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AZ CORP COMMISSION
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COMMISSIONERS

JEFF HATCH-MILLER, Chairman
WILLIAM A. MUNDELL
MIKE GLEASON
KRISTIN K. MAYES
GARY PIERCE

IN THE MATTER OF THE APPLICATION OF UNS GAS, INC. FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF THE PROPERTIES OF UNS GAS, INC. DEVOTED TO ITS OPERATIONS THROUGHOUT THE STATE OF ARIZONA CORPORATION COMMISSIONON.	DOCKET NO. G-04204A-06-0463
IN THE MATTER OF THE APPLICATION OF UNS GAS, INC. TO REVIEW AND REVISE ITS PURCHASED GAS ADJUSTOR.	DOCKET NO. G-04204A-06-0013
IN THE MATTER OF THE INQUIRY INTO THE PRUDENCE OF THE GAS PROCUREMENT PRACTICES OF UNS GAS, INC.	DOCKET NO. G-04204A-05-0831

STAFF'S NOTICE OF FILING DIRECT TESTIMONY

Staff of the Arizona Corporation Commission ("Staff") hereby files the Direct Testimony of Jerry Mendl (Consultant – MSB Energy Assoc., Inc.) in the above-referenced matter.

Staff is providing several pages containing confidential information from Jerry Mendl to Administrative Law Judge Nodes, the Commissioners, their Executive Aides and to those parties who have entered into a Protective Agreement with UNS Gas, Inc.

RESPECTFULLY SUBMITTED this 16th day of February 2007.

Arizona Corporation Commission
DOCKETED
FEB 16 2007
DOCKETED BY nr

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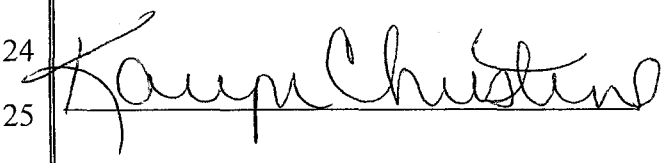

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DIRECT

TESTIMONY

OF

JERRY MENDL (CONSULTANT)

DOCKET NOS. G-04204A-06-0463

G-04204A-06-0013

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G-04204A-05-0831

IN THE MATTER OF THE APPLICATION OF UNS GAS, INC. FOR ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF THE PROPERTIES OF UNS GAS, INC. DEVOTED TO ITS OPERATIONS THROUGHOUT THE STATE OF ARIZONA

FEBRUARY 16, 2007

BEFORE THE ARIZONA CORPORATION COMMISSION

JEFF HATCH-MILLER
Chairman
WILLIAM A. MUNDELL
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner
GARY PIERCE
Commissioner

IN THE MATTER OF THE APPLICATION OF UNS GAS, INC. FOR ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF THE PROPERTIES OF UNS GAS, INC. DEVOTED TO ITS OPERATIONS THROUGHOUT THE STATE OF ARIZONA	)	DOCKET NO. G-04204A-06-0463
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REDACTED

DIRECT

TESTIMONY

OF

JERRY E. MENDL

ON BEHALF OF

ARIZONA CORPORATION COMMISSION STAFF

FEBRUARY 16, 2007

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EXECUTIVE SUMMARY
UNS GAS, INC.
DOCKET NOS. G-04204A-06-0463 ET AL

UNS Gas' procurement strategy over the September 2003 through December 2005 transition period, as set out in its January 1, 2005 price stabilization policy and utilizing low cost hedging instruments, was reasonable.

- The 2005 price stabilization policy, when fully implemented would spread purchases out over a three-year period.
- Fixed price forward physical gas contracts is the primary method identified in the policy to stabilize prices.
- Call options and collars, which incur premiums that may not be cost effective for ratepayers, were allowed under the Policy but not actually used in the audit period.

The use of hedging instruments incurring large premiums to help stabilize retail prices will not be reasonable unless the prices are not sufficiently stabilized by the regulatory process and low cost hedges.

- Over-and under-collections are banked and periodically reallocated, thus dampening the price volatility actually experienced by ratepayers.
- The PGA rates are based on a 12-month rolling average of the costs, thus dampening the price volatility actually experienced by ratepayers.
- Hedging instruments, such as physical fixed price forward contracts, reduce ratepayer price volatility without adding to ratepayer cost.
- Going forward, UNS Gas should factor in the potential for imbalance penalties associated with the recently implemented hourly balancing mechanism when considering modifications to its Price Stabilization Policy.

The changes to UNS Gas' fully implemented procurement strategy over a 36-month period, as set out in its January 1, 2006 price stabilization policy, appear to be reasonable if UNS Gas continues to utilize low cost hedging instruments.

- Like the 2005 Price Stabilization Policy, the 2006 Price Stabilization Policy would spread purchases out over a three-year period, use fixed price forward physical contracts as the primary method, and would allow call options and collars.
- The purchase timing under 2006 Price Stabilization Policy, when fully implemented, appears reasonable when the fixed price forward physical contracts are used, but may incur costs not commensurate with the benefits to ratepayers if call options or collars are used.

UNS Gas concentrated its gas purchases into only a few days, which results in higher risk of undue gas cost volatility.

- UNS Gas did not precisely carry out its 2005 Price Stabilization Policy.
- All the fixed price gas delivered during the 28-month audit period was purchased on only 20 days.

The impact of UNS Gas' concentrated procurement practices on actual cost was small, less than 2%.

- Had UNS Gas exactly followed its Price Stabilization Policy, the NYMEX cost of gas would have been slightly less than the NYMEX cost of gas under its actual purchase timing.
- Had UNS Gas followed a uniform dollar cost averaging strategy (for each delivery month, purchasing equal volumes of gas in each available purchase month), the NYMEX cost of gas would have been less than the NYMEX cost of gas under its actual purchase timing, but more than under its Price Stabilization Policy.

The Commission should not approve UNS Gas' request to approve its 2006 Gas Price Stabilization Policy.

- The 2006 Price Stabilization Policy would allow UNS Gas to stabilize prices using call options and collars which could add to the cost without commensurate benefit to ratepayers.
- Approval of the Policy would create a safe harbor that would increase the resistance of UNS Gas to change policies when conditions warranted.
- If the Commission considers approving the Price Stabilization Policy, it should require UNS Gas to provide a detailed explanation of how it would monitor the markets and make changes for the ratepayers' benefit.
- If the Commission considers approving the Price Stabilization Policy, it should condition the approval to be valid only as long as the conditions underlying the policy are valid.
- If the Commission considers approving the Price Stabilization Policy, it should require UNS Gas to show that any premiums anticipated for hedging instruments are reasonable and serve the objectives of stabilizing prices while minimizing costs.
- If the Commission considers approving the Price Stabilization Policy, it should require UNS Gas to provide a corrected copy of the Policy.

INTRODUCTION

Q. Please state your name and business address.

A. My name is Jerry E. Mendl. I am the President of MSB Energy Associates, Inc. ("MSB"). My business address is MSB Energy Associates, Inc., 7507 Hubbard Avenue, Middleton, Wisconsin 53562.

Q. Does Exhibit JEM-1 summarize your qualifications?

A. Yes.

Q. What is the purpose of your testimony?

A. Together with Mr. George E. Wennerlyn, a subcontractor to MSB, I am appearing on behalf of the Staff of the Arizona Corporation Commission - Utilities Division to address the prudence of UNS Gas, Inc.'s ("UNS Gas") gas procurement practices over the time frame spanning September 2003 through December 2005. My testimony focuses on the timing of gas purchases by UNS Gas relative to its Price Stabilization Policy. I also address UNS Gas' request that the Commission approve UNS Gas' Price Stabilization Policy.

FINDINGS AND RECOMMENDATIONS

Q. What are your findings?

A. In my review of UNS Gas' gas procurement practices, I concluded:

1. UNS Gas' procurement strategy over the September 2003 through December 2005 transition period, as set out in its January 1, 2005 price stabilization policy and utilizing low cost hedging instruments, was reasonable.

2. The use of hedging instruments incurring large premiums to help stabilize retail prices will not be reasonable unless the prices are not sufficiently stabilized by the regulatory process and low cost hedges.
3. The changes to UNS Gas' fully implemented procurement strategy over a 36-month period, as set out in its January 1, 2006 price stabilization policy, appear to be reasonable if UNS Gas continues to utilize low cost hedging instruments.
4. UNS Gas concentrated its gas purchases into only a few days, which results in higher risk of undue gas cost volatility.
5. The impact of UNS Gas' concentrated procurement practices on actual cost was small, less than 2%.
6. The Commission should not approve UNS Gas' request to approve its 2006 Price Stabilization Policy.

2005 PRICE STABILIZATION POLICY

I. UNS Gas' procurement strategy over the September 2003 through December 2005 transition period, as set out in its January 1, 2005 price stabilization policy and utilizing low cost hedging instruments, was reasonable.

Q. Did UNS Gas have a written policy regarding gas procurement that applied to the September 2003 - December 2005 period?

A. Yes, UNS Gas had its Price Stabilization Policy effective January 1, 2005, that set out the objectives for purchasing fixed price gas in order to maintain stable gas prices to ratepayers. UNS Gas ensured that the policy was implemented by requiring responsible employees to agree to comply with the parameters of the Price Stabilization Policy, and acknowledge that the willful violation of the limits set in the Price Stabilization Policy may result in disciplinary action. In my opinion, UNS Gas placed strong emphasis on ensuring that the Price Stabilization Policy was appropriately implemented.

Q. What was UNS Gas' price stabilization policy that applied to the September 2003 - December 2005 period?

A. The UNS Gas Price Stabilization Policy that was effective January 1, 2005 applied to this period. It called for 45% of the estimated monthly gas load to be supplied through non-discretionary purchases of fixed price gas. The non-discretionary purchases were to be made over a three year period prior to the delivery month, using calendar triggers on approximately January 19, March 9, and July 19. Thus for each delivery month, there should be nine purchase dates for fixed price non-discretionary gas, with each purchase being 5% of the estimated monthly gas load.

In addition, the Price Stabilization Policy also allowed UNS Gas to purchase discretionary gas volumes over and above the non-discretionary amounts when favorable purchasing opportunities exist. The sum of the discretionary and non-discretionary volumes were limited to 80% of the estimated monthly gas load to allow the opportunity for some index purchasing and to provide a buffer against abnormally low loads.

PURPOSE OF THE PRICE STABILIZATION POLICY

Q. What is the purpose of the company's price stabilization policy?

A. As its name states, the purpose of the policy is to stabilize the prices UNS Gas, and ultimately its customers, pay for natural gas through forward hedging activities.

Q. What hedging mechanisms are available to UNS Gas under its stabilization policy?

A. UNS Gas relies on fixed price forward physical purchases as its primary method to stabilize prices as well as NYMEX purchases, call options and collars as its secondary methods.

Q. Will employing a hedging strategy reduce the company's gas costs?

A. No, on average, hedging strategies will increase the cost of gas. The purpose of hedging strategies is to stabilize the cost of gas - to dampen the effects of gas price volatility. Depending on the hedging strategy used, the Company may incur a significant premium on the price to limit the price risk.

At one extreme, a utility could purchase all of its natural gas requirements on the spot market, or at the first of the month index price. Changes in short-term natural gas market conditions could result in volatile price swings and costs to the utility. The purpose of hedging is to dampen or avoid this price risk.

The utility can reduce the price risk by purchasing some of the gas supply under fixed price forward physical contracts, which is UNS Gas' primary price stabilization method. Using this method, UNS Gas would lock into physical supply on a predetermined schedule over a 36-month period in advance of delivery. Once UNS Gas makes the forward fixed price purchase, the price is locked and that volume of gas is no longer subject to price risk. Using this method, UNS Gas does not pay an explicit premium for its protection against price increases. But UNS Gas retains the risk that if gas market prices drop, it will end up paying above-market prices for the volumes of gas purchased this way. In times of increasing market price trends, fixing prices over a three-year period will tend to reduce average costs. Conversely, in a time of decreasing market prices, purchasing fixed price forward contracts will tend to result in higher average costs.

The utility can also shed price risk by purchasing call options or collars from a third party. In these financial transactions, the third party assumes the risk that prices will rise above some strike price. The utility will pay no more than the strike price for natural gas hedged

in that way, but the utility will pay a premium to the third party for absorbing the risk that it will go higher than the strike price. For the third party to be willing to assume the risk and to stay in business, the premium on average must be sufficient to pay for the times that the market price exceeds the strike price and to generate a profit for the investors. It follows that the more volatile the gas market is perceived to be, the higher the premium. Thus, on average, the premium will add to the cost of gas.

PRUDENCE OF THE PRICE STABILIZATION EXPENDITURES

II. The use of hedging instruments incurring large premiums to help stabilize retail prices will not be reasonable unless the prices are not sufficiently stabilized by the regulatory process and low cost hedges.

Q. Is it prudent and reasonable for UNS Gas to incur a premium that increases the cost of gas in order to reduce price volatility?

A. From a ratepayer perspective, a large premium may not be justified. There are at least three factors that must be weighed to determine how much expenditure is appropriate to control retail price (rate) volatility.

First, the regulatory process itself stabilizes prices paid by UNS Gas ratepayers. The fact that over- and under-collections are banked and redistributed periodically stabilizes the rates paid by retail gas customers. In addition, the PGA is based on a 12-month rolling average of gas costs rather than the most current monthly gas cost. This method of calculating the PGA rate dampens month to month price volatility in the rates as paid by the ratepayers. The regulatory process stabilizes retail rates experienced by UNS Gas' customers, but does not reduce the volatility of costs paid by UNS Gas.

Second, UNS Gas can purchase physical gas through fixed price forward contracts as it had done during the audit period. This approach reduces the volatility of costs paid by UNS Gas, which in turn reduces the rate volatility experienced by UNS Gas' customers. It reduces retail price volatility without an added premium to increase cost.

Third, UNS Gas could stabilize prices by purchasing financial gas - such as call options - to limit the price paid for gas. In addition to the market price of physical gas, UNS Gas may incur premiums that significantly add to the cost of gas. For its customers, these premiums may secure instruments that reduce rate volatility, but will increase overall rates.

If the first and second factors adequately address rate volatility from a ratepayer perspective, it is not reasonable to require ratepayers to pay a premium to further stabilize retail rates.

Q. Are there some conditions under which purchasing financial gas and incurring a premium could be prudent and reasonable?

A. Yes, there could be. For example, if there were an insufficient number of bidders willing to provide physical gas under fixed price forward contracts, competitive prices might not result. Supplementing those bids for physical gas with more liquid financial gas instruments could bring overall gas cost down.

As another example, beyond the audit period El Paso's hourly balancing requirement has taken effect. As UNS Gas considers the potential imbalance penalties, it may be appropriate to modify the current hedging target of 45% of monthly gas demand. UNS Gas should also assess whether fixed price three year forward physical gas contracts are

sufficiently flexible to meet that target in light of the potential impact of penalties incurred under El Paso's daily balancing requirement. Financial gas instruments could play a role, especially if the cost of the premiums declines.

In general, if the rate volatility cannot be sufficiently controlled through the ratemaking process and low cost hedges, then higher cost hedges with significant premiums may be needed to balance the objectives of stabilizing rates and minimizing cost.

Q. Are you suggesting that UNS Gas' price stabilization expenditures were imprudent?

A. No. UNS Gas' Price Stabilization Policy relies primarily on fixed price forward contracts. Our audit showed that UNS Gas has not incurred any hedging premiums. I would be concerned if UNS Gas began relying on call options and collars and began to incur premiums, but that has not been the case in the September 2003 through December 2005 audit period.

Later in my testimony, I will report on the prices faced by UNS Gas under its procurement strategy compared to other strategies it may have pursued. Mr. Wennerlyn and I have concluded that the cost of gas actually paid by UNS Gas for the audit period was reasonable in comparison to market prices.

Q. Please summarize.

A. During the audit period, UNS Gas implemented its 2005 Price Stabilization Policy by using low cost hedging instruments to control retail price volatility. It resulted in a reasonable cost of gas. Had UNS Gas used high cost (expensive premiums) hedging instruments, it could have resulted in an unreasonable cost of gas.

Beyond the audit period, UNS Gas implemented its 2006 Price Stabilization Policy. In addition, beyond the audit period the El Paso transportation service tariff now calls for hourly balancing. Going forward, UNS Gas should factor in the potential for imbalance penalties in assessing further modifications to its 2006 Price Stabilization Policy, both in regard to the hedged fraction and the hedging instruments.

2006 PRICE STABILIZATION POLICY

III. The changes to UNS Gas' fully implemented procurement strategy over a 36-month period, as set out in its January 1, 2006 price stabilization policy, appear to be reasonable if UNS Gas continues to utilize low cost hedging instruments.

Q. What changes is UNS Gas implementing in its new gas price stabilization policy which became effective on January 1, 2006?

A. UNS Gas has modified its Gas Price Stabilization Policy to utilize monthly calendar triggers for its non-discretionary purchases, excluding the months of August through October because of historical volatility due to hurricanes. The 2006 Policy still retains the non-discretionary target of 45% of the estimated monthly gas load. In effect, the policy change increases the number of purchase dates for non-discretionary fixed price gas from three per year (January, March and July) to nine per year (all but August - October). Non-discretionary fixed price gas prices would be averaged over 27 purchases spread over three years under the 2006 Price Stabilization Policy instead of 9 purchases over three years under the 2005 Policy.

Q. Is the 2006 price stabilization policy an improvement over the 2005 policy?

A. In a theoretical sense, I believe it provides more price stability by averaging costs over more purchase dates. Thus, it should show less fluctuation. That is consistent with the analysis reported in Exhibit JEM-5 which "backcasted" the effect of the 2006 and 2005

Price Stabilization Policies on NYMEX cost given the NYMEX prices from September 2000 through December 2005. The analysis does not suggest that the new approach will yield materially different gas costs. Nonetheless, the revised 2006 Price Stabilization Policy more closely approximates pure dollar cost averaging, which is a recognized method to reduce price volatility.

Q. Once the new 2006 price stabilization policy becomes fully implemented in approximately three years, will it set reasonable procurement parameters?

A. The indications are that it will. Exhibit JEM-4 "backcasts" the fully implemented 2005 Stabilization Policy and the three-year uniform implementation scenario based on NYMEX prices from September 2000 (three years prior to the beginning of the audit period) through December 2005. The new 2006 Price Stabilization Policy is nearer to the uniform three-year dollar cost averaging standard, and thus would likely to have been close to that result. In my opinion, the new policy is likely to set reasonable procurement parameters regarding timing.

This presumes that UNS Gas continues to purchase fixed price forward physical supply as its primary method to stabilize prices. I do not believe the new policy would set reasonable procurement parameters if UNS Gas began to purchase call options or collars that incur costs for premiums. The risk premiums tend to increase as the coverage period gets longer. Thus, while a three-year time frame is quite reasonable for fixed price forward purchases, the three-year time frame is likely to be too long for a call option because the premium becomes very expensive.

One additional caveat about my conclusion that the 2006 Policy is likely to set reasonable procurement parameters - my focus was on timing of the purchases and does not account

for the potential impact of imbalance penalties on the amount of gas hedged and instruments used to hedge it.

ACTUAL TIMING OF UNS GAS PURCHASES

IV. UNS Gas concentrated its gas purchases into only a few days, which results in higher risk of undue gas cost volatility.

Q. In light of its price stabilization policy, what was the timing of UNS Gas' natural gas purchases during the audit period?

A. The purchases were quite concentrated in time, which leads to a higher risk of undue gas cost volatility.

CONCENTRATION OF PURCHASES

Q. Why does concentrating gas purchases into relatively few days result in higher risk of undue gas cost volatility?

A. Natural gas prices can vary greatly from day to day. In recent years, natural gas prices have been highly volatile, particularly as extreme weather increases the demand for gas and as production capability is vulnerable to interruption due to hurricanes. Concentrating purchases into relatively few days takes the risk that gas prices will be higher than average on the dates of purchase, which increases the volatility of gas costs paid by ratepayers. If the gas supplies for each delivery month are purchased on one day, gas cost will be as volatile as the gas prices. If the gas supplies for each delivery month are purchased over many days, and particularly over a longer period of time, the weighted cost of gas for the delivery month will be stabilized. As a general principle, the more days over a longer time frame that natural gas is purchased, the more stable will be its average price and cost to the ratepayers.

Q. How concentrated were the purchases of natural gas for delivery in the September 2003 - December 2005 period?

A. Approximately 60% of the natural gas delivered to UNS Gas during the September 2003-December 2005 time frame was purchased under fixed price contracts. The rest was purchased under index priced contracts (first of month index) or daily index or the spot market.

All of the fixed-price natural gas for delivery in that 28-month period was purchased on just 20 days. Some of the gas was purchased by Citizens prior to September 2003, when UNS Gas took over the utility. Citizens purchased gas for the period on 6 of the 20 days, while UNS Gas purchased gas on 14 days. The table below shows the distribution of gas purchased on the 20 days. Not only was all of the fixed price gas purchased over just a few days, the volumes purchased on each of those days varied from 1% to 19% of the period volume.

In my opinion, these fixed price purchases are quite concentrated, and as such, pose a significant risk that natural gas prices will be relatively high at the time of purchase, thus increasing the gas cost volatility.

Date of gas purchase for delivery in the September 2003 - December 2005 period	% of period fixed-price gas purchased by Citizens and UNS Gas	% of period fixed-price gas purchased by UNS Gas
[redacted]	3%	
[redacted]	5%	
[redacted]	7%	
[redacted]	3%	
[redacted]	3%	
[redacted]	1%	
[redacted]	7%	9%
[redacted]	4%	5%
[redacted]	5%	7%
[redacted]	13%	17%
[redacted]	14%	18%
[redacted]	1%	1%
[redacted]	1%	2%
[redacted]	19%	24%
[redacted]	5%	7%
[redacted]	1%	2%
[redacted]	3%	4%
[redacted]	1%	2%
[redacted]	1%	2%
[redacted]	1%	1%

CONSISTENCY OF PURCHASE TIMING WITH PRICE STABILIZATION POLICY

Q. Did UNS Gas follow its 2005 price stabilization policy regarding the purchase schedules for fixed price gas?

A. Not exactly. It is clear from the preceding table that purchases did not always occur in the designated months of January, March and July, nor on the designated calendar date triggers in those months. The actual purchase volumes do not appear to be evenly distributed among the purchase dates, though that may be partially explained by UNS Gas' purchase of some discretionary gas volumes as well.

However, there are extenuating circumstances that must be considered. First, when UNS Gas took over the utility from Citizens in September 2003, Citizens had already purchased some of the fixed price gas for delivery months through July 2004. UNS Gas did not have to make a non-discretionary purchase until April 2004, although it made some discretionary purchases beginning in November 2003.

In addition, UNS Gas' Price Stabilization Policy would take three years to fully implement. Exactly following the policy would mean that the first non-discretionary purchase date following the September 2003 date when UNS Gas took ownership would be approximately January 19, 2004 for delivery beginning February 2004. The procurement policy could not be fully implemented to provide nine non-discretionary fixed-price purchases until July 2006 for gas to be delivered in August 2006, at earliest. Until then, the implementation of the Price Stabilization Policy would be in transition.

Q. Was UNS Gas' price stabilization policy or its implementation of the policy unreasonable?

A. While there are a myriad of ways in which UNS Gas could have procured gas, my conclusion is that the method used by UNS Gas did not produce an unreasonable outcome. I examined the purchase timing issue in some detail, and reached conclusions similar to Mr. Wennerlyn.

IMPACT OF PROCUREMENT TIMING ON GAS COST

V. The impact of UNS Gas' concentrated procurement practices on actual cost was small, less than 2%.

Q. How should the Commission consider your conclusion that UNS Gas deviated from its price stabilization policy?

A. There is a tradeoff that must be recognized whenever a policy of this sort is implemented. The policy provides guidance and discipline to gas purchasing. Without it, a utility may elect not to purchase gas because prices were higher than anticipated, but then find that the prices rose even more before it eventually made the purchase. Discipline is important to achieving stable gas prices (and costs) because it ensures that gas is purchased over time to result in a more stable weighted cost of gas. Failure to follow policy may be imprudent. On the other hand, blind adherence to a policy in light of changing market conditions can result in excess and unreasonable gas costs.

Even if a utility did not have a gas procurement policy or would deviate from its gas procurement policy, it may still end up with reasonable costs. In such an instance, the Commission may wish to address a more reasonable procurement method, and perhaps condition its order to improve the utility's procurement practices, but it may still find the costs to be prudent and reasonable.

METHOD OF ANALYSIS

Q. What analysis did you perform to determine whether the outcome of UNS Gas' gas procurement was reasonable gas cost?

A. First, I examined when UNS Gas (and Citizens before it) purchased gas for each delivery month in the September 2003 - December 2005 delivery period as a function of the three-year gas contract price history for that delivery month. This is an expansion of Mr. Wennerlyn's gas price ranking that shows not only the high and low prices but the daily prices. This provides information as to the likelihood that a lower cost scenario could exist. For example, if UNS Gas actually bought substantial amounts of gas on relatively high priced days, it might suggest that buying gas exactly according to the stabilization policy, or some other policy, could result in lower costs.

Second, I examined some scenarios for gas procurement to see how the gas costs for the September 2003 - December 2005 delivery period would have compared to the actual costs.

Q. What did you conclude from your assessment of the purchase history?

A. I produced a series of graphs depicting the three-year price histories relative to the actual fixed price purchases for each delivery month. Generally speaking, the graphs show UNS Gas and Citizens purchased its gas on a limited number of days generally near the recent end of the gas price history. The price graph shows that gas prices have increased over the three-year historical period. Since actual purchases were made over the more recent months, it follows that the gas costs would have been lower had the purchases been made over the entire three-year period. However, it is not reasonable to hold UNS Gas accountable for purchases made or not made prior to September 2003, the date when UNS Gas acquired the gas utility from Citizens.

In addition, at certain times, gas prices in the monthly price histories showed a decline, at least for a while. In those instances, purchasing more gas in the near term would be less costly than spreading those purchases out over the entire three-year period.

The graphs for each month are attached in Exhibit JEM-2. As can be seen in Exhibit JEM-2, there are a number of opportunities for UNS Gas to have purchased more or less gas at times when prices were relatively lower or higher, respectively. Since one does not have the benefit of 20-20 hindsight when the purchases are being made, it would not be appropriate to compare the actual cost to what the cost could have been with perfect knowledge. However, it is appropriate to compare the actual costs to what the costs would have been had UNS Gas exactly followed its Price Stabilization Policy or to an alternative uniform purchase timing strategy.

PURCHASE TIMING ALTERNATIVES ANALYZED

Q. What analyses have you done to determine the cost impacts of another procurement timing strategy, or not deviating from the procurement strategy set out in the 2005 price stabilization policy?

A. Since one cannot know in advance what the prices will be at any particular future date, I analyzed what the gas costs would have been under several procurement timing scenarios. To keep the costs comparable, I calculated the NYMEX gas cost for the volumes and dates for each scenario. I examined the following scenarios:

1. The actual purchase timing used by Citizens and UNS Gas for fixed price gas for delivery in the September 2003 - December 2005 period.
2. Uniform purchase timing over the full three years in advance of delivery. This assumes that UNS Gas would have acquired the same volume of fixed price gas, but in 36 equal monthly purchases prior to each delivery month. This is the

ultimate dollar cost averaging scenario, but not actually available to UNS Gas during the audit period because it includes purchase months before September 2003 when UNS Gas acquired the gas utility.

3. Full implementation of UNS Gas' three-year purchase horizon using the schedule set out in the 2005 Price Stabilization Policy. In this scenario, the same amount of fixed-price gas was assumed to have been purchased, but in nine equal installments occurring on the trade dates nearest to January 19, March 9 and July 19 in the three years prior to the delivery month. This full implementation scenario was also not actually available to UNS Gas during the audit period because it includes purchase months before September 2003 when UNS Gas acquired the gas utility.

These scenarios compare the fixed price NYMEX gas cost under fully implemented three-year procurement practices to the NYMEX gas cost as actually procured. They help analyze the merit of the Price Stabilization Policy once it can be fully implemented.

Q. Did you examine any other scenarios?

A. Yes. While the fully-implemented scenarios above provide insights about the steady state operation of the Price Stabilization Policy, the fact is that the current period, September 2003 - December 2005, is entirely a transition period. At no time during this period could the Price Stabilization Policy have been fully implemented. Thus I considered three transition scenarios designed to procure gas during the transition. In each transition scenario, I considered the fact that UNS Gas had no control over the purchases already made by Citizens for the September 2003 - December 2005 audit period. I also considered that UNS Gas could not purchase gas prior to September 2003, and thus ramped up purchases to match those actually made by UNS Gas as quickly as possible in

equal monthly amounts during the months in which purchases would be made under the policy. I examined the following transition scenarios:

1. Uniform purchase timing every month available after September 2003 until the month prior to delivery. For example, UNS Gas actually purchased some fixed price gas for delivery in December 2003. In this scenario, I assumed that UNS Gas purchased the same amount of fixed price gas for delivery in December 2003, but split equally over three months (September, October and November 2003).
2. UNS Gas 2005 Policy purchase timing, assuming that UNS Gas bought the same volumes of fixed price gas as soon as it could under the 2005 Price Stabilization Policy.
3. UNS Gas 2006 Policy purchase timing, assuming that UNS Gas bought the same volumes of fixed price gas as soon as it could under the revised 2006 Price Stabilization Policy that became effective on January 1, 2006. While outside of the audit period, this scenario provides insights about the effectiveness of the new policy - had it been implemented sooner.

RESULTS OF ANALYSIS

Q. What did your analysis show?

A. My analysis showed that a fully implemented strategy, spreading purchases over a three-year period, would have resulted in lower NYMEX costs for the same amounts of fixed price gas that was actually purchased. My analysis also showed that it did not make much difference whether the purchasing strategy was 36 equal monthly purchases over three years or the nine equal monthly purchases on the three calendar triggers per year specified in the 2005 Price Stabilization Policy. This is the result of lowering the average price of gas by including more of the early months when the gas prices were lower, as can be seen in Exhibit JEM-2.

My analysis shows that for the equivalent volumes of fixed price gas, the three-year uniform scenario would have provided the gas at a 17% lower NYMEX cost than the actual purchases. The fully-implemented three-year 2005 Price Stabilization Policy scenario would have provided gas at a NYMEX cost 18% lower than the actual. Supplying the gas under a uniform transition scenario would have resulted in 0.6% lower NYMEX cost. Using the UNS Gas Transition 2005 Price Stabilization Policy scenario would have saved about 2% on NYMEX gas costs. The new UNS Gas Transition 2006 Price Stabilization Policy scenario would have saved about 2.3% on NYMEX gas costs, only slightly more savings than the Policy in effect during the audit period. These results are shown in Exhibit JEM-3.

Exhibit JEM-4 shows the cumulative NYMEX cost savings of the fully implemented three-year purchase timing strategies over the audit period. Both the uniform three-year scenario and the UNS Gas 2005 Plan three-year scenario would have saved around $18 million relative to the actual fixed price gas purchases. I did this analysis to examine how the 2005 Policy would have performed relative to the uniform strategy, if either could have been fully implemented. It shows that a fully implemented 2005 Policy would have performed well over the audit period. It also suggests that the savings shown in this analysis of the audit period deliveries is more a function of averaging over a three year period than the specifics of purchase timing within the three year period. It should be remembered that the September 2003 acquisition date precluded UNS Gas from fully implementing the Price Stabilization Policy during the audit period.

Exhibit JEM-5 shows the cumulative NYMEX cost savings of the transition purchase timing strategies over the audit period. Both the UNS Gas 2005 Price Stabilization Policy and the UNS Gas 2006 Price Stabilization Policy scenarios would have saved around $2

million relative to the NYMEX costs of the actual fixed price gas purchases. The uniform transition scenario would have saved about $0.5 million relative to the NYMEX costs of the actual fixed price gas purchases. This analysis suggests that either UNS Gas' 2005 or 2006 Price Stabilization Policies would have saved money relative to the actual purchase timing over the part of the audit period that UNS Gas controlled purchase timing. It also would have saved money relative to a uniform purchase schedule over the part of the audit period that UNS Gas controlled purchase timing.

Q. Are you recommending that the Commission adjust the revenue recovery to disallow the excess NYMEX costs you calculated above?

A. No. The actual costs included in calculating the revenue requirement also add the basis to arrive at the receipt point prices and costs. To the extent that the basis is on average the same among the scenarios, the differential actual cost paid by UNS Gas would be equal to the differential NYMEX costs between scenarios. To the extent that the basis will differ for different scenarios, the savings may be more or less than what I calculated.

One of my purposes in developing the calculations was to evaluate and compare UNS Gas' 2005 Price Stabilization Policy to other scenarios to see whether the Policy is reasonable. I have concluded that the policy is a reasonable way to stabilize gas prices when utilizing low cost hedging instruments.

Another purpose of my analysis was to determine whether deviations in implementing the policies in the audit period would have had any material effect on the cost of gas in the audit period. I have determined that the alternate scenarios, including actual purchases, the 2005 Price Stabilization Policy and the "gold standard" of perfect dollar cost averaging (36 equal purchases over 36 months), all provide similar and relatively small levels of

savings over the transition period. Thus I have concluded that deviations between the policy and the practice are not likely to have material effect on the cost of gas in the audit period.

COMMISSION APPROVAL OF UNS GAS' PRICE STABILIZATION POLICY

VI. The Commission should not approve UNS Gas' request to approve its 2006 Price Stabilization Policy.

Q. Does the 2006 Price Stabilization Policy as set forth in Mr. Hutchens' Exhibit DGH-1 correctly reflect UNS Gas' position?

A. No. There is a minor modification that was identified in response to Staff Data Request 2.15. The data request sought the analysis described in Section 2.2.2 of the 2006 Price Stabilization Policy that shows "that there are regular oscillations within price trends with a typical low point in the third week of each month." The response indicates that the "discussion portion of the policy ... does not accurately portray the final reasoning for setting the 20th of the month date in the policy" and that "UNS will make this correction in its next update of the policy." The incorrect language is contained in the document for which UNS Gas is seeking approval.

Q. Does the 2006 price stabilization policy have merit?

A. Yes. The 2006 Price Stabilization Policy, if implemented utilizing low cost hedging instruments, approximates a pure dollar cost averaging method for timing the purchases of natural gas to reduce gas price fluctuations. This method averages prices out over a multi-year time frame and dampens the effect of individual price extremes.

The 2006 Price Stabilization Policy provides purchasing discipline through its mechanistic approach and would ensure that some gas is purchased each trigger date. There are

enough trigger dates to ensure that the average will not be dominated by a single extreme condition.

The 2006 Price Stabilization Policy also offers some flexibility to purchase additional discretionary fixed price gas when there are favorable market conditions. This flexibility allows UNS Gas to purchase discretionary volumes above 45% of the estimated monthly load as well as during hurricane season, which is blacked out for non-discretionary purchases.

Purchasing at least 45% and up to 80% of estimated monthly gas load on a fixed price basis insulates UNS Gas from price fluctuations. However, it may also lock UNS Gas in at higher than reasonable prices in the event that gas market prices fall after the purchase has been made. Thus, while it reduces the risk from price upswings, it increases the risk that gas price downswings will not benefit customers.

Q. Are there reasons that UNS Gas and the Commission should be wary of approving the 2006 Price Stabilization Policy?

A. Yes. The Price Stabilization Policy allows UNS Gas to use call options and collars as secondary mechanisms to stabilize prices, although these were not used during the audit period. Under the Price Stabilization Policy, UNS Gas could incur substantial costs for premiums (e.g., multi-year call options) and increase the cost of gas with no commensurate ratepayer benefit. The Commission's approval of the Price Stabilization Policy would give some presumption of prudence to a mechanism that would not be in the ratepayers interests.

While insulating against price increases, the fixed price forward physical contract mechanism that UNS Gas views as its primary hedging tool will also reduce the benefits of price decreases on the fixed price component of the gas supply. While it provides more protection from price swings by reducing volatility, it may result in higher cost than simply riding the market and buying gas at index. There is no way to know in advance whether the dollar cost averaging approach upon which the Price Stabilization Policy is based will result in higher or lower gas prices in any given period.

That suggests that UNS Gas must continually review its purchasing strategies and not put them on "autopilot." That is perhaps the greatest danger of Commission approval of the Price Stabilization Policy - it creates a "safe harbor" for UNS Gas to resist changing its procurement methods even if evolving market conditions make that change necessary. It can become less risky for UNS Gas to incur unnecessary gas costs that have a high probability of recovery because they followed an approved plan than to deviate from the plan even if it is warranted.

Q. Are you recommending that the Commission not grant UNS Gas' request to approve the Price Stabilization Policy?

A. Yes. This was the exact concern raised recently by the Public Utilities Commission of Nevada in its order in Docket No. 04-7004, dated November 18, 2004. The order is attached as Exhibit JEM-6. Sierra Pacific Power Company sought approval of its gas procurement plan, but did not explain how it would modify its procurement plan to reflect evolving market conditions. The Commission determined that it could not approve the plan and clearly held the utility accountable for monitoring the markets, identifying and responding to market changes by modifying its procurement plans. Paragraph 64 of the Public Utilities Commission of Nevada's order states:

> The Commission wishes to make it clear that the resource planning regulations are designed to allow SPPC the flexibility to make changes to its ESP if warranted - not to inoculate SPPC from regulatory risk. Accordingly, the Commission expects SPPC to formulate a clearly defined process for evaluating the effectiveness of its fuel procurement plan and risk management strategy (including its gas hedging strategy) and for changing these plans should conditions warrant.

UNS Gas has not provided any indication of how it would monitor and quickly respond to market conditions - especially if the utility had an approved plan creating the presumption of prudence. The Commission should not grant UNS Gas' request to approve the 2006 Price Stabilization Policy.

In the event that the Commission wishes to consider approving the 2006 Price Stabilization Policy, the Commission should require UNS Gas to provide a detailed explanation of how it will monitor the markets and respond to changes to the benefit of ratepayers. It should also require UNS Gas to show that any premiums for hedging instruments are reasonable and necessary to balance the objectives of stabilizing ratepayer prices and minimizing ratepayer costs. If the Commission approves the policy, it should condition the approval to be valid only as long as the conditions underlying the policy do not change. Changes in market conditions would invalidate the approval. That would help ensure that UNS Gas is held accountable for taking the necessary actions to analyze and prudently react to evolving gas market conditions.

Q. Does this conclude your testimony?

A. Yes it does.

JERRY E. MENDL
President
MSB Energy Associates

Areas of Expertise
+ Analysis of energy resource adequacy, cost and availability
+ Evaluation of alternative energy resource options
+ Analysis of electric utility bulk power supplies
+ Analysis of electric utility projected merger savings and implications on system operations and costs
+ Transmission system analysis
+ Service delivery and markets in a restructured electric utility industry

EDUCATION

1973 B.S. Degree in Nuclear Engineering, With Very High Honors, from the University of Wisconsin, Madison, Wisconsin

1974 M.S. Degree in Nuclear Engineering from the University of Wisconsin, Madison, Wisconsin.

EXPERIENCE

1987-Present
President
MSB Energy Associates, Inc.
Middleton, Wisconsin

Since co-founding MSB Energy Associates in 1988, Mendl has served public-sector clients in Kentucky, California, Utah, Nevada, Washington, Texas, Alaska, Iowa, Illinois, South Carolina, Connecticut, Massachusetts, Vermont, Maryland, Michigan, Missouri, Minnesota, Louisiana, Wisconsin, Pennsylvania, Georgia, Hawaii, Ohio, New Jersey, the District of Columbia and Ontario. Much of his recent work has involved electric utility restructuring, low-income consumer energy affordability and service issues, prudence of gas and electric utility planning and purchase practices, and analyzing need for transmission lines. He assesses "green pricing" tariffs for renewable electric resources and fuel/purchase power costs for electric and natural gas utility rate cases and renewable energy alternatives for utility construction cases. He evaluates electric utility restructuring alternatives and prepares restructuring policy recommendations and supporting technical information. He analyzes long-range plans and planning methods used by gas and electric utilities. He prepares and presents reports, recommendations and testimony.

He conducted engineering, environmental, economic and life-cycle cost analyses of alternate energy resource options, including improved end-use energy efficiency and renewable resources. Mendl developed state regulatory commission codes for implementing integrated resource

planning and evaluated the adequacy of existing and proposed codes. Mendl was both organizer and presenter for a series of five least-cost planning workshops across the U.S. sponsored by the National Association of Regulatory Utility Commissioners (NARUC). He also participated in five Conservation Law Foundation collaborative projects in the northeastern states.

1974-1988

Administrator, Division of Systems Planning, Environmental Review and Consumer Analysis (1979-1988)
Director, Bureau of Environmental and Energy Systems (1976-1979)
Public Service Engineer (1974-1976)
State of Wisconsin, Public Service Commission
Madison, Wisconsin

Mendl was employed by the Wisconsin Public Service Commission for 14 years (1974-1988), and was responsible for the development and evolution of Wisconsin's long-range planning process for electric utilities. He had overall responsibility for directing the Commission's activities concerning utility long-range plans. In addition, Mendl had overall responsibility for and directed the preparation of environmental impact statements and environmental assessments, identifying expected impacts as well as evaluating alternatives, for five large power plants, numerous transmission lines, a major natural gas pipeline, and many policy issues including Electric Space Heat, Electric Utility Tariffs, Electric Sales Promotion, Small- Power Production and Cogeneration, and Extension of Service. Mendl was also responsible for directing the preparation of major studies, including *The Alternative Electric Power Supply Study, Alternative Electric Power Supply - Update,* and *Utility SO_2 Cleanup - Cost and Capability.* (The *Alternative Electric Power Supply Study* and *Update* identified renewable energy, load management and energy efficiency resources that would economically meet Wisconsin's long term electricity needs.) Mendl testified before the Wisconsin Commission in rate cases, planning cases, construction certificate cases and policy cases. He also appeared before other state Commissions and the Federal Energy Regulatory Commission.

OTHER DISTINCTIONS

Mendl staffed the NARUC Subcommittee on Energy Conservation for two and one-half years, and was closely involved with the preparation of the *Least-Cost Planning Handbook for Public Utility Commissioners.*

Mendl also was appointed to serve a four-year term on the Research Advisory Committee of the National Regulatory Research Institute (NRRI). One of seven regulatory staff selected nationally, Mendl helped NRRI to shape its research agenda to be more useful and responsive to the regulatory community.

Mendl is a Registered Professional Engineer in the State of Wisconsin.

Testimony

Mendl, since co-founding MSB Energy Associates in 1988, has testified in the following proceedings:

Submitted To:	Subject	Docket No.	Date
Nevada Public Utilities Commission	WESTPAC Utilities gas rates and deferred energy accounts	06-05016	2006
Nevada Public Utilities Commission	Nevada Power Integrated Resource Plan - gas purchase strategies	06-06051	2006
Nevada Public Utilities Commission	Sierra Pacific Power Energy Supply Plan - gas purchase strategies	06-07010	2006
Wisconsin Public Service Commission	Strategic Energy Assessment - electrical adequacy through 2012	5-ES-103	2006
Nevada Public Utilities Commission	Nevada Power fuel gas and power purchase practices (DEAA)	06-01016	2006
Nevada Public Utilities Commission	Sierra Pacific Power fuel gas and power purchase practices (DEAA)	05-12001	2006
Michigan Public Service Commission	MichCon gas cost recovery factor, contingent factor, and purchase acquisition strategy	U-14717	2006
Michigan Public Service Commission	Consumers gas cost recovery factor, contingent factor, and purchase acquisition strategy	U-14716	2006
Nevada Public Utilities Commission	Nevada Power fuel gas and power purchase practices (BTER)	06-01016	2006
Nevada Public Utilities Commission	Sierra Pacific Power fuel gas and power purchase practices (BTER)	05-12001	2006
Nevada Public Utilities Commission	Nevada Power gas purchase practices – Energy Supply Plan	05-9017	2005
Nevada Public Utilities Commission	Sierra Pacific Power gas purchase practices – Energy Supply Plan	05-9016	2005
Michigan Public Service Commission	Consumers gas cost recovery factor, contingent factor, and purchase acquisition strategy	U-14403	2005

Michigan Public Service Commission	MichCon gas cost recovery factor, contingent factor, and purchase acquisition strategy	U-14401	2005
Kentucky Public Service Commission	Analysis of need for and electrical alternatives to EKPC Cranston-Rowan County transmission line	2005-00089	2005
Nevada Public Utilities Commission	Nevada Power gas purchase practices	04-9004	2004
Nevada Public Utilities Commission	Sierra Pacific Power gas purchase practices	04-7004	2004
Nevada Public Utilities Commission	Prudence of Southwest Gas PGA costs, purchase practices	03-12012	2004
Michigan Public Service Commission	MichCon gas cost recovery factor, contingent factor, and purchase acquisition strategy	U-13902	2004
Wisconsin Public Service Commission	WPS rate case, low income programs, Weston 4 pre-certification expenses and capital	6690-UR-115	2003
Wisconsin Public Service Commission	Alliant rate case, RiverSide purchase power cost and incentive, Columbia maintenance and outages	6680-UR-113	2003
Wisconsin Public Service Commission	Alliant rate case, RockGen purchase power savings bonus, coal procurement	6680-UR-112	2002
Wisconsin Public Service Commission	Assess fuel and purchase power issues in WPS rate case	6690-UR-114	2002
Wisconsin Public Service Commission	Assess fuel and purchase power issues in MG&E rate case	3270-UR-111	2002
Wisconsin Public Service Commission	Assess renewable energy and other alternative resources in WE Power the Future –Port Washington case	05-CE-117	2002
Wisconsin Public Service Commission	Assess costs related to formation and operation of American Transmission Company	05-EI-129	2002
Wisconsin Public Service Commission	Filed comments in investigation of purchase power incentive mechanisms	05-EI-131	2002

Wisconsin Public Service Commission	Alliant rate case, adequacy of planning, purchase power contracts, coal contracts	6680-UR-111	2002
Michigan Public Service Commission	Analyze proposed gas cost recovery factor and plan, and gas procurement practices.	UR-13060	2002
Wisconsin Public Service Commission	WPS rate case, fuel costs, adequacy of planning, purchase power	6690-UR-113	2002
Wisconsin Public Service Commission	Alliant fuel cost rate case, adequacy of planning, purchase power contracts	6680-UR-110	2001
Wisconsin Public Service Commission	Wisconsin Electric fuel rate case, fuel costs, adequacy of planning, purchase power contracts	6630-UR-111	2001
Wisconsin Public Service Commission	Rulemaking regarding electric utility fuel and purchased power cost recovery	1-AC-197	2001
Wisconsin Public Service Commission	Nuclear spent fuel dry cask storage expansion at Point Beach	6630-CE-275	2000
Wisconsin Public Service Commission	WPS rate case, fuel costs, adequacy of planning, purchase power	6690-UR-112	2000
Wisconsin Public Service Commission	Alliant fuel cost rate case, adequacy of planning, prudence of plant maintenance practices, purchase power	6680-UR-110	2000
Wisconsin Public Service Commission	Rulemaking regarding environmental impact analysis and public input process	1-AC-185	1999
Michigan Public Service Commission	Over-recovery of revenues due to declining coal costs	U-11560	1999
Michigan Public Service Commission	Reasonableness of proposed settlement regarding recovery of nuclear plant replacement power costs through power cost recovery factor, suspension of factor	U-11181-R	1999
Michigan Public Service Commission	Fuel and purchase power surcharge, coal costs	U-11180-R	1998

Vermont Public Service Board	Prudence of Green Mountain Power purchase and management of Hydro-Quebec power	5983	1997
Michigan Public Service Commission	Analysis of coal costs, purchase practices, spot market	U-10971-R	1997
Michigan Public Service Commission	Suspension of the fuel and purchase power factor and planning in the transition to restructured utilities	U-11453	1997
Wisconsin Public Service Commission	IEC merger (of WPL/IES/IPC), need and environmental issues regarding proposed Mississippi River transmission crossings	6680-UM-100	1997
Pennsylvania Public Utility Commission	Restructuring, stranded cost, and securitization -- economic and environmental issues	R-00973877	1997
Michigan Public Service Commission	Fuel and purchase power surcharge, impact of sales promotion	U-11181	1997
Wisconsin Public Service Commission	Primergy merger (of WEPCO/NSP), impact on state regulatory authority	6630-UM-100/4220-UM-101	1996
Michigan Public Service Commission	Gas cost recovery adjustments	U-10640-R	1996
Pennsylvania Public Utility Commission	Electric discounted rates, gas/electric competition	R-943280C0001	1996
Michigan Public Service Commission	Fuel and purchase power surcharge, impact of WEPCO/NSP merger	U-10966	1996
Michigan Public Service Commission	Fuel and purchase power surcharge, impact of energy efficiency	U-10971	1996
Minnesota House Committee on Taxes	Impact of cogeneration project on NSP ratepayers	HF637	1996
Minnesota Senate Committee on Jobs, Energy and Community Development	Impact of cogeneration project on NSP ratepayers	SF1147	1996

Wisconsin Public Service Commission	Role of DSM in Advance Plan-7 in light of potential restructuring	05-EP-7	1995
City Public Service Board of San Antonio	Integrated resource planning process (1992 EPAct hearings)	NA	1994
Maryland Public Service Commission	1992 EPAct rules	8630	1994
Georgia Public Service Commission	Commercial and Industrial DSM programs for Savannah Electric	4135-U	1993
Public Utilities Commission of Ohio	Analysis of forecasts and long range plans for Ohio Power and Columbus Southern (case settled)	90-659-EL-FOR and 90-660-EL-FOR	1990
Georgia Public Service Commission	Integrated resource plan analyses for Georgia Power and Savannah Electric	4131-U and 4134-U	1992
New Orleans City Council	Least-cost planning rules	14629 MCS	1991
District of Columbia Public Service Commission	Potomac Electric least-cost plan analysis	834 Phase II	1990
Massachusetts Department of Public Utilities	Boston Gas plan integrated resource plans	90-55	1990
Massachusetts Department of Public Utilities	Boston Gas commercial and industrial DSM, cost recovery	90-320	1991
Hawaii Public Service Commission	Least-cost resource planning	6617	1991
Georgia Public Service Commission	Least-cost planning and facility certification rules	4047-U	1991
New Jersey Board of Public Utilities Commissioners	Transmission line certificate (case settled)	NA	1990
South Carolina Public Service Commission	Transmission line certificate	88-519-E	1988
Vermont Public Service Board	Least-cost planning	5270	1988
D.C. Public Service Commission	Least-cost planning	834	1987

Mendl also assisted in preparing testimony and testified in numerous cases as a senior staff witness at the Wisconsin Public Service Commission. Dates are approximate.

- Advance Plans 1 through 4 (Dockets 05-EP-1 through 05-EP-4 -- on various occasions between 1977 and 1988) before the Wisconsin Public Service Commission
  A wide variety of planning issues including forecasts, nuclear vs coal power, alternative energy, renewable energy, load management, transmission planning, demand-side management resources, principles and methods of integrated resource planning

- Rate Cases (various occasions between 1976 and 1988) including landmark time-of-use rate case (6630-ER-2) for Wisconsin Electric Power
  Environmental and consumer impacts of rate levels and alternative rate designs before the Wisconsin Public Service Commission

- Construction Cases before the Wisconsin Public Service Commission
  Pleasant Prairie Power Plant (1976-1978)
  Germantown Combustion Turbines (1976-1977)
  Weston 3 (1979)
  Edgewater 5 (1980)
  Apple River -- Crystal Cave Transmission Line (1980)
  Prairie Island -- Eau Claire Transmission Line (1981-1982)
  North Madison -- Huiskamp -- Sycamore Transmission Line (1982)
  Point Beach Nuclear Plant Steam Generator Replacement (1982)
  Wisconsin Natural Gas Pipeline (1986)
  Need for power, appropriateness of the utility proposals, and the comparative economics of alternatives, environmental impacts

- Other Appearances while employed at the Wisconsin Public Service Commission
  Planning investigation before the Connecticut Department of Public Utilities Control Authority (1975); uranium availability and resource alternatives
  Rulemaking proceedings before Wisconsin Legislative Committees (1975-1982); planning, siting, and environmental impact analysis rules
  Tyrone Nuclear Project Termination cost recovery hearing before the Federal Energy Regulatory Commission (1980)
  Acid Rain legislation before Wisconsin Legislative Committees (1984-1985)

Selected Clients

Mendl has served the following public sector clients since 1988.

Client	Nature of Service
Alaska Housing Finance Corporation	Analysis of applicability of EPAct standards to Alaska resource selection process.

American Public Power Association	Prepared whitepaper on distributed resources, "Distributed Resources: Options for Public Power" and presented it to APPA National Meeting and distributed resources workshops.
California Low Income Governing Board	Analysis of options to deliver energy efficiency and assistance programs to low-income households in a restructured utility environment. Assist Board to develop low-income programs and policies under interim utility administration.
City of Chicago	Evaluate municipalization, especially regarding power availability and cost, transmission constraints, cogeneration potential.
Citizen's Utility Board of Wisconsin	Evaluate energy efficiency and load management programs in light of possible industry restructuring. Evaluate fuel rate cases and recommend revenue reductions in testimony for Alliant, Wisconsin Electric, Madison Gas & Electric and Wisconsin Public Service. Assess ATC formation and operation costs. Comment on and develop fuel rules, purchase power incentives.
Center for Neighborhood Technologies	Analysis of value of avoiding generation, transmission and distribution through energy efficiency, load management and distributed generation.
Conservation Law Foundation of New England	Collaboratives with Boston Edison, United Illuminating, Eastern Utilities Association, and Nantucket Electric regarding system planning approaches, avoided costs, resource screening. Collaborative with Green Mountain Power regarding Vermont Yankee end-of-life planning.
Dane County Energy Collaborative	Technical contractor to collaborative analyzing 345 kV transmission proposal and alternatives to meet Dane County energy needs.
District of Columbia Energy Office	Analysis of DC Natural Gas' and PEPCo's integrated resource planning.
District of Columbia Public Service Commission	Testimony regarding least cost planning principles and rules.
Environmental Law and Policy Center	Analyzed potential impacts of proposed merger of Wisconsin Electric Power Company and Northern States Power Company on state regulatory authority in Wisconsin and Minnesota. Analyzed environmental impacts related to proposed merger of WPL and two Iowa utilities (IES and IPC), including the proposed transmission line crossings of

	Mississippi River and changes in air pollutant emissions.
Environmentalists/Penn. Energy Project	Analyzed PECO application to securitize stranded costs, especially on economic and environmental impacts that could result from authorizing overestimated stranded costs. Analyzed utility retail access pilot programs. Analyzed restructuring plans for PECO and PP&L.
Germantown Settlement, Philadelphia	Advise regarding business structure and market to aggregate load and/or provide energy efficiency and energy assistance services to low-income households.
Georgia Public Service Commission	Developed integrated resource planning and facility certification rules. Developed integrated resource plans and reviewed utility filings. Monitored utility DSM programs.
Hawaii Division of Consumer Advocacy	Developed integrated resource planning rules.
Iowa Department of Natural Resources	Developed and implemented workshops to train building operators and architects in energy efficiency and renewable energy resource opportunities.
Kentucky Public Service Commission	Analyzed need and alternatives for an EKPC transmission line and a prepared report. Presented testimony defending and explaining report.
Lake Michigan Coalition	Analyzed nuclear spent fuel dry cask storage expansion proposal
Maryland Public Service Commission	Reviewed two utility long-range plans and suggested improvements.
Massachusetts Division of Energy Resources	Analysis of Boston Gas Co. integrated resource plans and residential energy efficiency programs. Analysis of Boston Gas's commercial and industrial energy efficiency programs.
Michigan Community Action Agency Association	Analysis of Michigan electric utility restructuring proposals and impacts on retail prices. Analysis of MichCon gas cost recovery case and factor. Analyses of Indiana-Michigan, Consumers Energy, Wisconsin Electric and Northern States Power-Wisconsin power supply cost recovery cases and factors, including analysis of coal and power purchase practices, demand-side management, and nuclear plant outage costs. Analysis of Northern States Power/Wisconsin Electric Power Co. proposed merger.
Missouri Public Service Commission	Developed rules for electric resource planning and gas resource planning. Evaluated three electric utility plans filed pursuant to rules.

National Association of Regulatory Utility Commissioners	Organized, prepared and presented at five workshops throughout the U.S. sponsored by NARUC/DOE.
Natural Resources Defense Council, Mid-Atlantic Energy Project Collaborative	Evaluated resource planning and selection processes used by PSE&G to prepare plan filings.
New Jersey Department of the Public Advocate	Analyzed a transmission line application.
City of New Orleans	Developed least cost planning rules, guided a public working group to develop demand-side programs.
Nevada Office of Attorney General, Bureau of Consumer Protection	Sierra Pacific Power and Nevada Power Energy Supply Plans, Base Tariff Energy Rates and Deferred Energy Adjustment Accounts - gas purchase practices and prudence
Nevada Public Utilities Commission, Regulatory Operations Staff	Southwest Gas PGA prudence analysis, gas purchase practices
Northeast States for Coordinated Air Use Management	Electric vehicle analysis.
Ohio Office of Consumer Council	Analyzed two utilities' long-range plans and energy efficiency resource options.
Ontario Energy Board	Evaluated need for natural gas integrated resource planning rules.
The Opportunity Council	Evaluated gas DSM programs to be considered by Cascade Natural Gas in Washington.
Pennsylvania Office of Consumer Advocate	Evaluated demand-side management programs for several electric utilities. Investigated causes of Winter Emergency of 1994. Analyzed electric "flexible rates" and gas/electric competition issues. Analyzed electric reliability concerns in a restructured and competitive market.
RENEW Wisconsin	Analyzed MG&E's green pricing tariff, compared costs of conventional resources to green resources to determine whether a green premium tariff was appropriate
Responsible Use of Rural and Agricultural Land (RURAL)	Evaluated air and licensing issues related to a proposed power plant. Evaluated Public Service Commission proposed environmental and siting rule changes. Analyzed rules governing environmental review and public comment process and provided testimony before PSCW.

South Carolina Office of Consumer Advocate	Analyzed a transmission line application.
Southeast Wisconsin Energy Initiative	Technical contractor to collaborative analyzing 345 kV transmission proposal and alternatives to meet energy needs in southeastern Wisconsin.
Texas ROSE	Developed electric planning rules. Analyzed city of San Antonio resource plan.
U.S. Environmental Protection Agency	Developed handbook, "Energy Efficiency and Renewable Energy: Opportunities from Title IV of the Clean Air Act", which focuses on how energy efficiency and renewables relate to acid rain compliance strategies.
U.S. Environmental Protection Agency and U.S. Department of Energy	Analyzed and compared utility supply- and demand-side resource selection for Clean Air Act compliance on the Pennsylvania-New Jersey-Maryland (PJM) interconnection.
Utah Committee on Consumer Services	Analyzed DSM cost recovery mechanism, avoided cost methods, cost effectiveness tests, assisted in settlement discussions and would have prepared testimony if issues not settled.
Vermont Natural Resources Council and Vermont Public Interest Research Group	Testimony regarding least cost planning principles and rules.
Vermont Public Service Board	Testimony regarding the prudence of Green Mountain Power's planning and management of the Hydro-Quebec power purchase.
Wisconsin Department of Administration	Analysis of new home characteristics built in northeastern Wisconsin, permit data, survey development and report
Wisconsin's Environmental Decade	Review of Draft Environmental Impact Statement of major 345 kV transmission line in northwestern Wisconsin, develop comments.

Exhibit JEM-2 Redacted

Exhibit JEM-2 was in part based on confidential information provided by UNS Gas subject to a Protective Agreement. Exhibit JEM-2 is a 14 page exhibit, consisting of 28 graphs, one for each delivery month September 2003 through December 2005, inclusive. The graphs show the actual purchase dates and volumes plotted with a three-year NYMEX contract daily price history.

NYMEX Cost for Fixed Price Gas UnderVarious Procurement Scenarios By Delivery Month

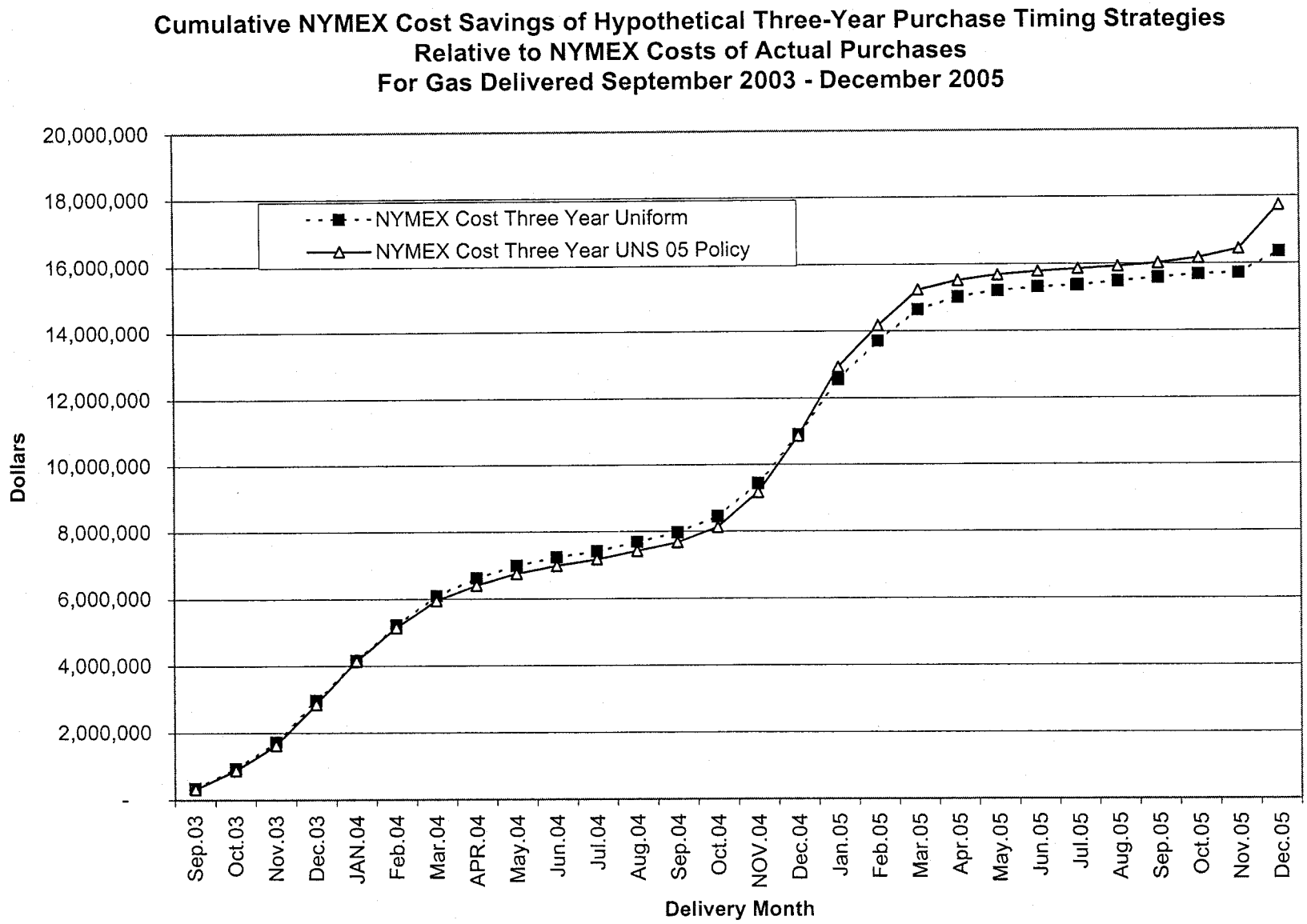
(Dollars)

	Sep.03	Oct.03	Nov.03	Dec.03
Actual Purchases	1,333,608	2,442,802	3,909,000	7,104,763
Three-Year Uniform	990,050	1,845,673	3,135,472	5,871,008
Three-Year UNS 2005 Policy	1,016,300	1,879,669	3,165,444	5,881,588
Transition Uniform	1,333,608	2,442,802	3,829,157	6,976,584
Transition UNS 2005 Policy	1,333,608	2,442,802	3,909,000	7,104,763
Transition UNS 2006 Policy	1,333,608	2,442,802	3,909,000	7,104,763

	Jan.04	Feb.04	Mar.04	Apr.04	May.04	Jun.04	Jul.04	Aug.04	Sep.04	Oct.04	NOV.04	Dec.04
Actual Purchases	7,354,415	6,240,580	5,277,595	2,414,196	1,604,959	1,095,638	853,968	1,144,631	1,154,449	2,039,864	4,249,501	7,422,585
Three-Year Uniform	6,151,165	5,181,900	4,403,526	1,891,648	1,228,953	850,246	676,123	861,934	874,448	1,569,495	3,254,189	5,964,273
Three-Year UNS 2005 Policy	6,061,850	5,247,526	4,469,610	1,963,201	1,259,669	856,605	669,423	891,364	894,949	1,588,429	3,212,946	5,726,955
Transition Uniform	7,438,341	6,427,420	5,412,934	2,293,558	1,492,463	1,039,330	820,494	1,075,246	1,078,130	1,902,415	3,945,294	7,242,681
Transition UNS 2005 Policy	7,354,415	6,240,580	5,277,595	2,420,653	1,563,959	1,064,854	827,531	1,096,947	1,102,281	1,956,542	3,959,907	7,057,719
Transition UNS 2006 Policy	7,354,415	6,240,580	5,277,595	2,311,027	1,500,083	1,038,586	828,042	1,098,258	1,110,989	1,968,141	3,950,852	7,003,380

	Jan.05	Feb.05	Mar.05	Apr.05	May.05	Jun.05	Jul.05	Aug.05	Sep.05	Oct.05	Nov.05	Dec.05
Actual Purchases	8,492,158	6,169,606	5,177,300	2,940,878	1,868,583	1,252,426	958,788	986,706	1,128,224	1,946,533	3,505,778	7,498,889
Three-Year Uniform	6,844,166	5,010,937	4,240,792	2,570,047	1,680,640	1,145,190	894,853	883,412	1,021,419	1,851,068	3,474,136	6,852,067
Three-Year UNS 2005 Policy	6,427,401	4,921,972	4,118,559	2,660,320	1,710,556	1,147,914	880,493	920,467	1,033,749	1,795,625	3,235,181	6,196,918
Transition Uniform	8,265,749	5,998,669	5,026,650	2,991,051	1,941,843	1,313,774	1,018,836	999,215	1,149,766	2,075,532	3,876,803	7,568,696
Transition UNS 2005 Policy	7,959,643	5,799,440	4,897,419	3,052,400	1,974,607	1,330,583	1,021,669	1,035,929	1,165,412	2,024,479	3,650,177	6,999,519
Transition UNS 2006 Policy	8,145,768	5,962,645	4,995,474	2,949,824	1,927,441	1,319,836	1,020,380	1,002,347	1,143,066	1,985,947	3,575,769	6,852,839

	TOTAL	Percent Difference
Actual Purchases	97,568,423	0.0%
Three-Year Uniform	81,218,829	-16.8%
Three-Year UNS 2005 Policy	79,834,687	-18.2%
Transition Uniform	96,977,040	-0.6%
Transition UNS 2005 Policy	95,624,432	-2.0%
Transition UNS 2006 Policy	95,353,458	-2.3%


Cumulative NYMEX Cost Savings of Hypothetical Three-Year Purchase Timing Strategies
Relative to NYMEX Costs of Actual Purchases
For Gas Delivered September 2003 - December 2005
NYMEX Cost Three Year Uniform
NYMEX Cost Three Year UNS 05 Policy
Dollars
20,000,000
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
Sep.03
Oct.03
Nov.03
Dec.03
JAN.04
Feb.04
Mar.04
APR.04
May.04
Jun.04
Jul.04
Aug.04
Sep.04
Oct.04
NOV.04
Dec.04
Jan.05
Feb.05
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Jun.05
Jul.05
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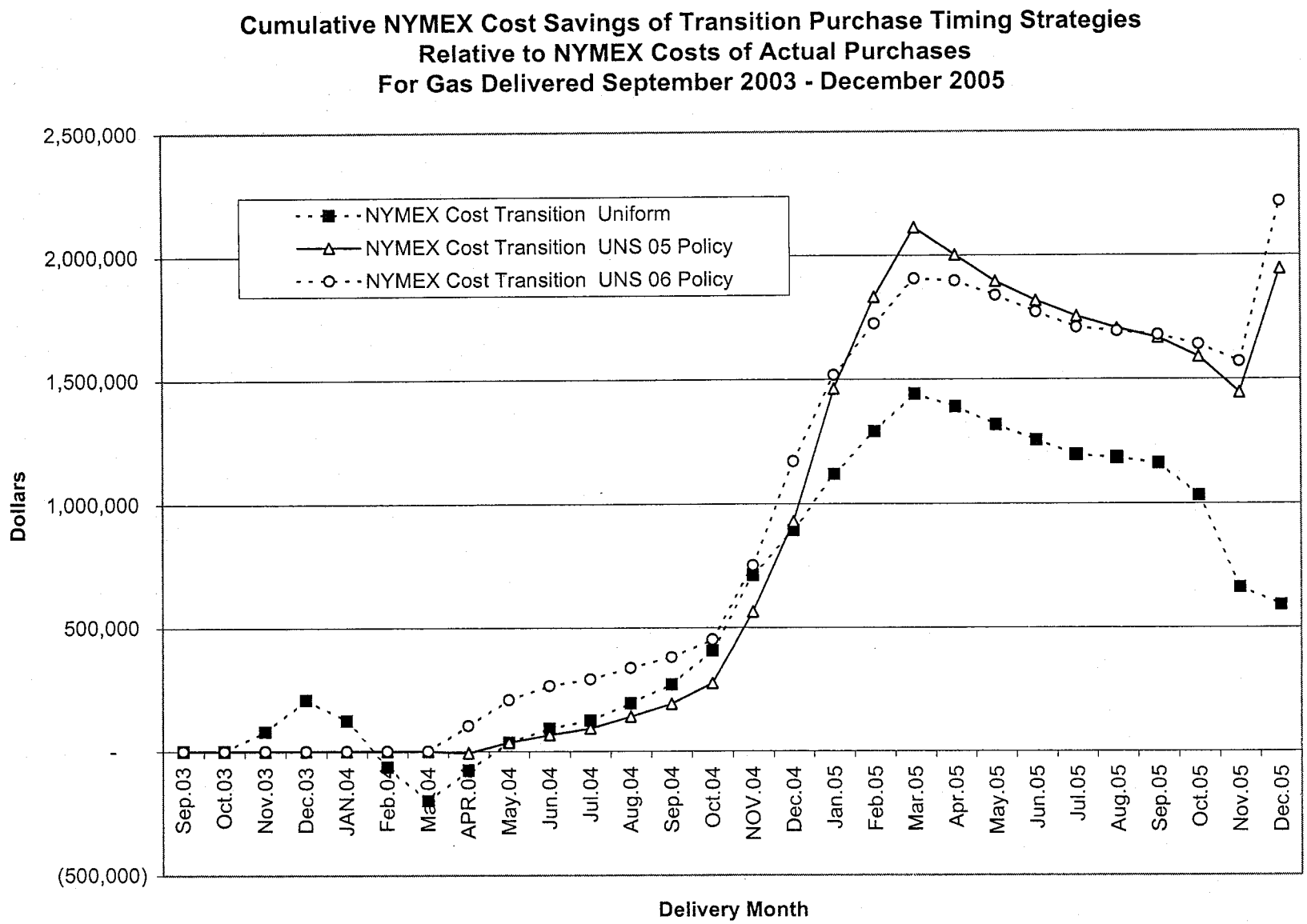
Sep.05
Oct.05
Nov.05
Dec.05
Delivery Month


Cumulative NYMEX Cost Savings of Transition Purchase Timing Strategies
Relative to NYMEX Costs of Actual Purchases
For Gas Delivered September 2003 - December 2005
NYMEX Cost Transition Uniform
NYMEX Cost Transition UNS 05 Policy
NYMEX Cost Transition UNS 06 Policy
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
(500,000)
Dollars
Sep.03
Oct.03
Nov.03
Dec.03
JAN.04
Feb.04
Mar.04
APR.04
May.04
Jun.04
Jul.04
Aug.04
Sep.04
Oct.04
NOV.04
Dec.04
Jan.05
Feb.05
Mar.05
Apr.05
May.05
Jun.05
Jul.05
Aug.05
Sep.05
Oct.05
Nov.05
Dec.05
Delivery Month

Re Sierra Pacific Power Company
Docket No. 04-7004

Nevada Public Utilities Commission
November 10, 2004

Before Soderberg, chairman, Chanos, and Linvill, commissioners And Jackson, commission secretary.

BY THE COMMISSION:

ORDER

*1 The Public Utilities Commission of Nevada ('Commission') makes the following findings of fact and conclusions of law:

I. Procedural History

1. On July 7, 2004, Sierra Pacific Power Company ('SPPC') filed an Application with the Public Utilities Commission of Nevada ('Commission'), designated as Docket No. 04-7004, for approval of its 2005-2024 Integrated Resource Plan.

2. The Application is filed pursuant to the Nevada Revised Statutes ('NRS') and the Nevada Administrative Code ('NAC'), Chapters 703 and 704, including but not limited to NRS 704.736 et seq. and NAC 704.9005 et seq. as modified by the regulations adopted in Legislative Counsel Bureau ('LCB') File No. R004- 04.

3. The Commission issued a public notice of the Application in accordance with state law and the Commission's Rules of Practice and Procedure.

4. On September 1, 2004, Petitions for Leave to Intervene were granted to: Alcoa, Inc. ('Alcoa'); Cantex, Inc. ('Cantex'); Cyanco Company ('Cyanco '); Eagle-Picher Minerals, Inc. ('EPMI'); Heavenly Valley, Limited Partnership ('Heavenly'); Lake Tahoe Horizon Casino Resort ('Horizon'); Kal-Kan Foods is Masterfoods USA, a division of Mars, Incorporated (' Kal-Kan'); Nevada Cement Company ('NVCC'); Premier Chemicals, LLC ('Premier'); R.R. Donnelley & Sons Company ('R.R. Donnelley'); The Ridge Tahoe Property Owners Association ('Ridge '); Royal Sierra Extrusions, Inc. ('Royal'); Washoe Medical Center, Inc. ('WMC,' collectively with Alcoa, Cantex, Cyanco, EPMI, Heavenly, Horizon, Kal-Kan, NVCC, Premier, R.R. Donnelley, Ridge, and Royal, 'Northern Nevada Industrial Electric Users,' 'NNIEU'); Newmont Mining Corporation ('Newmont '); and Barrick Goldstrike Mines Inc. ('Barrick'). The City of Fallon ('Fallon ') was granted limited intervention on transmission issues. The Washoe County Senior Law Project ('WSLP') was granted limited intervention on demand-side planning issues. The Renewable Energy Coalition of Nevada ('RECN') was granted limited intervention on long-term avoided cost ('LTAC') issues.

5. The Regulatory Operations Staff ('Staff') of the Commission and the Attorney General's Bureau of Consumer Protection ('BCP') participate as a matter of right.

6. On August 11, 2004, Newmont filed a Motion to Associate Counsel.

7. On August 25, 2004, a duly noticed prehearing conference was held in this matter.

8. On August 27, 2004, Barrick filed a Motion for Association of Local Counsel.

9. On September 1, 2004, a Procedural Order was issued in this matter adopting a procedural schedule for this docket and granting Newmont's Motion to Associate Counsel.

10. On September 8, 2004, RECN filed a Motion for Modification of Order on Petitions for Leave to Intervene ('Motion for Modification').

11. On September 9, 2004, Procedural Order No. 2 was issued in this matter granting Barrick's Motion for Association of Local Counsel.

12. On September 13, 2004, BCP filed a Response to RECN's Motion for Modification ('BCP's Response').

13. On September 14, 2004, Staff filed a Response to RECN's Motion for Modification ('Staff's Response').

14. On September 20, 2004, RECN filed a Reply to Staff's Response.

15. On October 4, 2004, Procedural Order No. 3 was issued in this matter denying RECN's Motion for Modification.

16. On October 7, 2004, SPPC and Staff filed Motions to Strike portions of the testimony filed by RECN Witness David Berry.

17. On October 8, 2004, Procedural Order No. 4 was issued in this matter shortening the time for responses to SPPC and Staff's Motions to Strike filed on October 7, 2004.

18. On October 11, 2004, NNIEU filed a Withdrawal of Petition for Leave to Intervene and Request for Commenter Status and Comments.

19. On October 12-13, 2004, a duly noticed hearing was held in this matter.

20. On October 12, 2004, Barrick requested to be excused from further participation in hearing as its concerns regarding the Application had been addressed. The Presiding Officer granted Barrick's request.

21. On October 12, 2004, a Stipulation, attached hereto as Attachment 1, was filed at the hearing. The Stipulation was signed by SPPC, BCP, Staff, Fallon, WSLP, Newmont, and

RECN.

22. On November 2, 2004, a Supplement to Stipulation ('Supplement'), attached hereto as Attachment 2, was filed. The Supplement was signed by SPPC, BCP, Staff, Fallon, WSLP, Newmont, and RECN.

II. Stipulation

***2** Summary of Stipulation

23. The Stipulation and the subsequent Supplement include recommendations that would settle all issues in this docket, except for the Energy Supply Plan ('ESP ') portion of the Action Plan.

24. Regarding the Demand Side Management ('DSM') issues, the parties recommended that SPPC's DSM Plan be approved with some minor modifications set forth in the Stipulation.

25. Regarding Supply-Side issues, the stipulating parties recommended several modifications. In particular, they recommended that SPPC should proceed with the permitting and development activities associated with the Tracy 500 MW combined cycle ('CC') project, but SPPC should file an amendment to its Resource Plan either reaffirming the need for the project, or proposing an alternative(s). Determination of the CC project as critical would be deferred until the need for the CC project is re-visited. Long-Term Avoided Cost issues would also be deferred to that proceeding. As a result, the total budget for the project from January 1, 2005, through August 1, 2005, would be reduced from $381,262,000 to $1,000,000.

26. Other items of note in the Stipulation include recommended approval of the Renewable Energy Promotion Program, the study of the feasibility of additional coal-fired generation at the Valmy generation site, the Power Plant Remaining Life Assessment Study, and the construction of the 345 kV transmission line from SPPC's East Tracy 345kV substation to a new substation ('Emma') located east of Virginia City. Regional Transmission Organization ('RTO') West (now called Grid West) expenditures were reduced from $5,900,000 to $950,000, which represents expenditures for 2005 only. The expenditures for 2006-2007 would be brought back to the Commission after a final determination as to SPPC's participation in RTO West (Grid West).

27. Overall, the recommendations proposed by the parties result in a reduction in the 2005-2009 total budget from $443,153,000 to $57,741,000, as detailed in the revised Action Plan Budget attached to the Supplement, previously attached hereto as Attachment 2.

Commission Discussion and Findings

28. The Commission finds that the recommendations made in the Stipulation and Supplement are in the public interest and should be approved.

III. Energy Supply Plan and Gas Hedging Strategy

SPPC's Positions

29. SPPC witnesses, Dr. John R. Ivey, Manager of Intermediate Term Resource Analysis, and Mr. Craig L. Berg, Manager of Market Analysis, sponsor sections of SPPC's ESP. (Exhibit 1, Volume II at Tab Berg, Ivey) SPPC is requesting Commission approval of its ESP for the period of 2005 through 2007, the action plan period. SPPC's ESP includes a recommendation for the issuance of a request for proposals for short-and intermediate-term purchased power contracts to fill a significant portion of SPPC's capacity requirements during that action plan period. SPPC is also requesting that the Commission approve its gas hedging strategy for April 2005 through March of 2006. Components of SPPC's gas hedging strategy include the procurement of physical gas requirements at indexed prices and the hedging of all the projected financial gas exposure using financially settled call options. (Hedges for the April 2005 through October 2005 season will be procured gradually from November 2004 through March 2005. Hedges for the November 2005 through March 2006 season will be procured gradually from June 2005 through October 2005.) SPPC also proposes to procure the call options at a strike price that is $0.50 'out-of-the-money' and purchase the options for each month and by hub based on the exposure at each hub during the month. (Exhibit 1, Volume II, Tab: Action Plan, at 3.)

30. In the Performance-Based Gas Methodology section of its ESP, SPPC also seeks approval to incorporate the natural gas purchased for resale for the gas distribution company in a proposal for a performance-based methodology for natural gas that it intends to submit via an amendment to its ESP. SPPC is also seeking other related approvals. (Exhibit 1, Volume III, page 52.)

Staff's Position

31. Staff's witness, Mr. Jon F. Davis, Electrical Engineer, provided testimony regarding SPPC's Energy Supply Plan ('ESP'). (Exhibit 5 at 2.) Mr. Davis identified a number of factors that could affect SPPC's open position. These factors include: a) customers leaving utility service under the provisions of NRS 704B; b) the loss of critical large generating supply for an extended period of time; c) advancing the construction schedule of the CC project; d) additional generation from customers' on-site resources or merchant activity; and e) abnormal weather.

32. Mr. Davis recommends that the Commission encourage SPPC to perform a regional nodal market analysis of the Pacific Northwest to better understand the challenges it faces in securing a reliable source of wholesale purchased power. He states that the analysis should study energy supply, energy pricing, and transmission supply limitations for the region assuming various hydroelectric production levels. (Id. at 13.) He believes the analysis will give SPPC a better understanding of the purchased power forward curves and the availability of purchased power on the open market. (Tr. at 158.) He adds that SPPC should use a regional model to develop forward curves that can be used to estimate the benefits of alternative strategies for varying levels of purchased power, transmission availability and power price volatility conditions. (Id. at 15; Tr. at 155.)

33. Mr. Davis states that SPPC's purchase power strategy appears reasonable. (Id. at 13.) He adds that SPPC should be mindful that two of its largest customers, Barrick and Newmont, may elect to purchase power from other providers and this could affect its purchase power strategy. (Id. at 14.)

34. Mr. Davis states that SPPC's concerns about price volatility of gas and generation capacity are valid and he believes SPPC's measures to counteract this volatility seem prudent. He adds that SPPC has developed a very conservative gas hedging strategy to address the market volatility. (Id. at 13.) He states that SPPC's 100% call option strategy allows SPPC to take advantage of any downward swings in gas prices and minimize its exposure to upward swings. He further states that SPPC should continually reevaluate its strategy to determine if conditions are such that a change in the strategy is warranted. He indicates that SPPC should take advantage of the stochastic capabilities of the Henwood RISKSYM software models to evaluate the risk-reward of the various option strategies. (Id. at 15.) He believes that once these models are in place, the Commission can be provided with information that will give it a better understanding of the various hedging strategies SPPC may be considering by illustrating the risks and rewards versus the cost of the various scenarios SPPC is considering. (Tr. at 161.)

35. Mr. Davis recommends that the Commission grant conditional approval of SPPC's ESP and hedging strategy subject to the following conditions: a) an appropriate response to factors that affect SPPC's open position; b) appropriate adjustments to its strategy should further analysis and evaluation of factors and conditions warrant an adjustment; c) performance by SPPC of a regional nodal analysis that develops forward curves for purchased power for low, normal, and high hydro years. He adds that should SPPC fail to implement its ESP or hedging strategy prudently, or alter them when warranted, it should be clear that adjustments might be appropriate in future deferred energy cases.

BCP's Position

36. BCP's Witness, Mr. George E. Wennerlyn, Select Energy Consulting, LLC, addresses the planned use of financial instruments as part of SPPC's natural gas acquisition program included in its ESP. (Exhibit 4 at 3.)

37. Mr. Wennerlyn states that the stated objectives in SPPC's ESP fall short of the intended goals of the current resource planning regulations as the ESP fails to balance the objectives of minimizing the cost of supply, minimizing retail price volatility, and maximizing the reliability of supply over the term of the plan. He states that SPPC's 100% call option strategy completely ignores the goal of minimizing the cost of supply and places too much emphasis on minimizing the risk to ratepayers. He adds that SPPC's hedging strategy is too conservative and too costly for the potential benefits it is expected to achieve.(Id. at 4, 5.)

38. Mr. Wennerlyn states that his Attachment GEW-2, which provides a summary of SPPC's use of call options, supports his belief that SPPC's use of call options is less than desirable from a cost benefit analysis. (Id. at 5.)

39. Mr. Wennerlyn believes that there are better alternatives. He indicates that his comparison in Attachment GEW-3 of his proposed 'One-Third' strategy (one-third call option, one-third indexed, one-third fixed), to SPPC's 100 % call option strategy demonstrates that the 'One-Third' strategy results in lower gas costs. (Id. at 9.)

40. Mr. Wennerlyn recommends that the Commission not approve the SPPC's ESP. He believes SPPC should start with the 'One-Third' strategy. Then, SPPC personnel, Staff, and interested

parties would make necessary adjustments to reach a more balanced ESP.

41. BCP witness, Jerry E. Mendl, President of MSB Energy Associates, provides testimony addressing SPPC's planned procurement timetable for natural gas requirements. (Exhibit 3 at 2.)

42. Mr. Mendl states that SPPC's analysis of gas price risk mitigation options is flawed and that it does not support SPPC's conclusion that the 100% call option strategy is the preferred approach. He adds that SPPC's conclusion is subjective and believes that a less flawed analysis or a different interpretation of the results could result in the conclusion that the 100% call option strategy is not the preferred approach. (Id. at 3.)

43. Mr. Mendl believes that there are two main flaws with SPPC's risk mitigation analysis. The first is a bias built into SPPC's analysis by its Value at Risk ('VaR') calculation. He states that VaR does not measure the probability that prices will be lower than the average price of gas or the impact of those prices on total gas cost. He states that considering only VaR biases the analysis toward options that mitigate higher costs at the expense of options that increase the opportunity to reduce gas costs. Mr. Mendl provides Attachment JEM-2 which lists the Opportunity at Risk ('OaR'), the opportunity to reduce total gas costs below the average gas cost, for various gas procurement strategies. He concludes that there is substantial opportunity at risk for many of the mitigation strategies. He opines that the OaR must be considered when selecting a price risk mitigation strategy. He states that SPPC's strategy inappropriately fails to consider OaR. (Id. at 4.)

44. Mr. Mendl states that the second flaw with SPPC's risk mitigation analysis is with the modeling of fixed and indexed priced options. He states that SPPC assumed for the analysis that the fixed price products were purchased at the time the analysis was done. He believes this assumption is unrealistic for two reasons. First, commonly accepted strategies for purchasing fixed price products involve making purchases over time to diversify the supply cost as gas prices fluctuate. Second, SPPC's analysis does not take into consideration that portfolio costs can be reduced through securing supplies when prices are lower, or at least spreading purchases over time. (Id. at 6.)

45. Mr. Mendl believes that SPPC should consider other gas procurement strategies. He states that there are many other approaches that should be evaluated and considered and recommends that at least three aspects should be considered in developing additional approaches. These include: approaches that take a longer view of the gas markets to increase the likelihood that SPPC can take advantage of price valleys rather than being forced to buy gas during price peaks; approaches that better balance the cost and price volatility of gas supplies to mitigate both price volatility and total cost; and approaches that utilize increased amounts of fixed price contracts. (Id. at 8.)

46. Mr. Mendl adds that the manner of selecting fixed priced contracts can affect the outcome. He indicates that fixed price contracts can be procured through a bidding process where costs are kept down by competitive pressures, through dollar cost averaging or through a quartile index method or similar type method used to identify periods of low gas prices. (Id. at 8.)

47. With respect to determining when it is the best time to buy gas, he suggests the use of the quartile index method as proposed by MichCon. This method relies on historical data to help the utility determine when gas prices are at relatively low prices.

48. Mr. Mendl ultimately recommends that the Commission: a) not approve SPPC's proposed 100% call option strategy for purchasing gas; b) direct SPPC to meet with Staff and the parties to identify and evaluate gas procurement methods that place more emphasis on longer term (1-3 year) strategies, mitigate both price volatility and total cost, and make more use of fixed price products; c) direct SPPC to file a modified gas procurement proposal for Commission review within two months of the Commission order in this docket, reflecting, if possible, the consensus of the parties; and d) if the Commission approves a gas procurement strategy for SPPC, it should monitor its performance under other market conditions, and modify it as appropriate.

49. The BCP witnesses did not offer a position on SPPC's purchased power procurement plan or its non-gas fuel procurement plan.

SPPC's Rebuttal Position

50. SPPC's rebuttal witness, Dr. John Ivey, provides rebuttal testimony addressing criticisms made by BCP witnesses Mendl and Wennerlyn of SPPC's gas hedging plan, as well as addressing the recommendations made by Staff witness Davis. (Exhibit 6 at 1.) Dr. Ivey disagrees with the BCP's assertion that SPPC's analysis relies too heavily on VaR and that it is biased against options that increase the opportunity to reduce gas costs. He states that SPPC's gas hedging plan is not intended to beat the market price of natural gas or minimize the cost of natural gas supplies. He states that this does not mean that cost minimization is irrelevant in evaluating a hedging strategy. He adds that the magnitude of SPPC's price exposure, which is very large, affects the level of risk aversion that is included in its hedging strategy. (Id. at 2, 3.)

51. Dr. Ivey responds to Mr. Mendl's assertion that SPPC should consider other gas procurement strategies by stating that other hedging plans may be reasonable but that SPPC considered the full range of hedging portfolios before selecting a portfolio that he believes best serves SPPC's customers and their needs. (Id. at 6.)

52. Dr. Ivey responds to Mr. Wennerlyn's assertion that SPPC's call option strategy is less than desirable from a cost-benefit analysis by stating that the hedging plan should be judged based on whether it achieved its intended goal of reducing the standard deviation of the cost to serve. He believes SPPC's plan accomplishes this goal and that the expected benefits of SPPC's gas hedging program out-weigh the costs. He states that Mr. Wennerlyn did not offer any evidence supporting his claim that SPPC's call option strategy is too expensive other than stating that the cost of hedging in SPPC's hedging strategy was not recouped. Dr. Ivey concludes by stating that it is reasonable to incur the cost to hedge against rising gas prices given the potential cost of the exposure. (Id. at 6, 8, 9.)

53. Dr. Ivey believes that Mr. Mendl's concerns about how SPPC modeled the purchase of the fixed price products (SPPC's analysis reflects that they were all purchased at the same time) are unwarranted. He states that Mr. Mendl errs when he concludes that this simplifying assumption changes the analysis in any fundamental way. He states that this assumption does not skew the

results because the portfolios are all assumed to be hedged at the same time. He adds that SPPC's analysis models it this way but in actuality gas purchase and hedges are spread over time.

54. Dr. Ivey defends SPPC's proposed 100% call option strategy by stating that call options offer flexibility that fixed price products do not. He states that fixed priced products are not the answer because they are not attractive at current prices and preclude SPPC from taking advantage of lower prices for the benefit of its customers should they occur. (Id. at 8, 9.)

55. Dr. Ivey states that he is currently using RISKSYM in his analysis but that MARKETSYM is probably a more appropriate tool for doing the nodal analysis suggested by Staff witness, Mr. Davis. He adds that he is not currently using MARKETSYM and is not sure of SPPC's policy for use of this software. (Tr. at 194.)

56. Dr. Ivey states that if SPPC were already executing its gas procurement plan and saw a change in the market that it would repeat the analysis summarized in Figure ESP-31, Evaluation Criteria Applied to Gas Price Risk Mitigation Options, exercise some judgment and present this analysis to the Enterprise Risk Oversight Committee for approval. (Tr. at 186.)

57. Dr. Ivey states that he understands that just because SPPC has pre-approval for the fuel procurement plan he does not believe that Commission has granted it a blank check. He states that SPPC still has the burden of monitoring the market. (Tr. at 203.)

Commission Discussion and Findings

58. The Commission finds that the ESP should be approved subject to certain conditions as discussed below. A separate issue is whether the Commission is able to make a determination of prudence at this time with respect to the elements of the ESP. The three elements of the ESP, the power procurement plan, the fuel procurement plan, and the risk management strategy, are analyzed below as to whether each is being determined as prudent at this time pursuant to Section 26(3) of the new resource planning regulations.

59. With respect to the power procurement plan, Mr. Davis testified that SPPC's proposed purchased power strategy is reasonable and that he believes SPPC's measures to counteract purchased power volatility are prudent. No party submitted contrary evidence. The Commission acknowledges the uncertainty of load obligation mentioned in SPPC's ESP and Mr. Davis's testimony, and recognizes that the Stipulation submitted by the parties was based in part on this uncertainty. Given this uncertainty, the Commission expects SPPC to make the appropriate changes to its power procurement plan should the load obligation change. Therefore, the Commission finds that SPPC's power procurement plan, including the proposed plan to issue a Request for Proposals for short/intermediate-term purchase power contracts to fill a significant portion of its capacity requirements expected for 2005-2007, is prudent.

60. The Commission believes that Mr. Davis's recommendation that SPPC perform a regional nodal analysis has merit and finds that SPPC should complete this analysis. It is not clear from the record whether SPPC has the immediate capability to complete this analysis or, if not, when it will have the capability to do so. Given this uncertainty, the Commission finds that SPPC

should complete this analysis and include it in its next ESP update, scheduled for September 1, 2005.

61. The Commission has a number of concerns with SPPC's proposed fuel procurement plan and risk management strategy. The Commission is concerned that SPPC may be reluctant to change its fuel procurement plan and risk management strategy or consider other alternative strategies (e.g., a gas procurement strategy that takes a long-term view of the gas markets) once the Commission has found them to be prudent. SPPC's proposed 100% call option risk management strategy may do more to protect SPPC from regulatory risk than to protect consumers from commodity price volatility. The Commission is also concerned that SPPC's proposed 100% call option strategy may result in increased costs to ratepayers over and above an already high-cost commodity. Lastly, the Commission is concerned that SPPC's ESP does not include a formal process for measuring the effectiveness of the risk management strategy on a going forward basis, or for modifying it should conditions warrant.

62. Due to the concerns expressed above, the Commission cannot at this time make a finding that SPPC has demonstrated that its fuel procurement plan and risk management strategy balance the objectives of minimizing the cost of supply, minimizing retail price volatility and maximizing the reliability of supply over the term of the plan, as required by Section 26(3)(c) of the new resource planning regulations. Therefore, the Commission is withholding a determination of prudence with regard to the fuel procurement plan and risk management strategy.

63. Prudence with regard to the fuel procurement plan and risk management strategy will be determined in the appropriate deferred energy proceeding. SPPC must make reasonable decisions in implementing its fuel procurement plan and risk management strategy and if needed, deviating from them. SPPC will be held accountable for those decisions.

64. The Commission wishes to make it clear that the resource planning regulations are designed to allow SPPC the flexibility to make changes to its ESP if warranted -- not to inoculate SPPC from regulatory risk. Accordingly, the Commission expects SPPC to formulate a clearly defined process for evaluating the effectiveness of its fuel procurement plan and risk management strategy (including its gas hedging strategy) and for changing these plans should conditions warrant. The Commission also expects SPPC to keep Staff informed of any necessary deviations to the ESP and to make the required changes with or without resource planning pre-approval (as conditions warrant) in accordance with Section 29 of the new resource planning regulations and to fully document its reasoning for making the change(s) in accordance with the regulations.

65. The Commission does not believe that there was enough information filed by SPPC or the parties for the Commission to consider SPPC's requested approvals that are included in the Performance-Based Gas Methodology section of its ESP. Therefore, the Commission makes no determination on those requests. SPPC is free to re-file the requests with additional information in a future docket.

IV. Additional Compliance Items

66. SPPC, like Nevada Power Company, is heavily dependent upon fossil fuel generation, and has yet to meet its statutory renewable portfolio standard. Therefore, consistent with the compliance item required of Nevada Power Company in Docket Nos. 04-6029 and 04-6030, SPPC shall within six months of the issuance of this Order, file with the Commission an amendment to its 2005-2024 Integrated Resource Plan for the installation of solar or other appropriate renewable power generation technologies on company-owned buildings in Northern Nevada. The Commission may consider designation of such facilities as critical. This amendment shall be filed as a separate Application.

67. Furthermore, green power tariffs offer consumers the opportunity to opt for a richer mix of renewable resources while also allowing them to insulate themselves from the rate shock that comes from natural gas price volatility. Therefore, SPPC, as Nevada Power Company was required to in Docket Nos. 04- 6029 and 04-6030, should include in its next general rate case a green power tariff proposal that insulates consumers from fuel prices.

68. Also, as with the Order in Docket Nos. 04-6029 and 04-6030 relating to Nevada Power Company, the Commission is concerned with the reliance upon new generation to address peak load growth. Therefore, within six months of the issuance of this Order, SPPC shall file with the Commission an amendment to its 2005-2024 Integrated Resource Plan to provide incentives in order to encourage the installation of high-efficiency air conditioners and/or space heaters in new residential development and the retrofit of existing residences, as well as any other methods of residential conservation and/or efficiency SPPC may propose. This amendment shall be filed as a separate Application.

69. Further, the Commission believes that other options may be viable for fossil-fuel generation and should be explored. Therefore, within twenty-four months of the issuance of this Order, SPPC shall investigate and file a report with the Commission on integrated coal gasification technology and the potential for the use of this technology as either modifications to existing company-owned generation facilities, including the Pi +-on Pine Project, or new company-owned generation facilities.

*3 THEREFORE, based upon the foregoing findings and conclusions, it is hereby ORDERED that:

1. The Action Plan of Sierra Pacific Power Company, with the exception of the Energy Supply Plan, is APPROVED as recommended in the Stipulation and Supplement to Stipulation, attached hereto and incorporated herein as Attachments 1 and 2 respectively.

2. The Energy Supply Plan portion of Sierra Pacific Power Company's Action Plan is APPROVED. The power procurement portion of the Energy Supply Plan is found prudent; however, no determination of prudency is made with regard to the fuel procurement plan and risk management strategy, as detailed in paragraphs 58-65 above.

3. Within six months of the issuance of this Order, Sierra Pacific Power Company SHALL FILE with the Commission an amendment to its 2005-2024 Integrated Resource Plan for the installation of solar or other appropriate renewable power generation technologies on company-owned buildings in Northern Nevada. This amendment shall be filed as a separate Application.

4. Sierra Pacific Power Company SHALL FILE with its next General Rate Case a green power tariff that offers consumers the option of purchasing a richer mix of renewable energy and insulates them from fuel prices.

5. Within six months of the issuance of this Order, Sierra Pacific Power Company SHALL FILE with the Commission an amendment to its 2005-2024 Integrated Resource Plan to provide incentives in order to encourage the installation of high-efficiency air conditioners and/or space heaters in new residential development and the retrofit of existing residences, as well as any other methods of residential conservation and/or efficiency Sierra Pacific Power Company may propose. This amendment shall be filed as a separate Application.

6. Within twenty-four months of the issuance of this Order, SPPC SHALL INVESTIGATE AND FILE A REPORT with the Commission on integrated coal gasification technology and the potential for the use of this technology for either modifications to existing company-owned generation facilities, including the Pinon Pine Project, or new company-owned generation facilities.

7. The Commission retains jurisdiction for the purpose of correcting any errors that may have occurred in the drafting or issuance of this Order.

8. Except as specifically set forth herein, acceptance of the Stipulation and Supplement to Stipulation's agreement does not constitute approval of, or precedent regarding, any legal or factual issue in this proceeding.

9. All arguments of the parties raised in these proceedings, including but not limited to arguments raised in the hearing, not expressly discussed herein have been considered and either rejected or found to be non-essential further support for this Order.

Dated: Carson City, Nevada