

BEFORE THE  
WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

UG-\_\_  
GENERAL RATE APPLICATION  
OF  
NORTHWEST NATURAL GAS COMPANY

December 31, 2018

**Direct Exhibit of Ronald J. Amen**

**COST OF SERVICE STUDY**

**Exh. RJA-7**

## Ronald J. Amen

Mr. Amen has over 40 years of combined experience in utility management and consulting in the areas of regulatory support, resource planning, organizational development, distribution operations and customer service, marketing and sales, and systems administration. He has advised gas, electric and water utility clients in the following areas: regulatory policy, strategy and analysis; cost of service studies (embedded and marginal cost analyses); rate design and pricing issues including time-of-use rates, revenue decoupling, weather normalization and other cost tracking mechanisms; resource strategy, planning and financial analysis; and business process design, evaluation and organizational structures. Mr. Amen has provided expert testimony in numerous state and provincial regulatory agencies, and the Federal Energy Regulatory Commission. Prior to joining Black & Veatch, Mr. Amen's consulting experience included Vice President of Concentric Energy Advisors, Inc. and Director with Navigant Consulting, Inc. His prior utility experience includes Manager of Federal Regulatory Affairs at Puget Sound Energy, Inc., Director of Rates at Washington Natural Gas Company, Regional Director - Operations and Director - Rates for Indiana Energy (now Vectren), and management positions in Information Systems and Distribution Operations at Ohio Valley Gas Corporation.

## PROJECT EXPERIENCE

### REGULATORY POLICY, STRATEGY AND ANALYSIS

#### CPS Energy (2017 – Present)

Provided an overall review of the client's Strategic Roadmap to prioritize its multi-year regulatory initiatives. (e.g., changes in product and service offerings, restructuring of current rate classes, introduction of new rate structures, rate levels, and tariff provisions). Current pricing processes and platforms assessed to identify recommended enhancements to enable the development and implementation of dynamic pricing concepts. Assisted client with preparation of next rate case (e.g., costing and pricing analyses, load forecasting, internal communications, and stakeholder engagement).

#### FortisBC Energy, Inc. (2016 – 2018)

Performed an overall review of the client's Transportation Service Model. Analyzed the client's various midstream transportation and storage capacity resources used in providing balancing of transportation customers' loads. Review included the physical diversity, functionality and flexibility provided by the various capacity resources, and the cost impact caused by transportation customers' imbalance levels. Conducted an industry-wide benchmarking study of current industry-wide best practices, by regulatory jurisdiction, related to

## DIRECTOR

**Specialization:**  
Financial analysis,  
regulatory support,  
strategy, operations,  
litigation support

**Office Location**  
Redmond, Washington

**Education**

- B.S. w/ Distinction, Business Administration (Finance and Economics), College of Business Administration, University of Nebraska, 1978

**Professional Associations**

- American Gas Association
- Southern Gas Association

**Year Career Started**  
1978

**Year Started with B&V**  
2013

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transportation balancing tariff provisions. Participated in stakeholder workshops and testified before the BCUC.

#### **McDowell Rackner & Gibson Law Firm (2015 – 2016)**

Provided due diligence services to the law firm in connection with a state utility commission investigation into the law firm client's gas storage and optimization activities. Provided an independent opinion as to the likely outcome of the Commission's ongoing investigation.

#### **Gulfport Energy Corporation (2016)**

Provided regulatory analysis and support to Gulfport Energy Corporation in the ANR Pipeline Company Natural Gas Act §4 rate proceeding before the Federal Energy Regulatory Commission (FERC). Analyzed as-filed cost of service and rate design to identify key cost of service, cost allocation, rate design and service related/tariff issues. Developed an integrated cost of service and rate design model to prepare studies on client issues. Prepared best/worst case litigation outcomes, discovery and evaluations of discovery of other parties. Analyzed FERC staff top sheets and settlement offers; and assisted in the preparation of settlement positions.

#### **Confidential Financial / Energy Partners (2015)**

Provided regulatory due diligence support for client related to a proposed merger with a multijurisdictional gas/electric company including an evaluation of the regulatory landscape in the various applicable state jurisdictions, recent regulatory decisions, and current regulatory issues.

#### **Confidential International Energy Company (2014)**

Provided regulatory due diligence support for client related to a proposed merger with a multijurisdictional gas company including an evaluation of the regulatory landscape in the various applicable state jurisdictions, recent regulatory decisions, and current regulatory issues.

#### **Pacific Gas & Electric Company (2014)**

Developed an extensive industrywide benchmarking study to determine the cost allocation and ratemaking treatment utilized by Local Distribution Companies (LDCs) in the United States for recovery of gas transmission costs. Benchmarked cost allocation and rate design utilized by Interstate/Intrastate Pipelines. Benchmarked how Industrial & Electric Generation customers are served with natural gas.

#### **Public Service Company of New Mexico (2009-2010)**

Provided case management, revenue requirement, cost of service and rate design support for general rate cases in the utility's two state regulatory

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jurisdictions. Issue management and policy development included an electric fuel and purchased power cost mechanism, recovery of environmental remediation costs for a coal fired power plant, and the valuation of renewable energy credits related to a wind power facility.

#### **Confidential International Energy Company (2009)**

Provided due diligence on behalf of client related to the purchase of a gas/electric utility, including a review of the regulatory and market-related assumptions underlying the client's valuation model, resulting in the validation of the model and identification of key business risks and opportunities.

#### **Confidential Energy Company (2007)**

Provided regulatory due diligence support for client related to a proposed merger with a multijurisdictional gas/electric company including an evaluation of the regulatory landscape in the various applicable state jurisdictions, recent regulatory decisions, and current regulatory issues.

#### **Public Service Electric & Gas (2004)**

Provided management with an evaluation of its line extension practices for both its gas and electric services and an earnings impact assessment using a proprietary evaluation model. Conducted a workshop for management on the results of the evaluation and recommendations for consideration in the areas of revenue enhancements, modification of internal policies and procedures, and construction cost control areas.

#### **Washington Gas Light (2004)**

Provided management with an evaluation of the policies, procedures and tools presently used in its new customer addition process, an assessment of the impact of new customer growth on net operating income, and regulatory solutions to accelerate recovery of new customer costs that best meet the regulatory requirements of its three state jurisdictions.

#### **Confidential Energy Company (2003)**

Performed due diligence on behalf of a confidential energy company client related to the acquisition of a U.S. interstate pipeline, involving a market assessment related to its customer contracts and their prospective alternatives.

#### **Terasen Gas (now FortisBC) (2002 – 2003)**

Engaged to assist with the development of a gas transmission asset ownership strategy. The project included researching examples from other jurisdictions in North America for transmission ownership structures, the supporting rationale and the resulting regulatory treatment.

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### **Chesapeake Utilities (2001 – 2002)**

Provided expert witness testimony on the subject of new area expansion programs in the United States for the client's general rate case proceeding in Delaware. As part of a negotiated settlement of the case, the client was permitted to establish a new area expansion pilot program.

### **Puget Sound Energy (1997, 2001)**

Redesigned gas line extension policy based on financial investment criteria, standardized construction costs, and revenue contributions derived from the client's residential end-use data (building type/size/vintage, appliance type, etc.). Introduced a new customer rate option for customers whose facilities extensions did not meet the target rate of return requirement, which significantly reduced earnings attrition caused by rapid customer growth. In a later general rate proceeding, testimony support was provided regarding the modifications and revisions to the facilities extension program.

## **RESOURCE PLANNING, STRATEGY AND FINANCIAL ANALYSIS**

### **Fortis BC Energy, Inc. (2011)**

Retained to help develop a gas supply incentive mechanism in cooperation with the British Columbia Utilities Commission staff and the company's other stakeholders. Provided an independent analysis of the utility's management of pipeline and storage capacity and supply. Part of this work entailed a review of the major markets in which the utility transacted, reviewing the size of trading activity at the major market hubs and reviewing the price indices for these markets.

### **Black Hills Colorado Electric Utility (2009)**

Engaged as a member of a consultant team that served as the independent evaluator in a competitive solicitation for non-intermittent generation resources. Jointly recommended by the utility client, the staff of the utility commission and the state attorney general, the consulting team acted as an agent of the public utility commission monitoring and overseeing the solicitation, which included reviewing the request for proposals and solicitation process, including provisions of the power purchase agreement, preliminary review (economic and contractual) of bids received from the request for proposals, initial modeling of bids for screening, selection of bidders with whom to conduct negotiations and oversight of the negotiation process, and the ultimate selection of the winning bid. Provided due diligence review of all input data, preliminary and final model output, and output summaries. The team produced biweekly confidential reports to the commission regarding the process and its results.

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### **NW Natural (2007-2008)**

Assisted with the development of its long-term Integrated Resource Plan (IRP) for its Oregon and Washington service territories. The IRP included the evaluation of incremental inter- and intra-state pipeline capacity, underground storage, and two proposed LNG plants under development in the region.

### **Puget Sound Energy (2007)**

Engaged to assist the client with the development of a natural gas resource efficiency and direct end-use strategy, an interdepartmental initiative focused on preparing a natural gas resource efficiency plan that optimizes customers' end-use energy consumption while furthering corporate customer, financial, environmental, and social responsibilities.

### **Avista Utilities (2005)**

As part of a review of a gas procurement strategy and hedging analytics, provided gas local distribution company (LDC) case studies for gas procurement and risk management practices, including identification of risk management best practices across the industry.

### **Puget Sound Energy (2003)**

Provided resource planning strategy and analysis for the company's Least Cost Plan, including a review of the company's underlying 20-year electric and gas demand forecasts.

### **Puget Sound Energy (2002 – 2003)**

Engaged as a member of a consulting team serving as the client's financial advisor for the acquisition of new electric power supply resources. Conducted a multitrack solicitation process for and evaluation of generation assets and purchase power agreements. Provided regulatory support for the acquisition in a subsequent power cost rate proceeding.

### **Central Illinois Light Company (Ameren Utilities) (2002 – 2003)**

Provided an evaluation of the functions provided by the utility's underground storage facilities for the purpose of assigning cost responsibility to the various customer groups, which had been challenged by parties in the company's general rate proceeding.

### **Confidential European Electric Utility (1999)**

Provided strategy and analysis support, including a review of the natural gas value chain in the United States, as part of an overall project scope focusing on the evaluation of retail multi-energy strategies for the client.

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### **Austin Energy (1997 – 1998)**

Engaged as a member of three-consultant team that established a self-sustaining energy services business to replace its rebate-based, demand-side management programs. Area of focus included the finance and administrative functions as well as the employee evaluation and recruitment process.

### **COST ALLOCATION, PRICING ISSUES AND RATE DESIGN**

#### **Louisville Gas & Electric Company and Kentucky Utilities Company (2018)**

Engaged by LG&E and KU to conduct a study in support of a joint utility and stakeholder collaborative concerning economical deployment of electric bus infrastructure by the transit authorities in the Louisville and Lexington KY areas, as well as possible cost-based rate structures related to charging stations and other infrastructure needed for electric buses.

#### **Summit Utilities – Colorado Natural Gas, Inc. (2018)**

Engaged by Summit Utilities to develop and support with expert testimony an appropriate normal weather period for the client's five Colorado temperature zones, resulting normalized billing determinants, and a weather normalization adjustment ("WNA") proposal in conjunction with the filing of a general rate case for its Colorado Natural Gas, Inc. subsidiary.

#### **Westar Energy (2018)**

Provided cost of service and expert witness support for the electric utility's general rate case filing before the Kansas Corporation Commission (KCC). The cost of service study determined the cost components for a new Residential Distributed Generation (DG) customer class that provided the basis for recommendations for establishing components of a sound, modern three-part rate design for this new Residential DG (roof-top solar) service, which was approved by the KCC.

#### **Florida Public Utilities (Chesapeake Utilities) (2017 – 2018)**

Provided a rate stratification study of the utility's commercial and industrial customer classes to facilitate the reconfiguration of the classes by size of service facilities, annual volume, and load factor. Reviewed the cost allocation bases and recommended alternatives for recovery of capital investments related to the utility's Gas Reliability Investment Program (GRIP).

#### **Tacoma Power (2016 – Present)**

Provided cost of service and rate design support for the electric utility's general rate case filings, including support for recovery of fixed costs through fixed charges and impacts on low income customers. Provided recommendations as to specifications in the client's cost of service analysis (COSA) model for deriving Open Access Transmission Tariff rates, using FERC approved standards to guide

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the evaluation. Conducted an electric utility costing and pricing workshop for the PUB in October 2017; and participated with Tacoma Utilities staff in a comprehensive electric and water Rates and Financial Planning workshop in February 2018. Engagement was extended for the 2019 – 2020 rate filing, which will incorporate the Black & Veatch municipal COSA model for costing and ratemaking purposes. Currently working with Tacoma Power for the potential incorporation of financial forecasting capabilities and revenue requirements development into the COSA model. Future project work involves working on the re-design of the general service and industrial rate schedules, economic development rate strategies, demand response rates, and other innovative rate programs, such as Electric Vehicle charging and carbon free rate options.

### **Tacoma Power (2017)**

Engaged to review and assess current rates for 3rd Party Pole Attachments (PA), and more specifically, to determine and recommend if any rate adjustments were needed. Performed several tasks:

- Performed a market survey of rates charged by comparable utilities;
- Reviewed current regulations on rate setting and practice for 3<sup>rd</sup> Party Pole Attachments as set forth by the Federal Communications Commission (FCC) and the State of Washington (WA), and the interpretation of such regulations in court decisions;
- Reviewed industry best practices under the FCC, WA, and the American Public Power Association (APPA);
- Collected and reviewed data for cost based fees including:
  - Application Fees
  - Non-Compliance Fees
- Reviewed cost data supplied by the City of Tacoma as relates to determining pole costs; and
- Performed modeling of rates under the FCC Model, the APPA model and the State of Washington shared model (50 % FCC Rate/ 50% APPA Rate).

### **BC Hydro (2016)**

Provided research and analysis of the line extension policies of a select group of peer utilities in Canada with similar regulatory regimes as well as U.S. utilities based on their geographic relationship to the client. Conducted interviews with peer utilities to gather comparative information regarding their line extension policies and related internal procedures. Performed a comparative analysis of the various line extension policies from the selected peer group.

### **Cascade Natural Gas Corporation (2015 – 2018)**

Provided cost of service and rate design support for several of the company's general rate case filings in its two state jurisdictions, 3 in Oregon and 2 in



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Washington. Conducted Long-run Incremental Cost Studies in the Oregon jurisdiction and embedded class allocated cost of service studies in the Washington jurisdiction. Performed benchmark analyses to compare each of the client's administrative and general (A&G) and operations and management (O&M) expenses, on a per-customer basis, to various peer groups. Analyses were performed for natural gas utilities and combination utilities with both electric and gas operations. Various iterations of the analyses were prepared to make the peer group of utilities more comparable to the characteristics of the client's utility operations.

#### **Chesapeake Utilities (2015 – 2016)**

For its Delaware jurisdiction, provided cost of service and rate design support in the client's general rate case proceeding, including expert witness testimony in support of the utility's proposed gas revenue decoupling mechanism.

#### **Homer Electric Association / Alaska Electric and Energy Cooperatives (2015)**

Represented clients in an ENSTAR gas general rate proceeding. Testimony discuss accepted industry principles of revenue allocation and rate design, including the applicability to and alignment with ENSTAR's revenue allocation and rate design proposals for large power and industrial customers. Provided a critique of certain methodological aspects of ENSTAR's Cost of Service study, proposed revenue allocation, and rate design relating to the various large power and industrial customers.

#### **Arkansas Oklahoma Gas Corporation (2002, 2003, 2004, 2007, 2012, 2013)**

Provided cost of service and rate design support for several of the company's general rate case filings in its two state jurisdictions and in support of Section 311 transportation filings (2007, 2010) before the Federal Energy Regulatory Commission. Provided related research, design and expert witness testimony in support of a Revenue Decoupling mechanism in one jurisdiction and a Weather Normalization Adjustment mechanism in the other jurisdiction, along with a significant increase in fixed charges and the introduction of demand charges for the company's largest customer classes. Conducted a pre-filing "decoupling" workshop for the utility commission staff.

#### **Northern Indiana Public Service Company (NiSource) (2009 – 2010, 2013, 2017)**

Conducted class allocated cost of service studies for the client's natural gas (including two other affiliate gas utilities) and electric operations. Work included reconfiguring the Company's commercial and industrial customer classes according to size of load and customer-related facilities. Rate design was modernized to recover a greater portion of fixed costs via fixed monthly customer and demand based charges, a transition to a "Straight-Fixed Variable"

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form of rate design. Industry research was provided on alternative rate designs for the electric service, including Time-of-Use rates and Critical Peak Pricing. Served as an expert witness on behalf of the client in four general rate cases before the Indiana Utility Regulatory Commission.

#### **Southwestern Public Service Company (Xcel) (2012)**

Retained to conduct a study to estimate the conservation effect of replacing its existing electric residential rate design with an alternative rate design such as an inverted block rate design. Reviewed inclining block rate structures that have actively been employed in other jurisdictions and also reviewed technical and academic literature to assess the elasticity of electricity demand for residential customers in the southwestern U.S. Analyzed 2009-2011 residential data to determine what sort of conservation effect the company may expect by implementing an inclining block rate structure. Provided an overview of alternative rate structures which may also promote conservation effects, such as seasonal rates, three-part rates and time-of-use (TOU) rates, and considered the competing incentives of promoting conservation and cost recovery, without specific rate mechanisms to address this conflict.

#### **Atlantic Wallboard LP and Flakeboard Company Limited (JD Irving) (2012)**

Represented clients in an Enbridge Gas New Brunswick Limited Partnership (“EGNB”) general rate proceeding. Testimony responded to the 2012 allocated cost of service study and rate design that was submitted to the New Brunswick Energy and Utilities Board by EGNB. Testimony also provided benchmark information regarding EGNB’s distribution pipeline infrastructure in New Brunswick, Canada.

#### **Western Massachusetts Electric Company (Northeast Utilities) (2010 – 2011)**

Supported utility in its decoupling proposal for the company’s general rate case. Work included: 1) research on the financial implications of decoupling; 2) identification of decoupling mechanism details to address company and regulatory requirements and objectives; 3) identification of rate adjustment mechanisms that would work together with the company’s proposed decoupling mechanism; and 4) preparing pre-filed testimony and testifying at hearings in support of the company’s decoupling and rate adjustment proposals. The proposed rate adjustment mechanisms included an inflation adjustment mechanism based on a statistical analysis, and a capital spending mechanism to recover the costs associated with capital plant investment targeted to improving service reliability.

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### **Interstate Power & Light (Alliant Energy) (2010 – 2011)**

Conducted class allocated cost of service studies for a Midwestern electric utility's Minnesota electric operations. Work included reconfiguring the company's customer classes for cost of service purposes to collapse end-use based classes with the classes to which they would be eligible. Cost of service studies were performed on a before-and-after basis for the existing and proposed classes. The cost of service studies included a fixed/variable study for production costs, and a primary/secondary study for poles, transformers and conductors. Performed a TOU analysis to determine the appropriate rate differentials for its peak and off-peak rates. Served as an expert witness on behalf of the client in a general rate case before the Minnesota Public Service Commission.

### **National Grid (2010)**

Conducted class allocated cost of service studies for the client's Massachusetts natural gas operations. This task included combined gas cost of service studies for the consolidation of four gas service territories into two gas utility subsidiaries. During interrogatories, performed four separate allocated cost of service studies for each gas service territory. Work included reconfiguring the company's commercial and industrial customer classes according to size of load and customer-related facilities. Served as an expert witness on behalf of the client in consolidated general rate cases before the Massachusetts Department of Public Utilities.

### **NW Natural (2008)**

Provided cost of service and rate design support for the utility's Washington general rate case, including expert witness testimony. Assisted the client with an earlier revenue neutral reconfiguration of its Oregon commercial/industrial sales and transportation service offerings. The earlier initiative included collaborative work with an industrial customer stakeholder group.

### **Integrus Energy (2007)**

Assisted the client with the pursuit of alternative regulatory initiatives in conjunction with company's expansion of its energy efficiency and conservation programs. Supported the research, design, and selection of revenue decoupling mechanisms for its two Illinois regulated gas utility subsidiaries, Peoples Gas Light & Coke Utility and North Shore Gas Company. Served as the cost of service witness in two general rate case filings.

### **Puget Sound Energy (2001 – 2002, 2006 – 2007)**

In two Washington general rate proceedings, provided cost of service and rate design support, including expert witness testimony in support of the utility's proposed gas revenue decoupling mechanism. Conducted research on

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accelerated cost recovery mechanisms for infrastructure replacement, electric power cost adjustment mechanisms and gas supply pricing options of utilities in North America.

#### **Southern Union Company (2006, 2007)**

Engagement director for cost of service and rate design support for the general rate proceedings of the company's Midwestern (Missouri Gas Energy) and northeastern Pennsylvania (PG Energy) gas utilities, including expert witness testimony on cost of service, rate design and declining use-per-customer. Rate design support included a proposed 10-year weather normal, and the introduction of straight-fixed variable rates (Midwestern LDC). This was the third consecutive rate case engagement for the Northeastern LDC.

#### **Vectren Energy Delivery Ohio (2004 – 2005)**

Assisted the company with the preparation of a retail customer choice filing for one of its gas distribution jurisdictions. Provided support for the development ancillary service costs, the design of program cost recovery mechanisms, and tariff structure for service offerings.

#### **Connecticut Natural Gas (1999 – 2000, 2002 – 2003, 2005)**

Served as engagement manager for cost of service and rate design support, including expert witness testimony, for the client's participation in a statewide gas unbundling proceeding. Subsequent projects included analysis of the client's demand forecasting capability, implementation of an algorithm-based balancing service and a cost of service studies related to transportation-related administrative costs, resources supporting system reliability and recovery of potentially stranded costs.

#### **Sempra Energy (2001 – 2002)**

Provided case strategy and cost of service support for the biennial cost allocation proceedings of its two utility subsidiaries, Southern California Gas and San Diego Gas & Electric.

#### **BC Gas Utility Ltd. (now FortisBC) (2000 – 2001)**

Served as engagement manager for cost of service and rate design support. Represented the client in its capital investment recovery proceeding for a major pipeline project, a cross-provincial (British Columbia) transmission pipeline. The three-phase project included regulatory strategy support for executive management regarding the integration of the pipeline proposal with the utility's Performance Based Ratemaking and unbundling initiatives and a global rate design proceeding. Cost of service support included a review of its gas cost portfolio allocation to firm sales customer classes, a survey of the trends in gas

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cost allocations and incentive mechanisms in North America, and serving as a facilitator for an all-party cost allocation and rate design workshop.

#### **Oklahoma Natural Gas Company (ONEOK) (1999 – 2000)**

Served as engagement manager for cost of service and rate design support, including expert witness testimony, for client's asset separation and unbundling proceeding as well as a subsequent general rate case. Integrated gas utility (wellhead to burner-tip) unbundled upstream services (production and gathering, storage, and intra-state transmission) from its distribution business.

#### **Confidential South American Gas Utility (1999)**

For an affiliate of a major U.S. energy company, conducted a cost of service and rate design training for management personnel engaged in the planned restructuring of the rate-setting processes for three gas utilities in Brazil.

#### **Confidential Canadian Energy Marketer (1999)**

Provided consulting support and position paper on cost allocation and pricing issues for Canadian gas marketer's participation in a restructuring collaborative sponsored by the intra-provincial pipeline and local distribution utility in Saskatchewan.

#### **Washington Natural Gas (1995)**

Negotiated and obtained regulatory approval of a 20-year contract with the company's largest industrial customer, which avoided bypass of 14 primary plant facilities within the service territory, prevented loss of annual throughput, and maintained contribution to system costs.

#### **Washington Natural Gas (1995)**

Obtained regulatory approval of unbundled, cost-based transportation services to meet large commercial and industrial customer needs and redesigned rates of other classes to better align with new cost of service methodology. The project required the facilitation of a collaborative working group of key industrial customers, customer associations, commission staff, and consumer advocacy agencies.

### **UTILITY SYSTEM OPERATIONS AND ORGANIZATIONAL DEVELOPMENT**

#### **Puget Sound Energy (2013 – 2014)**

Engaged to perform a review of its project management and capital spending authorization processes (CSA). The overall project objectives were to educate project management (PM) staff as to the importance and relevance of regulatory prudence standards, evaluate existing PM processes along with newly introduced corporate CSA processes, and propose PM and corporate process and documentation efficiencies. This task was accomplished through 1) a

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situational assessment and risk review; 2) analysis of project management practices; and 3) development of common documentation for the CSA and PM processes.

### **Puget Sound Energy (2012 – 2013)**

Engaged to perform a review of how the company compares to similarly-situated utilities in the areas of the underlying capitalized costs related to new customer additions (“new business investment”) and the management policies and practices that influence the new business capital investment. Examined the interrelationships of our client’s management policies and practices in the functional areas related to new business investment and developed an understanding of the nature of the costs captured by the new business investment process. Benchmarked those costs relative to peers’ cost factors and management capital expenditure practices and performed targeted peer group interviews on our client’s behalf. The review identified certain trends and/or interrelationships between management policies and practices, as well as other exogenous factors, and the resulting impact on new business investment.

### **Puget Sound Energy (2011 – 2012)**

Engaged to perform a review of its electric transmission planning and project prioritization process. The emphasis of the review was to determine if the process implemented by the client could be expected to meet the regulatory standard of prudence, as adopted by the state regulatory commission. Reviewed the prudence standard adopted by the commission in several recent regulatory proceedings, supplemented by our knowledge of the prudence standard adopted at a national level and in other states. The engagement included two phases: 1) an initial situation assessment of the existing process employed by the client, and 2) a review of the historic implementation of that process by reviewing a sampling of transmission projects. Compiled and provided examples of capital planning documents and procedures, viewed as “best practices,” from other electric utilities and other relevant transmission entities.

### **Alliant Energy (2011 – 2012)**

Provided audit support for one of the company’s gas and electric utilities, Interstate Power & Light, during a management audit ordered by one of its two regulatory jurisdictions. Conducted a pre-audit of distribution operations and resource planning processes to provide the client with potential audit issues. Assisted the client throughout the audit process in responding to information requests, preparing company executives and management personnel for audit interviews, and management of preliminary audit issues and findings by the independent audit firm.

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### **Ameren Illinois Utilities (2009 – 2010)**

Performed a number of benchmark analyses to compare each of the client's A&G and O&M expenses, on a per-customer basis, to various peer groups conducted for the client's natural gas and electric operations. Analyses were performed for natural gas, electric and combination utilities with both electric and gas operations. Various iterations of the analyses were prepared to make the peer group of utilities more comparable to the characteristics of the client's utility operations. Served as an expert witness on behalf of the client in a consolidated general rate case proceeding of its three utility subsidiaries before the Illinois Commerce Commission.

### **California Water Service Company (2007 – 2008)**

Engaged to manage the implementation of a new revenue decoupling mechanism into its 24 separate rate areas. Changes to the following processes and related procedures were required: rate setting, meter reading, billing, revenue and financial reporting. Microsoft Project was used to manage and track the implementation throughout the following organizations: Rates, Accounting, Information systems, Communications, and Customer Service.

### **Puget Sound Energy (2007)**

Conducted an evaluation of the company's key accounts (Top 100) and business account services organization. Work included compilation of "best practices" from peer group utilities, recommendations related to staffing levels, roles and responsibilities, and the interrelationships with the customer service (call center), revenue management and community relations organizations of the utility.

### **Washington Gas Light (2006)**

Provided market monitoring strategies and action plans based on an analysis of competitive threats and discussions with the client's customers and other utilities facing similar issues. Intent of recommended monitoring strategies and corresponding action plans to result in increased customer growth (meters) and/or customer retention, including a prioritized implementation approach to the monitoring strategies and action plans, based on benefits to the client and time to implement.

### **Entergy New Orleans / Entergy Gulf States (2004 – 2005)**

Conducted an evaluation of the two gas operating subsidiaries' capital planning, asset management strategy, and customer growth practices. Formulated a strategy for improving the profitability of the entities, with regulatory strategies for its two jurisdictions that included a special cost recovery mechanism for accelerated infrastructure replacement programs.

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### **Austin Energy (1997 – 1998)**

Engaged as a member of three-consultant team that established a self-sustaining energy services business to replace its rebate-based, demand-side management programs. Area of focus included the finance and administrative functions as well as the employee evaluation and recruitment process, which involved establishing the organization structure, span of control, job descriptions, qualifications, and salary ranges. The team worked closely with the head of the new organization, the municipal utility management, and the relevant municipal government agencies. Also facilitated numerous management and stakeholder meetings.

### **TXU Energy (1997)**

Provided research and consulting support to establish performance metrics and benchmarks from peer group companies for the client's performance management system.

## **EXPERT WITNESS TESTIMONY PRESENTATION**

- Alaska Regulatory Commission
- Arkansas Public Service Commission
- British Columbia Utility Commission (Canada)
- Colorado Public Utility Commission
- Connecticut Department of Public Utility Control
- Delaware Public Service Commission
- Illinois Commerce Commission
- Indiana Utility Regulatory Commission
- Kansas Corporation Commission
- Massachusetts Department of Utilities
- Minnesota Public Utilities Commission
- Missouri Public Service Commission
- New Brunswick Energy and Utilities Board (Canada)
- Oklahoma Corporation Commission
- Oregon Public Utility Commission
- Pennsylvania Public Utility Commission
- Washington Utilities and Transportation Commission
- Federal Energy Regulatory Commission



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## PROFESSIONAL HISTORY

### Black & Veatch (2013 - Present)

Director

### Concentric Energy Advisors, Inc. (2007 – 2013)

Vice President

### Navigant Consulting, Inc. (1997 – 2007)

Director

### Puget Sound Energy, Inc. (1997)

Manager – Federal Regulatory Affairs

### Washington Natural Gas Company (1993 – 1997)

(Merged with Puget Power & Light to form Puget Sound Energy in 1997)

Director – Rates and Tariffs

### Indiana Energy (now Vectren) (1984 – 1993)

Regional Director – Distribution Operations

Director – Rates

### Ohio Valley Gas Corporation (1978 – 1984)

Data Processing Manager

Assistant District Manager – Distribution Operations

## SELECTED PUBLICATIONS/PRESENTATIONS

“Enhancing the Profitability of Growth,” American Gas Association, Rate and Regulatory Issues Seminar, April 4 - 7, 2004

“Regulatory Treatment of New Generation Resource Acquisition: Key Aspects of Resource Policy, Procurement and New Resource Acquisition,” Law Seminars International, Managing the Modern Utility Rate Case, February 17 - 18, 2005

“Managing Regulatory Risk – The Risk Associated with Uncertain Regulatory Outcomes,” Western Energy Institute, Spring Energy Management Meeting, May 18 - 20, 2005

“Capital Asset Optimization – An Integrated Approach to Optimizing Utilization and Return on Utility Assets,” Southern Gas Association, July 18 - 20, 2005

“Resource Planning as a Cost Recovery Tool,” Law Seminars International, Utility Rate Case Issues & Strategies, February 22 - 23, 2007

- “Natural Gas Infrastructure Development and Regulatory Challenges,”  
Southeastern Association of Regulatory Utility Commissioners, Annual  
Conference, June 4 – 6, 2007
- “Resource Planning in a Changing Regulatory Environment,” Law Seminars  
International, Utility Rate Cases – Current Issues & Strategies, February 7 - 8,  
2008
- “Natural Gas Distribution Infrastructure Replacement,” American Gas  
Association, Rate Committee Meeting and Regulatory Issues Seminar, April  
11 – 13, 2010
- “Building a T&D Investment Program to Satisfy Customers, Regulators and  
Shareholders,” SNL Webinar, March 27, 2014
- “Utility Infrastructure Replacement; Trends in Aging Infrastructure,  
Replacement Programs and Rate Treatment,” Large Public Power Council,  
Rates Committee Meeting, August 14, 2014