BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,	
Complainant,	
v.	**Docket UG-230393**
PUGET SOUND ENERGY,	
Respondent.	

PREFILED REBUTTAL TESTIMONY (NONCONFIDENTIAL) OF

JOHN D. TAYLOR

ON BEHALF OF PUGET SOUND ENERGY

OCTOBER 6, 2023

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PUGET SOUND ENERGY

**PREFILED REBUTTAL TESTIMONY (NONCONFIDENTIAL) OF
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I.   INTRODUCTION

Q.   Please state your name, business address, and position with Puget Sound Energy.

A.   My name is John D. Taylor, and I am employed by Atrium Economics, LLC ("Atrium") as a Managing Partner. My business address is 10 Hospital Center Commons, Suite 400, Hilton Head Island, South Carolina 29926.

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

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

Q.   Did you previously submit testimony in this proceeding on behalf of PSE?

A.   Yes. On May 25, 2023, I submitted my direct testimony with Exhibits JDT-2 to JDT-7.

Q.   What is the purpose of your rebuttal testimony?

A.   This rebuttal testimony responds to certain portions of the testimony submitted by other parties relating to the Company's application in this matter. My rebuttal testimony addresses the testimony of the following witnesses:

1 • Washington Utilities and Transportation Commission ("Commission") Staff
2 witness Betty A. Erdahl; and

3 • Public Counsel Unit of the Office of the Attorney General ("Public Counsel")
4 witness Robert L. Earle.

5 **Q.** **Please summarize your principal conclusions.**

6 A. My principal conclusions are:

7 • It is reasonable for the specialized bidirectional four-mile pipeline segment to

8 be functionalized based on the unique utilization of the pipeline's capacity,

9 which results in an allocation of cost responsibility of 38.3 percent to Puget

10 LNG and 61.7 percent to PSE, as proposed by the Company and supported by

11 the testimony of PSE witness William F. Donahue.

12 • The Puget LNG line extension investment analysis performed by PSE under its

13 tariff Rule 6 is a common line extension evaluation method used to determine

14 whether and to what extent a contribution in aid of construction ("CIAC") is

15 required. The unique characteristics of the bidirectional capacity utilization that

16 required additional analysis by PSE in the form of a common line extension

17 evaluation was appropriate for functionalization of the four-mile pipeline

18 segment for rate setting purposes.

19 • The approach taken by PSE in functionalizing the four-mile pipeline segment

20 is based on cost causation and consistent with the guidance provided by the

21 Commission's General Order R-599 with respect to the allocation of gas

22 pipeline infrastructure expansions.

1 • The conclusions reached by the Commission Staff and Public Counsel

2 witnesses were based on their perceived limitations of the capacity

3 deliverability and failed to recognize the numerous potential variations of the

4 bidirectional flow and capacity utilization on the four-mile pipeline segment

5 throughout the year by PSE and Puget LNG, several scenarios of which have

6 been modeled by PSE witness Mr. Donahue and discussed in his rebuttal

7 testimony.

8 • Alternative allocation methods related to the utilization of the capacity of the

9 four-mile pipeline segment could be reasonably considered but would lead to

10 materially the same outcome, as demonstrated by Mr. Donahue's scenario

11 analysis presented in his rebuttal testimony.

12 • A line extension calculation should consider incremental costs based on cost

13 causation not an allocation of plant based on non-cost causative methods.

14 • PSE's line extension calculation was appropriately calculated and applied and,

15 as such, Staff's recommendation to recalculate Puget LNG's CIAC should be

16 rejected by the Commission. There is no need to adjust PSE's plant balances

17 by requiring Puget LNG to provide a CIAC and, as such, no need to refund

18 ratepayers.

19 • Further, the Schedule 141D rates reflect the appropriate level of cost recovery

20 associated with the bidirectional four-mile pipeline segment and, as such, no

21 refund is necessary for revenues collected through Schedule 141D rates.

1   •   There are several significant methodological concerns with Mr. Earle's

2   assertion that the last digit analysis should be applied to PSE's internal legal

3   costs, and the Commission should reject his proposal to disallow legal costs

4   based on this faulty analysis.

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**II.   PSE PROPERLY ALLOCATED COSTS FOR THE
FOUR-MILE PIPELINE SEGMENT AND THE ALLOCATION
PROPOSALS OF PUBLIC COUNSEL AND COMMISSION STAFF
SHOULD BE REJECTED**

9   **Q.**   **How do you respond to the testimony of Commission Staff witness Erdahl[1]**

10   **and Public Counsel witness Earle[2] in which they dispute PSE's allocation of**

11   **the cost of the four-mile pipeline segment?**

12   **A.**   I disagree with both Ms. Erdahl's and Mr. Earle's allocations of cost for the four-

13   mile pipeline segment. As discussed in more detail later in my testimony, both of

14   their proposals ignore the Commission's cost causation principles. Moreover, their

15   respective allocation of cost responsibility for the four-mile pipeline segment as

16   between PSE and Puget LNG are influenced by their perceived limitations of the

17   capacity deliverability of the facility, which is not dispositive of the issue and fails

18   to reflect the numerous potential variations of the directional flow and capacity

19   utilization on the pipeline throughout the year. I also disagree with Ms. Erdahl's

20   proposal to recalculate CIAC. In order to fully understand why their positions are

21   incorrect, it is necessary to properly understand the role and application of line

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[1] *See* Erdahl, Exh. BAE-1CT, at 22:21-28:3.
[2] *See* Earle, Exh. RLE-1CT, at 28:5-31:2.

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1   extension policies, the line extension calculation for Puget LNG, and the

2   methodology for allocation of facility costs to rates. I discuss each of these below.

3   **A.   Role and Application of Line Extension Policy**

4   **Q.   What is the goal of a regulatory commission in setting construction allowances**

5   **and tariff rules and policies relating to the extension of service to new**

6   **customers?**

7   A.   The overarching goal of a line extension policy is to set the rules and utility

8   practices that encompass the method by which gas distribution service is extended

9   to new customers. The line extension policy directs a utility's operational

10   processes to provide consistency in applying the rules across all customers

11   requesting service. Further, the line extension policy and associated construction

12   allowances set the costs of service for new customers and are embodied in tariffs

13   per the requirements of regulatory commission rules, administrative codes, and

14   prior regulatory case precedents. The line extension policy is also in place to

15   provide equity between existing and new customers, where existing customers are

16   held harmless by not paying for the portion of new service costs that are

17   uneconomic while still allowing for the benefit from the incremental revenues

18   received from new customers, which contribute to common costs.

19   **Q.   How does the integration of new customers result in benefits to existing**

20   **customers?**

1   A.   From an operational standpoint, integrating new customers into a utility's

2   distribution system can lead to internal efficiencies, lowering the average cost of a

3   utility's service to new and existing customers. This is due to the realization of

4   economies of scale, where the average unit costs of providing service to a

5   customer are lower as additional customers are added. Second, additional revenues

6   from new customers offset the recovery of common costs resulting in lower prices

7   for all customers over time. The nature of utility operations is characterized by the

8   existence of joint-use facilities. Common costs include facilities that are jointly

9   used by different customer groups, operating and maintenance ("O&M") expenses

10   associated with joint-use facilities, and administrative and general ("A&G")

11   expenses common across customer groups and functional areas of the utility. This

12   is due to spreading fixed costs across a greater number of customers. Lastly,

13   existing customers can benefit from economies of scope where cost savings are

14   achieved from providing service to two or more distinct groups of customers.

15   **Q.**   **How are line extension allowances set to treat new and existing customers**

16   **fairly?**

17   A.   A common approach to setting line extension allowances is to set the allowance

18   based on a calculation that compares the expected revenues from new customers

19   and the direct incremental cost of providing service to new customers. When the

20   direct incremental costs are above the expected revenues over time, the customer

21   would contribute directly to the construction costs. Various methods used to

22   conduct this calculation are further described below.

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1   Q.   **Are line extension policies and associated construction allowances a common**

2   **element of utility regulation across North America?**

3   A.   Yes. All utilities have tariff rules, commission-approved methods, and associated

4   internal policies to guide the utility's operational processes when extending service

5   to new customers. These exist for both electric and natural gas utilities and

6   encompass four primary methods of setting construction allowances:

7   Dollar Allowance: The construction allowance is a fixed cap dollar amount. This

8   allowance is then used to offset the costs of extending service to a new customer,

9   where the customer bears the costs in excess of the fixed cap allowance.

10   Footage Allowance: The construction allowance is a footage allowance based on

11   the distance from a distribution main. The customer bears the costs for any excess

12   length above the footage allowance.

13   Investment Analysis: Investment analyses involve comparing expected revenues

14   from new customers to the utility's incremental costs. Using a net present value

15   ("NPV") test subtracts the discounted costs of the extension from the expected

16   discounted revenues over some period of time. If the difference is positive, the

17   utility would consider the line extension an economical and financially viable

18   investment. If the difference is negative, the utility would require a customer

19   contribution to reduce the costs to a point where the difference is zero or positive.

20   Some investment analyses use an internal rate of return ("IRR") methodology.

21   This approach solves for a rate of return that sets the net present value of all cash

1   flows from the investment (both future distribution margin revenues and future

2   incremental costs) equal to zero. Lastly, some utilities use a perpetual net present

3   value method. Under this approach, the maximum level of economic investment

4   equals the net present value of the annual distribution margin in perpetuity. This

5   method was recently reviewed by the Commission,[3] although the review occurred

6   after the CIAC analysis was completed for Tacoma LNG in September 2020.

7   Revenue Multipliers: The construction allowance equals a multiple of annual

8   expected non-fuel base distribution margin revenues. Under this method, expected

9   revenues are derived from particular project assumptions or average usage

10   characteristics for a class of customers or customers with specific equipment types.

11   **B.   PSE's Line Extension Calculation for Puget LNG**

12   **Q.   What method was employed by PSE in determining the required CIAC for**

13   **Puget LNG?**

14   A.   As described by Company witness Donahue, PSE relied on Rule 6, Extension of

15   Distribution Facilities, to determine if Puget LNG would be required to provide an

16   upfront CIAC ("customer payment" as defined in Rule 6). In order to do so, PSE

17   needed to compare the capital cost of distribution system upgrades necessary to

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[3] In 2021, the Commission concluded a statewide investigation (Docket UG-210729) into whether natural gas utilities should continue to use the Perpetual Net Present Value ("PNPV") methodology to calculate natural gas line extension allowances. The investigation resulted in an order from the Commission requiring utilities that utilize the PNPV method to use a Net Present Value approach based on seven years of margin.

1   provide the requested service to its new customer, Puget LNG, to the capital cost

2   recovery portion of revenues earned from the expected service to Puget LNG.

3   **Q.   Is this a typical method employed by gas utilities across North America?**

4   A.   Yes. As I previously described, an investment analysis is a common line extension

5   evaluation method.

6   **Q.   Were there unique circumstances that required additional analysis when**

7   **conducting Puget LNG's line extension investment analysis?**

8   A.   Yes. As detailed by Company witness Donahue, PSE developed a method of

9   attributing this bidirectional four-mile pipeline segment to the following two uses:

10   (1) distribution system upgrades required to connect the LNG facility for the use of

11   PSE's customer, Puget LNG; and (2) facilitating the use of the LNG facility as

12   PSE's peaking resource.

13   Developing this methodology required PSE to functionalize the pipeline costs into

14   three functions: (1) incremental capacity requirements for the PSE peak shaving

15   facility; (2) the remaining base capacity use for flows into the facility; and (3) the

16   remaining base capacity use for flows out of the facility. This method is contested

17   by Commission Staff and Public Counsel, as further discussed below.

18   **Q.   How did PSE functionalize the costs between these three functions?**

19   A.   The incremental capacity requirements for the PSE peak shaving was set as the

20   cost difference between constructing four miles of 12-inch pipeline and four miles

1   of 16-inch pipeline. This is approximately $4.1 million and not disputed by

2   Commission Staff or Public Counsel. The remaining costs associated with the

3   four-mile pipeline segment, after removing the $4.1 million, were then equally

4   split between the two functions for flows into the facility and for flows out of the

5   facility.

6 **Q. Why were the costs incurred for the bidirectional four-mile pipeline segment?**

7 A.   The four-mile pipeline segment was installed to serve two functions: first, to get

8   gas to the LNG facility; and second, to get gas from the LNG facility. These

9   functions were of equal importance, and the incurrence of the costs was for the

10   four-mile pipeline segment to fulfill both of these functions. The cost of material,

11   trenching, welding, project management, rights of way, environmental studies, and

12   all other costs associated with this bidirectional four-mile pipeline segment were

13   incurred to facilitate the movement of gas to the LNG facility and from the LNG

14   facility. The feasibility of the Tacoma LNG Facility, as a whole, is dependent on

15   the bidirectional flow of this four-mile pipeline segment, not the flow in a single

16   direction, and no one direction is more important than the other relative to cost

17   causation. The welding, trenching, and site restoration were unrelated to either

18   in-flow or out-flow of the gas stream. The importance of this bidirectional

19   functionality is underscored by the fact the parties contracted for flow in each

20   direction, and unique to other distribution pipe, the pipeline has compression at

21   both ends to facilitate the flow, as indicated in the rebuttal testimony of Company

1   witness Mr. Donahue. Therefore, the 50/50 split between these two functions used

2   by PSE in the CIAC calculation is appropriate.

3   **C.**   **Allocation of Facilities for Rates**

4   **Q.**   **How did PSE determine what portion of the bidirectional four-mile pipeline**

5   **segment should be recovered from Puget LNG?**

6   A.   Costs of the bidirectional four-mile pipeline segment were functionalized into two

7   components: (1) costs associated with serving Puget LNG and (2) costs associated

8   with providing peaking service to PSE. The portion associated with providing

9   service to Puget LNG was directly assigned to Rate 88T.

10   **Q.**   **Are functional analyses common in utility regulation?**

11   A.   Yes. The purpose of these functional analyses is to determine what portion of a

12   plant facility or set of plant costs relates to the provision of different services by

13   the utility. In other words, the question that must be answered is: "What function

14   do the facilities perform in the provision of utility service to utility customers?"

15   This allows for a more accurate treatment of the underlying costs for recovery

16   from different groups of customers. An illustration of this functional analysis is the

17   storage analyses conducted in PSE's most recent rate case and previous rate cases.

18   The analysis results in functionalizing Jackson Prairie gas storage costs between

19   two functions: (1) storage for sales customers, and (2) support for balancing

20   services. Thus, a portion of Jackson Prairie gas storage costs and related pipeline

21   transportation (TF-2) demand charges were allocated to gas sales customers on a

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1   weighted winter season and peak day demand basis. The portion of Jackson

2   Prairie demand charges related to its system balancing function were allocated to

3   all customer classes based on winter sales. The remaining portion of costs are

4   allocated to sales customer with a ratio based on average winter sales that exceed

5   average summer sales.[4]

6   **Q.   Once costs are functionalized how are they allocated to ratepayers for**

7   **purposes of setting rates?**

8   A.   Once the functionalized costs are grouped together, allocation factors can be

9   developed and applied to similar types of facilities. For instance, the allocation of

10   metering equipment costs is performed in a different manner than the allocation of

11   gas storage facilities.

12   **Q.   Has the Commission provided policy guidance with respect to the allocation of**

13   **gas pipeline infrastructure costs that is pertinent to the four-mile pipeline**

14   **segment?**

15   A.   Yes. In its General Order R-599 in Dockets UE-170002 and UG-170003,[5] the

16   Commission articulated a policy that provides flexibility in the allocation of gas

17   pipeline infrastructure costs to meet the cost drivers that reflect the operating

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[4] This is the method prescribed in Table 4 of WAC 480-85-060 under the section 'Storage' within the 'Allocation Method.'
[5] *In the Matter of Amending WAC 480-07-510 and Adopting Chapter 480-85 WAC Relating to Cost of Service Studies for Electric and Natural Gas Investor-Owned Utilities,* Order Amending and Adopting Rules Permanently, ¶75 (July 7, 2020).

1   dynamics attendant to the specific function(s) provided by the pipeline

2   infrastructure.

3   The modern natural gas distribution system has existing
4   infrastructure that undergoes new expansions. This infrastructure
5   must continuously be evaluated to meet the needs of the expanding
6   system, policy goals of the state, and day-to-day operating dynamics
7   of real-time supply to customers. ***The appropriate cost drivers***
8   ***should, therefore, balance the plans that lead to construction of***
9   ***the infrastructure with the actual flow of gas.*** This understanding
10   drives our selection of the classification and allocation methods for
11   natural gas distribution mains.[6]

12   **Q.   Does the Commission's policy guidance address the direct assignment of**

13   **distribution system costs as PSE has done in its proposal?**

14   A.   Yes. In the previously referenced General Order R-599, the Commission addressed

15   the cost of service principle of "Direct Assignment" of distribution system costs.

16   While the Commission has historically rejected design day
17   methodologies, the Commission adopts design day in this
18   rulemaking. The Commission sees value in allocating the costs of
19   distribution mains according to the intended design of the system. A
20   core cost of service principle iterates that customers who can be
21   directly assigned responsibility for a utility's costs to serve them
22   should also be responsible for recovery of a utility's appropriate
23   costs.[7]

24   . . . .

25   One principle of cost of service is assigning costs to a customer or
26   customer class directly, where the costs can be directly attributed to
27   that customer or customer class. It is not the Commission's intent to
28   change this principle and, as it applies to the allocation of
29   distribution mains…[8]

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[6] *Id.* ¶75 (emphasis added).
[7] *Id.* at ¶ 49.
[8] *Id.* at ¶ 77.

1	Further, Table 4 of WAC 480-85-060 under the section 'Distribution Mains'
2	within the 'Allocation Method' column requires the "[d]irect assignment of
3	distribution mains to a single customer class where practical. All other costs
4	assigned based on design day (peak) and annual throughput (average) based on
5	system load factor."[9]
6	**Q. Is it necessary to allocate the four-mile pipeline segment to rate classes?**
7	A. Yes, but only the PSE portion, as the Puget LNG portion is directly assignable to
8	Rate 88T. As such, there are two steps necessary in determining an allocation of
9	the pipeline costs: first, a functionalization of these costs between costs to provide
10	PSE's connection with the LNG facility for peak shaving and costs to provide gas
11	to Puget LNG; and second, the allocation of the PSE functionalized portion to PSE
12	rate classes with the Puget LNG portion directly attributable to Rate 88T.
13	**Q. Is the functionalization of the four-mile pipeline segment used for the CIAC**
14	**calculation an appropriate method to functionalize this pipeline for**
15	**ratemaking purposes?**
16	A. Yes. I believe the approach taken by PSE in functionalizing the four-mile pipeline
17	segment is consistent with the guidance provided by the Commission's General
18	Order R-599 with respect the allocation of gas pipeline infrastructure expansions
19	and should be relied upon for ratemaking purposes.

[9] WAC 480-85-060.

1 **D.   Response to Allocation Proposals of Public Counsel and Commission**
2 **Staff**

3 **Q.   Please summarize the positions of Public Counsel and Commission Staff for**

4 **allocating costs of the four-mile pipeline segment.**

5 A.   The witness for Public Counsel, Mr. Earle, contends PSE's allocation method

6 ignores the amount of use of the four-mile pipeline segment and arbitrarily splits

7 the $23.3 million cost into half attributable to receipts (gas to the LNG facility) and

8 half attributable to delivery (gas from the LNG facility). He concludes that

9 delivery from the LNG facility can only occur a maximum of ten days per year due

10 to limitations on vaporization imposed by the Puget Sound Clean Air Agency

11 ("PSCAA") and, therefore, the use of the pipeline for "delivery from" is less than

12 three percent.[10]

13 Commission Staff witness, Ms. Erdahl, concludes PSE's allocation is inconsistent

14 with principles of cost causation and recommends a different allocation based on

15 maximum capacity and how the pipeline will be used to transport gas to and from

16 the facility rather than PSE's proposed 50/50 split. She also cites the PSCAA

17 restriction that the vaporizer must "operate no more than 240 hours (10 days) per

18 any 12 consecutive month period," thereby limiting the use of the pipeline to

19 transport vaporized gas from the Tacoma LNG facility. Ms. Erdahl's computations

20 supporting her proposed allocation approach also assume that PSE will deliver the

21 maximum quantity of 21,400 dekatherms (Dth) per day of natural gas to the LNG

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[10] *See* Earle, Exh. RLE-1CT, at 29:6-11.

1   facility via the four-mile pipeline segment based on the liquefaction train's

2   capacity.[11]

3   **Q.   What is the resulting allocation of the four-mile pipeline segment based on the**

4   **position of Commission Staff and Public Counsel?**

5   A.   Commission Staff and Public Counsel conduct calculations on their understanding

6   of use of the four-mile pipeline segment, both of which start their analysis with

7   their incorrect belief that PSE is constrained to using the pipeline to move

8   vaporized gas from the LNG facility into its distribution system on only 10 days of

9   the year. Commission Staff and Public Counsel assign the usage during these 10

10   days to PSE and assign 90 percent of the remaining 355 days a year to Puget LNG

11   for the function of moving gas into the LNG facility. Public Counsel's analysis

12   simply divides 10 days into 365 (10/365 = 2.7% for delivery to the distribution

13   system) whereas Commission Staff assumes annual volumes based on 100 percent

14   load factors. Under Commission Staff's calculations, this allocates 92 percent of

15   the four-mile pipeline segment for transporting gas to the LNG facility and 8

16   percent for transporting gas from the LNG facility.

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[11] *See* Erdahl, Exh. BAE-1CT, at 23:11-20.

1   Q.   **Did either Ms. Erdahl or Mr. Earle cite specific cost causation principles or**

2   **the recent Commission policy guidance on cost of service, portions of which**

3   **you discussed earlier in in your rebuttal testimony?**

4   A.   Surprisingly, no. The basis for either witness's approach to allocation of cost

5   responsibility of the four-mile pipeline segment between PSE and Puget LNG is

6   shaped by their perceived limitations of the capacity deliverability, whether by

7   reason of the PSCAA air permit restriction or the 21,400 Dth per day capacity.

8   Neither of these assumptions is dispositive of the issue, nor do they reflect the

9   numerous potential variations of the bidirectional flow and capacity utilization on

10   the four-mile pipeline segment throughout the year, several scenarios of which

11   have been modeled by PSE witness Mr. Donahue and are discussed in his rebuttal

12   testimony. Further, neither witness demonstrates why Table 4 of WAC 480-85-

13   060, which requires, "Direct assignment of distribution mains to a single customer

14   class where practical," was ignored. Rather than directly assign costs or

15   demonstrate that direct assignment is not practical, the witnesses develop new

16   methods that are neither based on direct assignment nor peak and average.

17   Q.   **How do you respond to the analysis conducted by Public Counsel witness Mr.**

18   **Earle?**

19   A.   There is no basis for splitting the bidirectional four-mile pipeline segment's costs

20   based on a misperception of the number of days of use without any consideration

21   of capacity availability or actual volumes. Public Counsel's sole reliance on its

1   perception of the resulting use based on the PSCAA air permit restriction ignores a

2   plethora of facts and results in an erroneous conclusion. It ignores the actual

3   capacity of the pipeline, both the 12-inch hypothetical and the 16-inch actual;

4   injection gas required for peak shaving; and boil off gas. There is no basis to

5   functionalize, allocate, or directly assign costs based on looking at misperceived

6   days of availability with no consideration of either peak capacity or usage. Mr.

7   Earle also ignores PSE's preemptive right to command use of the four-mile

8   pipeline segment at any hour of any day to flow peak-shaving volumes outbound

9   from the LNG plant.

10   **Q.   How do you respond to Mr. Earle's analogy of two friends using a racetrack**

11   **and splitting the costs?**

12   A.   This is nonsensical. First, racetracks do not charge for miles driven they charge

13   for the time you use their facilities, typically a daily rate. I've verified this with

14   two personal acquaintances, one who rents racetracks for driving events and the

15   second a retired racecar driver who manages other drivers. The cost incurrence is

16   essential in economics (in real life or made-up examples); you reserve time on the

17   track such that the capacity is dedicated to your use. Charging based on distance

18   would result in your friend, who is much faster than you, paying more while you

19   go slow, wasting your friend's time and money, likely resulting in that being your

20   last invitation to the track.   It would be more reasonable for two friends to split the

21   day 50/50 or to split the time available 50/50 than to charge based on each other's

22   distance.

1   **Q.**   **How do you respond to the analysis conducted by Commission Staff witness**

2   **Erdahl?**

3   A.   It appears Ms. Erdahl is attempting to allocate the bidirectional four-mile pipeline

4   segment's costs based solely on annual usage at a 100 percent load factor. This is

5   not a common method of allocating pipeline costs in Washington or across the

6   United States. While some regulators, including the Commission, have decided to

7   use a peak and average method where both the peak capacity and annual average

8   usage are considered, these methods relate to the allocation of mains to all

9   ratepayers for those mains that provide distribution service to all ratepayers. These

10   methods are not applicable to the functionalization of an asset to two distinct uses,

11   as is the need for this bidirectional four-mile pipeline segment. Further, as detailed

12   by PSE witness Donahue, Ms. Erdahl completely ignores other volumes associated

13   with this four-mile pipeline segment and does not reflect how the four-mile

14   pipeline segment would actually be used due to her assumption of a 100 percent

15   load factor. Ms. Erdahl also ignores PSE's preemptive right to command use of the

16   four-mile pipeline segment at any hour of any day to flow peak-shaving volumes

17   outbound from the plant.

18   **Q.**   **How do you respond to Commission Staff witness Erdahl's recommendation**

19   **for the Commission to require PSE to update its Rule 6 CIAC calculation**

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1   **based on her allocation of costs of the bidirectional four-mile pipeline**

2   **segment?**

3   A. Ms. Erdahl is confusing two distinct regulatory processes. First, as discussed

4   above, line extension calculations should compare incremental costs with

5   incremental revenues. The incremental costs are determined based on the required

6   incremental facilities to serve the customer's requirements. Incremental costs are

7   not determined based on the allocation of costs resulting from the annual usage of

8   facilities. For example, if a gas utility receives a request for new service from a

9   grain dryer that operates three months of the year, which requires a new half-mile

10   four-inch pipe, the utility would not set the incremental costs at 25 percent of the

11   costs based on annual usage. The utility would determine the actual costs of the

12   incremental facilities, compare them to the expected incremental revenues and

13   determine if a CIAC is required. The same is true for a customer that increases its

14   annual throughput. An initial CIAC calculation would consider the incremental

15   costs to connect that customer, and if the customer over-time increases its annual

16   throughput, that customer would not be allocated more incremental facilities'

17   costs, nor do utilities have a mechanism to go back and allocate more costs to a

18   customer whose use is at a higher load factor than modeled in the initial cost

19   allocation calculation. The calculus is made when the incremental facilities are

20   considered and first needed for the provision of utility service.

1 **Q. How do you respond to Commission Staff witness Erdahl's recommendation**

2 **to decrease provisional rates recovering a portion of the four-mile pipeline**

3 **segment and to require a refund for an updated CIAC calculation?**

4 A. There is no need for a decrease in provisional rates or for any kind of refund.

5 PSE's line extension calculation was appropriately calculated and applied and, as

6 such, Staff's recommendation to recalculate Puget LNG's CIAC should be rejected

7 by the Commission. There is no need to adjust PSE's plant balances by requiring

8 Puget LNG to provide a CIAC and as such no need to refund ratepayers. Ms.

9 Erdahl recommends the Commission "decrease provisional rates recovering the costs

10 of the four-mile distribution pipeline by at least $8.8 million by allocating $8.11

11 million of its costs to PSE customers". First, it is important to note the $8.11million

12 represents Ms. Erdahl's calculated rate base amount and not a revenue requirement

13 amount. The total annual revenue requirement for Schedule 141D is only $2.9

14 million.[12] Second, as detailed above Ms. Erdahl's functionalization of the four-mile

15 pipeline segment is erroneous, and Schedule 141D rates reflect the appropriate level

16 of cost recovery associated with the bidirectional four-mile pipeline segment. As

17 such, no refund is necessary for revenues collected through Schedule 141D rates.

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[12] Taylor, Exh. JDT-1T at 5, Table 2.

III. DIGIT ANALYSIS

Q. **Please respond to Public Counsel witness Earle's claim[13] that analyzing the last digits of internal legal costs can predict fraudulent data.**

A. Mr. Earle asserts that the last digits from the Company's records of internal legal

costs should follow a uniform distribution. Then, he suggests that the Company's

records are anomalous because they do not follow this probability distribution. The

type of data analysis Mr. Earle describes has been used in some machine learning

applications using large data sets for fraud detection. However, the method he

describes is one of many and is merely a screening tool, at best. In addition, there

are several significant methodological concerns with Mr. Earle's assertion,

including the probability distribution he has selected and the sample size.

Probability distributions have distinct use cases, as the nature and role of an input

will dictate the type of probability distribution used. Probability distributions must

be chosen based on the characteristics of the population or a much larger

representative data set. This is because every probability distribution requires a set

of parameters to produce results. Typically, these parameters are statistical

measures (such as the mean or standard deviation) describing the characteristics of

the data. In this case, no more extensive set of data or population data was

analyzed to define the appropriate probability distribution to apply. In short,

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[13] *See* Earle, RLE-1CT, at 21:14-23:1.

1   Mr. Earle does not provide any evidence that the occurrence of the last significant

2   digit of the internal legal costs data set should follow a uniform distribution.

3   Hourly rates that include PSE overheads or time spent tracked and rounded to the

4   nearest quarter hour will have impacts on the expected distribution of the last

5   significant digit. For example, a review of Washington state employee salaries

6   posted on the Washington State Fiscal Information website shows that all of the

7   salaries end in the last significant digit of zero (e.g., University of Washington

8   Head Coach at $3,322,400 and a law clerk at the Court of Appeals at $74,200).[14]

9   So, using Mr. Earle's hypothesis that accounting data should show the occurrence

10   of each last significant digit as a uniform distribution does not apply to this

11   population of data. The same can be true for internal billing data where a uniform

12   distribution does not apply. In fact, there is no basis to assert that legal costs,

13   typically a product of a billable hourly rate and the fractions of an hour billed,

14   should be expected to follow a uniform distribution.

15   Furthermore, the data analyzed by Mr. Earle consisted of a sample of the last digits

16   from 65 monthly totals of internal legal costs. A data set with 65 observations is a

17   small sample size, and one would not expect those values to perfectly align with

18   any probability distribution due to the law of large numbers.[15]

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[14] Washington State Fiscal Information Website - data collected via download on September 29, 2023, at https://fiscal.wa.gov/Staffing/Salaries.
[15] The law of large numbers states that as a sample size becomes larger, the sample mean gets closer to the expected value. The most basic example of this involves flipping a coin. Each time we flip a coin, the probability that it lands on heads is 1/2. Thus, the expected proportion of heads

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1   As further explained by Company witness Susan E. Free, PSE stands behind the

2   integrity of its reporting and disagrees with the sentiment and proposed

3   methodology related to the assertion that its internal legal costs should be

4   disallowed, and subject to ongoing review, based on the last digit analysis

5   concocted by Mr. Earle.

6   **IV.   CONCLUSION**

7   **Q.   Please summarize your findings and conclusions.**

8   A.   My findings and conclusions are the following:

9   • It is reasonable for the bidirectional four-mile pipeline segment to be

10   functionalized based on the unique utilization of the pipeline's capacity, which

11   results in 38.3 percent Puget LNG and 61.7 percent PSE cost responsibility, as

12   proposed by the Company and supported by the testimony of PSE witness Mr.

13   Donahue.

14   • The approach taken by PSE in functionalizing the four-mile pipeline segment

15   is based on cost causation and consistent with the guidance provided by the

16   Commission's General Order R-599 with respect the allocation of gas pipeline

17   infrastructure expansions.

that will appear over an infinite number of flips is 1/2 or 0.5. However, if we flip a coin 10 times, we might find that it only lands on heads 3 times. Since 10 flips is a small sample size, there's no guarantee that the proportion of heads will be close to 0.5. If we continue flipping the coin another 10 times, we might find that it lands on heads a total of 9 times out of 20. If we flip it 10 more times, we might find that it lands on heads 22 times out of 30. As we flip the coin more and more and our sample grows larger, the proportion of times that it lands on heads will converge to the expected proportion of 0.5.

- The Puget LNG line extension investment analysis performed by PSE under its Rule 6 is a common line extension evaluation method used to determine whether and to what extent a CIAC is required. The unique characteristics of the bidirectional capacity utilization that required additional analysis by PSE was appropriate for functionalization of these facilities for rate setting purposes.

- The conclusions reached by the Staff and Public Counsel witnesses were based on their perceived limitations of the capacity deliverability and failed to recognize the numerous potential variations of the bidirectional flow and capacity utilization on the four-mile pipeline segment throughout the year by PSE and Puget LNG.

- Alternative allocation methods related to the utilization of the capacity of the four-mile pipeline segment could be reasonably considered but would lead to materially the same outcome, as demonstrated by Mr. Donahue's scenario analysis presented in his rebuttal testimony.

- A line extension calculation should consider incremental costs based on cost causation not an allocation of plant based on non-cost causative methods.

- PSE's line extension calculation was appropriately calculated and applied and, as such, Staff's recommendation to recalculate Puget LNG's CIAC should be rejected by the Commission. There is no need to adjust PSE's plant balances by requiring Puget LNG to provide a CIAC and, as such, no need for refunds.

1   • Further, the Schedule 141D rates reflect the appropriate level of cost recovery

2   associated with the bidirectional four-mile pipeline segment and, as such, no

3   refund is necessary for revenues collected through Schedule 141D rates.

4   • Public Counsel's digit analysis is flawed to the point of being completely

5   unreliable and is erroneous.

6 **Q.   Does that conclude your rebuttal testimony?**

7 A.   Yes.