

**BEFORE THE WASHINGTON
UTILITIES & TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Complainant,

v.

PUGET SOUND ENERGY

Respondent.

DOCKETS UE-240004 and UG-240005 (*Consolidated*)

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

EXHIBIT DJG-1T

August 6, 2024

RESPONSE TESTIMONY OF DAVID J. GARRETT
DOCKET(S) UE-240004 AND UG-240005 (Consolidated)

EXHIBIT DJG-1T

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**RESPONSE TESTIMONY OF DAVID J. GARRETT
DOCKET(S) UE-240004 AND UG-240005 (Consolidated)**

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RESPONSE TESTIMONY OF DAVID J. GARRETT
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EXHIBIT DJG-1T

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Exhibit DJG-3	Summary Rate and Accrual Adjustment
Exhibit DJG-4	Depreciation Parameter Comparison
Exhibit DJG-5	Detailed Rate Comparison
Exhibit DJG-6	Depreciation Rate Development OLT and Iowa Curve Fitting Charts
Exhibit DJG-7	Account 376.20 – Mains – Plastic
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Exhibit DJG-10	Account 380.00 – Services
Exhibit DJG-11	Account 381.00 – Meters
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I. INTRODUCTION / SUMMARY

Q. Please state your name and business address.

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. My business address is 101 Park Ave., Suite 1125, Oklahoma City, Oklahoma, 73131. I focus my practice on the primary capital recovery mechanisms for public utility companies: cost of capital and depreciation.

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

1 Utility and Regulatory Financial Analysts. A more complete description of my
2 qualifications and regulatory experience is included in my curriculum vitae.¹

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

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

6 **Q. Describe the purpose and scope of your testimony in this proceeding.**

7 A. My testimony addresses the proposed depreciation rates of Puget Sound Energy
8 (PSE or the Company) in response to the direct testimony of Company witness
9 Ned Allis.

10 **Q. What exhibits are you sponsoring in this proceeding?**

11 A. I am sponsoring the following exhibits:

12	Exhibit DJG-2	Curriculum Vitae
13	Exhibit DJG-3	Summary Rate and Accrual Adjustment
14	Exhibit DJG-4	Depreciation Parameter Comparison
15	Exhibit DJG-5	Detailed Rate Comparison
16	Exhibit DJG-6	Depreciation Rate Development
17	Exhibit DJG-7	Account 376.20 – Mains – Plastic
18	Exhibit DJG-8	Account 376.40 – Mains – Wrapped Steel
19	Exhibit DJG-9	Account 378.00 – M&R Station Equipment
20	Exhibit DJG-10	Account 380.00 – Services

¹ David J. Garrett, Exh. DJG-2 (Curriculum Vitae).

- 1 Exhibit DJG-11 Account 381.00 – Meters
- 2 Exhibit DJG-12 Account 382.00 – Meter Installations
- 3 Exhibit DJG-13 Remaining Life Development

II. EXECUTIVE SUMMARY

5 **Q. Summarize the key points of your testimony.**

6 A. The Company is proposing an increase in its annual depreciation accrual in the
 7 amount of \$71 million based on plant balances as of the depreciation study
 8 date–December 31, 2022. This represents a 42 percent increase from the current
 9 accrual.² My analyses of the Company’s depreciable plant data in this case shows
 10 that reasonable adjustments should be made to the Company’s proposed
 11 depreciation rates. The following table compares my proposed depreciation
 12 accrual by plant function to that proposed by the Company.³

**Figure 1:
 Depreciation Accrual Comparison by Plant Function**

Plant Function	Current Accrual	PSE Proposed Accrual	PC Proposed Accrual	PC Adjustment
Underground Storage	\$ 1,949,322	\$ 2,170,143	\$ 2,170,809	\$ 666
Other Storage	6,479,930	6,494,392	6,470,114	(24,278)
Distribution	158,939,602	229,447,489	159,094,535	(70,352,954)
General	1,976,286	2,095,665	2,095,665	-
Total Plant Studied	\$ 169,345,140	\$ 240,207,689	\$ 169,831,123	\$ (70,376,566)

15 As shown in this table, accepting my proposed depreciation rates would result in
 16 an adjustment reducing the Company’s proposed depreciation accrual by

² Garrett, Exh. DJG-3 (Summary Rate and Accrual Adjustment).

³ Garrett, Exh. DJG-3; *see also* Garrett, Exhibits DJG-5 and DJG-6 for detailed depreciation rate calculations and comparisons to the Company’s proposed rates and accrual amounts.

1 approximately \$70 million, which would nonetheless result in a slight increase
 2 from the current depreciation accrual.

3 **Q. Please summarize the primary factor affecting your proposed adjustment.**

4 A. I propose adjustments to the depreciation rates of several of the Company’s mass
 5 property accounts. These adjustments are based on longer average service life
 6 estimates than those proposed by Allis. The following table compares my
 7 proposed service lives, depreciation rates, and accrual amounts with those
 8 proposed by Allis for the accounts in dispute.

**Figure 2:
 Depreciation Parameter Comparison**

Account No.	Description	PSE Position			PC Position		
		Iowa Curve	Depr Rate	Annual Accrual	Iowa Curve	Depr Rate	Annual Accrual
Distribution Plant							
376.20	MAINS - PLASTIC	R3 - 45	3.71%	67,006,015	R3 - 55	2.76%	49,934,720
376.40	MAINS - WRAPPED STEEL	R2.5 - 50	3.10%	20,875,527	R2.5 - 58	2.49%	16,778,239
378.00	M&R STATION EQUIPMENT	R3 - 35	5.22%	7,974,932	R2 - 44	3.29%	5,034,495
380.20	SERVICES - PLASTIC	R3 - 40	5.94%	85,607,269	R2 - 51	3.89%	56,026,079
380.30	SERVICES - WRAPPED STEEL	R3 - 40	24.69%	9,973,022	R2 - 51	6.01%	2,426,544
381.00	METERS	R3 - 30	7.27%	8,531,993	R2 - 42	3.08%	3,612,303
382.00	METER INSTALLATIONS	R3 - 35	4.92%	10,154,516	S1.5 - 47	2.88%	5,942,511

11 For each of these accounts, I propose a longer average service life than Allis,
 12 which results in adjustments reducing the Company’s proposed depreciation rates.
 13 These adjustments will be discussed in more detail later in my testimony in the
 14 section regarding service life.⁴

15 **Q. Please describe why it is important that estimated service lives are accurate.**

⁴ See Garrett, Exh. DJG-4 (Depreciation Parameter Comparison).

1 A. Average service lives that are too short cause depreciation rates that overestimate
2 the Company's actual depreciation expense. If depreciation rates are
3 overestimated (i.e., service lives are underestimated), economic inefficiency is
4 encouraged. Unlike competitive firms, regulated utility companies are not always
5 incentivized by natural market forces to make the most economically efficient
6 decisions. If a utility is allowed to recover the cost of an asset before the end of its
7 useful life, the utility is incentivized to unnecessarily replace the asset before the
8 end of its useful life in order to increase rate base, which results in economic
9 waste that is passed on to customers through rate increases. Thus, from a public
10 policy perspective, it is important that regulators ensure that assets are not
11 depreciated before the end of their economic useful lives.

12 **Q. Based on your investigation, what conclusions have you reached?**

13 A. The results of my investigation support adoption of the proposed service lives and
14 depreciation rates for the accounts in dispute, as outlined in Exhibit DJG-4.

15 **III. REGULATORY STANDARDS**

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

18 A. In *Lindheimer v. Illinois Bell Telephone Co.*, the U.S. Supreme Court stated that
19 "depreciation is the loss, not restored by current maintenance, which is due to all
20 the factors causing the ultimate retirement of the property. These factors embrace

1 wear and tear, decay, inadequacy, and obsolescence.”⁵ The *Lindheimer* Court also
2 recognized that the original cost of plant assets, rather than present value or some
3 other measure, is the proper basis for calculating depreciation expense.⁶

4 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.⁷

5 Thus, the Utilities and Transportation Commission (UTC or Commission) must
6 ultimately determine if the Company has met its burden of proof by making a
7 convincing showing that its proposed depreciation rates are not excessive and that
8 its predicted useful lives underlying those proposals are reasonable.

9 **Q. Please discuss the definition and purpose of a depreciation system, as well as**
10 **the depreciation system you employed for this project.**

11 A. The legal standards set forth above do not mandate a specific procedure for
12 conducting depreciation analysis. These standards, however, direct that analysts
13 use a system for estimating depreciation rates that will result in the systematic and

⁵ *Lindheimer v. Illinois Bell Tel. Co.*, 292 U.S. 151, 167, 54 S. Ct. 658, 78 L. Ed. 1182 (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 *Fed. Power Comm’n v. Hope Nat. Gas Co.*, 320 U.S. 591, 606, 64 S. Ct. 281, 88 L. Ed. 333 (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.” *Id.*

⁷ *Lindheimer*, 292 U.S. at 169.

1 rational allocation of capital recovery for the utility. Over the years, analysts have
2 developed “depreciation systems” designed to analyze grouped property in
3 accordance with this standard. A depreciation system may be defined by several
4 primary parameters: 1) a method of allocation; 2) a procedure for applying the
5 method of allocation; 3) a technique of applying the depreciation rate; and
6 4) a model for analyzing the characteristics of vintage property groups.⁸ In this
7 case, I used the straight line method, the average life procedure, the remaining life
8 technique, and the broad group model to analyze the Company’s actuarial data;
9 this system is denoted as an “SL-AL-RL-BG” system. This depreciation system
10 conforms to the standards set forth above and is commonly used by depreciation
11 analysts in regulatory proceedings. I provide a more detailed discussion of
12 depreciation system parameters, theories, and equations in Appendix A.

13 IV. SERVICE LIFE ANALYSIS

14 **Q. Describe the actuarial process you used to analyze the Company’s**
15 **depreciable property.**

16 A. The study of retirement patterns of industrial property is derived from the
17 actuarial process used to study human mortality. Just as actuarial analysts study
18 historical human mortality data to predict how long a group of people will live,
19 depreciation analysts study historical plant data to estimate the average lives of
20 property groups. The most common actuarial method used by depreciation

⁸ Wolf & W. Chester Fitch, *Depreciation Systems*, at 70, 140 (Iowa State University Press 1994).

1 analysts is called the “retirement rate method.” In the retirement rate method,
2 original property data, including additions, retirements, transfers, and other
3 transactions, are organized by vintage and transaction year.⁹ The retirement rate
4 method is ultimately used to develop an “observed life table,” (OLT) which
5 shows the percentage of property surviving at each age interval. This pattern of
6 property retirement is described as a “survivor curve.” The survivor curve derived
7 from the OLT must be fitted and smoothed with a complete curve in order to
8 determine the ultimate average life of the group.¹⁰ The most widely used survivor
9 curves for this curve-fitting process, and the ones I used here, were developed at
10 Iowa State University in the early 1900s and are commonly known as the “Iowa
11 curves.”¹¹ A more detailed explanation of how the Iowa curves are used in the
12 actuarial analysis of depreciable property is set forth in Appendix C.

13 I used the aged property data that the Company provided to create an OLT
14 for each account. The data points on the OLT can be plotted to form a curve (the
15 OLT curve). The OLT curve is not a theoretical curve; rather, it is actual observed
16 data from the Company’s records that indicate the rate of retirement for each
17 property group. An OLT curve by itself, however, is rarely a smooth curve, and is
18 often not a “complete” curve (i.e., it does not end at zero percent surviving). In

⁹ 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).

¹⁰ See, Appendix C for a more detailed discussion of the actuarial analysis used to determine the average lives of grouped industrial property.

¹¹ See, Appendix B for a more detailed discussion of the Iowa curves.

1 order to calculate average life (the area under a curve), a complete survivor curve
2 is required. The Iowa curves are empirically-derived curves based on the
3 extensive studies of the actual mortality patterns of many different types of
4 industrial property. The curve-fitting process involves selecting the best Iowa
5 curve to fit the OLT curve. This curve fitting can be accomplished through a
6 combination of visual and mathematical curve-fitting techniques, as well as
7 professional judgment. The first step of my approach to curve-fitting involves
8 visually inspecting the OLT curve for any irregularities. For example, if the “tail”
9 end of the curve is erratic and shows a sharp decline over a short period of time, it
10 may indicate that this portion of the data is less reliable, as further discussed
11 below. After inspecting the OLT curve, I use a mathematical curve-fitting
12 technique which involves measuring the distance between the OLT curve and the
13 appropriate Iowa curve to get an objective, mathematical assessment of how well
14 the curve fits. After selecting an Iowa curve, I observe the OLT curve along with
15 the Iowa curve on the same graph to determine how well the curve fits. I may
16 repeat this process several times to analyze multiple Iowa curves for any given
17 account to ensure that the most reasonable Iowa curve is selected.

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

19 A. Not when there is insufficient data. Mathematical fitting is an important part of
20 the curve-fitting process because it promotes objective, unbiased results. While
21 mathematical curve fitting is important, it may not always yield the optimum
22 result. For example, if there is insufficient historical data in a particular account

1 and the OLT curve derived from that data is relatively short and flat, the
2 mathematically “best” curve may be one with a very long average life, which may
3 not provide the most accurate estimate of service life. However, when there are
4 sufficient data available, mathematical curve fitting can be used as part of an
5 objective service life analysis.

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

7 A. No, not necessarily. Many analysts have observed that the points comprising the
8 “tail end” of the OLT curve often have less analytical value than other portions of
9 the curve. In fact, “[p]oints at the end of the curve are often based on fewer
10 exposures and may be given less weight than points based on larger samples. The
11 weight placed on those points will depend on the size of the exposures.”¹² In
12 accordance with this standard, an analyst may decide to truncate the tail end of the
13 OLT curve at a certain percent of initial exposures (i.e., dollars exposed to
14 retirement), such as one percent. Using this approach puts a greater emphasis on
15 the most valuable portions of the curve, which are based on higher quality data.
16 For my analysis in this case, I not only considered the entirety of the OLT curve,
17 but also conducted further analyses that involved fitting Iowa curves to the most
18 significant part of the OLT curve for certain accounts. To verify the accuracy of
19 my curve selection, I narrowed the focus of my additional calculation to consider
20 the top 99 percent of the “exposures” and to eliminate the tail end of the curve

¹² Wolf & W. Chester Fitch, *Depreciation Systems*, at 46 (Iowa State University Press 1994).

1 representing the bottom one percent of exposures for some accounts, if necessary.

2 I will illustrate an example of this approach in the discussion below.

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

5 A. For each of these accounts discussed below, the Company's proposed service life,
6 as estimated through Iowa curves, is too short to accurately describe the mortality
7 characteristics of the account. For example, the Company's estimated service
8 lives differ significantly from the Company's observed historical data. For the
9 accounts in which I propose a longer service life, I took the objective approach
10 and chose an Iowa curve that provides a better mathematical and/or visual fit to
11 the observed historical retirement pattern derived from the Company's plant data.
12 In making my recommended service life estimates, I use a combination of visual
13 and mathematical curve fitting, along with professional judgment. As a result, my
14 estimates are more consistent with the historical service life patterns observed in
15 the Company's accounts. The Company does not present a convincing reason to
16 deviate from the historical service retirement patterns observed in its accounts
17 when projecting future remaining life. It is therefore my opinion that primary
18 consideration should be given to the best service life estimates as indicated by
19 mathematical curve fitting, as described below.

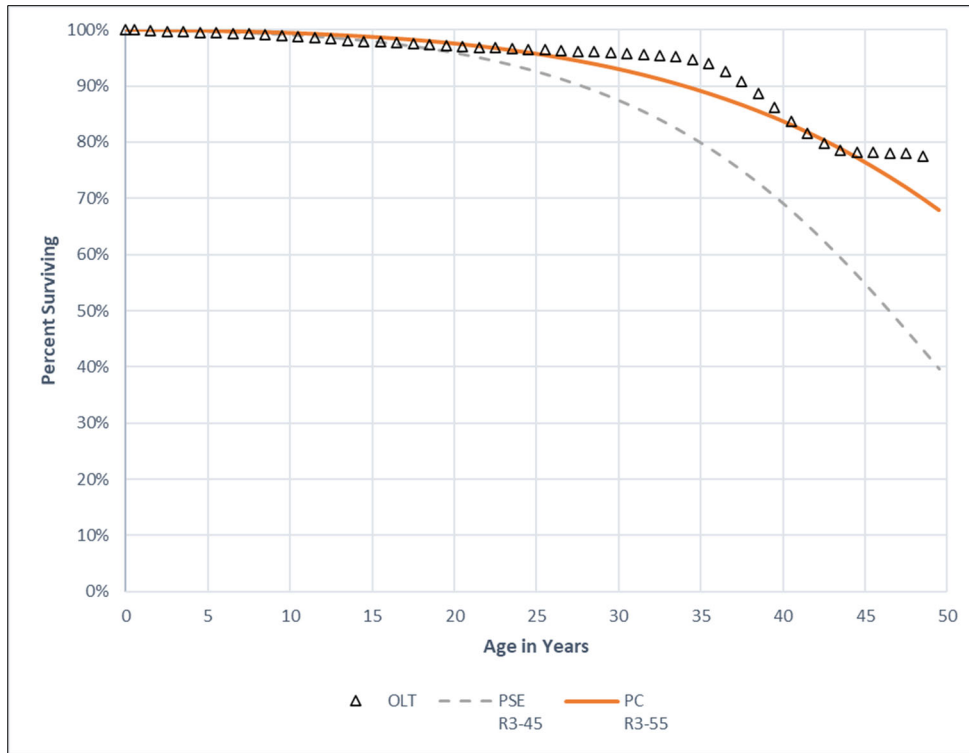
20 **A. Account 376.20 – Mains – Plastic**

21 **Q. Describe your service life estimate for this account and compare it with the**
22 **Company's estimate.**

1 A. The OLT curve for this account is shown in the graph below. The graph also
2 shows the Iowa curves that Allis and I selected to estimate the average life for this
3 account. The average life is determined by calculating the area under the Iowa
4 curves. Thus, a longer curve will produce a longer average life, and it will also
5 result in a lower depreciation rate. For this account, Allis selected the R3-45 Iowa
6 curve, and I selected the R3-55 Iowa curve. The average lives resulting from each
7 curve are indicated by the numbers after the dashes (45 and 55 in this case). Both
8 Iowa curves are shown with the OLT curve in the graph below.

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Figure 3
Account 376.20 – Mains – Plastic



11 One of the primary purposes of visual and mathematical Iowa curve fitting is to
12 select an Iowa curve that provides a relatively close fit to the historical retirement

1 pattern, as displayed through the OLT curve. As shown in this graph, the Iowa
2 curve proposed by Allis differs notably from the retirement pattern indicated in
3 the OLT curve. As a result, the depreciation rate proposed by Allis for this
4 account is unreasonably high and unsupported by the evidence presented.

5 Mathematical curve fitting techniques can be used to further assess the results.

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

8 A. Yes. While visual curve-fitting techniques helped us to identify the most
9 statistically relevant portions of the OLT curve for this account, mathematical
10 curve-fitting techniques can help us determine which of the two Iowa curves
11 provides the better fit. Mathematical curve fitting involves measuring the distance
12 between the OLT curve and the selected Iowa curve. The better
13 mathematically-fitted curve is the one that minimizes the distance between the
14 OLT curve and the Iowa curve, thus providing the closest fit. The distance
15 between the curves is calculated using the “sum-of-squared differences” (SSD)
16 technique. For this account, the SSD, or “distance” between the Company’s
17 R3-45 curve and the OLT curve is 0.7407. The SSD between the R3-55 curve I
18 selected and the OLT curve is only 0.0326.¹³ Thus, the R3-55 Iowa curve I
19 selected equates to a closer mathematical fit, and it results in a more reasonable
20 service life estimate and depreciation rate for this account.

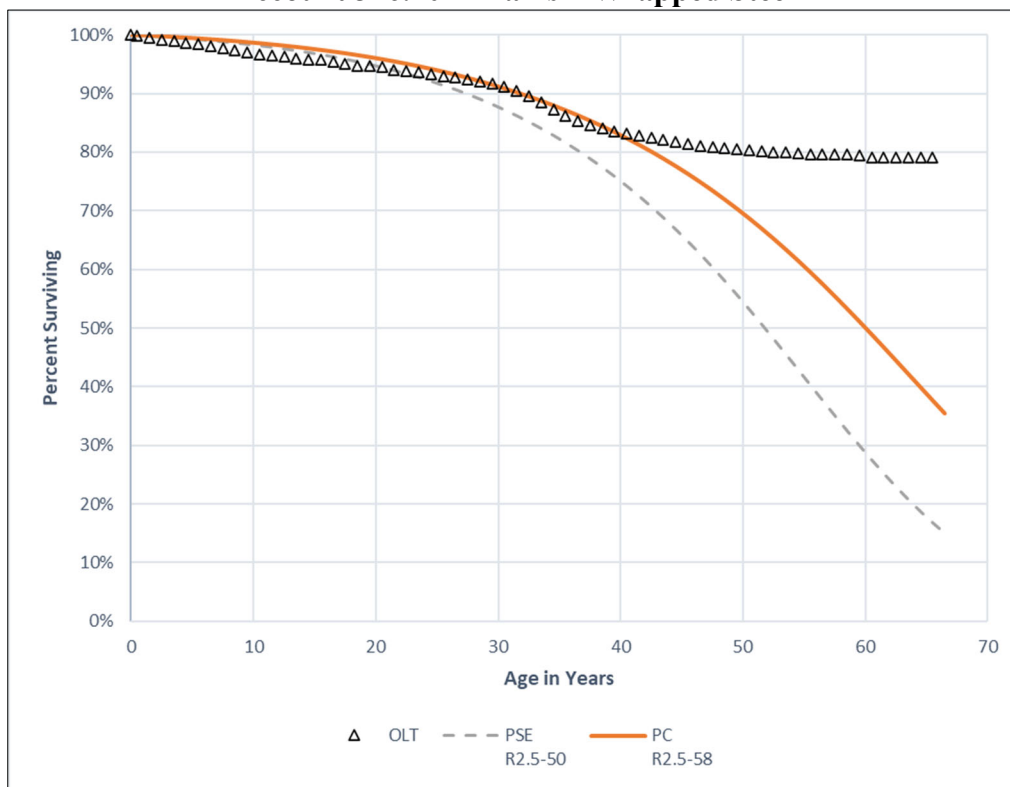
¹³ Garrett, Exh. DJG-7 (Account 376.20 – Mains – Plastic).

1 **B. Account 376.40 – Mains – Wrapped Steel**

2 **Q. Please describe your service life estimate for this account and compare it**
 3 **with the Company’s estimate.**

4 A. For this account, Allis selected the R2.5-50 curve, and I selected the R2.5-58
 5 curve. Thus, both of the selected Iowa curves have the same curve shape and a
 6 difference in average life of eight years. Both of these Iowa curves are shown in
 7 the following graph with the OLT curve.

8 **Figure 4**
 9 **Account 376.40 – Mains – Wrapped Steel**



10 As shown in this graph, the Iowa curve selected by Allis is again much shorter
 11 than the retirement pattern indicated in the OLT curve. For this particular OLT
 12 curve, the datapoints toward the end of the curve are less relevant for statistical

1 analysis, as indicated by the flattening of the OLT curve over a large range of age
2 intervals. Nonetheless, the Iowa curve selected by Allis ignores too much relevant
3 data without any explanation. As a result, the depreciation rate he proposes for
4 this account is unreasonably high and unsupported by the evidence.

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

7 A. Yes. The SSD between the Company's Iowa curve and the OLT curve is 3.8171,
8 and the SSD between the R2.5-58 Iowa curve I selected and the OLT curve is
9 1.2268, which means it results in the closer fit.¹⁴ A closer fit means that using the
10 R2.5-58 curve I selected results in a more reasonable service life estimate and
11 depreciation rate for this account.

12 **C. Account 378.00 – Measuring and Regulating Station Equipment**

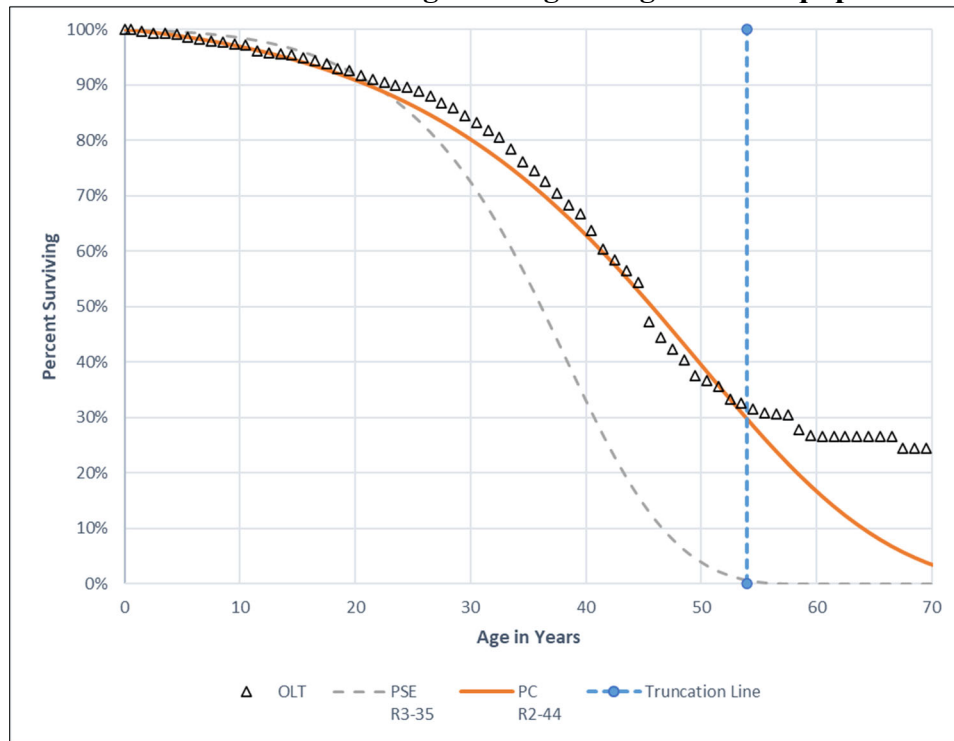
13 **Q. Please describe your service life estimate for this account and compare it**
14 **with the Company's estimate.**

15 A. For this account, Allis selected the R3-35 curve, and I selected the R2-44 curve.
16 Both of these Iowa curves are shown in the following graph with the OLT curve.

¹⁴ Garrett, Exh. DJG-8 (Account 376.40 – Mains – Wrapped Steel).

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Figure 5
Account 378.00 – Measuring and Regulating Station Equipment



3 As shown in this graph, the Iowa curve selected by Allis is again much shorter
4 than the retirement pattern indicated in the OLT curve. The vertical dotted line in
5 the graph represents a truncation point based on the exposure benchmark
6 discussed above, in which the data points occurring after the truncation line are
7 associated with dollars exposed to retirement that are less than one percent of the
8 total dollars exposed to retirement at age zero. Based on this truncation
9 benchmark, the Iowa curve I selected clearly results in a very close fit to the most
10 relevant portions of the OLT curve for this account. In contrast, the Iowa curve
11 proposed by Allis results in a very poor fit to the OLT curve, and as a result, the
12 depreciation rate he proposes for this account is excessively high.

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

3 A. Yes. Regardless of whether the entire or truncated OLT curve is measured, the
4 Iowa curve I propose results in a closer fit. Specifically, the SSD between the
5 Company's Iowa curve and the truncated OLT curve is 2.1595, and the SSD
6 between the R2-44 Iowa curve I selected and the truncated OLT curve is 0.0254,
7 which means it results in the closer fit and is therefore a more reasonable service
8 life estimate and depreciation rate for this account.¹⁵

9 **D. Account 380.00 – Services**

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

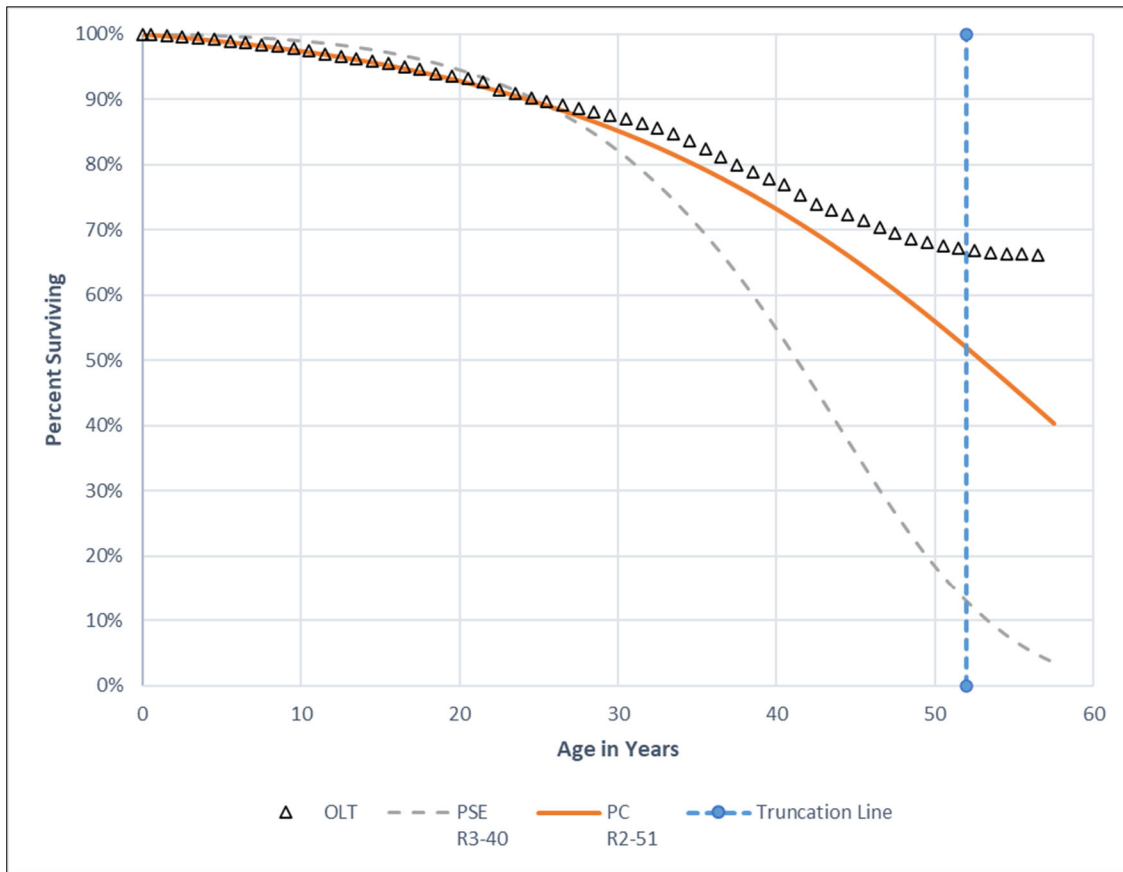
12 A. In the depreciation study, the service life data for subaccounts 380.20
13 (Services – Plastic) and 380.30 (Services – Wrapped Steel) were combined, and
14 thus the same Iowa curve was proposed for both accounts. I used the same
15 approach in my analyses.¹⁶ For these accounts, Allis selected the R3-40 curve,
16 and I selected the R2-51 curve. Both of these Iowa curves are shown in the
17 following graph with the OLT curve.

¹⁵ Garrett, Exh. DJG-9 (Account 378.00 – M&R Station Equipment).

¹⁶ See, Garrett, Exh. DJG-6 (Depreciation Rate Development OLT and Iowa Curve Fitting Charts).

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Figure 6:
Account 380.00 – Services



3 As shown in this graph, the Iowa curve selected by Allis is again much shorter
4 than the retirement pattern indicated in the OLT curve. The vertical dotted line in
5 the graph represents a truncation point based on the exposure benchmark
6 discussed above. Based on this benchmark, the vast majority of the OLT curve for
7 this account is statistically relevant. Despite this, the Iowa curve selected by Allis
8 ignores much of the relevant retirement data derived from this account.
9 Mathematical curve fitting can be used to further assess the results.

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

3 A. Yes. Regardless of whether the entire or truncated OLT curve is measured, the
4 Iowa curve I propose results in a closer fit. Specifically, the SSD between the
5 Company's Iowa curve and the truncated OLT curve is 2.0885, and the SSD
6 between the R2-51 Iowa curve I selected and the truncated OLT curve is 0.0997,
7 which means it results in the closer fit.¹⁷ A closer fit again indicates a more
8 reasonable service life estimate and depreciation rate for this account.

9 **E. Account 381.00 – Meters**

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

12 A. For these accounts, Allis selected the R3-30 curve, and I selected the R2-42 curve.
13 Both of these Iowa curves are shown in the following graph with the OLT curve.

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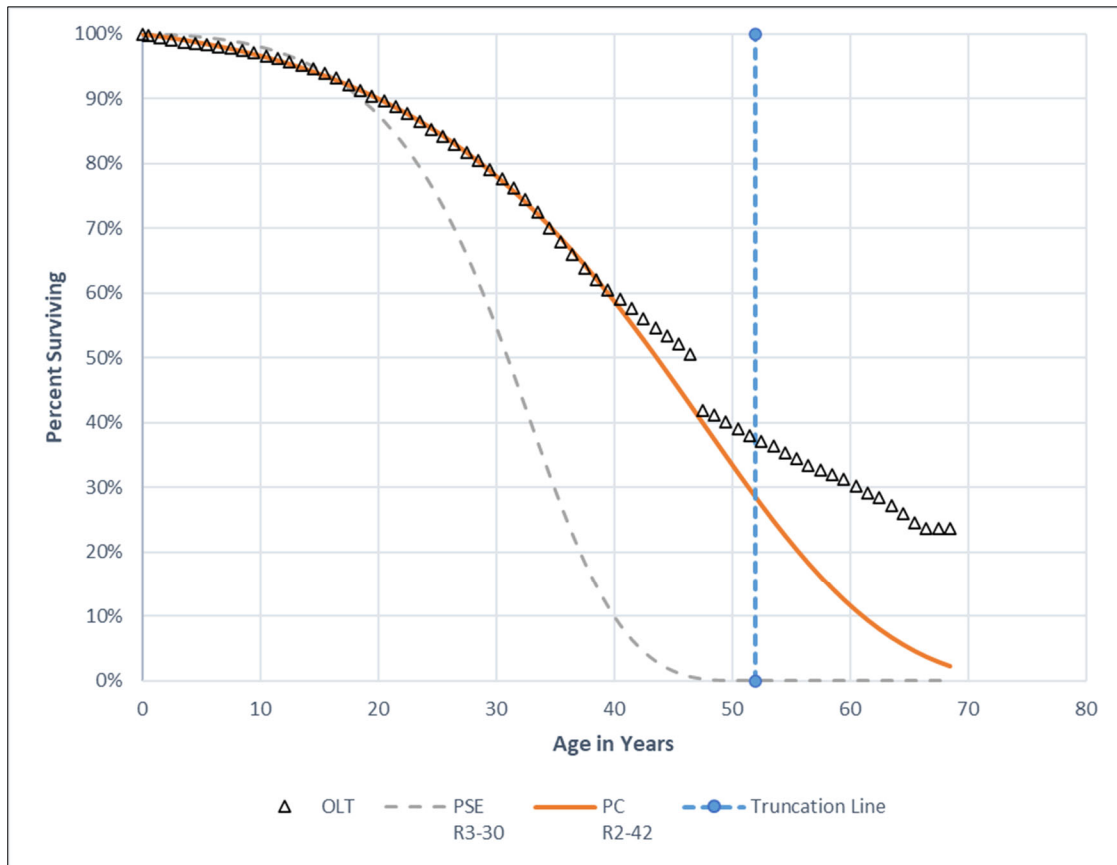
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¹⁷ Garrett, Exh. DJG-10 (Account 380.00 – Services).

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2

Figure 7
Account 381.00 – Meters



3 As with the other accounts discussed above, the Iowa curve selected by Allis
4 results in a very poor fit to the OLT curve and appears to almost ignore the
5 statistical data entirely. As a result, the service life and depreciation rate proposed
6 by the Company for this account is not supported by any evidence presented, and
7 it falls far short of the “convincing showing” standard discussed above. To accept
8 the Iowa curve proposed by Allis for this account would negate the purpose of the
9 Iowa curve fitting process entirely.

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

3 A. Yes. Regardless of whether the entire or truncated OLT curve is measured, the
4 Iowa curve I propose results in a closer fit. Specifically, the SSD between the
5 Company's Iowa curve and the truncated OLT curve is 4.3420, and the SSD
6 between the R2-42 Iowa curve I selected and the truncated OLT curve is 0.0346,
7 which means it results in the closer fit and is therefore a more reasonable service
8 life estimate and depreciation rate for this account.¹⁸

9 **F. Account 382.00 – Meter Installations**

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

12 A. For these accounts, Allis selected the R3-35 curve, and I selected the S1.5-47
13 curve. Both of these Iowa curves are shown in the following graph with the OLT
14 curve.

15 /

16 //

17 ///

18 ////

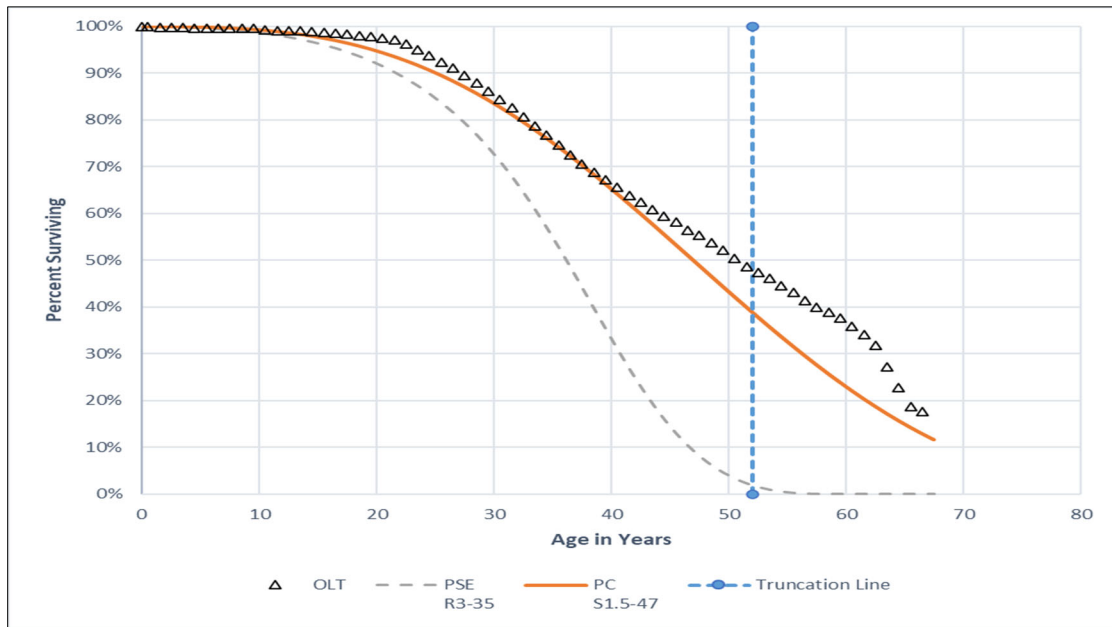
19 /////

20 //////

¹⁸ Garrett, Exh. DJG-11 (Account 381.00 – Meters).

1
2

Figure 8
Account 382.00 – Meter Installations



3 As with the other accounts discussed above, the Iowa curve selected by Allis
4 results in a very poor fit to the OLT curve and appears to almost ignore the
5 statistical data entirely. As a result, the service life and depreciation rate proposed
6 by the Company for this account is not supported by any evidence presented, and
7 it falls far short of the “convincing showing” standard discussed above.

8 Consequently, the depreciation rate proposed by the Company for this account is
9 unreasonably high and unsupported by the evidence.

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

12 A. Yes. Regardless of whether the entire or truncated OLT curve is measured, the
13 Iowa curve I propose results in a closer fit. The SSD between the Company’s
14 Iowa curve and the truncated OLT curve is 2.8988, and the SSD between the

1 S1.5-47 Iowa curve I selected and the truncated OLT curve is 0.0488, which
2 means it results in the closer fit.¹⁹ A closer fit indicates a more reasonable service
3 life estimate and depreciation rate for this account.

4 **Q. Does this conclude your testimony?**

5 **A. Yes.**

¹⁹ Garrett, Exh. DJG-12 (Account 382.00 – Meter Installations).