EXHIBIT NO. DEM-3C
DOCKET NO. UE-10____
PCA 8 COMPLIANCE
WITNESS: DAVID E. MILLS

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of **PUGET SOUND ENERGY, INC.** **For Approval of its March 2010 Power Cost Adjustment Mechanism Report**	**Docket No. UE-10____**

SECOND EXHIBIT (CONFIDENTIAL) TO THE PREFILED DIRECT TESTIMONY OF DAVID E. MILLS ON BEHALF OF PUGET SOUND ENERGY, INC.

REDACTED VERSION

MARCH 31, 2010

REDACTED VERSION

PUGET SOUND ENERGY, INC.

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PUGET SOUND ENERGY, INC.

ILLUSTRATION OF PSE'S PORTFOLIO AND RISK MANAGEMENT ACTIVITIES FOR PCA PERIOD 8 POWER SUPPLY FOR THE SINGLE MONTH OCTOBER 2009

I. PUGET SOUND ENERGY'S HEDGING PLAN

The purpose of this exhibit is to illustrate the manner in which Puget Sound Energy, Inc. ("PSE" or "the Company") manages its electric portfolio, including risk management activities, by describing how PSE managed power supply and costs for a single month during PCA Period 8: October 2009.

The Energy Management Committee ("EMC") is responsible for providing oversight and direction on all portfolio risk issues in addition to approving long-term resource contracts and acquisitions. Power and Gas Supply Operations Staff ("Staff") follow the EMC approved Programmatic Hedge strategy to guide them in the specific time periods and quantities of energy to hedge. PSE manages its short-term energy supply hedging and portfolio risk activities in accordance with the EMC-approved Energy Supply Hedging & Optimization Procedures Manual ("Procedures Manual"). In addition, the Audit Committee of the Company's Board of Directors also provides oversight of these activities in accordance with the Company's Energy Risk Policy.

On July 22, 2004, the EMC approved the original programmatic hedging strategy, with a Staff transactional purview of [redacted]. The programmatic hedge strategy authorizes Staff to use a dollar cost averaging informed by Margin at Risk ("MaR") analysis, with defined minimum and maximum monthly exposure limits. *See* Exhibit No. (DEM-4). This hedging plan increases Staff's ability to react to position changes due to stream or hydro flow variation, forced thermal plant outages and changing market conditions.

The term of the EMC approved strategy, known as the "Programmatically Managed Hedge" period, consisted of the last [redacted] of the [redacted] purview - this was also known as the "Rolling [redacted] Hedge". The first [redacted] (current month plus the following [redacted]) of the [redacted] purview were actively managed ("Actively Managed Hedge") in accordance with the Procedures Manual.

On January 7, 2006, the "Rolling [redacted] Hedge" was amended to be a "Rolling [redacted] Hedge" and the Actively Managed Hedge was extended to include the current month plus the next [redacted]. In October 2007, consistent with the Company's benchmarking of hedging best practices and market research efforts tailored to measure the value of energy commodity hedging to customers, the Company extended its hedging tenor from [redacted] to [redacted]. At that time, the first [redacted] of this period became the Actively Managed Hedge period and the remaining [redacted] through [redacted]) became the Programmatically Managed Hedge period in accordance with the EMC approved strategy. The Programmatically Managed Hedge period is currently referred to as the "Rolling [redacted]" hedge. The Programmatically Managed Hedge is designed to reduce the Company's net power portfolio exposure starting months in advance of delivery, subject to minimum and maximum exposure reduction, based upon a fundamental view and is intended to remove commodity price volatility.

All of the transactions for the "sample PCA month" (October 2009) were executed after the extension of the hedging strategy and many were transacted [redacted] prior to delivery, leaving primarily shorter-term balancing transactions to respond to changes in market heat rates, load conditions, unit assumptions and other variables.

The Programmatically Managed Hedge is designed to reduce the power portfolio's total net exposure for each month, so that the total net exposure will fall below the EMC exposure limits set forth in the Procedures Manual when each month falls into Staff's Actively Managed Hedge. The "maximum" monthly hedge is calculated by dividing the total net exposure by the remaining months prior to the time when the position falls into the Actively Managed Hedge term. The "minimum" monthly hedge is calculated by dividing the total net exposure (plus or minus the Director's limit authority) by the remaining months prior to the time when the position falls into the Actively Managed Hedge. The "mid-point" monthly hedge is the average of the "maximum" and the "minimum" monthly hedge amounts. If such a month's position already falls within the Director's exposure limit authority, there is no monthly hedge requirement. As defined in Schedule F of the Procedures Manual, the Director has exposure authority up to the CFO/CRO level ($[redacted] monthly or $[redacted] for the rolling [redacted] period); exposure above the CFO/CRO level requires notification to the EMC. *See* Exhibit No. DEM-5C.

During the Actively Managed Hedge period, Staff manages the monthly net exposure in accordance with the Procedures Manual. The exposure is calculated individually for peak, off-peak, and gas for power positions. The authority limit is calculated on the net spot exposure of all three. Spot market exposure is measured by multiplying the open position by the hourly spot price. *See* Exhibit No. DEM-5C.

Margin at Risk measures risk reduction as a result of incremental hedging. As PSE's hedging strategy evolved, the MaR concept was added to the evaluation process in May 2004 for the Programmatically Managed Hedge strategy to measure risk reduction for various alternatives and was extended in October 2007. MaR analysis shows how much risk reduction is gained by month and by strategy – providing an additional tool to determine which commodity is the best choice and for which month given a credit-constrained environment. The MaR calculation shows the amount of portfolio risk removed for each hedging dollar spent when 25 MW of on-peak or off-peak power or 5,000-MMBtu/day of gas is transacted.

The remainder of this report will illustrate the systems and tools used by Staff and their application for PCA Period 8 by describing actual hedging strategy decisions and their execution undertaken by PSE. Detailed explanation is provided in section II.A. for one specific month – [redacted] - with respect to power supply for delivery in October 2009. For all subsequent months, please reference sections II.B. through V. which provide a summary of [redacted] – October 2009, and reviews the analysis and fundamental views relied upon by Staff to make hedging decisions for October 2009. See Exhibit No. DEM-4 through Exhibit No. DEM-12 for additional detail supporting this narrative.

II. PROGRAMMATICALLY MANAGED HEDGE PERIOD

A. [redacted]

In [redacted], October 2009 rolled into Staff's Programmatically Managed Hedge purview. At the beginning of [redacted], the position report indicated the October 2009 net exposure was [redacted] with a [redacted] MW on-peak power [redacted] position, a [redacted] MW off-peak power [redacted] position and an [redacted] MMBtu/day natural gas [redacted] position. The then current portfolio position indicated that [redacted] MW of on-peak power [redacted] valued at the then current market price, resulted in an on-peak power exposure of [redacted]. This exposure combined with the [redacted] natural gas exposure and [redacted] off-peak power exposure totaled a net exposure of [redacted]. *See* Exhibit No. DEM-6C.

In [redacted], with [redacted] remaining before October 2009 fell into Staff's Actively Managed Hedge, the "maximum" monthly reduction in exposure yet to be accomplished by Staff is the net exposure noted above divided by the remaining months prior to the time when the position falls into the Actively Managed Hedge, or [redacted] ([redacted]). The "minimum" reduction is the total net exposure noted above (less the Director's limit authority) divided by the remaining months prior to the time when the position falls into the Actively Managed Hedge and is approximately [redacted]). The "mid-point" reduction, or the average of the "maximum" and "minimum" amounts, is [redacted].

Looking at delivery month October 2009, PSE's MaR analysis indicates that the greatest exposure reduction would be to purchase gas. *See* Exhibit No. DEM-7C. For example, if 5,000-MMBtu/day gas was purchased for October 2009, it would reduce risk by [redacted] for every $100 spent or [redacted] for every dollar spent, compared to [redacted] with the purchase of 25 MW on-peak power or [redacted] with the purchase of 25 MW of off-peak power. Based on this analysis, greater risk reduction would be gained from the purchase of [redacted].

Implied flat market heat rates (the power price divided by the gas price) for October 2009 were anticipated to be in the [redacted] range. At that heat rate, the Company's [redacted] and [redacted] combustion turbines ("CT") would be, on a probabilistic basis, "in the money", considering their dispatch heat rate. *See* Exhibit No. DEM-8C.

During [redacted], as part of the Programmatically Managed Hedge, Staff reviewed market fundamentals and came up with a hedging strategy for the [redacted] through [redacted] time frame, which included October 2009. Despite record levels of natural gas storage, fear of a cold winter was keeping market prices high. Although both power and natural gas markets appeared to be well supplied for the near term, there was a high degree of uncertainty regarding prices in the Rolling [redacted] time period. Forecasts called for a slowing of the global economy, but energy prices didn't seem to be factoring this in as they continued to remain strong. Given this market fundamentals backdrop, Staff elected to keep the hedging strategy for the Programmatically Managed Hedge period for the Power Portfolio at [redacted], but indicated it could increase hedging activity [redacted].

During [redacted], in accordance with the minimum hedging strategy, Staff [redacted] the October 2009 exposure. Staff uses many tools to determine which commodity to purchase and when. Due in part to the MaR analysis indicating that [redacted] would [redacted] risk at the time than a [redacted] would, Staff [redacted].

An overview of PSE's hedging activities for October 2009 can be found in Exhibit Nos. DEM-09C and DEM-10C. The hedges are charted by transaction date and transaction price for on-peak (also referred to as "heavy load hours" which represents the sixteen hours ending 0700 through 2200), off-peak (also referred to as "light load hours" which represents the eight hours ending 0100 through 0600 and 2300 through 2400, as well as all 24 hours of NERC defined holidays and Sundays), flat (which represents a hours 0100 through 2400) and gas for power. The charts show the mid-mark (as provided by a third-party, independent source) and the price at which the hedge was executed relative to the market price movement for October 2009. For most of the hedges, it may appear that the transaction price is above the October 2009 mid-mark. This is a result of purchasing a quarterly strip hedge for purposes of individual month exposure reduction, also referred to as "Q4", which includes the months of October, November and December. Oftentimes, the forward power market – especially for delivery beyond six months from execution – is only liquidly traded on a quarterly and/or calendar basis and does not trade monthly until the delivery date approaches 4-6 months out. October is typically the lowest priced month of the Q4 so by comparing the third-party price for October 2009 to the Q4 purchase price, it appears the purchase price is above market. Conversely, December is typically the highest priced month of Q4 so a comparison of third-party price for December 2009 to the Q4 2009 purchase price would indicate the hedge to be below the mid-mark. The EMC amended the Programmatically Managed Hedge on January 20, 2005 to allow for the comparison of trades against limits on a quarterly "block" basis when trading is available only in quarterly blocks since the use of regular monthly calculations would appear to violate hedging limits.

B. [redacted]

During the months [redacted] through [redacted], Staff managed the October 2009 spot market exposure similar to [redacted] – pursuant to the Programmatically Managed Hedge strategy – with an eye towards the power and natural gas market conditions and fundamentals, water supply, and weather. [redacted], PSE included its soon-to-be-acquired 133 MW Sumas Cogeneration Station in the power position effective [redacted], which created a [redacted] October 2009 gas position and a [redacted], power position. In response to the new gas fired resource and market heat rates, during these months, Staff continued to reduce the October 2009 exposure by [redacted]/MMBtu per day of gas and [redacted] MW of on-peak power. By the end of [redacted], the October 2009 net exposure had been [redacted] by [redacted], to [redacted], which included a [redacted] MW on-peak power [redacted] position, a [redacted] MW off-peak power [redacted] position and a [redacted] MMBtu/day natural gas [redacted] position.

In [redacted] the hedging strategy for the Programmatically Managed Hedge period was changed for [redacted] through [redacted] and [redacted] through [redacted]. The fundamental natural gas picture was fairly bullish. U.S. natural gas storage volumes were below the previous year levels and that deficit was expected to grow due to the continued cold weather forecasts for the gas intensive Mid-Continent and East Coast regions. Natural gas demand for electric generation for the prior 2007-2008 winter had been higher than the previous year. If the cold weather continued to reduce the year on year gas storage picture and the U.S. could not attract additional liquefied natural gas ("LNG"), then gas storage levels heading into the next winter could very well be at uncomfortably low levels - without even factoring in the potential downsides from an active hurricane season. PSE Staff decided to hedge at [redacted] levels for the higher risk periods noted above – which included October 2009. These periods were set to [redacted] hedge levels and the remaining months within the Rolling [redacted] period stayed at [redacted]. Moving from a [redacted] to a [redacted] hedging level [redacted] the monthly hedging limits from [redacted] to [redacted] given the [redacted] exposure for October 2009 at [redacted], per Exhibit No. DEM-6C.

During the [redacted], energy prices began reaching unprecedented levels, fueled by forecasts of crude oil "super spikes" of over $200/bbl and a seemingly insatiable global demand for energy. These increasing price forecasts, coupled with a weaker U.S. dollar and lower Canadian gas production and LNG imports, only added to the run up in prices. With no end in sight of how high energy prices would go, Staff elected to hedge to [redacted] amounts for the complete Rolling [redacted] period beginning [redacted]. Moving from a [redacted] to a [redacted] hedging level [redacted] the monthly hedging limits from [redacted] to [redacted] given the [redacted] exposure for October 2009 at [redacted], per Exhibit No. DEM-6C.

REDACTED VERSION

By late [redacted], signs of a global economic slow down began to emerge and energy prices appeared to have peaked. In the [redacted], the U.S. economy was falling into what would become the worst economic recession since the Great Depression. Other economies around the world soon followed the U.S. into recession, pulling energy prices down with them. *See* Exhibit No. DEM-11C.

Both near and long-term energy demand and production forecasts were being revised almost weekly as global economies spiraled deeper into recession. At the same time, great strides were being made in the unconventional natural gas drilling technologies used to extract gas from developments such as shale in the U.S. As the drilling technology improved, these once high cost unconventional sites now became more cost competitive. In addition, production estimates from these developments greatly exceeded original estimates.

Lower energy demand and the potential for greater cost competitive domestic production continued to keep downward pressure on energy prices. While this was most evident in the near-term price curve, it was less evident in the Rolling [redacted] period as forecasts and expectations for economic recovering were being discussed. Nonetheless, prices in the Rolling [redacted] were softening and Staff continued to hedge at [redacted] to [redacted]. It was unclear as to how the natural gas markets would respond and there were concerns that producers might curtail some production, thereby putting additional upward pressure on natural gas prices. During these months, Staff [redacted] MMBtu/day of gas for power, [redacted] MW of off-peak power and [redacted] MW of on-peak power so by the end of [redacted], when October 2009 was to shortly roll into the actively managed hedging period, October 2009's net exposure had been [redacted] to [redacted] with a [redacted] MW on-peak power [redacted] position, an [redacted] MW off-peak power [redacted] position and a [redacted] MMBtu/day natural gas [redacted] position.

III. ACTIVELY MANAGED HEDGING PERIOD

In [redacted], October 2009 rolled into Staff's Actively Managed Hedge. This allowed Staff to more actively manage the October 2009 position for a full [redacted] prior to delivery. At the end of [redacted], the Mint Farm Energy Center ("Mint Farm") gas-fired combined cycle combustion turbine with 296 MW of additional capacity was added to the power portfolio. As a result, the October 2009 position became [redacted] gas and [redacted] power due to the dispatch heat rate of Mint Farm being, on average [redacted] the forecast market heat rates. During [redacted], Staff purchased [redacted] MMBtu/day to [redacted] the [redacted] gas position and to [redacted].

Moving into the [redacted], the U.S. economy continued to weaken and unemployment rates increased. In fact, the unemployment rate in PSE's service territory increased significantly between the third quarter of 2008 (4.8%) and the second quarter of 2009 (8.4%). As discussed in more detail in the following section, gas and power prices continued to fall. Forecast market heat rates for October 2009 increased to the point that many of PSE's gas fired generators were forecast to be economically dispatched, causing a [redacted]. PSE updated its customer load forecast in July 2009 to reflect the economic downturn, reducing the October 2009 demand forecast by 63 aMW. During this [redacted] period, Staff continued to hedge, ultimately [redacted] an additional [redacted] MMBtu/day of gas and [redacted] MW of on-peak and [redacted] MW of off-peak power to manage the portfolio within EMC approved strategies and guidelines. During the [redacted] Actively Managed Hedge period, the exposure for October 2009 initially [redacted] as prices declined and heat rates increased. During [redacted], prices rose and heat rates fell, resulting in an end of [redacted] exposure for October 2009 at [redacted].

IV. FUNDAMENTALS AND MARKET PRICES AFFECTING OCTOBER 2009

From [redacted] to [redacted], forward prices for power and natural gas remained high due to global demand for energy, lower Canadian natural gas production and LNG imports. By [redacted], traders had been closely watching natural gas storage levels amid fears that an unusually hot summer or an active hurricane season could lead to supply constraints. An ongoing outage at Independence Hub, a major deepwater U.S. Gulf of Mexico gas platform, and dwindling imports of LNG from overseas were also contributing to supply concerns. In [redacted], diesel imports into China increased 8 fold compared to the prior year, as the country prepared for the Summer Olympics. A growing global demand continued for distillate fuels, such as heating oil and diesel. On [redacted], the profit margin, or crack spread, for making a barrel of oil into one of heating oil surged to $29.554 a barrel - the highest since at least 1989.

The U.S. Energy Information Administration's ("EIA") [redacted] monthly report increased the 2008 average gas price from the previous figure of $9.69/MMBtu to just above $11.00/MMBtu. There were concerns that flooding in the Midwest could severely damage the corn crop used for developing alternate fuels and create further energy supply shortages.

But by [redacted], forward natural gas prices began to fall. The next month's (also known as the "prompt" month) natural gas prices were down about 12%, winter 2008/2009 prices were down about 10% and summer 2009 prices were down about 7%. Rumors circulated that Lehman Brothers started the selloff by liquidating their energy holdings. However, viewed on a seasonal basis, natural gas sometimes endures a bull market correction from a spring peak to a summer low. The first hurricane of the season, Hurricane Bertha, formed early [redacted] and dissipated by [redacted]. Although the Atlantic wind sheer created a "hurricane meat grinder" and lessened the chances of hurricanes forming, Tropical Storm Cristobal was thought to potentially upgrade to a hurricane sometime in early to mid-August. Mid [redacted], however, the National Oceanic and Atmospheric Administration ("NOAA") noted that "environmental conditions are becoming less favorable for [hurricane] development". EIA weekly data showed U.S. consumers were using less gasoline - in the first week of [redacted], demand for gas reached a five year low, June 2008, demand was down 2.2% and April demand was down 1%. Were these the makings of a perfect storm? A weak hurricane season combined with increased domestic production and takeaway capability, a milder winter, and Europe relying less on LNG could bring the bears out and decrease prices. President Bush announced he would end the 18-year moratorium on oil and gas drilling on the outer U.S. – thus putting pressure on Congress to lift the ban.

By [redacted], a strengthening U.S. dollar and weakening oil prices were putting downside pressure on natural gas prices. Regardless, there was potential for prices to move much higher rather than much lower if storage injections fell below forecasts, weather on the east coast got warmer, hurricane activity picked up, and weather forecasts for winter were below normal. In a conference call on gas supply, Barclays reported a few interesting observations and forecasts: there was a lot of momentum to current drilling programs, which should be reflected in prices 6-12 months out as production was to come on-line, and the probability of exporting gas through LNG from the U.S. was highly unlikely because not only is the cost of building the facility high (approximately $2 billion), but a long-term supply agreement (20-30 years) would be needed to cover the costs.

By [redacted], Hurricanes Gustav and Ike came and went and spared oil and gas production facilities in the Gulf of Mexico, but caused ten oil rigs to be damaged. Demand, however, was falling faster than the loss of supply and the largest decline in gas demand (3.3 Bcf/day) was from the industrial and power sectors. The cumulative deferred production since Gustav's and Ike's arrival was estimated to be 192 Bcf through the end of [redacted].

In [redacted], the Organization of the Petroleum Exporting Countries ("OPEC") scheduled an emergency meeting in Vienna to discuss the declining price of crude oil and strategies to control it. Market observers anticipated a reduction of one million barrels would be required to stabilize declining prices. Iran favored a cut between 2 to 2.5 million barrels, citing the risk of a "prolonged" global economic downturn. Standard & Poor's ("S&P") slashed its forecasted natural gas prices by $2.00/MMBtu, to $7.00/MMBtu for

2009 and 2010, and said that in 2011 and beyond, gas prices would average $6.00/MMBtu. Raymond James & Associates stated "the U.S. rig count will fall by more than 10% year over year in 2009 with a 40% peak to trough decline in the natural gas rig count. We expect the overall domestic rig count to fall 30% from its highs. Given our view that U.S. natural gas prices will remain depressed into late 2009, we suspect the rig count should reach a bottom in early/mid 2010." Raymond James is forecasting an average rig count of 1,500 in 2010, which would imply a 12.5% decrease from 2009.

By [redacted] natural gas storage was at near record highs. Raymond James & Associates Inc. says that the 2009 natural gas price outlook is "still very ugly" and given the current over supply, even a colder-than-normal winter is unlikely to prevent a gas price collapse in 2009. Due to the price differential and demand levels between North America, Europe and Asia, North American LNG imports have been extremely low in 2008 compared to 2007. The BG Group's Lake Charles, Louisiana LNG import facility will be receiving two loads in [redacted] which will actually double their total year to date 2008 volume to just 8.5 Bcf compared to a total 250 Bcf they imported in 2007. This massive discrepancy can be attributed inpart to increased LNG demand in Asia and Europe compared with the static demand in North America - combined with the increase in production from unconventional natural gas plays such as shale gas.

By [redacted], Barclays was reporting that rotary rig counts were down by 49 in Texas, Louisiana and Colorado, however, this was expected to only affect 2009 production. In addition, Canadian gas imports have been down due to weaker U.S. demand.

By [redacted], rig counts continue to drop in the Rockies - this time by 3 rigs in this month, but total Rockies production was increasing. Canadian rig counts and production were also increasing. A prominent industry analyst from Barclays Capital released a report with the prediction that natural gas could fall to $4.00/MMBtu or less within a matter of months with such an oversupplied market. With industrial demand waning on a daily basis and domestic production remaining strong, Barclays Capital saw the need for up to 5 Bcf/day or almost 10 percent of production to be cut to bring the market supply and demand back in balance.

In [redacted], PIRA noted that despite what was shaping up as a dry water year, similar year over year conditions and the timing of the flows should allow hydro generation to increase during the March-May 2009 period. However, this is a timing benefit only and hydro generation later in the summer, i.e. during June and July, is expected to decline. Gas will more than likely be the primary victim of the bearish economic backdrop, despite the relative price weakness - and those effects seem likely to be more material in comparison to the impact on gas from the upcoming year over year monthly swings in hydro generation. Gas rig counts were down 36 and at the current pace, the target of 800 rigs, mentioned by different consulting firms as the level needed to balance the gas market supply/demand later in the year, would be reached by the end of March. Raymond James & Associates reported that the massive reductions in demand and the surge in supply combination meant that there was no good news for natural gas over the next three to six months and prices could decline to or below $2.00/MMBtu.

By [redacted], on one level, analysts were looking back and sensing that the price dynamics of the last six years were unusual and that current natural gas price levels were more representative normal. Others, however, saw the low natural gas prices as only temporary. Wood Mackenzie expected a 2.1 Bcf/day year-over-year decline in industrial demand through the first quarter with both the economy and reduced heating loads for February 2009 contributing to the decline.

In [redacted], Colorado State University (CSU) lowered its Atlantic hurricane forecast for 2009 to 12 named storms, with at least half of them likely to become hurricanes. Two of the storms were expected to develop into intense or major hurricanes with sustained winds of 111 mph or more. CSU expected the then-current weak La Nina conditions to transition to neutral and perhaps morph into weak El Nino conditions by the start of the 2009 hurricane season. CSU said if El Nino conditions developed for 2009's hurricane season, it would tend to increase levels of vertical wind shear and decrease the levels of Atlantic hurricane activity. Fitch Ratings was no longer optimistic about a rebound in natural gas prices this year, and cut its 2009 base case price for gas to $4.25/MMBtu (Henry Hub) because of the protracted global economic slump

By [redacted], El Nino appeared to be making a come back and tropical Pacific waters continued to warm. According to Bentek Energy, California would need very little power from the Pacific Northwest due to an oversupply of gas when they noted, "Gas prices in Southern California will have to remain low, and heat rates will have to remain high in order for the California gas supply surplus to be reduced to more normal levels by next winter. Gas prices at Sumas should remain under some downward pressure because

California is expected to rely less this summer on southbound power transmission capacity" during the summer. Natural gas storage in the West was 122 Bcf above the previous year, in the East was 78 Bcf above the previous year and in the Producing Region was 282 Bcf above the previous year.

In [redacted], with two weeks into the hurricane season, there had been only one tropical depression. The tropical Pacific was showing more and more signs of a developing Nino and there was already plenty of wind shear (bad for storms) over the majority of the tropical Atlantic. Assets in the United States Natural Gas Fund ("UNG") swelled to around $3.7 billion from about $670 million in February 2009. Funds that hold commodities are typically restricted on the number of shares they can issue to meet investor demand, and the UNG was running out of shares, so the fund talked of filing with the SEC to increase the number of shares by ten times. The Fund's sheer volume and speculative approach were creating a new dynamic in the natural gas market and creating very bullish sentiments.

By [redacted], sea surface temperatures in the tropical Pacific dropped, however, subsurface temperatures continued to run well above normal. It was thought that El Nino could still develop through the fall and winter months. The final runoff for the water year was 79% of normal. LNG was expected to increase in the third and fourth quarters of 2009. Coal to gas substitution occurred during the spring months and was expected to return in the fall (1 BCF to ½ Bcf incremental demand). Citing weakness in the Gross Domestic Product, continued shale gas development, new coal capacity, and new LNG, Wood Mackenzie delivered a bearish fundamental outlook for natural gas prices with calendar 2010 at $4.50/MMBtu, calendar 2011 at $4.75/MMBtu and calendar 2012 at $5.20/MMBtu. For reference, the current 2010 average price was at $5.54/MMBtu, 2011 was at $6.44/MMBtu and 2012 was at $6.74/MMBtu.

By [redacted], NOAA followed suit with other hurricane forecasters and lowered its tropical storms expectations due to the development over the past couple of months of an El Nino event. El Nino events tend to be associated with increased levels of vertical wind shear and decreased levels of Atlantic hurricane activity. PIRA estimated that storage levels by the end of August would reach 3.4 TCF and September estimates were 3.7 TCF, which was very close to the maximum estimated capacity of approximately 3.9 TCF. Total injections for October 2008 and the first week of November 2008 totaled 362 BCF and the five years average was 285 BCF. Global LNG spreads had narrowed significantly, which meant more chance of supplies coming to the U.S. In addition, the year over year natural gas storage deficit in Europe had evaporated.

By [redacted], a weak El Nino resulted in warmer winter forecasts for the northern U.S. west of the Mississippi River. After months of speculation about when natural gas production would begin to decline, the production numbers started to show the impact of lower active rigs. September production was estimated to be about 3 Bcf/day lower than July. The British Columbia government increased interest in active shale gas plays by offering a new package of royalty incentives to stimulate exploration and development.

V. SUPPORTING EXHIBITS

The monthly exposure for October 2009 is included in Exhibit No. DEM-6C. The monthly MaR analysis for October 2009 can be found in Exhibit No. DEM-7C. As stated previously, MaR analysis shows how much risk reduction is gained by month and by strategy – providing Staff with an additional tool to evaluate which commodity to hedge given a credit-constrained environment.

Daily heat rate trends for October 2009 can be found in Exhibit No. DEM-8C, as well as the dispatch heat rate of PSE's gas fired turbines. Implied market heat rates fluctuate daily depending on the power and gas prices, and are part of the dispatch logic used in the model to determine which gas fired turbines are "in the money".

October 2009 hedges are shown for both power and gas for power in Exhibit Nos. DEM-9C and DEM-10C.

Daily commodity prices for October 2009 are in Exhibit No. DEM-11C. This chart illustrates peak power, off-peak power, and gas for power prices as they evolved over the 24-month period.

The Northwest River Forecast Center ("NWRFC") issued its first official water supply forecast of the 2009 water year on December 18, 2008. Thousands of Acre Feet ("KAF") for the January-July period at Grand Coulee was projected at 58,000 KAF. The 30-year average (1971-2000), also referred to as "normal," for the January-July period at Grand Coulee is 62,900 KAF. Thus, NWRFC predicted January-July runoff at 92% of normal at Grand Coulee (58,000 KAF/62,900 KAF). All subsequent forecasts for the 2009 water year can be found in Exhibit No. DEM-12. Also found in Exhibit No. DEM-12 are the monthly runoff volumes at Grand Coulee for water years 2007, 2008, 2009 and October through January for water year 2010.

The above referenced tools, forecasts, and fundamental views were used to manage the monthly spot market exposure for delivery month October 2009. October 2009 hedges were executed in accordance with both the Programmatically Managed Hedge and Actively Managed Hedge strategies and the hedge details are shown for both power and gas for power in Exhibit No. DEM-9C.

VI. OCTOBER 2009 – WITHIN MONTH OVERVIEW

In October 2009, most market observers were attributing the then recent rally in natural gas to short covering, a lower probability of a storage induced price meltdown, and declining production. With the UNG index fund roll recently completed, many traders were probably set up for a decline in prices, which contributed to the strength in the NYMEX. The October NYMEX natural gas contract gained about $0.70/MMBtu during the month of September. Despite the challenges Staff faced while hedging for October 2009 (including an unprecedented economic downturn and gas storage levels), Staff succeeded in executing transactions at competitive market prices. From [redacted] through September 2009, Staff [redacted] MW on-peak power at an average price of [redacted] and [redacted] MW off-peak power at an average price of [redacted]. Staff also [redacted] MW peak power at an average price of [redacted], [redacted] MW off-peak power at an average price of [redacted] and [redacted]

MW of flat power at an average price of [redacted]. From [redacted] through [redacted], Staff [redacted]-MMBtu/day natural gas at an average price of [redacted]/MMBtu. *See* Exhibit Nos. DEM-10C and DEM-9C.