

EXHIBIT NO. _____ (WAG-27)
DOCKET NO. UE-031725
2003 POWER COST ONLY RATE CASE
WITNESS: WILLIAM A. GAINES

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

Docket No. UE-031725

**REBUTTAL TESTIMONY OF
WILLIAM A. GAINES
ON BEHALF OF PUGET SOUND ENERGY, INC.**

FEBRUARY 13, 2004

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

**WUTC Docket No. UE-031725
Puget Sound Energy, Inc.
2003 Power Cost Only Rate Case**

WUTC STAFF DATA REQUEST NO. 45

WUTC STAFF DATA REQUEST NO. 45:

Please account for the history of risk management in wholesale gas and electric commodity for the period 1995 to the present. If a predecessor firm is involved, account for that firm's activity as well.

Response:

PSE's risk management activities from the period 1995 through the end of 2003 took place in the context of significant change and upheaval in the wholesale gas and electric (power) markets. Over this period, PSE diversified its portfolio to include more market-priced power resources and adopted a number of portfolio risk management tools and techniques. Therefore, in answering this question, PSE is providing an overview of market and industry conditions, PSE's resource portfolio and its risk management activities over time. Additional detail regarding the Company's power and gas portfolios and risk management considerations at various points during the period can be found in the Company's least cost plans/integrated resource plans from 1995 through 2003, as well as other contemporaneous documents. See e.g., Ex. JMR-3C (PSE's current risk management manual) and PSE's Response to WUTC Staff DR No. 48 (prior versions of PSE's risk management manual).

History of and Developments in the Industry and Wholesale Markets

In 1995, prior to the California restructuring, western electric utilities were typically vertically integrated, and transactions were predominantly utility-to-utility. The Western Systems Power Pool ("WSPP") had developed a standardized contract which WSPP members used as the basis for entering into transactions and which helped in the development of a western-wide market in the late 1990s.

Although deregulation of the electric markets had not been implemented in the West, utilities were aware of the push toward deregulation. (By contrast, the wholesale natural gas markets had been significantly restructured over the previous decade.) The future of traditional, vertically integrated load-serving electric utilities was unclear, and the potential for massive stranded costs was viewed as a significant future risk.

PSE Resp to WUTC Staff DR No. 45
WITNESS: Julia M. Ryan / William A. Gaines
DATE: December 17, 2003

FERC's issuance of Orders 888 and 889 in April 1996 further accelerated the trend toward electric industry restructuring and market-based rates. Also in 1996, the California Legislation (Assembly Bill 1890) restructured the electric generation market in California. Under this legislation, California's investor-owned utilities divested generation assets and transferred control of their transmission lines to the California ISO. These developments introduced many new market participants to the Western Systems Coordinating Council ("WSCC") region. On January 6, 2000, FERC issued Order No. 2000, which set forth the minimum characteristics and functions of regional transmission organizations ("RTOs") acceptable to the FERC.

As a competitive wholesale markets developed, retail electric customers, particularly large industrial customers, began pressing for access to market-based rates rather than rates based on embedded costs of service.

Power trading continued to grow within the region. By March 1998, California ISO and Power Exchange began operations. In November 1999, Enron introduced its on-line electronic trading platform, *Enron OnLine*, and competing products included Bloomberg and Intercontinental Exchange. This further facilitated the entry into the market of non-utility entities.

Mid C Power prices rose steadily in 2000, with a range from a low of \$28 in April 2000 to a peak day price of \$3322 in December. In the beginning of 2000, the California ISO had a \$750 price cap in its market. By the end of June, the ISO Board of Governors reduced the cap to \$500, and further reduced it in August to \$250. There were no price caps in place for other western power markets. In late 2000, FERC stepped in and created a 'soft cap' of \$150.

From the end of 2000 into early 2001, the power markets continued to trade at extremely high prices (at times over \$500 per MWh). The Cal PX filed bankruptcy and suspended trading on 1/31/01. In 2001, Mid C prices started high at the beginning of the year and declined to lower prices by year end: prices were highest in the first quarter of 2001 (at times over \$500) and declined over the year to a low price level of \$24 in November. By mid year, FERC reversed its prior position and established a 'west-wide power mitigated price' that was calculated at \$91.87.

In the first half of 2002, FERC initiated investigations into possible market manipulation by Enron and other wholesale energy companies in the California markets during 2000-2001. In October 2002, FERC revised west-wide price caps by setting a \$250/MWh cap. In October, the California ISO began operation under Phase 1A of new market design that includes Automatic Mitigation Procedures (AMP) which automatically lowered bids into ISO markets that were too high.

On December 2, 2001, Enron declared bankruptcy. This marked the beginning of a large decline in the merchant energy sector in 2002. Many energy companies withdrew

from wholesale trading and marketing activities. In 2002, ten of the top twenty largest power marketers in North America had their debt ratings downgraded three or more levels.

Following the significant shake-up of the energy industry, counterparty credit risk became even more prominent. The Committee of Chief Risk Officers (CCRO) was established and became a resource for energy companies in: Governance and Organization Independence, Valuation and Risk Metrics, Credit Risk Management, Disclosures, Credible Market Price Indices, and Capital Adequacy for Merchant Energy Companies.

Following the 2002 decline in the merchant sector, several other merchant power companies restructured under bankruptcy protection, e.g. NRG, Mirant, and PG&E National Energy Group. Other merchant power companies and power marketers experienced significant downgrades (Calpine, Reliant, Williams, Allegheny, Dynegy, Aquila). Northwestern Energy became another western utility to declare bankruptcy.

Over this period, the tools and techniques available for energy risk management have continued to change, expand and develop.

Risk Management Within the Company from 1995 to the Present:

Puget Sound Power & Light Company ("Puget Power"):

As of 1995, Puget Power was a vertically integrated electric power utility, that owned and contracted for resources (hydro, coal, and fixed-price contracts) generally sufficient to meet its retail load. Puget Power dispatched its plants to serve retail load, and would enter into off-system sales with other utilities if there were demand for its surplus power. Puget Power also purchased energy and/or capacity in the short to intermediate term markets from time to time in order to meet retail loads, or to economically displace more expensive thermal generating units. At this time, hedging decisions centered around the purchase and sale of power, purchase of fuel for the Company's combustion turbines and the dispatch of several long-term, energy-limited wholesale purchase and exchange contracts that afforded some scheduling flexibility.

Puget Power was a party to the Pacific Northwest Coordination Agreement (PNCA). Pursuant to the planning requirements of this Agreement, Puget Power coordinated the operation of its hydroelectric and certain thermal resources with multiple other Northwest parties including BPA. Puget Power utilized its rights under the PNCA to request deliveries of energy from other parties that were needed to meet its retail loads. Puget Power also utilized the PNCA's storage provisions to manage short-term variations in its power portfolio.

Puget Power also monitored trends and issues with respect to restructuring the industry and its potential impact on the Company and its resource acquisition practices. For example, there were concerns about whether small to mid-sized load-serving utilities such as Puget Power would be able to compete against larger entities and marketers in the new wholesale electric market environment. Puget Power explored restructuring its long-term gas supply contracts toward more flexible market-based pricing to diversify its portfolio.

Washington Natural Gas ("WNG"):

As of 1995, WNG entered into off-system sales of natural gas to maximize full takes under its supply contracts and to optimize un-used transportation capacity for the benefit of its ratepayers. In 1996, WNG wrote a risk policy ("Natural Gas Price Risk Policy & Procedures Manual") that established the policies and procedures to be followed by Gas Supply and Pipeline Services Department for the use of risk management instruments in its gas purchase activities. This Risk Policy addressed issues such as: policy purpose and objectives, authorizations, procedures and reporting, roles and responsibilities, accounting and financial reporting, debt covenants as they affect risk management, descriptions of physical and financial tools. In 1995-1996, Washington Natural Gas executed several ISDA Master Agreements to enable it to hedge using financial derivatives (these would later transfer to PSE after the merger in 1997).

Puget Sound Energy, Inc. ("PSE"):

In 1997, Puget Power merged with Washington Energy, WNG's parent, to become Puget Sound Energy, Inc. ("PSE"). Washington Energy had been an active participant in regional gas markets. Prior to the merger date, Washington Natural Gas created a Gas Supply Accounting Procedures Manual that documented certain energy accounting and risk control functions to be incorporated into the merged Company's overall risk management practices.

In July 1997, PSE developed a risk management policy ("Energy Price Risk Policy") which provided the framework for a series of internal controls for managing risk. At this time, PSE also established the Risk Management Committee (RMC). The RMC monitored the forward positions, and developed policy with regard to entering into forward transactions to hedge risks. The RMC explored the use of financial derivative contracts to hedge forward exposures.

In 1997-99, PSE worked with Duke Louis Dreyfus (later Duke Energy Trading and Marketing) on wholesale power marketing, forward trading and hedging of power resources, and forward position analysis. In September 1997, the Company implemented the Louis Dreyfus Electric scheduling system (LDEC). This system was used to track the daily and long-term physical electric trades. Prior to this implementation, electric trading was tracked using Excel spreadsheets and the

Company's Energy Scheduling and Accounting System (ESAS). This system enabled PSE to develop "mark to market" valuation methods and related trading controls and limits. Gas transactions were tracked using Excel spreadsheets. Late in 1999, the RMC approved the creation of a new position, Director of Energy Risk Management, and two risk management staff.

In mid-1999, PSE also engaged the services of a company named Merchant Energy Group of the Americas (MEGA) to provide risk advisory services to PSE. Pursuant to this agreement, MEGA provided support and advice in the areas of risk control, energy accounting system development and design, development of credit policies and procedures, portfolio analysis and the development of intermediate-term hedging strategies and recommendations. Specific issues that were addressed included master agreement setup, credit exposure and credit tracking systems, trader responsibilities, trade transaction processes, transaction recording and tracking systems procedures, compilation of positions, invoice preparation, and cash management. MEGA and PSE risk management staff also initiated a process to review and potentially revise the Company's 1997 Risk Policy.

In late 1999, the Company purchased a suite of programs that were intended to consolidate risk tracking, electric scheduling and gas scheduling from ALTRA, an energy software developer located in Houston, Texas. The Company implemented the Gas Management System (GMS) in July, 2000. This system tracks the daily trading and long-term physical gas transactions. (The ALTRA Risk system was also tested during 2000, but proved to have significant programming problems. ALTRA ultimately bought this part of the suite back from the Company and withdrew the product from the market.)

From June 2000 through August 2001, PSE obtained additional portfolio risk management services from MEGA, including: a review of substantive risk positions in the portfolio and the development of hedge implementation strategies; advisory services to assist PSE in developing systems; procedures, strategies and tactics for managing its energy portfolio; training of PSE personnel in the identification and management of risk in the portfolio; aid in the selection and implementation of a computer-based energy trading and risk management system and aid in the development of risk management practices and procedures for management of its portfolio.

In 2000, PSE evolved its risk management process, with work on position definition, valuation, risk analysis, strategy development, decision-making, execution of hedges and operational management. In the fall of 2000, PSE created a new officer position to lead the risk management and risk control operations (VP of Risk Management and Corporate Development).

PSE implemented the ALTRA electric scheduling system (ACES) in July, 2001 that enabled the Company to track daily and long-term physical power transactions and the associated purchase and sale of electric transmission.

In summer 2001, PSE hired a new Director of Energy Risk Management, who helped develop new risk analytics. In December 2001, the Company separated the Energy Risk Control and Energy Risk Management functions, so they would report to different officers. Energy Risk Control reported to a financial officer, and Energy Risk Management was combined with Power Supply Operations and Gas Supply Operations to report to a new officer, Vice President of Energy Portfolio Management.

In August 2001, PSE implemented new policies and procedures set forth in the "Energy Supply Hedging and Optimization Procedures Manual". This expanded upon the earlier policy by introducing additional limits, explaining roles and responsibilities in the energy production area, and providing FAS 133 procedures. This Manual was further updated in December 2001.

In 2001, PSE looked for systems that could do scenario-testing, and which could model the probability of certain outcomes in a base case scenario. PSE's objective was to acquire or develop a system that linked up the transaction capture and scheduling systems, financial reporting, credit risk management and risk analysis. PSE reviewed integrated system options and then elected to purchase KW3000. KW3000 is discussed in PSE Response to Data Request No. 34. The KW3000 model was implemented in 2002.

A challenge in implementation of KW3000 was developing the models that would ultimately be used for the dynamic risk analysis. Among other things, PSE adapted the hydro models for Pacific Northwest conditions and the specifics of PSE's west-side hydro operations and its Mid C contracts. Similarly, PSE developed models for load forecasting, price forecasting and thermal plant operations specific to PSE's resources.

In 2003, the energy risk management group further developed PSE's energy price analysis capability to provide another source of data to supplement the outside analysis available from firms such as PIRA and CERA. The energy risk management group is also developing additional risk analysis tools to help address downside risks in the portfolio on a cost and margin basis.

Energy risk management continues to build tools to help augment the value of hydro operations and gas storage operations. For example, energy risk management analysts developed new load forecasting tools utilized for real-time operations using econometric modeling. Energy Risk Control built a new credit module to monitor counterparty risk exposure.

The following are non-exhaustive representative examples of application of risk management techniques, practices and policies such as the foregoing during the time period:

In the late 1990s, PSE took steps to reduce its fixed-price exposure by diversifying its portfolio to add gas supply costs that track the market by buying out the high fixed-price gas supply contracts for the Tenaska and Encogen combined cycle combustion turbines.

PSE engaged in forward hedging activities including the following: sale of some surplus summer generating capacity under financial 'tolling' arrangements; purchase of daily call options (right to purchase power) for winter 2000-2001 to hedge against extreme winter peaking events; and purchase of put options (right to sell power) in fall 2000 to insure against prices falling to levels where the Company's combustion turbines would have no longer been economic to run.

Since 2001, PSE has hedged a portion of its winter extreme day capacity deficit with 'dual strike options'. The energy risk management group modeled the correlation between cold weather, high loads and market prices, and determined that the exposure could be managed at a lower cost by linking the daily dual-strike call options to both a price strike and a weather strike.

During 2002, the energy risk management staff back-tested regional gas prices to develop a hedging plan for the Core Gas Portfolio. By September 2002, PSE introduced fixed price hedges into the Core Gas Portfolio to lock in a portion of the costs for gas utility customers. PSE has expanded upon the hedging in the core gas portfolio, and concentrated the gas hedges on mitigating costs for customers in the winter 2003-2004. As a result, the Company doubled the effective gas hedging volumes for winter to 100,000 MMBtu/d.

In late 2002, anticipating drier than normal hydro conditions through monitoring of El Nino weather events and the preliminary snowpack and precipitation analysis for the region from October through December 2002, the Company decided to forward purchase 100-175 aMW for the period of March- June 2003.

From a credit risk management perspective, in November-December 2002, PSE negotiated terminations of power and gas contracts with four financially weak energy marketer counterparties. PSE replaced the supplies with stronger counterparties.

In 2003, PSE developed a dollar cost averaging strategy to reduce exposure in the power portfolio to help protect against volatility in wholesale markets such as had been experienced in 2000-01. The portfolio was generally hedged on a 6-month rolling forward basis, and the hedging strategy was to ratably reduce the forward short positions with the greatest exposure on a monthly basis. The strategy is described more fully in PSE Response to Data Request No. 34.

See also PSE's Responses to WUTC Staff Data Requests 51 and 58 and ICNU's Data Requests 2.06 and 2.09.