

ADDENDUM F

Puget Sound Energy General Rate Case – Index of Testimony and Exhibits UE-19_____ and UG-19_____

1. **David E. Mills**, Senior Vice President of Policy and Energy Supply at PSE provides a high-level overview of PSE, its vision for the future and the challenges PSE faces, in addition to introducing the witnesses.

DEM-1T Direct Testimony

DEM-2 Professional Qualifications

2. **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

DAD-1T Direct Testimony

DAD-2 Professional Qualifications

DAD-3 Standard and Poor's Funds from Operations to Debt (FFO/Debt) Metric for Puget Sound Energy

DAD-4 Returns on Equity, Equity Ratios and Weighted-Average Returns on Equity Authorized for Electric and Natural Gas Utilities for the Period January 1, 2018, through December 31, 2018

DAD-5 Returns on Equity, Equity Ratios and Weighted-Average Returns on Equity Authorized for Dr. Morin's Proxy Group of Electric and Natural Gas Utilities for the Period January 1, 2018, through December 31, 2018

DAD-6 Test Year and Rate Year Credit Metric Comparisons for Puget Sound Energy

3. **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

RAM-1T Direct Testimony

RAM-2 Professional Qualifications

RAM-3 Investment-Grade Dividend-Paying Combination Gas and Electric Utilities Covered in Value Line's Electric Utility Industry Group

RAM-4 Proxy Group for Puget Sound Energy

RAM-5 Combination Electric & Gas Utilities – DCF Analysis Value Line Growth Rates

RAM-6	Combination Electric & Gas Utilities – DCF Analysis Analysts’ Growth Forecasts
RAM-7	Combination Electric & Gas Utilities – Beta Estimates
RAM-8	DCF Analysis S&P 500 Stocks
RAM-9	Discussion of the ECAPM, Including Its Theoretical and Empirical Underpinnings
RAM-10	2018 Utility Industry Historical Risk Premium
RAM-11	Allowed Risk Premium Analysis

4. Matthew D. McArthur, Corporate Treasurer for PSE, addresses PSE’s capital structure, overall rate of return and cost of debt.

MDM-1T	Direct Testimony
MDM-2	Professional Qualifications
MDM-3	Test Year Capital Structure and Costs of Capital (2018 Commission Basis Reports)
MDM-4	Test Year Capital Structure and Costs of Capital (As Adjusted by PSE)
MDM-5	Projected Rate Year Capital Structure and Costs of Capital
MDM-6	PSE’s Outstanding Issues of Callable Long-Term Debt as of December 31, 2018

5. 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.

MFH-1T	Direct Testimony
MFH-2	Professional Qualifications
MFH-3	Technology Placed into Service After October 1, 2016, and Before December 31, 2018
MFH-4	Data Center and Disaster Recovery Program Corporate Spending Authorization Documentation
MFH-5	Energy Management System Upgrade Corporate Spending Authorization
MFH-6	HR-TOPS Corporate Spending Authorization

6. 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.

JJJ-1T	Direct Testimony
--------	------------------

JJJ-2	Professional Qualifications
JJJ-3	2016 GTZ Board Presentation
JJJ-4	2016 Project Roadmap
JJJ-5	2016 JD Power Residential
JJJ-6	GTZ Project List
JJJ-7	Web Corporate Spending Authorization
JJJ-8	Communication Gateway Corporate Spending Authorization
JJJ-9	Microservices Corporate Spending Authorization
JJJ-10	IWM Corporate Spending Authorization

7. **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.

AW-1T	Direct Testimony
AW-2	Professional Qualifications
AW-3	JD Power 2018 Electric Utility Residential Customer Satisfaction Survey
AW-4	JD Power 2017-2018 Scorecards

8. **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.

BKG-1T	Direct Testimony
BKH-2	Professional Qualifications

9. **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.

CAK-1T	Direct Testimony
CAK-2	Professional Qualifications
CAK-3	Major Projects Greater than \$10 Million
CAK-4	Advanced Metering Infrastructure
CAK-5	Storm Deferral

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

DAH-1T Direct Testimony
DAH-2 Professional Qualifications
DAH-3 Excerpt from PSE 2012 10 Year Plan HP Project List

11. **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.

DSL-1T Direct Testimony
DSL-2 Professional Qualifications
DSL-3 CBRE Workplace Strategy Findings Report
DSL-4C CBRE Market Analysis April 2018
DSL-5 Capital Spending Authorization for Bellingham Service Center
DSL-6 South King Complex Tenant Improvement – Phase I
DSL-7 Snoqualmie Facility Purchase Authorization

12. **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.

PKW-1CT Direct Testimony
PKW-2 Professional Qualifications
PKW-3C Summary of PSE’s Proposed Power Costs in Comparison with Power Costs in the 2017 GRC Settlement
PKW-4 EMC Slides for 150 MW Midway Transmission Renewal
PKW-5 EMC Slides for 474 MW Rocky Reach/Vantage Transmission Renewal
PKW-6 EMC Slides for 150 MW New Mid-C Transmission
PKW-7 EMC Slides for 663 MW Colstrip Transmission Renewal
PKW-8 EMC Slides for 300 MW Transmission renewal for PG&E Exchange Agreement
PKW-9 EMC Slides for Hopkins Ridge 2024 Transmission

PKW-10C	Description of the Analysis Used to Estimate the Value of the Colville Slice of the Wells Hydroelectric Project
PKW-11	EMC Slides for Extension of 33,000 dth/day Capacity on Westcoast Pipeline
PKW-12C	EMC slides for Extension of 52,000 dth/day Capacity on Westcoast Pipeline
PKW-13C	Summary of Rate Year Power Costs by Resource
PKW-14C	Monthly Detail of Costs and Energy Produced by AURORA
PKW-15C	Summary of the Rate Year Costs Not in Aurora
PKW-16C	Rate Year Resources Input Summary
PKW-17C	Summary of the 2018 Review of Variable O&M Costs
PKW-18C	Variable Operations and Maintenance Dispatch Assumptions for Gas-Fired Generators
PKW-19C	Monthly Market Gas and Power Prices
PKW-20C	Presentation of the 2017 Availability Data and the Adjusted Capacity Used to Calculate the Cost of Westcoast Capacity
PKW-21C	Comparisons of Actual Wind Generation with Preconstruction, 2010 DNV, and 2016 Wind Forecasts for Each Wind Resource
PKW-22C	Development of Skookumchuck PPA Hour-Ahead Costs
PKW-23C	Calculation of Rate Year Day-Ahead Wind Integration Costs
PKW-24C	Colstrip Fixed Fuel Costs
PKW-25C	Contract Costs of Mid-C Hydro Resources
PKW-26C	BPA Transmission Costs
PKW-27C	Gas Mark-to-Model and Open Transport Value
PKW-28C	Fixed Gas-for-Power Transportation Costs
PKW-29C	Distillate Fuel Incremental Costs
PKW-30C	Adjustment to Remove Non-Fuel Costs that are Included in AURORA's Peaker Start Costs
PKW-31C	Winter Peak Planning Incremental Costs
PKW-32	Other Power Costs Chargeable to FERC Account 557
PKW-33C	Comparison of Commission Approved Power Costs with Proposed Power Costs in this Proceeding

- 13. 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.

RJR-1T	Direct Testimony
RJR-2	Professional Qualifications
RJR-3C	Details Regarding the Colstrip Steam Electric Station
RJR-4	Press Release of Talen Montana Announcing the Early Retirement of Colstrip Units 1 & 2
RJR-5	Press Release of PSE Announcing the Early Retirement of Colstrip Units 1 & 2
RJR-6	Colstrip Steam Electric Station PSE Capital Expenditures Over \$100,000 (October 1, 2016 – December 31, 2018)
RJR-7	Summary of Rate Year Production O&M Costs
RJR-8	Summary of the Adjustments to Test Year Expense in Calculating the Rate Year Production O&M Expense
RJR-9C	Summary of Colstrip Overhaul Events Included in the Rate Year
RJR-10C	Amortization of Major Maintenance Associated with PSE's Owned and Jointly-Owned Simple and Combined Cycle Combustion Turbine Facilities Included in the Rate Year
RJR-11C	Comparison of Amortization of Major Maintenance Associated with PSE's Owned and Jointly-Owned Simple and Combined Cycle Combustion Turbine Facilities Included in this Proceeding to Amortization of Major Maintenance Associated with PSE's Owned and Jointly-Owned Simple and Combined Cycle Combustion Turbine Facilities Included in the 2017 GRC
RJR-12	Comparison of Hydro O&M Costs Included in this Proceeding to Hydro O&M Costs Included in the 2017 GRC
RJR-13	Comparison of Wind Production O&M Costs Included in this Proceeding to Wind Production Costs Included in the 2017 GRC

- 14. 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 prudence of two new renewable projects that will serve PSE's Green Direct program.

WTE-1CT	Direct Testimony
WTE-2	Professional Qualifications
WTE-3C	Skookumchuck Wind Energy Project, LLC PPA

WTE-4C	Lund Hill Solar Project, LLC PPA
WTE-5	Exhibit A to 2017 RFP for Renewable Energy
WTE-6HC	Green Direct First Open Season RFI Results
WTE-7HC	Green Direct Second Open Season RFP Results

15. **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.

TMH-1T	Direct Testimony
TMH-2	Professional Qualifications
TMH-3C	Merit Increase Trends
TMH-4	Excerpt from Executive Compensation Portion of Form 10-K
TMH-5C	Health Benefit Plans History
TMH-6	Pension Assets and Pension Benefit Obligations
TMH-7	2018 Goals and Incentives Plan

16. **Matthew R. Marcellia**, 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.

MRM-1T	Direct Testimony
MRM-2	Professional Qualifications
MRM-3	I.R.S. Private Letter Ruling 8920025
MRM-4	I.R.S. Private Letter Ruling 200824001
MRM-5	I.R.S. Private Letter Ruling 201820010
MRM-6	Normalization Provisions in the Tax Cuts and Jobs Act
MRM-7	PricewaterhouseCoopers Comments on PSE’s ARAM and Normalization Treatment
MRM-8	2014.08.14 Vision Document Budget Project Whitepaper
MRM-9	FTIP Reset Slides
MRM-10	FTIP2 SA Design Phase Close

17. **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.

JAP-1T	Direct Testimony
JAP-2	Professional Qualifications
JAP-3	Normalized Test Year Revenue from Electric Operations
JAP-4	Normalized Test Year Revenue from Natural Gas Operations
JAP-5	Electric Lighting Rate Design
JAP-6	Electric Rate Design Proposal
JAP-7	Proposed Electric Tariff Schedule Revisions
JAP-8	Sample Calculation of Conjunctive Billed Demand
JAP-9	Derivation of Demand Rates under Conjunctive Demand Billing
JAP-10	Conjunctive Demand Service Option Tariff Schedule
JAP-11	Electric Delivery Decoupling Mechanism Calculations
JAP-12	Electric Fixed Production Decoupling Mechanism Calculations
JAP-13	Gas Decoupling Mechanism Calculations
JAP-14	Estimated Electric Bill Impacts from Proposed Base and Rider Rates
JAP-15	Estimated Gas Bill Impacts from Proposed Base and Rider Rates
JAP-16	Projected Electric Rate Year Revenue for Attrition Analysis
JAP-17	Projected Gas Rate Year Revenue for Attrition Analysis

18. **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.

SEF-1T	Direct Testimony
SEF-2	Professional Qualifications
SEF-3	Electric and Natural Gas Revenue Requirement Base Rates Deficiency Calculations
SEF-4	Electric and Natural Gas Summary Pages, Detailed Summaries and Adjustment Pages

SEF-5	Electric and Natural Gas Test Year Rate Base, Working Capital, Allocation Methods and Cost of Capital
SEF-6	Revenue Requirement Restating and Proforma Adjustments Common to Electric and Natural Gas
SEF-7	Revenue Requirement Restating and Proforma Adjustments – Electric Only
SEF-8	Revenue Requirement Restating and Proforma Adjustments – Natural Gas Only
SEF-9	Determination of Attrition Basis Amounts for Electric and Natural Gas
SEF-10	Five Year Compound Growth Rates
SEF-11	Exhibit A-1 Power Cost and Fixed Production Cost Baseline Rate

19. **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.

SJK-1T	Direct Testimony
SJK-2	Professional Qualifications
SJK-3	Allocated Results of Operations
SJK-4	Balance Sheet
SJK-5	Revised 2018 Affiliated Interest Subsidiary Transaction Report filed with the Commission on May 7, 2019

20. **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

RJA-1T	Direct Testimony
RJA-2	Professional Qualifications
RJA-3	Electric Revenue Attrition Study
RJA-4	Gas Revenue Attrition Study
RJA-5	Gas Capacity Resource Allocation

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

JDT-1T	Direct Testimony
JDT-2	Professional Qualifications
JDT-3	Summary of COSS Results
JDT-4	Account Detail by Classification and Rate Class
JDT-5	Account Inputs and Allocation Choices
JDT-6	External Allocation Factors
JDT-7	Rate Apportionment, Proposed Rates, and Revenue Proofs
JDT-8	Balancing, Demand, and Procurement Charge Support

22. **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.

LIM-1T	Direct Testimony
LIM-2	Professional Qualifications

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

BDJ-1T	Direct Testimony
BDJ-2	Professional Qualifications
BDJ-3C	Peak Credit Analysis
BDJ-4	Electric Cost of Service

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

JJS-1T	Direct Testimony
JJS-2	Professional Qualifications
JJS-3	2018 Depreciation Study

25. **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.

CKC-1T	Direct Testimony
CKC-2	Professional Qualifications
CKC-3	2018 Load Research Report

