

*Exhibit No.:*  
*Issue:* *Natural Gas Purchasing Practice:*  
*Hedging*  
*Witness:* *Kwang Y. Choe*  
*Sponsoring Party:* *MoPSC Staff*  
*Type of Exhibit:* *Surrebuttal Testimony*  
*Case No.:* *GR-2006-0352*  
*Date Testimony Prepared:* *November 16, 2007*

**MISSOURI PUBLIC SERVICE COMMISSION**

**UTILITY SERVICES DIVISION**

**SURREBUTTAL TESTIMONY**

**OF**

**KWANG Y. CHOE**

**SOUTHERN MISSOURI GAS COMPANY, L.P.,  
d/b/a SOUTHERN MISSOURI NATURAL GAS**

**CASE NO. GR-2006-0352**

*Jefferson City, Missouri*  
*November 2007*

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1 information and circumstances that existed at the time the decisions were made to support my  
2 analysis. I strongly repudiate the charge. My conclusion was based on the information available  
3 at the time SMNG made its hedging decisions. Third, Mr. Maffet's claims that I failed to  
4 understand that the use of basis swaps or basis hedging was always a part of SMNG's Gas  
5 Supply Plan of 2005 is a misleading conclusion. Fourth, Mr. Maffet's argument that I failed to  
6 understand that SMNG considered the various pricing structures, mechanisms, and instruments  
7 contained in 4 CSR 240-40.018 (2) including natural gas storage, fixed price contracts, call  
8 options, collars, outsourcing/agency agreements, futures contracts, financial swaps, and other  
9 tools utilized in the market for cost-effective management of price and/or usage volatility, as  
10 required by Commission's rule on Natural Gas Price Volatility Mitigation is simply untrue.  
11 Fifth, Mr. Maffet's assertion that my conclusions are the result of hindsight and ignore generally-  
12 accepted prudence standards utilized by the Commission in actual cost adjustment (ACA) cases  
13 is incorrect. Mr. Maffet fails to understand the rationale for Staff's hedging disallowances.

14 Q. Was it reasonable for SMNG to speculate about the natural gas market direction  
15 during the summer of 2005 without any convincing evidence and therefore base its entire  
16 hedging decision for the winter months November 2005 through March 2006 on such  
17 conjecture?

18 A. No.

19 Q. Was it prudent for SMNG to lock in only a portion of the natural gas prices and  
20 wait for the natural gas prices to come down later in the winter of 2005-2006 without any  
21 documented support?

1           A.     No, I do not think it was prudent.

2           Q.     On page 3, lines 3-5, of Mr. Maffet's rebuttal testimony, he claims that you did  
3 not rely upon information and circumstances that existed at the time the decisions were made to  
4 support your analysis. Do you agree?

5           A.     No. I relied on various natural gas market information publicly available at the  
6 time SMNG made its hedging decisions in order to support my analysis. Here, the important  
7 question is whether the natural gas market circumstances at the time SMNG made its hedging  
8 decisions during the summer of 2005 were compelling enough for SMNG to lock in only a  
9 portion of its winter natural gas supply price. In other words, the question is whether the  
10 natural gas market was due for a major downward price correction and thus it made sense to fix  
11 only a portion of the price and wait for the price to come down (Maffet rebuttal, p.7, ll. 7-9).

12          Q.     What did the natural gas market information publicly available during the  
13 summer of 2005 that you reviewed reveal?

14          A.     The general picture of the natural gas market contained in the information showed  
15 that the natural gas market was volatile and nowhere in the information reviewed even hinted of  
16 a major market downturn. On the contrary, hotter than normal summer temperatures, higher than  
17 normal electricity demand, hurricane threats, and strength in crude oil sector, among other  
18 factors, led to upward pressures on the natural gas prices during the summer of 2005.

19          Q.     Did SMNG provide Staff with any documented natural gas market information  
20 and circumstances that existed during the summer of 2005 when its hedging decisions were  
21 made to support its actions?

22          A.     No, SMNG did not provide Staff with such documented information.

1           Q.     On page 3, lines 6-8, of his testimony Mr. Maffet alleges that I failed to  
2 understand that the use of basis swaps or basis hedging was always a part of SMNG's  
3 Gas Supply Plan of 2005. Do you agree?

4           A.     No. I can see that SMNG's Gas Supply Plan of 2005, dated August 26, 2005,  
5 page 2, states, "SMGC will continue to evaluate and monitor opportunities to use financial  
6 derivative contracts such as call options, basis swaps, costless collars and knock-out options as a  
7 means to provide better price stability to its customers." However, Mr. Maffet misses the issue  
8 in this proceeding.

9           Q.     Please explain.

10          A.     In page 10 of the same SMNG's Gas Supply Plan of 2005, it states, "Secure  
11 60-75% of winter heating-season gas supply and 25-50% of summer baseload at *fixed prices*."  
12 During hearing of GR-2005-0279 on 9-29-2005, Mr. Maffet was asked by Commissioner Gaw  
13 what fixed price contracts SMNG had Mr. Maffet acknowledged that SMNG did not have fixed  
14 price contracts (See Schedule 1). Staff's hedging disallowances are based on SMNG's failure to  
15 hedge certain portions of the winter normal supply requirements at fixed prices as called for by  
16 its Gas Supply Plan and the resulting damage to SMNG's ratepayers. SMNG should have  
17 hedged certain portions of its normal winter supply requirements at fixed prices during the  
18 summer of 2005. Ultimately, SMNG's decision of not fixing the prices for certain winter  
19 volumes during the summer of 2005 cost its rate payers more than what they should have paid.  
20 Staff's disallowances demonstrate the damages of the extra costs that should have been avoided.

21          Q.     On page 3 of his testimony, lines 9-17, Mr. Maffet argues, "Mr. Choe apparently  
22 failed to understand that SMNG considered the various pricing structures, mechanisms, and  
23 instruments contained in 4 CSR 240-40.018 (2), including natural gas storage, fixed

1 price contracts, call options, collars, outsourcing/agency agreements, futures contracts,  
2 financial swaps, and other tools utilized in the market for cost-effective management of price  
3 and/or usage volatility, as required by Commission's rule on Natural Gas Price Volatility  
4 Mitigation." Do you agree with Mr. Maffet's argument?

5 A. No. I doubt the validity of Mr. Maffet's argument. In no place in my direct  
6 testimony did I show or exhibit a failure to understand that SMNG considered the various  
7 pricing structures, mechanism, and instruments contained in 4 CSR 240-40.018 (2). SMNG  
8 may have considered a broad array of pricing structure, mechanisms, and instruments. I do not  
9 question whether or not SMNG considered the various structures, mechanism, and instruments  
10 contained in Natural Gas Volatility Mitigation rule. However, the key here is whether SMNG  
11 made reasonable effort to structure its portfolio of contracts during the summer of 2005 in order  
12 to mitigate upward natural gas price spikes and secure adequate natural gas supplies for its  
13 customers for the winter months November 2005 through March 2006. Based on the natural gas  
14 market information available at the time SMNG's decisions were made, Staff's review of  
15 SMNG's natural gas purchasing practices during the summer of 2005 concluded that SMNG  
16 failed to follow Commission's Natural Gas Price Volatility Mitigation Rule

17 (1) (A) As part of a prudent planning effort to secure adequate  
18 natural gas supplies for their customers, natural gas utilities  
19 should structure their portfolios of contracts with various supply  
20 and pricing provisions in an effort to mitigate upward natural gas  
21 price spikes, and provide a level of stability of delivered natural  
22 gas prices.

23 and failed to follow its own hedging plan, SMNG's Gas Supply Plan of 2005.

24 Q. On page 3 of his testimony, lines 23-24, Mr. Maffet asserts that my conclusions  
25 are the result of hindsight. Do you agree?

1           A.     No. Mr. Maffet misinterprets my conclusions as being the result of hindsight.  
2     In my direct testimony, I state toward the end, “Staff is keenly aware of the fact that it is  
3     conducting its review with the benefit of hindsight and is mindful of the fact that any  
4     prudence adjustment as a result of its review should be based on whether the Company acted  
5     reasonably with the information that it could and should have known at the time of its decision.”  
6     From this statement one can easily draw a conclusion that Staff is cautious not to be trapped in  
7     the pitfall of the hindsight review, given the nature of actual cost adjustment (ACA) process,  
8     where Staff conducts the review after the natural gas purchase period has concluded.

9           Q.     On page 5 of his testimony, lines 22-23, Mr. Maffet states, “SMNG management  
10    felt that the most prudent course of action was to lock-in record high basis differentials, and then  
11    exercise those basis differential hedges when the natural gas prices moderated. SMNG followed  
12    this plan, and as result, SMNG’s customers benefited from the use of these basis hedges.” Do  
13    you agree with this statement?

14          A.     No. The statement is misleading.

15          Q.     Please explain.

16          A.     Although the natural gas prices were reduced by those basis differentials when  
17    SMNG exercised the differentials, SMNG’s customers were exposed to virtually unlimited  
18    upward price risk. And indeed, the natural gas prices kept on increasing throughout the summer  
19    and most of the rest of 2005. Therefore, SMNG’s customers actually paid more than what they  
20    could have paid if SMNG had fixed the natural gas prices during the summer of 2005. In fact,  
21    the basis differentials that Mr. Maffett lauds turned out to be worse than no hedging at all. The  
22    Staff has not made an adjustment for the fact that the basis differentials that were locked in  
23    turned out to be worse than simply buying the gas on Southern Star, in a completely

1 unhedged manner in the first of the month market. Therefore, there was nothing favorable about  
2 how SMNG's practice turned out. However, the Staff has focused its criticism on the failure to  
3 fix the price of gas and is not suggesting a further adjustment for SMNG's decision to lock in a  
4 differential price to NYMEX. In SMNG's service area, based upon past pricing history, a local  
5 distribution company (LDC) would always expect to receive a discounted price to NYMEX. It  
6 would be imprudent to pay an unadjusted NYMEX price in an area where the prevailing price is  
7 a lower Southern Star Central Price. What SMNG chose to do with its basis differentials was to  
8 decide that the prevailing discount of Southern Star pricing versus NYMEX pricing was  
9 relatively high. Again, although this turned out to be a more costly decision than simply buying  
10 at a Southern Star's first of month index, the Staff viewed SMNG's decision based upon the  
11 facts and circumstances at the time. However, a basis differential alone does not fully hedge the  
12 gas price. A simple hypothetical example of asking what SMNG's gas price would have been at  
13 a \$15 per MMBtu NYMEX price, or a \$20 per MMBtu NYMEX illustrates the flaw in  
14 SMNG's theory.

15 Q. Have you attached a chart to illustrate the critical distinction between buying gas  
16 at a NYMEX price versus buying gas at a Southern Star Central index price?

17 A Yes, this is provided in the graph in Schedule 2. Over time you can see how  
18 NYMEX nearly always trades at a premium to the Southern Star Central index price. The  
19 difference between the two prices represents the "basis" that ultimately occurred between these  
20 two pricing points. As the graph suggests, the basis lock that SMNG entered into during the  
21 summer of 2005 did not turn out very well. However, the Staff has not suggested that SMNG  
22 should not have entered into this lock in of the basis differential. The Staff is stating that to only  
23 hedge (or lock in) the discount, leaves tremendous price exposure to increased gas prices.



1           Q.     On page 6 of his testimony, lines 15-24, Mr. Maffet seems to indicate that I  
2 blindly advocate fixed price contracts. Do you agree?

3           A.     No, I do not blindly advocate a total dependence on fixed price contracts. Staff  
4 believes that SMNG should not have totally depended on basis deals during the summer of 2005  
5 given the market conditions at the time.

6           Q.     On page 7, lines 3-24 and on page 8, lines 1-6 of his testimony, Mr. Maffet  
7 explains the market conditions in the summer and fall of 2005. Does his explanation accurately  
8 describe the market conditions during that time?

9           A.     No. Mr. Maffet seems to indicate that the natural gas price should not have been  
10 that high during that time based on the market fundamentals. However, there was enough  
11 information to show the natural gas market was not as bearish as Mr. Maffet thought it was and  
12 not about to be on a downward slope. For example, storage level, albeit plentiful during the  
13 spring of 2005, started showing a sign of contraction toward the middle to the end of July of  
14 2005 as the hot summer of 2005 continued to progress.

15          Q.     On page 8-9, Mr. Maffet claims that I do not have supporting information to  
16 assess the market conditions at the time SMNG made its hedging decisions. Do you agree?

17          A.     No, I do not agree. I have supporting information to assess the market conditions  
18 at the time SMNG made its hedging decisions. This market information comes from Gas Daily,  
19 a natural gas trade publication that is read widely across the industry, Short Term  
20 Energy Outlook from the U.S. Energy Information Administration, a federal government's  
21 monthly energy information update, and Missouri Public Service Commission's monthly natural  
22 gas report, a synopsis of the market that I prepare on a monthly basis.

1           Q.     On page 10, line 4 to page 12, line 4, Mr. Maffet discusses Case  
2 No. GC-2006-0180. Out of the settlement in this case, SMNG agreed to practice fixed price  
3 hedging for the winter months. Although you are not citing this settled case as precedent, do you  
4 believe this case shows the importance of hedging practice with a price certainty goal at a  
5 disciplined pace?

6           A.     Yes, it illustrates how important it is for an LDC to practice hedging, to a certain  
7 extent, in a disciplined manner with a price certainty in mind.

8           Q.     On page 14, lines 21-24 and on page 15, lines 1-3, Mr. Maffet implies that I admit  
9 a 20/20 hindsight prudence review approach. Is Mr. Maffet correct?

10          A.     No, Mr. Maffet is incorrect. Mr. Maffet mischaracterizes my testimony. Again,  
11 what I meant in my direct testimony was that due to the nature of the Staff ACA review being  
12 conducted after the natural gas purchase period has ended, Staff is very mindful of not being  
13 fallen into the trap of 20/20 hindsight review. Staff's analysis is based on how an LDC practiced  
14 hedging with the information available at the time.

15          Q.     On page 15, lines 12-23, Mr. Maffet seems to imply that Staff's three scenarios  
16 were randomly selected without any reasoning. Do you agree?

17          A.     No. Staff selected the three scenarios based on SMNG's past practices and also  
18 on the market circumstances under which SMNG could have most reasonably fixed the natural  
19 gas prices during the summer of 2005 when SMNG made its hedging decisions for the winter  
20 months November 2005 through March 2006. By definition, the measurement of harm or  
21 damages will involve some judgment on what impact reasonable practice might have had on the  
22 costs the company might have incurred. It is a question of "what might have been". In fact,  
23 there are many reasonable decisions that could have been made. Should 50% of normal gas

1 supply been hedged? What about 51% or 52%? Would a reasonable hedging plan have placed  
2 the hedge on April 1? How about some portion on May the 2<sup>nd</sup>? Each one of these choices  
3 implies a potentially different damage assessment and the Staff must choose some reasonable  
4 plan that does not rely on hindsight.

5 Q. On page 16, lines 16-23 and on page 17, lines 1-2, Mr. Maffet's testimony takes  
6 an example of hedging during the summer and fall of 2005 that meets 70% target and ends up  
7 costing more than SMNG's actual experience and thus he seems to indicate that the result would  
8 have been worse than SMNG's actual outcome if SMNG had chosen that route. What do you  
9 make of the example?

10 A. Mr. Maffet's hypothetical example picks two dates, one on August 25, 2005 and  
11 another on September 28, 2005 to fix prices for the winter months November 2005 through  
12 March 2006. However, these two dates are relatively late compared to SMNG's past practices of  
13 fixing prices. Nevertheless, since the natural gas market prices were substantially high on  
14 September 28, 2005 after the two devastating hurricanes, Katrina and Rita, damaged the Gulf's  
15 natural gas producing region, it may have been that SMNG's actual experience would have  
16 resulted in lower cost than that in this hypothetical example. However, it is a complete  
17 mischaracterization for Mr. Maffet to assume that this is Staff's suggested "prudent" approach.  
18 (Maffet rebuttal, page 16, line 23) Staff does not imply that SMNG should have fixed prices for  
19 70% of its winter supplies on August 25, and September 28, 2005. Again Mr. Maffet's own  
20 20/20 hindsight example misses the rationale for Staff to make hedging disallowances. Staff  
21 could have picked any other earlier dates in May or June of 2005, which it did not, that resulted  
22 in higher disallowances (See Schedule 3). That is not what Staff's hedging prudence review  
23 intends to achieve. Staff's hedging review focuses on what SMNG could have reasonably done

1 to protect its ratepayers from upward price uncertainty given its own past hedging practice and  
2 all available information at the time it made its hedging decision.

3 Q. According to Commission rule, CSR 240-40.018 (c), *Part of a natural gas*  
4 *utility's balanced portfolio may be higher than spot market price at times, and this is recognized*  
5 *as a possible result of prudent efforts to dampen upward volatility*. What does this mean?

6 A. It means that an LDC's actual hedging experience would have resulted in lower  
7 cost than some other hypothetical experiences, that does not mean that the other experiences  
8 were a worse hedging practice than what an LDC actually did. Staff does not take an approach  
9 of penalizing an LDC just because of its higher hedge costs. Staff takes into account an  
10 LDC's hedging decision making process as well as an actual hedging outcome to make a  
11 determination on the prudence of the LDC's hedging practice.

12 Q. Please summarize your conclusion.

13 A. SMNG's unreasonable hedging practices for the winter months November 2005  
14 through March 2006 by locking in only basis differentials resulted in damage to its ratepayers.  
15 SMNG fixed only these basis differentials during the summer of 2005 speculating that the  
16 natural gas prices would collapse downward in the coming months. SMNG's hedging decision  
17 during the summer of 2005 lacks fully supported market information or analysis. To the  
18 contrary, the natural gas prices kept going up during the summer and most of the rest of 2005.  
19 SMNG could have avoided the higher cost had it acted more reasonably with the publicly  
20 available market information during the summer of 2005. Thus, Staff's hedging disallowance  
21 recommendation is based on what SMNG could have reasonably implemented its hedging  
22 practice with the market information available at the time it made its hedging decision.

- 1           Q.     Does this conclude your testimony?
- 2           A.     Yes.

**BEFORE THE PUBLIC SERVICE COMMISSION**  
**OF THE STATE OF MISSOURI**

In the Matter of Southern Missouri Natural Gas )  
Company, L.P.'s Purchased Gas Adjustment (PGA) )  
Factors to be Reviewed in Its 2005-2006 Actual )  
Cost Adjustment

Case No. GR-2006-0352

**AFFIDAVIT OF KWANG Y. CHOE**

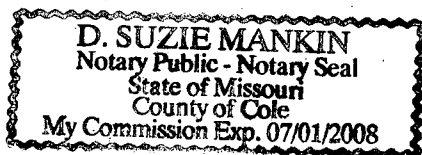
STATE OF MISSOURI       )  
                                  )  
COUNTY OF COLE       )       ss.

Kwang Y. Choe, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Surrebuttal Testimony in question and answer form, consisting of 12 pages to be presented in the above case; that the answers in the foregoing Surrebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

*Kwang Y. Choe*

Kwang Y. Choe

Subscribed and sworn to before me this 14<sup>th</sup> day of November 2007.



*D. Suzie Mankin*  
Notary Public

Excerpt from transcripts in Case No. GR-2005-0279

September 29, 2005

(Question to Randal Maffett by Commissioner Gaw)

1           Q.       You abandoned that method that had been  
2 utilized in the past by Southern Missouri Gas?

3           A.       We utilized an alternative form.

4           Q.       Did you abandon it?

5           A.       I did not abandon it, no, sir.

6           Q.       Okay. So tell me what fixed price contracts  
7 you have for this winter.

8           A.       We do not have fixed price contracts.

9           Q.       So you didn't use it?

10          A.       That's what I said.

11          Q.       Okay. We can quibble over the use of the word  
12 "abandoned" for the next two hours if you'd like, but I  
13 suspect both of us have better things to do.

14                   COMMISSIONER GAW: That's all I have, Judge.

15                   JUDGE THOMPSON: Other questions from the  
16 Bench?

17                   Hearing none, recross based on questions from  
18 the Bench. Ms. Shemwell.

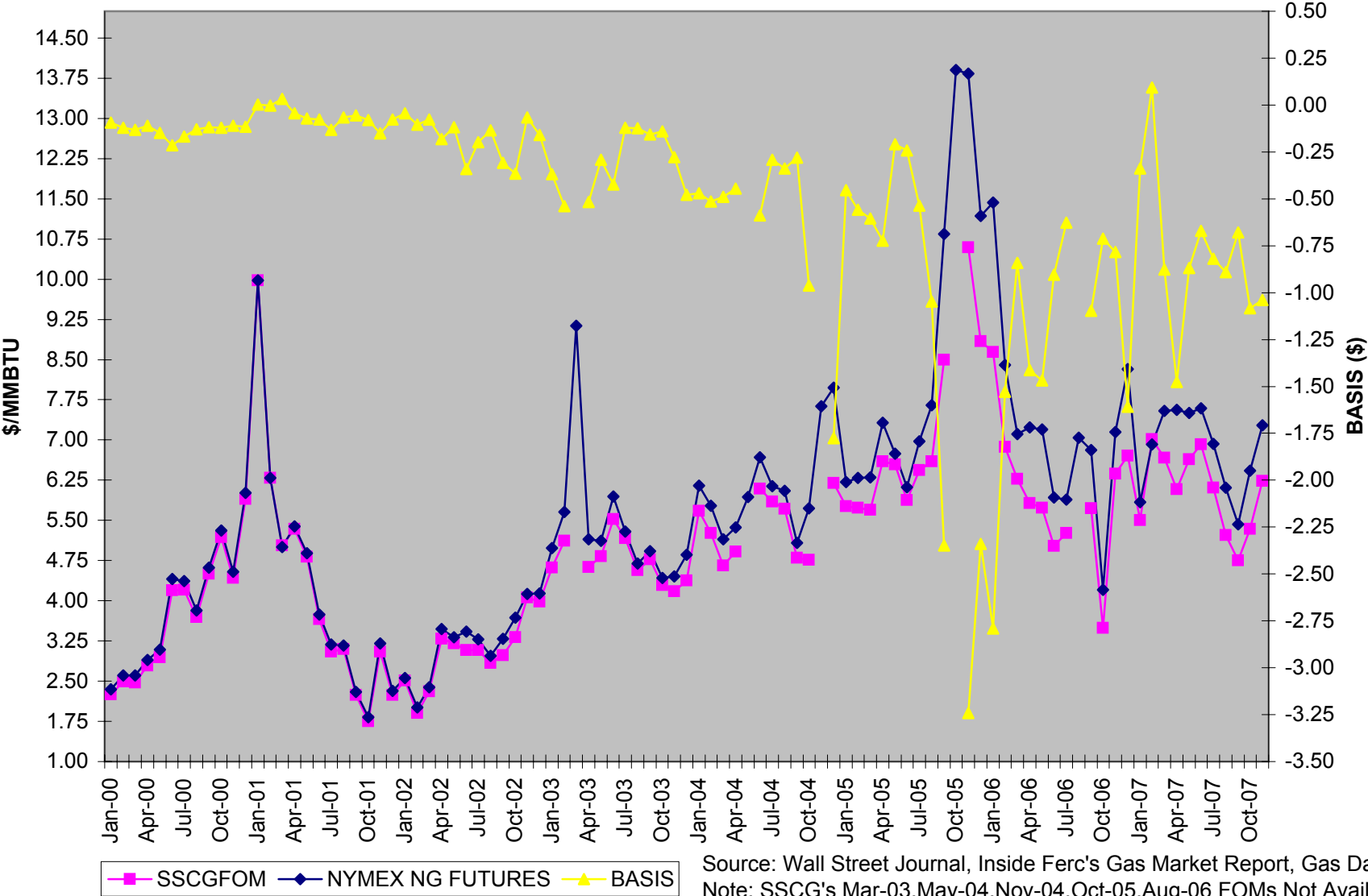
19 RECROSS-EXAMINATION BY MS. SHEMWELL:

20          Q.       Mr. Maffett, when you purchased SMGC, did you  
21 have, under your purchase agreement, the ability to use  
22 Mr. Scott Klemm and his knowledge of past practices? I would  
23 note that Mr. Klemm purchased the gas for SMGC and works for  
24 DTE, the prior owner. Did you consult with Mr. Klemm?

25          A.       We did not for our specific strategies.



SSCGFOM, NYMEX NG FUTURES, & BASIS



Nymex 2005-06 FrontMo, WinterMo, Jan06 Daily & SSCGFOM

