS POWER PLANT EQUIPMENT										
	GEORGETOWN GTs COMMON	242,043	S2.5	45	-9%	263,827	134,252	129,575	23.40	5,537	**2.29%**
	HARDING STREET STATION GTs 1 AND 2	40,040	S2.5	45	-29%	51,652	63,340	-11,688	1.00	-11,688	**-29.19%**
	HARDING STREET STATION GT 4	110,634	S2.5	45	-20%	132,761	62,317	70,444	20.00	3,522	**3.18%**
	HARDING STREET STATION GT 5	266,365	S2.5	45	-20%	319,638	209,627	110,011	18.50	5,947	**2.23%**
	HARDING STREET STATION GT 6	131,437	S2.5	45	-20%	157,725	94,049	63,676	22.30	2,855	**2.17%**
	HARDING STREET STATION GTs COMMON	1,373,028	S2.5	45	-18%	1,620,173	1,031,088	589,085	21.00	28,052	**2.04%**
	EAGLE VALLEY CCGT	870,131	S2.5	45	-3%	896,235	72,183	824,052	31.40	26,244	**3.02%**
	TOTAL ACCOUNT 346.00	3,033,679			-13%	3,442,011	1,666,856	1,775,155	29.36	60,469	**1.99%**
	Total Other Production Plant	337,266,446			-12%	376,726,183	169,492,998	207,233,185	27.05	7,661,364	**2.27%**
	Transmission Plant										
350.50	LAND RIGHTS	21,416,885	R4	80	0%	21,416,885	9,920,731	11,496,154	43.50	264,279	**1.23%**
351.00	ENERGY STORAGE EQUIPMENT	10,305,630	L3	15	-5%	10,820,911	6,271,065	4,549,846	8.70	522,971	**5.07%**
352.00	STRUCTURES AND IMPROVEMENTS	21,576,195	R3	65	-20%	25,891,434	4,671,639	21,219,795	56.10	378,249	**1.75%**
353.00	STATION EQUIPMENT	235,540,145	S0	50	-15%	270,871,167	73,883,226	196,987,941	40.40	4,875,939	**2.07%**
353.01	STATION EQUIPMENT - MPP	2,502,990	SQ	18	-15%	2,878,439	1,040,170	1,838,269	10.50	175,073	**6.99%**
354.00	TOWERS AND FIXTURES	51,153,862	R4	75	-50%	76,730,792	42,130,352	34,600,440	42.70	810,315	**1.58%**
355.00	POLES AND FIXTURES	51,932,491	R1.5	71	-40%	72,705,487	19,009,257	53,696,230	57.05	941,213	**1.81%**
355.01	POLES AND FIXTURES - MPP	313,305	SQ	18	-10%	344,635	282,966	61,669	3.10	19,893	**6.35%**

Depreciation Rate Development

		[1]	[2]		[3]	[4]	[5]	[6]	[7]	[8]	[9]
Account No.	Description	Original Cost	Iowa Curve Type	AL	Net Salvage	Depreciable Base	Book Reserve	Future Accruals	Remaining Life	Total Accrual	Total Rate
356.00	OVERHEAD CONDUCTORS AND DEVICES	65,226,990	R2.5	76	-70%	110,885,884	47,811,884	63,074,000	50.25	1,255,204	**1.92%**
357.00	UNDERGROUND CONDUIT	9,431	R3	60	0%	9,431	245	9,186	58.90	156	**1.65%**
358.00	UNDERGROUND CONDUCTORS AND DEVICES	487,825	R0.5	30	-10%	536,608	8,231	528,377	29.70	17,790	**3.65%**
	Total Transmission Plant	460,465,749			-29%	593,091,673	205,029,766	388,061,907	41.90	9,261,084	**2.01%**
	Distribution Plant										
360.50	LAND RIGHTS	391,444	R4	75	0%	391,444	316,837	74,607	41.40	1,802	**0.46%**
361.00	STRUCTURES AND IMPROVEMENTS	11,604,182	R2.5	65	-20%	13,925,018	9,914,030	4,010,988	49.10	81,690	**0.70%**
362.00	STATION EQUIPMENT	211,642,798	R1	60	-10%	232,807,077	104,301,162	128,505,915	50.60	2,539,643	**1.20%**
364.00	POLES, TOWERS AND FIXTURES	262,046,873	L2	67	-110%	550,298,434	197,605,387	352,693,047	54.39	6,484,520	**2.47%**
365.00	OVERHEAD CONDUCTORS AND DEVICES	374,332,907	R0.5	60	-50%	561,499,361	230,235,373	331,263,988	57.20	5,791,328	**1.55%**
366.00	UNDERGROUND CONDUIT	157,819,431	R1	66	-20%	189,383,318	52,327,341	137,055,977	54.40	2,519,411	**1.60%**
367.00	UNDERGROUND CONDUCTORS AND DEVICES	351,427,826	L0.5	54	-20%	421,713,391	181,810,150	239,903,241	44.37	5,406,879	**1.54%**
368.00	LINE TRANSFORMERS	258,425,215	R1	44	-5%	271,346,476	173,791,556	97,554,920	38.80	2,514,302	**0.97%**
369.00	SERVICES	158,416,611	S2.5	55	-75%	277,229,068	138,913,807	138,315,261	41.90	3,301,080	**2.08%**
370.00	METERS	35,132,607	S0	23	0%	35,132,607	20,641,005	14,491,602	13.30	1,089,594	**3.10%**
370.01	METERS - SMART METERS	95,786,891	L1	18	0%	95,786,891	31,170,610	64,616,281	15.59	4,144,726	**4.33%**
371.00	INSTALLATIONS ON CUSTOMERS' PREMISES	46,502,244	S1.5	38	-40%	65,103,142	53,801,187	11,301,955	34.90	323,838	**0.70%**
373.00	STREET LIGHTING AND SIGNAL SYSTEMS	68,777,058	S0	45	-20%	82,532,470	58,676,471	23,855,999	38.30	622,872	**0.91%**
373.01	STREET LIGHTING AND SIGNAL SYSTEMS - LED	535,079	R2	25	-10%	588,587	352,886	235,701	21.30	11,066	**2.07%**
	Total Distribution Plant	2,032,841,166			-38%	2,797,737,284	1,253,857,802	1,543,879,482	44.32	34,832,753	**1.71%**
	General Plant										
390.00	STRUCTURES AND IMPROVEMENTS										
	ELECTRICAL BUILDING	40,720,743	R1	75	-30%	52,936,965	11,364,497	41,572,468	30.60	1,358,577	**3.34%**
	MORRIS STRET SERVICE CENTER	39,617,685	R1	75	-30%	51,502,991	21,276,910	30,226,081	19.20	1,574,275	**3.97%**
	ARLINGTON SERVICE CENTER	10,614,956	R1	75	-30%	13,799,443	6,870,276	6,929,167	12.00	577,431	**5.44%**
	CUSTOMER SERVICE CENTER	3,235,446	R1	75	-30%	4,206,080	1,836,261	2,369,819	18.40	128,795	**3.98%**
	OTHER STRUCTURES	3,849,780	R3	45	-5%	4,042,269	1,211,778	2,830,491	28.60	98,968	**2.57%**
	TOTAL ACCOUNT 390.00	98,038,610			-29%	126,487,747	42,559,722	83,928,025	22.45	3,738,046	**3.81%**
391.00	OFFICE FURNITURE AND EQUIP	12,751,358	SQ	21	0%	12,751,358	5,745,980	7,005,378	11.40	614,507	**4.82%**
391.60	OFFICE FURNITURE AND EQUIP - COMPUTER	34,237,019	SQ	5	0%	34,237,019	22,618,210	11,618,809	2.60	4,468,773	**13.05%**
392.00	TRANSPORTATION EQUIPMENT	52,428,191	L2	13	10%	47,185,372	36,196,508	10,988,864	10.00	1,098,886	**2.10%**
393.00	STORES EQUIPMENT	1,733,825	SQ	27	0%	1,733,825	813,391	920,434	13.70	67,185	**3.87%**
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT	15,659,539	SQ	25	0%	15,659,539	5,206,975	10,452,564	16.50	633,489	**4.05%**
395.00	LABORATORY EQUIPMENT	4,499,732	SQ	23	0%	4,499,732	2,630,095	1,869,637	9.60	194,754	**4.33%**
396.00	POWER OPERATED EQUIPMENT	2,264,491	SQ	16	0%	2,264,491	1,039,832	1,224,659	8.80	139,166	**6.15%**
397.00	COMMUNICATION EQUIPMENT	31,540,473	SQ	18	0%	31,540,473	14,256,550	17,283,923	10.10	1,711,280	**5.43%**

Depreciation Rate Development

		[1]	[2]		[3]	[4]	[5]	[6]	[7]	[8]	[9]
Account No.	Description	Original Cost	Iowa Curve Type	Iowa Curve AL	Net Salvage	Depreciable Base	Book Reserve	Future Accruals	Remaining Life	Total Accrual	Total Rate
398.00	MISCELLANEOUS EQUIPMENT	2,046,339	SQ -	27	0%	2,046,339	833,864	1,212,475	15.90	76,256	**3.73%**
	Total General Plant	255,199,577			-9%	278,405,895	131,901,127	146,504,768	11.50	12,742,341	**4.99%**
	TOTAL PLANT STUDIED	**5,919,402,104**			**-23%**	**7,251,416,462**	**3,300,405,354**	**3,951,011,108**	**23.12**	**170,919,106**	2.89%

[1] From Company depreciation study
[2] Average life and Iowa curve shape developed through actuarial analysis and professional judgment
[3] Weighted net salvage for production plant accounts from Attachment DJG-6; net salvage for mass accounts 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 cuve in [2]; see remaining life exhibit for detailed calculations
[8] = [6] / [7]
[9] = [8] / [1]

Weighted Net Salvage Calculation

	[1]	[2]	[3]	[4]	[5]
	Terminal Retirements		Interim Retirements		Weighted
Plant	Retirements	Net Salvage	Retirements	Net Salvage	Net Salvage
STEAM PRODUCTION					
HARDING STREET STATION UNIT 5	82%	-22%	18%	-22%	-22%
HARDING STREET STATION UNIT 6	81%	-22%	19%	-22%	-22%
HARDING STREET STATION UNITS 5 AND 6	98%	-22%	2%	-22%	-22%
HARDING STREET STATION UNIT 7	64%	-22%	36%	-22%	-22%
HARDING STREET STATION COMMON	75%	-22%	25%	-22%	-22%
PETERSBURG UNIT 2	89%	-12%	11%	-22%	-13%
PETERSBURG UNITS 1 AND 2	86%	-12%	14%	-22%	-14%
PETERSBURG UNIT 3	71%	-12%	29%	-22%	-15%
PETERSBURG UNIT 4	69%	-12%	31%	-22%	-15%
PETERSBURG UNITS 3 AND 4	88%	-12%	12%	-22%	-13%
PETERSBURG COMMON	80%	-12%	20%	-22%	-14%
EAGLE VALLEY STEAM (TO REMAIN)	89%	-2%	11%	-22%	-4%
EAGLE VALLEY CCGT	82%	-2%	18%	-22%	-5%
OTHER PRODUCTION					
HARDING STREET STATION GTs 1 AND 2	100%	-29%	0%	-7%	-29%
HARDING STREET STATION GT 4	61%	-29%	39%	-7%	-20%
HARDING STREET STATION GT 5	60%	-29%	40%	-7%	-20%
HARDING STREET STATION GT 6	59%	-29%	41%	-7%	-20%
HARDING STREET STATION GTs COMMON	52%	-29%	48%	-7%	-18%
GEORGETOWN GTs COMMON	53%	-10%	47%	-7%	-9%
EAGLE VALLEY CCGT	77%	-2%	23%	-7%	-3%

[1], [3] Company proposed weighting of terminal and interim retirements (see AES response to OUCC DR 7-2 Attach. 2)

[2] From Attachment DJG-7

[4] Accepted Company's proposed interim net salvage rates (see AES response to OUCC DR 7-2 Attach. 2)

[5] = [1]*[2] + [3]*[4] (rounded)

Terminal Net Salvage Adjustment

Plant	[1] Company Demo Cost Estimate	[2] Less Contingency	[3] Adjusted Demo Cost	[4] Company Allocation	[5] Terminal Retirements	[6] Terminal Net Salvage
Steam Production						
HARDING STREET STATION	$ 130,007,000	$ 29,596,000	$ 100,411,000	$ 80,328,800	$ (373,078,362)	-22%
PETERSBURG STATION	257,625,000	57,928,000	199,697,000	199,697,000	(1,626,646,510)	-12%
EAGLE VALLEY STEAM	13,355,000	4,068,000	9,287,000	92,870	(5,297,951)	-2%
EAGLE VALLEY CCGT				7,615,340	(474,554,135)	-2%
Other Production						
HARDING STREET STATION GTs				26,001,400	(90,440,068)	-29%
GEORGETOWN GTs	4,344,000	1,070,000	3,274,000	3,274,000	(32,920,441)	-10%
EAGLE VALLEY CCGT				2,270,350	(95,571,863)	-2%
TOTAL	$ 405,331,000	$ 92,662,000	$ 312,669,000	$ 319,279,760	$ (2,698,509,331)	-12%

[1], [2], [4], [5] From AES response to IG DR 2-18 Attach. 1
[3] = [1] - [2]
[6] = [4] / [5]

Account 355.00 Curve Fitting

[1] Age (Years)	[2] Exposures (Dollars)	[3] Observed Life Table (OLT)	[4] Company R2-65	[5] OUCC R1.5-71	[6] Company SSD	[7] OUCC SSD
0.0	48,787,871	100.00%	100.00%	100.00%	0.0000	0.0000
0.5	50,442,526	99.91%	99.93%	99.88%	0.0000	0.0000
1.5	48,810,583	99.42%	99.78%	99.62%	0.0000	0.0000
2.5	47,793,839	98.90%	99.62%	99.36%	0.0001	0.0000
3.5	44,864,186	98.52%	99.45%	99.10%	0.0001	0.0000
4.5	43,259,628	96.98%	99.27%	98.82%	0.0005	0.0003
5.5	42,101,628	96.60%	99.09%	98.54%	0.0006	0.0004
6.5	33,728,537	96.32%	98.89%	98.25%	0.0007	0.0004
7.5	30,248,985	96.15%	98.69%	97.95%	0.0006	0.0003
8.5	26,463,622	95.59%	98.47%	97.65%	0.0008	0.0004
9.5	24,028,196	94.78%	98.25%	97.34%	0.0012	0.0007
10.5	23,170,358	94.42%	98.01%	97.02%	0.0013	0.0007
11.5	22,774,958	94.05%	97.77%	96.69%	0.0014	0.0007
12.5	18,957,831	93.83%	97.51%	96.35%	0.0014	0.0006
13.5	17,895,144	93.76%	97.24%	96.01%	0.0012	0.0005
14.5	17,488,463	93.64%	96.95%	95.65%	0.0011	0.0004
15.5	17,125,021	93.62%	96.66%	95.29%	0.0009	0.0003
16.5	18,295,601	93.36%	96.35%	94.92%	0.0009	0.0002
17.5	18,260,044	93.31%	96.02%	94.54%	0.0007	0.0002
18.5	18,491,724	93.23%	95.68%	94.15%	0.0006	0.0001
19.5	17,824,932	92.79%	95.33%	93.75%	0.0006	0.0001
20.5	17,384,220	92.59%	94.96%	93.34%	0.0006	0.0001
21.5	16,843,196	92.17%	94.58%	92.93%	0.0006	0.0001
22.5	16,930,960	91.90%	94.17%	92.50%	0.0005	0.0000
23.5	16,698,360	91.67%	93.75%	92.06%	0.0004	0.0000
24.5	16,628,097	91.46%	93.32%	91.61%	0.0003	0.0000
25.5	15,768,089	91.15%	92.86%	91.15%	0.0003	0.0000
26.5	15,504,642	90.60%	92.39%	90.68%	0.0003	0.0000
27.5	14,707,620	90.19%	91.90%	90.20%	0.0003	0.0000
28.5	13,742,151	90.03%	91.39%	89.71%	0.0002	0.0000
29.5	12,833,258	89.92%	90.85%	89.20%	0.0001	0.0001
30.5	12,410,661	89.23%	90.30%	88.68%	0.0001	0.0000
31.5	12,803,036	88.98%	89.72%	88.15%	0.0001	0.0001
32.5	12,164,411	88.66%	89.13%	87.61%	0.0000	0.0001
33.5	10,188,618	86.88%	88.50%	87.05%	0.0003	0.0000
34.5	9,425,892	85.98%	87.86%	86.48%	0.0004	0.0000
35.5	8,415,921	85.32%	87.19%	85.90%	0.0003	0.0000
36.5	8,199,416	84.91%	86.50%	85.30%	0.0003	0.0000
37.5	7,662,449	84.51%	85.78%	84.68%	0.0002	0.0000
38.5	7,491,943	84.03%	85.03%	84.05%	0.0001	0.0000
39.5	6,972,398	83.17%	84.26%	83.40%	0.0001	0.0000
40.5	6,923,408	82.46%	83.45%	82.74%	0.0001	0.0000
41.5	7,071,952	81.88%	82.63%	82.06%	0.0001	0.0000
42.5	6,588,517	81.65%	81.77%	81.36%	0.0000	0.0000
43.5	6,364,174	81.47%	80.88%	80.65%	0.0000	0.0001
44.5	6,253,807	80.96%	79.96%	79.92%	0.0001	0.0001
45.5	3,968,191	79.85%	79.01%	79.17%	0.0001	0.0000
46.5	3,883,839	79.72%	78.03%	78.40%	0.0003	0.0002
47.5	3,599,015	79.34%	77.02%	77.61%	0.0005	0.0003
48.5	3,467,547	79.16%	75.97%	76.81%	0.0010	0.0006
49.5	3,391,292	78.86%	74.90%	75.98%	0.0016	0.0008
50.5	2,887,197	78.47%	73.78%	75.14%	0.0022	0.0011
51.5	2,336,594	78.19%	72.64%	74.27%	0.0031	0.0015

Account 355.00 Curve Fitting

[1] Age (Years)	[2] Exposures (Dollars)	[3] Observed Life Table (OLT)	[4] Company R2-65	[5] OUCC R1.5-71	[6] Company SSD	[7] OUCC SSD
52.5	2,161,789	77.88%	71.46%	73.39%	0.0041	0.0020
53.5	1,830,499	77.63%	70.25%	72.48%	0.0054	0.0026
54.5	1,728,366	77.04%	69.01%	71.56%	0.0065	0.0030
55.5	1,670,483	76.95%	67.73%	70.61%	0.0085	0.0040
56.5	1,575,325	76.71%	66.42%	69.65%	0.0106	0.0050
57.5	1,458,304	76.02%	65.07%	68.66%	0.0120	0.0054
58.5	1,438,508	75.87%	63.70%	67.66%	0.0148	0.0067
59.5	1,393,614	75.80%	62.29%	66.63%	0.0183	0.0084
60.5	972,200	75.52%	60.85%	65.58%	0.0215	0.0099
61.5	892,609	75.13%	59.38%	64.52%	0.0248	0.0113
62.5	887,334	74.69%	57.89%	63.43%	0.0282	0.0127
63.5	796,270	70.97%	56.36%	62.32%	0.0213	0.0075
64.5	791,145	70.63%	54.81%	61.20%	0.0250	0.0089
65.5	786,860	70.41%	53.23%	60.06%	0.0295	0.0107
66.5	766,765	70.26%	51.64%	58.90%	0.0347	0.0129
67.5	759,192	69.57%	50.02%	57.72%	0.0382	0.0141
68.5	758,396	69.52%	48.38%	56.52%	0.0447	0.0169
69.5	357,548	69.19%	46.73%	55.31%	0.0504	0.0193
70.5	168,626	69.19%	45.07%	54.08%	0.0582	0.0228
71.5	168,534	69.19%	43.40%	52.84%	0.0665	0.0267
72.5	150,289	69.19%	41.72%	51.58%	0.0755	0.0310
73.5	150,289	69.19%	40.03%	50.31%	0.0850	0.0356
74.5	150,289	69.19%	38.35%	49.03%	0.0951	0.0406
75.5	150,289	69.19%	36.67%	47.74%	0.1057	0.0460
76.5	150,289	69.19%	35.00%	46.45%	0.1169	0.0517
77.5	150,289	69.19%	33.34%	45.14%	0.1285	0.0578
78.5	21	69.19%	31.69%	43.83%	0.1406	0.0643
79.5	21	69.19%	30.06%	42.51%	0.1531	0.0712
80.5			28.46%	41.19%		

Sum of Squared Differences for Entire OLT Curve	[8]	1.4530	0.6208
SSD for Truncated OLT Curve (Up to 1% of Beginning Exposures)	[9]	0.3774	0.1536

[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.

Account 356.00 Curve Fitting

[1] Age (Years)	[2] Exposures (Dollars)	[3] Observed Life Table (OLT)	[4] Company R2-65	[5] OUCC R2.5-76	[6] Company SSD	[7] OUCC SSD
0.0	36,614,944	100.00%	100.00%	100.00%	0.0000	0.0000
0.5	36,351,406	99.94%	99.93%	99.96%	0.0000	0.0000
1.5	36,351,123	99.06%	99.78%	99.89%	0.0001	0.0001
2.5	30,687,151	98.14%	99.62%	99.81%	0.0002	0.0003
3.5	30,582,964	97.12%	99.45%	99.73%	0.0005	0.0007
4.5	30,346,946	96.94%	99.27%	99.64%	0.0005	0.0007
5.5	30,050,063	96.80%	99.09%	99.54%	0.0005	0.0008
6.5	22,696,898	96.77%	98.89%	99.45%	0.0005	0.0007
7.5	24,056,024	96.37%	98.69%	99.34%	0.0005	0.0009
8.5	24,893,000	95.86%	98.47%	99.23%	0.0007	0.0011
9.5	24,005,186	95.78%	98.25%	99.12%	0.0006	0.0011
10.5	26,332,109	95.26%	98.01%	99.00%	0.0008	0.0014
11.5	26,055,058	95.04%	97.77%	98.87%	0.0007	0.0015
12.5	23,439,389	95.02%	97.51%	98.74%	0.0006	0.0014
13.5	22,477,412	95.02%	97.24%	98.59%	0.0005	0.0013
14.5	22,261,619	95.00%	96.95%	98.45%	0.0004	0.0012
15.5	22,922,489	95.00%	96.66%	98.29%	0.0003	0.0011
16.5	29,704,130	94.76%	96.35%	98.12%	0.0003	0.0011
17.5	29,750,354	94.62%	96.02%	97.95%	0.0002	0.0011
18.5	31,312,733	94.61%	95.68%	97.77%	0.0001	0.0010
19.5	30,920,716	94.53%	95.33%	97.58%	0.0001	0.0009
20.5	30,720,810	94.52%	94.96%	97.37%	0.0000	0.0008
21.5	32,658,414	94.39%	94.58%	97.16%	0.0000	0.0008
22.5	34,165,208	94.32%	94.17%	96.94%	0.0000	0.0007
23.5	35,141,186	94.21%	93.75%	96.71%	0.0000	0.0006
24.5	35,259,818	94.17%	93.32%	96.46%	0.0001	0.0005
25.5	36,193,770	94.13%	92.86%	96.21%	0.0002	0.0004
26.5	39,925,717	93.95%	92.39%	95.94%	0.0002	0.0004
27.5	38,663,333	93.84%	91.90%	95.66%	0.0004	0.0003
28.5	36,482,772	93.79%	91.39%	95.36%	0.0006	0.0002
29.5	34,898,392	93.28%	90.85%	95.05%	0.0006	0.0003
30.5	34,607,060	93.16%	90.30%	94.73%	0.0008	0.0002
31.5	34,005,208	93.10%	89.72%	94.39%	0.0011	0.0002
32.5	33,640,710	93.07%	89.13%	94.04%	0.0016	0.0001
33.5	33,089,686	93.02%	88.50%	93.67%	0.0020	0.0000
34.5	32,363,160	92.85%	87.86%	93.28%	0.0025	0.0000
35.5	31,544,948	92.40%	87.19%	92.88%	0.0027	0.0000
36.5	29,051,319	91.56%	86.50%	92.46%	0.0026	0.0001
37.5	27,902,090	91.41%	85.78%	92.02%	0.0032	0.0000
38.5	27,635,686	91.38%	85.03%	91.56%	0.0040	0.0000
39.5	24,046,916	91.27%	84.26%	91.09%	0.0049	0.0000
40.5	23,601,903	91.02%	83.45%	90.59%	0.0057	0.0000
41.5	23,632,694	90.89%	82.63%	90.07%	0.0068	0.0001
42.5	22,945,473	90.75%	81.77%	89.54%	0.0081	0.0001
43.5	22,740,324	90.68%	80.88%	88.97%	0.0096	0.0003
44.5	22,013,162	90.46%	79.96%	88.39%	0.0110	0.0004
45.5	14,924,302	90.40%	79.01%	87.78%	0.0130	0.0007
46.5	14,655,731	90.35%	78.03%	87.15%	0.0152	0.0010
47.5	12,895,538	90.18%	77.02%	86.50%	0.0173	0.0014
48.5	12,624,261	90.06%	75.97%	85.82%	0.0198	0.0018
49.5	12,565,344	89.94%	74.90%	85.11%	0.0226	0.0023
50.5	10,325,878	89.80%	73.78%	84.37%	0.0257	0.0029
51.5	8,779,663	89.75%	72.64%	83.61%	0.0293	0.0038
52.5	7,615,084	89.53%	71.46%	82.82%	0.0326	0.0045
53.5	7,221,788	89.50%	70.25%	82.00%	0.0370	0.0056
54.5	5,775,534	89.14%	69.01%	81.15%	0.0405	0.0064
55.5	1,463,320	89.03%	67.73%	80.27%	0.0454	0.0077
56.5	1,374,643	88.45%	66.42%	79.35%	0.0485	0.0083

Account 356.00 Curve Fitting

[1] Age (Years)	[2] Exposures (Dollars)	[3] Observed Life Table (OLT)	[4] Company R2-65	[5] OUCC R2.5-76	[6] Company SSD	[7] OUCC SSD
57.5	1,232,185	88.15%	65.07%	78.41%	0.0532	0.0095
58.5	972,115	87.29%	63.70%	77.43%	0.0556	0.0097
59.5	882,287	86.29%	62.29%	76.41%	0.0576	0.0098
60.5	533,056	83.92%	60.85%	75.36%	0.0532	0.0073
61.5	588,439	82.89%	59.38%	74.28%	0.0553	0.0074
62.5	570,928	80.55%	57.89%	73.15%	0.0514	0.0055
63.5	494,532	79.08%	56.36%	72.00%	0.0516	0.0050
64.5	476,572	77.09%	54.81%	70.80%	0.0496	0.0040
65.5	413,451	76.58%	53.23%	69.57%	0.0545	0.0049
66.5	396,620	75.93%	51.64%	68.29%	0.0590	0.0058
67.5	394,323	75.49%	50.02%	66.98%	0.0649	0.0072
68.5	387,251	74.14%	48.38%	65.63%	0.0663	0.0072
69.5	387,191	74.13%	46.73%	64.25%	0.0751	0.0098
70.5	379,796	73.45%	45.07%	62.82%	0.0806	0.0113
71.5	362,106	72.24%	43.40%	61.37%	0.0832	0.0118
72.5	342,212	72.24%	41.72%	59.87%	0.0932	0.0153
73.5	342,059	72.24%	40.03%	58.34%	0.1037	0.0193
74.5	341,994	72.24%	38.35%	56.78%	0.1149	0.0239
75.5	341,941	72.23%	36.67%	55.19%	0.1264	0.0290
76.5	341,941	72.23%	35.00%	53.57%	0.1386	0.0348
77.5	341,938	72.23%	33.34%	51.92%	0.1513	0.0412
78.5	37,631	72.18%	31.69%	50.25%	0.1639	0.0481
79.5	37,386	71.71%	30.06%	48.56%	0.1735	0.0536
80.5	37,386	71.71%	28.46%	46.86%	0.1871	0.0618
81.5	37,153	71.26%	26.87%	45.14%	0.1970	0.0682
82.5	37,153	71.26%	25.32%	43.41%	0.2110	0.0775
83.5	37,148	71.26%	23.80%	41.68%	0.2252	0.0875
84.5	37,148	71.26%	22.32%	39.95%	0.2395	0.0981
85.5	37,069	71.10%	20.88%	38.22%	0.2522	0.1081
86.5	37,046	71.06%	19.47%	36.50%	0.2661	0.1195
87.5	36,736	70.47%	18.12%	34.79%	0.2741	0.1273
88.5	36,655	70.31%	16.80%	33.10%	0.2863	0.1385
89.5	36,655	70.31%	15.54%	31.42%	0.2999	0.1512
90.5			14.33%	29.78%		
Sum of Squared Differences for Entire OLT Curve				[8]	4.8390	1.4907
SSD for Truncated OLT Curve (Up to 1% of Beginning Exposures)				[9]	1.2518	0.1759

[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.

Account 364.00 Curve Fitting

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	**Exposures (Dollars)**	**Observed Life Table (OLT)**	**Company R2.5-58**	**OUCC L2-67**	**Company SSD**	**OUCC SSD**
0.0	211,829,136	100.00%	100.00%	100.00%	0.0000	0.0000
0.5	167,269,202	99.95%	99.95%	100.00%	0.0000	0.0000
1.5	143,121,519	99.93%	99.85%	100.00%	0.0000	0.0000
2.5	124,977,299	99.86%	99.74%	99.99%	0.0000	0.0000
3.5	118,129,304	99.81%	99.63%	99.98%	0.0000	0.0000
4.5	112,626,613	99.34%	99.51%	99.97%	0.0000	0.0000
5.5	109,126,540	98.71%	99.37%	99.94%	0.0000	0.0002
6.5	105,477,646	98.37%	99.23%	99.90%	0.0001	0.0002
7.5	102,486,704	98.29%	99.08%	99.85%	0.0001	0.0002
8.5	98,968,416	98.24%	98.92%	99.78%	0.0000	0.0002
9.5	96,537,230	98.20%	98.74%	99.70%	0.0000	0.0002
10.5	95,898,585	98.18%	98.56%	99.60%	0.0000	0.0002
11.5	94,375,604	98.15%	98.36%	99.49%	0.0000	0.0002
12.5	90,669,200	98.10%	98.14%	99.35%	0.0000	0.0002
13.5	88,880,682	98.05%	97.92%	99.19%	0.0000	0.0001
14.5	88,095,779	98.00%	97.67%	99.02%	0.0000	0.0001
15.5	87,984,685	97.95%	97.41%	98.82%	0.0000	0.0001
16.5	88,325,133	97.86%	97.14%	98.60%	0.0001	0.0001
17.5	87,882,576	97.80%	96.84%	98.36%	0.0001	0.0000
18.5	86,452,876	97.73%	96.53%	98.09%	0.0001	0.0000
19.5	85,738,119	97.61%	96.19%	97.80%	0.0002	0.0000
20.5	80,326,102	97.51%	95.84%	97.49%	0.0003	0.0000
21.5	78,374,122	97.37%	95.46%	97.15%	0.0004	0.0000
22.5	72,120,083	97.21%	95.06%	96.79%	0.0005	0.0000
23.5	69,803,548	97.03%	94.63%	96.40%	0.0006	0.0000
24.5	66,754,221	96.81%	94.18%	95.98%	0.0007	0.0001
25.5	63,151,976	96.57%	93.70%	95.52%	0.0008	0.0001
26.5	58,422,044	96.31%	93.19%	95.02%	0.0010	0.0002
27.5	53,698,551	96.00%	92.66%	94.47%	0.0011	0.0002
28.5	47,157,211	95.68%	92.09%	93.88%	0.0013	0.0003
29.5	44,306,689	95.36%	91.49%	93.23%	0.0015	0.0005
30.5	42,872,797	94.79%	90.86%	92.53%	0.0015	0.0005
31.5	42,489,545	94.28%	90.19%	91.77%	0.0017	0.0006
32.5	41,125,157	93.87%	89.49%	90.95%	0.0019	0.0009
33.5	38,345,908	91.19%	88.75%	90.08%	0.0006	0.0001
34.5	35,241,391	87.57%	87.96%	89.15%	0.0000	0.0002
35.5	32,189,867	85.76%	87.14%	88.16%	0.0002	0.0006
36.5	29,822,135	84.97%	86.28%	87.11%	0.0002	0.0005
37.5	27,646,473	83.90%	85.37%	86.01%	0.0002	0.0004
38.5	25,725,912	82.83%	84.41%	84.85%	0.0003	0.0004
39.5	23,360,537	81.77%	83.41%	83.65%	0.0003	0.0004
40.5	21,448,042	80.65%	82.36%	82.40%	0.0003	0.0003
41.5	19,515,771	79.35%	81.25%	81.11%	0.0004	0.0003
42.5	17,785,030	78.23%	80.10%	79.78%	0.0003	0.0002
43.5	16,358,903	77.34%	78.89%	78.41%	0.0002	0.0001
44.5	15,083,269	76.35%	77.62%	77.01%	0.0002	0.0000
45.5	13,472,586	75.17%	76.29%	75.58%	0.0001	0.0000
46.5	12,205,053	73.78%	74.90%	74.12%	0.0001	0.0000
47.5	10,680,216	72.18%	73.45%	72.65%	0.0002	0.0000
48.5	9,042,582	70.41%	71.93%	71.16%	0.0002	0.0001
49.5	7,955,098	69.00%	70.36%	69.65%	0.0002	0.0000
50.5	6,983,445	67.67%	68.71%	68.14%	0.0001	0.0000
51.5	6,532,314	66.38%	67.00%	66.62%	0.0000	0.0000

Account 364.00 Curve Fitting

[1] Age (Years)	[2] Exposures (Dollars)	[3] Observed Life Table (OLT)	[4] Company R2.5-58	[5] OUCC L2-67	[6] Company SSD	[7] OUCC SSD
52.5	5,775,506	65.16%	65.23%	65.10%	0.0000	0.0000
53.5	5,208,776	63.67%	63.39%	63.57%	0.0000	0.0000
54.5	4,804,250	62.03%	61.49%	62.05%	0.0000	0.0000
55.5	4,591,806	60.54%	59.53%	60.54%	0.0001	0.0000
56.5	4,133,371	58.82%	57.51%	59.04%	0.0002	0.0000
57.5	3,763,525	57.19%	55.44%	57.55%	0.0003	0.0000
58.5	3,369,753	55.76%	53.32%	56.07%	0.0006	0.0000
59.5	3,123,508	53.82%	51.15%	54.61%	0.0007	0.0001
60.5	2,569,228	51.70%	48.94%	53.16%	0.0008	0.0002
61.5	2,214,491	49.81%	46.71%	51.73%	0.0010	0.0004
62.5	1,864,398	47.10%	44.46%	50.33%	0.0007	0.0010
63.5	1,482,232	44.80%	42.19%	48.94%	0.0007	0.0017
64.5	1,283,609	42.28%	39.92%	47.58%	0.0006	0.0028
65.5	998,426	39.04%	37.65%	46.24%	0.0002	0.0052
66.5	843,232	36.67%	35.40%	44.92%	0.0002	0.0068
67.5	591,527	34.70%	33.18%	43.63%	0.0002	0.0080
68.5	456,918	32.63%	31.00%	42.37%	0.0003	0.0095
69.5	331,319	30.61%	28.86%	41.13%	0.0003	0.0111
70.5	243,440	28.85%	26.78%	39.91%	0.0004	0.0122
71.5	197,195	27.01%	24.76%	38.72%	0.0005	0.0137
72.5	161,170	25.44%	22.81%	37.56%	0.0007	0.0147
73.5	141,120	24.17%	20.94%	36.42%	0.0010	0.0150
74.5	124,889	22.73%	19.16%	35.30%	0.0013	0.0158
75.5	113,070	21.43%	17.46%	34.21%	0.0016	0.0163
76.5	101,395	20.27%	15.85%	33.15%	0.0020	0.0166
77.5	88,502	18.07%	14.34%	32.11%	0.0014	0.0197
78.5	78,266	16.02%	12.92%	31.09%	0.0010	0.0227
79.5	52,749	10.87%	11.59%	30.09%	0.0001	0.0370
80.5			10.35%	29.12%		
Sum of Squared Differences for Entire OLT Curve				[8]	0.0347	0.2398
SSD for Truncated OLT Curve (Up to 1% of Beginning Exposures)				[9]	0.0218	0.0100

[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.

Account 366.00 Curve Fitting

[1] Age (Years)	[2] Exposures (Dollars)	[3] Observed Life Table (OLT)	[4] Company R1.5-60	[5] OUCC R1-66	[6] Company SSD	[7] OUCC SSD
0.0	124,675,186	100.00%	100.00%	100.00%	0.0000	0.0000
0.5	108,503,483	99.99%	99.85%	99.80%	0.0000	0.0000
1.5	101,156,673	99.94%	99.55%	99.41%	0.0000	0.0000
2.5	95,947,408	99.69%	99.24%	99.00%	0.0000	0.0000
3.5	95,658,513	99.28%	98.92%	98.59%	0.0000	0.0000
4.5	94,893,811	98.50%	98.59%	98.17%	0.0000	0.0000
5.5	89,160,928	98.04%	98.25%	97.74%	0.0000	0.0000
6.5	85,476,148	97.52%	97.90%	97.30%	0.0000	0.0000
7.5	82,596,938	96.48%	97.53%	96.85%	0.0001	0.0000
8.5	79,610,407	96.11%	97.16%	96.40%	0.0001	0.0000
9.5	75,866,008	95.78%	96.78%	95.93%	0.0001	0.0000
10.5	73,997,017	95.49%	96.38%	95.46%	0.0001	0.0000
11.5	70,360,108	95.16%	95.97%	94.98%	0.0001	0.0000
12.5	68,624,393	94.68%	95.55%	94.50%	0.0001	0.0000
13.5	63,386,819	94.30%	95.12%	94.00%	0.0001	0.0000
14.5	63,126,597	93.95%	94.67%	93.50%	0.0001	0.0000
15.5	58,988,875	93.58%	94.21%	92.98%	0.0000	0.0000
16.5	57,607,605	93.27%	93.74%	92.46%	0.0000	0.0001
17.5	55,948,115	92.95%	93.26%	91.94%	0.0000	0.0001
18.5	54,858,093	92.35%	92.76%	91.40%	0.0000	0.0001
19.5	52,439,177	91.64%	92.25%	90.86%	0.0000	0.0001
20.5	47,443,468	90.23%	91.72%	90.31%	0.0002	0.0000
21.5	47,404,893	89.12%	91.18%	89.75%	0.0004	0.0000
22.5	44,284,607	87.49%	90.62%	89.18%	0.0010	0.0003
23.5	40,571,420	86.13%	90.05%	88.60%	0.0015	0.0006
24.5	40,415,090	84.72%	89.46%	88.02%	0.0022	0.0011
25.5	38,736,170	83.20%	88.85%	87.43%	0.0032	0.0018
26.5	36,103,103	81.70%	88.23%	86.82%	0.0043	0.0026
27.5	33,970,894	81.14%	87.59%	86.21%	0.0042	0.0026
28.5	29,558,561	80.43%	86.93%	85.59%	0.0042	0.0027
29.5	28,200,777	79.96%	86.24%	84.96%	0.0039	0.0025
30.5	27,325,523	79.50%	85.54%	84.32%	0.0037	0.0023
31.5	25,916,416	78.72%	84.82%	83.67%	0.0037	0.0024
32.5	23,767,365	78.09%	84.08%	83.00%	0.0036	0.0024
33.5	21,721,760	77.36%	83.31%	82.33%	0.0035	0.0025
34.5	19,163,267	76.76%	82.52%	81.64%	0.0033	0.0024
35.5	17,081,397	76.14%	81.71%	80.94%	0.0031	0.0023
36.5	15,667,148	75.68%	80.87%	80.23%	0.0027	0.0021
37.5	14,394,790	75.19%	80.01%	79.50%	0.0023	0.0019
38.5	12,883,363	74.86%	79.12%	78.76%	0.0018	0.0015
39.5	12,117,581	74.30%	78.21%	78.01%	0.0015	0.0014
40.5	10,590,809	73.90%	77.27%	77.25%	0.0011	0.0011
41.5	9,551,306	73.61%	76.31%	76.47%	0.0007	0.0008
42.5	8,040,200	73.16%	75.31%	75.68%	0.0005	0.0006
43.5	7,805,590	72.70%	74.29%	74.87%	0.0003	0.0005
44.5	7,429,035	71.37%	73.25%	74.05%	0.0004	0.0007
45.5	7,017,275	70.95%	72.17%	73.21%	0.0001	0.0005
46.5	6,076,798	69.01%	71.06%	72.36%	0.0004	0.0011
47.5	5,472,326	68.86%	69.93%	71.49%	0.0001	0.0007
48.5	4,770,303	68.24%	68.77%	70.61%	0.0000	0.0006
49.5	4,471,577	68.09%	67.58%	69.72%	0.0000	0.0003
50.5	4,059,912	67.92%	66.36%	68.80%	0.0002	0.0001
51.5	3,177,179	67.63%	65.12%	67.88%	0.0006	0.0000
52.5	2,776,395	67.40%	63.84%	66.94%	0.0013	0.0000
53.5	2,306,476	66.82%	62.54%	65.98%	0.0018	0.0001
54.5	2,006,667	66.50%	61.21%	65.01%	0.0028	0.0002
55.5	1,952,954	66.15%	59.85%	64.03%	0.0040	0.0004
56.5	1,865,432	65.84%	58.47%	63.03%	0.0054	0.0008
57.5	1,850,049	65.60%	57.07%	62.02%	0.0073	0.0013
58.5	2,478,014	65.28%	55.64%	60.99%	0.0093	0.0018
59.5	2,367,861	64.91%	54.19%	59.95%	0.0115	0.0025
60.5	2,305,741	64.65%	52.72%	58.90%	0.0142	0.0033
61.5	2,273,268	64.26%	51.23%	57.83%	0.0170	0.0041
62.5	2,128,506	63.90%	49.73%	56.76%	0.0201	0.0051
63.5	2,024,968	63.59%	48.21%	55.67%	0.0237	0.0063
64.5	1,909,681	63.34%	46.67%	54.57%	0.0278	0.0077
65.5	1,782,556	63.26%	45.13%	53.46%	0.0329	0.0096
66.5	1,701,809	63.18%	43.58%	52.33%	0.0384	0.0118

Account 366.00 Curve Fitting

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	**Exposures (Dollars)**	**Observed Life Table (OLT)**	**Company R1.5-60**	**OUCC R1-66**	**Company SSD**	**OUCC SSD**
67.5	1,423,478	54.28%	42.02%	51.20%	0.0150	0.0009
68.5	1,354,625	54.01%	40.46%	50.06%	0.0184	0.0016
69.5	1,246,358	53.05%	38.89%	48.91%	0.0200	0.0017
70.5	1,111,177	52.77%	37.33%	47.76%	0.0238	0.0025
71.5	1,005,976	52.60%	35.78%	46.60%	0.0283	0.0036
72.5	803,487	52.50%	34.24%	45.43%	0.0334	0.0050
73.5	671,431	49.93%	32.70%	44.25%	0.0297	0.0032
74.5	535,973	49.90%	31.18%	43.07%	0.0350	0.0047
75.5	503,096	49.03%	29.68%	41.89%	0.0374	0.0051
76.5	476,041	46.09%	28.20%	40.71%	0.0320	0.0029
77.5	472,170	45.08%	26.75%	39.52%	0.0336	0.0031
78.5	413,403	39.31%	25.32%	38.33%	0.0196	0.0001
79.5	469,567	39.31%	23.91%	37.15%	0.0237	0.0005
80.5	463,882	39.27%	22.54%	35.96%	0.0280	0.0011
81.5	553,335	39.03%	21.21%	34.78%	0.0318	0.0018
82.5	548,205	38.92%	19.91%	33.59%	0.0361	0.0028
83.5	535,122	38.23%	18.64%	32.42%	0.0384	0.0034
84.5	527,658	38.05%	17.42%	31.25%	0.0426	0.0046
85.5	521,666	37.93%	16.24%	30.08%	0.0471	0.0062
86.5	518,860	37.91%	15.10%	28.92%	0.0521	0.0081
87.5	136,964	37.88%	14.00%	27.78%	0.0570	0.0102
88.5	136,472	37.82%	12.94%	26.64%	0.0619	0.0125
89.5	136,255	37.79%	11.93%	25.51%	0.0669	0.0151
90.5	133,106	37.13%	10.97%	24.39%	0.0685	0.0162
91.5	127,057	37.02%	10.05%	23.29%	0.0728	0.0189
92.5	111,613	36.21%	9.17%	22.20%	0.0731	0.0196
93.5	180,282	35.41%	8.34%	21.13%	0.0733	0.0204
94.5	178,704	35.20%	7.55%	20.07%	0.0764	0.0229
95.5	177,609	35.11%	6.81%	19.03%	0.0801	0.0258
96.5	177,472	35.09%	6.12%	18.01%	0.0840	0.0292
97.5	173,994	34.94%	5.46%	17.02%	0.0869	0.0321
98.5	169,592	34.17%	4.86%	16.04%	0.0859	0.0329
99.5	169,088	34.09%	4.29%	15.08%	0.0888	0.0361
100.5	161,809	33.87%	3.77%	14.15%	0.0906	0.0389
101.5	160,234	33.54%	3.29%	13.24%	0.0915	0.0412
102.5	159,378	33.48%	2.86%	12.36%	0.0938	0.0446
103.5	159,378	33.48%	2.46%	11.51%	0.0962	0.0483
104.5	157,661	33.46%	2.11%	10.68%	0.0983	0.0519
105.5	157,661	33.46%	1.79%	9.88%	0.1003	0.0556
106.5	155,188	33.46%	1.52%	9.11%	0.1020	0.0593
107.5	148,481	33.46%	1.27%	8.37%	0.1036	0.0630
108.5	148,481	33.46%	1.06%	7.66%	0.1050	0.0666
109.5	148,481	33.46%	0.87%	6.98%	0.1062	0.0701
110.5			0.72%	6.34%		

Sum of Squared Differences for Entire OLT Curve	[8]	2.8660	0.9921
SSD for Truncated OLT Curve (Up to 1% of Beginning Exposures)	[9]	0.3107	0.1004

[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.

Account 367.00 Curve Fitting

[1] Age (Years)	[2] Exposures (Dollars)	[3] Observed Life Table (OLT)	[4] Company R2-50	[5] OUCC L0.5-54	[6] Company SSD	[7] OUCC SSD
0.0	334,966,694	100.00%	100.00%	100.00%	0.0000	0.0000
0.5	309,353,440	100.00%	99.91%	99.91%	0.0000	0.0000
1.5	288,641,292	99.92%	99.71%	99.66%	0.0000	0.0000
2.5	275,572,047	99.80%	99.49%	99.33%	0.0000	0.0000
3.5	264,503,172	99.60%	99.26%	98.95%	0.0000	0.0000
4.5	253,088,609	99.40%	99.02%	98.51%	0.0000	0.0001
5.5	245,960,703	99.12%	98.76%	98.03%	0.0000	0.0001
6.5	239,401,135	98.93%	98.49%	97.49%	0.0000	0.0002
7.5	232,450,105	98.72%	98.19%	96.92%	0.0000	0.0003
8.5	223,831,899	98.50%	97.88%	96.30%	0.0000	0.0005
9.5	212,172,834	98.12%	97.55%	95.64%	0.0000	0.0006
10.5	203,509,818	97.58%	97.19%	94.94%	0.0000	0.0007
11.5	194,821,557	97.09%	96.82%	94.20%	0.0000	0.0008
12.5	185,249,270	96.59%	96.42%	93.41%	0.0000	0.0010
13.5	178,505,628	96.16%	96.01%	92.59%	0.0000	0.0013
14.5	175,823,460	95.74%	95.56%	91.73%	0.0000	0.0016
15.5	169,126,290	95.34%	95.09%	90.83%	0.0000	0.0020
16.5	166,127,947	94.90%	94.59%	89.90%	0.0000	0.0025
17.5	157,715,373	94.43%	94.07%	88.93%	0.0000	0.0030
18.5	146,710,763	93.99%	93.52%	87.92%	0.0000	0.0037
19.5	138,628,059	93.37%	92.93%	86.88%	0.0000	0.0042
20.5	116,583,974	92.40%	92.32%	85.81%	0.0000	0.0043
21.5	105,811,114	91.33%	91.67%	84.71%	0.0000	0.0044
22.5	99,064,899	90.05%	90.99%	83.58%	0.0001	0.0042
23.5	86,966,092	88.38%	90.27%	82.43%	0.0004	0.0035
24.5	85,027,457	86.44%	89.52%	81.25%	0.0009	0.0027
25.5	78,813,184	84.01%	88.73%	80.06%	0.0022	0.0016
26.5	70,340,901	82.15%	87.89%	78.84%	0.0033	0.0011
27.5	63,614,750	79.63%	87.02%	77.61%	0.0055	0.0004
28.5	51,182,380	76.20%	86.10%	76.37%	0.0098	0.0000
29.5	47,025,577	73.84%	85.14%	75.12%	0.0128	0.0002
30.5	42,712,154	71.68%	84.14%	73.86%	0.0155	0.0005
31.5	38,853,207	69.72%	83.09%	72.59%	0.0179	0.0008
32.5	34,115,617	68.06%	81.98%	71.33%	0.0194	0.0011
33.5	29,731,146	66.50%	80.83%	70.06%	0.0205	0.0013
34.5	25,772,579	64.95%	79.63%	68.80%	0.0216	0.0015
35.5	22,220,646	63.39%	78.38%	67.54%	0.0225	0.0017
36.5	19,218,587	61.84%	77.07%	66.28%	0.0232	0.0020
37.5	16,124,598	60.47%	75.71%	65.03%	0.0232	0.0021
38.5	14,637,146	59.57%	74.29%	63.78%	0.0217	0.0018
39.5	12,996,190	58.63%	72.82%	62.53%	0.0201	0.0015
40.5	11,639,127	57.71%	71.29%	61.29%	0.0184	0.0013
41.5	10,011,915	57.10%	69.70%	60.06%	0.0159	0.0009
42.5	8,851,465	56.52%	68.05%	58.83%	0.0133	0.0005
43.5	7,852,025	55.93%	66.35%	57.60%	0.0109	0.0003
44.5	7,077,856	55.22%	64.60%	56.38%	0.0088	0.0001
45.5	6,233,766	54.59%	62.79%	55.17%	0.0067	0.0000
46.5	5,152,932	54.05%	60.93%	53.97%	0.0047	0.0000
47.5	4,333,258	53.51%	59.01%	52.77%	0.0030	0.0001
48.5	3,677,685	52.99%	57.05%	51.59%	0.0016	0.0002
49.5	3,277,320	52.23%	55.04%	50.41%	0.0008	0.0003
50.5	2,729,378	51.29%	53.00%	49.24%	0.0003	0.0004
51.5	2,407,945	50.50%	50.91%	48.08%	0.0000	0.0006
52.5	1,938,633	49.54%	48.79%	46.94%	0.0001	0.0007
53.5	1,580,498	49.09%	46.65%	45.80%	0.0006	0.0011
54.5	1,251,927	48.70%	44.48%	44.67%	0.0018	0.0016

Account 367.00 Curve Fitting

[1] Age (Years)	[2] Exposures (Dollars)	[3] Observed Life Table (OLT)	[4] Company R2-50	[5] OUCC L0.5-54	[6] Company SSD	[7] OUCC SSD
55.5	1,155,584	47.91%	42.30%	43.56%	0.0031	0.0019
56.5	1,068,399	47.47%	40.12%	42.45%	0.0054	0.0025
57.5	987,856	47.22%	37.93%	41.36%	0.0086	0.0034
58.5	1,058,663	46.89%	35.75%	40.28%	0.0124	0.0044
59.5	971,186	46.58%	33.59%	39.21%	0.0169	0.0054
60.5	938,688	45.99%	31.44%	38.16%	0.0212	0.0061
61.5	902,657	45.60%	29.34%	37.12%	0.0265	0.0072
62.5	831,523	45.39%	27.27%	36.09%	0.0328	0.0086
63.5	768,909	44.98%	25.24%	35.08%	0.0389	0.0098
64.5	691,056	44.74%	23.28%	34.08%	0.0461	0.0114
65.5	622,294	44.47%	21.38%	33.10%	0.0533	0.0129
66.5	582,793	44.15%	19.54%	32.13%	0.0606	0.0144
67.5	542,431	43.97%	17.78%	31.18%	0.0686	0.0164
68.5	480,551	43.62%	16.10%	30.24%	0.0757	0.0179
69.5	438,330	43.32%	14.51%	29.31%	0.0830	0.0196
70.5	399,235	42.82%	13.00%	28.41%	0.0889	0.0208
71.5	363,645	42.35%	11.58%	27.51%	0.0947	0.0220
72.5	311,825	41.86%	10.25%	26.64%	0.0999	0.0232
73.5	273,028	41.37%	9.02%	25.78%	0.1047	0.0243
74.5	247,857	40.83%	7.87%	24.93%	0.1086	0.0253
75.5	232,223	40.67%	6.81%	24.11%	0.1146	0.0274
76.5	225,746	40.36%	5.84%	23.29%	0.1191	0.0291
77.5	212,932	39.85%	4.96%	22.50%	0.1217	0.0301
78.5	206,625	39.36%	4.16%	21.72%	0.1239	0.0311
79.5	201,757	38.49%	3.44%	20.96%	0.1228	0.0307
80.5	194,328	38.02%	2.80%	20.21%	0.1240	0.0317
81.5	183,383	37.33%	2.24%	19.48%	0.1231	0.0319
82.5	176,640	36.90%	1.75%	18.77%	0.1236	0.0329
83.5	150,508	33.54%	1.33%	18.08%	0.1038	0.0239
84.5	136,490	33.41%	0.98%	17.40%	0.1052	0.0256
85.5	121,804	31.99%	0.69%	16.73%	0.0980	0.0233
86.5	117,716	31.99%	0.46%	16.09%	0.0994	0.0253
87.5			0.28%	15.46%		

Sum of Squared Differences for Entire OLT Curve	[8]	2.7570	0.6681
SSD for Truncated OLT Curve (Up to 1% of Beginning Exposures)	[9]	0.3242	0.0627

[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.

Account 370.01 Curve Fitting

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	**Exposures (Dollars)**	**Observed Life Table (OLT)**	**Company S1-15**	**OUCC L1-18**	**Company SSD**	**OUCC SSD**
0.0	99,519,439	100.00%	100.00%	100.00%	0.0000	0.0000
0.5	55,202,760	99.99%	99.99%	99.82%	0.0000	0.0000
1.5	51,684,073	99.84%	99.84%	99.28%	0.0000	0.0000
2.5	46,401,559	99.35%	99.36%	98.41%	0.0000	0.0001
3.5	39,443,516	97.47%	98.42%	97.14%	0.0001	0.0000
4.5	28,230,916	96.25%	96.94%	95.41%	0.0000	0.0001
5.5	22,171,827	93.43%	94.88%	93.18%	0.0002	0.0000
6.5	7,387,672	90.29%	92.20%	90.45%	0.0004	0.0000
7.5	4,672,723	86.90%	88.92%	87.24%	0.0004	0.0000
8.5	798,201	84.00%	85.06%	83.64%	0.0001	0.0000
9.5	105,422	83.38%	80.66%	79.73%	0.0007	0.0013
10.5			75.78%	75.64%		

Sum of Squared Differences for Entire OLT Curve	[8]	0.0020	0.0016
SSD for Truncated OLT Curve (Up to 1% of Beginning Exposures)	[9]	0.0011	0.0002

[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.

AES
Electric Division
355.00 Poles and Fixtures

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 71 *Survivor Curve:* R1.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1950	18,582.48	71.00	261.72	22.13	5,791.53
1951	91.55	71.00	1.29	22.59	29.13
1952	251,260.60	71.00	3,538.85	23.06	81,607.24
1953	603,511.77	71.00	8,500.08	23.54	200,065.00
1954	209.06	71.00	2.94	24.02	70.73
1955	87.33	71.00	1.23	24.51	30.15
1956	41,480.14	71.00	584.22	25.01	14,612.24
1957	286.49	71.00	4.04	25.52	102.97
1958	2,066.46	71.00	29.10	26.03	757.66
1959	208.59	71.00	2.94	26.55	78.01
1960	2,071.45	71.00	29.18	27.08	790.13
1961	89,092.56	71.00	1,254.81	27.62	34,653.76
1962	563,351.64	71.00	7,934.45	28.16	223,441.56
1963	47,975.63	71.00	675.71	28.71	19,399.47
1964	75,550.17	71.00	1,064.08	29.27	31,143.22
1965	346.77	71.00	4.88	29.83	145.70
1966	7,611.09	71.00	107.20	30.40	3,258.87
1967	183,237.32	71.00	2,580.78	30.98	79,952.30
1968	82,021.22	71.00	1,155.22	31.56	36,462.40
1969	279,488.07	71.00	3,936.41	32.16	126,577.10
1970	15,801.93	71.00	222.56	32.75	7,289.38
1971	650,942.37	71.00	9,168.11	33.36	305,803.47
1972	487,364.54	71.00	6,864.22	33.97	233,160.15
1973	379,217.62	71.00	5,341.04	34.58	184,710.57
1974	493,855.11	71.00	6,955.63	35.21	244,891.56
1975	79,399.48	71.00	1,118.29	35.84	40,075.27
1976	20,987.44	71.00	295.59	36.47	10,781.00

AES
Electric Division
355.00 Poles and Fixtures

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 71 *Survivor Curve:* R1.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1977	2,217,260.52	71.00	31,228.70	37.11	1,158,992.76
1978	87,421.79	71.00	1,231.28	37.76	46,491.97
1979	20,401.13	71.00	287.34	38.41	11,037.54
1980	451,512.99	71.00	6,359.27	39.07	248,462.75
1981	8,416.80	71.00	118.55	39.74	4,710.49
1982	125,187.09	71.00	1,763.18	40.40	71,240.98
1983	345,750.03	71.00	4,869.67	41.08	200,038.72
1984	5,236.82	71.00	73.76	41.76	3,080.09
1985	352,304.88	71.00	4,961.99	42.44	210,607.80
1986	120,903.82	71.00	1,702.85	43.14	73,452.98
1987	742,656.26	71.00	10,459.84	43.83	458,452.61
1988	331,824.35	71.00	4,673.53	44.53	208,105.58
1989	1,290,333.79	71.00	18,173.53	45.23	822,068.16
1990	199,067.52	71.00	2,803.74	45.94	128,811.19
1991	105,493.53	71.00	1,485.81	46.66	69,323.49
1992	1,665,743.40	71.00	23,460.93	47.37	1,111,448.33
1993	563,880.95	71.00	7,941.90	48.10	381,969.71
1994	1,915,350.11	71.00	26,976.49	48.82	1,317,073.91
1995	289,672.55	71.00	4,079.85	49.55	202,167.06
1996	773,676.03	71.00	10,896.73	50.29	547,970.74
1997	287,076.83	71.00	4,043.29	51.03	206,309.57
1998	98,593.31	71.00	1,388.62	51.77	71,883.34
1999	591,861.92	71.00	8,336.00	52.51	437,744.58
2000	216,734.44	71.00	3,052.57	53.26	162,582.12
2001	392,705.47	71.00	5,531.01	54.01	298,752.73
2002	489,851.81	71.00	6,899.25	54.77	377,869.10
2003	433,972.22	71.00	6,112.22	55.53	339,408.46

AES

Electric Division

355.00 Poles and Fixtures

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of December 31, 2022

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 71 *Survivor Curve:* R1.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
2004	101,200.28	71.00	1,425.34	56.29	80,235.17
2005	140,155.18	71.00	1,974.00	57.06	112,630.76
2006	52,536.16	71.00	739.94	57.83	42,788.85
2007	194,485.80	71.00	2,739.21	58.60	160,517.23
2008	119,892.79	71.00	1,688.61	59.38	100,264.14
2009	275,308.61	71.00	3,877.55	60.16	233,256.74
2010	3,514,785.40	71.00	49,503.51	60.94	3,016,635.41
2011	106,653.28	71.00	1,502.14	61.72	92,719.62
2012	1,264,926.89	71.00	17,815.69	62.51	1,113,725.76
2013	2,272,087.78	71.00	32,000.91	63.31	2,025,885.77
2014	3,739,231.71	71.00	52,664.70	64.10	3,375,954.89
2015	3,879,681.50	71.00	54,642.84	64.90	3,546,393.91
2016	8,839,033.46	71.00	124,492.15	65.70	8,179,745.84
2017	968,221.48	71.00	13,636.78	66.51	906,984.95
2018	2,220,652.58	71.00	31,276.48	67.32	2,105,531.62
2019	3,152,178.62	71.00	44,396.43	68.13	3,024,815.03
2020	11,216.70	71.00	157.98	68.95	10,892.21
2021	2,046,314.84	71.00	28,821.04	69.77	2,010,745.71
2022	534,938.36	71.00	7,534.27	70.59	531,829.07
Total	51,932,490.66	71.00	731,436.03	57.05	41,727,290.00

Composite Average Remaining Life ... 57.05 Years

AES
Electric Division
356.00 Overhead Conductors and Devices

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 76 *Survivor Curve:* R2.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1932	36,655.78	76.00	482.31	12.67	6,108.66
1948	64.86	76.00	0.85	18.86	16.10
1949	87,650.11	76.00	1,153.29	19.34	22,308.09
1950	30,259.73	76.00	398.15	19.84	7,898.67
1951	14,046.80	76.00	184.83	20.34	3,759.79
1952	143,908.65	76.00	1,893.53	20.86	39,493.25
1953	419,929.37	76.00	5,525.38	21.39	118,164.29
1956	278,567.50	76.00	3,665.36	23.03	84,418.39
1957	15,306.54	76.00	201.40	23.60	4,753.20
1958	31,008.48	76.00	408.01	24.18	9,865.30
1959	10.61	76.00	0.14	24.77	3.46
1960	1,317.17	76.00	17.33	25.37	439.69
1961	173,102.81	76.00	2,277.67	25.98	59,169.73
1962	369,183.41	76.00	4,857.67	26.60	129,190.31
1963	78,984.21	76.00	1,039.26	27.23	28,294.62
1964	148,188.32	76.00	1,949.84	27.86	54,325.40
1965	269,943.46	76.00	3,551.88	28.51	101,247.48
1966	3,250.20	76.00	42.77	29.16	1,247.12
1967	3,886,459.34	76.00	51,137.56	29.82	1,525,088.19
1968	1,523,364.36	76.00	20,044.24	30.49	611,196.43
1969	365,853.88	76.00	4,813.86	31.17	150,061.95
1970	968,739.12	76.00	12,746.55	31.86	406,086.93
1971	1,524,526.35	76.00	20,059.53	32.55	652,963.66
1972	2,152,693.88	76.00	28,324.88	33.25	941,928.07
1973	523,447.20	76.00	6,887.45	33.96	233,916.84
1974	424,476.55	76.00	5,585.21	34.68	193,682.05
1975	1,403,383.74	76.00	18,465.55	35.40	653,664.35

AES

Electric Division

356.00 Overhead Conductors and Devices

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of December 31, 2022

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 76 *Survivor Curve:* R2.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1976	183,015.93	76.00	2,408.10	36.13	87,009.20
1977	7,439,308.49	76.00	97,885.52	36.87	3,608,822.92
1978	265,435.15	76.00	3,492.56	37.61	131,355.01
1979	24,815.15	76.00	326.51	38.36	12,525.91
1980	605,728.65	76.00	7,970.10	39.12	311,777.39
1981	13,006.28	76.00	171.14	39.88	6,824.89
1982	279,742.53	76.00	3,680.82	40.65	149,631.16
1983	3,496,031.41	76.00	46,000.36	41.43	1,905,636.36
1984	3,519.36	76.00	46.31	42.21	1,954.50
1985	956,940.65	76.00	12,591.31	43.00	541,384.72
1986	2,430,698.10	76.00	31,982.83	43.79	1,400,524.59
1987	615,885.69	76.00	8,103.75	44.59	361,333.88
1988	687,792.80	76.00	9,049.89	45.40	410,822.91
1989	442,647.43	76.00	5,824.30	46.21	269,117.37
1990	75,826.37	76.00	997.71	47.02	46,914.25
1991	1,165,490.53	76.00	15,335.38	47.85	733,723.16
1992	1,511,165.40	76.00	19,883.73	48.67	967,788.37
1993	664,043.51	76.00	8,737.40	49.50	432,541.07
1994	2,986,703.09	76.00	39,298.68	50.34	1,978,439.45
1995	475,793.02	76.00	6,260.43	51.19	320,450.66
1996	505,578.48	76.00	6,652.34	52.03	346,150.58
1997	305,953.81	76.00	4,025.70	52.89	212,906.15
1998	4,842.71	76.00	63.72	53.75	3,424.71
1999	495,901.12	76.00	6,525.01	54.61	356,322.88
2000	191,315.28	76.00	2,517.30	55.48	139,648.61
2001	255,034.84	76.00	3,355.72	56.35	189,091.09
2002	477,867.58	76.00	6,287.72	57.23	359,815.07

AES
Electric Division
356.00 Overhead Conductors and Devices

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 76 *Survivor Curve:* R2.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
2003	468,940.62	76.00	6,170.26	58.11	358,524.00
2004	111,323.70	76.00	1,464.78	58.99	86,409.58
2005	137,137.55	76.00	1,804.44	59.88	108,050.23
2006	731,500.87	76.00	9,625.00	60.77	584,938.65
2007	121,758.82	76.00	1,602.09	61.67	98,802.22
2008	166,594.43	76.00	2,192.03	62.57	137,158.83
2009	511,812.07	76.00	6,734.36	63.48	427,468.83
2010	2,388,272.45	76.00	31,424.60	64.38	2,023,265.99
2011	25,842.81	76.00	340.04	65.30	22,203.15
2012	1,021,757.23	76.00	13,444.16	66.21	890,152.16
2013	913,638.83	76.00	12,021.55	67.13	806,992.97
2014	644,263.93	76.00	8,477.15	68.05	576,883.51
2015	286,738.97	76.00	3,772.88	68.98	260,237.83
2016	7,972,030.15	76.00	104,895.01	69.90	7,332,487.62
2017	132,326.82	76.00	1,741.14	70.83	123,333.02
2018	257,120.56	76.00	3,383.16	71.77	242,801.79
2019	81,171.66	76.00	1,068.05	72.70	77,650.58
2020	4,886,545.62	76.00	64,296.57	73.64	4,734,977.80
2021	813,791.39	76.00	10,707.77	74.58	798,625.53
2022	2,120,016.05	76.00	27,894.91	75.53	2,106,819.18
Total	65,226,990.32	76.00	858,248.82	50.25	43,123,012.38

Composite Average Remaining Life ... 50.25 Years

AES

Electric Division

364.00 Poles, Towers, and Fixtures

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of December 31, 2022

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 67 *Survivor Curve:* L2

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1942	36,933.94	67.00	551.25	22.80	12,570.16
1943	332.18	67.00	4.96	23.05	114.29
1944	219.16	67.00	3.27	23.30	76.21
1945	1,868.43	67.00	27.89	23.54	656.59
1946	5,551.28	67.00	82.85	23.79	1,970.88
1947	4,658.28	67.00	69.53	24.03	1,670.92
1948	7,860.45	67.00	117.32	24.27	2,847.75
1949	11,989.64	67.00	178.95	24.52	4,387.33
1950	24,581.20	67.00	366.88	24.76	9,082.55
1951	30,668.55	67.00	457.74	25.00	11,442.63
1952	68,895.70	67.00	1,028.29	25.24	25,949.90
1953	97,257.48	67.00	1,451.60	25.48	36,982.64
1954	97,099.24	67.00	1,449.24	25.71	37,266.58
1955	206,605.93	67.00	3,083.67	25.96	80,038.61
1956	94,694.03	67.00	1,413.34	26.19	37,020.88
1957	208,319.79	67.00	3,109.25	26.44	82,196.14
1958	115,591.86	67.00	1,725.25	26.68	46,023.31
1959	291,339.42	67.00	4,348.34	26.92	117,061.86
1960	231,332.79	67.00	3,452.72	27.17	93,793.48
1961	260,626.17	67.00	3,889.94	27.41	106,638.93
1962	432,022.86	67.00	6,448.09	27.66	178,378.59
1963	130,436.91	67.00	1,946.82	27.92	54,353.31
1964	302,284.48	67.00	4,511.70	28.18	127,124.84
1965	253,438.35	67.00	3,782.66	28.44	107,581.10
1966	327,559.03	67.00	4,888.94	28.71	140,354.47
1967	118,119.36	67.00	1,762.97	28.98	51,097.55
1968	270,747.57	67.00	4,041.00	29.26	118,259.09

AES

Electric Division

364.00 Poles, Towers, and Fixtures

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of December 31, 2022

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 67 *Survivor Curve:* L2

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1969	468,733.41	67.00	6,996.01	29.55	206,759.59
1970	636,792.87	67.00	9,504.36	29.85	283,714.23
1971	554,454.51	67.00	8,275.43	30.16	249,563.06
1972	821,581.06	67.00	12,262.39	30.47	373,674.69
1973	931,026.65	67.00	13,895.90	30.80	427,988.18
1974	1,382,392.63	67.00	20,632.70	31.14	642,462.35
1975	1,372,666.53	67.00	20,487.54	31.49	645,110.48
1976	1,048,738.25	67.00	15,652.79	31.85	498,574.56
1977	1,418,046.65	67.00	21,164.85	32.23	682,121.19
1978	1,152,508.70	67.00	17,201.60	32.62	561,154.86
1979	1,541,054.00	67.00	23,000.78	33.03	759,704.13
1980	1,587,400.53	67.00	23,692.52	33.46	792,640.06
1981	1,960,059.89	67.00	29,254.59	33.90	991,624.20
1982	1,848,608.50	67.00	27,591.14	34.36	947,974.82
1983	2,319,126.53	67.00	34,613.79	34.84	1,205,809.04
1984	1,953,571.82	67.00	29,157.75	35.34	1,030,333.17
1985	2,196,962.62	67.00	32,790.45	35.85	1,175,690.49
1986	2,416,048.44	67.00	36,060.38	36.40	1,312,472.97
1987	2,683,495.83	67.00	40,052.13	36.96	1,480,211.96
1988	2,296,895.82	67.00	34,281.99	37.54	1,287,029.74
1989	2,305,974.94	67.00	34,417.50	38.15	1,312,929.63
1990	2,701,337.48	67.00	40,318.42	38.77	1,563,207.02
1991	1,771,393.59	67.00	26,438.68	39.43	1,042,384.88
1992	2,270,763.68	67.00	33,891.96	40.10	1,358,910.74
1993	3,498,826.80	67.00	52,221.23	40.79	2,130,313.43
1994	6,734,720.45	67.00	100,518.10	41.51	4,172,084.15
1995	5,173,020.11	67.00	77,209.16	42.25	3,261,721.07

AES
Electric Division
364.00 Poles, Towers, and Fixtures

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *67* *Survivor Curve:* *L2*

Year (1)	*Original Cost* (2)	*Avg. Service Life* (3)	*Avg. Annual Accrual* (4)	*Avg. Remaining Life* (5)	*Future Annual Accruals* (6)
1996	4,824,014.14	67.00	72,000.13	43.00	3,095,758.74
1997	3,869,137.70	67.00	57,748.26	43.77	2,527,764.05
1998	3,693,533.62	67.00	55,127.30	44.56	2,456,341.48
1999	3,011,350.21	67.00	44,945.47	45.36	2,038,856.47
2000	7,076,173.95	67.00	105,614.41	46.18	4,876,835.64
2001	3,297,930.76	67.00	49,222.79	47.00	2,313,667.56
2002	6,845,463.15	67.00	102,170.97	47.84	4,887,663.92
2003	2,310,617.65	67.00	34,486.79	48.69	1,678,994.50
2004	2,972,322.75	67.00	44,362.97	49.54	2,197,672.24
2005	1,969,941.50	67.00	29,402.08	50.40	1,482,009.78
2006	1,851,502.68	67.00	27,634.34	51.28	1,417,033.65
2007	2,797,892.18	67.00	41,759.54	52.16	2,178,360.28
2008	2,517,009.76	67.00	37,567.27	53.06	1,993,226.70
2009	3,241,822.07	67.00	48,385.35	53.96	2,611,061.64
2010	5,368,983.91	67.00	80,133.99	54.88	4,397,520.74
2011	3,869,814.39	67.00	57,758.36	55.80	3,223,095.36
2012	3,368,370.47	67.00	50,274.13	56.74	2,852,344.94
2013	4,332,485.10	67.00	64,663.88	57.68	3,729,854.88
2014	6,183,939.65	67.00	92,297.50	58.63	5,411,576.79
2015	6,110,914.58	67.00	91,207.57	59.59	5,435,428.65
2016	6,326,867.80	67.00	94,430.75	60.56	5,718,917.43
2017	5,238,713.35	67.00	78,189.66	61.54	4,811,739.59
2018	8,164,144.59	67.00	121,852.76	62.52	7,618,416.47
2019	10,081,337.70	67.00	150,467.55	63.51	9,556,324.85
2020	20,027,637.18	67.00	298,919.61	64.50	19,281,429.22
2021	26,442,145.38	67.00	394,658.42	65.50	25,850,543.37
2022	47,575,570.89	67.00	710,082.31	66.50	47,220,486.60

AES

Electric Division

364.00 Poles, Towers, and Fixtures

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of December 31, 2022

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 67   *Survivor Curve:* L2

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
Total	262,046,873.48	67.00	3,911,142.78	54.39	212,744,030.78

Composite Average Remaining Life ... 54.39 Years

AES
Electric Division
366.00 Underground Conduit

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 66 *Survivor Curve:* R1

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1912	148,481.28	66.00	2,249.68	7.02	15,783.67
1915	6,706.75	66.00	101.62	7.94	807.25
1916	2,473.39	66.00	37.47	8.26	309.40
1918	1,653.00	66.00	25.04	8.89	222.77
1920	566.64	66.00	8.59	9.55	81.96
1922	6,173.07	66.00	93.53	10.21	955.17
1923	120.24	66.00	1.82	10.55	19.22
1924	557.49	66.00	8.45	10.89	92.00
1925	2,731.00	66.00	41.38	11.24	465.06
1927	815.41	66.00	12.35	11.94	147.53
1928	497.22	66.00	7.53	12.30	92.63
1929	668.17	66.00	10.12	12.66	128.14
1930	13,033.78	66.00	197.48	13.02	2,571.31
1931	5,653.49	66.00	85.66	13.39	1,146.95
1932	788.02	66.00	11.94	13.76	164.30
1933	98.45	66.00	1.49	14.14	21.09
1934	275.50	66.00	4.17	14.52	60.60
1935	381,337.67	66.00	5,777.74	14.90	86,099.71
1936	2,509.39	66.00	38.02	15.29	581.31
1937	4,333.02	66.00	65.65	15.68	1,029.57
1938	4,865.64	66.00	73.72	16.08	1,185.32
1939	3,380.06	66.00	51.21	16.48	843.97
1940	3,601.20	66.00	54.56	16.88	921.27
1941	6,490.67	66.00	98.34	17.29	1,700.74
1942	5,241.40	66.00	79.41	17.71	1,406.29
1943	720.13	66.00	10.91	18.13	197.78
1944	6,289.51	66.00	95.29	18.55	1,767.69

AES
Electric Division
366.00 Underground Conduit

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 66 *Survivor Curve:* R1

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1945	6,496.34	66.00	98.43	18.98	1,867.91
1946	3,974.16	66.00	60.21	19.41	1,168.72
1947	25,232.09	66.00	382.30	19.85	7,587.30
1948	135,171.49	66.00	2,048.02	20.29	41,550.28
1949	93,784.45	66.00	1,420.95	20.73	29,462.80
1950	200,593.66	66.00	3,039.24	21.19	64,388.02
1951	108,582.90	66.00	1,645.17	21.64	35,604.34
1952	128,892.97	66.00	1,952.89	22.10	43,163.61
1953	84,973.42	66.00	1,287.45	22.57	29,056.04
1954	64,409.08	66.00	975.88	23.04	22,483.37
1955	38,800.15	66.00	587.87	23.52	13,824.02
1956	79,052.12	66.00	1,197.74	24.00	28,740.82
1957	125,459.41	66.00	1,900.87	24.48	46,537.88
1958	108,711.47	66.00	1,647.11	24.97	41,133.59
1959	105,767.30	66.00	1,602.51	25.47	40,815.93
1960	137,802.63	66.00	2,087.88	25.97	54,224.39
1961	18,915.09	66.00	286.59	26.48	7,588.39
1962	52,877.52	66.00	801.16	26.99	21,623.15
1963	94,389.94	66.00	1,430.12	27.51	39,339.64
1964	131,575.41	66.00	1,993.53	28.03	55,877.94
1965	132,709.81	66.00	2,010.72	28.56	57,422.79
1966	95,656.74	66.00	1,449.32	29.09	42,161.61
1967	143,464.09	66.00	2,173.66	29.63	64,405.60
1968	293,035.01	66.00	4,439.84	30.17	133,962.83
1969	450,499.21	66.00	6,825.62	30.72	209,703.09
1970	400,988.89	66.00	6,075.48	31.28	190,018.24
1971	872,358.26	66.00	13,217.31	31.84	420,798.66

AES
Electric Division
366.00 Underground Conduit

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: **66** *Survivor Curve:* **R1**

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1972	400,961.14	66.00	6,075.06	32.40	196,836.14
1973	324,499.26	66.00	4,916.57	32.97	162,108.53
1974	668,341.50	66.00	10,126.20	33.55	339,709.30
1975	593,357.00	66.00	8,990.09	34.13	306,809.56
1976	783,766.56	66.00	11,875.04	34.71	412,223.22
1977	518,336.28	66.00	7,853.44	35.30	277,253.51
1978	319,345.88	66.00	4,838.49	35.90	173,698.90
1979	575,110.12	66.00	8,713.63	36.50	318,041.44
1980	1,582,290.52	66.00	23,973.66	37.11	889,543.88
1981	1,075,813.76	66.00	16,299.91	37.71	614,742.21
1982	1,510,942.71	66.00	22,892.66	38.33	877,467.44
1983	828,866.64	66.00	12,558.36	38.95	489,125.93
1984	1,560,657.40	66.00	23,645.89	39.57	935,727.34
1985	1,462,033.23	66.00	22,151.62	40.20	890,492.80
1986	1,583,108.84	66.00	23,986.06	40.83	979,418.01
1987	1,955,578.06	66.00	29,629.43	41.47	1,228,689.59
1988	2,533,423.36	66.00	38,384.50	42.11	1,616,356.17
1989	1,997,444.64	66.00	30,263.76	42.75	1,293,873.13
1990	2,154,076.21	66.00	32,636.93	43.40	1,416,504.50
1991	1,212,479.39	66.00	18,370.57	44.05	809,275.80
1992	849,351.32	66.00	12,868.73	44.71	575,343.12
1993	1,351,066.91	66.00	20,470.34	45.37	928,665.15
1994	4,379,004.26	66.00	66,347.34	46.03	3,053,880.95
1995	2,161,307.56	66.00	32,746.49	46.69	1,529,021.19
1996	2,309,003.47	66.00	34,984.27	47.36	1,656,888.09
1997	1,698,650.91	66.00	25,736.67	48.03	1,236,149.12
1998	137,644.51	66.00	2,085.48	48.70	101,572.25

AES
Electric Division
366.00 Underground Conduit

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 66 *Survivor Curve:* R1

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1999	3,598,714.61	66.00	54,524.99	49.38	2,692,405.88
2000	3,544,471.57	66.00	53,703.14	50.06	2,688,272.69
2001	2,360,436.32	66.00	35,763.54	50.74	1,814,561.04
2002	5,677,598.15	66.00	86,022.65	51.42	4,423,379.84
2003	2,931,916.37	66.00	44,422.17	52.11	2,314,633.22
2004	3,251,331.79	66.00	49,261.71	52.79	2,600,684.68
2005	2,817,085.59	66.00	42,682.34	53.48	2,282,735.70
2006	2,801,138.52	66.00	42,440.72	54.17	2,299,205.55
2007	2,761,788.93	66.00	41,844.53	54.87	2,295,969.19
2008	2,260,069.78	66.00	34,242.86	55.57	1,902,723.75
2009	2,431,109.54	66.00	36,834.32	56.27	2,072,493.25
2010	4,446,650.84	66.00	67,372.27	56.97	3,838,000.43
2011	5,028,231.14	66.00	76,183.94	57.67	4,393,701.43
2012	2,635,065.67	66.00	39,924.51	58.38	2,330,778.91
2013	4,934,745.59	66.00	74,767.51	59.09	4,418,063.81
2014	4,437,964.04	66.00	67,240.66	59.80	4,021,255.90
2015	3,969,388.41	66.00	60,141.16	60.52	3,639,808.25
2016	5,825,437.36	66.00	88,262.60	61.24	5,405,247.01
2017	8,841,912.88	66.00	133,965.94	61.96	8,301,073.49
2018	3,478,130.99	66.00	52,698.00	62.69	3,303,633.61
2019	5,182,556.13	66.00	78,522.15	63.42	4,979,886.66
2020	5,150,510.84	66.00	78,036.62	64.15	5,006,262.93
2021	11,780,243.64	66.00	178,485.30	64.89	11,581,889.31
2022	16,402,236.14	66.00	248,514.21	65.63	16,309,844.68

AES

Electric Division

366.00 Underground Conduit

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of December 31, 2022

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 66 *Survivor Curve:* R1

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
Total	157,819,431.48	66.00	2,391,160.05	54.40	130,089,242.14

Composite Average Remaining Life ... 54.40 Years

AES
Electric Division
367.00 Underground Conductors and Devices

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 54 *Survivor Curve:* L0.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1935	117,692.66	54.00	2,179.46	19.65	42,821.63
1936	4,086.63	54.00	75.68	19.86	1,502.89
1937	8,881.92	54.00	164.48	20.07	3,301.58
1938	13,433.50	54.00	248.76	20.29	5,047.34
1939	10,069.93	54.00	186.48	20.51	3,824.76
1940	4,634.02	54.00	85.81	20.73	1,779.03
1941	7,387.35	54.00	136.80	20.95	2,866.59
1942	5,004.15	54.00	92.67	21.18	1,962.74
1943	266.84	54.00	4.94	21.41	105.79
1944	3,699.98	54.00	68.52	21.64	1,482.70
1945	9,988.95	54.00	184.98	21.88	4,046.53
1946	4,814.67	54.00	89.16	22.11	1,971.42
1947	14,679.31	54.00	271.83	22.35	6,075.32
1948	21,616.53	54.00	400.30	22.59	9,042.81
1949	35,163.88	54.00	651.17	22.83	14,868.60
1950	35,377.39	54.00	655.13	23.08	15,120.13
1951	31,161.44	54.00	577.05	23.33	13,461.85
1952	33,369.48	54.00	617.94	23.58	14,572.18
1953	51,123.78	54.00	946.72	23.84	22,565.39
1954	57,590.96	54.00	1,066.48	24.09	25,693.30
1955	38,115.01	54.00	705.82	24.35	17,187.30
1956	35,382.82	54.00	655.23	24.61	16,126.88
1957	64,464.42	54.00	1,193.77	24.88	29,697.76
1958	73,860.32	54.00	1,367.76	25.14	34,392.20
1959	55,106.34	54.00	1,020.47	25.42	25,936.74
1960	67,224.90	54.00	1,244.89	25.69	31,979.97
1961	28,487.05	54.00	527.53	25.96	13,697.13

AES

Electric Division

367.00 Underground Conductors and Devices

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of December 31, 2022

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 54 *Survivor Curve:* L0.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1962	20,562.14	54.00	380.77	26.24	9,992.72
1963	82,589.53	54.00	1,529.41	26.52	40,567.04
1964	64,941.46	54.00	1,202.60	26.81	32,240.54
1965	81,237.27	54.00	1,504.37	27.10	40,763.01
1966	90,680.47	54.00	1,679.24	27.39	45,990.41
1967	96,695.98	54.00	1,790.64	27.68	49,565.99
1968	334,291.55	54.00	6,190.49	27.98	173,189.57
1969	376,608.36	54.00	6,974.12	28.28	197,199.84
1970	437,232.49	54.00	8,096.77	28.58	231,391.93
1971	285,169.56	54.00	5,280.83	28.88	152,530.60
1972	489,757.99	54.00	9,069.45	29.19	264,767.19
1973	353,481.84	54.00	6,545.86	29.50	193,134.84
1974	625,412.09	54.00	11,581.52	29.82	345,358.28
1975	778,831.12	54.00	14,422.57	30.14	434,666.55
1976	1,047,673.31	54.00	19,401.05	30.46	590,945.25
1977	795,616.00	54.00	14,733.40	30.78	453,557.50
1978	706,464.24	54.00	13,082.46	31.11	407,029.04
1979	951,157.63	54.00	17,613.75	31.44	553,859.42
1980	1,095,532.01	54.00	20,287.31	31.78	644,723.71
1981	1,546,898.74	54.00	28,645.82	32.12	920,049.64
1982	1,207,464.20	54.00	22,360.09	32.46	725,811.34
1983	1,446,691.58	54.00	26,790.16	32.81	878,870.38
1984	1,254,279.22	54.00	23,227.03	33.15	770,090.43
1985	2,659,078.01	54.00	49,241.41	33.51	1,649,971.40
1986	2,505,083.88	54.00	46,389.71	33.86	1,570,967.80
1987	3,035,430.19	54.00	56,210.78	34.22	1,923,801.28
1988	3,306,167.78	54.00	61,224.36	34.59	2,117,675.11

AES
Electric Division
367.00 Underground Conductors and Devices

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of December 31, 2022
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 54 *Survivor Curve:* L0.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
1989	3,870,176.56	54.00	71,668.80	34.96	2,505,297.57
1990	3,945,407.49	54.00	73,061.95	35.33	2,581,154.49
1991	2,795,408.12	54.00	51,766.00	35.70	1,848,257.49
1992	2,988,134.24	54.00	55,334.94	36.08	1,996,752.49
1993	2,607,734.68	54.00	48,290.62	36.47	1,761,220.91
1994	9,769,046.39	54.00	180,905.41	36.87	6,669,105.32
1995	4,537,812.57	54.00	84,032.24	37.27	3,131,637.31
1996	6,578,948.42	54.00	121,830.45	37.68	4,590,325.06
1997	4,331,849.51	54.00	80,218.17	38.10	3,056,201.61
1998	865,825.21	54.00	16,033.55	38.53	617,771.55
1999	11,663,212.76	54.00	215,982.01	38.97	8,417,103.18
2000	7,170,050.05	54.00	132,776.61	39.43	5,234,958.90
2001	6,877,077.12	54.00	127,351.27	39.90	5,080,728.08
2002	20,203,941.37	54.00	374,141.15	40.38	15,106,940.46
2003	8,000,899.93	54.00	148,162.47	40.87	6,056,012.25
2004	9,109,542.78	54.00	168,692.57	41.39	6,981,394.44
2005	8,658,126.64	54.00	160,333.14	41.91	6,719,820.05
2006	8,369,066.66	54.00	154,980.27	42.45	6,579,105.12
2007	11,172,863.66	54.00	206,901.61	43.01	8,898,746.30
2008	6,887,875.10	54.00	127,551.23	43.58	5,559,193.69
2009	6,835,952.77	54.00	126,589.72	44.17	5,592,079.98
2010	7,965,786.50	54.00	147,512.23	44.78	6,605,932.53
2011	10,157,674.92	54.00	188,102.12	45.41	8,541,066.09
2012	9,497,333.62	54.00	175,873.77	46.05	8,098,611.21
2013	12,644,947.07	54.00	234,161.98	46.70	10,936,336.15
2014	12,980,834.22	54.00	240,382.02	47.38	11,389,608.74
2015	10,558,894.32	54.00	195,531.99	48.08	9,400,487.49

AES

Electric Division

367.00 Underground Conductors and Devices

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of December 31, 2022

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 54 *Survivor Curve:* L0.5

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
2016	11,054,430.03	54.00	204,708.43	48.79	9,987,770.59
2017	11,241,960.12	54.00	208,181.15	49.52	10,309,821.14
2018	12,717,755.89	54.00	235,510.27	50.28	11,840,704.99
2019	11,657,561.96	54.00	215,877.36	51.05	11,021,033.25
2020	13,785,514.15	54.00	255,283.26	51.85	13,236,187.77
2021	22,853,438.67	54.00	423,205.14	52.68	22,293,780.69
2022	30,565,029.29	54.00	566,010.11	53.55	30,307,184.09
Total	351,427,825.66	54.00	6,507,819.80	44.37	288,732,172.37

Composite Average Remaining Life ... 44.37 Years

AES

Electric Division

370.01 Meters - Smart Meters

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of December 31, 2022

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 18 *Survivor Curve: L1*

Year (1)	Original Cost (2)	Avg. Service Life (3)	Avg. Annual Accrual (4)	Avg. Remaining Life (5)	Future Annual Accruals (6)
2012	101,626.64	18.00	5,645.48	11.08	62,540.25
2013	686,862.10	18.00	38,155.98	11.48	438,189.77
2014	3,718,660.77	18.00	206,575.89	11.92	2,463,301.86
2015	2,437,518.25	18.00	135,406.95	12.41	1,680,479.71
2016	14,039,816.12	18.00	779,927.96	12.95	10,103,168.54
2017	5,231,747.22	18.00	290,629.58	13.56	3,940,531.12
2018	10,717,218.90	18.00	595,353.85	14.23	8,472,336.01
2019	6,081,983.64	18.00	337,861.20	14.97	5,057,269.63
2020	5,027,961.32	18.00	279,309.04	15.77	4,404,332.79
2021	3,433,051.95	18.00	190,709.99	16.63	3,170,903.04
2022	44,310,444.13	18.00	2,461,496.21	17.53	43,157,220.17
Total	95,786,891.04	18.00	5,321,072.13	15.59	82,950,272.90

Composite Average Remaining Life ... 15.59 Years

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	ELECTRIC PLANT										
	MISCELLANEOUS INTANGIBLE PLANT										
303.00	MISCELLANEOUS INTANGIBLE PLANT - SOFTWARE		7-SQ		0	145,325,118.17	107,414,541	37,910,577	10,511,946	**	3.6
303.10	MISCELLANEOUS INTANGIBLE PLANT - SAAS SOFTWARE		5-SQ		0	2,450,601.68	571,645	1,878,957	515,222	**	3.6
303.11	MISCELLANEOUS INTANGIBLE PLANT - SAAS SOFTWARE		3-SQ		0	5,830,306.86	5,713,279	117,028	78,019	**	1.5
303.15	MISCELLANEOUS INTANGIBLE PLANT - ACE SOFTWARE		10-SQ							***	
	TOTAL MISCELLANEOUS INTANGIBLE PLANT					**153,606,026.71**	**113,699,465**	**39,906,562**	**11,105,187**	7.23	3.6
	STEAM PRODUCTION PLANT										
311.00	STRUCTURES AND IMPROVEMENTS										
	HARDING STREET STATION UNIT 5	12-2030	80-R2.5	*	(34)	3,068,388.51	2,667,838	1,443,803	188,114	6.13	7.7
	HARDING STREET STATION UNIT 6	12-2030	80-R2.5	*	(34)	2,340,628.83	2,179,718	956,725	125,077	5.34	7.6
	HARDING STREET STATION UNITS 5 AND 6	12-2030	80-R2.5	*	(36)	3,950,416.68	2,105,569	3,266,998	410,423	10.39	8.0
	HARDING STREET STATION UNIT 7	12-2033	80-R2.5	*	(31)	20,390,549.33	13,454,062	13,257,558	1,230,328	6.03	10.8
	HARDING STREET STATION COMMON	12-2033	80-R2.5	*	(33)	37,175,430.50	24,076,917	25,366,406	2,361,877	6.35	10.7
	EAGLE VALLEY	12-2055	80-R2.5	*	(8)	419,450.97	5,982	447,025	13,840	3.30	32.3
	EAGLE VALLEY CCGT	12-2055	80-R2.5	*	(8)	18,862,945.41	2,056,897	18,315,084	569,836	3.02	32.1
	PETERSBURG UNIT 2	12-2042	80-R2.5	*	(26)	1,747,553.16	772,924	1,428,993	73,636	4.21	19.4
	PETERSBURG UNITS 1 AND 2	12-2042	80-R2.5	*	(25)	9,928,094.84	5,692,520	6,717,599	347,637	3.50	19.3
	PETERSBURG UNIT 3	12-2042	80-R2.5	*	(25)	27,788,100.65	18,576,659	16,158,467	866,314	3.12	18.7
	PETERSBURG UNIT 4	12-2042	80-R2.5	*	(25)	39,678,652.58	25,130,481	24,467,835	1,288,348	3.25	19.0
	PETERSBURG UNITS 3 AND 4	12-2042	80-R2.5	*	(25)	543,072.56	267,754	411,087	21,295	3.92	19.3
	PETERSBURG COMMON	12-2042	80-R2.5	*	(25)	113,575,426.98	49,440,707	92,528,577	4,772,947	4.20	19.4
	TOTAL ACCOUNT 311					*279,468,711.00*	*146,428,028*	*204,766,157*	*12,269,672*	4.39	16.7
311.01	STRUCTURES AND IMPROVEMENTS - MPP										
	HARDING STREET STATION UNIT 5		18-SQ		(34)	1,021.88	477	892	78	7.63	11.4
	HARDING STREET STATION UNIT 7		18-SQ		(31)	968,863.93	1,043,319	225,893	81,509	8.41	2.8
	HARDING STREET STATION COMMON		18-SQ		(33)	1,891,012.11	2,093,438	421,608	169,409	8.96	2.5
	EAGLE VALLEY CCGT		18-SQ		(8)	15,178.49	439	15,954	912	6.01	17.5
	PETERSBURG UNIT 3		18-SQ		(25)	761,919.68	870,529	81,871	51,430	6.75	1.6
	PETERSBURG UNIT 4		18-SQ		(25)	1,900,174.65	1,465,282	909,936	139,990	7.37	6.5
	PETERSBURG COMMON		18-SQ		(25)	419,400.17	137,784	386,466	25,058	5.97	15.4
	TOTAL ACCOUNT 311.01					*5,957,570.91*	*5,611,268*	*2,042,620*	*468,386*	7.86	4.4
311.02	STRUCTURES AND IMPROVEMENTS - MATS										
	PETERSBURG UNIT 2	12-2042	80-R2.5	*	(26)	202,050.00	42,193	212,390	10,770	5.33	19.7

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	PETERSBURG UNIT 3	12-2042	80-R2.5	*	(25)	557,757.86	103,920	593,277	30,070	5.39	19.7
	PETERSBURG UNIT 4	12-2042	80-R2.5	*	(25)	73,833.30	10,342	81,950	4,147	5.62	19.8
	PETERSBURG COMMON	12-2042	80-R2.5	*	(25)	206,394.52	38,455	219,538	11,127	5.39	19.7
	TOTAL ACCOUNT 311.01					*1,040,035.68*	*194,910*	*1,107,155*	*56,114*	5.40	19.7
312.00	BOILER PLANT EQUIPMENT										
	HARDING STREET STATION UNIT 5	12-2030	60-R1.5	*	(34)	10,236,170.53	12,121,393	1,595,076	204,144	1.99	7.8
	HARDING STREET STATION UNIT 6	12-2030	60-R1.5	*	(34)	9,569,521.51	11,176,022	1,647,137	210,836	2.20	7.8
	HARDING STREET STATION UNITS 5 AND 6	12-2030	60-R1.5	*	(36)	29,168,319.21	21,919,443	17,749,471	2,255,333	7.73	7.9
	HARDING STREET STATION UNIT 7	12-2033	60-R1.5	*	(31)	106,023,318.08	77,053,225	61,837,322	5,768,375	5.44	10.7
	HARDING STREET STATION COMMON	12-2033	60-R1.5	*	(33)	60,362,498.98	48,393,855	31,888,269	2,977,871	4.93	10.7

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	EAGLE VALLEY	12-2055	60-R1.5	*	(8)	218,609.41	59,323	176,775	5,875	2.69	30.1
	EAGLE VALLEY CCGT	12-2055	60-R1.5	*	(8)	176,224,509.87	30,934,269	159,388,202	5,248,008	2.98	30.4
	PETERSBURG UNIT 2	12-2042	60-R1.5	*	(26)	8,170,948.17	4,241,878	6,053,517	319,866	3.91	18.9
	PETERSBURG UNITS 1 AND 2	12-2042	60-R1.5	*	(25)	21,821,947.81	16,518,063	10,759,372	583,613	2.67	18.4
	PETERSBURG UNIT 3	12-2042	60-R1.5	*	(25)	102,149,951.48	66,082,834	61,604,605	3,307,964	3.24	18.6
	PETERSBURG UNIT 4	12-2042	60-R1.5	*	(25)	149,648,036.89	114,665,017	72,395,029	3,954,730	2.64	18.3
	PETERSBURG UNITS 3 AND 4	12-2042	60-R1.5	*	(25)	790,545.76	311,573	676,609	35,463	4.49	19.1
	PETERSBURG COMMON	12-2042	60-R1.5	*	(25)	454,112,927.59	257,043,471	310,597,688	16,549,752	3.64	18.8
	TOTAL ACCOUNT 312					*1,128,497,305.29*	*660,520,366*	*736,369,072*	*41,421,830*	3.67	17.8
312.01	BOILER PLANT EQUIPMENT - MPP										
	HARDING STREET STATION UNIT 5		18-SQ		(34)	2,087,850.78	2,564,879	232,841	51,742	2.48	4.5
	HARDING STREET STATION UNIT 6		18-SQ		(34)	2,107,770.41	2,824,412	0	0	-	-
	HARDING STREET STATION UNITS 5 AND 6		18-SQ		(36)	17,298.06	10,206	13,319	1,402	8.10	9.5
	HARDING STREET STATION UNIT 7		18-SQ		(31)	67,894,222.09	74,183,776	14,757,655	8,479,428	12.49	1.7
	HARDING STREET STATION COMMON		18-SQ		(33)	12,044,828.63	13,789,804	2,229,818	1,483,851	12.32	1.5
	PETERSBURG UNIT 3		18-SQ		(25)	66,331,744.04	71,565,043	11,349,637	4,232,735	6.38	2.7
	PETERSBURG UNIT 4		18-SQ		(25)	34,638,151.33	25,324,920	17,972,769	2,749,177	7.94	6.5
	PETERSBURG COMMON		18-SQ		(25)	28,449,616.15	32,145,038	3,416,982	1,799,905	6.33	1.9
	TOTAL ACCOUNT 312.01					*213,571,481.49*	*222,408,078*	*49,973,021*	*18,798,240*	8.80	2.7
312.02	BOILER PLANT EQUIPMENT - MATS										
	HARDING STREET STATION COMMON	12-2033	60-R1.5	*	(33)	9.50	3	10	1	10.53	10.0
	PETERSBURG UNIT 3	12-2042	60-R1.5	*	(25)	127,336,245.78	21,498,690	137,671,617	7,203,700	5.66	19.1
	PETERSBURG UNIT 4	12-2042	60-R1.5	*	(25)	174,436.07	23,837	194,208	10,142	5.81	19.1
	PETERSBURG COMMON	12-2042	60-R1.5	*	(25)	11,054.89	1,659	12,160	636	5.75	19.1
	TOTAL ACCOUNT 312.02					*127,521,746.24*	*21,524,189*	*137,877,995*	*7,214,479*	5.66	19.1
312.30	ASH AND COAL HANDLING EQUIPMENT										
	HARDING STREET STATION UNIT 5	12-2030	50-R1.5	*	(34)	39,325.84	27,628	25,069	4,123	10.48	6.1
	HARDING STREET STATION UNIT 6	12-2030	50-R1.5	*	(34)	59,223.24	37,244	42,115	6,328	10.68	6.7
	HARDING STREET STATION UNITS 5 AND 6	12-2030	50-R1.5	*	(36)	24,773.30	10,627	23,065	2,949	11.90	7.8
	HARDING STREET STATION UNIT 7	12-2033	50-R1.5	*	(31)	567,973.23	325,542	418,503	43,236	7.61	9.7
	HARDING STREET STATION COMMON	12-2033	50-R1.5	*	(33)	4,051,917.09	1,941,081	3,447,969	342,435	8.45	10.1
	PETERSBURG UNIT 3	12-2042	50-R1.5	*	(25)	362,586.94	85,240	367,994	19,659	5.42	18.7
	PETERSBURG UNIT 4	12-2042	50-R1.5	*	(25)	1,077,879.25	157,979	1,189,370	62,894	5.83	18.9
	PETERSBURG UNITS 3 AND 4	12-2042	50-R1.5	*	(25)	26,400.01	7,432	25,568	1,376	5.21	18.6
	PETERSBURG COMMON	12-2042	50-R1.5	*	(25)	418,759.62	52,861	470,589	24,843	5.93	18.9

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	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	TOTAL ACCOUNT 312.3				*6,628,838.52*	*2,645,634*	*6,010,242*	*507,843*	7.66	11.8
312.31	ASH AND COAL HANDLING EQUIPMENT - MPP									
	HARDING STREET STATION UNIT 7		18-SQ	(31)	96,529.22	126,453	0	0	-	-
	HARDING STREET STATION COMMON		18-SQ	(33)	133,130.17	177,063	0	0	-	-
	TOTAL ACCOUNT 312.31				*229,659.39*	*303,516*	*0*	*0*	-	-

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TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT (1)	PROBABLE RETIREMENT DATE (2)	SURVIVOR CURVE (3)	NET SALVAGE PERCENT (4)	ORIGINAL COST (5)	BOOK DEPRECIATION RESERVE (6)	FUTURE ACCRUALS (7)	CALCULATED ANNUAL ACCRUAL AMOUNT (8)	CALCULATED ANNUAL ACCRUAL RATE (9)=(8)/(5)	COMPOSITE REMAINING LIFE (10)
312.40	RAILROAD TRACK SYSTEM/CARS									
	PETERSBURG STATION	12-2042	25-S1 *	(25)	272,620.05	4,469	336,306	19,610	7.19	17.1
	TOTAL ACCOUNT 312.4				*272,620.05*	*4,469*	*336,306*	*19,610*	7.19	17.2
314.00	TURBOGENERATOR UNITS									
	HARDING STREET STATION UNIT 5	12-2030	60-R1.5 *	(34)	9,712,464.40	8,106,574	4,908,128	647,516	6.67	7.6
	HARDING STREET STATION UNIT 6	12-2030	60-R1.5 *	(34)	7,593,125.20	6,798,504	3,376,284	447,588	5.89	7.5
	HARDING STREET STATION UNITS 5 AND 6	12-2030	60-R1.5 *	(36)	743,621.88	373,131	638,195	81,056	10.90	7.9
	HARDING STREET STATION UNIT 7	12-2033	60-R1.5 *	(31)	41,205,070.67	30,213,700	23,764,943	2,264,879	5.50	10.5
	HARDING STREET STATION COMMON	12-2033	60-R1.5 *	(33)	7,646,881.30	6,596,536	3,573,816	355,274	4.65	10.1
	EAGLE VALLEY CCGT	12-2055	60-R1.5 *	(8)	95,278,834.13	12,514,669	90,386,472	2,975,618	3.12	30.4
	PETERSBURG UNIT 2	12-2042	60-R1.5 *	(26)	585,614.18	293,461	444,413	24,021	4.10	18.5
	PETERSBURG UNIT 3	12-2042	60-R1.5 *	(25)	51,396,018.52	29,589,950	34,655,073	1,901,522	3.70	18.2
	PETERSBURG UNIT 4	12-2042	60-R1.5 *	(25)	75,204,758.14	47,460,853	46,545,095	2,574,319	3.42	18.1
	PETERSBURG UNITS 3 AND 4	12-2042	60-R1.5 *	(25)	181,783.95	136,412	90,818	5,288	2.91	17.2
	PETERSBURG COMMON	12-2042	60-R1.5 *	(25)	29,860,712.72	22,091,781	15,234,110	889,964	2.98	17.1
	TOTAL ACCOUNT 314				*319,408,885.09*	*164,175,571*	*223,617,347*	*12,167,045*	3.81	18.4
314.01	TURBOGENERATOR UNITS - MPP									
	HARDING STREET STATION COMMON		18-SQ	(33)	57,280.48	54,866	21,317	8,527	14.89	2.5
	TOTAL ACCOUNT 314.01				*57,280.48*	*54,866*	*21,317*	*8,527*	14.89	2.5
315.00	ACCESSORY ELECTRIC EQUIPMENT									
	HARDING STREET STATION UNIT 5	12-2030	70-R2.5 *	(34)	1,753,259.98	1,387,296	962,072	125,578	7.16	7.7
	HARDING STREET STATION UNIT 6	12-2030	70-R2.5 *	(34)	1,279,869.96	1,135,051	579,975	77,252	6.04	7.5
	HARDING STREET STATION UNITS 5 AND 6	12-2030	70-R2.5 *	(36)	9,132,826.52	4,710,168	7,710,476	968,668	10.61	8.0
	HARDING STREET STATION UNIT 7	12-2033	70-R2.5 *	(31)	12,480,674.73	5,878,649	10,471,035	965,017	7.73	10.9
	HARDING STREET STATION COMMON	12-2033	70-R2.5 *	(33)	18,409,022.53	12,424,034	12,059,966	1,137,906	6.18	10.6
	EAGLE VALLEY CCGT	12-2055	70-R2.5 *	(8)	83,536,791.40	8,970,244	81,249,491	2,546,764	3.05	31.9
	PETERSBURG UNIT 2	12-2042	70-R2.5 *	(26)	5,970,065.58	2,187,097	5,335,186	276,159	4.63	19.3
	PETERSBURG UNIT 3	12-2042	70-R2.5 *	(25)	21,429,991.84	7,737,797	19,049,693	985,433	4.60	19.3
	PETERSBURG UNIT 4	12-2042	70-R2.5 *	(25)	18,721,644.10	7,810,122	15,591,933	809,604	4.32	19.3
	PETERSBURG UNITS 3 AND 4	12-2042	70-R2.5 *	(25)	963.45	682	522	30	3.11	17.4
	PETERSBURG COMMON	12-2042	70-R2.5 *	(25)	122,839,829.43	57,808,077	95,741,710	5,043,704	4.11	19.0
	TOTAL ACCOUNT 315				*295,554,939.52*	*110,049,217*	*248,752,059*	*12,936,115*	4.38	19.2
315.01	ACCESSORY ELECTRIC EQUIPMENT - MPP									
	HARDING STREET STATION UNIT 5		18-SQ	(34)	37,886.03	50,767	0	0	-	-
	HARDING STREET STATION UNIT 6		18-SQ	(34)	33,660.01	45,104	0	0	-	-

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	HARDING STREET STATION UNIT 7		18-SQ		(31)	11,667,268.52	12,269,284	3,014,838	1,275,821	10.94	2.4
	HARDING STREET STATION COMMON		18-SQ		(33)	13,407,653.18	14,937,100	2,895,079	1,611,931	12.02	1.8
	PETERSBURG UNIT 3		18-SQ		(25)	3,000,448.33	3,434,866	315,694	210,463	7.01	1.5
	PETERSBURG UNIT 4		18-SQ		(25)	12,218,358.97	9,009,789	6,263,160	963,563	7.89	6.5
	PETERSBURG COMMON		18-SQ		(25)	7,945,745.57	9,129,658	802,524	515,456	6.49	1.6
	TOTAL ACCOUNT 315.01					*48,311,020.61*	*48,876,568*	*13,291,295*	*4,577,234*	9.47	2.9
315.02	ACCESSORY ELECTRIC EQUIPMENT - MATS										
	PETERSBURG UNIT 3	12-2042	70-R2.5	*	(25)	11,041,203.14	1,319,232	12,482,272	635,545	5.76	19.6
	PETERSBURG COMMON	12-2042	70-R2.5	*	(25)	24,354.92	1,968	28,476	1,445	5.93	19.7
	TOTAL ACCOUNT 315.01					*11,065,558.06*	*1,321,200*	*12,510,748*	*636,990*	5.76	19.6

INDIANAPOLIS POWER & LIGHT COMPANY

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	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT										
	HARDING STREET STATION UNIT 5	12-2030	60-S0	*	(34)	135,253.94	92,839	88,401	11,511	8.51	7.7
	HARDING STREET STATION UNIT 6	12-2030	60-S0	*	(34)	480,656.30	336,757	307,322	39,861	8.29	7.7
	HARDING STREET STATION UNITS 5 AND 6	12-2030	60-S0	*	(36)	306,930.81	144,288	273,138	34,782	11.33	7.9
	HARDING STREET STATION UNIT 7	12-2033	60-S0	*	(31)	2,549,337.77	1,547,427	1,792,205	172,003	6.75	10.4
	HARDING STREET STATION COMMON	12-2033	60-S0	*	(33)	4,224,679.87	2,069,569	3,549,255	335,838	7.95	10.6
	EAGLE VALLEY	12-2055	60-S0	*	(8)	52,986.89	816	56,410	1,858	3.51	30.4
	EAGLE VALLEY CCGT	12-2055	60-S0	*	(8)	205,682,210.54	24,616,792	197,519,995	6,659,431	3.24	29.7
	PETERSBURG UNIT 2	12-2042	60-S0	*	(26)	434,311.71	196,948	350,285	19,404	4.47	18.1
	PETERSBURG UNIT 3	12-2042	60-S0	*	(25)	4,695,731.71	1,790,015	4,079,650	221,593	4.72	18.4
	PETERSBURG UNIT 4	12-2042	60-S0	*	(25)	1,598,649.41	835,908	1,162,404	65,242	4.08	17.8
	PETERSBURG UNITS 3 AND 4	12-2042	60-S0	*	(25)	432,568.89	126,868	413,843	22,068	5.10	18.8
	PETERSBURG COMMON	12-2042	60-S0	*	(25)	18,801,010.37	7,762,924	15,738,339	861,975	4.58	18.3
	TOTAL ACCOUNT 316					*239,394,328.21*	*39,521,151*	*225,331,247*	*8,445,566*	3.53	26.7
316.01	MISCELLANEOUS POWER PLANT EQUIPMENT - MPP										
	HARDING STREET STATION UNIT 6		18-SQ		(34)	38,501.28	51,592	0	0	-	-
	HARDING STREET STATION UNIT 7		18-SQ		(31)	1,200,322.26	1,209,378	363,044	163,273	13.60	2.2
	HARDING STREET STATION COMMON		18-SQ		(33)	636,775.11	644,177	202,734	81,094	12.74	2.5
	PETERSBURG UNIT 3		18-SQ		(25)	17,837.03	17,587	4,709	1,046	5.86	4.5
	PETERSBURG UNIT 4		18-SQ		(25)	105,047.06	74,102	57,207	8,801	8.38	6.5
	PETERSBURG COMMON		18-SQ		(25)	856,249.23	735,924	334,388	56,465	6.59	5.9
	TOTAL ACCOUNT 316.01					*2,854,731.97*	*2,732,760*	*962,082*	*310,679*	10.88	3.1
316.02	MISCELLANEOUS POWER PLANT EQUIPMENT - MATS										
	PETERSBURG UNIT 3	12-2042	60-S0	*	(25)	131,334.84	36,527	127,642	6,768	5.15	18.9
	PETERSBURG COMMON	12-2042	60-S0	*	(25)	57,091.79	15,878	55,487	2,942	5.15	18.9
	TOTAL ACCOUNT 316.01					*188,426.63*	*52,405*	*183,129*	*9,710*	5.15	18.9
	TOTAL STEAM PRODUCTION PLANT					**2,680,023,139.14**	**1,426,424,196**	**1,863,151,792**	**119,848,040**	**4.47**	
	OTHER PRODUCTION PLANT										
341.00	STRUCTURES AND IMPROVEMENTS										
	GEORGETOWN GTs COMMON	12-2052	50-R3	*	(18)	803,369.64	416,513	531,463	20,196	2.51	26.3
	HARDING STREET STATION GTs 1 AND 2	05-2023	50-R3	*	(60)	227,129.14	222,818	140,589	140,589	61.90	1.0
	HARDING STREET STATION GT 4	12-2044	50-R3	*	(39)	2,306,838.30	2,221,793	984,712	53,434	2.32	18.4
	HARDING STREET STATION GT 5	12-2045	50-R3	*	(39)	1,985,803.91	1,867,992	892,275	46,497	2.34	19.2
	HARDING STREET STATION GT 6	12-2052	50-R3	*	(38)	833,628.12	583,459	566,948	22,207	2.66	25.5
	HARDING STREET STATION GTs COMMON	12-2052	50-R3	*	(35)	2,660,591.03	2,255,250	1,336,548	58,904	2.21	22.7

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	EAGLE VALLEY CCGT	12-2055	50-R3	*	(6)	337,559.21	30,882	326,931	10,346	3.06	31.6
	TOTAL ACCOUNT 341					*9,154,919.35*	*7,598,707*	*4,779,466*	*352,173*	3.85	13.6
342.00	FUEL HOLDERS, PRODUCERS AND ACCESSORIES - HANDLING AND STORAGE										
	GEORGETOWN GTs COMMON	12-2052	55-R4	*	(18)	1,328,315.68	908,363	659,050	24,532	1.85	26.9
	HARDING STREET STATION GT 4	12-2044	55-R4	*	(39)	196,494.67	204,625	68,503	3,461	1.76	19.8
	HARDING STREET STATION GT 5	12-2045	55-R4	*	(39)	231,985.32	204,151	118,309	5,500	2.37	21.5
	HARDING STREET STATION GT 6	12-2052	55-R4	*	(38)	1,642,050.21	1,225,958	1,040,071	37,880	2.31	27.5
	HARDING STREET STATION GTs COMMON	12-2052	55-R4	*	(35)	2,140,583.01	1,838,307	1,051,480	41,119	1.92	25.6
	TOTAL ACCOUNT 342					*5,539,428.89*	*4,381,404*	*2,937,413*	*112,492*	2.03	26.1

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
343.00	PRIME MOVERS										
	GEORGETOWN GTs COMMON	12-2052	50-R3	*	(18)	41,482,493.69	25,943,213	23,006,130	926,082	2.23	24.8
	HARDING STREET STATION GTs 1 AND 2	05-2023	50-R3	*	(60)	712,603.22	1,140,165	0	0	-	-
	HARDING STREET STATION GT 4	12-2044	50-R3	*	(39)	17,260,983.59	15,871,731	8,121,036	434,305	2.52	18.7
	HARDING STREET STATION GT 5	12-2045	50-R3	*	(39)	16,729,267.57	15,194,670	8,059,012	416,076	2.49	19.4
	HARDING STREET STATION GT 6	12-2052	50-R3	*	(38)	40,814,716.78	26,992,827	29,331,482	1,137,125	2.79	25.8
	HARDING STREET STATION GTs COMMON	12-2052	50-R3	*	(35)	5,151,727.11	4,255,896	2,698,936	118,211	2.29	22.8
	EAGLE VALLEY CCGT	12-2055	50-R3	*	(6)	2,930,212.01	450,692	2,655,333	84,806	2.89	31.3
	TOTAL ACCOUNT 343					*125,082,003.97*	*89,849,194*	*73,871,929*	*3,116,605*	2.49	23.7
344.00	GENERATORS										
	GEORGETOWN GTs COMMON	12-2052	50-S1.5	*	(18)	11,798,153.40	5,927,377	7,994,444	316,851	2.69	25.2
	HARDING STREET STATION GTs 1 AND 2	05-2023	50-S1.5	*	(60)	2,253,719.30	3,605,951	0	0	-	-
	HARDING STREET STATION GT 4	12-2044	50-S1.5	*	(39)	4,514,592.66	3,679,422	2,595,862	138,256	3.06	18.8
	HARDING STREET STATION GT 5	12-2045	50-S1.5	*	(39)	4,380,246.48	3,382,039	2,706,504	137,473	3.14	19.7
	HARDING STREET STATION GT 6	12-2052	50-S1.5	*	(38)	11,368,427.39	8,094,804	7,593,626	316,917	2.79	24.0
	HARDING STREET STATION GTs COMMON	12-2052	50-S1.5	*	(35)	19,111,019.91	6,764,829	19,035,048	702,898	3.68	27.1
	EAGLE VALLEY CCGT	12-2055	50-S1.5	*	(6)	109,983,838.37	14,579,538	102,003,331	3,328,468	3.03	30.6
	TOTAL ACCOUNT 344					*163,409,997.51*	*46,033,960*	*141,928,815*	*4,940,863*	3.02	28.7
345.00	ACCESSORY ELECTRIC EQUIPMENT										
	GEORGETOWN GTs COMMON	12-2052	45-S2.5	*	(18)	6,294,827.34	4,152,575	3,275,321	152,225	2.42	21.5
	HARDING STREET STATION GTs 1 AND 2	05-2023	45-S2.5	*	(60)	2,630,035.23	3,500,995	707,061	707,061	26.88	1.0
	HARDING STREET STATION GT 4	12-2044	45-S2.5	*	(39)	2,869,587.03	2,762,260	1,226,466	77,098	2.69	15.9
	HARDING STREET STATION GT 5	12-2045	45-S2.5	*	(39)	2,283,716.72	2,139,973	1,034,393	62,083	2.72	16.7
	HARDING STREET STATION GT 6	12-2052	45-S2.5	*	(38)	2,023,439.75	1,444,142	1,348,205	59,572	2.94	22.6
	HARDING STREET STATION GTs COMMON	12-2052	45-S2.5	*	(35)	5,621,302.96	4,602,881	2,985,878	148,415	2.64	20.1
	EAGLE VALLEY CCGT	12-2055	45-S2.5	*	(6)	9,323,508.18	1,360,051	8,522,868	276,292	2.96	30.8
	TOTAL ACCOUNT 345					*31,046,417.21*	*19,962,877*	*19,100,192*	*1,482,746*	4.78	12.9
346.00	MISCELLANEOUS POWER PLANT EQUIPMENT										
	GEORGETOWN GTs COMMON	12-2052	45-S2.5	*	(18)	242,043.49	134,252	151,359	6,476	2.68	23.4
	HARDING STREET STATION GTs 1 AND 2	05-2023	45-S2.5	*	(60)	40,040.00	63,340	724	724	1.81	1.0
	HARDING STREET STATION GT 4	12-2044	45-S2.5	*	(39)	110,634.18	62,317	91,465	4,566	4.13	20.0
	HARDING STREET STATION GT 5	12-2045	45-S2.5	*	(39)	266,365.07	209,627	160,620	8,694	3.26	18.5
	HARDING STREET STATION GT 6	12-2052	45-S2.5	*	(38)	131,437.31	94,049	87,334	3,908	2.97	22.3
	HARDING STREET STATION GTs COMMON	12-2052	45-S2.5	*	(35)	1,373,027.68	1,031,088	822,499	39,140	2.85	21.0
	EAGLE VALLEY CCGT	12-2055	45-S2.5	*	(6)	870,131.32	72,183	850,156	27,118	3.12	31.4
	TOTAL ACCOUNT 346					*3,033,679.05*	*1,666,856*	*2,164,157*	*90,626*	2.99	23.9

INDIANAPOLIS POWER & LIGHT COMPANY

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	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	TOTAL OTHER PRODUCTION PLANT				**337,266,445.98**	**169,492,998**	**244,781,972**	**10,095,505**	**2.99**	
	TRANSMISSION PLANT									
350.50	LAND RIGHTS		80-R4	0	21,416,885.13	9,920,731	11,496,154	264,061	1.23	43.5
351.00	ENERGY STORAGE EQUIPMENT		15-L3	(5)	10,305,629.86	6,271,065	4,549,846	520,577	5.05	8.7
352.00	STRUCTURES AND IMPROVEMENTS		65-R3	(20)	21,576,194.84	4,671,639	21,219,795	378,406	1.75	56.1
353.00	STATION EQUIPMENT		50-S0	(15)	235,540,145.02	73,883,226	196,987,941	4,871,653	2.07	40.4
353.01	STATION EQUIPMENT - MPP		18-SQ	(15)	2,502,990.01	1,040,170	1,838,269	175,494	7.01	10.5
354.00	TOWERS AND FIXTURES		75-R4	(50)	51,153,861.55	42,130,352	34,600,440	810,897	1.59	42.7
355.00	POLES AND FIXTURES		65-R2	(40)	51,932,490.66	19,009,257	53,696,230	1,052,673	2.03	51.0
355.01	POLES AND FIXTURES - MPP		18-SQ	(10)	313,304.82	282,966	61,669	19,808	6.32	3.1
356.00	OVERHEAD CONDUCTORS AND DEVICES		65-R2	(70)	65,226,990.32	47,811,884	63,074,000	1,459,216	2.24	43.2
357.00	UNDERGROUND CONDUIT		60-R3	0	9,431.45	245	9,186	156	1.65	58.9
358.00	UNDERGROUND CONDUCTORS AND DEVICES		30-R0.5	(10)	487,825.32	8,231	528,377	17,801	3.65	29.7
	TOTAL TRANSMISSION PLANT				**460,465,748.98**	**205,029,766**	**388,061,907**	**9,570,742**	**2.08**	

INDIANAPOLIS POWER & LIGHT COMPANY

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	ACCOUNT (1)	PROBABLE RETIREMENT DATE (2)	SURVIVOR CURVE (3)	NET SALVAGE PERCENT (4)	ORIGINAL COST (5)	BOOK DEPRECIATION RESERVE (6)	FUTURE ACCRUALS (7)	CALCULATED ANNUAL ACCRUAL AMOUNT (8)	CALCULATED ANNUAL ACCRUAL RATE (9)=(8)/(5)	COMPOSITE REMAINING LIFE (10)
	DISTRIBUTION PLANT									
360.50	LAND RIGHTS		75-R4	0	391,443.72	316,837	74,607	1,802	0.46	41.4
361.00	STRUCTURES AND IMPROVEMENTS		65-R2.5	(20)	11,604,181.76	9,914,030	4,010,988	81,772	0.70	49.1
362.00	STATION EQUIPMENT		60-R1	(10)	211,642,797.59	104,301,162	128,505,915	2,541,666	1.20	50.6
364.00	POLES, TOWERS AND FIXTURES		58-R2.5	(110)	262,046,873.48	197,605,387	352,693,047	6,963,248	2.66	50.7
365.00	OVERHEAD CONDUCTORS AND DEVICES		60-R0.5	(50)	374,332,907.35	230,235,373	331,263,988	5,795,327	1.55	57.2
366.00	UNDERGROUND CONDUIT		60-R1.5	(20)	157,819,431.48	52,327,341	137,055,977	2,795,894	1.77	49.0
367.00	UNDERGROUND CONDUCTORS AND DEVICES		50-R2	(20)	351,427,825.66	181,810,150	239,903,241	5,780,172	1.64	41.5
368.00	LINE TRANSFORMERS		44-R1	(5)	258,425,215.45	173,791,556	97,554,920	2,517,262	0.97	38.8
369.00	SERVICES		55-S2.5	(75)	158,416,610.57	138,913,807	138,315,261	3,297,358	2.08	41.9
370.00	METERS		23-S0	0	35,132,606.71	20,641,005	14,491,602	1,091,092	3.11	13.3
370.01	METERS - SMART METERS		15-S1	0	95,786,891.04	31,170,610	64,616,281	4,980,712	5.20	13.0
371.00	INSTALLATIONS ON CUSTOMERS' PREMISES		38-S1.5	(40)	46,502,244.07	53,801,187	11,301,955	323,769	0.70	34.9
373.00	STREET LIGHTING AND SIGNAL SYSTEMS		45-S0	(20)	68,777,058.39	58,676,471	23,855,999	623,647	0.91	38.3
373.01	STREET LIGHTING AND SIGNAL SYSTEMS - LED		25-R2	(10)	535,078.85	352,886	235,701	11,045	2.06	21.3
	TOTAL DISTRIBUTION PLANT				**2,032,841,166.12**	**1,253,857,802**	**1,543,879,482**	**36,804,766**	**1.81**	
	GENERAL PLANT									
390.00	STRUCTURES AND IMPROVEMENTS									
	ELECTRICAL BUILDING	06-2056	75-R1	* (30)	40,720,742.64	11,364,497	41,572,468	1,357,832	3.33	30.6
	MORRIS STRET SERVICE CENTER	06-2043	75-R1	* (30)	39,617,685.18	21,276,910	30,226,081	1,571,893	3.97	19.2
	ARLINGTON SERVICE CENTER	06-2035	75-R1	* (30)	10,614,955.78	6,870,276	6,929,167	575,557	5.42	12.0
	CUSTOMER SERVICE CENTER	06-2042	75-R1	* (30)	3,235,446.06	1,836,261	2,369,819	128,660	3.98	18.4
	OTHER STRUCTURES		45-R3	(5)	3,849,779.92	1,211,778	2,830,491	99,119	2.57	28.6
	TOTAL ACCOUNT 390				*98,038,609.58*	*42,559,722*	*83,928,026*	*3,733,061*	3.81	
391.00	OFFICE FURNITURE AND EQUIPMENT		21-SQ	0	12,751,358.34	5,745,980	7,005,378	615,703	4.83	11.4
391.60	OFFICE FURNITURE AND EQUIPMENT - COMPUTER EQUIPMENT		5-SQ	0	34,237,018.78	22,618,210	11,618,809	4,444,143	12.98	2.6
392.00	TRANSPORTATION EQUIPMENT		13-L2	10	52,428,190.98	36,196,508	10,988,864	1,103,840	2.11	10.0
393.00	STORES EQUIPMENT		27-SQ	0	1,733,825.44	813,391	920,434	67,183	3.87	13.7
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT		25-SQ	0	15,659,538.86	5,206,975	10,452,564	633,887	4.05	16.5
395.00	LABORATORY EQUIPMENT		23-SQ	0	4,499,731.84	2,630,095	1,869,637	195,033	4.33	9.6
396.00	POWER OPERATED EQUIPMENT		16-SQ	0	2,264,490.50	1,039,832	1,224,658	139,124	6.14	8.8
397.00	COMMUNICATION EQUIPMENT		18-SQ	0	31,540,473.41	14,256,550	17,283,923	1,715,827	5.44	10.1
398.00	MISCELLANEOUS EQUIPMENT		27-SQ	0	2,046,338.97	833,864	1,212,475	76,226	3.72	15.9
	TOTAL GENERAL PLANT				**255,199,576.70**	**131,901,127**	**146,504,768**	**12,724,027**	**4.99**	
	TOTAL DEPRECIABLE PLANT				**5,919,402,103.63**	**3,300,405,354**	**4,226,286,483**	**200,148,267**	**3.38**	

INDIANAPOLIS POWER & LIGHT COMPANY

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	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	SOON TO BE RETIRED PLANT										
	EAGLE VALLEY STEAM PRODUCTION PLANT TO BE RETIRED										
311.00	STRUCTURES AND IMPROVEMENTS	12-2016	80-R2.5	*	(6)	3,589,059.88	3,804,403	0	0	-	-
312.00	BOILER PLANT EQUIPMENT	12-2016	60-R1.5	*	(6)	56,468.96	59,857	0	0	-	-
312.30	ASH AND COAL HANDLING EQUIPMENT	12-2016	50-R1.5	*	(6)	499,681.82	529,663	0	0	-	-
312.40	RAILROAD TRACK SYSTEM/CARS	12-2016	25-S1	*	(6)	132,036.64	139,959	0	0	-	-
314.00	TURBOGENERATOR UNITS	12-2016	60-R1.5	*	(6)	60,428.47	64,054	0	0	-	-
315.00	ACCESSORY ELECTRIC EQUIPMENT	12-2016	70-R2.5	*	(6)	327,355.61	346,997	0	0	-	-
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT	12-2016	60-S0	*	(6)	18,547.88	19,661	0	0	-	-
390.00	STRUCTURES AND IMPROVEMENTS	12-2016	45-R3	*	(5)	2,047.62	2,150	0	0	-	-
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT	12-2016	25-SQ	*	0	24,229.77	24,230	0	0	-	-
	SUBTOTAL EAGLE VALLEY STEAM PRODUCTION PLANT TO BE RETIRED					**4,709,856.65**	**4,990,974**	**0**	**0**	**-**	

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	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	PETERSBURG UNITS 1 AND 2 STEAM PRODUCTION PLANT TO BE RETIRED										
311.00	STRUCTURES AND IMPROVEMENTS										
	PETERSBURG UNIT 2	05-2023	80-R2.5	*	0	7,030,697.62	5,478,875	1,551,823	155,182	****	10.0
	PETERSBURG UNITS 1 AND 2	05-2023	80-R2.5	*	0	19,404,145.21	15,179,529	4,224,616	422,462	****	10.0
	TOTAL ACCOUNT 311					26,434,842.83	20,658,404	5,776,439	577,644	****	10.0
311.02	STRUCTURES AND IMPROVEMENTS - MATS										
	PETERSBURG UNIT 2	05-2023	80-R2.5	*	0	33,113.50	18,685	14,428	1,443	****	10.0
	TOTAL ACCOUNT 311.01					33,113.50	18,685	14,428	1,443	****	10.0
312.00	BOILER PLANT EQUIPMENT										
	PETERSBURG UNIT 2	05-2023	60-R1.5	*	0	116,214,859.95	116,214,860	0	0	****	-
	PETERSBURG UNITS 1 AND 2	05-2023	60-R1.5	*	0	23,584,431.95	23,584,432	0	0	****	-
	TOTAL ACCOUNT 312					139,799,291.90	139,799,292	0	0	****	-
312.01	BOILER PLANT EQUIPMENT - MPP										
	PETERSBURG UNIT 2	05-2023	18-SQ	*	0	23,966,927.39	21,998,007	1,968,920	196,892	****	10.0
	TOTAL ACCOUNT 312.01					23,966,927.39	21,998,007	1,968,920	196,892	****	10.0
312.02	BOILER PLANT EQUIPMENT - MATS										
	PETERSBURG UNIT 2	05-2023	60-R1.5	*	0	207,037,846.17	101,360,900	105,676,946	10,567,695	****	10.0
	TOTAL ACCOUNT 312.02					207,037,846.17	101,360,900	105,676,946	10,567,695	****	10.0
312.30	ASH AND COAL HANDLING EQUIPMENT										
	PETERSBURG UNIT 2	05-2023	50-R1.5	*	0	16,662,917.77	9,088,528	7,574,390	757,439	****	10.0
	PETERSBURG UNITS 1 AND 2	05-2023	50-R1.5	*	0	1,441,177.45	800,617	640,560	64,056	****	10.0
	TOTAL ACCOUNT 312.3					18,104,095.22	9,889,145	8,214,950	821,495	****	10.0
312.32	ASH AND COAL HANDLING EQUIPMENT - MATS										
	PETERSBURG UNIT 2	05-2023	50-R1.5	*	0	342,124.29	71,536	270,588	27,059	****	10.0
	TOTAL ACCOUNT 312.32					342,124.29	71,536	270,588	27,059	****	10.0
314.00	TURBOGENERATOR UNITS										
	PETERSBURG UNIT 2	05-2023	60-R1.5	*	0	41,980,389.93	35,114,591	6,865,799	686,580	****	10.0
	PETERSBURG UNITS 1 AND 2	05-2023	60-R1.5	*	0	895,752.34	749,687	146,065	14,607	****	10.0

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TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	TOTAL ACCOUNT 314					42,876,142.27	35,864,278	7,011,864	701,187	****	10.0
315.00	ACCESSORY ELECTRIC EQUIPMENT										
	PETERSBURG UNIT 2	05-2023	70-R2.5	*	0	5,171,639.56	3,854,674	1,316,966	131,697	****	10.0
	PETERSBURG UNITS 1 AND 2	05-2023	70-R2.5	*	0	21,292,419.06	15,604,363	5,688,056	568,806	****	10.0
	TOTAL ACCOUNT 315					26,464,058.62	19,459,037	7,005,022	700,503	****	10.0
315.01	ACCESSORY ELECTRIC EQUIPMENT - MPP										
	PETERSBURG UNIT 2	05-2023	18-SQ	*	0	1,694,920.93	1,694,921	0	0	****	-
	TOTAL ACCOUNT 315.01					1,694,920.93	1,694,921	0	0	****	-
315.02	ACCESSORY ELECTRIC EQUIPMENT - MATS										
	PETERSBURG UNIT 2	05-2023	70-R2.5	*	0	10,067,623.55	3,296,780	6,770,844	677,084	****	10.0
	TOTAL ACCOUNT 315.02					10,067,623.55	3,296,780	6,770,844	677,084	****	10.0
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT										
	PETERSBURG UNIT 2	05-2023	60-S0	*	0	1,436,152.37	1,011,383	424,769	42,477	****	10.0
	PETERSBURG UNITS 1 AND 2	05-2023	60-S0	*	0	1,927,188.18	1,401,882	525,306	52,531	****	10.0
	TOTAL ACCOUNT 316					3,363,340.55	2,413,265	950,075	95,008	****	10.0
316.01	MISCELLANEOUS POWER PLANT EQUIPMENT - MPP										
	PETERSBURG UNIT 2	05-2023	18-SQ	*	0	10,613.43	10,613	0	0	****	-
	TOTAL ACCOUNT 316.01					10,613.43	10,613	0	0	****	-
316.02	MISCELLANEOUS POWER PLANT EQUIPMENT - MATS										
	PETERSBURG UNIT 2	05-2023	60-S0	*	0	1,025,798.86	806,745	219,054	21,905	****	10.0
	TOTAL ACCOUNT 316.02					1,025,798.86	806,745	219,054	21,905	****	10.0
390.00	STRUCTURES AND IMPROVEMENTS	05-2023	45-R3	*	(5)	20,771.47	17,351	4,459	446	****	10.0
391.00	OFFICE FURNITURE AND EQUIPMENT	05-2023	21-SQ	*	0	69,454.47	64,675	4,779	478	****	10.0
392.00	TRANSPORTATION EQUIPMENT										
	PETERSBURG UNIT 2	05-2023	13-L2	*	10	192,580.85	173,323	0	0	****	-
	PETERSBURG UNITS 1 AND 2	05-2023	13-L2	*	10	45,817.00	41,235	0	0	****	-
	TOTAL ACCOUNT 392					238,397.85	214,558	0	0	****	-

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
393.00	STORES EQUIPMENT	05-2023	27-SQ	*	0	6,002.68	5,565	438	44	****	10.0
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT										
	PETERSBURG UNIT 2	05-2023	25-SQ	*	0	11,267.68	10,750	518	52	****	10.0
	PETERSBURG UNITS 1 AND 2	05-2023	25-SQ	*	0	26,181.29	25,047	1,134	113	****	10.0
	TOTAL ACCOUNT 394					37,448.97	35,797	1,652	165	****	10.0
397.00	COMMUNICATION EQUIPMENT										
	PETERSBURG UNIT 2	05-2023	18-SQ	*	0	16,963.53	16,209	755	76	****	10.0
	PETERSBURG UNITS 1 AND 2	05-2023	18-SQ	*	0	11,510.64	9,951	1,560	156	****	10.0
	TOTAL ACCOUNT 397					28,474.17	26,160	2,315	232	****	10.0
398.00	MISCELLANEOUS EQUIPMENT	05-2023	27-SQ	*	0	8,940.50	8,740	200	20	****	10.0
	SUBTOTAL PETERSBURG UNITS 1 AND 2 STEAM PRODUCTION PLANT TO BE RETIRED					**501,630,229.62**	**357,714,454**	**143,892,973**	**14,389,300**	****	
	PETERSBURG STEAM PRODUCTION PLANT TO BE REFUELED										
311.00	STRUCTURES AND IMPROVEMENTS										
	PETERSBURG UNIT 3	12-2025	80-R2.5	*	(26)	1,281,950.29	1,085,073	530,184	177,708	13.86	3.0
	PETERSBURG UNIT 4	12-2025	80-R2.5	*	(26)	3,611,986.99	3,306,064	1,245,040	417,521	11.56	3.0
	PETERSBURG UNITS 3 AND 4	12-2025	80-R2.5	*	(26)	12,810.93	9,501	6,641	2,214	17.28	3.0
	PETERSBURG COMMON	12-2025	80-R2.5	*	(26)	12,969,046.73	11,643,347	4,697,652	1,575,784	12.15	3.0
	TOTAL ACCOUNT 311					17,875,794.94	16,043,985	6,479,517	2,173,227	12.16	3.0
311.01	STRUCTURES AND IMPROVEMENTS - MPP										
	PETERSBURG UNIT 4	12-2025	18-SQ	*	(26)	13,368,810.85	12,897,155	3,947,547	1,315,849	9.84	3.0
	PETERSBURG COMMON	12-2025	18-SQ	*	(26)	61,040.21	76,911	0	0	-	-
	TOTAL ACCOUNT 311.01					13,429,851.06	12,974,066	3,947,547	1,315,849	9.80	3.0

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
312.00	BOILER PLANT EQUIPMENT										
	PETERSBURG UNIT 3	12-2025	60-R1.5	*	(26)	23,995,315.24	26,453,652	3,780,445	1,268,606	5.29	3.0
	PETERSBURG UNIT 4	12-2025	60-R1.5	*	(26)	25,526,306.55	32,163,146	0	0	-	-
	PETERSBURG UNITS 3 AND 4	12-2025	60-R1.5	*	(26)	472,264.51	595,053	0	0	-	-
	PETERSBURG COMMON	12-2025	60-R1.5	*	(26)	88,348,114.89	111,318,625	0	0	-	-
	TOTAL ACCOUNT 312					138,342,001.19	170,530,476	3,780,445	1,268,606	0.92	3.0
312.01	BOILER PLANT EQUIPMENT - MPP										
	PETERSBURG UNIT 3	12-2025	18-SQ	*	(26)	7,974,297.48	8,347,388	1,700,227	1,060,757	13.30	1.6
	PETERSBURG UNIT 4	12-2025	18-SQ	*	(26)	64,787,570.92	59,478,392	22,153,947	7,384,649	11.40	3.0
	PETERSBURG COMMON	12-2025	18-SQ	*	(26)	230,164.31	290,007	0	0	-	-
	TOTAL ACCOUNT 312.01					72,992,032.71	68,115,787	23,854,174	8,445,406	11.57	2.8
312.02	BOILER PLANT EQUIPMENT - MATS										
	PETERSBURG UNIT 3	12-2025	60-R1.5	*	(26)	20,848,262.69	9,703,464	16,565,347	5,558,841	26.66	3.0
	PETERSBURG UNIT 4	12-2025	60-R1.5	*	(26)	23,437,981.03	11,288,440	18,243,416	6,121,952	26.12	3.0
	TOTAL ACCOUNT 312.02					44,286,243.72	20,991,904	34,808,763	11,680,793	26.38	3.0
312.30	ASH AND COAL HANDLING EQUIPMENT										
	PETERSBURG UNIT 3	12-2025	50-R1.5	*	(26)	23,884,764.11	13,424,046	16,670,757	5,652,283	23.66	2.9
	PETERSBURG UNIT 4	12-2025	50-R1.5	*	(26)	28,832,235.11	18,109,476	18,219,140	6,201,259	21.51	2.9
	PETERSBURG UNITS 3 AND 4	12-2025	50-R1.5	*	(26)	85,226.69	48,023	59,363	19,964	23.42	3.0
	PETERSBURG COMMON	12-2025	50-R1.5	*	(26)	90,986,956.16	51,649,119	62,994,446	21,300,756	23.41	3.0
	TOTAL ACCOUNT 312.3					143,789,182.07	83,230,664	97,943,706	33,174,262	23.07	3.0
312.32	ASH AND COAL HANDLING EQUIPMENT - MATS										
	PETERSBURG UNIT 3	12-2025	50-R1.5	*	(26)	412,953.80	78,840	441,482	148,148	35.88	3.0
	TOTAL ACCOUNT 312.32					412,953.80	78,840	441,482	148,148	35.88	3.0
312.40	RAILROAD TRACK SYSTEM/CARS										
	PETERSBURG COMMON	12-2025	25-S1	*	(26)	57,344.62	6,115	66,139	25,536	44.53	2.6
	TOTAL ACCOUNT 312.4					57,344.62	6,115	66,139	25,536	44.53	2.6
314.00	TURBOGENERATOR UNITS										
	PETERSBURG COMMON	12-2025	60-R1.5	*	(26)	5,065.62	5,147	1,236	422	8.33	2.9
	TOTAL ACCOUNT 314					5,065.62	5,147	1,236	422	8.33	2.9

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
315.00	ACCESSORY ELECTRIC EQUIPMENT										
	PETERSBURG UNIT 3	12-2025	70-R2.5	*	(26)	305,482.48	236,009	148,899	49,798	16.30	3.0
	PETERSBURG UNIT 4	12-2025	70-R2.5	*	(26)	130,579.34	96,685	67,845	22,694	17.38	3.0
	PETERSBURG UNITS 3 AND 4	12-2025	70-R2.5	*	(26)	47,833.66	37,866	22,404	7,493	15.66	3.0
	PETERSBURG COMMON	12-2025	70-R2.5	*	(26)	7,335,523.38	6,520,127	2,722,632	915,728	12.48	3.0
	TOTAL ACCOUNT 315					7,819,418.86	6,890,687	2,961,780	995,713	12.73	3.0
315.01	ACCESSORY ELECTRIC EQUIPMENT - MPP										
	PETERSBURG UNIT 4	12-2025	18-SQ	*	(26)	2,409,195.72	2,093,065	942,522	314,174	13.04	3.0
	TOTAL ACCOUNT 315.01					2,409,195.72	2,093,065	942,522	314,174	13.04	3.0

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT										
	PETERSBURG UNIT 3	12-2025	60-S0	*	(26)	73,757.22	60,196	32,738	11,098	15.05	2.9
	PETERSBURG UNIT 4	12-2025	60-S0	*	(26)	497,848.65	433,217	194,072	66,000	13.26	2.9
	PETERSBURG COMMON	12-2025	60-S0	*	(26)	1,302,620.26	1,010,545	630,757	212,754	16.33	3.0
	TOTAL ACCOUNT 316					1,874,226.13	1,503,958	857,567	289,852	15.47	3.0
316.01	MISCELLANEOUS POWER PLANT EQUIPMENT - MPP										
	PETERSBURG UNIT 4	12-2025	18-SQ	*	(26)	353,649.44	310,924	134,674	44,891	12.69	3.0
	TOTAL ACCOUNT 316.01					353,649.44	310,924	134,674	44,891	12.69	3.0
390.00	STRUCTURES AND IMPROVEMENTS	12-2025	45-R3	*	(5)	95.12	73	27	9	9.46	3.0
391.00	OFFICE FURNITURE AND EQUIPMENT	12-2025	21-SQ	*	0	24,508.75	20,975	3,534	1,362	5.56	2.6
393.00	STORES EQUIPMENT	12-2025	27-SQ	*	0	3,000.00	2,478	522	174	5.80	3.0
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT										
	PETERSBURG UNIT 3	12-2025	25-SQ	*	0	3,860.19	3,195	665	222	5.75	3.0
	PETERSBURG COMMON	12-2025	25-SQ	*	0	21,392.71	17,719	3,674	1,225	5.73	3.0
	TOTAL ACCOUNT 394					25,252.90	20,914	4,339	1,447	5.73	3.0
395.00	LABORATORY EQUIPMENT	12-2025	23-SQ	*	0	4,840.29	4,127	713	238	4.92	3.0
398.00	MISCELLANEOUS EQUIPMENT	12-2025	27-SQ	*	0	7,246.46	5,886	1,360	454	6.27	3.0
	SUBTOTAL PETERSBURG STEAM PRODUCTION PLANT TO BE REFUELED					**443,711,903.40**	**382,830,071**	**176,230,047**	**59,880,563**	**13.50**	
	TOTAL SOON TO BE RETIRED PLANT					**950,051,989.67**	**745,535,499**	**320,123,020**	**74,269,863**	**7.82**	
	TOTAL DEPRECIABLE PLANT AND EARLY RETIREMENT PLANT					**6,869,454,093.30**	**4,045,940,853**	**4,546,409,503**	**274,418,130**	**3.99**	
	NONDEPRECIABLE PLANT AND ACCOUNTS NOT SUTDIED										
301.00	ORGANIZATION					46,415.06					
310.00	LAND					3,045,837.91					
312.99	BOILER PLANT EQUIPMENT - NON-UTILITY / FUTURE USE						46				
317.00	ARO					195,718,283.90	153,410,415				
343.99	PRIME MOVERS (GL ACCOUNT 114)					484,815.45	226,837				
350.00	LAND					546,176.95					
359.10	ARO					30,195.59	28,653				
360.00	LAND					4,149,109.35	(3,133)				
360.99	LAND AND LAND RIGHTS - NON-UTILITY / FUTURE USE					105,446.83					
374.00	ARO					234,612.79	229,478				
389.00	LAND					4,248,759.35					

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2022

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
389.99	LAND AND LAND RIGHTS - NON-UTILITY / FUTURE USE				305,008.76					
390.99	STRUCTURES AND IMPROVEMENTS - NON-UTILITY / FUTURE USE				145,317.74	140,073				
399.10	ARO				692,516.26	679,547				
	TOTAL NONDEPRECIABLE PLANT				**209,752,495.94**	**154,711,916**				
	TOTAL ELECTRIC PLANT				**7,079,206,589.24**	**4,200,652,769**				

* LIFE SPAN PROCEDURE IS USED. CURVE SHOWN IS INTERIM SURVIVOR CURVE.
** ASSETS RECORDED IN THIS ACCOUNT ARE INDIVIDUALLY DEPRECIATED OVER THE LIFE OF THE ASSET.
*** ASSETS ADDED IN THIS ACCOUNT SUBSEQUENT TO DECEMBER 31, 2022 ASSOCIATED WITH THE "ACE SOFTWARE PROJECT" WILL BE DEPRECIATED INDIVIDUALLY USING A 10% ACCRUAL RATE CONSISTENT WITH A 10-YEAR LIFE.
**** UNRECOVERED PLANT TO BE AMORTIZED OVER 10 YEARS.

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2017 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF JUNE 30, 2017

Prepared by:

Gannett Fleming

Excellence Delivered ***As Promised***

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF JUNE 30, 2017

	ACCOUNT	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(7)/(4)	(9)=(6)/(7)
	ELECTRIC PLANT								
	STEAM PRODUCTION PLANT								
311	STRUCTURES AND IMPROVEMENTS								
	HARDING STREET STATION	80-R2.5 *	(25)	52,489,773.54	34,106,097	31,506,120	2,059,643	3.92	15.3
	EAGLE VALLEY STATION	80-R2.5 *	(50)	3,589,059.88	5,383,590	0	0	-	-
	PETERSBURG STATION	80-R2.5 *	(15)	188,319,259.95	96,399,525	120,167,624	5,204,382	2.76	23.1
	TOTAL ACCOUNT 311			*244,398,093.37*	*135,889,212*	*151,673,744*	*7,264,025*	2.97	20.9
311.01	STRUCTURES AND IMPROVEMENTS - MPP								
	HARDING STREET STATION	18-SQ	(25)	2,859,876.04	1,411,253	2,163,592	270,299	9.45	8.0
	PETERSBURG STATION	18-SQ	(15)	16,201,965.02	8,263,180	10,369,080	876,867	5.41	11.8
	TOTAL ACCOUNT 311.01			*19,061,841.06*	*9,674,433*	*12,532,672*	*1,147,166*	6.02	10.9
312	BOILER PLANT EQUIPMENT								
	HARDING STREET STATION	62-R1 *	(25)	238,048,661.93	54,092,696	243,468,131	17,538,247	7.37	13.9
	EAGLE VALLEY STATION	62-R1 *	(50)	146,815.63	220,223	0	0	-	-
	PETERSBURG STATION	62-R1 *	(15)	1,006,692,270.38	428,539,622	729,156,489	37,102,740	3.69	19.7
	TOTAL ACCOUNT 312			*1,244,887,747.94*	*482,852,541*	*972,624,620*	*54,640,987*	4.39	17.8
312.01	BOILER PLANT EQUIPMENT - MPP								
	HARDING STREET STATION	18-SQ	(25)	88,547,777.84	50,049,766	60,634,956	8,847,176	9.99	6.9
	PETERSBURG STATION	18-SQ	(15)	252,891,151.55	108,982,022	181,842,802	23,472,971	9.28	7.7
	TOTAL ACCOUNT 312.01			*341,438,929.39*	*159,031,788*	*242,477,758*	*32,320,147*	9.47	7.5
312.02	BOILER PLANT EQUIPMENT - MATS								
	HARDING STREET STATION	62-R1 *	(25)	9.50	1	11	1	10.53	11.0
	EAGLE VALLEY STATION	62-R1 *	(50)	437.45	656	0	0	-	-
	PETERSBURG STATION	62-R1 *	(15)	431,976,244.83	48,834,782	447,937,900	22,403,765	5.19	20.0
	TOTAL ACCOUNT 312.02			*431,976,691.78*	*48,835,439*	*447,937,911*	*22,403,766*	5.19	20.0
312.3	ASH AND COAL HANDLING EQUIPMENT								
	HARDING STREET STATION	52-R1 *	(25)	4,785,672.85	1,715,834	4,266,257	311,613	6.51	13.7
	EAGLE VALLEY STATION	52-R1 *	(50)	499,681.82	749,523	0	0	-	-
	PETERSBURG STATION	52-R1 *	(15)	171,963,981.05	65,134,899	132,623,679	7,284,061	4.24	18.2
	TOTAL ACCOUNT 312.3			*177,249,335.72*	*67,600,256*	*136,889,936*	*7,595,674*	4.29	18.0
312.31	ASH AND COAL HANDLING EQUIPMENT - MPP								
	HARDING STREET STATION	18-SQ	(25)	229,659.39	287,074	0	0	-	
	TOTAL ACCOUNT 312.31			*229,659.39*	*287,074*	*0*	*0*	-	

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF JUNE 30, 2017

	ACCOUNT	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(7)/(4)	(9)=(6)/(7)
312.4	RAILROAD TRACK SYSTEM/CARS								
	EAGLE VALLEY STATION	50-S1 *	(50)	132,036.64	198,055	0	0	-	-
	PETERSBURG STATION	50-S1 *	(15)	6,130,394.34	323,535	6,726,418	310,445	5.06	21.7
	TOTAL ACCOUNT 312.4			*6,262,430.98*	*521,590*	*6,726,418*	*310,445*	4.96	21.7
314	TURBOGENERATOR UNITS								
	HARDING STREET STATION	52-R1.5 *	(25)	62,974,992.26	44,626,691	34,092,049	2,448,754	3.89	13.9
	EAGLE VALLEY STATION	52-R1.5 *	(50)	60,428.47	90,643	0	0	-	-
	PETERSBURG STATION	52-R1.5 *	(15)	222,917,357.67	125,663,065	130,691,896	6,576,859	2.95	19.9
	TOTAL ACCOUNT 314			*285,952,778.40*	*170,380,399*	*164,783,945*	*9,025,613*	3.16	18.3
314.01	TURBOGENERATOR UNITS - MPP								
	HARDING STREET STATION	18-SQ	(25)	57,280.48	21,782	49,819	6,227	10.87	8.0
	TOTAL ACCOUNT 314.01			*57,280.48*	*21,782*	*49,819*	*6,227*	10.87	8.0
315	ACCESSORY ELECTRIC EQUIPMENT								
	HARDING STREET STATION	70-R2.5 *	(25)	20,759,242.25	14,277,973	11,671,080	779,912	3.76	15.0
	EAGLE VALLEY STATION	70-R2.5 *	(50)	327,355.61	491,033	0	0	-	-
	PETERSBURG STATION	70-R2.5 *	(15)	140,973,052.78	90,432,855	71,686,156	3,153,478	2.24	22.7
	TOTAL ACCOUNT 315			*162,059,650.64*	*105,201,861*	*83,357,236*	*3,933,390*	2.43	21.2
315.01	ACCESSORY ELECTRIC EQUIPMENT - MPP								
	HARDING STREET STATION	18-SQ	(25)	25,146,467.74	10,268,863	21,164,222	2,859,594	11.37	7.4
	PETERSBURG STATION	18-SQ	(15)	27,280,147.69	19,661,592	11,710,578	1,169,794	4.29	10.0
	TOTAL ACCOUNT 315.01			*52,426,615.43*	*29,930,455*	*32,874,800*	*4,029,388*	7.69	8.2
316	MISCELLANEOUS POWER PLANT EQUIPMENT								
	HARDING STREET STATION	60-R1.5 *	(25)	7,370,697.54	3,343,775	5,869,597	406,344	5.51	14.4
	EAGLE VALLEY STATION	60-R1.5 *	(50)	18,547.88	27,822	0	0	-	-
	PETERSBURG STATION	60-R1.5 *	(15)	23,768,567.93	13,035,972	14,297,881	682,108	2.87	21.0
	TOTAL ACCOUNT 316			*31,157,813.35*	*16,407,569*	*20,167,478*	*1,088,452*	3.49	18.5
316.01	MISCELLANEOUS POWER PLANT EQUIPMENT - MPP								
	HARDING STREET STATION	18-SQ	(25)	1,875,598.65	538,801	1,805,697	234,748	12.52	7.7
	PETERSBURG STATION	18-SQ	(15)	1,343,396.19	646,152	898,754	89,115	6.63	10.1
	TOTAL ACCOUNT 316.01			*3,218,994.84*	*1,184,953*	*2,704,451*	*323,863*	10.06	8.4
	TOTAL STEAM PRODUCTION PLANT			**3,000,377,862.77**	**1,227,819,352**	**2,274,800,788**	**144,089,143**	**4.80**	

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF JUNE 30, 2017

	ACCOUNT (1)	SURVIVOR CURVE (2)		NET SALVAGE PERCENT (3)	ORIGINAL COST (4)	BOOK DEPRECIATION RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	CALCULATED ANNUAL ACCRUAL RATE (8)=(7)/(4)	COMPOSITE REMAINING LIFE (9)=(6)/(7)
	OTHER PRODUCTION PLANT									
341	STRUCTURES AND IMPROVEMENTS									
	HARDING STREET STATION	55-R2.5	*	(4)	7,769,820.88	6,355,835	1,724,779	109,622	1.41	15.7
	GEORGETOWN STATION	55-R2.5	*	(11)	754,447.74	522,076	315,361	14,936	1.98	21.1
	TOTAL ACCOUNT 341				*8,524,268.62*	*6,877,911*	*2,040,140*	*124,558*	1.46	16.4
342	FUEL HOLDERS, PRODUCERS AND ACCESSORIES - HANDLING AND STORAGE									
	HARDING STREET STATION	55-R4	*	(4)	4,214,647.54	2,888,954	1,494,279	90,005	2.14	16.6
	GEORGETOWN STATION	55-R4	*	(11)	1,309,939.53	835,302	618,731	28,048	2.14	22.1
	TOTAL ACCOUNT 342				*5,524,587.07*	*3,724,256*	*2,113,010*	*118,053*	2.14	17.9
343	PRIME MOVERS									
	HARDING STREET STATION	50-S2.5	*	(4)	82,995,531.82	57,769,557	28,545,796	1,783,671	2.15	16.0
	GEORGETOWN STATION	50-S2.5	*	(11)	40,072,094.95	25,537,815	18,942,210	925,383	2.31	20.5
	TOTAL ACCOUNT 343				*123,067,626.77*	*83,307,372*	*47,488,006*	*2,709,054*	2.20	17.5
344	GENERATORS									
	HARDING STREET STATION	50-S1.5	*	(4)	27,098,812.46	23,924,604	4,258,161	265,198	0.98	16.1
	PETERSBURG STATION	50-S1.5	*	(9)	925,510.69	961,478	47,329	6,037	0.65	7.8
	GEORGETOWN STATION	50-S1.5	*	(11)	9,553,790.40	5,685,060	4,919,647	248,772	2.60	19.8
	TOTAL ACCOUNT 344				*37,578,113.55*	*30,571,142*	*9,225,137*	*520,007*	1.38	17.7
345	ACCESSORY ELECTRIC EQUIPMENT									
	HARDING STREET STATION	45-S2.5	*	(4)	12,798,811.06	9,940,874	3,369,890	223,001	1.74	15.1
	GEORGETOWN STATION	45-S2.5	*	(11)	6,302,671.61	3,923,445	3,072,520	157,428	2.50	19.5
	TOTAL ACCOUNT 345				*19,101,482.67*	*13,864,319*	*6,442,410*	*380,429*	1.99	16.9
346	MISCELLANEOUS POWER PLANT EQUIPMENT									
	HARDING STREET STATION	40-S2.5	*	(4)	1,701,199.96	1,247,627	521,621	35,722	2.10	14.6
	GEORGETOWN STATION	40-S2.5	*	(11)	242,043.49	116,092	152,576	7,894	3.26	19.3
	TOTAL ACCOUNT 346				*1,943,243.45*	*1,363,719*	*674,197*	*43,616*	2.24	15.5
	TOTAL OTHER PRODUCTION PLANT				**195,739,322.13**	**139,708,719**	**67,982,900**	**3,895,717**	**1.99**	
	TRANSMISSION PLANT									
350.5	LAND RIGHTS	80-R4		0	17,948,582.82	8,447,958	9,500,625	249,485	1.39	38.1
351	ENERGY STORAGE EQUIPMENT	15-S1		(5)	14,088,049.12	1,105,504	13,686,948	1,281,549	9.10	10.7
352	STRUCTURES AND IMPROVEMENTS	60-R2.5		(20)	12,955,338.54	2,284,082	13,262,324	310,378	2.40	42.7
353	STATION EQUIPMENT	55-S0		(10)	180,531,575.71	56,455,973	142,128,760	4,569,632	2.53	31.1
353.01	STATION EQUIPMENT - MPP	18-SQ		(10)	732,477.36	303,031	502,694	48,994	6.69	10.3
354	TOWERS AND FIXTURES	75-R3		(40)	46,942,620.27	39,112,593	26,607,075	641,917	1.37	41.4
355	POLES AND FIXTURES	65-R2.5		(50)	54,260,153.31	13,158,984	68,231,246	1,585,201	2.92	[illegible]
355.01	POLES AND FIXTURES - MPP	18-SQ		(10)	298,029.13	178,740	149,092	18,636	6.25	8.0
356	OVERHEAD CONDUCTORS AND DEVICES	60-R2		(30)	49,222,907.62	44,293,518	19,696,262	589,314	1.20	[illegible]
357	UNDERGROUND CONDUIT	55-R3		0	372.58	18	355	7	1.88	[illegible]
	TOTAL TRANSMISSION PLANT				**376,980,106.46**	**165,340,401**	**293,765,381**	**9,295,113**	**2.47**	

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF JUNE 30, 2017

	ACCOUNT	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE		COMPOSITE REMAINING LIFE
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)=(7)/(4)		(9)=(6)/(7)
	DISTRIBUTION PLANT										
360.5	LAND RIGHTS	75-R4		0	391,443.72	304,366	87,078	2,043	0.52		42.6
361	STRUCTURES AND IMPROVEMENTS	60-R2.5		(20)	11,404,896.08	9,447,510	4,238,365	106,838	0.94		39.7
362	STATION EQUIPMENT	55-R1.5		(10)	166,357,968.05	97,223,594	85,770,171	2,676,736	1.61		32.0
364	POLES, TOWERS AND FIXTURES	52-R3		(100)	153,142,294.76	188,252,643	118,031,947	3,149,648	2.06		37.5
365	OVERHEAD CONDUCTORS AND DEVICES	46-R3		(90)	205,300,901.98	230,112,350	159,959,364	4,821,087	2.35		33.2
366	UNDERGROUND CONDUIT	55-S0.5		(15)	114,917,196.51	36,654,926	95,499,850	3,015,603	2.62		31.7
367	UNDERGROUND CONDUCTORS AND DEVICES	37-S1.5		(15)	260,596,322.44	147,544,330	152,141,441	6,641,128	2.55		22.9
368	LINE TRANSFORMERS	46-S0		0	228,315,454.56	186,856,211	41,459,244	1,478,981	0.65		28.0
369	SERVICES	44-R4		(80)	132,155,678.32	115,532,885	122,347,336	4,266,593	3.24		28.5
370	METERS	29-S0		0	54,373,116.72	26,130,506	28,242,611	2,118,577	3.90		13.3
370.01	METERS - SMART METERS	7-L3		0	24,564,685.16	3,355,993	21,208,692	4,752,967	19.35		4.5
371	INSTALLATIONS ON CUSTOMERS' PREMISES	32-R3		(50)	39,869,113.95	56,192,578	3,611,093	140,220	0.35	**	25.8
373	STREET LIGHTING AND SIGNAL SYSTEMS	40-S1.5		(20)	64,054,784.26	62,533,300	14,332,441	516,595	0.81	**	27.7
	TOTAL DISTRIBUTION PLANT				**1,455,443,856.51**	**1,160,141,192**	**846,929,633**	**33,707,016**	**2.32**		
	GENERAL PLANT										
390	STRUCTURES AND IMPROVEMENTS										
	ELECTRICAL BUILDING	80-R0.5	*	(25)	38,473,975.50	5,018,151	43,074,318	1,639,985	4.26		26.3
	MORRIS STRET SERVICE CENTER	80-R0.5	*	(25)	38,535,421.19	13,631,930	34,537,346	1,590,856	4.13		21.7
	ARLINGTON SERVICE CENTER	80-R0.5	*	(25)	9,495,566.22	4,224,073	7,645,385	473,068	4.98		16.2
	CUSTOMER SERVICE CENTER	80-R0.5	*	(25)	3,072,995.37	1,149,814	2,691,430	126,077	4.10		21.3
	OTHER STRUCTURES	45-R3		(5)	2,820,642.25	697,520	2,264,154	96,067	3.41		23.6
	TOTAL ACCOUNT 390				*92,398,600.53*	*24,721,488*	*90,212,633*	*3,926,053*	4.25		
391	OFFICE FURNITURE AND EQUIPMENT	21-SQ		0	11,851,547.87	3,878,685	7,972,863	639,181	5.39		12.5
391.6	OFFICE FURNITURE AND EQUIPMENT - COMPUTER EQUIPMENT	5-SQ		0	29,679,908.21	14,830,357	14,849,551	6,488,991	21.86		2.3
392	TRANSPORTATION EQUIPMENT	11-S1		15	42,208,193.59	11,528,724	24,348,241	4,638,902	10.99		5.2
393	STORES EQUIPMENT	27-SQ		0	1,576,638.04	462,009	1,114,629	60,365	3.83		18.5
394	TOOLS, SHOP AND GARAGE EQUIPMENT	25-SQ		0	8,951,810.17	2,856,961	6,094,849	364,015	4.07		16.7
395	LABORATORY EQUIPMENT	23-SQ		0	4,768,804.26	2,070,031	2,698,773	211,586	4.44		12.8
396	POWER OPERATED EQUIPMENT	16-SQ		0	1,282,453.18	398,717	883,736	112,821	8.80		7.8
397	COMMUNICATION EQUIPMENT	18-SQ		0	23,705,362.95	6,716,468	16,988,895	1,306,223	5.51		13.0
398	MISCELLANEOUS EQUIPMENT	27-SQ		0	1,715,260.81	477,535	1,237,726	63,844	3.72		19.4
	TOTAL AMORTIZED GENERAL PLANT				218,138,579.61	67,940,975	166,401,696	17,811,981	8.17		
	PRE 1997 ASSETS										
391.8	OFFICE FURNITURE AND EQUIPMENT - PRE 1997	21-SQ		0	8,101,369.74	8,101,370	0	0	-		-
393.8	STORES EQUIPMENT - PRE 1997	27-SQ		0	1,338,731.44	1,082,095	256,636	88,714	6.63		2.9
394.8	TOOLS, SHOP AND GARAGE EQUIPMENT - PRE 1997	25-SQ		0	8,635,799.63	7,411,652	1,224,148	812,108	9.40		1.5
395.8	LABORATORY EQUIPMENT - PRE 1997	23-SQ		0	5,321,154.95	4,977,160	343,995	282,870	5.32		1.2
396.8	POWER OPERATED EQUIPMENT - PRE 1997	16-SQ		0	1,400,531.68	1,400,532	0	0	-		-
398.8	MISCELLANEOUS EQUIPMENT - PRE 1997	27-SQ		0	2,068,326.33	1,543,982	524,344	156,340	7.56		3.4
	TOTAL PRE 1997 ASSETS				26,865,913.77	24,516,791	2,349,123	1,340,032	4.99		
	TOTAL GENERAL PLANT				**245,004,493.38**	**92,457,766**	**168,751,019**	**19,152,013**	**7.82**		
	TOTAL DEPRECIABLE PLANT				**5,273,545,641.25**	**2,785,467,430**	**3,652,229,721**	**210,139,002**	**3.98**		

INDIANAPOLIS POWER & LIGHT COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF JUNE 30, 2017

	ACCOUNT	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(7)/(4)	(9)=(6)/(7)
	NONDEPRECIABLE PLANT AND PLANT NOT SUTDIED								
301	ORGANIZATION			46,415.06					
303	MISCELLANEOUS INTANGIBLE PLANT - SOFTWARE			87,316,743.43					
310	LAND			2,298,219.75					
350	LAND			546,176.95					
360	LAND			3,610,913.45					
389	LAND			3,777,829.58					
	TOTAL NONDEPRECIABLE PLANT			97,596,298.22					
	TOTAL ELECTRIC PLANT			5,371,141,939.47	2,785,467,430	3,652,229,721	210,139,002		

* LIFE SPAN PROCEDURE IS USED. CURVE SHOWN IS INTERIM SURVIVOR CURVE.

** NEW ADDITIONS AS OF JULY 1, 2017 IN ACCOUNTS 371 AND 373 RELATED TO LED LIGHTING WILL UTILIZE AN ANNUAL ACCRUAL RATE OF 5.89% BASED ON A 25-L2.5 LIFE ESTIMATE AND (20) NET SALVAGE

NOTE: NEW ADDITIONS FOR EAGLE VALLEY CCGT WILL HAVE ACCRUAL RATES AS FOLLOWS.

ACCOUNT	RATE
311	2.90
312	4.07
314	3.33
341	2.86
343	3.11
344	3.45

AFFIRMATION

I affirm, under the penalties for perjury, that the foregoing representations are true.

David J. Garrett
Resolve Utility Consulting, Inc.
Indiana Office of Utility Consumer Counselor

Cause No. 45911
AES Indiana

October 12, 2023
Date

CERTIFICATE OF SERVICE

This is to certify that a copy of the ***Indiana Office of Utility Consumer Counselor's Testimony of David J. Garrett*** has been served upon the following parties of record in the captioned proceeding by electronic service on October 12, 2023.

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