EXH. RJA-1T
DOCKETS UE-___/UG-___
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-19____** **Docket UG-19____**

PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF

RONALD J. AMEN

ON BEHALF OF PUGET SOUND ENERGY

JUNE 20, 2019

PUGET SOUND ENERGY

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I. INTRODUCTION

Q. Please state your name, business address, and employer.

A. My name is Ronald J. Amen. My business address is 17806 NE 109th Court, Redmond, Washington 98052. I am employed by Black & Veatch Management Consulting, LLC ("Black & Veatch") as a Director and I am a member of the Advisory & Planning Practice within Black & Veatch.

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

A. I am appearing on behalf of Puget Sound Energy ("PSE").

Q. Have you prepared an exhibit describing your education, relevant employment experience, and other professional qualifications?

A. Yes. Please see the First Exhibit to the Prefiled Direct Testimony of Ronald J. Amen, Exh. RJA-2, for an exhibit describing my education, relevant employment experience, and other professional qualifications.

Q. Why did PSE retain Black & Veatch?

A. PSE retained Black & Veatch to assist with utility costing and rate design and related regulatory matters. Specifically, Black and Veatch has worked with PSE to develop the attrition analyses on which the attrition adjustments proposed in this case are based. My testimony presents and describes the attrition analyses. In addition, Black & Veatch conducted a cost of service study, used to determine the embedded costs of serving PSE's gas customers and provided rate design support. My Black & Veatch colleague, John D. Taylor, provides testimony supporting the cost of service study, the class revenue increase apportionment and proposed rate design for gas service.

Q. Please summarize your testimony.

A. My testimony presents the following:

1. PSE's electric attrition revenue deficiency, which is comprised of the fixed production, transmission, and delivery attrition evaluation. My attrition analysis presented in the Second Exhibit to the Prefiled Direct Testimony of Ronald J. Amen, Exh. RJA-3, supports an increase to electric base rates, exclusive of power costs, of $118.4 million.

2. PSE's gas attrition revenue deficiency consisting of the fixed production and delivery attrition evaluation. My attrition analysis presented in the Third Exhibit to the Prefiled Direct Testimony of Ronald J. Amen, Exh. RJA-4, supports an increase to gas base rates of $108.2 million.

3. The allocation study of PSE's natural gas capacity resource costs, consisting of U.S. interstate and Canadian provincial pipeline capacity resources and leased gas storage capacity resources, presented in the Fourth Exhibit to the Prefiled Direct Testimony of Ronald J. Amen, Exh. RJA-5. I will provide a recommendation as to the allocation of pipeline capacity and storage costs for use in PSE's Purchased Gas Adjustment ("PGA") filings.

II. WASHINGTON REGULATORY HISTORY REGARDING ATTRITION ANALYSIS FOR ELECTRIC AND NATURAL GAS OPERATIONS

Q. Why is PSE proposing an attrition adjustment in this case?

A. As more fully described in the Prefiled Direct Testimony of Daniel A. Doyle, Exh. DAD-1T, PSE is requesting an attrition adjustment in this proceeding to address the backward-looking, historical nature of traditional ratemaking, which contributes significantly to regulatory lag and attrition. Utility costs are increasing more rapidly than retail sales, the traditional means by which utilities were able to fund necessary incremental investment in utility infrastructure. Utilities such as PSE are actively modernizing and improving their delivery systems. Regulatory lag prevents timely cost recovery, resulting in consistent earnings attrition, which then impacts utility credit ratings and cost of capital. This trend in earnings attrition may then discourage on-going critical utility infrastructure investment.

Q. Are there other methodologies for addressing erosion of earnings that results from regulatory lag, other than an attrition adjustment?

A. Yes. In responding to the challenges associated with traditional ratemaking and the resulting regulatory lag, utilities and public utility commissions, including the WUTC, have pursued alternative regulatory approaches. These innovative techniques and methodologies include forward-looking and fully-forecasted test years; more liberal use of pro forma adjustments; authorizing interim rates, subject to refund; shortened rate case suspension periods;[1] including construction work in progress ("CWIP") in rate base;[2] accelerated transmission and distribution infrastructure replacement programs and cost trackers; revenue decoupling; multiyear rate plans; and rate stabilization or performance-based rate mechanisms ("PBR").

PBR is a comprehensive alternative form of regulation, which is based on strong performance incentives and a pre-set, long-term rate escalation. PBR aims to change how rates are set to streamline regulatory burdens and allow utilities more flexibility to innovate. When it works, the utility and its customers share benefits. PBR mechanisms often include a multiyear rate plan and performance-based, incentive mechanisms. The incentives reward the utility for performance while the multiyear rate plan includes an "attrition relief mechanism" as a key protection against the utility failing to perform and other unintended outcomes.[3]

In other words, the attrition relief provides sufficient revenue to cover a utility's costs and get a reasonable return on the money it invests, without which the utility would not be able to meet required performance levels, innovate to control costs, and operate efficiently. Multiyear rate plans are usually capped either in terms of rate levels or total revenues over a three- to five-year period. Common designs for multiyear rate plans consist of: (a) Multistep – predetermined increases in rates or

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1 Black & Veatch research indicates 26 state jurisdictions with suspension periods of 9 months or less.

2 Black & Veatch research indicates 34 state jurisdictions that authorize some form of CWIP in rate base, including those with certain limitations for special purpose uses.

3 Herman K. Trabish, *Can Performance-Based Regulation Unlock the Utility of the Future?*, Utility Dive (March 17, 2016), https://www.utilitydive.com/news/can-performance-based-regulation-unlock-the-utility-of-the-future/414651/

revenues based on cost forecasts; (b) Indexing – variable increases tied to an authoritative cost index;[4] and (c) Hybrids – indexing for operations and maintenance ("O&M") and stairsteps for capital expenditures. Additional provisions of multiyear rate plans may include cost trackers, earnings sharing mechanisms, and "off ramps" to allow for suspension of the plan in the event of unusually high or low earnings results.

Recent examples of innovative ratemaking approaches in Washington include PSE's multiyear rate plan that was in effect from July 1, 2013, through December 31, 2017; PSE's 2013 and 2018 expedited rate filings ("ERF"); PSE's Schedule 149, Cost Recovery Mechanism for Pipeline Replacement or "Gas CRM"; and PSE's electric and gas decoupling mechanisms. The Commission has also approved multiyear rate plans, attrition adjustments, and decoupling mechanisms for other investor owned utilities in Washington over the past decade.[5]

Q. Why has PSE elected to request an attrition adjustment in this case rather than another type of mechanism to address regulatory lag?

A. Over the past several years the Commission has more clearly defined its expectation as to how attrition adjustments may be used to address regulatory lag. Previously, PSE had not used this mechanism for several decades due to

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4 Example: U.S. Bureau of Labor Statistics, Producer Price Index by Industry: Electric Power Distribution.

5 *See, e.g., WUTC v. PacifiCorp,* Docket UE-152253, Order 12 (September 1, 2016) (authorizing decoupling mechanism and multiyear rate plan); *WUTC v. Avista Corp,* Dockets UE-120436/UG-120437, Order 09 (December 26, 2012) (authorizing multiyear rate plan).

uncertainty around Commission expectations for attrition adjustments. However, in several recent cases, the Commission and Commission Staff have provided helpful guidance on how an attrition adjustment can be used to address earnings erosion due to regulatory lag. With the increased clarity around this tool in the Commission's toolbox, PSE believes that under the circumstances presented in this case and at this point in time for PSE, an attrition adjustment is the appropriate tool to address regulatory lag.

Q. How does the Commission define attrition?

A. The Commission has stated that

> attrition occurs when the test-period relationship between rate base, expenses and revenues does not hold under conditions in the rate effective period, such that a utility's expenses or rate base grows more quickly than revenues, and a utility would likely have no reasonable opportunity to earn its allowed rate of return.[6]

Q. What has been the historical basis for the Commission's consideration of attrition?

A. Historically, the Commission stated that attrition adjustments are designed to address "vastly different" rates of growth in revenues, expenses and rate base.[7]

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6 *WUTC v. Avista*, Docket UE-150204/UG-150205, Order 05 ¶ 47 (January 6, 2016); *see also WUTC v. PSE*, Dockets UE-111048/UG-111049, Order 08 ¶ 490 (May 7, 2012) ("[T]he relationship between rate base, expenses and revenues is used to represent the future and to set prospective rates adequate to allow a reasonable return. Ratemaking rests on the key assumption that the test-period relationships will accurately represent relationships in the future. If this assumption fails, cost of service may increase more rapidly than revenues and the rates approved based on test period conditions may not be adequate to achieve the allowed level of return under future conditions.").

7 *See WUTC v. Avista*, Dockets UE-150204/UG-150205, Order 05 ¶ 50 (January 6, 2016).

Q. What are some of the specific historical bases for attrition adjustments?

A. Historically, bases for use of attrition adjustments included:

- Abnormal or excessive inflation;
- Severe challenges to the utility's financial integrity;
- An exceptionally large amount of production plant construction;
- Increasing expenses and decreasing sales;
- Higher cost of future securities issues; and
- The lack of a reasonable opportunity to earn its allowed rate of return.[8]

As the Commission has recognized, "it is clear that, historically, the two most common sources of earnings attrition in Washington are abnormal or excessive inflation, and exceptional and prolonged levels of plant additions."[9]

Q. Has the Commission provided recent direction on the use of attrition adjustments?

A. Yes. In a 2015 Avista general rate case, Dockets UE-150204 and UG-150205, the Commission issued Order 05, providing significantly updated guidance regarding the use of attrition adjustments. This order provides the most timely and relevant precedent by the Commission in its consideration and evaluation of proposed attrition adjustments, as well as other tools to address more broadly the challenges to earning authorized returns (e.g., use of pro-forma plant additions).

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[8] *See id.* ¶ 50, 62 (citing past Commission attrition orders).

[9] *Id.* ¶ 62.

Q. Wasn't that case struck down by the Washington Court of Appeals?

A. Yes. The Washington Court of Appeals struck down all portions of the attrition allowance attributable to Avista's rate base because the projections of future rate base were not "used and useful" for service in Washington, relying on RCW 80.04.250 and Washington case law interpreting the statute.[10] However, since that time the legislature has amended RCW 80.04.250 "to ensure that the Commission has sufficient flexible authority to determine the value of utility property for rate making purposes."[11] With the amendment to RCW 80.04.250, the Court of Appeals's concerns that an attrition adjustment violates the used and useful statute has been addressed and corrected. This change in the law allows for the use of attrition adjustments that project rate base balances into the rate year without violating RCW 80.04.250.

Q. Please explain the amendment to the statute.

A. The amended statute allows the Commission to "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*…."[12] The legislature broadened the time period applicable to the used and useful rule from "the time

10 *Wash. Attorney General's Office, Public Counsel Unit v. WUTC*, 4 Wn. App. 2d 657, 877-78 (Aug. 7, 2018) (relying on Washington Supreme Court's interpretation of RCW 80.04.250 in *People's Organization for Washington Energy Resources v. WUTC,* 104 Wn. 2d 798, 815 (1985)).

11 Laws of 2019, ch. 288, § 20(1).

12 *Id.* §20(2) (emphasis added).

the inquiry as to rates is made,"[13] which was used by the courts, to "by or during the rate effective period."[14] Finally, the amended statue makes clear that "[n]othing in this section limits the commission's authority to consider and implement performance and incentive-based regulation, multiyear rate plans, and other flexible regulatory mechanisms."[15] An attrition adjustment is a flexible regulatory mechanism that the amended statute makes clear the Commission has authority to consider and implement. With these changes to the law, the Commission can consider and approve an attrition adjustment that is based on increased levels of plant that will be in service during the rate year.

Q. Given the Court of Appeals decision and the new legislation, does the Commission's decision in Dockets UE-150204 and UG-150205 still provide good guidance on attrition adjustments?

A. Yes. The Commission's decision in that case provides the most definitive discussion of what the Commission expects to see when a utility proposes an attrition adjustment, and the Commission's guidance is consistent with the recent amendment of RCW 80.04.250.

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13 Washington Attorney General's Office, Public Counsel Unit v. WUTC, 4 Wn. App. 2d 657, 684 (Aug. 7, 2018) (citing People's Organization for Washington Energy Resources v. WUTC, 104 Wn.2d 798, 815 (1985)).

14 Laws of 2019, ch. 288, § 20(2). The amended statute also provides that "[t]he valuation may include consideration of any property of public service company acquired or constructed by or during the rate effective period, including the reasonable costs of construction work in progress, to the extent that the commission finds that such an inclusion is in the public interest and will yield fair, just, reasonable, and sufficient rates." *Id.* § 20(3).

15 *Id.* § 20(6).

Q. What was the primary issue for resolution in Dockets UE-150204 and UG-150205?

A. The primary issue in this case was Avista's position that attrition had been eroding earnings for both its electric and gas operations. Avista had been making significant replacements and improvements to its gas infrastructure, with much of these improvements being driven by compliance obligations, safety and reliability needs and Commission orders.[16]

Q. In Dockets UE-150204 and UG-150205, what were the primary issues the Commission needed to resolve concerning attrition?

A. The primary issues regarding attrition to be resolved in that case were:

1. The appropriate criteria for determining whether an attrition adjustment is warranted;
2. The appropriate methodology for an attrition study; and
3. Whether Avista has met its burden of proof to justify granting an attrition adjustment for both electric and gas rates.[17]

Q. In Dockets UE-150204 and UG-150205, what were the primary factors in the Commission's decision to authorize an attrition adjustment for Avista's gas operations?

A. The Commission stated that Avista

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16 *WUTC v. Avista,* Dockets UE-150204/UG-150205, Order 05 ¶ 67 (January 6, 2016).

17 *Id.* ¶ 108.

> had reasonably demonstrated that it is making significant investments in non-revenue generating plant for the purposes of safety and reliability, to comply with explicit regulatory requirements and in accordance with prior Commission orders.[18]

The Commission also supported proactive efforts to replacing failing infrastructure, stating, "it is in the public interest for all gas companies to take a proactive approach to replacing pipe that presents an elevated risk of failure."[19] The Commission concluded, "We accept that Avista has established that the need for its capital investments in natural gas operations are beyond its control"[20] and that Avista had been under-earning on its gas operations for several years while "engaging in rapid replacement and improvement of its gas distribution infrastructure."[21]

Q. In Dockets UE-150204 and UG-150205, what were the primary factors in the Commission's consideration of whether to authorize an attrition adjustment for Avista's electric operations?

A. The Commission found the evidence "mixed" with respect to the need for an attrition adjustment on the electric side.[22] The Commission noted that

> [t]he record contains some, but not complete, evidence as to what degree the Company's electric system as a whole, or in part, is unsafe or unreliable, and whether distribution capital spending is driven by, or at least guided by, a specific plan to address the

[18] *Id.* ¶ 121.

[19] Id. (quoting In re Replacing Pipeline Facilities with an Elevated Risk of Failure, Docket No. UG-120715, ¶ 37 (Dec. 31, 2012)).

[20] Id.

[21] *Id.* ¶ 124.

[22] See id. ¶ 125.

> safety or reliability shortcomings of the Company's electric service.[23]

Given these observations, the Commission stated,

> Where, as in this case, there is some, but not complete, evidence to demonstrate that the circumstances driving attrition are outside of the Company's control, the Commission retains broad discretion to consider other factors, such as the Company's intent to file another rate case within the next year, and the analysis under *Hope*, *Bluefield*, and *Permian Basin*. We believe we can exercise broad discretion to consider such seminal cases using our informed judgment in deciding whether or not an attrition adjustment is warranted given the specific facts and circumstances in a rate case.[24]

The Commission expressed concern regarding Avista's opportunity to earn its authorized return in the rate year, stating that

> while the record shows that Avista's electric operations are currently financially healthy and the Company has actually earned near or above authorized levels for its Washington electric operations for the past two years, we are concerned this may not hold in the rate year or beyond. Absent an attrition adjustment, we are concerned that the Company may not have an opportunity to achieve earnings on electric operations at or near authorized levels.[25]

The Commission concluded, "Thus, after considering the evidence in this case, as well as our public interest obligations and the 'end-result' test cited above, we grant an attrition adjustment in electric operations in this case."[26]

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[23] *Id.* ¶ 127.

[24] *Id.* ¶ 129.

[25] *Id.* ¶ 131.

[26] *Id.* ¶ 135.

Q. In Dockets UE-150204 and UG-150205, did the Commission limit the use of an attrition adjustment to extraordinary circumstances?

A. No. In fact, in Dockets UE-150204 and UG-150205, the Commission found that "extraordinary circumstances" such as high inflation and extraordinary levels of investment in production plant that justified the use of attrition adjustments in the past were not present in that case.[27] However, the Commission reiterated its view that "it is not necessary to require a finding of extraordinary circumstances to justify granting an attrition adjustment. An attrition adjustment is yet another tool in our regulatory 'toolbox' for utility ratemaking."[28]

Q. What were the circumstances justifying an attrition adjustment in that case?

A. The Commission noted that the driver for an attrition adjustment was Avista's "increased capital investments in non-revenue generating plant (primarily on the distribution system) in an environment of low load growth."[29] The Commission stated "we do not believe that these circumstances are extraordinary. In fact, we believe that these circumstances represent the 'new normal.'"[30]

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27 *See id.* ¶ 109.

28 *Id.* ¶ 110.

29 *Id.* ¶ 109.

30 Id.

Q. Did the Commission provide any other guidance with respect to the use of an attrition adjustment?

A. Yes. While the Commission no longer requires a showing of extreme financial distress or extraordinary circumstances, it did require that utilities requesting an attrition adjustment demonstrate the cause of the mismatch between revenues, rate base and expenses is not within the utility's control. "Without such a standard, a utility could plan for a level of expenditures that would exceed revenues and rate base recovery, creating the need for an attrition adjustment."[31]

Q. What factors does the Commission consider when determining if there is a mismatch between revenues, rate base and expenses and whether this mismatch is beyond the utility's control?

A. There are several factors that can be gleaned from the Commission's Order 05 in Dockets UE-150204 and UG-150205 in terms of whether there is a mismatch between revenues, rate base and expenses and whether this mismatch is due to factors beyond the utility's control. Some of these are listed below:

- Whether the company is making investments in non-revenue generating plant for the purposes of safety and reliability or service quality benefits, to comply with explicit regulatory requirements and in accordance with Commission orders;[32]

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[31] *Id.* ¶ 110.

[32] *Id.* ¶¶ 121, 127.

- Whether the company's spending reflects a proactive approach to replace plant that presents an elevated risk of failure and replacement, which is in the public interest;[33]

- Whether the company has been under-earning for several years while engaging in rapid replacement and improvement of infrastructure;[34]

- If the company is currently financially healthy, whether there is a risk that absent attrition, the company may not have an opportunity to achieve earnings at or near authorized levels;[35]

- Whether capital spending is guided by a specific plan to address the safety or reliability shortcomings of the company's electric service;[36]

- Whether there is an explanation of the relationship between the business cases, asset management program and total net plant investment, including detailed description of how the company prioritizes its capital investments in distribution plant, or performance criteria to track the need or impacts of those investments;[37] and

- Whether the company plans and prioritizes investments in its distribution system and how these decisions impact system reliability and economy.[38]

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33 *Id.* ¶ 121.
34 *Id.* ¶ 124.
35 *Id.* ¶ 131.
36 *Id.* ¶ 127.
37 *Id.* ¶ 126.
38 *Id.* ¶ 141.

Q. What did the Commission find as the appropriate methodology for an attrition study in its Final Order in Dockets UE-150204 and UG-150205?

A. The Commission found Staff's approach to an attrition study, as adjusted and corrected by Avista

> provide[d] the most appropriate methodology in this docket for supporting an attrition adjustment. Because an attrition study is an additional tool to use in conjunction with a modified historical test year, the appropriate methodology begins with development of a modified historical test year with pro forma plant additions, even subsequent to a test year. An attrition study is based on resulting projected earnings and revenue requirements, and the attrition adjustment is added only if the study shows a mismatch of earnings and expenditures.[39]

Q. Please summarize the Commission's guidance regarding attrition and the use of attrition adjustments.

A. Attrition occurs when a utility's costs grow at a faster rate than the utility's revenues, thus eroding the regulated utility's opportunity to achieve a reasonable rate of return. It occurs when the relationships between costs, revenues and rate base established in a historical test year do not hold through the rate-effective period and result in a mismatch between revenues, expenses, and capital investment. While historically attrition was often due to inflation or an exceptionally large amount of production plant construction, the Commission has recognized that we have entered into a "new normal" in which utilities are making increased capital investments in non-revenue generating distribution plant in an environment of low load growth, which is causing attrition.

39 *Id.* ¶ 111.

An attrition adjustment is one of the many tools in the Commission's regulatory toolbox to address regulatory lag and earnings attrition. The Commission no longer requires a showing of extraordinary circumstances or extreme financial distress to justify granting an attrition adjustment. However, the Commission does expect to see that the utility has been underearning, or that absent an attrition adjustment, the company may not have an opportunity to achieve earnings at or near authorized levels. Further, the Commission requires a company seeking an attrition adjustment to demonstrate that the cause of the mismatch between revenues, rate base and expenses is not within the utility's control—that the need to invest in non-revenue generating plant, and particularly distribution plant, is so necessary and immediate as to be beyond its control. To do so, utilities must demonstrate the need for such investments and the benefit to customers of the increased level of capital investments, beyond its expected revenues. Utilities can show, for example, that they are making investments in non-revenue generating plant for the purposes of safety and reliability or service quality benefits, to comply with explicit regulatory requirements and in accordance with Commission orders. They can also show that that capital spending is guided by a particular plan to improve safety and reliability.

III. PSE'S EVIDENCE IN THIS CASE IS CONSISTENT WITH THE COMMISSION'S GUIDANCE AND NEW LEGISLATION

Q. Does PSE's filing comply with the guidance provided by the Commission with respect to its request for an attrition adjustment?

A. Yes. The Prefiled Direct Testimony of Daniel A. Doyle, Exh. DAD-1T, demonstrates that PSE is unlikely to earn its authorized rate of return absent an attrition adjustment in this case. He also testifies that, looking back at PSE's financial performance over the past several years, without the benefit of the 2013 Expedited Rate Filing and the rate plan increases (K-factor) from 2014 through 2017, PSE would have substantially under-earned against its allowed rate of return and return on equity on both an actual and normalized basis for both electric and gas operations. Neither the 2013 Expedited Rate Filing nor the K-factor increases would have been sufficient on its own or in combination to consistently close the return gap created by regulatory lag and attrition under traditional general ratemaking. Mr. Doyle further testifies about the process for prioritizing capital spending across the company, and some of the drivers of attrition.

Q. Has PSE provided evidence demonstrating that the pace of its spending is beyond PSE's control consistent with factors identified by the Commission?

A. Yes. There is significant evidence in this case demonstrating that the pace of spending is beyond PSE's control. I will highlight a few examples. The Prefiled Direct Testimony of Booga K. Gilbertson, Exh. BKG-1T, discusses the categories of the electric and natural gas operations work PSE has been undertaking and will continue to undertake during the rate year. As Ms. Gilbertson testifies, this work is generally non-discretionary. It is required in response to public improvement projects, public and customer safety, and customer growth. The reliability work and gas pipeline safety work responds to federal and state requirements for the safety and integrity of the bulk electric system and the gas delivery system. PSE is spending at a level that allows it to maintain and improve its reliability in areas where PSE's performance has lagged, including addressing the number and duration of outages. Additionally, PSE is spending to replace obsolete systems, as in the case of installation of the Advanced Metering Infrastructure ("AMI") network and meters to replace the Automated Meter Reading ("AMR") system that is nearing the end of its useful life. Ms. Gilbertson describes the benefits to customers that result from PSE's operations work and the process for planning and prioritizing the work across the system infrastructure portfolio. The Prefiled Direct Testimony of Catherine A. Koch, Exh. CAK-1T and the accompanying exhibits provide a detailed, granular explanation of the need for PSE's delivery system spending and the AMI system. Ms. Koch addresses the benefits to customers that result from these investments.

Additionally, the Prefiled Direct Testimony of Margaret F. Hopkins, Exh. MFH-1T, addresses information technology ("IT") expenditures—how they benefit customers and provide for the security of PSE's data systems. These tend to be short-lived assets, which exacerbate the detrimental effects of regulatory lag for PSE. She testifies that PSE's IT investment strategy aims to provide cost effective secure technology solutions that improve grid and gas reliability, meet evolving customer expectations, enable clean energy solutions that must be undertaken pursuant to the recently enacted Washington Clean Energy Transformation Act, and support key business objectives. The Prefiled Direct Testimony of Joshua J. Jacobs, Exh. JJJ-1T, further addresses the Get to Zero ("GTZ") initiative and how the several projects included in GTZ are transforming the customer experience and responding to customer expectations for digital, flexible, self-service options for interacting with PSE.

Q. Does the attrition study presented in PSE's case comply with the methodology accepted by the Commission in Dockets UE-150204 and UG-150205?

A. Yes. In this case, PSE began with a modified historical test year with pro forma plant additions, as discussed in the Prefiled Direct Testimony of Susan E. Free, Exh. SEF-1T. The attrition study PSE proposes, discussed in more detail later in my testimony, is based on resulting projected earnings and revenue requirements, and demonstrates a mismatch of earnings and expenditures.

Q. Have you developed the attrition adjustment in this case in a manner that complies with RCW 80.04.250 as recently amended?

A. Yes. First, it should be noted that O&M expense is not addressed under RCW 80.04.250 and the used and useful rule does not apply to it, as the

Washington courts have determined.[40] Accordingly, the trending and projection of O&M expense included in the attrition adjustment is not prohibited by RCW 80.04.250. Second, the attrition adjustment I developed looks at plant expected to go into service during the rate effective period. Therefore, it falls within the parameters of the amended statute. Finally, it is my view that an attrition adjustment falls within the definition of a flexible regulatory mechanism, which the amended statute expressly gives the Commission authority to use.[41]

Q. Does PSE intend to update the Commission on new plant placed in service up to and during the rate effective period?

A. Yes. PSE proposes to file an update to plant in service in the major functional categories, similar to the presentation in the attrition analyses. This update will be filed on a semi-annual basis. This will allow the Commission and stakeholders to compare the actual plant placed in service during the rate year to the projected rate year plant on which the attrition adjustment is based and to confirm that PSE has put into service plant that is used and useful during the rate effective period commensurate with the level of plant projected for the rate year in the attrition adjustment.

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[40] People's Organization for Washington Energy Resources v. WUTC, 104 Wn.2d 798, 815 (1985); Washington Attorney General's Office, Public Counsel Unit v. WUTC, 4 Wn. App. 2d 657, 687 (Aug. 7, 2018) (stating that RCW 80.04.250 "is purely a rate base statute and does not apply to operating expenses").

[41] Laws of 2019, ch. 288, § 20(6) ("Nothing in this section limits the commission's authority to consider and implement performance and incentive-based regulation, multiyear rate plans, and other flexible regulatory mechanisms.").

Q. How will the appropriateness and cost of this new plant be addressed?

A. PSE has provided detailed explanations of the various programmatic spending it is undertaking now and will undertake during the course of the rate year and is asking in this case for the Commission to approve the appropriateness of this programmatic spending. The investments that will go into service during the rate year are generally continuations of the programmatic spending undertaken in the test year and discussed in the case. These include such things as ongoing replacement of high molecular weight cables that are failing, remediation on the worst performing circuits, and other reliability work described in the Prefiled Direct Testimony of Catherine A. Koch, Exh. CAK-1T. Additionally, PSE is requesting that the Commission approve its AMI program and the projects comprising its GTZ initiative in this case. These projects make up a significant portion of the plant that will go into service during the rate year. To the extent further review of the actual costs is needed, the Commission can undertake that review when PSE files its rate year plant in service list, or in PSE's subsequent rate case.

IV. ATTRITION ANALYSIS FOR ELECTRIC AND NATURAL GAS OPERATIONS

Q. Have you prepared exhibits that demonstrate the development of your attrition analysis for PSE's electric and natural gas operations?

A. Yes. Summaries of the attrition analysis for PSE's electric and natural gas operations are presented in Exh. RJA-3 and Exh. RJA-4, respectively.

Q. What data sources did you use for the attrition analysis?

A. The following four data sources were used for the attrition studies:

1. **PSE's 2008-2018 Commission Basis Reports ("CBRs"):** The CBRs served as a starting point for calculating growth factors. I made a visual inspection of the 11 years of data. Where the data showed a valid trend, I used 10 years of data points; the first year (2008) is the starting point or year zero (0) in the regression equation described later in my testimony. However, if there was a step change or a clear change of trend in the data, I settled on a shorter period, which reflects recent trends most accurately.

2. **PSE's historical period plant accounts:** I used the plant accounts to identify and remove specific rate base items that should be outside PSE's historical trend and cannot be properly estimated through a trend-based analysis.

3. **Revenue Projections:** PSE produces a detailed revenue forecast for each rate-class, which I used in the attrition analysis. The revenue projections are discussed in the Prefiled Direct Testimony of Jon A. Piliaris, Exh. JAP-1T. Exh. JAP-16 presents the derivation of projected electric rate year revenue in the attrition analysis, and Exh. JAP-17 presents the derivation of projected gas rate year revenue in the attrition analysis.

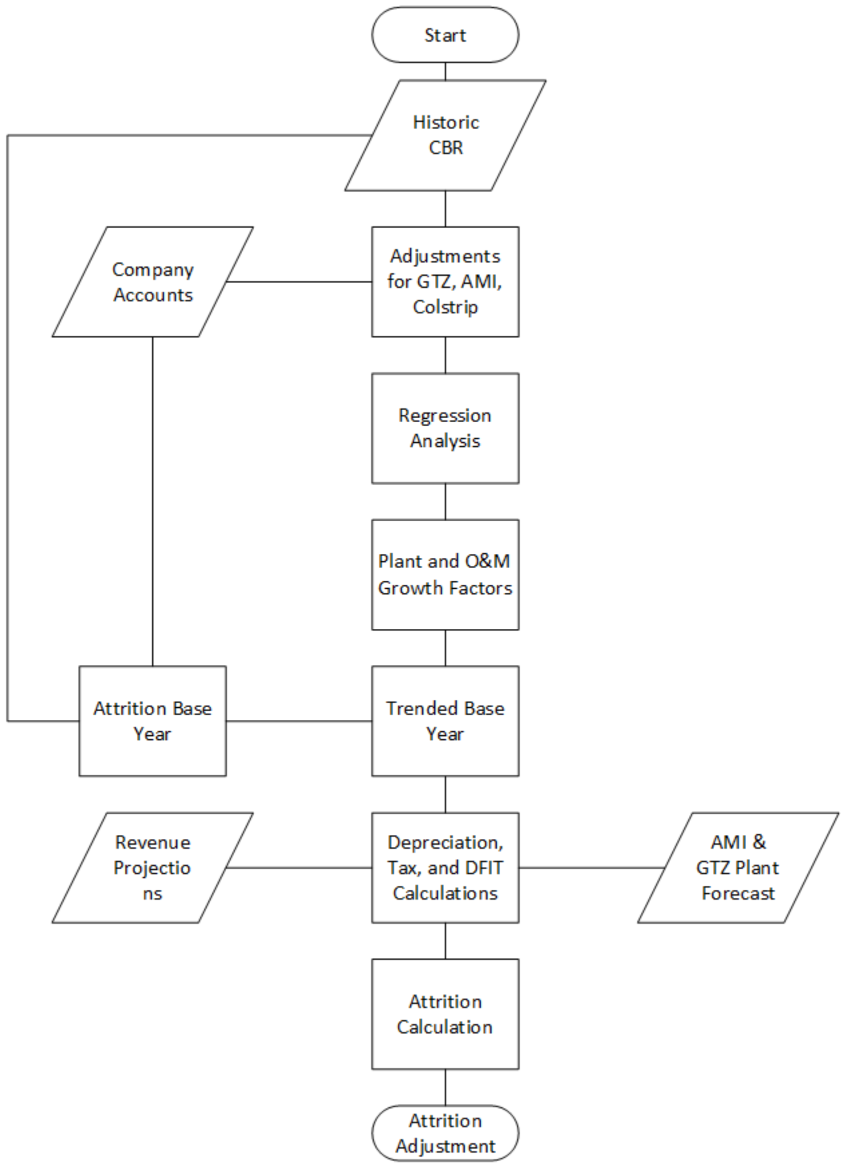
4. **Capital Projections:** I used PSE's rate-year capital projections for rate base items not included in the trend analysis.

In addition, I relied upon the following information provided in the Prefiled Direct Testimony of Matthew R. Marcelia, Exh. MRM-1T: the major components of rate year rate base (including gross plant, accumulated depreciation, and deferred tax liability), depreciation expense, and income tax expense.

Q. Please describe the methodology you used in the attrition study.

A. The flow diagram below shows the methodology employed in the attrition study.

Figure 1 Attrition Study Methodology



PSE's latest eleven (2008 through 2018) CBRs 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, all of which were handled separately from the regression analysis. I will discuss these adjustments in detail further in my testimony.

The adjusted data were run through a series of regression analyses to calculate growth factors for other operating revenues, 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 Mr. Marcelia that projects the major components of rate year rate base, depreciation and taxes. The development of the attrition base amounts is discussed in detail in the Prefiled Direct Testimony of Susan E. Free, Exh. SEF-1T and accompanying Exh. SEF-9. As noted above, I also imported PSE's rate-year revenue projections and capital projections for AMI and GTZ.

The rate year projections were then run through 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 left the rate year amounts at the same level as in the test year to preclude its impact on the trending analysis. Finally, the rate year amounts used for Colstrip were developed and are discussed in the Prefiled Direct Testimony of Susan E. Free, Exh. SEF-1T.

Based on the foregoing calculations, I was able to determine the difference between expected revenues at current rates and revenue required at projected rate base and expenses. This 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, as discussed in Exh. JAP-1T.

Q. Is this methodology consistent with the one approved by the Commission in the Avista Dockets UE-150204 and UG-150205 discussed earlier?

A. Not exactly. Avista again filed for an attrition adjustment in Dockets UE-160228 and UG-160229. While an attrition adjustment was ultimately not approved for Avista in that case, the Commission expressed support for the updated analysis put forth by Commission Staff.[42] The analysis presented as part of my testimony begins with the general approach taken by Staff in this more recent Avista docket and makes adjustments appropriate for PSE's present circumstances.

Q. Please describe the adjustments to PSE's CBRs.

A. I made three adjustments to PSE's CBRs. Each of these are further explained in the Prefiled Direct Testimony of Matthew R. Marcelia, Exh. MRM-1T.

1. Colstrip: Depreciation expense was removed related to Colstrip. In PSE's 2017 General Rate Case, depreciation of Colstrip was accelerated. Similarly, in this case, PSE is proposing to further accelerate the depreciation for this generating plant. As a result, this expense distorts the historical trend. To address this in the historical trending data, the 2018 CBR was adjusted to remove the incremental Colstrip depreciation expense in 2018 that resulted

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[42] *WUTC v. Avista,* Dockets UE-160228/UG-160229, Order 06 ¶ 75 n.141 (Dec. 15, 2016).

from implementation of the new Colstrip depreciation rates. The plant, accumulated depreciation, DFIT and depreciation expense for Colstrip were calculated outside the trend analysis and added to the attrition calculation.

2. AMI: Due to the magnitude and schedule of the investment, including AMI in the trend analysis would distort the results. The projected plant balance, accumulated depreciation, DFIT and depreciation expense were calculated outside the trend analysis and added to the attrition calculation.

3. GTZ: As with AMI, GTZ is a large investment and outside PSE's historical trend. Hence, the projected plant balance, accumulated depreciation, DFIT and depreciation expense were calculated outside the trend analysis and added to the attrition calculation.

Q. Please explain how you calculated the growth factors.

A. The following regression equation was used to calculate growth rates based on the historical eleven years of adjusted CBR data, which yielded a maximum of 10 data points.

$$\ln(y_n/y_0) = \ln(1+r)*n + E$$

Where,

n = independent variable - year
y_0 = dependent variable (plant or O&M) in year zero
y_n = dependent variable (plant or O&M) value in year n
r = growth factor
E = regression error

Solving this regression problem, I was able to estimate ln(1+r). I then computed the growth rate, r.

Q. Is this methodology different from one used by Commission Staff in Dockets UE-160228 and UG-160229?

A. Yes. In UE-160228 and UG-160229, the Commission Staff used the following regression equation.

$$y_n = a + b*n$$

Where,

n = independent variable – year
y_n = dependent variable (plant or O&M) value in year n

Staff then calculated the growth factor as b/y_n.

Q. Why did you choose a different regression equation?

A. The regression equation used in previous dockets does not represent a true growth formula. This equation tries to fit a straight line into an exponential curve. It is an approximation that may yield results that are close enough over short periods but fall apart over a longer term. This can be demonstrated with a simple illustration.

History/ Projection	Year	y0	Actual Projection	Fitted Value	Regression Forecast	Difference
(a)	(b)	(c)	(d)	(e)	(f)	(g)
History	0	100.0		99.26		-0.7%
History	1	103.0		102.69		-0.3%
History	2	106.1		106.13		0.0%
History	3	109.3		109.56		0.3%
History	4	112.6		113.00		0.4%
History	5	115.9		116.43		0.4%
History	6	119.4		119.87		0.4%
History	7	123.0		123.31		0.3%
History	8	126.7		126.74		0.1%
History	9	130.5		130.18		-0.2%
History	10	134.4		133.61		-0.6%
Projection	11		138.4		137.8	-0.4%
Projection	12		142.6		141.4	-0.9%
Projection	13		146.9		145.0	-1.3%
Intercept		99.3				
Slope		3.44				
Growth Rate		2.56%				

The table above describes an independent variable, y, that grows 3 percent year-on-year (column (c)). In this case, using the previous linear regression equation results in a growth rate estimate of 2.56 percent instead of 3.0 percent (column (e)). As a result, the difference between the actual projection and the regression forecast increases year-on-year (column (g)). A similar difference can be observed in fitted values and historic values.

Using my logarithmic regression equation solves these problems.

Q. How did you calculate rate year rate base?

A. The gross plant, accumulated depreciation and deferred tax liability ("DTL") components of rate base were calculated within the tax module of the attrition model. Exh. MRM-1T provides a detailed explanation of these calculations. To summarize, the plant growth factors calculated in the attrition model were used to project end of period ("EOP") gross plant. The plant balances were then converted to an average of the monthly averages ("AMA") basis. The plant growth factors were also used to calculate incremental depreciation expense, which allowed for calculation of accumulated depreciation, and the DTL.

In addition, non-plant DTL, deferred debits, allowances for working capital and other rate base items were left unchanged from the attrition base amounts presented in Exh. SEF-9. These components are volatile, making them difficult to forecast, but otherwise have a small impact on the attrition results.

Q. How did you calculate rate year depreciation, amortization and income tax expenses?

A. The calculations in the tax module allowed me to import depreciation, amortization and income tax expenses from the tax module to the attrition study. Again, these calculations are discussed in greater detail in Exh. MRM-1T.

V. ATTRITION ANALYSIS RESULTS

Q. Please describe the results of the attrition analysis.

A. The attrition analysis presented in Exh. RJA-3 supports an increase to electric base rates, exclusive of power costs, of $118.4 million. The attrition analysis presented in Exh. RJA-4 supports an increase to gas base rates of $108.2 million. Exh. SEF-3E, page 4, and Exh. SEF-3G, page 4, provide the resulting amounts for use in determining the attrition revenue shortfalls. For electric, the shortfall is $44.5 million, and for natural gas, the shortfall is $22.1 million.

Q. Is this attrition shortfall the same as the revenue increase requested by PSE?

A. No. As explained in the Prefiled Direct Testimony of John A. Piliaris, Exh. JAP-1T, PSE is limiting the amount of its requested increases to 6.9 percent for electric and 7.9 percent for natural gas.

VI. RECOMMENDED ALLOCATION OF GAS RESOURCE DEMAND COSTS

Q. What is the purpose of this section of your testimony?

A. This section of my testimony describes the manner in which PSE plans for and utilizes the gas pipeline transportation and storage capacity that is needed to serve its natural gas customers. I will provide a recommendation as to the allocation of pipeline capacity and storage costs for use in PSE's PGA filings.

Q. Please describe what drives PSE's decisions regarding the use of pipeline capacity.

A. Most of PSE's natural gas sales customers are firm customers as opposed to interruptible customers. Firm customers expect to receive gas at all times, particularly during extremely cold weather. Demand for natural gas from PSE's firm customers is at its highest during cold weather. However, the cold weather increases the demand of other interstate pipeline customers, thus reducing the availability of contracted but unused pipeline capacity.

Given PSE's obligation to serve its firm customers, it is the expected customer demand, and in particular the shape of that demand, that drives PSE to plan for and use pipeline capacity. As more fully described in PSE's 2017 Integrated Resource Plan, PSE seeks the least-cost mix of available resources that can meet its design-day peak standard. Often, due to lack of additional storage or other peaking resources, the only available incremental resource to ensure PSE's ability to meet its design day standard is year-round pipeline capacity, which PSE has under contract with Williams Northwest Pipeline, Gas Transmission Northwest, Nova Gas Transmission Pipeline, and Foothills Pipeline.

Q. How does PSE determine its use of pipeline capacity?

A. The process for determining the need for pipeline capacity can be summarized in the six-step process described below. The six steps reflect a logical progression in identifying why and when capacity is needed, and thus give guidance as to how to allocate the related costs.

Q. Please identify the steps and how they can guide pipeline capacity resource cost allocation.

A. **<u>Step 1</u>**: One must consider the average summer demand or sales volume level. This must be served by flowing gas supply using year-round pipeline capacity because, other than for load balancing, storage and peaking resources are not available in the summer. PSE's normalized average daily sales volume in the summer months during the 12 months ended December 2018 was approximately 153,097 dekatherms per day ("Dth/day"). Thus, average summer sales volumes require pipeline capacity of 153,097 Dth/day. Since this capacity is only available on a year-round basis and will be used to serve winter sales volumes as well (Step 2), it is reasonable to allocate the cost of this capacity to annual sales volumes.

<u>Step 2</u>: In order to have sufficient volumes in storage to serve the winter sales volumes, storage injections must be made using flowing gas and year-round pipeline capacity. Average summer injection requirements for Jackson Prairie and Clay Basin are 73,790 Dth/day. PSE could schedule its injection requirements around its customer requirements and operate all summer long with 73,790 Dth/day of pipeline capacity. Because this capacity is needed specifically to fill storage, which is in turn used to serve winter sales volumes, it is reasonable to allocate the costs of this capacity to winter sales volumes. This capacity is also available to flow additional gas to serve winter sales volumes after the summer injection period (Step 3).

Step 3: Before determining the need for additional pipeline capacity to serve winter demand, PSE considers the average availability of storage withdrawals from Jackson Prairie that use Williams Northwest Pipeline TF-2 transportation capacity and thus do not require the use of year-round pipeline capacity. Average daily winter withdrawals from Jackson Prairie storage average approximately 49,519 Dth/day. The TF-2 capacity utilized by Jackson Prairie withdrawals would reasonably be allocated partially to winter sales volumes, design peak volumes and of course, system load balancing.

Step 4: Winter average daily sales volumes are 419,292 Dth/day. These requirements are met with the capacity acquired in Steps 1, 2 and 3, thus leaving an average winter sales demand of 142,885 Dth/day (419,292 minus 49,519 minus 73,790 minus 153,097) to be fulfilled with additional year-round pipeline capacity. It is reasonable to allocate the costs of this capacity to winter sales volumes.

Step 5: PSE considers its design peak sales requirement and the deliverability of all of its storage and peaking resources that have not already been considered in use on the average winter day. PSE's estimated design peak requirement for the 12 months ended December 2018 was approximately 1,013,108 Dth/day. PSE's peaking and storage resources provide, at maximum deliverability, a total of 468,057Dth/day (447,057 from Jackson Prairie and 21,000 from a delivered product peaking contract). However, PSE has already relied on 49,519 Dth/day from Jackson Prairie on an average winter day in Step 3, thus incremental storage and peaking provide a resource of 418,538 Dth/day (468,057 minus 49,519). It is reasonable that the costs of the various resources that provide this incremental deliverability should be allocated based on their use to serve the design peak requirements of the system.

Step 6: The design peak demand is not yet met, and no additional gas storage or peaking resources are available in a cost-effective manner. PSE thus must use additional year-round pipeline capacity of 173,100 Dth/day (1,010,929 minus 226,887 minus 142,885 minus 447,057 minus 21,000) to make up the shortfall. Because this last increment of pipeline capacity is required only to serve the design peak day requirements of the customer demand, it is reasonable to allocate the cost of this capacity based on the contribution of various customer classes to design peak day demand. Exh. RJA-5, pages 2 and 3, illustrates the six steps described above in both tabular and graphical format, respectively.

Q. What is your overall recommendation as to the allocation of year-round pipeline capacity, storage, peaking and redelivery capacity costs?

A. As summarized in the table on page 2 of Exh. RJA-5, showing the six-step process, I recommend that year-round pipeline capacity costs should be allocated within the PGA as 28.2 percent to annual sales volumes, 39.9 percent to winter sales volumes and 31.9 percent to design peak volumes. I recommend that the 79 percent of Jackson Prairie and its related pipeline capacity that is not allocated to system balancing be allocated in the PGA as follows: 11.1 percent to winter sales and 67.9 percent to design peak day.

Q. What are the resulting unit demand cost rates for the various sales service classes in the PGA?

A. The computations to determine the class-by-class unit demand cost rates that result from the foregoing allocation of pipeline, storage and peaking capacity are shown on page 1 of Exh. RJA-5. The capacity costs are first allocated to sales customers within each customer class based on their respective annual, winter, and design day peak volumes and then converted to a unit-of-sales basis by class for use in PSE's PGA filings.

VII. CONCLUSION

Q. Does this conclude your testimony?

A. Yes.