EXH. RJA-6T
DOCKETS UE-190529/UG-190530
UE-190274/UG-190275
2019 PSE GENERAL RATE CASE
WITNESS: RONALD J. AMEN

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**Docket UE-190529** **Docket UG-190530 (*Consolidated*)**
In the Matter of the Petition of **PUGET SOUND ENERGY** **For an Order Authorizing Deferral Accounting and Ratemaking Treatment for Short-life IT/Technology Investment**	**Docket UE-190274** **Docket UG-190275 (*Consolidated*)**

PREFILED REBUTTAL TESTIMONY (NONCONFIDENTIAL) OF

RONALD J. AMEN

ON BEHALF OF PUGET SOUND ENERGY

JANUARY 15, 2020

PUGET SOUND ENERGY

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I. INTRODUCTION

Q. Are you the same Ronald J. Amen who submitted prefiled direct testimony on June 20, 2019, on behalf of Puget Sound Energy ("PSE") in this proceeding?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony will respond to comments by Washington Utilities and Transportation Commission ("WUTC" or "Commission") witnesses Chris McGuire and Jing Liu regarding the "used and useful" policy issue with PSE's proposed attrition adjustment. I will also address the comments of Public Counsel witness Mark E. Garrett concerning the prevalence of and adherence to historical test years by utility commissions. Finally, I will respond to more technical aspects of the attrition analysis performed by WUTC Staff witness Liu.

II. RESPONSE TO CONCERNS ABOUT ATTRITION AND THE USED AND USEFUL STANDARD

Q. What is the nature of the used and useful policy issue discussed by WUTC Staff witness McGuire?

A. Mr. McGuire discusses PSE's reference to the recent legislative revisions to the used and useful provisions of the property valuation statute, RCW 80.04.250, as justification for not using projections of costs and rate base. Witness McGuire then points to the Commission's initiation of Docket U-190531 to consider how it will identify and review property that becomes used and useful during the rate-effective period, as support for his assertion that since "the Commission has yet to provide rules or a policy statement on this matter, PSE's portrayal of what the revised statute means for PSE's request for an attrition allowance is premature."[1]

Q. Do you agree with Mr. McGuire's conclusion that an attrition adjustment is premature at this time?

A. No. The recent change to the property valuation statute, RCW 80.04.250, noted by Mr. McGuire, gives the Commission the authority to set rates based on projections of plant that will be used and useful during the rate effective period.

> The Commission has the power upon complaint or upon its own motion to ascertain and determine the fair value for rate making purposes of the property of any public service company *used and useful* for service in this state by or during the rate effective period…[2]

PSE's attrition adjustment is consistent with the revisions made to RCW 80.04.250.

[1] McGuire, Exh. CRM-1T at 28:12-8.
[2] RCW 80.04.250(2).

Q. Mr. McGuire suggests that despite the current lack of "rules or a policy statement on this matter" the Commission could still find justification for providing PSE with an attrition allowance in this case. What is his stated basis for this viewpoint?

A. Mr. McGuire states, "It is possible that a properly performed attrition study could supply convincing evidence that the modified historical test year approach produces revenues insufficient to cover costs in any given rate year."[3]

Q. Does PSE's attrition study provide the convincing evidence that the results of the modified historical test year in this case produces insufficient revenues to cover PSE's costs in the rate year?

A. Yes, I believe it does. Contrary to Mr. McGuire's contention that PSE's attrition study's use of exponential growth curves, which assumes that the growth in expenses and rate base will *accelerate* between the test year and the rate year, results in overstated earnings attrition in the rate year,[4] the analysis presented later in my rebuttal testimony demonstrates that rate base growth is exponential and is validated by electric and gas utility investment data, authoritative utility industry cost indexes, and PSE's own capital budget information.

Q. Has Commission Staff expressed reservations about PSE's attrition study as it relates to Staff's view of the traditional "used and useful" principles?

[3] McGuire, Exh. CRM-1T at 29:5-8.
[4] *Id.* at 29:12-15.

A. Yes. Ms. Liu states, "Staff believes the pro forma case more accurately reflects the verifiable revenue, expense and rate base in the modified historical test year. The attrition study relies on forecasted rate base associated with Advanced Metering Infrastructure ("AMI") and Get-to-Zero ("GTZ") as well as statistical trending of gross plant and expenses, creating challenges for Staff to adhere to our long-held "used and useful" and "known and measurable" principles."[5]

Q. Can you provide insight on the traditional application of the "used and useful" standard based on your own industry experience and research?

A. Yes. In recent years, several technology and market innovations have changed the utility landscape. Like PSE, utilities are making increasing investments in assets with shorter useful lives compared to traditional utility assets. Examples of these are software, distribution automation ("DA") and AMI. Increasing adoption of distributed energy resources ("DER") and energy efficiency have also led to a utility industry environment of decreasing levels of sales. However, the regulatory lag built into traditional ratemaking makes it difficult for utilities to respond to these challenges expeditiously and efficiently without experiencing increasing levels of earnings attrition. The traditional interpretation of the "used and useful" standard, initially adopted to value utility property for ratemaking purposes, may exacerbate regulatory lag. As mentioned in my prefiled direct testimony, utilities across the country are progressively exploring future test years, multi-year rate

[5] Liu, Exh. JL-1CTr at 58:1-6.

plans, formula rate plans, Construction Work in Progress ("CWIP") and capital expenditure trackers as a way of reducing regulatory lag.[6] With increasing use of more forward looking ratemaking, the traditional "used and useful" standard, and the manner in which prudence for new plant is reviewed, requires reexamination. This then becomes a question of *when* the used and useful standard is to be applied – at the time of a rate case hearing or when the plant actually becomes "used and useful."

Q. How have state utility commissions in other jurisdictions addressed the determination of "used and useful" plant put in service after the start of the rate year?

A. Some jurisdictions have separated the "used and useful" review process into two steps. The first step focuses on whether the decision to incur certain costs satisfies the Commission's prudence standard, given information known at the time the decision was made. This process can be carried out during the rate case process. The second step simply focuses on whether a particular project was managed responsibly, and the costs are reasonably in line with the estimate that led to the initial decision to incur the costs. The prudence of the investment decision is not revisited at this time. This second step can happen any time before or during the rate year. The actual rates may be trued up at this time. For example, under the Arkansas Formula Rate Plan (FRP), the utility files an Evaluation Report

[6] Amen, Exh. RJA-1T at 3:18 – page 5, 6.

annually. The capital investments are first proposed in this report. At that time, the prudence review of the decision to make an investment is determined. Review at the time of rate true-up is limited to cost level and related cost management factors. This approach is similar to the one I suggested in my prefiled direct testimony.[7]

III. THE NEED FOR AN ATTRITION ADJUSTMENT

Q. Public Counsel witness Mark Garrett states that he has not found cost escalations similar to those presented by PSE, which provide support for PSE's attrition adjustment, to be the norm in other jurisdictions across the country.[8] Do you concur?

A. No. Starting in 2007, the growth of electric utility plant has significantly outpaced sales, which have been stagnant. This same phenomenon has been present, and even more dramatic, for gas utility plant over the last twenty years, as energy efficiency improvements in gas end-use equipment and energy conservation measures have resulted in a lower use-per-customer trend, which has largely offset customer growth. These trends, coupled with low to moderate levels of inflation, causes an attritionary environment, as illustrated in Figures 1 and 2, below.

[7] Amen, Exh. RJA-1T at 22:6-12.
[8] Garrett, Exh. MEG-1T at 9:6-8.

Figure 1[9]

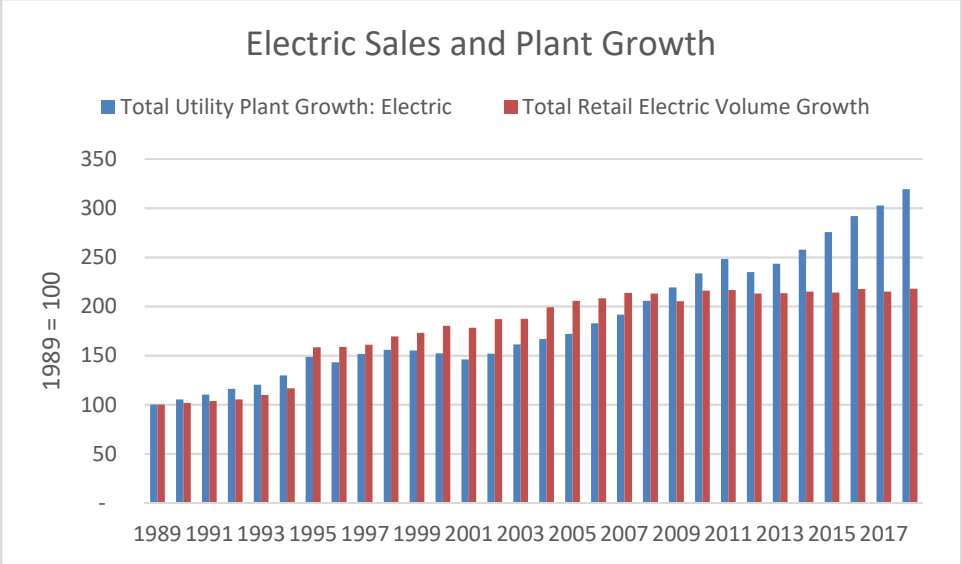
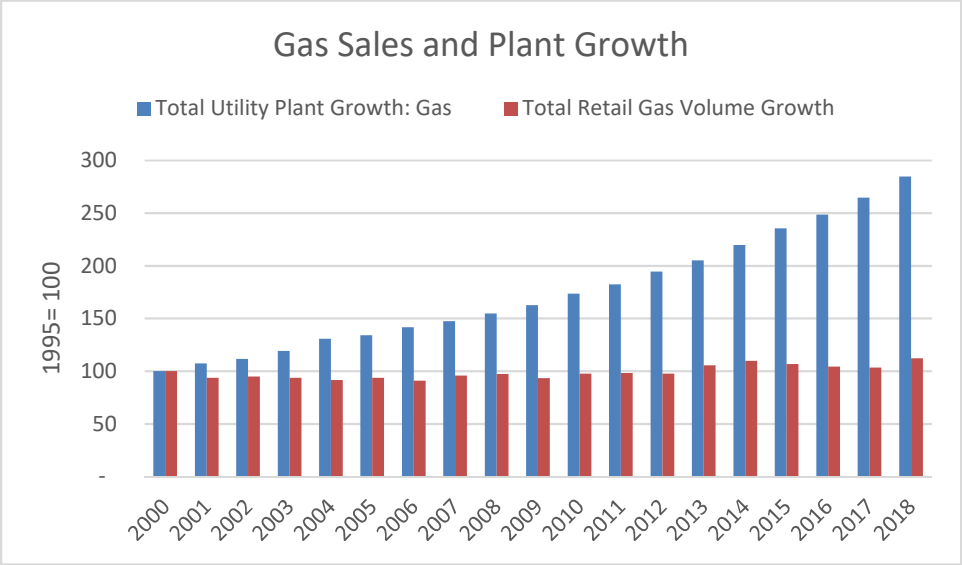


Figure 2[10]

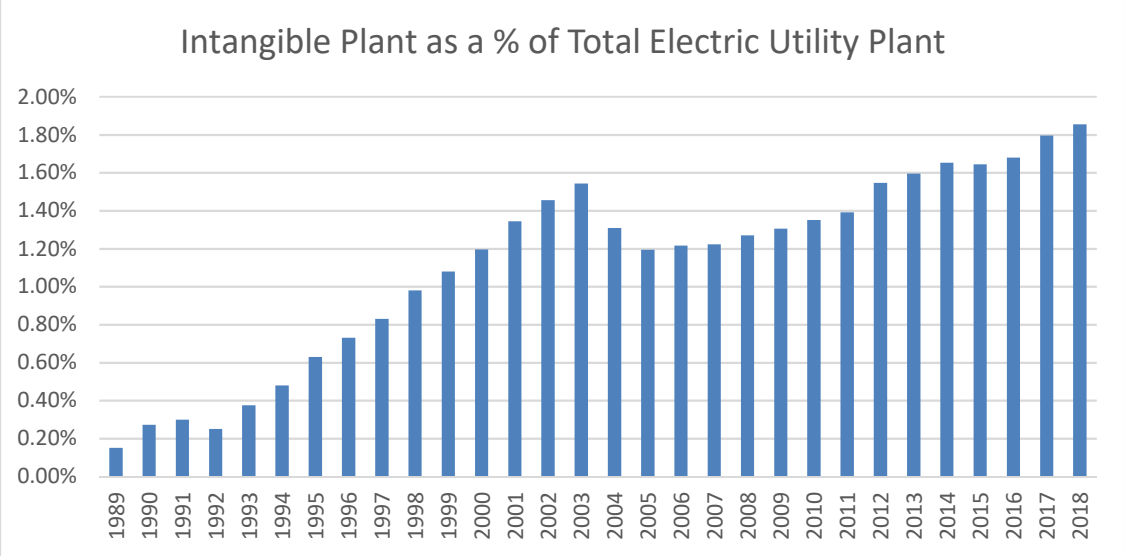


Additionally, as mentioned earlier, utilities have been making increasing investments in assets with relatively short depreciable lives compared to

[9] Source: S&P Global.
[10] Source: S&P Global.

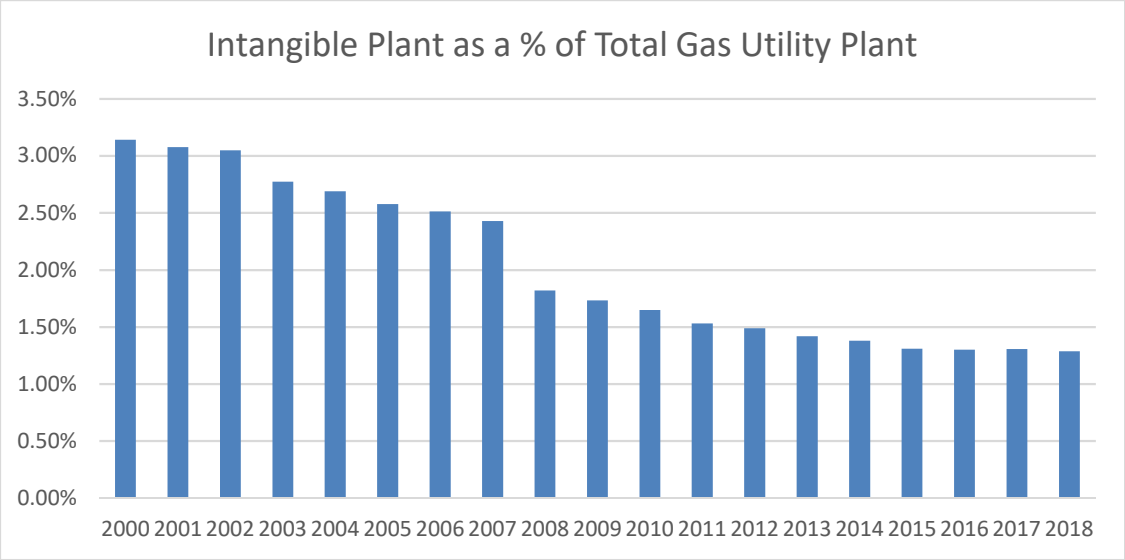
traditional utility assets. These include AMI, DA, and various Information Technology (IT) investments. Figure 3 below shows a twelve-times increase in intangible plant as a share of total electric utility plant over thirty years. While intangible plant investments for gas utilities since 2000 have grown over eight-times the levels from the last half of the prior decade, it has since leveled out over the last twenty years and been significantly outpaced by the scope of widespread gas distribution infrastructure replacement programs. Therefore, intangible gas plant as a percentage of total gas plant has since declined, as shown in Figure 4, below. At times, intangible investments may have already lost a significant share of book value by the time they are placed in rate base for ratemaking purposes.

Figure 3[11]



[11] Source: S&P Global.

Figure 4[12]



IV. RESPONSE TO CRITIQUES OF PSE'S ATTRITION ANALYSIS

Q. Before responding to other parties' critiques of the attrition analysis, please summarize the methodology you employed in conducting the attrition analysis presented in your direct testimony.

A. As discussed in my direct testimony, PSE's latest eleven (2008 through 2018) Commission Basis Reports ("CBR") were used as the starting point for the attrition analysis. The CBR data was adjusted to remove Colstrip depreciation expense, PSE's natural gas cost recovery mechanism ("CRM"), AMI, and GTZ projects. The adjusted data were run through a series of regression analyses to calculate growth factors for other operating revenues, operations and maintenance

[12] Source: S&P Global.

("O&M") expenses and plant line items. These growth factors were applied to the attrition base amounts to determine rate-year other operating revenues and O&M expenses. The growth factors for plant were used as inputs in the model developed by PSE witness Mr. Matthew R. Marcelia. Mr. Marcelia's model projects the major components of rate year rate base, depreciation and taxes while adhering to the consistency provisions of the IRS normalization rules. I also imported PSE's rate-year capital projections for AMI and GTZ. The rate year projections were then run through the PSE's depreciation and tax model to determine rate year depreciation and amortization expense, accumulated depreciation and deferred federal income tax ("DFIT").

For CRM, because these amounts are recovered in a separate mechanism, I removed CRM amounts from the historical data used for developing the growth factors as well as from the test year amounts that were being escalated. In the ending attrition results, I used the rate year amounts presented by PSE witness Ms. Susan E. Free in adjustment SEF-8GP. This treatment has the effect of properly not including any impacts in the attrition analysis for CRM investments, which are recovered in a separate mechanism.

Through the attrition analysis, I determined the revenue required at projected rate base and expenses. This amount is then compared to the revenue required under the traditional modified historical test year approach as presented by Ms. Free. The resulting difference is the amount of the attrition. Separate electric and gas

attrition amounts were calculated to support PSE's requested increases in electric and gas rates.[13]

Q. Did you update your attrition analysis based on PSE's position on rebuttal?

A. Yes, the changes I made are discussed below.

Q. What rate of return did you use in the preparation of your rebuttal exhibits?

A. As summarized by Ms. Free, in anticipation of receiving the final ROE recommendation from Dr. Morin, PSE utilized 9.7 percent ROE in the preparation of its exhibits while awaiting the final determination. However, Dr. Morin's final determination of 9.5 percent ROE was received too late to incorporate into PSE's rebuttal exhibits. Consequently, the exhibits presented in this rebuttal filing are based on an ROE of 9.7 percent. In testimony, I generally state amounts at 9.7 percent as that is what agrees with the corresponding exhibits presented. Where possible and relevant, I also state in testimony what the amount would be at 9.5 percent ROE.

Q. You mentioned above that you utilized the Company's rate-year capital projections for AMI and GTZ. PSE witnesses Mr. Kensok, Mr. Jacobs and Ms. Koch discuss utilizing updated forecast information in their rebuttal testimonies. Did you update the rate year capital projections for AMI and GTZ in your attrition analysis?

[13] Amen, Exh. RJA-1T at 25-27.

A. No. The updated forecasts for AMI and GTZ were both higher than the original forecasts used in the attrition analyses that I filed on June 20, 2019 in Exhs. RJA-3 and RJA-4. Because PSE did not request the full attrition adjustments in its original or rebuttal filings,[14] it was not necessary to update to the new forecasted information as it would not have impacted the end result of the net revenue change PSE is requesting. Although, when calculated at 9.5 percent ROE, PSE does end up requesting its full attrition adjustment for electric, the amount it is under the 6.9 percent revenue increase established in Exh. JAP-14 in PSE's direct filing is immaterial. See Table 1 in Ms. Free's rebuttal testimony.

Q. Please describe the changes to your attrition results that are presented in your rebuttal testimony.

A. In the original filing, the electric attrition revenue deficiency, which is comprised of the fixed production, transmission, and delivery attrition evaluation, supports an increase to electric base rates, exclusive of power costs, of $118.4 million. PSE's gas attrition revenue deficiency, consisting of the fixed production and delivery attrition evaluation, supported an increase to gas base rates of $108.2 million.

I have presented revised attrition results of $90.7 million for electric and $112.4 million for gas. These results are included in Exh. RJA-8 for electric and Exh. RJA-9 for gas. When calculated at 9.5 percent ROE, the attrition results are $84.2

[14] See, line 23 on page 1 of Exhs. SEF-3E, SEF-3G, SEF-18E and SEF-18G.

million for electric and $109.7 million for gas.[15]

Q. Please explain the differences between the attrition results in the original and rebuttal filings.

A. Subsequent to the original filing, several necessary corrections to the attrition revenue requirement calculations were identified. PSE provided these corrections in its First Revised Response to AWEC Data Request No. 020 which Ms. Liu attached to her testimony as Exh. JL-22. The impact on the attrition deficiency was a decrease to electric of $0.9 million and an increase to gas of $8.2 million.

There were other corrections and updates identified after the submittal of the First Revised Response to AWEC Data Request No. 020. I have identified the witness in whose exhibits the change is discussed. These changes are detailed below:

1. Ms. Liu identified that PSE inadvertently did not remove the Production O&M for Colstrip Units 1 and 2 from its attrition calculation.[16] Therefore, I have removed this amount on page 1 of Exh. RJA-8.
2. I identified a needed correction to the growth factors used for electric transmission and distribution plant categories. The factors used in Exh. RJA-3 were linear when I had intended for them to be logarithmic. This change updates the factors from 5.32% to 5.77% for electric transmission plant and from 3.44% to 3.09% for electric distribution plant.
3. Ms. Liu identified that the Other Operating Expense should not have a growth factor applied because this cost category contains regulatory amortizations that do not exhibit a consistent trend.[17] Additionally, amortizations are known amounts for the rate year. Therefore, PSE agrees with this assessment. I have made this change in Exhs. RJA-8 and RJA-9.

[15] Exhibits RJA-8 and RJA-9 reflect an underlying ROE of 9.7%. Two sets of work papers will be submitted – one set reflecting a 9.7% ROE and one set reflecting a 9.5% ROE.

[16] Liu, Exh. JL-1CT at 70:21-23.

[17] *Id.* at 71:18-23

4. Mr. Matthew R. Marcelia in his Prefiled Rebuttal Testimony, Exh. MRM-11T, discussed that the way in which accumulated depreciation and accumulated deferred income taxes for PSE's CRM were treated in the attrition model requires correction. I have made this correction.

5. In his Prefiled Rebuttal Testimony, Exh. MDM-7T, PSE witness Matthew D. McArthur provides the rate of return of 7.57 percent that is based on the revised return on equity of 9.7 percent used by PSE in preparation of its exhibits as well as the requested rate of return of 7.48 percent that is based on the recommended return on equity of 9.5 percent supported by PSE witness Dr. Roger A. Morin. I have incorporated this updated rate of return in the calculation of the attrition deficiencies.

The table below provides a summary of the changes and their impacts at 9.7 percent and 9.5 percent ROE:

Table 1 – Summary of Changes to PSE's Attrition Revenue Requirement

Line	Description	At 9.7% ROE	At 9.5% ROE		
			Electric	Gas	Combined
1	Attrition revenue requirement filed June 20, 2019	$ 118.4	$ 108.2	$ 226.6	$ 118.4	$ 108.2	$ 226.6
2							
3	Impacts of First Revised Response to AWEC 20	(1.0)	8.2	7.2	(1.0)	8.2	7.2
4	Remove Colstrip 1 and 2 Production O&M	(20.6)	-	(20.6)	(20.6)		(20.6)
5	Correction of electric transm and dist growth factors	(1.8)	-	(1.8)	(1.8)		(1.8)
6	Use 0% growth rate for Other Operating Expenses	(0.8)	(0.5)	(1.3)	(0.8)	(0.5)	(1.3)
7	Corrections to ADIT in MRM	-	(2.1)	(2.1)		(2.1)	(2.1)
8	Update rate of return	(3.6)	(1.4)	(14.2)	(10.1)	(4.1)	(14.2)
9	Other	0.0	0.0		0.0	0.0	0.0
10							
11	Subtotal Changes	(27.7)	4.2	(32.8)	(34.2)	1.5	(32.8)
12							
13	Attrition revenue requirement filed January 15, 2020	$ 90.7	$ 112.4	$ 193.8	$ 84.2	$ 109.7	$ 193.8
					$ -	$ -	$ -

Q. What were the results of WUTC Staff witness Jing Liu's attrition analysis?

A. Ms. Liu's attrition analysis resulted in a rate year revenue *sufficiency* of $2.5 million for electric operations and a rate year revenue deficiency of $12.1 million for natural gas operations.[18]

Q. In Exhibit JL-1CTr at page 58 lines 13-15, Ms. Liu indicates the Commission shouldn't authorize an attrition adjustment because PSE included two large capital projects in its regression models that should have been excluded. Do you agree with Ms. Liu's assessment?

A. No. Ms. Liu is referring to the LNG distribution upgrades and the software related to PSE's participation in the Energy Imbalance Market ("EIM"). As discussed by Ms. Free, PSE does not agree that these costs should be removed from the attrition analysis. Ms. Liu's testimony reads as if she believes their inclusion is a basis for the Commission to not approve an attrition adjustment for PSE. I would agree that whether or not to include these items in the attrition adjustment is a difference of opinion between PSE and Commission Staff, but I do not believe that it rises to the level of a reason that the Commission should not grant an attrition adjustment.

Q. Ms. Liu filed revisions to her testimony on December 17, 2019. Have you reviewed her changes, and do you agree with them?

[18] *Id.* at 57.

A. Yes, I reviewed them. There is one change that she made with which I do not agree. Ms. Liu changed the number of years of data used in her electric intangible model from 7 years to 11 years. She did not provide any justification for this change.

Q. Can you summarize Ms. Liu's opinion on the application of exponential growth for rate base?

A. Yes, Ms. Liu states that PSE's decision making related to plant additions does not follow compound growth rationale. She quotes PSE's capital budget to state that overall capital expenditures will peak in 2020 and decline thereafter.

Q. Do you agree with Ms. Liu's assessment?

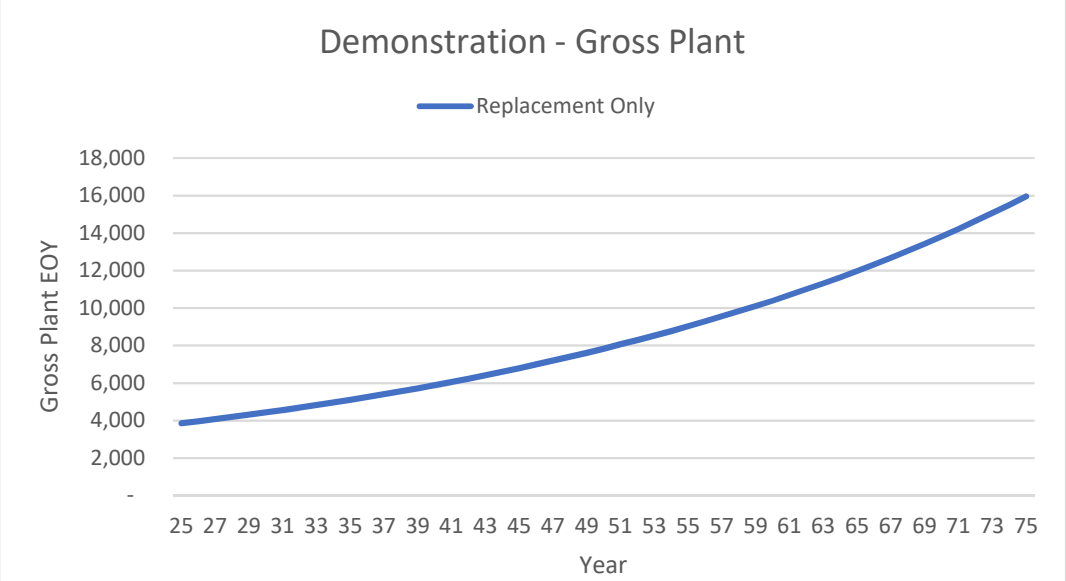
A. No. I will demonstrate that rate base growth is exponential even if plant additions are not experiencing exponential growth. In plant accounting, gross plant balance is calculated as:

1. Gross plant balance beginning of the period,
2. Less: Retirements
3. Plus: Replacements
4. Plus: Additions

In Figure 5, I have shown capital asset stock with 25 years of depreciation life, built with a real equivalent of $100 capital investment each year. In year 26, the initial $100 investment would have to be retired and replaced. However due to

inflation, the same asset that cost $100 in year 1 costs $209[19] in year 26. So, the gross plant balance experiences a $109 growth even without a single dollar of capital addition. Continuing this trend, one can clearly see an exponential plant balance. In fact, the only configuration in which a utility can have a non-exponential plant growth is when it is not growing and only partially replacing its existing asset base. This is a highly unlikely scenario for PSE. The detailed calculations can be found in Exh. RJA-7.

Figure 5



Q. Can you present some empirical evidence to support exponential growth?

A. Yes. Table 2 below shows gross plant investment across all major U.S. electric utilities over the period of 1988 to 2018. I have also inserted a linear trend-line in

[19] A 3% inflation assumption was used for this demonstration.

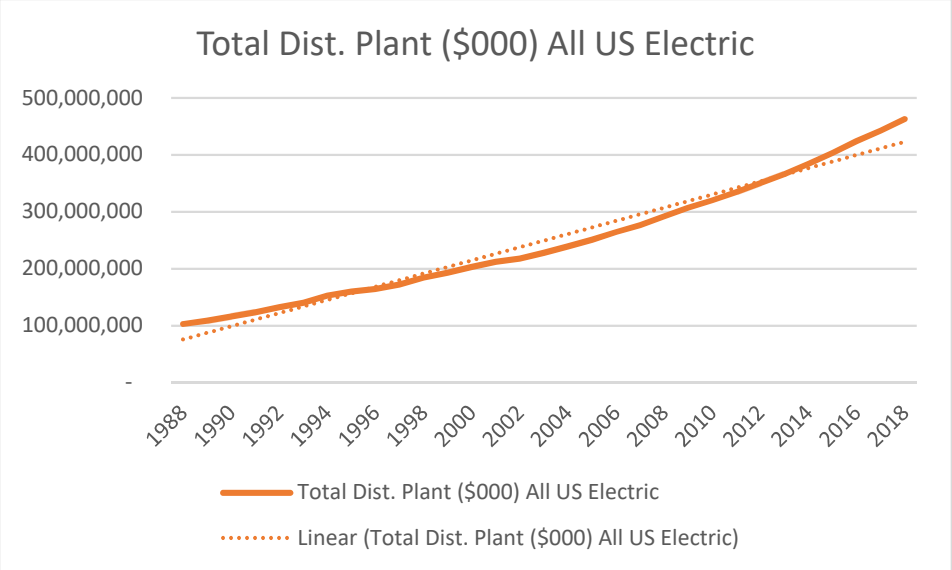
Figure 6 to contrast with plant. The trend can be clearly seen and mathematically proven to be an exponential fit.

Table 2[20]

Year	Total Dist. Plant ($000) All US Electric
1988	103,012,745
1989	108,984,957
1990	116,506,258
1991	123,760,515
1992	132,763,070
1993	140,288,591
1994	152,923,049
1995	159,910,515
1996	164,555,193
1997	172,238,258
1998	184,136,285
1999	193,066,010
2000	203,385,548
2001	212,235,532
2002	218,039,280
2003	228,065,096
2004	239,163,278
2005	250,934,642
2006	264,789,299
2007	276,197,560
2008	292,221,464
2009	307,210,906
2010	320,336,882
2011	335,043,951
2012	350,704,701
2013	366,437,138
2014	384,243,706
2015	403,179,783
2016	423,970,137
2017	442,854,197
2018	462,914,657

[20] Source: S&P Global

Figure 6



Q. Can you provide statistical evidence that supports exponential trend?

A. Yes. Ms. Liu provided a series of charts to support her assertion that growth is not exponential. These charts showing a limited timeframe can create an impression that growth is linear. However, this does not withstand statistical scrutiny. Table 3 shows a statistical comparison of Staff attrition model and PSE's model. In all plant categories, PSE's exponential model performs similar or better than Staff's linear model. This holds true both in terms of overall model fit (R-square) and variable predictability (p-value).

Table 3

	Staff Model				PSE Model				Better Fit	Variable Confidence
Electric Plant	Observed Years	Growth rate	R Square	p-value	Observed Years	Growth rate	R Square	p-value	R Square	p-value
Production	6	0.14%	16.6%	0.4965	6	1.50%	84.0%	0.0101	PSE	PSE
Transmission	7	4.60%	98.6%	0.0000	7	5.77%	99.3%	0.0000	PSE	Similar
Distribution	7	3.08%	96.8%	0.0001	7	3.09%	98.3%	0.0000	PSE	Similar
Intangible	11	5.90%	87.9%	0.0000	7	16.16%	93.4%	0.0004	PSE	Similar
General	9	4.43%	90.7%	0.0001	9	6.04%	97.5%	0.0000	PSE	Similar
Gas Plant										
Production	5	1.45%	93.5%	0.0072	5	1.33%	96.5%	0.0029	PSE	PSE
Transmission										
Distribution	10	3.68%	99.8%	0.0000	11	5.22%	99.7%	0.0000	Similar	Similar
Intangible	8	8.34%	84.8%	0.0006	8	15.11%	96.4%	0.0000	PSE	Similar
General	10	2.14%	53.0%	0.0170	11	2.90%	86.7%	0.0000	PSE	PSE

Q. Have you validated your exponential attrition model against any relevant utility industry indices?

A. Yes. The Handy-Whitman Indexes are a well-established, authoritative set of industry indexes that are routinely applied in the utility industry. The Handy-Whitman Index calculates the cost trends for different types of utility construction. Separate indexes are published for the electric, gas and water industries. These indexes are used by regulatory bodies, operating utilities, service companies, and valuation engineers, as well as insurance companies. Figures 7, 8 and 9 below demonstrate exponential nature of electric transmission, electric distribution and gas total plant costs. Each of these categories demonstrate a better exponential fit than linear.

Figure 7

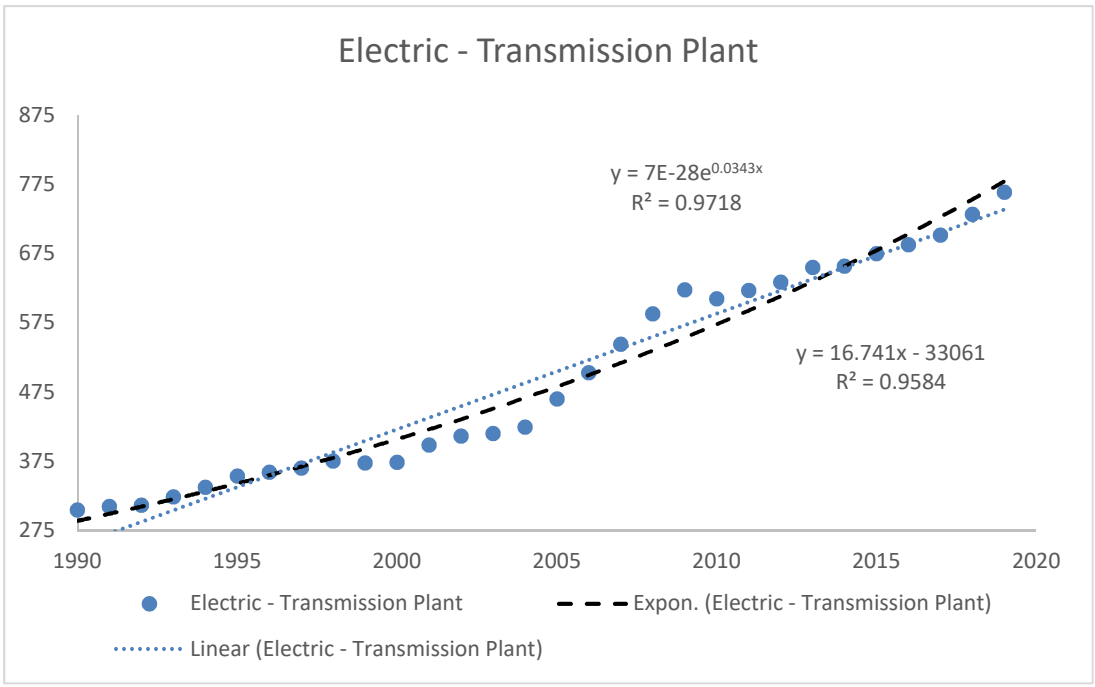


Figure 8

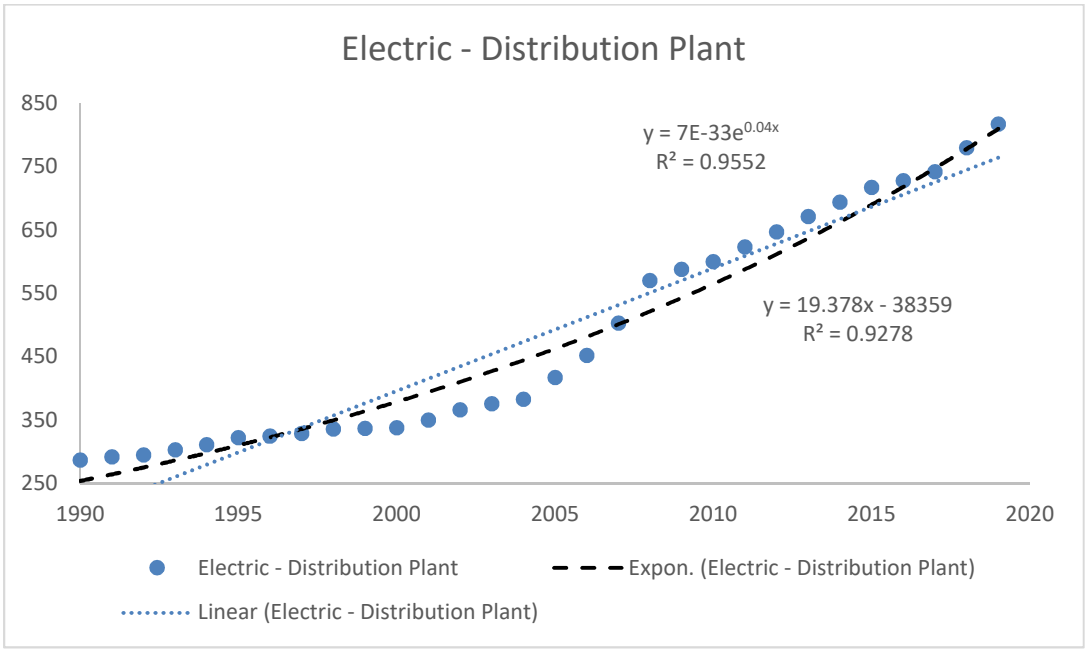
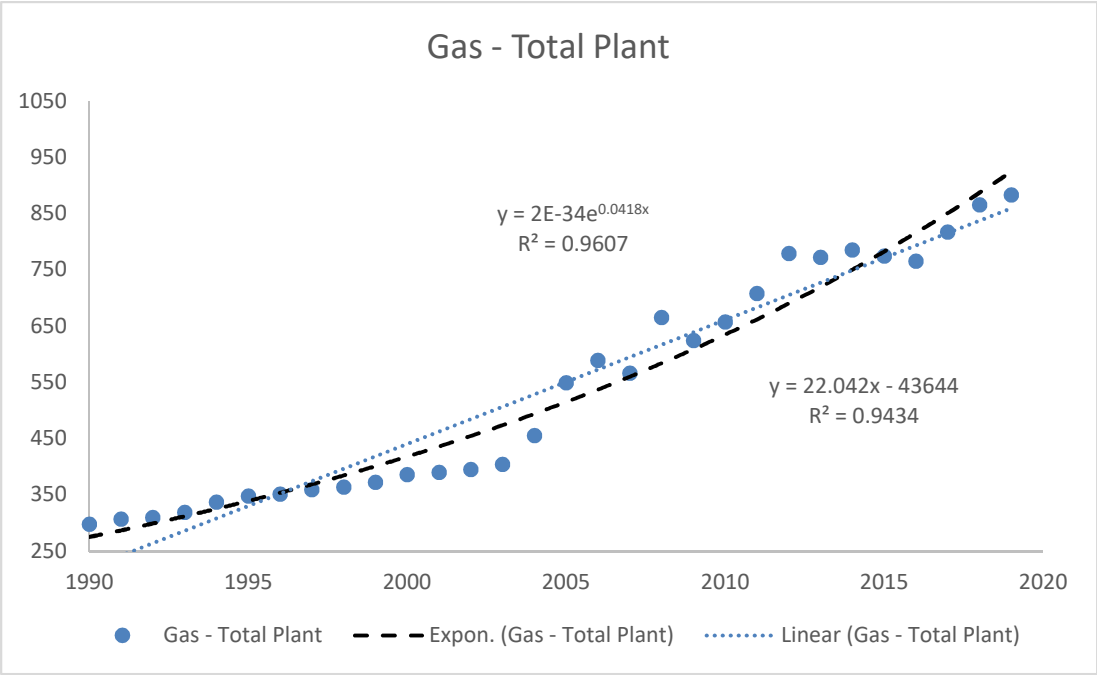


Figure 9



Q. Do you agree with Ms. Liu that using an exponential model overstates PSE's electric and gas plant growth?

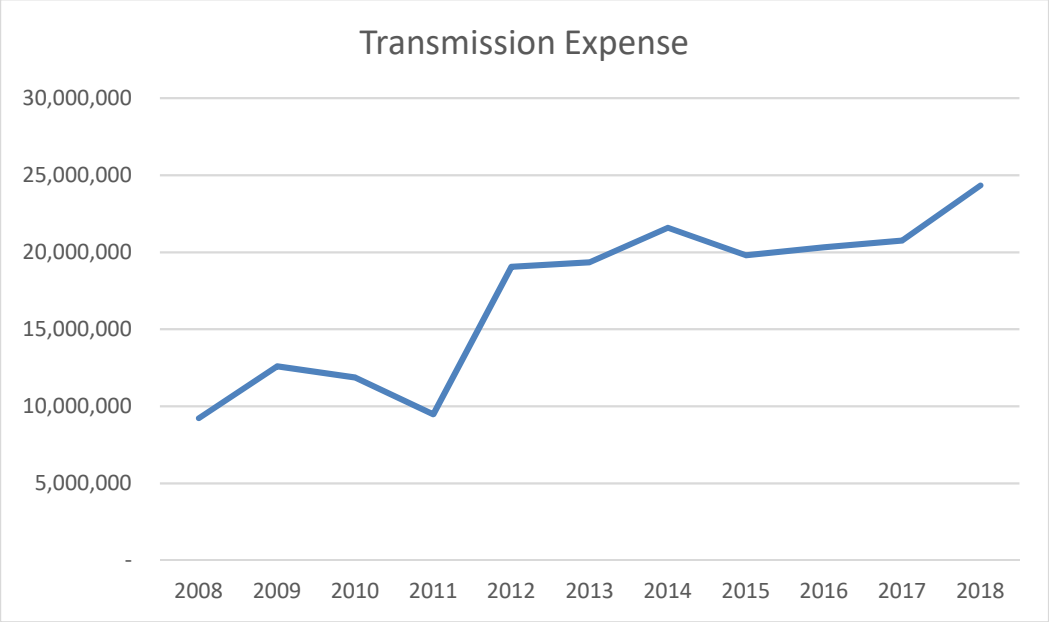
A. No. PSE witness Josh Kensok provides budget information that serves both to validate my attrition projections and the reliability of PSE's budgets.

Q. Do you agree with Ms. Liu that combining growth trends such as transmission and distribution expenses skews the results?

A. No, this assertion has no mathematical basis. The transmission and distribution expenses were combined in my PSE analysis to reflect the fact that PSE had a reclassification of some expenses in 2011-2012 timeframe. As shown in Figure 10, this caused a step increase in transmission expenses in 2012 and a corresponding step decrease in distribution expenses. Witness Liu ignored this

fact, and as a result, obtained poor regression results and settled on using a CAGR that understates the growth.

Figure 10



Q. What about Ms. Liu's changes to customer accounts and customer service expenses?

A. Again, there is no mathematical basis to this assertion. In any case, the resulting changes are relatively small and cancel each other out on electric and gas side, as shown in Table 4.

Table 4

ELECTRIC	Customer Account Expenses	Customer Service Expenses	Total Customer Expenses
Growth Rate	2.40%	6.56%	2.45%
Escalation Base	28,149,920	1,763,236	29,913,156
Projection	29,754,201	2,044,949	31,652,504
Difference			(146,647)

GAS			
Growth Rate	0.78%	2.32%	1.09%
Escalation Base	28,149,920	1,763,236	29,913,156
Projection	28,664,915	1,860,166	30,681,956
Difference			156,874

Q. Do you agree with Ms. Liu that other operating expenses do not exhibit consistent trend and therefore should not be trended?

A. Yes.

Q. Have you made any other corrections or changes to the attrition analysis?

A. Yes. I have changed references in workpaper 190529-30-PSE-WP-RJA-8-Attrition-Study-19GRC-01-2020.xlsx to the electric transmission and distribution plant growth rates to connect to the exponential regression growth rates. The previous references were incorrect. I have also made the correction to AMI accumulated deferred income taxes, as described in Exhibit RJA-10, the response to WUTC Staff Data Request No. 006. The reference error has no impact on the revenue deficiency.

V. CONCLUSION

Q. What should the Commission conclude related to PSE's attrition adjustment?

A. PSE's attrition study provides convincing evidence that the results of the modified historical test year proposed by the Commission Staff in this case produces insufficient revenues to cover PSE's costs in the rate year. PSE's attrition study's use of exponential growth curves, which reflects the growth in expenses and rate

base that will accelerate between the test year and the rate year, demonstrates that rate base growth is exponential and is validated by electric and gas utility investment data, authoritative utility industry cost indexes, and PSE's own capital budget information. PSE's attrition adjustment proposal is reasonable as an acceptable method of mitigating the adverse impacts of regulatory lag and the earnings attrition that it causes following the rate effective date in this case and should be approved by the Commission.

Q. Does this conclude your prefiled rebuttal testimony?

A. Yes.