BEFORE THE WASHINGTON

UTILITIES & TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

DOCKETS NOS. UE-220066, UG-220067, and UG-210918 (*Consolidated*)

RESPONSE TESTIMONY OF DAVID J. GARRETT
ON BEHALF OF THE
WASHINGTON STATE OFFICE OF ATTORNEY GENERAL
PUBLIC COUNSEL UNIT

EXHIBIT DJG-1T

July 28, 2022

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DOCKETS UE-220066, UG-220067, and UG-210918 (*Consolidated*)

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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 in 2011, where I worked in the Office of General Counsel in regulatory proceedings. In 2012, I began working for the Public Utility Division as a regulatory analyst providing testimony in regulatory proceedings. In 2016, I formed Resolve Utility Consulting, PLLC, where I represent 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?

A. I am testifying on behalf of the Public Counsel Unit of the Washington Office of Attorney General (Public Counsel).

Q. Describe the purpose of your testimony in this proceeding.

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[1] David J. Garrett, Exh. DJG-2.

A. In my testimony, I address the depreciation rates proposed by Puget Sound Energy (PSE or the Company) as outlined in the testimony of Company witness Ned Allis, who sponsors the Company's depreciation study.

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. I employed a well-established depreciation system and used actuarial techniques to analyze the Company's depreciable assets statistically and develop reasonable depreciation rates in this case. I applied my estimates of average service life and salvage to the Company's plant and reserve balances as of June 30, 2021. The table below compares my proposed depreciation accrual by plant function to that the Company proposed.[2]

Figure 1:
Depreciation Accrual Comparison by Plant Function

Plant Function	Plant Balance 6/30/2021	PSE Proposed Accrual	PC Proposed Accrual	PC Proposed Adjustment
Electric Plant	$ 9,994,754,455	$ 367,100,303	$ 349,216,042	$ (17,884,261)
Gas Plant	4,498,784,001	145,314,489	127,239,691	(18,074,798)
Common Plant	375,183,118	28,018,977	27,974,338	(44,639)
TOTAL PLANT STUDIED	**$ 14,868,721,574**	**$ 540,433,769**	**$ 504,430,071**	**$ (36,003,698)**

[2] Garrett, Exh. DJG-3.

The original cost and accrual amounts correspond to plant balances as of the depreciation study date – June 30, 2021. As this table shows, accepting Public Counsel's proposed depreciation rates would result in an adjustment reducing the Company's proposed depreciation accrual by approximately $36 million.[3]

Q. Please summarize the primary factors driving your proposed adjustments.

A. I propose adjustments to the depreciation rates of several of the Company's mass property accounts. These adjustments include longer average service life estimates than those PSE witness Ned W. Allis proposed. The following table compares my proposed service lives, depreciation rates, and accrual amounts with those Allis proposed for the accounts at issue.

Figure 2:
Depreciation Accrual Comparison by Plant Function

		Company Position				Public Counsel Position			
		Iowa Curve		Depr	Annual	Iowa Curve		Depr	Annual
Account No.	Description	Type	AL	Rate	Accrual	Type	AL	Rate	Accrual
	ELECTRIC PLANT								
366.00	UNDERGROUND CONDUIT	R3 -	60	1.84%	15,041,164	R2.5 -	72	1.46%	11,876,613
367.00	UG CONDUCTORS AND DEVICES	R2.5 -	38	4.35%	49,046,290	R2 -	44	3.37%	37,954,395
368.00	LINE TRANSFORMERS	R2 -	48	3.31%	18,200,892	R1.5 -	54	2.67%	14,707,134
	GAS PLANT								
376.20	MAINS - PLASTIC	R3 -	55	2.76%	45,596,048	R2.5 -	67	2.14%	35,252,449
376.40	MAINS - WRAPPED STEEL	R2 -	60	2.25%	14,426,476	R1.5 -	68	1.93%	12,384,356
380.20	SERVICES - PLASTIC	R2.5 -	50	4.03%	52,439,991	R2 -	54	3.59%	46,770,622

[3] *See* Garrett, Exh. DJG-3; see also Exhibit DJG-5 for a more detailed depreciation rate comparison.

For each of these accounts, I propose a longer average service life than Allis does, which results in adjustments reducing the Company's proposed depreciation rates. My testimony will discuss these adjustments in more detail later.[4]

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

A. Average service lives that are too short result in depreciation rates that overestimate the Company's actual depreciation expense. 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. Overestimating depreciation rates (i.e., underestimating service lives), encourages economic inefficiency. Unlike competitive firms, natural market forces do not always incentivize regulated utility companies to make the most economically efficient decisions. If a utility is allowed to recover the cost of an asset before the end of its useful life, this could incentivize the utility to replace the asset unnecessarily in order to increase rate base, which results in economic waste. Thus, from a public policy perspective, it is preferable for regulators to ensure that utilities do not depreciate assets before the end of their economic useful lives.

Q. How do your analyses and recommendations consider equity as that term is used in the multiyear rate plan statute in RCW 80.28.425(1)?

A. As discussed above, it is important for the Commission to set fair depreciation rates, determined in this case largely through statistical analysis of historical retirement rates in

[4] *See* Garrett, Exh. DJG-4.

order to estimate reasonable remaining service lives. The Company has the burden to show its proposed depreciation rates are not excessive, and I believe it has not met this burden with regard to the accounts I discuss in my testimony. Specifically, I believe the Company has proposed service lives shorter than its own historical retirement data otherwise indicates. Depreciation rates derived from unreasonably short service life estimates result in unreasonably high depreciation expense. An unreasonably high depreciation expense affects all customers, but disproportionately affects low-income customers—those whose utility expenses represent a larger share of their household operating budgets.

III. LEGAL 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."[5] The Lindheimer Court also recognized that the original cost of plant assets, rather than present value or some other measure, is the proper basis for calculating depreciation expense.[6] Moreover, the Lindheimer Court

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

[6] *Id*. at 168 (Referring to the straight-line method, the *Lindheimer* Court stated that "[a]ccording to the principle of this accounting practice, the loss is computed upon the actual cost of the property as entered upon the books, less the expected salvage, and the amount charged each year is one year's pro rata share of the total amount."). The original cost standard was reaffirmed by the Court in Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591, 606 (1944). The Hope Court stated: "Moreover, this Court recognized in [Lindheimer], supra, the propriety of basing annual depreciation on cost. By such a procedure the utility is made whole and the integrity of its investment maintained. No more is required." *Fed. Power Comm'n v. Hope Nat. Gas Co.*, 320 U.S. 591, 606 (1944).

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.[7]

Thus, the Washington Utilities and Transportation Commission (Commission) ultimately must determine whether the Company has met its burden of proof by making a convincing showing that its proposed depreciation rates are not excessive.

Q. Should depreciation rates be based on cost allocation, rather than loss of value?

A. Yes. Depreciation should represent an allocated cost of capital to operation, rather than a mechanism to determine loss of value. While the Lindheimer case and other early literature recognized depreciation as a necessary expense, the language indicated that depreciation was primarily a mechanism to determine loss of value.[8] Adoption of this "value concept" would require annual appraisals of extensive utility plant, and is thus not practical in this context. Rather, the "cost allocation concept" recognizes that depreciation is a cost of providing service, and that in addition to receiving a "return on" invested capital through the allowed rate of return, a utility should also receive a "return of" its invested capital in the form of recovered depreciation expense. The cost allocation concept also satisfies several fundamental accounting principles, including verifiability, neutrality, and the matching principle.[9] The American Institute of Certified Public

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[7] *Lindheimer*, 292 U.S. at 169.

[8] *See* Frank K. Wolf & W. Chester Fitch, *Depreciation Systems* 71 (Iowa State Univ. Press 1994).

[9] Nat'l Ass'n of Regul. Util. Commissioners, *Public Utility Depreciation Practices* 12 (NARUC 1996).

Accountants (AICPA) definition of "depreciation accounting" properly reflects the cost allocation concept:

> Depreciation accounting is a system of accounting that aims to distribute cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner. It is a process of allocation, not of valuation.[10]

Thus, the concept of depreciation as "the allocation of cost has proven to be the most useful and most widely used concept."[11]

IV. ANALYTIC METHODS

Q. Discuss your approach to analyzing the Company's depreciable property in this case.

A. I obtained and reviewed all the data that the Company used to conduct its depreciation study. Allis proposed deprecation rates based on depreciable property recorded as of June 30, 2021. I used the same plant balances to develop my proposed depreciation rates. In developing my proposed service lives, I used the Company's historical plant data to develop observed life tables for each account. I then used empirical survivor curves known as "Iowa curves" to develop remaining life estimates for each adjusted account.[12] The details of this process are further discussed later in my testimony.

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

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[10] Am. Inst. of Accts., *Accounting Terminology Bulletins Number 1: Review and Résumé* 25 (Am. Inst. of Accts. 1953).

[11] Wolf *supra* note 8, at 73.

[12] See Exhibit DJG-14 for remaining life calculations.

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 method of allocation; 2) a procedure for applying the method of allocation; 3) a technique of applying the depreciation rate; and 4) a model for analyzing the characteristics of vintage property groups.[13] In this case, I used the straight line method, the average life procedure, the remaining life technique, and the broad group model to analyze the Company's actuarial data; this system is 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 Exhibit DJG-14.

Q. Describe how the book reserve is incorporated into the remaining life depreciation rate calculation.

A. Under the remaining life technique, the book depreciation reserve is subtracted from the gross plant balance of each account and allocated over the remaining life of plant, as estimated through Iowa curve analysis. This feature of the remaining life technique is important because it highlights the reason it was created. Over time, imbalances between the book reserve and the "theoretical reserve" can develop. Essentially, the theoretical

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[13] *See* Wolf *supra* note 8, at 70, 140.

reserve is the balance the book reserve "should be" if the current depreciation parameters (i.e., life and net salvage estimates) had been applied to the account from the beginning. Using the "whole life" technique instead of the remaining life technique requires a manual rebalancing of the depreciation reserve, which adds complexities to a regulatory proceeding. For this reason, the majority of depreciation analysts and regulatory jurisdictions rely on the remaining life technique to develop depreciation rate. Under the remaining life technique, <u>there is no need to make a separate adjustment to rebalance or reallocate the theoretical reserve to bring it closer to the book reserve</u>.

The authoritative texts are clear that using the remaining life technique requires no separate reallocation of the theoretical reserve (or Calculated Accumulated Depreciation or CAD), for it is unnecessary. According to Wolf:

> Users of remaining life depreciation often do not explicitly calculate the CAD. As previously discussed, calculation of the CAD is implicit in the use of the remaining life method of adjustment, because the variation between the CAD and the accumulated provision for depreciation is <u>automatically</u> amortized over the remaining life.[14]

The NARUC manual also agrees that using the remaining life technique requires no separate reallocation of the theoretical reserve: "The desirability of using the remaining life technique is that <u>any necessary adjustments</u> of depreciation reserves, because of changes to the estimates of life on net salvage, are accrued <u>automatically</u> over the remaining life of the property."[15] Thus, the primary advantage of the remaining life technique is it requires no separate adjustment to the theoretical reserve.

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[14] Wolf *supra* note 8, at 178 (emphasis added).

[15] NARUC *supra* note 9, at 65 (emphasis added).

Q. Did Allis and you both use the book reserve in developing your proposed depreciation rates under the remaining life technique?

A. Yes. Allis and I used the same depreciation system, including the remaining life technique, in developing our proposed depreciation rates. Thus, the difference in our positions stems from our differing opinions regarding the most appropriate service lives for the accounts at issue, as I discuss further below.

V. SERVICE LIFE ANALYSIS

Q. Describe the actuarial process you used to analyze the Company's depreciable property.

A. The study of retirement patterns of industrial property is derived from 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 depreciation analysts use is called the "retirement rate method." The retirement rate method organizes original property data, including additions, retirements, transfers, and other transactions, by vintage and transaction year.[16] Using this method one can develop an "observed life table," (OLT) to show the percentage of property surviving at each age interval. This pattern of property retirement is described as a "survivor curve." Deriving a survivor curve from the OLT, however, requires fitting and smoothing

[16] 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).

with a complete curve in order to determine the ultimate average life of the group.[17] Iowa State University developed the most widely used survivor curves for this curve-fitting process, commonly known as the "Iowa curves," in the early 1900s.[18] Exhibit DJG-16 sets forth a more detailed explanation of how the Iowa curves are used in the actuarial analysis of depreciable property.

I used the aged property data the Company provided to create an OLT for each account. Plotting the data points on the OLT forms a curve (the OLT curve). The OLT curve is not a theoretical curve; rather, it is actual observed data from Company records that indicate the rate of retirement for each property group. An OLT curve by itself, however, is rarely smooth, and often is not a "complete" curve (i.e., it does not end at zero percent surviving). Calculating average life (the area under a curve) requires a complete survivor curve.

The Iowa curves are empirically-derived curves based on 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 curve fitting 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

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[17] See Exhibit DJG-16 for a more detailed discussion of the actuarial analysis used to determine the average lives of grouped industrial property.

[18] See Exhibit DJG-15 for a more detailed discussion of the Iowa curves.

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. I may repeat this process several times for any given account to ensure selecting the most reasonable Iowa curve.

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

A. Not necessarily. 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 a particular account contains insufficient historical data 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, which may not provide the most accurate estimate of service life. However, when sufficient data are available, mathematical curve fitting can be part of an objective service life analysis.

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

A. Not necessarily. Many analysts have observed that the points comprising the "tail-end" of the OLT curve often may 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."[19] In accordance with 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 a greater emphasis on the most valuable portions of 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 the top 99 percent of the "exposures" (i.e., dollars exposed to retirement) and to eliminate the tail-end of the curve representing the bottom one percent 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 I discuss below, the Company's proposed service life, as estimated through Iowa curves, is too short to accurately describe the mortality characteristics of the account. For the accounts in which I propose a longer service life, I took the objective approach and chose an Iowa curve that provides a better mathematical and/or visual fit to the observed historical retirement pattern derived from the Company's plant data. In making my recommended service life estimates, I use a combination of visual and mathematical curve fitting along with professional judgment. Unless the

[19] Wolf *supra* note 8, at 46.

Company presents a convincing reason to deviate from the historical service retirement patterns observed in its accounts when projecting future remaining life, it is my opinion that the Commission should give primary consideration to best service life estimates as indicated by mathematical curve fitting.[20]

A. Account 366 – Underground Conduit

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

A. The graph below shows the OLT curve for Account 366. The graph also shows the Iowa curves that Allis and I selected to estimate the average life for this account. The average life is determined, by calculating the area under the Iowa curves. Thus, a longer curve will produce a longer average life, and it will also result in a lower depreciation rate. For this account, Allis selected the R3-60 Iowa curve, and I selected the R2.5-72 Iowa curve. The numbers after the dashes indicate the average lives resulting from each curve (60 and 72 in this case). The graph shows both Iowa curves with the OLT curve.

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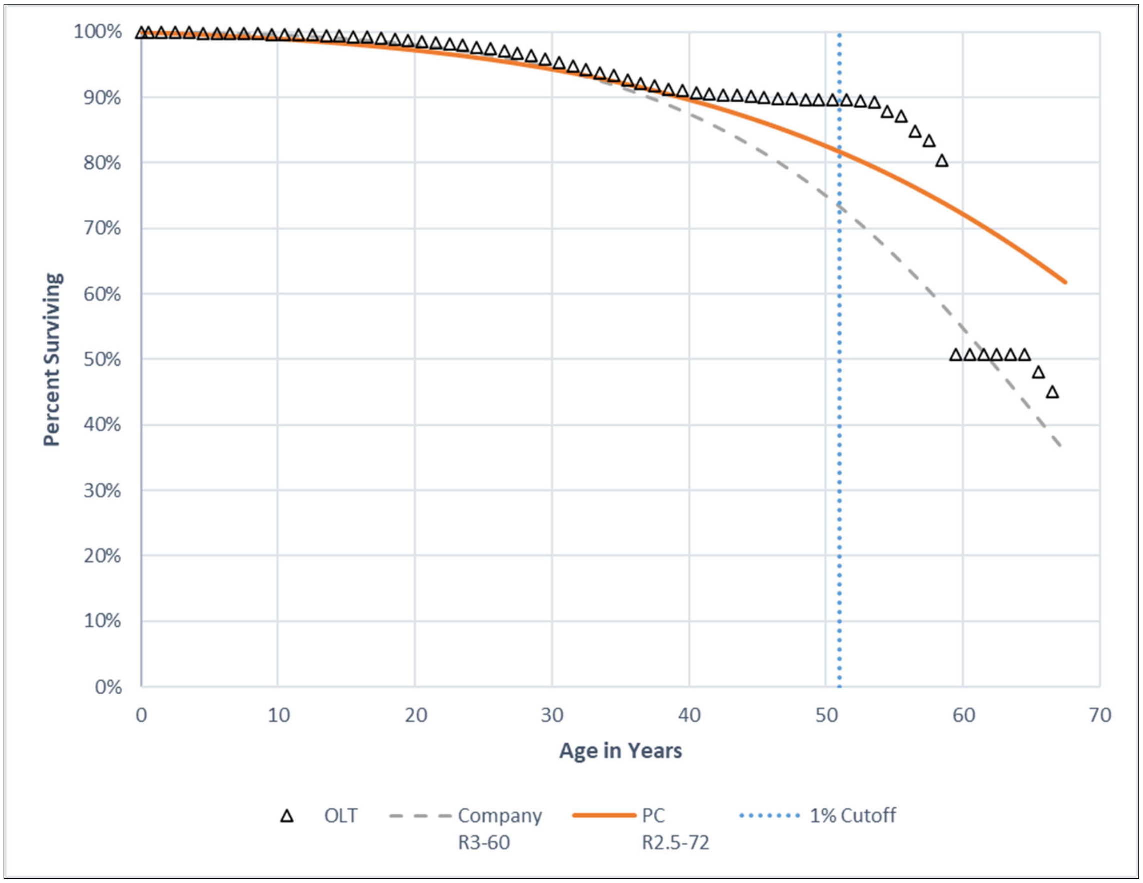
[20] See Exhibit DJG-6 for depreciation rate calculations.

Figure 3:
Account 366 – Underground Conduit



One of the primary purposes of visual and mathematical Iowa curve fitting is to select an Iowa curve that provides a relatively close fit to the historical retirement pattern, as displayed through the OLT curve. As discussed above, the tail-end of some OLT curves may be properly ignored during the curve-fitting process, which is the case for this account. The graph below shows the same OLT and Iowa curves. The data points to the right of the vertical dotted line occur after the one percent truncation benchmark discussed above. However, it appears that the curve Allis selected gives undue consideration to these irrelevant data points. As a result, the Iowa curve Allis selected is arguably too short, resulting in an unreasonably high depreciation rate.

Q. Does the Iowa curve you selected provide a better mathematical fit to the OLT curve for this account?

A. Yes. While visual curve-fitting techniques helped to identify the most statistically relevant portions of the OLT curve for this account, mathematical curve-fitting techniques can help determine which of the two Iowa curves provides the better fit. Mathematical curve fitting essentially involves measuring the distance between the OLT curve and the selected Iowa curve. The best mathematically-fitted curve minimizes the distance between the OLT curve and the Iowa curve, thus providing the closest fit. Calculating the "distance" between the curves involves using the "sum-of-squared differences" (SSD) technique. For this account, the Iowa curve I selected provides a better mathematical fit to the observed data, whether measuring the entire OLT curve or the truncated OLT curve. Specifically, the SSD or "distance" between the Company's Iowa curve and the OLT curve is 0.4817, and the SSD between the R2.5-72 curve and the OLT curve is 0.3639.[21] Thus, the R2.5-72 curve I selected results in the better mathematical fit.

B. 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. The OLT curve for Account 367 is relatively well-suited for conventional Iowa curve fitting techniques and analyses, because the OLT curve is relatively smooth and has an adequate amount of retirement history (i.e., it is long enough). For this account, Allis

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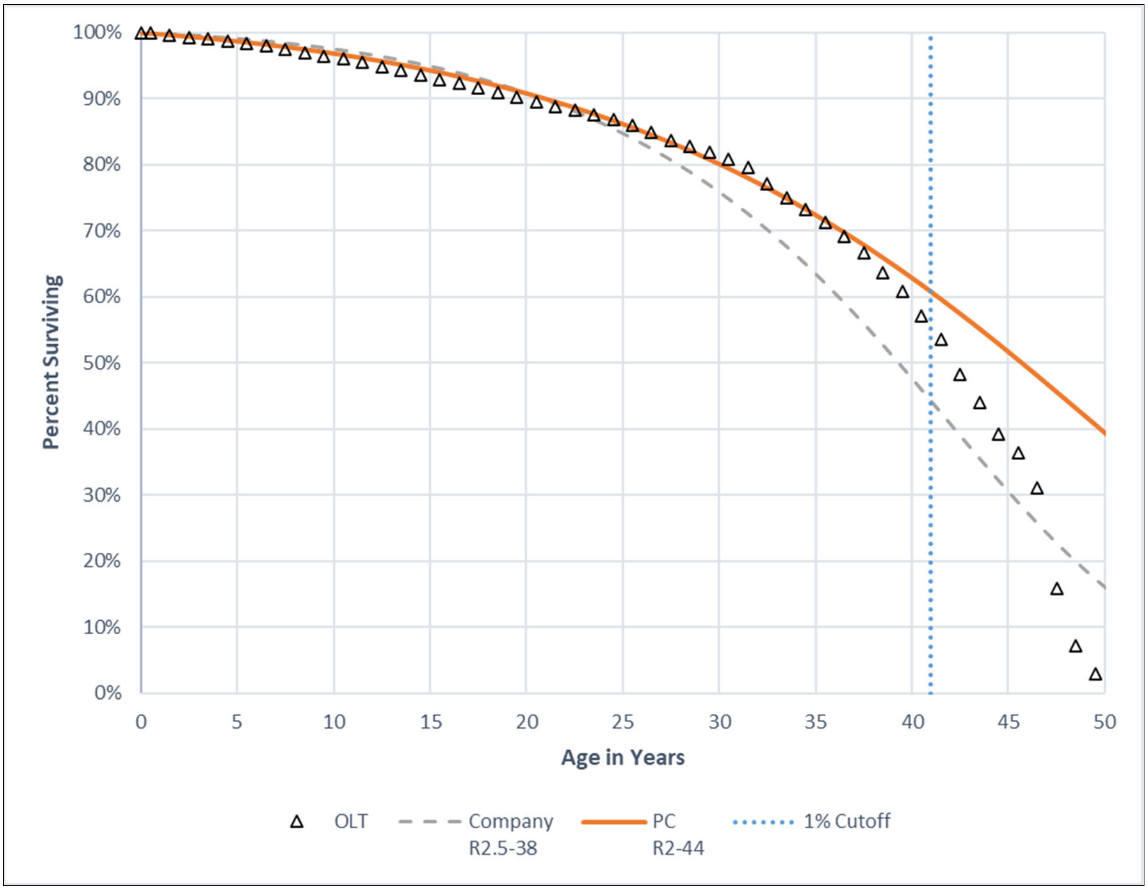
[21] Garrett, Exh. DJG-7.

selected the R2.5-38 curve, and I selected the R2-44 curve. The graph below shows both Iowa curves along with the OLT curve.

Figure 4:
Account 367 – Underground Conductors and Devices



As with Account 366 discussed above, the Iowa curve Allis selected appears to give an undue amount of statistical credit to the less-relevant data points occurring after the one percent truncation line. In my opinion, it is preferable to give more statistical weight to the data points occurring before the truncation line; doing so should result in a longer Iowa curve selection than the curve Allis selected.

Q. Does the Iowa curve you selected provide a better mathematical fit to the truncated OLT curve for this account?

A. Yes. When the mathematical curve fitting process is conducted on the data points comprising the truncated OLT curve, the Iowa curve I selected results in a closer mathematical fit. Specifically, the SSD for the Company's curve is 0.1013, and the SSD for the R2-44 curve I selected is only 0.0058, which means it results in the closer fit.[22]

C. Account 368 – Line Transformers

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

A. For this account, Allis selected the R2-48 curve, and I selected the R1.5-54 curve. The graph below shows both of these Iowa curves along with the OLT curve.

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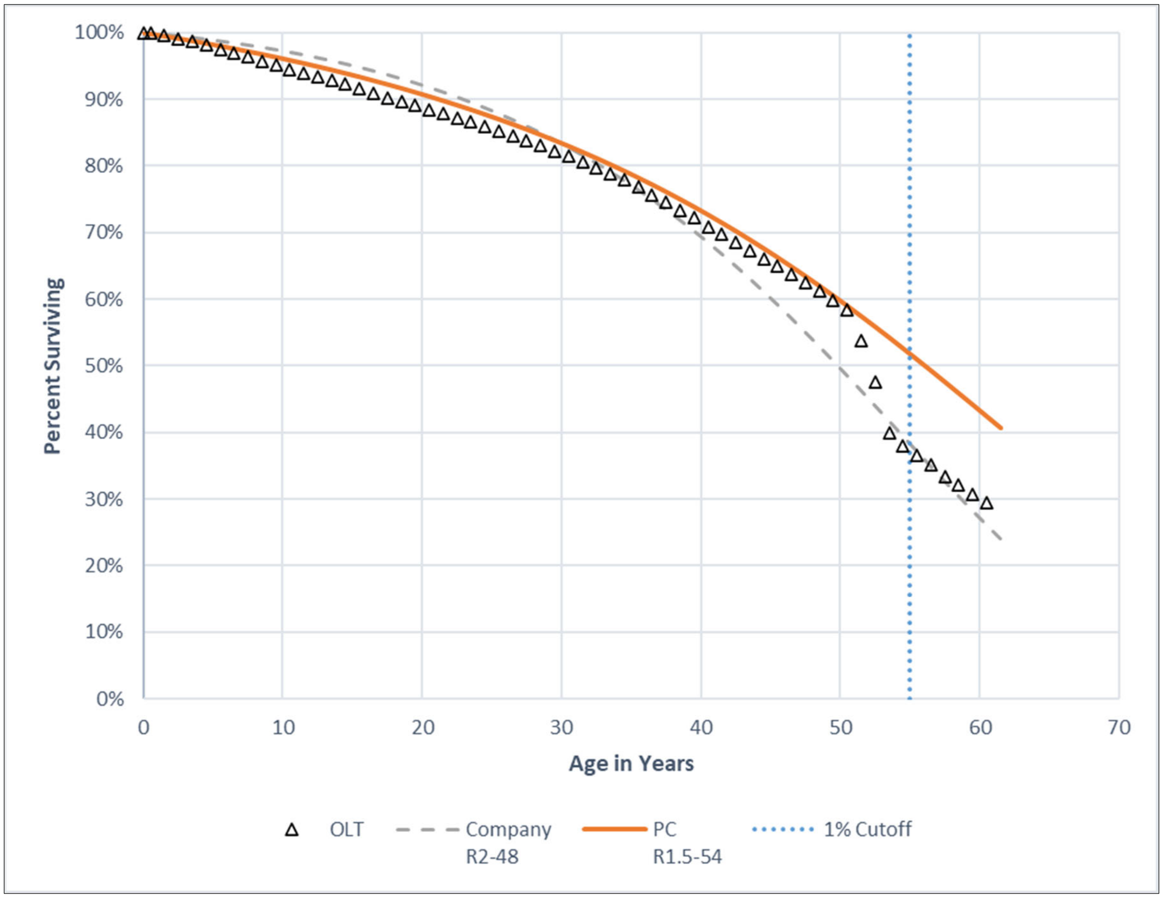
[22] Garrett, Exh. DJG-8.

Figure 5:
Account 368 – Line Transformers



As with Account 367 discussed above, the Iowa curve Allis selected appears to give more statistical weight to the less-relevant tail-end of the OLT curve, relative to the upper and middle portions of the OLT curve. In other words, it is clear from a visual perspective that the R2-48 curve provides a closer fit to the tail-end of the OLT curve; however, this is the least relevant (and arguably irrelevant) portion of the OLT curve.

Q. Does the Iowa curve you selected provide a better mathematical fit to the truncated OLT curve for this account?

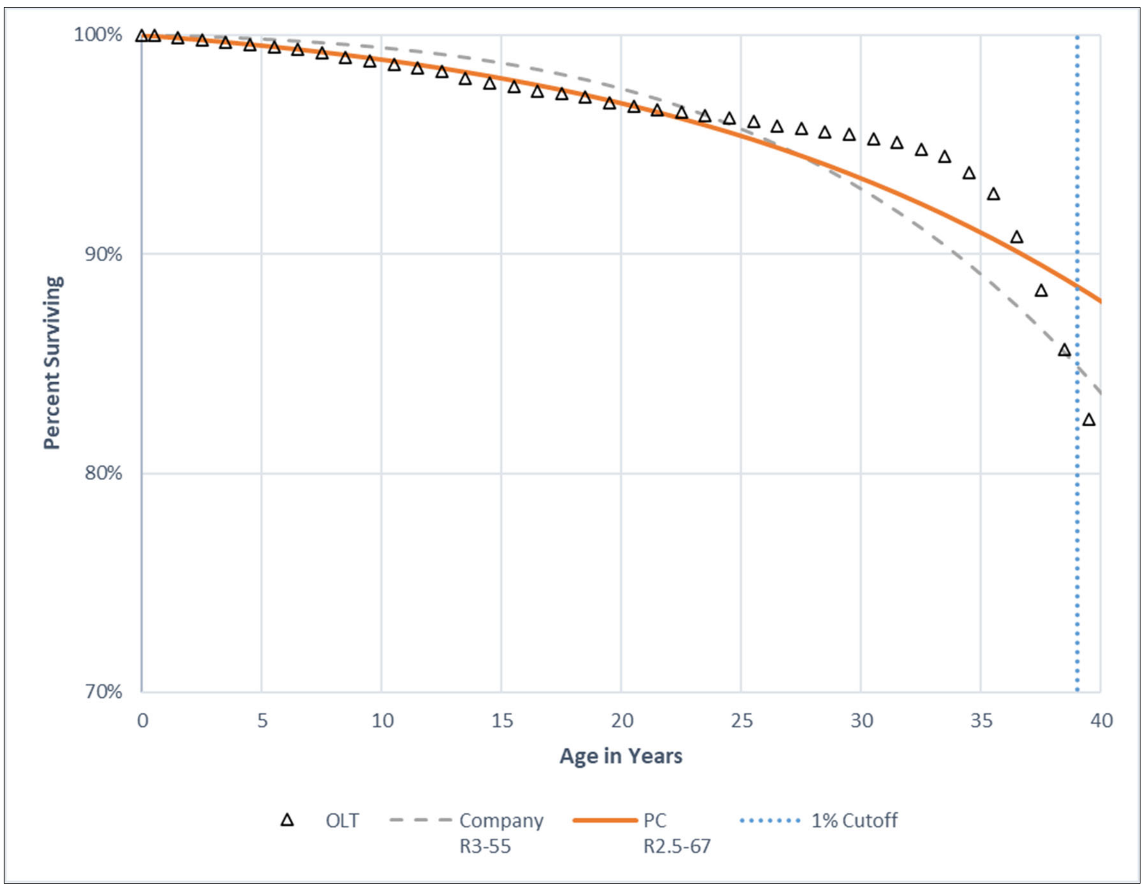
A. Yes. When conducting the mathematical curve fitting process on the data points comprising the truncated OLT curve, the Iowa curve I selected results in a closer mathematical fit. Specifically, the SSD for the Company's curve is 0.0717, and the SSD for the R1.5-54 curve I selected is only 0.0614, which means it results in the closer fit.[23]

D. Account 376.20 – Mains – Plastic

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

A. For this account, Allis selected the R3-55 curve, and I selected the R2.5-67 curve. The graph below shows both of these Iowa curves along with the OLT curve.

Figure 6:
Account 376.20 – Mains – Plastic



[23] Garrett, Exh. DJG-9.

As with Account 368 discussed above, the Iowa curve Allis selected appears to give more statistical weight to the less-relevant tail-end of the OLT curve, relative to the upper and middle portions of the OLT curve. While the OLT curve for Account 368 does not drop as far as the OLT curve discussed in previous accounts (thus making it more difficult for Iowa curve fitting), it is nonetheless the Company's burden to make a convincing showing that the proposed depreciation rate for this account is not excessive. Given the availability of closer fitting Iowa curves to apply to the Company's data, I believe it would be reasonable to adjust the Company's proposed service life for this account accordingly.

Q. Does the Iowa curve you selected provide a better mathematical fit to the truncated OLT curve for this account?

A. Yes. When the mathematical curve fitting process is conducted on the data points comprising the truncated OLT curve, the Iowa curve I selected results in a closer mathematical fit. Specifically, the SSD for the Company's curve is 0.0113, and the SSD for the R2.5-67 curve I selected is only 0.0055, which means it results in the closer fit.[24]

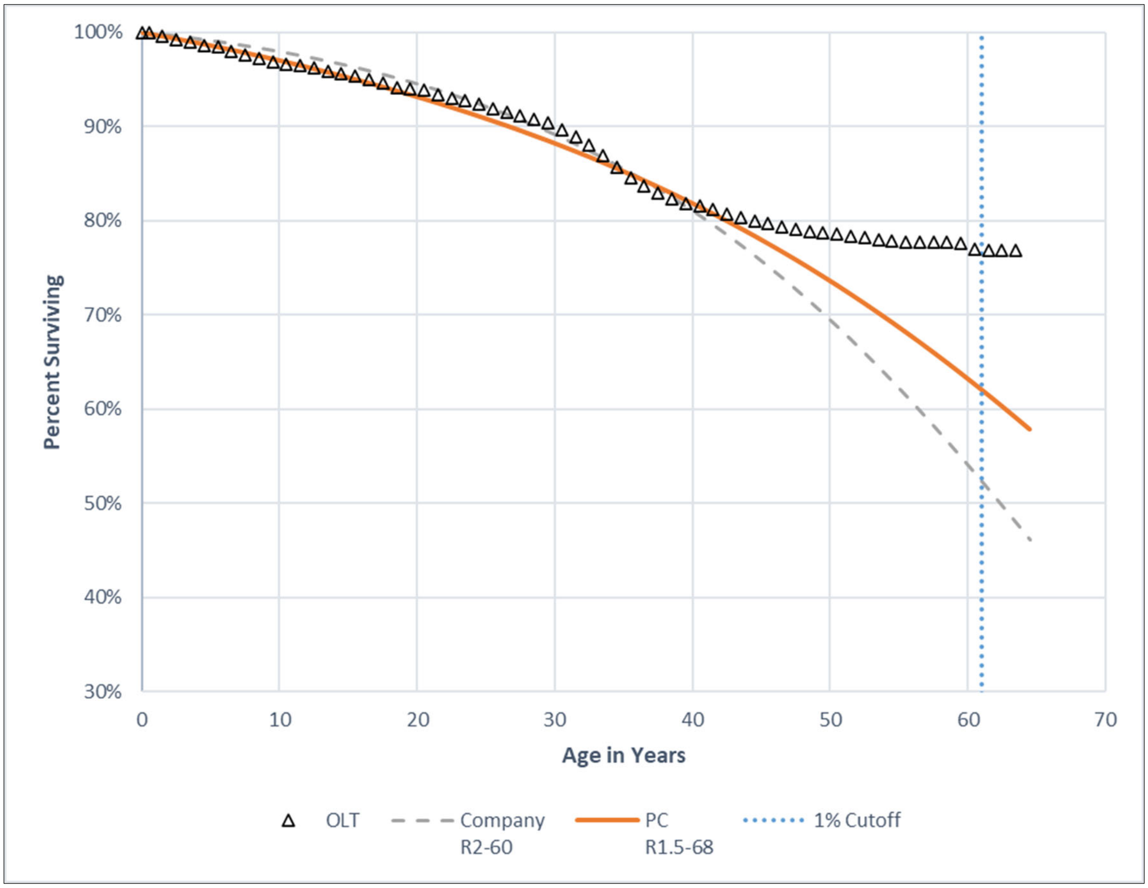
E. Account 376.40 – Mains – Wrapped Steel

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

A. For this account, Allis selected the R2-60 curve, and I selected the R1.5-68 curve. The graph below shows both of these Iowa curves along with the OLT curve.

[24] Garrett, Exh. DJG-10

Figure 7:
Account 376.40 – Mains – Wrapped Steel



This graph shows the Iowa curve Allis selected ignores a good portion of relevant data points on the OLT curve, especially from years 40–60. As a result, the depreciation rate derived from the unreasonably short Iowa curve Allis selected results in an excessive proposed depreciation rate.

Q. Does the Iowa curve you selected provide a better mathematical fit to the truncated OLT curve for this account?

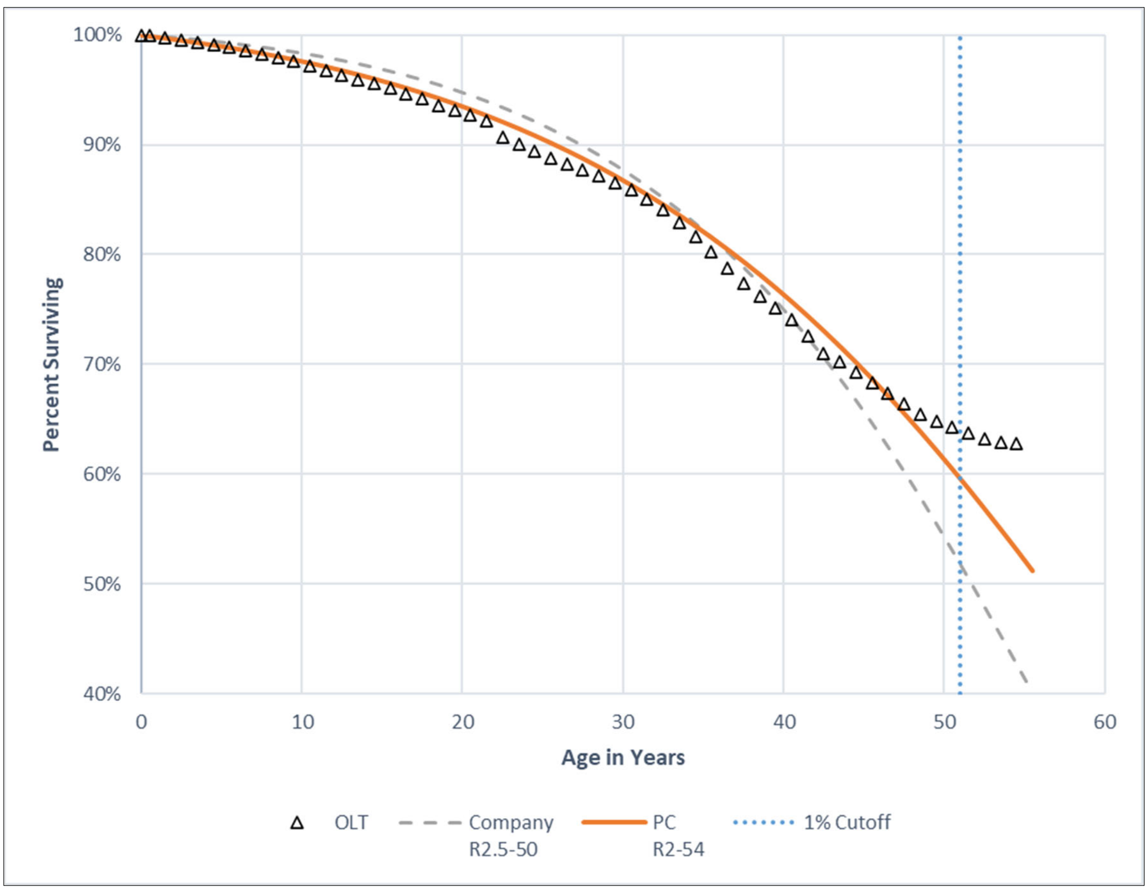
A. Yes. Whether considering the entire OLT curve or truncated OLT curve, the Iowa curve I selected results in a closer mathematical fit. Specifically, the SSD for the Company's curve is 0.5762, and the SSD for the R1.5-68 curve I selected is 0.2050, which means it results in the closer fit.[25]

F. Account 380.20 – Services – Plastic

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

A. For this account, Allis selected the R2.5-50 curve, and I selected the R2-54 curve. The graph below shows both Iowa curves along with the OLT curve.

Figure 8:
Account 380.20 – Services – Plastic



[25] Garrett, Exh. DJG-11.

This graph shows that the flatter, lower-modal curve shape Allis selected results in a poorer fit to the OLT curve through nearly the entirety of the OLT curve, regardless of whether the truncated portion is considered. As a result, I believe the depreciation rate Allis proposed for this account is too high.

Q. Does the Iowa curve you selected provide a better mathematical fit to the truncated OLT curve for this account?

A. Yes. Whether considering the entire OLT curve or truncated OLT curve, the Iowa curve I selected results in a closer mathematical fit. Specifically, the SSD for the Company's curve is 0.1547, and the SSD for the R2-54 curve I selected is 0.0070, which means it results in the closer fit.[26]

Q. Does this conclude your testimony?

A. Yes.

[26] Garrett, Exh. DJG-12.