EXH. DEM-1T
DOCKETS UE-19___/UG-19___
2019 PSE GENERAL RATE CASE
WITNESS: DAVID E. MILLS

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

DAVID E. MILLS

ON BEHALF OF PUGET SOUND ENERGY

JUNE 20, 2019

PUGET SOUND ENERGY

PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF DAVID E. MILLS

CONTENTS

PUGET SOUND ENERGY

PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF DAVID E. MILLS

LIST OF EXHIBITS

PUGET SOUND ENERGY

PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF DAVID E. MILLS

I. INTRODUCTION

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

A. My name is David E. Mills. My business address is 355 110th Ave. NE, Bellevue, WA 98004. I am Senior Vice President of Policy and Energy Supply at Puget Sound Energy ("PSE").

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

A. Yes, I have. Please see the First Exhibit to the Prefiled Direct Testimony of David E. Mills, Exh. DEM-2, for an exhibit describing my education, relevant employment experience, and other professional qualifications.

Q. What are your duties as Senior Vice President of Policy and Energy Supply at PSE?

A. As Senior Vice President of Policy and Energy Supply, my responsibilities include oversight of PSE's Power and Gas Supply Operations; Load Serving Operations; Transmission Contracts; Energy Operations Policy, Planning and Compliance; Legislative and Regulatory Affairs; Energy Efficiency; and Products

and Service Development groups. I am also responsible for certain strategic customer initiatives related to customer experience and satisfaction.

Q. Please summarize the purpose of your prefiled direct testimony.

A. My testimony provides a high-level overview of PSE, its vision for the future and the challenges PSE faces. I review PSE's long history of supporting renewable resource development and energy conservation and the additional steps PSE is taking to increase its reliance on clean energy. I discuss PSE's continued focus on providing safe, dependable, and efficient energy, the improvements PSE has made in meeting customer expectations, and the areas in which we continue to focus and improve our performance. I describe the steps PSE is taking to meet customer expectations for choice, flexibility and proactive interaction when doing business with PSE. I outline some of the financial challenges PSE faces, PSE's rate request in this case, and the need for an attrition adjustment. Finally, I introduce the PSE witnesses who are providing prefiled direct testimony in this case, and I provide a brief summary of the nature of their testimony.

II. OVERVIEW OF PSE AND ITS VISION FOR THE FUTURE

Q. Please provide a high-level overview of PSE.

A. PSE and its predecessor companies have served Western Washington for more than a century. Today, PSE is Washington's largest electric and natural gas utility, with approximately 1.2 million electric customers and approximately 800,000 natural gas customers, primarily in the Puget Sound region of Western Washington. PSE employs approximately 3,000 Washington residents and covers

a service territory that spans approximately 6,000 square miles in ten counties. PSE owns and maintains more than 20,000 miles of electric transmission and distribution lines and underground cables to deliver electricity to its customers. Additionally, PSE owns and maintains approximately 26,000 miles of natural gas lines that serve its natural gas customers. This infrastructure is located in diverse geography and heavily wooded areas.

PSE's customers are diverse as well—from the high-tech urban areas of Bellevue to the agricultural and forest lands in Skagit County. We are committed to knowing what is important to our customers and we strive to deliver quality customer service to all customers—safely, reliably, and efficiently—always looking to improve our ease of interaction and our focus on sustainability.

PSE has been a leader in the development of renewable and low-carbon resources. PSE remains one of the country's largest utility-owners of wind assets, and its power portfolio includes more than 800 MW of wind generation. Throughout its history, PSE has built, owned and operated FERC-licensed hydroelectric plants that have provided low-cost, reliable, carbon-free energy to Washington residents for more than a hundred years.

PSE has assisted the State of Washington in its transition away from the use of coal-fired generation, through the planned retirement of Colstrip Units 1 and 2 and the retirement of the Centralia Coal Plant by 2025. The broad settlement PSE and nine other diverse parties agreed to in PSE's 2017 general rate case provided an elegant solution to a number of issues that the Commission, PSE, and

interested stakeholders had been grappling with for several years relating to the Colstrip Generation Plant. Additionally, PSE worked closely with legislators, the Commission and other stakeholders to help pass the Washington Clean Energy Transformation Act that will allow PSE, its customers, and the State of Washington to transition to a 100 percent clean energy future.

Q. Please summarize the environment in which PSE operates and the challenges faced.

A. PSE is filing its rate case in a time of increasing uncertainty but also great opportunity. While utilities around the country are still called upon to provide their services in the safest, most dependable and most efficient way possible, they are increasingly being asked to do so in the face of mounting financial and competitive pressure. Utilities are also challenged to provide reliable utility service in a way that protects the environment. Customers are demanding cleaner energy sources and the Washington Clean Energy Transformation Act requires electric utilities to work towards eliminating greenhouse gas emissions.

PSE operates in one of the fastest growing economies in the United States, and we are fortunate to have a wide array of businesses in the region including Amazon, Boeing, Microsoft, Starbucks, Costco and Expedia, to name a few. These companies are experiencing tremendous growth, and it is not surprising that a large base of our customers are tech-savvy and expect PSE to be as well. These customers do not compare PSE to other utilities. They compare PSE to Amazon

and Starbucks, and they expect PSE to have the same ease of interaction and level of service.

Information technology and the use of digital tools are rapidly becoming essential in order to achieve PSE's core mission of providing safe, dependable and efficient service to customers and providing customers choice as to how they interact with PSE. These technologies have much shorter depreciable lives than traditional utility assets, and the current utility regulatory model with its modified historical test year creates challenges in terms of PSE's ability to recover its technology investments.

Additionally, these technologies can be vulnerable to cyberattacks that can threaten PSE's ability to provide safe and dependable service to its customers. PSE intends to remain laser focused on protecting customer information and PSE's valuable infrastructure. The establishment of new data centers, discussed in this case, is a positive step in that direction.

PSE, its stakeholders, and regulators must be willing to explore new, flexible, and dynamic approaches to the regulatory paradigm that will meet customers' changing needs and choices while also allowing PSE to comply with clean energy legislation and operate as a financially healthy utility that can reliably provide energy service to its customers and the region.

Q. What is PSE's vision for the future?

A. PSE has built its vision of the future on the "voice of the customer." Currently, PSE hears its customers continue to demand safe, reliable and efficient energy

service, but also lower emission energy sources and options for choice and control from their utility.

PSE's bedrock is providing safe and dependable electric and natural gas service, efficiently, and at a reasonable price. With respect to safety, PSE has worked to develop and implement a company-wide safety culture that benefits both customers and employees, with emphasis on areas such as pipeline safety, gas leak detection and mitigation, and emergency response services among others. PSE achieved first quartile national electric utility ranking for employee safety for the past five years. PSE's vision going forward is to build upon that bedrock with greater offerings that give customers choices in their source of power, ability to monitor and conserve usage, and avenues for contacting PSE.

PSE will build on its history as an industry leader in renewable resource development and energy efficiency to promote clean energy for its customers and sustainability. This includes grid modernization to lay the foundation for increased residential solar, battery storage and electric vehicle penetration. It also includes targeted pilot projects that allow PSE to facilitate electrification of the transportation sector and seek to better understand battery storage. In April 2019, the Washington State Department of Commerce awarded PSE a grant from the Washington Clean Energy Fund for PSE's proposed innovative microgrid project in Tenino. PSE's Blumauer substation will be the host site for the first utility scale solar plus storage microgrid project in PSE's service area. In partnership with the Tenino School District, PSE will use solar power, along with new energy storage

and customer load controls, to increase reliability and resilience for Tenino High School. Another battery will also be installed at the end of a distribution feeder line in the rural community, which will enable the demonstration of reliability improvement.

PSE envisions a future in which stakeholders and regulators work with PSE to successfully implement flexible regulatory mechanisms that allow PSE to adapt to the changing environment, remain financially stable, and provide leadership in the transformation of the energy industry, while still providing reliable and reasonably priced energy service to customers. Recent legislation that affirms the Commission's ability to consider multiyear rate plans and other flexible regulatory mechanisms should facilitate this process.

Q. How does this case help PSE meet its vision for the future?

A. This case allows PSE to remain financially sound while continuing to provide safe, dependable, and efficient service to its customers, and also offering customers choices in terms of their power sources, usage and interactions with PSE.

III. CHANGES IN THE ENVIRONMENTAL LANDSCAPE THAT AFFECT PSE

Q. Have there been changes in environmental requirements since PSE filed its 2017 general rate case?

A. Yes. Earlier this year the Washington Clean Energy Transformation Act was signed into law by Governor Jay Inslee. This new law will fundamentally

transform Washington's energy future. The law requires utilities in Washington to move away from all coal-fired power by December 31, 2025. It also requires electric utilities in the state to provide 100 percent of their energy from greenhouse-gas-neutral sources by January 1, 2030, with the exception that through 2044, up to 20 percent of that power could be covered by alternative compliance such as purchasing renewable energy credits or investing in energy transformation projects that reduce emissions but do not generate electricity. The law contains a cost cap provision that limits rate increases associated with the law to no more than two percent per year.

Q. What steps is PSE taking to comply with the Washington Clean Energy Transformation Act?

A. Even though the ink has barely dried on the new law, PSE has been taking steps to reduce carbon emissions and promote renewable resources for many years and will continue to do so in a way that complies with the requirements of the new law. For example, PSE and its Board committed several years ago to reduce PSE's greenhouse gas emissions by fifty percent of PSE's 2016 greenhouse gas footprint by 2040.

As previously discussed, PSE agreed, several years ago, to close Colstrip Units 1 and 2 no later than 2022, and those plants are now scheduled to close by 2020. Additionally, in the 2017 general rate case multi-party settlement, PSE and the settling parties agreed to a depreciation schedule for Colstrip Units 3 and 4 that shortened the depreciable lives of those units from 2044 and 2045, respectively, to

December 31, 2027. With the enactment of the Washington Clean Energy Transformation Act, PSE is now proposing to further shorten the depreciable lives of Colstrip Units 3 and 4 to December 31, 2025 in this case. The depreciation schedule for these units is discussed in more detail in the Prefiled Direct Testimony of John J. Spanos, Exh. JJS-1T with respect to the limited depreciation study addressing Colstrip Units 3 and 4, and the Prefiled Direct Testimony of Susan E. Free, Exh. SEF-1T, with respect to the adjustment to the revenue requirement associated with this change.

Q. Is PSE taking other steps to provide customers more choices with respect to clean energy and environmental stewardship?

A. Yes. PSE has initiated or will initiate several pilot projects that help promote clean energy and environmental stewardship. For example, PSE is a member of the Joint Utility Transportation Electrification Stakeholder Group, and in 2018, PSE filed tariffs for several pilot programs that promote electric vehicle supply equipment. Through these pilots, PSE is authorized to provide residential and non-residential charging products and services, electric vehicle education and outreach, and electric vehicle low income transportation service. PSE's participation in these electric vehicle pilots will help facilitate efficient electrification of the transportation system to meet Washington State's policy goals.

In addition to this existing pilot project, PSE is exploring pilot projects to offer (i) a new smart street light control service as part of the light emitting diode

upgrades on existing PSE owned high pressure sodium street lights that will enhance operational efficiency and reliability; (ii) a community solar program that would allow customers to support the development of specific small-scale solar projects in PSE's service territory; and (iii) a battery energy storage systems for residential, commercial and community installations, on a limited basis, that will allow PSE to evaluate a broad range of operation, use case, and performance metrics for distributed battery energy storage system technology. These pilot projects are discussed in more detail in the Prefiled Direct Testimony of William T. Einstein, Exh. WTE-1T.

Q. Are there other PSE initiatives discussed in this case that promote green energy and customer choice?

A. Yes. The Commission has previously approved PSE's Green Direct program, which is a voluntary, long-term green energy program that provides large existing customers a reasonably priced renewable energy option. The Green Direct program has been approved to provide a total of 85 average megawatts through power purchase agreements for two new renewable energy projects—the Skookumchuck Wind Energy Project will serve the Green Direct program beginning in late 2019, and the Lund Hill Solar Project is anticipated to begin serving the program in 2021. These two projects are presented to the Commission for prudence review in this case, as discussed in the Prefiled Direct Testimony of William T. Einstein, Exh. WTE-1T.

IV. PSE CONTINUES TO FOCUS ON PROVIDING SAFE, DEPENDABLE AND EFFICIENT ENERGY SERVICES

Q. What steps are being taken by PSE to provide safe, dependable and efficient energy services to its customers?

A. PSE's primary mission is to provide safe, dependable and efficient electric and natural gas service to its customers, as described in the Prefiled Direct Testimony of Booga K. Gilbertson, Exh. BKG-1T. In the 2017 general rate case, PSE testified of the need to focus on two areas to improve electric reliability: (i) accelerated replacement of high molecular weight cables that are prone to failure and (ii) the worst-performing distribution circuits. Although the Commission did not approve a specific cost recovery mechanism for these programs, PSE continues to focus on this work. These, and other reliability efforts of PSE, are discussed in the Prefiled Direct Testimony of Catherine A. Koch, Exh. CAK-1T. With respect to natural gas, PSE focuses on enhancing and maintaining pipeline system integrity and reliability. This includes replacing or repairing all identified defects that have been identified as high risk to the public and the natural gas system as described in the Prefiled Direct Testimony of Catherine A. Koch, Exh. CAK-1T.

Additionally, robust cybersecurity is essential if PSE is to continue to provide safe and reliable service to its customers and maintain customer trust. The Data Center/Disaster Recovery initiative discussed in the Prefiled Direct Testimony of Margaret F. Hopkins, Exh. MFH-1T, directly supports PSE's efforts to protect its critical assets and information from cyber-attacks and ensures the reliability and

resiliency of the systems that support our gas and electric service should PSE experience a localized catastrophic event.

Q. Are customers seeing improvements in reliability as a result of the work on PSE's transmission and distribution system?

A. Yes. The JD Power survey results, discussed in the Prefiled Direct Testimony of Andrew Wappler, Exh. AW-1T, demonstrate that customers are seeing improvements with respect to PSE's performance in (i) providing outage information to electric residential customers and (ii) avoiding brief interruptions for electric business customers. Additional progress is needed, however, particularly in terms of avoiding lengthy outages. PSE has been focusing, and will continue to focus, on improving reliability through the work detailed in the Prefiled Direct Testimony of Catherine A. Koch, Exh. CAK-1T.

Q. How does grid modernization fit with PSE's core mission?

A. Grid modernization is critical for several reasons. First, a modern grid is a key requirement and foundational technology for high levels of residential solar, battery storage and electric vehicle penetration, which customers are increasingly requesting. Without a modernized grid designed for frequent and large amounts of two-way power flows, it may not be feasible to meet the 100 percent clean energy standard.

Second, as these new technologies begin to proliferate on PSE's electric system, increased reliability, resiliency and safety issues can arise absent grid modernization. Increased penetration of residential solar creates two-way power

flow in a grid designed for one-way power flow and raises concerns about power quality, grid design, and field worker safety and practices, among other things. Development of high capacity electric vehicle charges for residential use (e.g., Class 3 EV charges) may result in increases in connected load and may require distribution system infrastructure reinforcement to handle the increased load. The Prefiled Direct Testimony of Booga K. Gilbertson, Exh. BKG-1T provides additional detail on grid modernization.

Q. What is PSE doing to promote grid modernization?

A. PSE's near-term focus on grid modernization emphasizes reliability and resiliency improvements along with targeted and thoughtful smart/modern grid capabilities. Over time, as foundational systems such as Advanced Metering Infrastructure ("AMI") are implemented, more focus will be placed on smart and flexible grid capabilities, as discussed in the Prefiled Direct Testimony of Booga K. Gilbertson, Exh. BKG-1T.

Q. Is PSE currently implementing AMI?

A. Yes. In 2016, PSE began replacing its Automated Meter Reading ("AMR") system with AMI across PSE's electric and gas service territory in order to continue accurate billing of energy use for PSE's customers. PSE's AMR system, installed between 1998 to 2001, is failing and growing obsolete. The replacement of AMR with AMI will allow PSE to expand energy savings for customers through voltage reductions and provide a communications platform to advance

distribution automation to improve reliability for customers. The enhanced capabilities of the AMI system will be foundational to modernizing the grid.

Q. What smart grid projects is PSE deploying?

A. In PSE's 2017 general rate case, the Commission approved PSE's Glacier Battery Storage Project that is designed to provide a back-up power source for the town core of Glacier in the event of a power loss. PSE also completed a demand response pilot in 2018 that will be deployed as an effective non-wire solution to a delivery system concern. Additionally, PSE is deploying a Transmission Line Automation System that automatically locates and isolates transmission line faults and reconfigures the system to restore power to affected customers. Similarly, PSE's Distribution Automation program uses remote monitoring and sensing equipment and other technology to automatically reconfigure circuits when outages occur. These are discussed in more detail in the Prefiled Direct Testimony of Booga K. Gilbertson, Exh. BKG-1T.

V. CUSTOMERS WANT CHOICE, FLEXIBILITY AND PROACTIVE INTERACTION WHEN DOING BUSINESS WITH PSE

Q. Have customer expectations for PSE changed over the past decade?

A. Yes. Customers measure their satisfaction with PSE based on the model of service that permeates other industries and provides customers choice and flexibility. Accordingly, PSE is leveraging technology to offer customers speed, autonomy, choice and flexibility in their interactions with PSE. PSE's goal is to enable customers to interact with PSE through their preferred channel (e.g., PSE website,

smart phone, interactive voice response ("IVR")) on a 24/7 basis, allowing customers to monitor their energy usage and proactively obtain notification regarding outages. The Prefiled Direct Testimony of Andrew Wappler, Exh. AW-1T provides additional detail on the "voice of the customer" and the changing expectations of PSE customers.

Q. What steps are being taken by PSE to meet these customer expectations?

A. PSE has undertaken the Get To Zero ("GTZ") initiative that consists of several different projects designed to improve the overall customer experience for all PSE customers. Through this initiative, PSE is (i) creating new self-service options for customers to interact with PSE at their convenience, (ii) removing obstacles that result in calls to the utility, (iii) providing proactive communications on outages and other utility information, and (iv) improving the efficiency of field operations. PSE aims to provide customers with a range of digital and operational improvements that will continue to increase customer satisfaction and allow PSE to keep pace with the digital transformation that is happening all around us. In this case, PSE is seeking recovery of the investments made to further this initiative. These are generally IT investments that redesign PSE's web platform, mobile app, and billing, payment and collections program, among others. GTZ also includes an integrated work management project designed to improve customer experience with PSE's field work process. A detailed description of the full scope of work being undertaken through the GTZ initiative is set forth in the Prefiled Direct Testimony of Joshua J. Jacobs, Exh. JJJ-1T.

Q. What is the timeframe for completion of the GTZ initiative?

A. GTZ is a six-year initiative that began in 2016 and is expected to be completed in 2021. However, many of the projects have been put in service already, and the vast majority of the projects will be put in service by the end of the rate year in this case.

Q. Is customer satisfaction increasing as a result of GTZ?

A. Yes. When PSE focused its efforts and investment on providing customers flexible, self-service options for interacting with the utility, PSE's score in the JD Power Residential Electric Utility Satisfaction Study improved significantly in areas such as (i) online ease of navigating website; (ii) online timeliness of problem, question or request resolution; and (iii) ease of understanding self-service IVR phone menu instructions. In 2017, PSE was ranked by its customers in the fourth quartile in each of these metrics. In 2018, after extensive deployment of PSE's modernized website, mobile and IVR technologies, customers ranked PSE in the second quartile among these attributes. PSE's performance on these and other areas are discussed in the Prefiled Direct Testimony of Andrew Wappler, Exh. AW-1T.

VI. FINANCIAL CHALLENGES FACING PSE AND PSE'S PROPOSED ATTRITION ADJUSTMENT

Q. Please provide a high-level summary of the financial challenges PSE faces.

A. There are several financial challenges PSE faces. Much of the work to (i) modernize the grid and increase reliability and resiliency, (ii) provide

customers choice in terms of the manner in which they interact with PSE, and (iii) promote clean energy use, is heavily reliant on information technology investments. These investments typically have short depreciable lives, as discussed in the Prefiled Direct Testimony of Margaret F. Hopkins, Exh. MFH-1T. The traditional modified historical test year approach to rate recovery used in Washington means that many of these investments will be significantly depreciated before they can be recovered in rates, which creates financial hardships for PSE.

Moreover, for several years PSE has been unable to earn its authorized rate of return or return on equity under the traditional regulatory landscape in Washington—a modified historical test year with limited pro forma adjustments. It was only when the Commission approved a multiyear rate plan with annual rate increases that PSE was able to approach earning its authorized rate of return for a portion of that rate plan. This is due in large part to flat or low load growth combined with the need to replace aging infrastructure with new and more expensive plant, as well as the addition of new technology investments. PSE's financial performance and chronic underearning under traditional ratemaking is discussed in more detail in the Prefiled Direct Testimony of Daniel A. Doyle, Exh. DAD-1T.

Q. How does PSE's general rate case address these challenges and opportunities?

A. In this case PSE seeks to recover the cost of the significant investments it has made, and continues to make, to provide safe, reliable, and efficient energy service, and to provide customers with options for choice and control in terms of their interactions with PSE. PSE is requesting a rate increase of 6.9 percent for electric customers and 7.9 percent for natural gas customers, which is below the amount of rate relief PSE has justified in this case. PSE's requested rate increase includes an attrition adjustment that is consistent with Washington law and the Commission's guidance in prior cases, as discussed in more detail in the Prefiled Direct Testimony of Ronald J. Amen, Exh. RJA-1T. The attrition adjustment will allow PSE a better opportunity to earn its authorized rate of return in the rate year as discussed in more detail in the Prefiled Direct Testimony of Daniel A. Doyle, Exh. DAD-1T. Moreover, Commission authorization of the attrition adjustment requested in this case will provide more firm guidance on the evidence needed to justify the need for attrition relief due to regulatory lag, the appropriate manner to quantify earnings attrition, and the Commission's preferred approach to addressing earnings attrition.

Q. Is the pace of spending for which PSE seeks recovery in this case and through its proposed attrition adjustment due to circumstances outside PSE's control?

A. Yes. PSE operates efficiently and has taken steps to limit its spending as discussed in more detail in the Prefiled Direct Testimony of Daniel A. Doyle, Exh. DAD-1T. Even with these efforts, the rate increase requested in this case is necessary to allow PSE to:

- replace aging infrastructure and systems that are reaching the end of their useful lives, such as the replacement of AMR with AMI, the construction of two new data centers, and the ongoing focus on replacement of high molecular weight distribution cables that are prone to failure;
- improve the safety, reliability, and resiliency of its natural gas and electric systems, for example through an intensified focus on improving the worst performing distribution circuits that have perennially struggled with outages;
- respond to changing customer preferences in terms of how they interact with their utility, for example through the GTZ program expenditures that allow customers to interact with PSE through mobile apps, PSE's website, or the IVR;
- invest in technology in order to operate more efficiently, keep automated systems up to date and guard against cyber threats, for example, PSE's Data Center/Disaster Recovery initiative, PSE's Integrated Work Management project, and the Financial Transparency and Improvement Program.

VII. INTRODUCTION OF WITNESSES

Q. Please introduce the witnesses who have filed direct testimony on behalf of PSE in this general rate case.

A. The following is a list of the witnesses, in addition to myself, who are filing direct testimony and a brief summary of their testimony:

- **Daniel A. Doyle**, Chief Financial Officer for PSE, provides an overview of PSE's financial performance, the actions taken to improve its earnings, the need for an attrition adjustment, PSE's request for a 9.8 percent return on equity and 48.5 percent equity ratio and PSE's credit ratings.
- **Dr. Roger A. Morin**, Principal, Utility Research International, provides an independent appraisal of the fair and reasonable rate of return of common equity for PSE.
- **Matthew D. McArthur**, Corporate Treasurer for PSE, addresses PSE's capital structure, overall rate of return and cost of debt.
- **Margaret F. Hopkins**, PSE's Vice President and Chief Information Office, provides an overview of PSE's information technology strategy and the technology investments placed in service and that will be placed in service during the rate year.
- **Joshua J. Jacobs**, Director, Business Integration for PSE, describes the mission and benefits of PSE's GTZ initiative as well as the investment made thus far, and the work scheduled for the remainder of the project.

- **Andrew Wappler**, Vice President, Customer Operations and Communications for PSE, provides testimony addressing the voice of the PSE customer as reflected in JD Power surveys and the changing expectations of PSE's customers.

- **Booga K. Gilbertson**, Senior Vice President, Operations with PSE, provides an overview of PSE's electric and natural gas operations work, PSE's approach to providing safe, dependable and efficient gas and electric services for its customers, the planning process PSE uses to determine the priority of projects, and grid modernization efforts.

- **Catherine A. Koch,** Director, Planning for PSE, addresses significant gas pipeline safety and integrity work, electric transmission and distribution work, and AMI implementation through the test year and planned to be completed through the end of the rate year. Additionally, she addresses storm deferrals and grid modernization investments to improve electric reliability and resiliency.

- **Duane A. Henderson,** Manager, Gas System Integrity for PSE, addresses distribution system upgrades related to the Tacoma LNG project.

- **Doug S. Loreen**, Director, Safety and Corporate Shared Services for PSE, addresses capital facilities changes relevant to this case including the rebuild of the Bellingham Service Center, renovation of the South King Complex, purchase of the Snoqualmie Technology Center, the Bellevue Campus

Consolidation, and termination of operating leases at business offices and pay stations.

- **Paul K. Wetherbee**, Director, Energy Supply Merchant for PSE, testifies regarding power cost issues, including transmission contract renewals and additions, new resources, and projected power costs for the rate year.
- **Ronald J. Roberts**, Director of Generation and Natural Gas Storage for PSE, addresses the test year operating and capital expenditures and the projected rate year operating and capital expenditures for PSE's interests in the Colstrip Steam Electric Station and an overview of the rate year production operations and maintenance expense for PSE's thermal, hydroelectric, and wind generation facilities.
- **William T. Einstein**, Director of Product Development and Growth at PSE, provides testimony regarding the proposed sale of PSE's water heater rental business, several pilot and demonstration projects recently begun and on the horizon, and the prudency of two new renewable projects that will serve PSE's Green Direct program.
- **Thomas M. Hunt,** Director of Compensation and Benefits for PSE, describes the elements of PSE's compensation and benefits programs and explains the steps PSE takes to compete in a challenging labor market and retain a skilled workforce while controlling wage and benefits costs.

- **Matthew R. Marcelia,** Director of Tax and IT Finance Projects for PSE, addresses Internal Revenue Service normalization requirements related to the excess deferred income taxes that resulted from the recent change in corporate income tax rates and how PSE treats excess deferred taxes in this filing. He also provides testimony supporting the implementation of PSE's Financial Transparency and Improvement Program, and he explains the calculations in the attrition model for rate year rate base, deferred tax liability, and income tax expense.

- **Jon A. Piliaris,** Director, Regulatory Affairs for PSE, presents the electric rate spread and rate design for PSE. He also provides the revenue projections for PSE's requested attrition adjustment, the normalized test year revenue, the overall electric and natural gas rate impacts, and the adjusting price schedules to be included in the final compliance filing.

- **Susan E. Free,** Manager of Revenue Requirement for PSE, addresses the calculation of the revenue requirement, including restating and pro forma adjustments, and the associated requested revenue change after attrition for electric and natural gas operations. She also provides an updated baseline rate for use in PSE's Power Cost Adjustment mechanism

- **Stephen J. King,** Director, Controller and Principal Accounting Officer for PSE, presents PSE's income statement and balance sheet and addresses the processes and procedures that PSE has in place to ensure the completeness and accuracy of the financial information used in the test periods for the

electric and gas revenue requirements. He also presents the affiliate and subsidiary transaction report.

- **Ronald J. Amen**, Director, Advisory and Planning Practice, Black & Veatch Management Consulting LLC, presents PSE's electric and natural gas attrition analyses and the electric and natural gas attrition revenue deficiencies. He also presents an allocation study of natural gas resource costs and a recommendation for the allocation of pipeline capacity and storage costs for use in the Purchased Gas Adjustment mechanism.

- **John D. Taylor**, Principal Consultant, Black & Veatch Management Consulting LLC, provides the natural gas cost of service, rate spread and rate design for PSE.

- **Lorin I. Molander,** Manager, Load Forecasting and Analysis for PSE, presents PSE's electric and natural gas temperature adjustment methodologies and results used to develop the pro forma electric and natural gas sales for the test year.

- **Birud Jhaveri**, Manager of Pricing and Cost of Service for PSE, presents the electric cost of service for PSE.

- **John J. Spanos,** Senior Vice President, Gannett Fleming Valuation and Rate Consultants, LLC, sponsors a depreciation study for Colstrip Units 3 and 4.

- **Dr. Chun K. Chang,** former PSE Regulatory Consultant in Pricing and Cost of Service for PSE, presents PSE's 2019 load research report used to perform PSE's electric cost of service study and rate design.

VIII. CONCLUSION

Q. Does this conclude your prefiled direct testimony?

A. Yes, it does.