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Staff Report on Purchased Gas Adjustor Mechanisms

October 19, 1998

Docket Number G-00000C-98-0568

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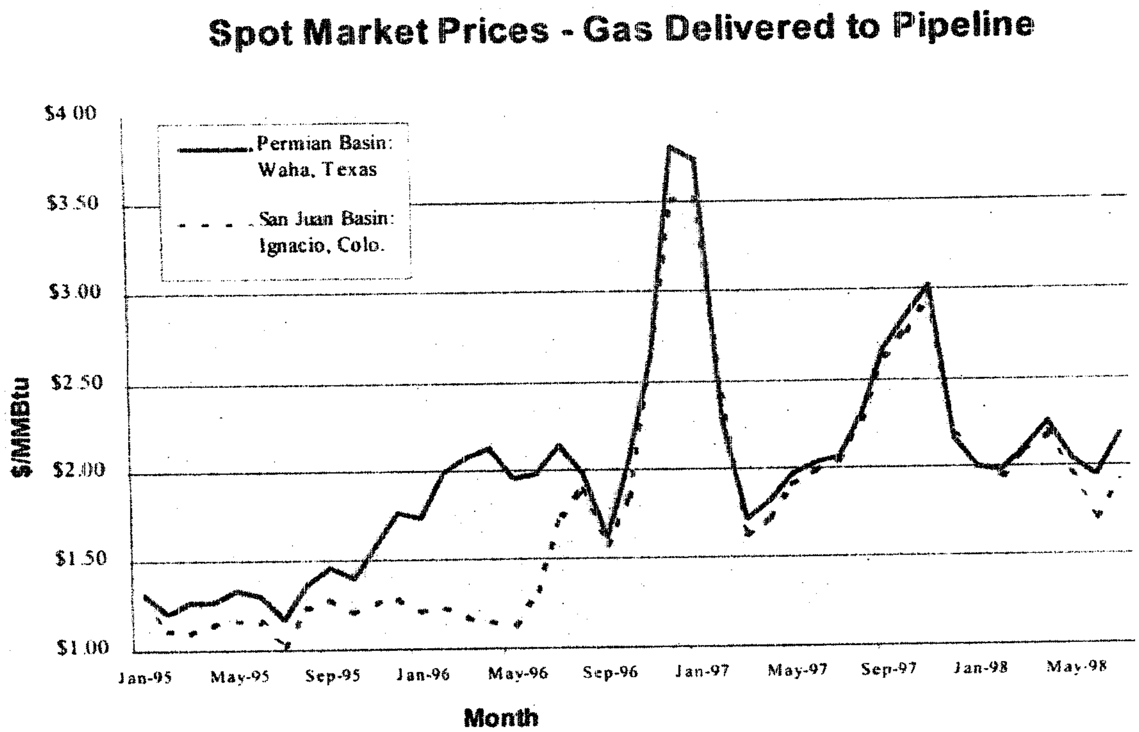
Introduction

This report provides Staff's analysis and recommendations regarding Arizona local distribution company (LDC) purchased gas adjustor (PGA) mechanisms. In recent years, prices in natural gas markets have shown significant volatility and the Arizona Corporation Commission (the Commission) has received numerous complaints from Arizona natural gas customers that their monthly natural gas bills have greatly fluctuated from month to month and year to year.

To address gas cost issues, the Commission, in its decision on a recent Southwest Gas purchased gas adjustor filing (Decision Number 60735, March 23, 1998), ordered "that Staff establish a working group with Southwest, the other Arizona LDCs, and other interested parties to work together to explore possible PGA mechanism design changes, including the imposition of interest on account balances and make recommendations such that the Commission can act on those recommendations no later than November 1, 1998." This decision also indicates that issues leading to the formation of this working group include the volatility of natural gas prices, providing flexibility to LDCs in the recovery of their natural gas costs, and the possibility of developing more uniform PGA mechanisms for Arizona LDCs.

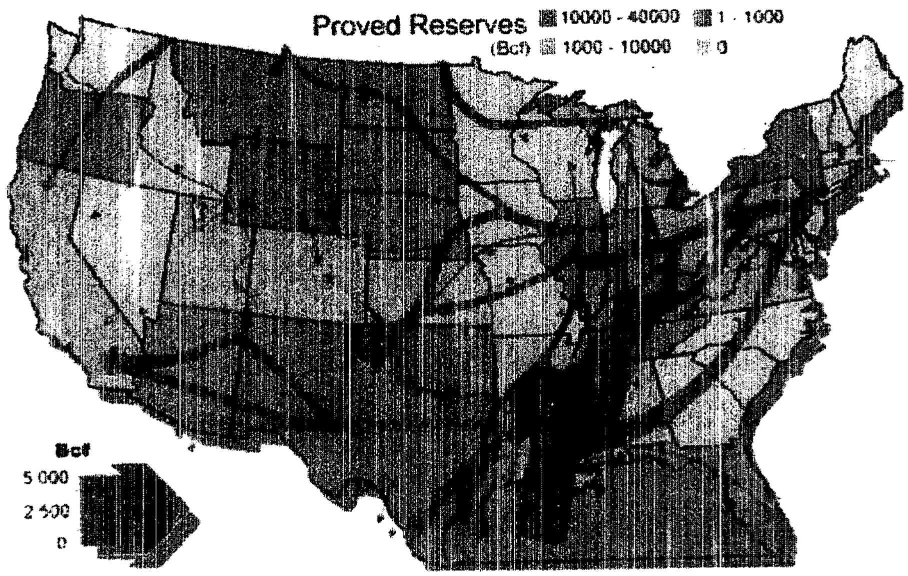
The PGA Design Working Group met several times and a variety of PGA and gas procurement related issues were discussed. The working group was able to come to agreement on a number of issues. This report incorporates a number of the working group's recommendations as well as additional Staff recommendations. Participants in the working group include Commission Staff, Arizona Consumers Council, Bagdad Copper Market, Black Mountain Gas, Broken Bow Gas, Citizens Utilities, Duncan Rural Service Corporation, Enron, Graham County Utilities, Quality Energy Services, the Residential Utility Consumer Office, and Southwest Gas. Appendix A contains a full listing of the individuals who participated in the working group, as well as meeting dates.

Over the last decade the natural gas industry has undergone enormous changes in the wellhead, interstate pipeline, and LDC segments. These changes have greatly impacted gas utility operations in Arizona, including the procurement of natural gas supplies for Arizona customers. One outcome of the changing natural gas industry is that many LDCs have relied to a much greater extent on the natural gas spot market or spot market indexed contracts to purchase their natural gas supplies. In recent years spot market natural gas prices have exhibited significant volatility, particularly during the 1996-97 winter. Additionally, prices in the Arizona natural gas market have become increasingly tied to events in the national natural gas market. This is due to a number of factors including an increased ability for interstate pipelines to send gas to the eastern markets from supply basins that provide gas to Arizona LDCs. Presently Arizona LDCs recover their purchased gas costs through their PGA mechanisms. Purchased gas costs consist of the cost for the actual natural gas commodity and the cost of transporting the natural gas commodity to the LDC's citygate(s). While transport costs also fluctuate, the main source of volatility in purchased gas costs has been the price of the natural gas commodity. The graph below shows the monthly spot market prices for natural gas in the San Juan and Permian supply basins, the sources of virtually all natural gas consumed in Arizona.



Source: Natural Gas Week

The following map shows the major flows of natural gas in the United States.



Source: Natural Gas Supply Association

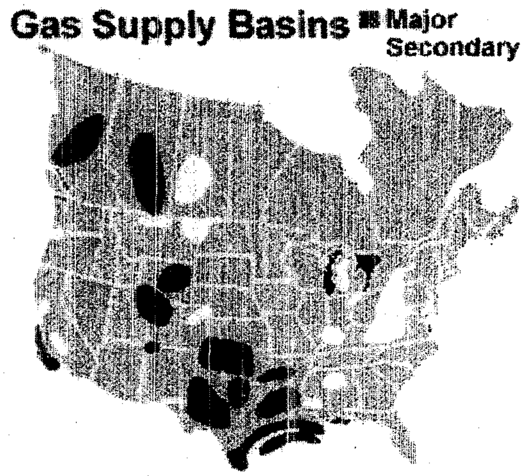
To reflect the changing cost of natural gas, Arizona LDCs have a PGA rate in their tariffs. The PGA rate is a per therm rate that is added to the regular tariff rates and may increase or decrease the effective tariff rates. Most Arizona LDCs must file for Commission approval to make any adjustment to their PGA rate. An exception is Citizens Utilities, Northern Arizona Gas Division, whose PGA rate adjusts automatically, based upon a rolling average of natural gas costs for the most recent 12 month period. The difference between what the LDC collects from its customers for its natural gas costs and what the LDC actually pays for natural gas supplies is calculated on a monthly basis and the resulting under or over-collection is added to the LDC's PGA bank balance. Typically, LDCs have filed for an adjustment to their PGA rate when the bank balance becomes significantly under or over-collected. The PGA rate is then adjusted upward or downward to attempt to eliminate the under or over-collection in the bank balance. The table below shows the current PGA bank balances for all Arizona LDCs, as well as 1996 and 1997 natural gas sales.

Local Distribution Company	PGA Bank Balance[1]	Date of PGA Bank Balance	1996 Natural Gas Sales (therms)	1997 Natural Gas Sales (therms)
Black Mountain Gas - Cave Creek Division	-$585,694	6/30/98	3,068,871	4,085,098
Black Mountain Gas - Page Division	-$243,495	6/30/98	1,155,975	1,199,684
Broken Bow Gas Company	$6,586	6/30/98	2,191,599	2,449,527
Citizens Utilities - Northern Arizona Gas Division	$2,245,210	5/31/98	79,310,298	88,918,918
Citizens Utilities - Santa Cruz Gas Division	-$392,252	5/31/98	5,002,930	5,033,290
Copper Market	-$113,720	6/30/98	139,532	149,061
Duncan Rural Service Corp.	-$61,922	6/30/98	733,350	694,700
Graham County Utilities	$44,490	5/31/98	2,985,320	3,028,270
Southwest Gas	-$44,930,025	5/31/98	465,941,640	428,517,929

[1] A negative PGA bank balance denotes an under-collected bank balance and a positive bank balance denotes an over-collected bank balance.

Natural Gas Commodity Prices In Arizona

With little instate natural gas production, Arizona is dependent on out of state natural gas supplies. Arizona is supplied through two El Paso Natural Gas Company interstate pipelines which cross the state in an east-west fashion and have several north-south connections. There is also a Transwestern (Enron) interstate pipeline that crosses the northern part of the state. The map on the next page shows the major pipelines in Arizona. In comparison to most other states, particularly in the eastern United States, Arizona does not have many choices for the interstate transportation of natural gas. The El Paso and Transwestern pipelines are tied into the Permian supply basin in western Texas and the San Juan supply basin in northern New Mexico and southern Colorado. The map below shows the supply basins in North America.



Source: Natural Gas Supply Association

Due to the lack of supply options, the price that Arizona customers pay for natural gas is heavily dependent on conditions in the San Juan and Permian supply basins. In recent years the supply basins Arizona receives gas from have become increasingly tied into the natural gas markets in the central and eastern United States, meaning that weather and other events in different parts of the country often impact the price of natural gas paid by Arizona consumers.

There are three propane LDCs in Arizona: Black Mountain Gas - Page Division, Broken Bow Gas Company in Payson, and Copper Market in Bagdad. Propane is typically procured from out of state refineries and then trucked to the LDCs in Arizona. Broken Bow Gas has propane storage capabilities in Phoenix and northern Arizona to help the company ensure reliable propane supplies and avoid some of the price volatility in the propane market.

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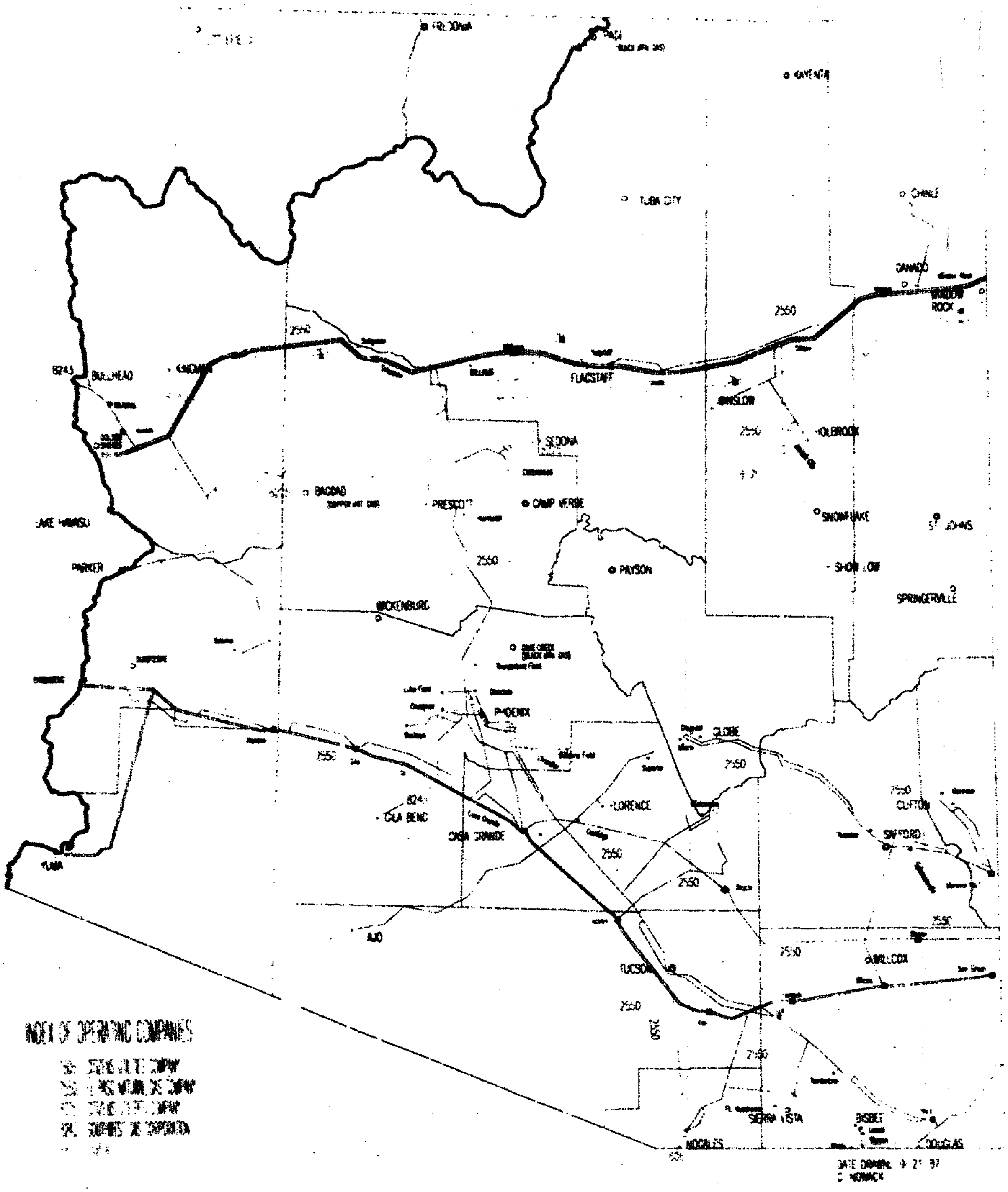

NATURAL GAS PIPELINES
STATE OF ARIZONA

There are a wide variety of factors that affect the price of natural gas paid by Arizona end-users and increase or decrease the volatility in the natural gas markets. The table below lists many of these factors.

Factors Affecting Natural Gas Prices

Weather in producing and consuming regions - demand can fluctuate based upon a number of weather factors including temperature, hurricanes in Gulf of Mexico, frozen wells in production fields, and rainfall levels in hydro-electric production regions
Gas procurement procedures and the resulting gas supply contract structures
Use of financial hedging, futures, swaps, and options
Gas storage availability/utilization
Changing interstate pipeline capacity conditions - new construction, expansion of existing pipelines, changes in pipeline operations
Gas production costs
Level of investment by well owners in new and existing wells and exploration
Short and long term interest rates
Value of the Canadian dollar - a weak Canadian dollar encourages Canadian natural gas producers to export more gas to the United States
Natural gas cost projections
Electric utility demand for gas-fired generation - particularly summer air-conditioning demand
End-user consumption patterns
Tariff rates and rate structure for end-users
Level of price signal sent to end-users
Federal and state regulatory actions
PGA mechanism mechanics
Pipeline and distribution system accidents - may restrict the deliverability of gas and discourage people from using gas
Alternate fuel competition, such as propane, fuel oil, and residual fuel
Speculation in gas markets and possible manipulation of spot market indexes
Increasing electric competition
Environmental considerations - global warming, electric generation emissions, natural gas vehicles

Given the large number of factors that influence natural gas prices, it appears likely that natural gas prices will continue to experience volatility. The PGA Design Working Group recognized that an important part of reducing volatility in the price of natural gas is to address the procurement of gas by Arizona LDCs. If the price of the underlying commodity is highly volatile, it is very difficult to design a PGA mechanism that will not flow through that volatility to the end-users. Therefore the working group felt that gas procurement issues must be considered in developing a comprehensive plan to redesign the PGA mechanisms of Arizona LDCs.

Generally, it is accepted that purchasing gas on the spot market and through market index based contracts will result in the lowest cost of gas over the long term. However, the price paid for spot market related gas has historically shown significant volatility. The pursuit of the lowest cost price should be weighed against the economic impact on natural gas consumers of sizable gas price fluctuations. Another option is to purchase gas with longer term, fixed price contracts. This provides greater price stability, but may result in a higher long term cost of gas. When a natural gas consumer does not know whether the price of gas will change by 25 or 50 percent within a year, it is difficult to set a budget for natural gas costs. The working group discussed this issue and the possibility of purchasing at least some portion of the LDCs' supply portfolios with longer term, fixed price contracts. Several LDC representatives indicated that they could purchase longer term, fixed price contracts for some or all of their baseload gas supply needs at virtually the same price as the projected spot market prices over the proposed period of the fixed price contract. However, an LDC purchasing all of its gas supplies through longer term, fixed price contracts would likely incur a significant premium over comparable spot market prices.

Given these considerations, it appears that generally the best strategy to pursue would be to purchase some or all baseload gas supplies under longer term fixed price contracts and purchase other gas supplies using shorter term, spot market-based purchases. This will introduce some stability to the overall cost of gas for an LDC, while not incurring a sizable premium over other low cost gas procurement strategies. The Commission should not mandate that a specific percentage of gas purchases be under longer term fixed price contracts, due to the unique circumstances of each LDC.

Some LDCs expressed a concern that if they entered into longer term fixed price contracts, the Commission could disallow gas costs in future proceedings if the price of spot market gas was cheaper than the fixed price contract during the contract's term. Other LDCs indicated that they have purchased gas through long term fixed price contracts for many years and the Commission has not disallowed their gas costs in the past. To provide the LDCs with some level of assurance that they will have an opportunity to recover their prudently incurred and reasonable gas commodity costs related to fixed price contracts, while acknowledging the Commission's oversight of gas procurement activities, the Commission could adopt language such as the following:

> "As a general principle, subject to the circumstances of any specific matter: if a contract appeared to be prudent and reasonable at the time it was entered into, given market conditions and other relevant factors, the utility should be permitted an opportunity to recover the gas costs associated with that contract. However, the Commission has the right to review all LDC gas purchases on a case by case basis."

Additionally, the LDCs have a responsibility to procure the best portfolio of gas supplies for their customers. While price is an important factor in developing the best supply portfolio, there are other factors, including price stability, which should be considered as well. An inherent part of the gas procurement process is the management of risk to both the LDC and its customers. An important aspect of risk management is to spread the risk out over a number of areas, so that a dramatic shift in one area, such as spot market natural gas prices, does not have as large an impact on the whole, in this case the average cost of gas. For example, an LDC buying half of its natural gas under fixed price contracts and half of its natural gas on the spot market has spread the risk of price volatility over two different supply arrangements. Given this example, if there were a run up in spot market natural gas prices, the LDC would only experience half the increase in its average cost of gas that it would have had if it bought all of its natural gas on the spot market. If an LDC were to rely exclusively on one supply arrangement, such as spot market pricing, it is conceivable that such procurement arrangements could be viewed as a poor exercise of risk management. There have been cases in other states where Commissions have reviewed LDCs procurement practices and concluded that the LDC was not properly procuring gas, resulting in cost disallowances and/or other actions. The LDCs should consider price stability in the procurement of their natural gas supplies.

Possible Purchased Gas Adjustor Mechanism Designs

Purchased gas costs have been addressed in many ways across the country. Generally LDCs pass gas costs through to the end-user on a dollar for dollar basis and do not make a profit on the gas procurement. However, there are cases in recent years where some type of performance-based ratemaking has been implemented to allow LDCs to share in the risk of gas purchase costs or the LDC has had its cost of gas fixed and the company bears the risk of higher or lower gas costs. But again, in most cases LDCs use some type of flow through mechanism that passes purchased gas costs directly to the end users. The following section provides a number of possible PGA mechanism designs.

Eliminate PGA Mechanism

Under this scenario, the LDC would no longer have a PGA mechanism. The cost of gas would be set during rate cases and the risk and benefits of price increases and decreases would be borne by the LDC. An example of this is the New York State Electric and Gas Corporation, which voluntarily had its PGA mechanism eliminated.

Pros:

- The LDC would have a strong incentive to minimize gas costs.
- End-users would be protected from natural gas price fluctuations between rate cases.
- The regulatory lag associated with many PGA mechanisms would be eliminated (However, the regulatory lag could end up being longer because changing the PGA rate as part of a general rate proceeding would likely take longer than a stand-alone PGA filing).

Cons:

- The LDC would probably file for general rate case proceedings with the Commission more frequently.
- The LDC's credit rating could be negatively impacted due to the increased risk the LDC bears as natural gas prices fluctuate.
- During rate case proceedings the setting of a proper gas price would be a speculative and time consuming activity.
- Absent some type of trigger mechanism, the LDCs would tend to file for rate adjustments when gas prices went higher, but not when gas prices fall.

Traditional PGA Mechanism

Under this scenario, the LDC would be required to file for Commission approval of any change in the PGA rate. The PGA rate could be changed outside of a general rate proceeding. The mechanism could include trigger mechanisms that would require some type of action when set off, such as filing with the Commission. This type of mechanism is currently used by most Arizona LDCs.

Pros:

- The Commission reviews any changes to the PGA rate before they take effect.
- End-users would be protected from natural gas price fluctuations between PGA rate change filings.
- The price customers pay would tend to be closer to the market price of gas than if no PGA mechanism was in place.

Cons:

- Changes in the PGA rate tend to lag behind the market and may not reflect to the end user the actual cost of gas being consumed.
- The PGA rate changes are sharp and often larger than would result from some PGA mechanism designs that react more quickly to price changes and spread the increase or decrease in the PGA rate over a number of months.
- The LDC does not have as strong an incentive to minimize gas costs as it does under some other PGA mechanism designs.

Regular Filing for Commission Review of PGA Rate

Under this scenario, there would be a process to set the PGA rate on a regular basis, such as annually. The type of process can be set up a number of ways but generally the LDCs would make a filing by a certain date and then the Commission would act on the filings so that the new PGA rate for each LDC could be put into effect on a certain date.

Pros:

- This mechanism design provides a consistent, established way of adjusting the PGA rate as well as reviewing gas procurement issues.

Cons:

- Sometimes the PGA rate would not need to be changed, but the review process would still have to be undertaken, leading to unnecessary administrative burden.
- The PGA rate would not adjust between reviews to reflect the changing price of gas.

Straight Rolling Average Gas Cost

Under this scenario, the PGA rate would simply be set based upon the average cost of natural gas over a given historic period of time. The PGA rate would adjust automatically, tracking the change in the average cost of gas. Each month the latest month of gas purchases would be added into the average and the oldest month would be dropped out of the average. The period of time could be set at a number of different intervals, including 1 month, 3 months, 6 months, 12 months, and 2 years. This mechanism is similar to the mechanism currently used by Citizens Utilities' Northern Arizona Gas Division, where a 12-month rolling average is used.

Given the seasonal variation in consumption levels (high in the winter and low in the summer) and the historically higher winter gas costs, it is difficult to use a rolling average for a period of less than 12 months. If a shorter period were used, the bank balance would have a strong tendency to be under-recovered. For example, if a 3-month rolling average were used, the higher prices for winter gas would be applied to customers' lower use months during the spring and summer and the lower prices for summer gas would be applied to the high consumption winter months.

Pros:

- The changing price of gas is reflected on a more timely basis than many other possible mechanisms and sends a price signal to customers that gas prices are rising or falling. The price signal is sharper when a short period of time is used, such as one month.
- Administrative burden is minimized because the LDC generally does not have to file with the Commission for any change in PGA rates.
- The PGA rate is determined by a mechanical calculation that can be easily verified by both the LDC and the Commission.

Cons:

- Without some type of banding or capping of the change in the rolling average gas cost, the LDC's customers may experience large swings in the price of natural gas, possibly causing economic hardships.

Banded Rolling Average Gas Cost

This scenario is a modification of the straight rolling average gas cost scenario. The change under the banded rolling average scenario is that the fluctuation of the PGA rate during a given period is limited to a certain number of cents per therm. This banding can be set up several ways. One possibility is that a new band could be set up annually, averaging the previous year's gas costs and allowing the PGA rate to fluctuate within $0.05 of the previous year's average gas cost. Another method would be to require that the new PGA rate in a given month cannot be more than $0.07/therm different than the PGA rate in any of the preceding 12 months. It is possible that the cost of gas could fluctuate more than the banding allows the PGA rate to reflect. It is conceivable that over a period of time, this situation could result in the bank balance developing a large over or under-collection. To address this potential problem, the banding of the PGA rate should be accompanied by implementation of a bank balance threshold. If the threshold is exceeded, on either the over or under-collection side, the LDC would be required to address this bank balance through some type of action, such as a filing with the Commission.

Pros:

- This mechanism balances the need to send a price signal to the customer with the need to protect customers from large changes in the prices they pay for natural gas.
- Administrative burden is minimized by limiting LDC filings with the Commission to rare circumstances where the cost of gas shows large and continued trends in one direction.

- The PGA rate is determined by a mechanical calculation that can be easily verified by both the LDC and the Commission.

Cons.
- This mechanism may not send as clear of a price signal as the straight rolling average gas cost mechanism.

The working group felt that the banded rolling average mechanism had merit and was worth pursuing. The group then held further discussions on some of the details of how the banded rolling average would be implemented. One issue to be addressed is at what level the threshold on the bank balance would be set. Considerations include the financial impact on the LDCs of carrying a sizable bank balance and balancing the need to keep the bank balance from getting too large with the need to minimize LDC PGA filings which might not be necessary. Given the large disparity in size of Arizona LDCs, it is reasonable that the threshold be based upon the size of the LDC. At the September 3, 1998 working group meeting, group members considered a number of possible thresholds, but agreed that the following thresholds should be adopted.

Local Distribution Company	Proposed Bank Balance Threshold
Black Mountain Gas Company - Cave Creek Division	**$180,000**
Black Mountain Gas Company - Page Division	**$60,000**
Broken Bow Gas Company	**$120,000**
Citizens Utilities - Northern Arizona Gas Division	**$4,200,000**
Citizens Utilities - Santa Cruz Division	**$250,000**
Copper Market, Inc.	**$7,500**
Duncan Rural Services Corporation	**$35,000**
Graham County Utilities, Inc.	**$150,000**
Southwest Gas Corporation	**$22,400,000**

If there is a significant change in the number of therms sold annually by an LDC, it may be necessary to adjust the bank balance thresholds. If such a situation arises, the LDC or Staff may initiate Commission review of the need to adjust the threshold.

The working group recognized that setting threshold levels is by nature arbitrary and given experience with the above thresholds, it may be beneficial to modify them in the future. These thresholds were calculated by taking the average of 1996 and 1997 natural gas sales, in therms, and multiplying each LDC's average sales number by $0.05 and then rounding the number off for simplicity's sake. This methodology creates bank balance thresholds which are consistent on a per therm basis from LDC to LDC.

The working group discussed the need for a filing if the bank balance threshold is exceeded. Some working group members wanted flexibility built into the mechanism so that they would not necessarily have to file for a PGA rate adjustment if the threshold was exceeded. For example, the threshold could be barely exceeded on the under-collected side and the trend in gas prices might indicate that the bank balance would probably go back within the threshold in the following months. If this was the case it would be beneficial to have the flexibility to delay and very likely avoid the LDC having to make a PGA filing. The working group members agreed that the following procedure should be followed when the bank balance threshold is exceeded.

"Procedure To Follow When Bank Balance Thresholds are Exceeded:

The utility must either:

1. File for a PGA rate adjustment within 45 days of the threshold being exceeded, OR
2. Contact Staff to discuss why a PGA rate adjustment is not necessary at this time.

If option 2 is chosen, the Company should immediately contact Staff to discuss the reason(s) why a PGA rate adjustment is not necessary. If Staff agrees that a filing is not necessary, the Utilities Division Director will notify the LDC in writing of such a finding and will identify any further conditions. If the LDC does not receive such a letter within 30 days of the bank balance threshold being exceeded, the LDC must file for a PGA rate adjustment within 45 days of the threshold being exceeded."

If an LDC were to file for a PGA rate adjustment as a result of the bank balance threshold being exceeded, such a filing should have as its goal to bring the bank balance below the threshold to such an extent that the LDC would not be likely to exceed the bank balance threshold in the immediate future. This filing would be expected to impose a temporary charge or credit that would be added on to the on-going rolling average cost of gas. The credit or surcharge should have a definite expiration date. The working group also discussed the possibility of LDCs filing outside of the procedure shown above. The group agreed that filing for a change in the PGA rate should generally follow the procedures laid out in this report. However, the group recognized that in rare circumstances there might be a need for an LDC to file for a PGA rate adjustment even when the bank balance threshold is not violated, and that they are not precluded from making such a filing. Before making a filing outside of the regular PGA mechanism mechanics, the LDC should discuss the reason(s) for such a filing with Staff.

The working group also discussed what method of banding should be used to limit the fluctuation in the PGA rate that customers experience on their monthly bills. Banding of the PGA rate has the effect of smoothing large swings in the PGA rate. The banding could be set very tight, which would not allow much swing in the PGA rate. If the banding is set too tight, the bank balance would have a strong tendency to build up sizable over or under-collections and the price signal to the customer would be largely muted. On the other hand, the banding could be set very loosely, in which case the banding would rarely, if ever, moderate the rate of change in the PGA rate. A very loose banding would largely defeat the purpose of banding, which is to mute the large swings in the PGA rate.

The banding of the PGA rate needs to be set so that in most cases the changing PGA rate will accurately track the 12-month rolling average. However, in extreme circumstances where there are large changes in the cost of gas, the rate of change in the PGA rate should be moderated by the use of banding. The banding method selected should also be simple to administer and evaluate. Given these requirements, the banding method which should be applied is to limit the change in the PGA rate so that it is no more than $0.07 per therm different than the PGA rate in effect during any of the preceding 12 months. Given that an average residential natural gas rate is roughly $0.70 per therm in Arizona, this banding would limit the change in the PGA rate within any 12 month period to approximately 10% of the typical residential customer's bill.

Typically propane prices in Arizona are higher than natural gas prices. While an average residential natural gas rate is roughly $0.70/therm, an average residential rate for propane is roughly $1.20 per therm. To provide a similar level of flexibility to propane LDCs, the band should be $0.12 per therm for propane LDCs, rather than $0.07 per therm. This will allow approximately a 10 percent annual swing in propane prices for residential customers of propane LDCs, the same as for residential natural gas customers.

Use of Projected Gas Costs

Historically the Commission has relied on historical test years and historical gas costs to set rates. At times the Commission has considered costs incurred after the test year if they are known and measurable. In some cases the LDCs have purchased gas under contracts that have set terms such as price and duration and the Commission has taken those costs into consideration. The working group did not identify a way known future gas costs may be included in setting the current PGA rate. Staff, the LDCs and other interested parties can work together in the future to identify any possible ways that known future gas costs could be included in the banded rolling average mechanism.

Reporting Requirements

Currently all Arizona LDCs are required to file monthly reports with the Commission, documenting the status of their bank balances and other related information. Because the LDC reporting requirements have generally been dealt with one LDC at a time, the format and content of the reports varies from LDC to LDC. The working group felt it would be useful to standardize and simplify the reports to the extent possible. The group reviewed what is currently being reported and what Staff needs to have included in the reports. Staff drafted some forms to use as templates for the LDCs to use for their PGA reports, as well as some administrative details for the monthly PGA reporting. The group reviewed Staff's proposed reporting requirements and agreed that they should be adopted, with the recognition that small alterations might need to be made for individual LDC reporting situations. The reporting requirements are listed below, with three sample templates of report sheets contained in Appendix C.

The Monthly PGA Report from each LDC should at a minimum contain the following:

1. Purchases - including contract number, supplier, dollars, therms, supply basin (when available), transportation costs, and name of pipeline;
2. Sales - including number of customers, dollars, and therms by customer class;
3. Exchanged Gas (Account No. 806) - including dollars and therms;
4. Credits and Debits to Bank Balance - should include a separate sheet or sheets which detail each credit and debit and show how each credit and debit was calculated;
5. PGA rolling average calculation worksheet - this calculation should include both commodity and transportation costs; and
6. Person preparing report and telephone number.

Monthly PGA Report Format:

1. Summary Sheet - see Appendix C, Exhibit A;
2. Sales Summary Sheet - see Appendix C, Exhibit B;
3. PGA rolling average calculation worksheet - see Appendix C, Exhibit C; and
4. Sheets showing credits and debits calculations.

Provision of Invoices for Monthly Purchases:

LDCs should provide a copy of all invoices for gas commodity and transportation purchases with each monthly report. LDCs should also include in each monthly report a copy of any receipts for other credits or charges to the PGA bank balance. Because of the large number of invoices Southwest Gas has, this requirement should be waived for them, but they must have the invoices available for Commission review.

Other Reporting Issues:

Filing Date - Monthly PGA Reports should be filed within 2 months of the month the report is for. For example, the report for January 1999 should be filed by the last day of March 1999.

Price Lag in 12-month rolling average - there should be no more than 2 months from the last month reflected in the 12-month average to the month to which the PGA rate is applied. For example, the PGA rate for March 1999 should reflect gas costs for February 1998-January 1999.

Items which are not needed in the Monthly PGA Report, but may be included if utilities wish to do so -

1. Forecasts and projections of future gas costs, and
2. Copies of payments to commodity and transportation suppliers.

Other Issues

Treatment of Existing Bank Balances

As the new banded rolling average PGA mechanism is implemented, the issue of how to treat the existing bank balances, which in some cases are quite large, needs to be addressed. The working group discussed this issue and felt that a reasonable approach would be to freeze the bank balance of each LDC when the new PGA mechanism is implemented. Each LDC would then work with Staff to include in the PGA rate a temporary per therm surcharge or credit to amortize the frozen bank balance over an appropriate period of time. The PGA surcharge would automatically expire after the designated amortization period or when the combination of the remaining frozen balance and the new balance will zero out the remaining frozen balance, whichever comes sooner.

Each LDC should file for Commission approval of a rate to amortize the existing bank balance, such that the amortization rate will be approved before the new 12 month banded rolling average PGA mechanism is implemented. Because the bank balance amortization rate will be approved before the new mechanism goes into place, there will probably be 1-2 months of over or under-collections from the old PGA rate that will not be accounted for when the amortization rate is set for the existing bank balance. Any over or under-collection during this 1-2 month transition period should be accounted for by rolling it into the new bank balance for the 12 month banded rolling average PGA mechanism.

Interest on the Bank Balance

A number of the LDCs have indicated that they would like to see interest applied to the PGA bank balance. Currently the Commission does not allow any LDCs to collect interest on the PGA bank balance. The working group discussed how other states treat interest on the PGA bank balance. These approaches include: not allowing interest, applying interest at the same interest rate to the bank balance at all times, applying a higher interest rate when the bank balance is over-collected, and applying interest on the under-recovered balance only to the extent that interest has already been applied on over-recovered balances. One concern with applying interest is that, depending upon how the PGA mechanism is set up, the LDC might have the opportunity to manipulate the size of the bank balance to collect more or less interest. However, if the PGA mechanism being proposed in this report is adopted, the size of the bank balance would be determined by mechanical calculations which would be difficult to manipulate. Therefore the application of interest is more feasible under the banded 12 month rolling average mechanism than under some alternative PGA mechanisms. The application of interest would compensate the party, whether the ratepayers (when over-collected) or the LDC (when under-collected), for the use of its money. The group noted that application of interest will also tend to increase the volatility of the PGA bank balance, because it increases the over or under-collection of the bank balance. The group also discussed the possibility of beginning to apply interest only when the current over-collected and under-collected bank balances are zeroed out. Generally the LDCs were in favor of applying interest to the PGA bank balance.

Given the scope and nature of the proposal being put forward in this report, Staff believes that interest should be applied to over and under-collected bank balances incurred by Arizona LDCs using the new banded 12-month rolling average PGA mechanism. The interest rate to be applied is the Federal Reserve 3-month commercial paper rate. This monthly interest rate should be applied to the PGA bank balance at the beginning of each month. Interest should not be applied to the existing bank balances that are to be frozen and amortized. As with many other aspects of the proposed PGA mechanism, the application of interest should be reviewed in the future to determine if it should continue to be applied.

Performance Based Ratemaking

One weakness of traditional PGA mechanisms is that the LDC does not have a strong incentive to minimize gas costs because the LDC does not make a profit on the gas cost portion of the customer's bill. The introduction of performance-based ratemaking (PBR) to the gas procurement process can provide such an incentive to LDCs. PBR has been used in a number of other states, including California, where Pacific Gas and Electric and San Diego Gas and Electric operate under PBR mechanisms.

The goal of PBR is to introduce an economic incentive for the LDC to perform more efficiently in certain areas, in this case gas procurement. Experience in other states has shown that a major difficulty with PBR is that it is a contentious and very time-consuming process to design a well thought out, effective PBR mechanism. A poorly designed PBR can give the LDC unintended incentives to undertake certain actions and may have numerous unexpected consequences. Generally a PBR is designed so that the LDC would on average cover its costs and have the opportunity to earn a fair rate of return. The LDC's performance is typically compared to various pre-established benchmarks. Two examples of PBR are revenue cap regulation and price cap regulation.

At this time, the Commission has not approved any PBR mechanisms for the gas procurement function of Arizona LDCs and no Arizona LDCs have proposed the use of PBR in the course of this process Staff is willing to consider the implementation of PBR in the future, if it is in the best interest of Arizona consumers and LDCs. However, Staff believes that any PBR mechanism should be thoroughly evaluated before it is put into place and should be monitored after implementation to evaluate its impacts on natural gas service in the state of Arizona.

Use of Financial Instruments to Reduce Price Volatility

One approach used by various businesses to address price volatility is to employ financial instruments such as futures. In the gas industry, some LDCs use New York Mercantile Exchange natural gas futures contracts. A futures contract obligates the holder to either buy or sell a given quantity of natural gas at a specific price and location at a specific date in the future. Currently, Arizona LDCs do not use financial instruments. Use of financial instruments can be a complex process and may expose the LDC to risks it would not otherwise face. Nationally, there have been a number of cases where large corporations have lost significant amounts of money using financial instruments in recent years. If Arizona LDCs are to begin using financial instruments, the ramifications of such use should be carefully considered. If an Arizona LDC wishes to use financial instruments, the Commission should consider such requests, but should carefully study the potential impacts on the LDC and Arizona natural gas customers.

Implementation of the New PGA Mechanism

The working group discussed the timing of the implementation of the new PGA mechanism and felt that it would be best to implement after the end of the heating season in the spring of 1999. Some LDCs will also have to revise their billing systems. The group recognized that Staff and the LDCs will need to work out some of the details of implementing the new PGA mechanism after the Commission has approved it. It is expected that the working group will continue to meet, to the extent necessary to address implementation details, after Commission approval of the new PGA mechanism. Shown below is a timetable for implementation of the new PGA mechanism.

Date	Action
October 27-28, 1998	**Commission votes on new PGA mechanism.**
January 31, 1999	**LDCs must file tariff pages, report formats and other information necessary for implementation of the new PGA mechanism.**
November, 1998 - May, 1999	**Staff and LDCs work out details of PGA implementation.**
June 1, 1999	**New PGA mechanism and resultant PGA rates take effect.**

An important part of the implementation process will be transitioning from each LDC's currently effective PGA rate to each LDC's banded rolling average PGA rate. Citizens Utilities - Northern Arizona Gas Division currently employs a 12 month rolling average PGA rate, so its current PGA rate should be very similar to the PGA rate it will have under the new mechanism. However, other Arizona LDCs currently have PGA rates that in some cases have been set years ago and may not accurately reflect the current 12 month average cost of gas. Without some type of phase-in procedure, there could be a large swing in the PGA rate from the existing PGA rate to the new 12 month rolling average PGA rate. Due to this potential disparity between the existing PGA rate and the PGA rate based upon the 12 month rolling average, a phase-in procedure needs to be designed to transition to the 12 month rolling average PGA rate. An example of a possible procedure is as follows:

> The existing PGA rate would be the starting point for the new 12 month rolling average PGA rate. In the first month the 12 month rolling average calculation is used, the PGA rate would be allowed to move up to $0.02/therm from the existing PGA rate. In each following month , the PGA rate would be allowed to move an additional $0.02/therm, up to the limit imposed by the banding mechanism.

The design of such a phase-in procedure will be impacted by the level of the current PGA rate and the level of the 12 month average cost of gas when the new PGA mechanism is implemented on June 1, 1999. The current PGA rate is known, but the 12 month average cost of gas to be applied in June 1999 obviously will not be known until near that time. Given these circumstances, Staff believes that the design of the phase-in procedure should not be finalized until the spring of 1999, when the Commission and the LDCs will have a better idea of the relationship between each LDC's current PGA rate and each LDC's 12 month rolling average gas cost.

Given that the LDCs would be filing with the Commission in the spring of 1999 to approve the amortization rate for the existing bank balance, it would be useful to also have the Commission approve the phase-in procedures at that time. It is Staff's expectation that the PGA working group will continue to discuss this issue and monitor the cost of gas through the winter of 1998-99 and should be able to design a suitable phase-in procedure.

Billing and Rate Design Issues

The working group discussed a number of billing issues including the use of levelized billing. Levelized billing programs can be designed in a number of different ways, but the general goal is to balance the customer's high bill months with the customer's low bill months and charge the customer approximately the same size monthly bill all year round. Levelized billing is another option that can help alleviate price volatility for the customer. LDCs indicated that current customer participation in levelized billing programs is low. Some states have seen much higher participation rates, such as Minnesota where a majority of natural gas customers participate in levelized billing. Given the relatively low consumption rates of Arizona natural gas customers, it is expected that a lower percentage of customers would participate in levelized billing. However, as part of a comprehensive plan to address gas costs in Arizona, the LDCs should encourage customer participation in levelized billing. Additionally, LDCs should consider other billing and rate design options that would address the problem of price volatility.

Southwest Gas indicated that it currently bills customers on a prorated basis. Prorated billing means that when the customer is billed part way through the current month, the customer pays the effective rate for the previous month on usage during the portion of the billing period in the previous month and the effective rate for the current month on usage during the portion of the billing period in the current month. Historically this has not been a major issue, because the PGA rate has not adjusted on a monthly basis, but only when the Commission approved a PGA rate adjustment. However, under the banded 12 month rolling average PGA mechanism the PGA rate changes each month, increasing the complexity of the billing. Southwest has indicated that its billing system, as currently configured, is unable to bill customers with the new PGA mechanism in place. Southwest has requested that it no longer bill on a prorated basis. Instead, each month the effective PGA rate would be applied to all usage billed during that month. For example, if the rolling average PGA rate for October goes into effect October 1, all customers billed on or after October 1 would be billed using the October PGA rate, until the beginning of November, when the new rolling average PGA rate for November would be applied.

A shift from prorated billing should not have a noticeable impact on customer bills during the month the change would take place. Additionally, a move away from prorated billing should actually simplify billing procedures for Southwest Gas. Southwest Gas should no longer use prorated billing when the new PGA mechanism goes into effect and rate changes should be applied to all usage on bills rendered on or after the effective date of the change. If LDCs discover additional billing issues that need to be addressed, they should work with Staff to address those issues.

Treatment of Copper Market, Inc.

Copper Market is a small propane system located in Bagdad, Arizona. It is a wholly owned subsidiary of Cyprus Climax Metals Company (Cyprus), which owns and operates the mine at Bagdad. Copper Market is less than one-fourth the size of the next largest LDC, based upon annual sales volume. Cyprus also owns the town of Bagdad, operates the propane distribution system as a fringe benefit to its employees, and has indicated in past proceedings (Decision No. 57991, August 26, 1992) as well as recent discussions that it does not intend to make a profit off of the system.

Copper Market's PGA bank balance is under-collected by $113,720 as of June 30, 1998. For the size of Copper Market, its PGA bank balance is by far the most under-collected PGA bank balance of any Arizona LDC.

Copper Market has indicated that it believes that its unique circumstances and small size warrant different treatment than the larger LDCs receive. While in general Staff believes that it would be beneficial for the same PGA mechanism to be applied to all LDCs in Arizona, Staff agrees that a different PGA approach may be warranted in Copper Market's case. However, Staff believes that Copper Market's large under-collection must be addressed. Having considered this situation, Staff recommends that:

> Copper Market must have a PGA mechanism plan in place to address the under-collected bank balance, including possibly the parent company writing off the under-collected bank balance, by July 1, 1999. Such a plan should be approved by Staff. If such a plan is in place by July 1, 1999, Copper Market will be exempted from all other requirements of this order. If such a plan is not in place by July 1, 1999, Copper Market must implement the same PGA mechanism and meet the same requirements as the other Arizona LDCs under this order.

Customer Education

The working group recognized that a change in the PGA mechanism will impact customer bills, and customers will likely have questions regarding the changes to their bill. The LDCs will need to educate their customers about the changes in the PGA mechanism. Staff, the LDCs and other interested parties should work together to address the need for customer education. As part of the LDCs' January 31, 1999 filing, the LDCs should include a proposal for educating their customers about the new PGA mechanism.

Tariff Filings and Publishing of PGA Rates

Some LDCs currently have specific tariff pages that set forth the details of their PGA mechanism and/or the PGA rate currently charged by the LDC. It would be beneficial to have all LDCs file tariff pages setting forth the basic details of their PGA mechanism and the currently effective PGA rate. Staff and the LDCs could work out the details of the tariff filings.

One customer representative indicated that it would be helpful for the current PGA rate information to be available to customers, particularly commercial and industrial customers, to help them make purchasing decisions. Currently the PGA rate is available in the tariff books at the Commission, but this is difficult for many people to access. One possibility considered by the group would be to publish the current PGA rates on the individual LDC websites or the Commission website. This would make the PGA information much more accessible to gas customers statewide. Staff and the LDCs will investigate the possibility of publishing PGA rates on their websites and, if feasible, will pursue implementation.

Summary of Staff Findings and Recommendations

The PGA mechanisms currently used by Arizona LDCs should be revised to provide greater price stability to customers while also sending a price signal to the customer. The price fluctuations experienced by many Arizona customers in recent years were caused by a number of factors including: the dependence of some LDCs on spot market-related gas purchasing strategies and the substantial increase in the cost of gas from the San Juan basin due to increasing interstate pipeline capabilities to send San Juan basin gas to eastern markets.

The extreme run up in spot market gas prices in the 1996-1997 winter season was also due to a number of national factors including low gas storage levels and several months of colder than normal weather. It appears unlikely that such a combination of circumstances will occur again soon, although natural gas spot market prices continue to exhibit volatility. Short of buying all natural gas supplies under fixed price contracts, it is difficult to avoid at least some fluctuation in natural gas prices. However, a balanced approach, that addresses both gas procurement and the PGA mechanism mechanics, can moderate the price swings experienced by natural gas customers. The Commission should adopt the following set of recommendations to address the needs of the LDCs and natural gas customers in Arizona.

Gas Procurement

1. The LDCs should pursue longer term, fixed price supply options as a viable option when they choose which gas supplies to include in their supply portfolios. To provide the LDCs with some level of assurance that they will have an opportunity to recover their prudently incurred and reasonable gas commodity costs related to fixed price contracts, while acknowledging the Commission's oversight of gas procurement activities, the Commission should adopt language such as the following:

   "As a general principle, subject to the circumstances of any specific matter: if a contract appeared to be prudent and reasonable at the time it was entered into, given market conditions and other relevant factors, the utility should be permitted an opportunity to recover the gas costs associated with that contract. However, the Commission has the right to review all LDC gas purchases on a case by case basis."

2. The Commission recognizes price stability as one of the goals of the natural gas procurement process.

PGA Mechanism

3. The banded 12-month rolling average mechanism, as described in Staff's report, should be adopted.

4. The bank balance thresholds should be set as follows:

Black Mountain Gas - Cave Creek Division	$180,000
Black Mountain Gas - Page Division	$60,000
Broken Bow Gas	$120,000
Citizens Utilities - Northern Arizona Gas Division	$4,200,000
Citizens Utilities - Santa Cruz Division	$250,000
Copper Market	$7,500
Duncan Rural Services	$35,000
Graham County Utilities	$150,000
Southwest Gas	$22,400,000

If there is a significant change in the number of therms sold annually by an LDC, it may be necessary to adjust the bank balance thresholds. If such a situation arises, the LDC or Staff may initiate Commission review of the need to adjust the threshold.

5. When the bank balance is exceeded, the following procedure should be followed:

The utility must either:

1. File for a PGA rate adjustment within 45 days of the threshold being exceeded, OR
2. Contact Staff to discuss why a PGA rate adjustment is not necessary at that time.

If option 2 is chosen, the Company should immediately contact Staff to discuss the reason(s) why a PGA rate adjustment is not necessary. If Staff agrees that a filing is not necessary, the Utilities Division Director will notify the LDC in writing of such a finding and will identify any further conditions. If the LDC does not receive such a letter within 30 days of the bank balance being exceeded, the LDC must file for a PGA rate adjustment within 45 days of the threshold being exceeded.

This filing would be expected to impose a temporary charge or credit that would be added on to the on-going rolling average cost of gas. The credit or surcharge should have a definite expiration date.

6. For natural gas LDCs the PGA rate should be banded so that the new PGA rate for a month is no more than $0.07 per therm different than the PGA rate in effect during any of the preceding 12 months. To provide a similar level of flexibility to propane LDCs, recognizing the higher average price of propane, the band should be $0.12 per therm for propane LDCs, rather than $0.07 per therm.

Reporting Requirements

7. The Monthly PGA Report from each LDC should at a minimum contain the following:
   1. Purchases - including contract number, supplier, dollars, therms, supply basin (when available), transportation costs, and name of pipeline;
   2. Sales - including number of customers, dollars, and therms by customer class;
   3. Exchanged Gas (Account No. 806) - including dollars and therms;
   4. Credits and Debits to Bank Balance - should include a separate sheet or sheets which detail each credit and debit and show how each credit and debit was calculated;
   5. PGA rolling average calculation worksheet - this calculation should include both commodity and transportation costs; and
   6. Person preparing report and telephone number.

   Monthly PGA Report Format:
   1. Summary Sheet - see Appendix C, Exhibit A;
   2. Sales Summary Sheet - see Appendix C, Exhibit B;
   3. PGA rolling average calculation worksheet - see Appendix C, Exhibit C; and
   4. Sheets showing credits and debits calculations.

   Provision of Invoices for Monthly Purchases:
   LDCs should provide a copy of all invoices for gas commodity and transportation purchases with each monthly report. LDCs should also include in each monthly report a copy of any receipts for other credits or charges to the PGA bank balance. Because of the large number of invoices Southwest Gas has, this requirement should be waived for it, but they must have the invoices available for Commission review.

   Other Reporting Issues:
   Filing Date - Monthly PGA Reports should be filed within 2 months of the month that the report covers. For example, the report for January 1999 should be filed by the last day of March 1999.

   Price Lag in 12-month rolling average - there should be no more than 2 months from the last month reflected in the 12-month average to the month to which the PGA rate is applied. For example, the PGA rate for March 1999 should reflect gas costs for February, 1998-January, 1999.

8. The monthly PGA report should also conform to the three Exhibits, with the understanding that individual LDCs may work with Staff to include small report modifications, to meet their reporting needs.

Treatment of Existing Bank Balances

9. The existing PGA bank balance should be frozen at the time the new PGA mechanism is implemented. The frozen bank balance would then be eliminated through a per therm surcharge or credit set over an appropriate period of time. The PGA surcharge would automatically expire after the designated amortization period or when the combination of the remaining frozen balance and the new balance will zero out the remaining frozen balance, whichever comes sooner.

10. Each LDC should file for Commission approval of a rate to amortize the existing bank balance, such that the amortization rate will be approved before the new 12 month banded rolling average PGA mechanism is implemented. Because the bank balance amortization rate will be approved before the new mechanism goes into place, there will probably be 1-2 months of over or under-collections from the old PGA rate that will not be accounted for when the amortization rate is set for the existing bank balance. Any over or under-collection during this 1-2 month transition period should be accounted for by rolling it into the new bank balance for the 12 month banded rolling average PGA mechanism.

Interest on the Bank Balance

11. Interest should be applied to over and under-collected bank balances incurred by Arizona LDCs using the new banded 12-month rolling average PGA mechanism. The interest rate to be applied is the Federal Reserve 3-month commercial paper rate. Interest should not be applied to the existing bank balances that are to be frozen and amortized.

Implementation of the New PGA Mechanism

12. LDCs must file tariff pages, report formats, and other information necessary to implement the new PGA mechanism by January 31, 1999. This filing should include a plan to educate customers on the new PGA mechanism.

13. An important part of the implementation process will be transitioning from each LDC's currently effective PGA rate to each LDC's banded rolling average PGA rate. The design of the phase-in procedure should not be finalized until the spring of 1999, when the Commission and the LDCs will have a better idea of the relationship between each LDC's current PGA rates and each LDC's 12 month rolling average gas cost. Given that the LDCs would be filing with the Commission in the spring of 1999 to approve the amortization rate for the existing bank balance, the LDCs should also file for Commission approval of the phase-in procedures at that time.

14. The new PGA mechanism and resultant PGA rates should take effect beginning June 1, 1999.

Billing and Rate Design Issues

15. The LDCs should consider billing and rate design options that would help to address the problem of price volatility.

16. Southwest Gas should no longer use prorated billing when the new PGA mechanism goes into effect and rate changes should be applied to all usage on bills rendered on or after the effective date of the change. If LDCs discover additional billing issues that need to be addressed, they should work with Staff to address those issues.

Treatment of Copper Market

17. Copper Market must have a PGA mechanism plan in place to address the under-collected bank balance, including possibly the parent company writing off the under-collected bank balance, by July 1, 1999. Such a plan should be approved by Staff. If such a plan is in place by July 1, 1999, Copper Market will be exempted from all other requirements of this order. If such a plan is not in place by July 1, 1999, Copper Market must implement the same PGA mechanism and meet the same requirements as the other Arizona LDCs under this order.

APPENDIX A. Purchased Gas Adjustor Working Group Participants

The following organizations and individuals attended one or more meetings of the Purchased Gas Adjustor Design working group.

Organization	*Representatives*
Arizona Corporation Commission	Crystal Brown, Caroline Butler, Claudio Fernandez, Robert Gray
Arizona Consumers Council	Phyllis Rowe
Bagdad Copper Market	Ron Brown
Black Mountain Gas/Northern States Power	Dennis Fulton, Jamie Seitz, Jim Wilson
Broken Bow Gas Company	Doug Mann, Deanna Poppenberger
Citizens Utilities Company	John Cogan, Carl Dabelstein, Chuck Loy, Jeff Richoux
Duncan Rural Service Corporation	Chester Jones
Enron	Pat Keene
Graham County Utilities	Russ Barney
Quality Energy Services	Wendell Johnson
Residential Utility Consumer Office	Bill Rigsby
Southwest Gas	Andy Bettwy, Ed Gieseking, Roger Montgomery, Jaime Ramirez

Working group meetings were held on the following dates:
August 11, 1998
September 3, 1998

APPENDIX B. Recent History of Arizona Gas LDCs' PGA Rates

1. Black Mountain Gas Company

Page Division

PGA Rate (per therm)	Decision Number, Date	Date Effective
($0.3939)	55526, 4/23/87	June 1, 1988
$0	56202, 11/16/88	January 1, 1989
$0.05	57397, 6/6/91	June 1, 1991
$0.12	58038, 10/7/92	October 1, 1992

Note: As requested by the Company, from January 1, 1991 to October 1, 1992 Black Mountain's shareholders absorbed $0.08 per therm for gas costs and from October 1, 1992 to the present time, Black Mountain's shareholders have absorbed $0.04 per therm for gas costs, as requested by the Company.

Cave Creek Division

PGA Rate (per therm)	Decision Number, Date	Date Effective
($0.15)	55527, 4/23/87	June 1, 1988
$0.05	56201, 11/16/88	January 1, 1989
$0	57397, 6/6/91	June 1, 1991
($0.05)	58038, 10/7/92	October 1, 1992

2. Broken Bow Gas Company

PGA Rate (per therm)	Decision Number, Date	Date Effective
$0.0115	55331, 12/17/86	December 17, 1986
$0.2570	56783, 1/31/90	January 31, 1990
$0.0115	56863, 4/4/90	April 4, 1990
$0.1215	57166, 11/28/90	November 28, 1990
($0.0568)	57293, 3/7/91	March 7, 1991
$0.1000	57694, 1/8/92	January 8, 1992
$0.00	57780, 4/1/92	April 1, 1992
$0.1100	58465, 11/26/93	November 26, 1993
$0.0200	58587, 4/6/94	April 6, 1994
$0.0708	59523, 2/21/96	February 21, 1996
$0.00 (see Note)	60383, 8/29/97	August 29, 1997

Note: A temporary surcharge of $0.0611 per therm was put into effect in Decision Number 60383 until the balance of $147,968 has been collected.

3. Copper Market, Inc.

PGA Rate (per cubic foot)	Decision Number, Date	Date Effective
$0	57991, 8/26/92	September 1, 1992
$0.00341	58731, 8/10/94	August 10, 1994

Note: Copper Market's PGA mechanism was established in Decision Number 57991 (August 26, 1992). Before this decision, Copper Market's tariff rate was its gas cost, plus 10 percent.

4. *Citizens Utilities Company*

Santa Cruz Division

Fuel Adjustor Rate	Decision Number, Date	Date Effective
($0.09170) per therm	55535, 4/23/87	

Northern Arizona Division

Fuel Adjustor Rate (per therm)	Decision Number, Date	Date Effective
($0.0175)	56647, 10/4/89	
($0.0248)	57189, 12/20/90	January 1, 1991
($0.0478)	58015, 9/15/92	October 1, 1992
$0.0270	58420, 9/30/93	October 1, 1993
($0.0400)	59120, 6/8/95	June 9, 1995
($0.0400)	59399, 11/28/95	
($0.0670)		1/11/96
($0.0696)		2/9/96
($0.0700)		3/12/96
($0.0200)		10/31/96
($0.0351)		11/7/96
($0.0325)		12/10/96
($0.0328)		1/6/97
($0.0262)		2/3/97
$0.0088		2/5/97
$0.0536		3/4/97
$0.1120		4/2/97
$0.1289		5/1/97
$0.1288		6/2/97
$0.1315		7/2/97
$0.1336		8/1/97
$0.1379		8/29/97
$0.1367		9/30/97
$0.1400		10/29/97
$0.1428		12/1/97
$0.1634		1/2/98
$0.1490		1/30/98
$0.1167		3/2/98
$0.0671		3/31/98
$0.0627		4/30/98
$0.0674		5/29/98
$0.0615		6/29/98
$0.0570		7/29/98

Note: On December 2, 1991, the Commission approved the acquisition of Southern Union Gas by Citizens Utilities Company (Decision Number 57647). In Decision Number 59399 (November 28, 1995), the Commission authorized Citizens to change its PGA mechanism to include a 12-month rolling average cost of gas, which adjusts automatically each month.

5. *Duncan Rural Services Corporation*

PGA Rate	Decision Number, Date	Date Effective
$0.6575 per MCF	55200, 9/18/86	October 1, 1986
$0.7575 per MCF	55418, 2/12/87	February 12, 1987
$1.1720 per MCF	56024, 6/29/88	July 1, 1988
$1.4745 per MCF	56165, 10/13/88	November 1, 1988
$1.9790 per MCF	56323, 1/26/89	February 1, 1989
$1.4721 per MCF	57099, 9/19/90	October 1, 1990
$0.7349 per MCF	57319, 4/3/91	April 1, 1991
$0.0916 per MCF	57926, 7/2/92	August 1, 1992
$0.0122 per therm	58356, 7/23/93	August 1, 1993
($0.02325) per therm	59539, 2/21/96	March 1. 1996

Note: Duncan Rural Services Corporation was formed on September 15, 1988 to acquire gas and water assets of General Utilities, Inc. DRSC has the same board of directors as Duncan Valley Electric Cooperative. In Decision Number 56660 (October 25, 1989), the Commission approved the transfer of assets and the CC&N from General Utilities to DRSC.

6. *Graham County Utilities*

PGA Rate	Decision Number, Date	Date Effective
$0.6575 per MCF	55200, 9/18/86	October 1, 1986
$0.7575 per MCF	55418, 2/12/87	February 12, 1987
$1.1720 per MCF	56024, 6/29/88	July 1, 1988
$1.4745 per MCF	56165, 10/13/88	November 1. 1988
$1.9790 per MCF	56323, 1/26/89	February 1. 1989
$0.9578 per MCF	56885, 4/26/90	May 1, 1990
$0.3055 per MCF	57350, 5/1/91	May 1, 1991
($0.144) per MCF	58437, 10/18/93	November 1, 1993
($0.01193) per therm	59364, 11/1/95	November 1, 1995
($0.002854) per therm	60472, 11/25/97	December 1, 1997

Note 1: Graham County Utilities was formed on February 14, 1989 to acquire the Graham County gas operations of General Utilities, Inc. and the water operations of City Utilities Company. GCU has the same board of directors as Graham County Electric Cooperative. In Decision Number 56660 (October 25, 1989), the Commission approved the transfer of assets and CC&Ns from General Utilities and City Utilities to GCU.

7. *Southwest Gas Corporation*

Southwest Gas' PGA surcharge currently includes four separate components for:

1. Amortization of the balance of the gas cost balancing account (GCBA).
2. Gas cost adjustments.
3. Recovery of Low Income Rate Assistance (LIRA) program costs
4. Recovery of Demand-side Management (DSM) costs

Some of these components are only assessed to certain rate classes.

Until recently, Southwest had separate Central and Southern Divisions and at times certain components of the surcharge differed between Divisions. The DSM cost recovery component was created by the Commission in Decision Number 60352 (August 29, 1997).

Decision Number 57075
Date of Decision August 31, 1990
Date Effective August 31, 1990

GCBA Amortization Rate	Gas Cost Adjustment	LIRA Cost Recovery
($0.02949)	0	0

Residential Surcharge: ($0.02949) per therm

Decision Number 57187
Date of Decision December 20, 1990
Date Effective January 1, 1991

GCBA Amortization Rate	Gas Cost Adjustment	LIRA Cost Recovery
($0.00949)	0	0

Residential Surcharge: ($0.00949)

Decision Number 57398
Date of Decision June 6, 1991
Date Effective June 6, 1991

GCBA Amortization Rate	Gas Cost Adjustment	LIRA Cost Recovery
($0.00949)	0	0

Residential Surcharge: ($0.00136) per therm
Note: Some rate classes (including the residential class) are assessed a charge of $0.00813 per therm for the Take or Pay Surcharge. Other rate classes are assessed a charge of $0.00706 per therm for the Take or Pay Surcharge.

Decision Number 57927
Date of Decision July 2, 1992
Date Effective July 2, 1992
Note: This Decision allowed Southwest to impose a two month surcharge of $0.00661 per therm on non-residential customers in the Central Division to recover Bixco related costs.

Decision Number 57943
Date of Decision July 6, 1992
Date Effective July 15, 1992

GCBA Amortization Rate	Gas Cost Adjustment	LIRA Cost Recovery
($0.0640)	($0.01527)	0

Residential Surcharge: ($0.01354) per therm
Note: Some rate classes (including the residential class) are assessed a charge of $0.00813 per therm for the Take or Pay Surcharge. Other rate classes are assessed a charge of $0.00706 per therm for the Take or Pay Surcharge.

Decision Number 58096
Date of Decision December 9, 1992
Date Effective December 15, 1992

GCBA Amortization Rate	Gas Cost Adjustment	LIRA Cost Recovery
($0.02319)	($0.01527)	0

Residential Surcharge: ($0.03033) per therm
Note: Includes $0.00813 per therm for the Take or Pay Surcharge

Decision Number 58572
Date of Decision March 16, 1994
Date Effective March 16, 1994

GCBA Amortization Rate	Gas Cost Adjustment	LIRA Cost Recovery
$0.01933	($0.01527)	$0.00 Central Division $0.00268 Southern Division

Residential Surcharge: $0.00674 per therm for the Southern Division and $0.00406 per therm for the Central Division.
Note: This Decision began the LIRA surcharge in the Southern Division. This Decision set the Take or Pay Surcharge at $0.00.

Decision Number 59171
Date of Decision July 20, 1995
Date Effective August 1, 1995

GCBA Amortization Rate	Gas Cost Adjustment	LIRA Cost Recovery
($0.02612)	($0.01527)	$0.00126 Central Division $0.00162 Southern Division

Residential Surcharge: ($0.03977) per therm for the Southern Division and ($0.04013) per therm for the Central Division.
Note: This Decision began the LIRA surcharge in the Central Division.

Decision Number 60352
Date of Decision August 29, 1997
Date Effective September 1, 1997

GCBA Amortization Rate	Gas Cost Adjustment	LIRA Cost Recovery
($0.02612)	($0.01527)	$0.00162

Residential Surcharge: ($0.03977)
Note: This Decision consolidated the Southern and Central Division rate classes. In the Central Division the Southern Division's LIRA rate of $0.00162 per therm replaced the current $0.00126 per therm LIRA rate. Therefore the residential surcharge in the Central Division went from ($0.04013) per therm to ($0.03977) per therm.

Decision Number 60735
Date of Decision March 23, 1998
Date Effective April 1, 1998

GCBA Amortization Rate	Gas Cost Adjustment	LIRA Cost Recovery
$0.07986	($0.01527)	$0.00162

Residential Surcharge: $0.06621

APPENDIX C. Sample Templates for Monthly PGA Reports

COMPANY NAME
PREPARER'S NAME
PHONE NO.

EXHIBIT A

BANK BALANCE FORMAT
MONTH OF ____________

LINE NO				
1	BEGINNING BANK BALANCE			$
2	COST OF PURCHASED GAS (EXHIBIT B, LINE 20)		$	
3	TRANSPORTATION COSTS (EXHIBIT B, LINE 21)		$	
4	TOTAL COST TO BE RECOVERED (1+2+3)			$
5	SALES - THERMS (EXHIBIT B, LINE 6)			
6	BASE PERIOD FUEL COST PER THERM		$	
7	AMOUNT RECOVERED BY BASE PERIOD GAS COSTS (5 X 6)			$
8	SALES - THERMS (EXHIBIT B, LINE 6)			
9	ROLLING AVERAGE PGA-PER THERM (EXHIBIT C, LINE 15)		$	
10	AMT. RECOVERED FROM ROLLING AVG (8 X 9)			$
11	TOTAL AMOUNT RECOVERED (7 + 10)			$
12	ADJUSTMENTS (PLEASE ATTACH EXHIBIT)	A		$
13	MONTHLY SUBTOTAL (4-11+ OR - 12)			$
14	MONTHLY INTEREST (PLEASE ATTACH EXHIBIT)	A		$
13	END OF MONTH BANK BALANCE (13 + OR - 14)			$

A Please attach schedule indicating the exact nature of adjustment and if applicable calculation of adjustment.

COMPANY NAME
PREPARER'S NAME
PHONE NO.

EXHIBIT B

SALES - PURCHASES DATA
MONTH OF ______________

LINE NO		
	SALES (THERMS)	
1	RESIDENTIAL	
2	COMMERCIAL	
3	INDUSTRIAL	
4	IRRIGATION	
5	MUNICIPALITY	
6	TOTAL SALES (THERMS)	
	SALES (DOLLARS)	
7	RESIDENTIAL	
8	COMMERCIAL	
9	INDUSTRIAL	
10	IRRIGATION	
11	MUNICIPALITY	
12	TOTAL SALES	$
	NUMBER OF CUSTOMERS	
13	RESIDENTIAL	
14	COMMERCIAL	
15	INDUSTRIAL	
16	IRRIGATION	
17	MUNICIPALITY	
18	TOTAL CUSTOMERS	
19	PURCHASES (THERMS)	
20	PURCHASES (DOLLARS)	$
21	TRANSPORTATION COSTS	$

COMPANY NAME
PREPARER'S NAME
PHONE NO

EXHIBIT C

PGA ROLLING AVERAGE CALCULATIONS
MONTH OF ____________

		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
LINE NO	DATE	COMMODITY COST INVOICED	PURCHASED VOLUMES DTH'S	COST PER DTH PURCHASED	MONTHLY SALES DTH'S	12-MONTH ENDING COMMODITY COST INVOICED	12-MONTH ENDING SALES - DTH'S	MONTHLY AVERAGE DTH SOLD	COMMODITY COST 12-MO. ROLL. AVG.
1	JAN	$ 2,000,000	800,000	2.5000	400,000	$ 2,000,000	400,000	5.0000	5.0000
2	FEB	3,000,000	1,300,000	2.3077	675,000	5,000,000	1,075,000	4.4444	4.6512
3	MAR	4,000,000	1,720,000	2.3256	1,725,000	9,000,000	2,800,000	2.3188	3.2143
4	APR	800,000	450,000	1.7778	425,000	9,800,000	3,225,000	1.8824	3.0388
5	MAY	600,000	300,000	2.0000	285,000	10,400,000	3,510,000	2.1053	2.9630
6	JUN	500,000	275,000	1.8182	250,000	10,900,000	3,760,000	2.0000	2.8989
7	JUL	400,000	250,000	1.6000	225,000	11,300,000	3,985,000	1.7778	2.8356
8	AUG	300,000	200,000	1.5000	185,000	11,600,000	4,170,000	1.6216	2.7818
9	SEP	550,000	325,000	1.6923	300,000	12,150,000	4,470,000	1.8333	2.7181
10	OCT	750,000	425,000	1.7647	410,000	12,900,000	4,880,000	1.8293	2.6434
11	NOV	900,000	505,000	1.7822	475,000	13,800,000	5,355,000	1.8947	2.5770
12	DEC	1,000,000	500,000	2.0000	480,000	14,800,000	5,835,000	2.0833	2.5364
				A / B				A / D	E / F

13	COMMODITY COST 12-MONTH ROLLING AVERAGE	$	2.5364
14	BASE COST OF GAS		(2.5000)
15	**PGA ROLLING AVERAGE**	**$**	**0.0364**

Highest PGA Rate in Previous 12 Months
Lowest PGA Rate in Previous 12 Months
March PGA Rate

Note: The numbers in the table above are hypothetical and are only for the purpose of showing the mathematical calculations.
Note: To reflect the separate cost of the gas commodity and gas transportation costs, columns will need to be added to the table above to reflect transportation costs and the sum of transportation and gas commodity costs.