REDACTED

REVISED

REBUTTAL TESTIMONY

OF

ERIC LOUNSBERRY

ENGINEERING DEPARTMENT

ENERGY DIVISION

ILLINIOS COMMERCE COMMISSION

ILLINOIS POWER COMPANY

d/b/a AmerenIP

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Q. Please state your name and business address.

A. My name is Eric Lounsberry, and my business address is 527 East Capitol Avenue, Springfield, Illinois 62701.

Q. Are you the same Eric Lounsberry that previously provided testimony in this proceeding?

A. Yes. I previously presented Direct Testimony in this proceeding, ICC Staff Exhibit 2.00.

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony responds to the rebuttal testimony of Illinois Power Company ("IP" or "Company") witnesses Wayne G. Hood, Curtis D. Kemppainen, Timothy L. Hower, and Kevin D. Shipp.

Q. What recommendations did you make in your direct testimony?

A. I recommended the Commission find the $15,718 in additional gas costs the Company incurred as a result of unauthorized use gas charges were not prudent. Next, I recommended that the Company include in its rebuttal testimony additional explanation to support its decision to enter into the NGPL Lateral contract. Finally, I recommended the Commission find the $7,630,528 in additional gas costs that IP incurred as a result of the reduction of peak day capacity and seasonal withdrawal capacity of its Hillsboro storage field imprudent.

Q. What are your current recommendations?

A. I continue to recommend that the Commission find the $15,718 in additional gas costs the Company incurred as a result of unauthorized use gas charges were not prudent. I also recommend that the Commission find the $6,870,109 in additional gas costs that IP incurred as a result of the reduction of peak day capacity and seasonal withdrawal capacity of its Hillsboro storage field imprudent.

Q. Do you have any schedules attached to your direct testimony?

A. Yes. I have the following schedules attached to my direct testimony:

Schedule 4.01R	Summary of Adjustments
Schedule 4.02R	Comparison of IP Heat Content Values
Schedule 4.03R	Revised PEPL Delivery Amounts
Schedule 4.0 4R	Storage Adjustment Alternative

Unauthorized Use Gas Charges

Q. What recommendation did you make in your direct testimony regarding the unauthorized use gas charges the Company incurred during the reconciliation period?

A. I recommended that the Commission find the $15,718 in additional gas costs the Company incurred as a result of unauthorized use gas charges from March 9, 2003 and April 6, 2003 were not prudent.

Q. How did the Company respond to your recommendation?

A. Company witness Kevin Shipp's rebuttal testimony (IP Exhibit No. 2.1), pages 3 to 11 provide the Company's response to my recommendation on this topic. In summary, Mr. Shipp's testimony indicates how infrequent overrun penalties are on the Company's system and showed the magnitude of the volume of overrun gas versus gas purchased by the Company. Mr. Shipp also discussed how the Company monitors the volumes delivered by the various interstate pipelines to it and that some of the delivery points on the pipelines in question are not telemetered but are instead estimated by the Company. Mr. Shipp also explains how the Company converts a volumetric measurement into an MMBtu basis that is used for billing. Finally, Mr. Shipp provides some details about the gas days in question and the volume of gas the Company received on this day.

Q. What is a Btu?

A. Btu refers to a British thermal unit and it is the standard unit for measuring quantity of heat energy, such as the heat content of fuel.

Q. Did Mr. Shipp's rebuttal testimony cause you to alter your adjustment?

A. No. While I do not disagree with Mr. Shipp's explanation for how the Company monitors its gas supply or the circumstances the Company faced, Mr. Shipp's testimony does not provide sufficient basis for reaching a determination that these charges are prudent. Therefore, I maintain my recommendation that that the Commission find the $15,718 in additional gas costs the Company incurred as a result of unauthorized use gas charges from March 9, 2003 and April 6, 2003 were not prudent.

March Charges

Q. Please summarize what occurred regarding the March 9, 2003 event when IP incurred an unauthorized use gas charges from Natural Gas Pipeline Company of America ("NGPL").

A. According to the Company's response to Staff data request ENG 2.13, on March 9, 2003 the Company took 1,089 Dekatherms ("DTH") in excess of its allowed tolerance from NGPL and incurred an unauthorized use gas charge of $11,435.

Q. Do you have any additional information regarding the events on this day that impact your review of the prudence of the Company's actions?

A. Yes. I will demonstrate that the Company's information from its own system indicated that during the March 9 gas day it was receiving more gas then it was allowed from NGPL, which would result in an unauthorized use gas charge. However, even with that information, the Company's dispatch center made no attempt to alter its delivery amounts to avoid this occurrence.

Further, Mr. Shipp's comments regarding the accuracy of the telemetering equipment and the fact that the Company does not meter all of its NGPL receipt points indicates to me that the Company was fully aware of the potential that its usage estimates could differ somewhat from usage amounts calculated by NGPL. Therefore, the Company should have made some allowances during the gas day to keep from taking delivery of gas in amounts that are at the limits, or in the Company case exceed the limits, set forth by the delivering pipeline.

Q. How much gas did the Company nominate for its March 9, 2003 gas day?

A. The Company requested a total gas delivery of 155,989 MMBtu from NGPL on its March 9, 2003 gas day. According to the Company's response to Staff data request ENG 2.60, this value was comprised of the Company's original nomination of 114,233 MMBtu, which included 54,233 MMBtu of customer owned gas, plus 26,756 MMBtu of pipeline storage and 15,000 MMBtu from its Point Operator Account (114,233 + 26,756 + 15,000 = 155,989).

Q. What allowances does NGPL provide the Company to deviate from its requested delivery amount?

A. According to the Company's response to Staff data request ENG 2.86, NGPL's tariff allows a +/-5% variance on pipeline nominations and IP holds no-notice service as part of its DSS agreement (storage service). ***BEGIN CONF xxxxxx xxxxx

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is very close to the amount that NGPL calculated for IP's usage on its March 9, 2003 gas day.

Q. What does your analysis cause you to conclude?

A. IP is correct in that its estimates for its gas usage from NGPL will not always match those from NGPL itself. However, IP's estimate is and should always be extremely close (about .5% on March 9) to the value that NPGL itself calculates. Further, IP's load estimation does not have to be exact. NGPL's tariff provides a +/-5% variance on nominations and IP has contracted with NGPL for an OPA that provides additional volumes for variance. Therefore, the Company should not incur overrun penalties unless some extraordinary circumstances exist.

Further, IP's own calculations for the March 9 gas day showed it had exceeded the amount allowed from NGPL, yet the Company failed to react to that event by altering the manner it received gas off of NGPL. In the Company's response to Staff data request ENG 2.72, it indicated that its dispatch center receives telemetered data related to gas deliveries every 4 to 8 seconds. IP was tracking or should have been tracking its delivery amounts from NGPL throughout the March 9 gas day, yet it failed to act upon the information coming into the dispatch center that it was taking too much gas. Therefore, I continue to support my conclusion that the Company's unauthorized use gas charge off of NGPL on March 9, 2003 was imprudent.

April Charges

Q. What amount of unauthorized use gas charges did the Company incur as a result of its March actions?

A. According to the Company's response to Staff data request ENG 2.13, on April 6, 2003, the Company took 415 Dekatherms ("DTH") in excess of its allowed tolerance and incurred an unauthorized use gas charge of $4,583. This unauthorized use gas charge was incurred on the Panhandle Eastern Pipe Line Company ("PEPL") system.

Q. Do you have any additional information regarding the events on this day that impact your review of the prudence of the Company's actions?

A. Yes. I will demonstrate that the Company's own estimate from the April 6 gas day indicated that it was not receiving any unauthorized use gas, but that Company made incorrect assumptions regarding the Btu or heat content of the gas.

Again, Mr. Shipp's comments regarding the accuracy of the telemetering equipment and the fact that the Company does not meter all of its PEPL receipt points indicates to me that the Company was fully aware of the potential that its usage estimates could differ somewhat from usage amounts calculated by PEPL. Therefore, the Company should have made some allowances during the gas day to keep from taking delivery of gas in amounts that are at the limits or, as in the Company case exceed the limits, set forth by the delivering pipeline.

Q. How much gas did the Company nominate for its April 6, 2003 gas day?

A. The Company requested a total gas delivery of 74,768 MMBtu from PEPL on its April 6, 2003 gas day. According to the Company's response to Staff data request ENG 2.60, the nomination of 74,768 MMBtu included 26,654 MMBtu of customer owned gas, which meant 50,114 MMBtu (74,768 – 26,654) was nominated for ratepayers.

Q. What allowances did PEPL provide the Company to deviate from its requested delivery amount?

A. According to the Company's response to Staff data request ENG 2.86, PEPL's tariff allows a +/-10% variance on pipeline nominations, but if the amount of gas taken is above the maximum daily allowed level then the tolerance is 4%.

Q. What total amount of delivery variance did the Company have available to it from PEPL on the April 6, 2003 pipeline day?

A. The Company would have been allowed a +4% variance on its 50,248 maximum contractual level plus the amount of the nomination under the maximum contract amount. So the 4% tolerance of 50,248 provides 2009 MMBtu (50,248 * 4%), plus the difference between 50,114 and 50,248 provided another 134 MMBtu of tolerance for a total of 2,143 MMBtu. This amount would have allowed the Company to take up to 52,257 MMBtu for ratepayers without penalty from PEPL.

Q. What amount of gas did PEPL determine that IP had received on its April 6, 2003 gas day?

A. According to the Company's response to Staff data request ENG 2.82, PEPL calculated that it had delivered 79,327 MMBtu to the Company (less 26,654 of customer transport gas meant 52,673 MMBtu of gas was provided to ratepayers). This amount was 416 MMBtu more than IP was allowed to receive without penalty from PEPL.

Q. What amount of gas did IP determine it had received from PEPL on its April 6 gas day?

A. According to the Company's response to Staff data request ENG 2.82, IP measured a gas delivery of 74,057 Mcf at its telemetered locations and estimated usage of 2,365 Mcf at its non-telemetered locations. IP then assumed a heat content factor of 1.023 for its telemetered load and a factor of 1.000 for its non-telemetered load to determine a usage of 75,776 MMBtu for its telemetered locations and 2,365 MMBtu for its non-telemetered locations. Therefore, IP assumed PEPL delivered 78,141 MMBtu (75,776 + 2,365) of gas to it on its April 6, 2003 gas day. IP value also corresponds to a ratepayer delivery of 51,487 MMBtu (78,141 – 26,654), which was 770 MMBtu below the maximum amount allowed by PEPL.

Q. Why did IP still incur a penalty?

A. IP incurred a penalty because it had not updated its heat content assumptions for its various take points from PEPL.

Q. Why are up to date heat content assumptions important?

A. As indicated above, the Company's dispatch center receives telemetered information about its deliveries from its various delivery points from the interstate pipelines every 4 to 8 seconds. However, this information is only provided on a volumetric basis. The Company, using its heat content assumptions, must convert that usage into an MMBtu amount since the interstate pipelines determine the amounts taken by each utility via an MMBtu measure. For example, if a utility were to underestimate the heat content of the gas being delivered, then its conversion to a MMBtu measure is also understated.

Q. How could IP update its heat content assumptions?

A. PEPL has a system, called Messenger System, that allows its customers to obtain gas flow and heat content information after the gas day has ended. In Staff data request ENG 2.119, I requested the heat content factors used by PEPL for the period April 3, 2003 through April 7, 2003. This data showed that the individual delivery points from PEPL to IP had fairly consistent heat content factors over this period.

Q. How do the heat content factors from PEPL for the period April 3 through April 5 compare to the values that IP assumed would exist on the April 6 gas day?

A. As shown on ICC Staff Ex. 4.0R, Schedule 4.02R, I compared the heat content factors, by station, that IP assumed for its April 6 gas day to the actual April 3 through April 6 information for the same locations. This comparison shows four locations where the assumed heat content value was more than 2.6% lower than the historical data leading up to the April 6 gas day. Further, this schedule shows

that the actual April 6 heat content factors used by PEPL to calculation IP's usage were consistent with factors from April 3 through 5. In short, IP failed to update its heat content assumptions even though the heat content factors for the prior three gas days indicated its assumptions were out of date.

Q. In your opinion what flow projection would IP have determined if a more up to date heat content value were used?

A. As shown on ICC Staff Ex. 4.0R, Schedule 4.03R, applying the actual PEPL heat content factors from April 6 to the Company's volumetric measurement from that same day would have resulted in an overage of 161 Dth.

Q. What does the above information indicate to you?

A. If the Company had used heat content factors that were based on more up to date and readily available information, IP's own dispatch center would have recognized that it was in danger taking more gas from the PEPL system then it was allowed. Further, given the Company's knowledge that it can not perfectly determine the volume of gas it received from PEPL, I consider it a reasonable assumption that the Company would not have attempted to taken an amount of gas equal to the full 4% limit provided by PEPL.

In fact, I would expect the Company would have maintained at least a 1% variance from the maximum allowance provided from PEPL. This 1% variance would equal about 523 MMBtu. Therefore, if IP had used up to date heat content information and left any reasonable amount of cushion to account for potential

errors between the Company projections and the interstate pipeline's values, the Company would have reduced its deliveries from PEPL by at least 684 MMBtu (161 + 523), which would have allowed it to avoid an unauthorized gas use charge on April 6, 2003 (overage was for 416 MMBtu).

This amount is also fairly consistent with the Company's actions on April 6, 2003. The Company's projected deliveries from PEPL on April 6, 2003 was about 1.5% under the maximum contractual allowance (770/52,257= 1.5%).

Q. Do you believe a prudent operator should allow some cushion to account for potential errors betweens its values and the interstate pipeline's values?

A. Yes. As Mr. Shipp pointed out in his rebuttal testimony, the potential exists for errors between the amounts telemetered by the utility versus the interstate pipeline number due to a number of factors, including Btu variance. Further, in IP's case, it also operated several delivery points that are not telemetered and whose flow must be estimated, which is another source for potential error. Therefore, I would not expect a utility to use all of its allowed tolerance in balancing its daily loads, some amount of cushion should remain to account for those potential errors. In fact, a utility, when making its initial nominations should never expect to rely on using any of the interstate pipeline delivery tolerances and a utility should limit itself while tracking its usage throughout the day to using as little of the delivery tolerances as possible since those tolerances are there to account for variances in forecasts, heat content, etc.

In the review of the PEPL overage above, I indicated the use of even a 1% cushion, which equated to about 523 MMBtu would have eliminated the overage. However, a review of the variance between PEPL measurement and IP's number indicates a 500 MMBtu cushion is too conservative to represent a reasonable cushion. For example, the difference between IP' and PEPL's non-telemetered load values was about 1,000 MMBtu, while the telemetered load value had a variance of about 200 MMBtu. Given the magnitude of those values, my use of the 500 MMBtu is likely too small as a general rule to be a reasonable cushion and demonstrates that limiting the use of the allowed pipeline tolerance is preferred. However, my example demonstrates that the use of a cushion to account for potential errors is appropriate and would have allowed IP to avoid any overrun charges.

NGPL Lateral

Q. What did you request in your direct testimony from the Company regarding the NGPL lateral?

A. I requested that the Company potentially update its economic analysis associated with the NGPL Lateral, provide a full discussion regarding the costs (direct and indirect) the Company believed should be part of any economic analysis associated with the lateral, and to discuss the appropriate FT capacity costs (market and field zone) that such an analysis should contain. I also noted that depending on the response the Company provided, I reserved the right to make adjustments, if warranted, in my rebuttal testimony.

Q. Did the Company address the concerns that you had regarding the NGPL lateral?

A. Yes. The combination of the Company's rebuttal testimony and responses to Staff data requests on this topic resulting in my concerns being fully addressed. Therefore, I have no adjustments to recommendation associated with the Company's decision to enter into the NGPL lateral agreements.

Hillsboro Storage Field

Q. What recommendations did you make in your direct testimony regarding the Hillsboro storage field?

A. I recommended that the Commission find the Company imprudent for operating the Hillsboro storage field operated at a reduced peak day capacity level (100,000 Mcf/day instead of 125,000 Mcf/day) for a portion of the reconciliation period and for being unable to withdraw the full seasonal quantity (7.6 Bcf) of gas from the field during the winter months within the reconciliation period.

Q. Why do you believe the reduced peak day rating and reduced level of seasonal gas supply associated with the Hillsboro storage field is imprudent?

A. In my direct testimony, I indicated several reasons for finding the reductions in the Hillsboro storage field imprudent. These reasons were broken down into two main areas: (1) IP's actions that relate directly to the Hillsboro storage field and its inability to recognize its problems in a timely fashion and (2) IP's actions regarding its storage operations overall. My conclusion is that IP should have

identified and acted upon the reduced inventory and deliverability problems at the Hillsboro storage field several years prior to the reconciliation period (calendar year 2003) involved in the instant proceeding.

IP had several opportunities to discover the inventory shortfall at its Hillsboro storage field in a timely fashion, yet failed to do so. In particular, IP determined that its injection and withdrawal metering errors offset when it was already in possession of data that disputed that conclusion. Further, IP had data regarding the operation of the field that contradicted its assumption that the Hillsboro storage field was necessarily experiencing a “structural problem” versus an inventory shortfall.

My review also indicates several significant areas of concern regarding IP’s overall storage operations. These concerns include reduction in management oversight, reduction in capital spending, and the inability to identify problems or to conduct thorough root cause analyses. All of these areas contributed to the Company’s action of reducing the peak day and seasonal ratings for the Hillsboro storage field and increased the Company’s gas costs during the reconciliation period.

Calculation of Hillsboro Adjustment

Q. What level of additional cost did you determine in your direct testimony that IP incurred during the reconciliation period as a result of its imprudent actions involving its Hillsboro storage field?

A. I determined that IP incurred an additional cost of $825,008 associated with the reduction in peak day capability of the Hillsboro storage field and an additional cost of $6,805,520 associated with the reduction in the volume of gas that was available to withdraw during the winter season.

Q. Has your recommendation changed?

A. Yes. I continue to recommend that the Commission find the Company's actions concerning the Hillsboro storage field as imprudent, but the value of the additional cost associated with that imprudence has changed. My calculation regarding IP's additional cost associated with the reduction in peak day capacity, (an adjustment of $825,008), has not changed, but my calculation regarding IP's additional cost associated with the reduction in the volume of gas available for withdrawal from Hillsboro during the winter season has changed to $6,045,101 instead of $6,805,520.

Peak Day Calculation

Q. How did you determine that IP incurred $825,008 of additional cost during the reconciliation period associated with the reduction in peak day capacity of the Hillsboro storage field?

A. My direct testimony contains my analysis for the $825,008 value associated with the peak day capacity of the Hillsboro storage field. This value was determined by taking the volume of reduced peak day capacity associated with the Hillsboro storage field and multiplying that by the price that IP paid for pipeline capacity

and the gas supply reservation costs associated with a swing[1] contract for the months of January through October, 2003.

Q. Did the Company dispute this value?

A. Yes. Aside from disputing that its actions regarding the reduction in Hillsboro peak day and annual withdrawal capacity were imprudent, the Company offered an alternative calculation for this value if the Commission were to find that it was imprudent.

Q. What alternative calculation did the Company provide to your calculation?

A. Mr. Shipp indicated that if IP had to replace the 25,000 Mcf/day in reduced Hillsboro storage field capacity for the winter of 2002-2003, the Company would have likely purchased a winter-only term contract. Using that argument, he then indicated that if IP were to replace that capacity a more appropriate contract comparison to make would have been to use the rates from a recently terminated Dynegy contract and to just use those prices fro the three months the

contract was needed. Following Mr. Shipp's recommendation would result in a peak day adjustment value of $524,987.

Q. Why do you continue to support your value?

A. I have two reasons.

[1] A swing contract is one where the utility can nominate any volume for delivery between zero and the contract maximum.

First, Mr. Shipp has limited his review to the need for the capacity just in the 2002-2003 winter season. However, the Company reduced the peak day capacity of the Hillsboro storage field in 1999. Further, Mr. Shipp indicated the Company usually enters into contracts in multi-year agreements. Therefore, I believe it is more appropriate to look at when IP's transportation contracts ended to determine the length of time to assign costs.

Second, the rate I selected for this calculation is identical to the rates used by the Commission in Docket No. 04-0476 to evaluate the used and usefulness of the Hillsboro storage field. Therefore, the use of my transportation cost is consistent with the Commission's determination from that proceeding.

Seasonal Storage Adjustment

Q. Has your calculation of the seasonal storage adjustment value changed?

A. Yes, I am now accepting the calculation conducted by the Company.

Q. Why are you accepting the Company's calculation?

A. The Company's calculation corrected two minor errors contained within my calculation as well as took into account a ratio error that I had discovered after the filing of my direct testimony. Finally, the Company's value also adjusts the Hillsboro storage field withdrawal volumes to account for non-normal temperature conditions. I agree with all of these changes. Therefore, I am now recommending the seasonal storage adjustment value to equal $6,045,101.

Specific Hillsboro Items

Q. What conclusions did you reach regarding the timing for when the Company should have identified the inventory shortfall of its Hillsboro storage field inventory?

A. In my direct testimony, I determined that IP should have found the inventory shortfall at Hillsboro prior to the 2000 injection season, this would have allowed IP to inject replacement gas over the next four injection seasons (2000, 2001, 2002, 2003).

Q. What was your basis for this conclusion?

A. Based on my review of the material involving the Hillsboro storage field, I determined that the Company had several opportunities to detect the large inventory problem at the Hillsboro storage field, yet failed to do so. In support of that conclusion, I noted that:

1) The Company had in its procession data that indicated a large inventory shortfall in early 2000, but instead relied upon unsupported documentation to reach the conclusion that the injection and withdrawal meter errors offset each other;

2) The Company did not place a high priority on accurate measurement for withdrawals from the Hillsboro storage field immediately after the expansion of the Hillsboro storage field and failed to follow the guidelines from the American Gas Association in order to ensure accurate measurement of withdrawals from the field; and

3) The volume of gas being withdrawn from Hillsboro in the two winter seasons (1999/2000 and 2000/2001) was significant because the volume withdrawn was less than the amount IP had historically withdrawn from the Hillsboro storage field prior to its expansion.

Q. Has any other information become available since you filed your direct testimony that provides additional support for your opinion?

A. Yes. In Docket No. 04-0476, IP's most recent gas rate case, the Commission adopted Staff position that the Company's Hillsboro storage field was not 100% used and useful. Many of the arguments made in this section as well as the overall storage concern section (discussed later in this testimony) were also made in Docket No. 04-0476 to support the Staff's recommendation that the Hillsboro storage field be found less than 100% used and useful. In short, in another proceeding the Commission found in favor of the arguments Staff made regarding the Hillsboro storage field operation.

Hillsboro Metering Review

Q. What did you conclude regarding the Hillsboro meter review in your direct testimony?

A. I indicated that in December 1999, when the Company received the results of the Peterson Engineering Study, which found errors in both the injection and withdrawal metering at Hillsboro, the Company was in possession of information that could have led it to conclude that there was a large inventory shortfall at the Hillsboro storage field. Instead of reviewing or using that information, the Company instead used unsupportable assumptions to reach the determination that the injection and withdrawal metering errors offset each other. My review concluded that had IP conducted a thorough review of all information available to

it, it could have discovered the significant inventory loss at the Hillsboro field and would have been able to begin replacing the gas into the field in 2000.

Q. How did the Company respond to your review and conclusion?

A. The Company disagreed with my conclusion that it could have used the injection well chart data to determine there was an inventory shortfall and it also disagreed with the proposition that once the shortfall was discovered the Company would have immediately began to replace the inventory shortfall.

Specifically, Mr. Wayne G. Hood and Mr. Curtis D. Kemppainen ("Panel") indicated that even if the Company had used the well chart data to determine that a significant inventory shortfall had occurred, the Company could not have ruled out the reservoir/structural problems as a cause of the Hillsboro deliverability decline.

Q. Do you disagree with the Panel's statement?

A. Yes and no. I agree that had the Company found the inventory shortfall problem in a timely fashion the Company would have still had to consider potential problems with the reservoir or other structural problems. However, this does not mean that the Company could not have started replacing the inventory shortfall in 2000. Rather, in my opinion, the Company would have begun replacing the inventory shortfall while it was investigating whether there were other problems with the reservoir.

Q. Why do you believe the Company should have replaced the inventory while also investigating the potential for reservoir problems?

A. If the Company had found the inventory shortfall, then the Company could have reviewed its information and discovered that the information it had regarding the field also supported an inventory shortfall as the primary problem. For example, the Peterson Engineering Study indicates that the Company was aware of potential problems with its storage field metering for several years prior to the study being conducted. Specifically, the Peterson Study, page 7, indicates that:

> During the past three or four years, IPC had been monitoring and reviewing the measured injected and withdrawn gas volumes as part of a review of the gas storage reservoir behavior. Computed volumes from the plant metering and well metering have not been satisfactorily reconciled.

Obviously, the Company was aware that something was potentially wrong with its plant metering versus the well metering for several years. It appears from the Peterson Study, which was done in 1999, that the Company was aware of potential problems since either 1995 or 1996. However, the Company failed to fully act upon that information.

The recognition of a significant inventory shortfall due to metering error or errors was also consistent with the various physical observations at the facility. For example, the Panel also indicated that they reviewed the observation well water level and water production over time. This review indicated that the volume of gas in the reservoir was decreasing. In particular, the working gas volumes declined below the 3.1 Bcf pre-expansion level of the field (the significance of the

3.1 Bcf amount is discussed in more detail below). Obviously, as the field's inventory declined other physical field information showed that occurring. Again, had the Company found the inventory shortfall and reviewed all of the available data, this information would have supported the conclusion that the inventory shortfall was the cause of the problems at Hillsboro.

Another physical observation was described in the Company's revised response to Staff data request ENG 1.15.1-Schedule, from Docket No. 04-0476. In that response, the Company indicated that its neutron log surveys had observed the reservoir bubble thinning in July 1993. Bubble thinning could be caused by gas moving away from the structure or from an inventory shortfall.

In short, the Company had data that provided a very strong case that the inventory shortfall was the problem. I believe the Company, in order to determine which avenue was the problem at Hillsboro should have started replacing inventory in the field, in order to determine the impact the replacement inventory would have, while at the same time continuing its investigation into potential reservoir problems.

Hillsboro's Withdrawal Orifice Meters

Q. What did you conclude regarding Hillsboro's Orifice Meters in your direct testimony?

A. I indicated that my review indicated the Company did not place a high priority on accurate measurement for withdrawals from the Hillsboro storage field

immediately after the expansion of the Hillsboro storage field and failed to follow the minimum requirements from American Gas Association Guidelines in order to ensure accurate measurement of withdrawals from the field.

Q. How did the Company respond?

A. The Panel disagreed with my statement. In particular, the Panel indicated that the orifice meters were installed in accordance with the AGA standards set forth in AGA Report #3. Further, the Panel indicated that there are no Commission standards that apply to storage fields and the AGA Gas Measurement Manual's suggestions for inspection schedules are guidelines only. Finally, the Panel indicates that when the Hillsboro storage field was expanded, the Company added electronic instrumentation to measure and perform the computation of withdrawal volumes, which improved measurement accuracy and reduced processing manhours. The addition of the electronic instrumentation illustrated the Company's concern regarding accurate metering at the plant.

Q. How do you respond to the Panel's comments?

A. I agree with the Company's factual statements that there are not any specific Commission standards for storage field metering, that the AGA documentation are only guidelines, and that the Company added electronic instrumentation to the orifice metering when the Hillsboro storage field was expanded. However, none of these facts excuse the Company from ignoring the orifice plates that are an integral part of the orifice meter.

The Company indicated it followed AGA Report #3 Part 2 – Specification and Installation Requirements when it installed the orifice meters. However, the Company subsequently ignored the language contained within that document. This language noted that the orifice plate should be clean at all times. Further, all the AGA guidelines and the Commission standards for orifice metering include a requirement for inspecting the orifice plate (AGA – quarterly, Commission – at least annually). Yet, the Company failed to ever inspect the orifice plate from the time of installation until the time of the Peterson meter study, a period of over six years.

Q. In your opinion why are there not any specific mandatory requirements for checking the orifice plate in an orifice meter in a storage field?

A. It is understood in the industry that in order to maintain accurate metering, frequent checking of the orifice plates is necessary. That is why the AGA guidelines that recommend quarterly inspections of the orifice plate are just guidelines, it provides the flexibility to match the circumstances faced by the user. For example, the Hillsboro storage field orifice metering in question in the proceeding only operate when the storage field is withdrawing gas. This only occurs during the winter months of November through March or April. It would not make much sense to review the operation of those meters quarterly when the meter only operates four or five months out of the year.

At a minimum, the Company should have checked the meters in late October or early November, depending on the usual timing on the withdrawal season at the

Hillsboro storage field. In my opinion, another check on the orifice plate should also occur later in the withdrawal season. Depending on what the Company found historically during that second check (i.e. if no problems with plate found for five years running) then the Company could determine whether or not an annual orifice plate inspection was sufficient to ensure accurate measurement at the Hillsboro storage field. Conversely, if the Company had repeatedly found problems with the orifice plate on the second inspection, then more frequent inspections should be considered for those meters.

Q. What did the Peterson Study find regarding the orifice metering plates?

A. The Peterson Study, pages 19 and 20, indicated that the orifice plates for the North and South metering station orifice meters had not been pulled since they were installed (a period of six years). Further, when the plates were pulled the South Field primary orifice meter was very dirty and all other orifice plates were dirty to a lesser degree.

Q. What impact does a dirty plate have?

A. The Peterson study, page 20, indicated that dirty orifice plates can introduce a significant metering error and that the error could be positive or negative bias. The Peterson study referenced a Nova Corporation Study that found a 3.3% measurement loss when grease was deposited on the orifice plate.

Further, in the paper “Effect of Various Conditions in Primary Element on Orifice Meter Measurement Table” by Roland Rollins various impacts from potential

problems with orifice meters were investigated. This paper demonstrated that very large errors (up to 27.4%) could exist under tests conducted with dirty orifice plates. While, I do not know how dirty or what the exact impact the dirty orifice plates had on IP's metering at Hillsboro, the fact that the orifice plates were dirty and had not been checked for six years meant that those meters were not accurate and had the potential for very large measurement errors.

Q. Did the Panel have anything else to add?

A. Yes. The Panel indicated that the withdrawal metering error, caused by the incorrectly sized orifice plate, was mitigating a portion of the injection metering error, such that if the Company had found the metering error it may have resulted in increasing the deliverability problem.

Q. Do you agree with the Panel's statement?

A. Yes. I agree that under the assumption that all of the orifice metering errors caused an overstatement, the correction of those errors would have likely resulted in the Hillsboro storage field experiencing deliverability problems at an earlier date. I also believe this would have caused the Company, if it had conducted a thorough review, to discover the inventory problems at Hillsboro at an even earlier date. This in turn would have lead to an even earlier recovery of the peak day and annual deliverability problems at the field. Therefore, I do not see the relevance of the Company's argument.

Q. What other statements did the Panel make regarding the orifice metering errors?

A. The Panel indicated that even if the withdrawal metering error had been discovered earlier the Peterson Engineering metering audit would not have changed. The Panel indicated that when the Peterson Study was conducted the Company was attempting to identify all possible causes of the Hillsboro deliverability issues and since Peterson Engineering metering audit's purpose was to review all the metering and related processes at the Hillsboro storage field, finding or not finding the withdrawal error would not have impacted that review.

Q. How do you respond?

A. I agree the scope of the Peterson Study may not have changed. However, unlike the actual situation where IP made the assumption that the injection and withdrawal errors offset each other, if IP had maintained accurate measurement at the orifice meters used to measure the amount of gas withdrawn from the field, then IP would have had to take a closer look into an appropriate estimate for the injection shortfall. As noted above, IP had known for years that its well metering and plant metering was not corresponding to each other, therefore the discovery of the injection metering error should have caused the Company to take a more thorough look, including the use of the available well chart information, to determine the potential volume of gas that resulted from that error. Had this been done, the Company should have discovered the large inventory shortfall at the field.

Top Gas Volume

Q. What did you conclude regarding the Top Gas Volume in your direct testimony?

A. In my direct testimony, I noted that the volume of gas being withdrawn from Hillsboro in the two winter seasons (1999/2000 and 2000/2001) was significant because the volume withdrawn was less than the amount IP had historically withdrawn from the Hillsboro storage field prior to its expansion. Prior to the expansion of the Hillsboro storage field, the field was designed to withdraw 3.1[2] Bcf of gas.

Q. How did the Company respond?

A. The Panel indicated that the fact the Company could not withdraw more than 3.1 Bcf from the field was not indicative that the gas volume at the field had declined below 3.1 Bcf or that there was no structural problem or cause. In particular, the Company noted that had the field's withdrawal capability stabilized at the pre-expansion level that could have indicated that all of the expansion gas that was injected was lost off structure, but since it decline below 3.1 Bcf, the possible cause remained ambiguous.

Q. Do you agree with the Panel?

A. No. The Panel itself indicated that as a result of the expansion of the Hillsboro storage field the field went from having 5 injection/withdrawal ("I/W") wells to 14

[2] In my direct testimony, I incorrectly referenced 3.6 Bcf as the volume of gas the field was designed to withdraw.

I/W wells. Further, the total volume of gas in the field (sum of working gas and base gas) went from 10.2 Bcf to 21.7 Bcf.

At the pre-expansion field, IP expected to cycle 3.1 Bcf in a normal winter. However, in my opinion after the Company added 11.5 Bcf of total inventory and 9 I/W wells, the fields failure to cycle 3.1 Bcf, no matter what the temperatures experienced, is an indication that the field's operation has decline below its pre-expansion levels and was a large flag directing the Company to look into potential inventory shortfall problems. In essence, the Company missed another opportunity to identify a large inventory shortfall.

Conclusion

Q. What does the above information indicate to you?

A. My review of the above information as well as information discussed in the Company's testimony and my direct testimony indicates to me that the Company should have identified the inventory shortfall prior to the 2000 injection season. Further, IP should have also started replacing the inventory shortfall as soon as it was identified.

Furness #1 Well

Q. What did you conclude regarding the Company's drilling of the Furness #1 well in your direct testimony?

A. In my direct testimony, I noted that the Company drilled the Furness #1 well, in part, to verify the 3-D seismic survey analysis that it had received. However, this well, which was drilled in November 2000, invalidated the 3-D seismic survey assumptions that were provided to the Company. I also indicated that the Furness #1 well completely invalidated the structural variance theory; therefore; IP should have concluded that some other problem, (i.e. inventory) was causing the declines at Hillsboro.

Q. How did the Company respond to your testimony?

A. The Panel indicated that while the Furness No. 1 well did not locate the expected sub-structure to the Northeast of the Hillsboro storage field, the drilling of the well did not completely invalidate the possibility that a reservoir/structural problem existed at the field and did not invalidate the potential existence of a substructure elsewhere in the reservoir. Further, the Company indicated that it was not until the crosswell seismic survey was done in June 2001 that the Company could definitely determine that no sub-structure existed. Finally, the Company indicated that even post-June 2001, the Company could not eliminate the possibility of other reservoir or structural problems at the field.

Q. How do you respond?

A. I agree that the results of the Furness #1 well drilling did not necessarily eliminate the potential that other problems existed at the field. However, as discussed above, had the Company found the inventory shortfall problem in a timely fashion and also failed to find a sub-structure where the 3-D survey

indicated one existed, the Company would have even more reason to consider that the inventory shortfall was the primary problem at the field.

Q. Assuming the Commission determines that the appropriate time period for the Company to have started its replacement of inventory at Hillsboro began after the Furness #1 well was drilled, how would that impact your adjustment?

A. The only impact to the adjustment would be associated with the seasonal withdrawal quantity adjustment. As shown on ICC Staff Exhibit 4.0R, Schedule 4.04R, the seasonal adjustment would then equal $3,039,260, with a total adjustment (including peak day value) of $3,864,268.

Overall Storage Concerns

Q. Did you discuss any other information in your direct testimony for the Commission to consider that would support a prudence disallowance at the Hillsboro storage field?

A. Yes. I discussed several overall concerns regarding the manner that IP has operated its natural gas storage fields. I consider these concerns relevant to the discussion of the prudence of IP's actions, since IP has the responsibility to maintain the capabilities of its storage facilities. The information I discuss below led me to the conclusion that IP has failed to fulfill that responsibility.

Q. What were your concerns and or observations regarding the manner that IP has operated its storage fields in your direct testimony?

A. I had the following four concerns.

1. The Company has, in the past, taken the uncommon step of reducing the peak day capacity of both of its largest storage fields.

2. The Company has reduced the manpower levels associated with the oversight of its storage fields.

3. The Company has reduced its capital spending at the storage fields below historical levels.

4. The Company has shown the inability to properly identify the root cause of storage problems and therefore, is unable to correct those problems.

Reduction in Peak Day Capacity

Q. What did you state in your direct testimony regarding the Company reducing the capacity of its storage facilities?

A. I noted that during my 15 year tenure at the Commission, I can recall only one other utility that reduced the peak day capacity of one of its storage fields. However, on that occasion the basis for the reduced peak day capacity dealt with the purposeful reduction in inventory at the field. Therefore, the fact that IP had to reduce the ratings at its two largest storage fields is not a positive indication of its management or oversight over those facilities.

Q. How did the Company respond?

A. Mr. Hower indicated that he does not believe that a reduction in the peak day capacity of a storage field necessarily signifies a problem at the field. Mr. Hower indicated that deliverability decline has been reported to be the most common problem in the gas storage industry and that most gas storage operators experience a loss in deliverability over time.

Q. How do you respond?

A. I do not disagree with Mr. Hower's factual statements. However, I would point out that there is a difference in a decline in an individual storage I/W well deliverability and the overall deliverability of a storage field. For example, the Hillsboro storage field has a rated peak day capacity of 125,000 Mcf/day and operates with 14 I/W wells. I would expect the actual capacity of the 14 wells when the field's inventory is replenished to exceed the field's 125,000 Mcf/day peak day capacity rating because it is the on-site equipment (piping, separators, dehydration equipment, etc.) that dictates the maximum deliverability from the field. This would allow the expected decline in individual well performance without impacting the overall operation of the storage field until such a point and time that the Company determines it must take some remedial action on the well or wells.

In fact, the Company's response to Staff data request ENG 1.15 (from Docket No. 04-0476) indicated that two I/W wells were not productive during the 1995-1996 heating season. However, the Company did not reduce the peak day capacity rating at the field until 1999. Obviously, the combined output for the

remaining I/W wells at Hillsboro was sufficient to meet the 125,000 Mcf/day peak day value, which indicates a surplus capacity associated with the withdrawal capability of the field's I/W wells in total.

Obviously, many of the problems that have impacted IP's individual I/W wells at its various storage fields, including Hillsboro and Shanghai, have also been experienced by every other storage operator in the state. However, those operators have not been forced to reduce the overall deliverability of their field as has IP.

Q. Did the Company have any other response to your comments?

A. Yes. Mr. Shipp indicated that he did not believe it was appropriate to include the Company's decision to reduce the peak day capacity rating of its Shanghai storage field in this section. In particular, Mr. Shipp indicated that Staff had taken issue with that the reduced capacity at the Shanghai storage field in Docket No. 01-0701 and the Commission had not found the Company's actions associated with that field as imprudent.

Q. How do you respond to Mr. Shipp's comments?

A. I agree that Company's decision to reduce the peak day capacity of the Shanghai storage field was at issue in Docket No. 01-0701 and that the Commission did not agree with Staff's recommendation to find the Company's action imprudent. However, that does not change the fact that the Company had to reduce the peak day capacity rating on its two largest storage fields or that this is an

uncommon event subject to Commission review. There are factual differences between the adjustment advocated in regards to the Shanghai storage field in Docket No. 01-0701 and the adjustment offered in this docket. The context for the reductions of peak day capacity ratings of the two storage fields was different. For those reasons and given the additional detail discussed in the instant proceeding I consider it relevant information and an appropriate adjustment for this proceeding.

Manpower

Q. What conclusion did you reach in your direct testimony regarding the manpower levels at the Company's storage field?

A. My direct testimony indicated that the number of storage field operators has remained stable since 1991; however, the number of storage field supervisors was significantly reduced from three or four supervisors from 1991 through November of 1995 to two persons at the end of 1995 and finally dropping to one person at the beginning of 2000.

I also indicated that the problems at the fields (i.e. reductions in peak day capacity and poor root cause analyses) did not comport with IP's statement regarding its ability to operate its storage fields in safe, reliable and efficient manner with less management. If anything, the events suggest the opposite; that is, IP's reduction in oversight has caused it to operate its storage fields in a manner that is not safe, reliable and efficient.

Q. How did the Company respond?

A. The Company disagreed with my conclusion. Mr. Shipp's rebuttal testimony discussed the Company's adoption of a manpower plan in 1995 that instituted self-directed work team philosophy and that this was the reason why the number of supervisors was reduced. Mr. Shipp also provided information regarding the Company's storage field's safety records. In short, Mr. Shipp concluded that the Company had operated its storage fields in a manner that was safe, reliable, and efficient.

Q. How do you respond?

A. Whereas I do not dispute any of the factual information that Mr. Shipp has presented regarding the Company's storage operations safety records, the fact remains that the Company has experienced significant problems at its storage fields for some time. I continue to believe that the reduction in oversight at the storage fields played a role in this activity.

Capital Expenditures

Q. What did you conclude in your direct testimony regarding the Company's level of capital expenditures?

A. I concluded that a review of the Company's past expenditures amounts as well as documentation found in the due diligence reports supported my contention that the Company was unwilling to spend capital on its storage activities, which,

in turn, has contributed negatively to the Company's ability to maintain its storage operations.

Q. How did the Company respond?

A. Mr. Shipp's rebuttal testimony indicated that the fluctuation in capital expenditures at the storage fields is expected from year to year. Further, Mr. Shipp disputed my contention that the Company has not been proactive in identifying and correcting problems at all of its storage fields. In particular, Mr. Shipp indicated that the Company had initiated numerous projects to avoid potential problems while ensuring the maximum deliverability ratings at its storage fields. Further, Mr. Shipp indicated that the Company was extremely proactive in trying to identify and correct the root causes of the problems at the Hillsboro storage field.

Mr. Scott Glaeser also discussed the information contained in the due diligence report and indicated that the post-merger analysis by Ameren found no evidence that IP's capital spending at its storage fields was inadequate.

Q. How do you respond?

A. While I cannot dispute Mr. Shipp's statements, since I am not in possession of any detailed information regarding the Company's natural gas storage budgeting procedures that in and of itself does not detract from my conclusion. The fact remains that IP's capital expenditures levels have been reduced over time and IP has also experienced problems at its two largest storage fields. Mr. Shipp would

have the Commission believe that this is a coincidence. For the reasons discussed in my direct testimony; Staff does not believe it is a coincidence.

Regarding Mr. Glaeser's comments that the Company now finds no problems with the capital spending levels of the Company, I would note that the quote from the due diligence report that was contained my direct testimony was in a format that showed the statement was made by someone at IP. Given that, there appears to be some inconsistency in what was written versus what is now being concluded by Ameren. Therefore, I continue to support my original comments.

Identification of Problems

Q. What did you conclude in your direct testimony regarding the Company's ability to identify problems or conduct thorough root cause analyses at its storage fields?

A. I concluded that based on the past problems that I have seen at the Hillsboro storage field and the Company's investigation into those problems, the Company has not demonstrated the ability to conduct a thorough root cause analysis. In particular my direct testimony referred to two examples, the Hillsboro Incident and the Gas Dispatch Tracking.

Hillsboro Incident

Q. What was the Hillsboro Incident?

A. As I indicated in my direct testimony, at approximately 11:45 p.m. on December 16, 2000, a 50,000 gallon produced water tank (Tank T-402) at IP's Hillsboro storage field exploded, launching the tank approximately 275 feet and causing it to land on top of the storage field's regulator building causing extensive damage to all equipment contained within the building. Natural gas withdrawals from the Hillsboro storage field were stopped at this time and did not resume until December 21, 2000, at which time the field could provide only 65,000 MMBtu or 65 percent of its present rated capacity. The field was returned to its 100,000 Mcf/day rating on January 26, 2001.

Q. What did you conclude regarding the Hillsboro Incident?

A. I concluded that the Company had failed to properly investigate the root cause of the problems at Hillsboro. In particular, I noted that it took Staff's prompting five months after the incident for the Company to determine the produced water tank should have had sufficient relief capacity to vent pressurized gas once it entered the produced water tank from the separator. The inability to make the basic discovery is a reflection of the poor management oversight that IP has over the safe, reliable, and efficient operation of its storage fields.

Q. How did the Company respond to your comments?

A. The Panel testimony indicated that they disagreed with my assessment and noted that IP promptly hired Packer Engineering to conduct an investigation and that the Packer report concluded the failure of the emergency relief on the produced water tank caused the explosion.

The Panel noted the various corrective actions that were implemented as a result of the Packer Engineering Report. The Panel also indicated that some of the hypothetical assumptions contained within my direct were not necessarily supported by the physical plant findings; finally, the Panel indicated that is was not clear why I continued to discuss this topic.

Q. How do you respond to the Panel's statements?

A. I agree that IP promptly hired Packer Engineering for the purpose of determining the origin and cause of the explosion of the produced water tank. I also agree that IP implemented several corrective actions as a result of the Packer Engineering Report. However, I dispute that the Company was proactive in its root cause analysis.

Q. Why do you dispute the Panel's statement?

A. The Company only had Packer Engineering determine the cause of the produced water tank explosion. I have seen no indication that IP followed up with any review to determine what set of events allowed or caused the separator to release high pressure gas into the produced water tank in the first place. As I noted in my direct testimony, IP indicated "The contributing factors that resulted in the over-pressurization of Tank 402 are still being investigated. IP hasn't established a "position" on what caused the over-pressurization…"

I consider the factors that lead to the over-pressurization as the real root cause problem with the Hillsboro Incident; however, I have not seen any indication that

IP conducted any further studies regarding that topic. Therefore, I continue to support my original conclusion that IP's investigation into this event was lacking.

For example, if a car hits a tree a reasonable question to ask is why did that happen? If the response is that a brake failure caused the accident, in my opinion further questions would also need asked. For example, did the brakes fail due to improper maintenance, or were they past their useful life, or etc.

One of the purposed of the root cause analysis is to enable the Company to avoid similar accidents in the future. Coming up with only part of the reason for why something happened is not consistent with a thorough root cause analysis.

Q. The Panel also indicated that the hypothetical information provided in Staff data request responses was not necessarily consistent with the physical findings the facility, how do you respond?

A. While I do not dispute the fact that some liquids were found in the separator when the unit was inspected, this does not conclusively establish that the separator was not the source of the overpressure situation. If it were not, then why was this separator selected by the Company for inspection after the event. Further, the reason Staff sent the data requests requesting "hypothetical" information was the Company's failure to conduct any of its own analysis, which forced Staff to provide very specific examples in order to obtain any information about what could have happened at that incident.

Finally, I would also point out that if the separator in question was not the source, then that is even more reason why IP should investigate the events further. The original equipment prior to the Hillsboro Incident was designed to not explode, but it happened anyway. Without conducting a thorough review of what actually happened, IP cannot be assured that it took appropriate corrective actions.

Gas Dispatch Tracking

Q. What did you indicate in your direct testimony about IP's ability to track its gas deliveries?

A. I indicated that even though IP had significant measurement errors that primarily occurred during the injection months when gas usage is the lowest, its load forecasting and dispatch group failed to notice an extra Bcf of gas entering its system every year for 6 years. I noted that this was another example of IP's failure to adequately oversee its operations.

Q. How did the Company respond to your testimony?

A. Mr. Shipp indicated that the 1 Bcf of gas that I noted in my direct testimony would equate to about 4,000 Mcf per day assuming an equal injection pattern throughout the injection season. Mr. Shipp then indicated that during the shoulder months of April, May, October and November the purchase volume runs around 300,000 – 400,000 Mcf. Next, Mr. Shipp indicated that the transportation tariff in effect at that time these events occurred allowed transportation customers a daily variance of 50% between nominations and deliveries. Mr.

Shipp then indicated that a 4,000 Mcf error during that time period would not stand out as a significant error. Finally, he noted that IP maintains line pack on its system in the range of 0 – 10,000 Mcf, thus the amount of gas IP's dispatchers failed to notice was less then the line pack IP typically maintains on its system.

Q. How do you respond to Mr. Shipp's comments?

A. I believe that Mr. Shipp has over simplified the problem. In response to Staff data request ENG 1.50, Schedule ENG 1.50-1, IP provided the daily throughput volumes for IP's system for the period July 7, 2003 through July 13, 2003. Using this response, I reviewed the data for July 7, 2003. This data indicated that the system throughput for non-transportation customers was about 294,874 therms. Using the 4,000 Mcf/day value provided by Mr. Shipp, which is roughly equivalent to 40,000 therms/day, IP during the summer months was seeing a customer load forecasting error for its customers in excess of 13%. I would expect a utility would be aware of errors of that magnitude regarding its forecasting and dispatch. Further, as was discussed above, IP tracks its pipeline deliveries at many different locations, I would expect the delivery points that include deliveries for some of the storage fields provide more detailed information that would allow easier detection. Therefore, I continue to support my original conclusion.

Conclusion

Q. What does all of the above information regarding your concerns about IP's overall storage operations indicate to you?

A. The above information tells me IP's actions over several years contributed to the problems that IP encountered at the Hillsboro storage field. First, it is very uncommon for a utility to reduce the peak day capacity of a storage field, yet IP has reduced the peak day capacity of both of its largest storage fields, Shanghai in 2001 and Hillsboro in 1999.

Second, IP reduced the manpower levels associated with the oversight of its storage fields. After reducing its manpower levels, IP's ability to identify and act upon problems at its storage fields declined.

Third, the Company reduced its capital spending at the storage fields below historical levels. This may indicate that IP is being reactive rather than proactive when determining when to make upgrades or other improvements at its storage fields. A potential reason for a utility to behave in this fashion is that a utility will not earn a return on its investments for improvements or upgrades at its storage facilities until it requests and receives a natural gas rate increase from the Commission. However, increased gas supply costs resulting from this behavior, unless deemed imprudently incurred, are automatically passed through to customers through the PGA.

Finally, the events surrounding the Hillsboro incident and metering review discussed above indicate that the Company's poor oversight does not allow IP to properly identify and act upon the various problems facing its storage operations. IP's inability, or more accurately, unwillingness to operate its storage in a safe, reliable, and efficient manner also causes its ratepayers to incur additional costs. Therefore, IP should be held accountable for its actions, or lack thereof, and the reduction in peak day and seasonal withdrawal quantities from the Hillsboro storage field should be found imprudent in the instant reconciliation period.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

Summary of Adjustments

	Title	Adjustment
1	Unauthorized Gas Use Charges	$15,718
2	Hillsboro Storage Field Peak Day Value	$825,008
3	Hillsboro Storage Field Seasonal Value	$6,045,101
4	Total	$6,885,827

Row 1 = ICC Staff Exhibit 2.00R, page 5
Row 2 = ICC Staff Exhibit 2.00R, Schedule 2.02R, Row 6
Row 3 = IP Exhibit 2.6, Row 10
Row 4 = Row 1 + Row 2 + Row 3

Comparison of IP Heat Content Values

PEPL Gate Stations (1)	Assumed April 6 Values (2)	Actual April 3 Values (3)	% Var 4/3 vs. 4/6 (4)	Actual April 4 Values (5)	% Var 4/4 vs. 4/6 (6)	Actual April 5 Values (7)	% Var 4/5 vs. 4/6 (8)	Actual April 6 Values (9)	% Var 4/6 vs. 4/6 (10)
Clinton	0.940	1.007	7.1	1.007	7.1	1.009	7.3	1.008	7.2
Danville	1.070	1.067	-0.3	1.069	-0.1	1.077	0.7	1.075	0.5
Elmwood	1.020	1.007	-1.3	1.007	-1.3	1.009	-1.1	1.008	-1.2
Elwin	1.020	1.007	-1.3	1.012	-0.8	1.008	-1.2	1.007	-1.3
Jacksonville	1.000	1.002	0.2	1.010	1.0	1.006	0.6	0.996	-0.4
Mt. Auburn	0.970	1.007	3.8	1.007	3.8	1.009	4.0	1.008	3.9
Mt. Zion	1.000	1.007	0.7	1.012	1.2	1.008	0.8	1.007	0.7
Savoy	1.040	1.067	2.6	1.069	2.8	1.077	3.6	1.075	3.4
W. Brick	1.000	1.067	6.7	1.069	6.9	1.077	7.7	1.075	7.5
Hammond	1.030	1.011	-1.8	1.005	-2.4	1.030	0.0	1.045	1.5

Column 1 = Company's response to Staff data request ENG 2.118, Schedule 1
Column 2 = Company's response to Staff data request ENG 2.118, Schedule 1
Column 3 = Company's response to Staff data request ENG 2.119, Schedule 1
Column 4 = (Column 3 - Column 2) / Column 2 * 100
Column 5 = Company's response to Staff data request ENG 2.119, Schedule 1
Column 6 = (Column 5 - Column 2) / Column 2 * 100
Column 7 = Company's response to Staff data request ENG 2.119, Schedule 1
Column 8 = (Column 7 - Column 2) / Column 2 * 100
Column 9 = Company's response to Staff data request ENG 2.119, Schedule 1
Column 10 = (Column 9 - Column 2) / Column 2 * 100

Revised PEPL Delivery Amounts

PEPL Actual Measurement	April 6 Mcf	April 6 Dth	Heat Content
Telemetered	73,464	75,954	1.034
Non-Telemetered	3,184	3,373	1.059
Total	76,648	79,327	

Adjusted IP Measurement	April 6 Mcf	April 6 Dth
Telemetered	74,057	76,567
Non-Telemetered	2,365	2,505
Total	76,422	79,072

Revised IP Amount	79,072
Customer Transport	26,654
Company Receipt	52,418
Total Allowed	52,257
Unauthorized Gas	161

Source = Company responses to Staff data requests ENG 2.68 and 2.82

Storage Adjustment Alternative

		November	December	January	February	March
1	Full Cycle	1,462,340	1,573,853	1,781,569	1,541,108	1,224,741
2	Weather	0.737	0.934	1.189	1.009	0.758
3	Weather Cycle	1,077,745	1,469,979	2,118,286	1,554,978	928,354
4	Multiplier	0.79	0.79	0.57	0.57	0.57
5	Pro-rated Cycle	850,851	1,160,510	1,198,504	879,790	525,253
6	2003 Actual	0	300,095	800,524	594,255	334,392
7	Difference	850,851	860,415	397,980	285,535	190,861
8	Per Unit Savings	-0.108	0.919	1.788	3.232	3.699
9	Monthly Benefit	-$91,892	$790,721	$711,588	$922,850	$705,994
10	Total Seasonal Benefit	$3,039,260				
11	Peak Day Value	$825,008				
12	Storage Adjustment	$3,864,268				

Row 1 = Inventory IP cycled from Hillsboro in winter season of 1993-1994
Row 2 = Weather adjustment factor (From IP Exhibit 2.6)
Row 3 = Row 1 * Row 2
Row 4 = Percent of storage inventory assumed in field
Row 5 = Row 3 * Row 4
Row 6 = Per Company response to Staff data request ENG 2.5 Revised
Row 7 = Row 5 - Row 6
Row 8 = ICC Staff Exhibit 7.0R, Schedule 7.06R from Docket No. 04-0476
Row 9 = Row 7 * Row 8
Row 10 = Sum of Row 9
Row 11 = ICC Staff Exhibit 2.00R, Schedule 2.02R, Row 6
Row 12 = Row 10 + Row 11