BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE APPLICATION OF QUESTAR GAS COMPANY TO INCREASE DISTRIBUTION RATES AND CHARGES AND MAKE TARIFF MODIFICATIONS	))))))))	**DOCKET NO. 13-057-05** **DPU Exhibit 7.0 DIR**

COST OF SERVICE

DIRECT TESTIMONY OF LEE SMITH

ON BEHALF OF

THE UTAH DIVISION OF PUBLIC UTILITIES

October 30, 2013

I. INTRODUCTION

Q. What is your name and business address?

A. My name is Lee Smith. I am an independent consultant, working for La Capra Associates, One Washington Mall, Boston, MA 02108.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of the Utah Division of Public Utilities (Division).

Q. Please describe your background and experience.

A. I was Managing Consultant and Senior Economist at La Capra Associates for 28 years. Since September 2012, I have been an independent consultant working exclusively for La Capra Associates. I have prepared testimony on gas and electric rates, rate adjustors, cost allocation and other issues regarding more than 40 utilities in 21 states and before the Federal Energy Regulatory Commission. Prior to my employment at La Capra Associates, I was Director of Rates and Research, in charge of gas, electric, and water rates, at the Massachusetts Department of Public Utilities. Prior to that period, I taught economics at the college level. I assisted the Division in the last Questar Gas Company (the Company or Questar) rate case and participated in the subsequent work groups. I have testified previously in Utah in PacifiCorp rate proceedings. My resume is attached as DPU Exhibit 7.1 DIR.

Q. Please describe your educational background.

A. I have a bachelor's degree with honors in International Relations and Economics from Brown University. I have completed all requirements except the dissertation for a Ph.D. in economics from Tufts University.

Q. What is the purpose of your testimony?

A. I have been retained by the Division to review and analyze the cost allocation and rate design presented by the Company.

Q. Please summarize your testimony.

A. I have reviewed and analyzed all aspects of the Company's allocation of costs to customer classes and proposed class rates. I recommend some specific changes to cost allocation and apply those changes to the Company's model for the Division. I further comment on specific rate issues and offer rate designs to implement my recommendations.

II. COST ALLOCATION

Q. What issues are you addressing regarding cost allocation?

A. I will address the allocation of distribution costs through the Distribution Plant Factor Study ("DPFS") and the Demand/Throughput allocator, and the allocation of certain

Administrative and General accounts. I also comment on the Company's cost curve methodology, which is intended to link the allocated costs and the proposed rate design.

A. Distribution Plant Factor Analysis

Q. Please describe the Questar Distribution Plant Factor study.

A. Questar performs a detailed study of the meters, services, and low and intermediate pressure mains serving its customers to develop its allocation of most distribution plant costs. This allocator, based on plant costs, is used to allocate rate-base related costs, distribution operation and maintenance ("O&M") costs, and a portion of administrative and general ("A&G") costs. Questar utilized actual data for its largest customers and for a large stratified sample of smaller customers. The data is organized by meter size, so that the data can be averaged for each Basic Service Fee ("BSF") group and each class. For each meter examined, Questar analyzes the distribution plant—specifically the meters, regulators, service lines, and small diameter intermediate high pressure (IHP) mains—that serve each meter. The cost of this plant for each meter in the sample is used to calculate the average cost of various types of plant for each type of meter on Questar's system. These average costs are then multiplied by the number of meters of each type in each BSF group and customer class and then scaled to estimate allocation factors for different types of plant.[1]

Q. What issues did you find with the distribution plant factor study?

[1] QGC Exhibit 4.0, Direct Testimony of Austin C. Summers, pp. 2-3.

A. I found two problems with the study: one related to the allocation of service plant, and the other related to the allocation of small diameter mains.

Q. Please describe the issue related to the allocation of service plant.

A. As part of the distribution plant factor study, Questar analyzed what service lines are attached to each meter in its sample. The study then attributed 100% of the costs of these service lines to each customer in the sample despite the fact that some of these services serve more than one customer.[2] This would result in overestimating the costs of the service plant serving classes that more frequently have more than one customer attached to a service line.

Questar recalculated the service plant allocation by dividing the costs of the service line equally among the customers attached to each service.[3] The impact to the service plant allocator is shown in the table below.

TABLE 1

	Rate Class	GS	FS	IS	TS	FT1	NGV	Total	Source
A	Service Line	99.14%	0.24%	0.08%	0.46%	0.06%	0.02%	100%	OCS 5.01
B	Revised Service Line	99.09%	0.28%	0.08%	0.48%	0.05%	0.01%	100%	DPU 3.08
B-A	Difference	-0.04%	0.04%	0.00%	0.02%	-0.02%	0.00%	0%	

Although the impact to the allocator is small, it results in a small decrease in the allocation of service plant to the GS class and better reflects the allocation of costs to customers on service lines serving more than one customer.

[2] Questar Response to DPU 3.08 part c.
[3] Questar Response to DPU 3.08 part d and Attachment 3.08.

Q. Please describe the issue related to the allocation of small diameter mains.

A. Questar calculates the cost of 1000 ft. of main attached to each customer in the distribution plant factor study sample, which generally translates to 500 ft. of main in each direction. To estimate the cost of the main serving each customer, the Company originally indicated that the total cost of this main was divided by the number of service taps within 1000 feet of the meter.[4] However, Questar later clarified that it actually divided the length of main by the number of meters attached to the main.[5] Using the number of meters instead of the number of service taps better reflects actual costs to serve customers, as it accounts for service lines that serve more than one customer.

In its original work, however, Questar did not divide by the appropriate number of meters. When Questar performed the calculation, it assumed only one meter per service for the service lines connected to the customers in the distribution plant factor study sample.[6] Therefore, for customers with a shared service line, Questar divided by too few meters.

Questar revised the calculation to include all the meters in the divisor,[7] and the impact on the small diameter main allocator is shown in Table 2 below.

TABLE 2

	Rate Class	GS	FS	IS	TS	FT1	NGV	Total	Source
A	SD Main	99.701%	0.165%	0.033%	0.082%	0.001%	0.018%	100%	OCS 5.01
B	Revised SD Main	99.713%	0.167%	0.031%	0.078%	0.001%	0.010%	100%	DPU 3.08
B-A	Difference	0.012%	0.002%	-0.002%	-0.004%	0.000%	-0.007%	0%	

[4] QGC Exhibit 4.0, Direct Testimony of Austin C. Summers, lines 74-86.
[5] Questar Response to DPU 3.07 part a.
[6] Questar Response to DPU 12.01.
[7] Attachment to Questar Response to DPU 12.01.

As with the adjustment to the service plant allocator, the impact is small, but using the number of meters in the divisor instead of the number of service taps is better in line with cost causation, it is important that Questar divide by the appropriate number of meters.

Q. Please explain why accounting for more than one customer on a service line decreases service plant costs allocated to the GS class but increases small diameter main costs allocated to the GS class.

A. This counterintuitive result can be explained by the cost of the mains. For customers with shared service lines, increasing the number of meters in the divisor decreases the cost of main per customer. However for the TS, IS, and NGV classes, these larger customers are served by larger, more expensive main than smaller customers. Therefore, the total reduction in small diameter main cost per customer is greater for the larger customers than for the smaller customers, leading to the increase in allocation factors for the GS and FS classes, and the decreases for the other classes. The same is not true for service lines, which have more uniform costs across classes and BSF groups.

B. Classification and Allocation of Feeder Mains

Q. How does Questar allocate its feeder mains?

A. The first step in the allocation of this plant is the classification as either demand or energy related. The 60% of these mains that is classified as demand related is allocated on the

basis of estimated firm class design day peak loads, while the remaining 40% is allocated on the basis of throughput.

Q. Does Questar present any analysis to demonstrate that this 60/40 split between peak and energy reflects cost causation?

A. No, it does not. It explains its use of this split as follows:

"These facilities fulfill a two-part function. They are designed to meet the peak requirements of firm customers, and they are used 365 days of the year to move gas to all customers, both firm and interruptible. The allocation of these costs does not lend itself to a single definitive solution. On the one hand it has been argued that firm customers should pay the entire cost in recognition of the underlying design demand function of these facilities. On the other hand it has been argued that customers should have responsibility for these facilities in proportion to actual use of the facilities. It is generally agreed that it would be unreasonable to allocate 100% on Peak Responsibility, just as it would be unreasonable to allocate 100% on Commodity Throughput.

"The cost-of-service task force that resulted from the 2002 general rate case looked at studies based on alternative weightings between peak and commodity of 75/25, 60/40, and 50/50. No consensus was reached as to the most appropriate weighting. However, the 60/40 weighting more closely matches the results of the COS that the Company has proposed over time."[8]

In other words, there appears to be no theoretical justification for the 60/40 split classifying feeder mains both as demand and as energy related; rather the only justification for the 60/40 split is its use over time, and changing this split would change cost allocation.

Q. Please comment on this justification.

[8] Questar Response to DPU 3.25.

A. The Company's approach seems almost backwards. A primary goal of cost allocation should be to reflect cost causation, and cost allocation should not be driven primarily by some desired result. Granted, parties often moderate the results of cost allocation studies to reflect other ratemaking principles, for example, gradualism. However, if the results of cost allocation indicate that some classes are paying less than cost and others more, the degree of modification is basically a policy and rate design question

Q. What is the question that needs to be answered to estimate the impact of demand and of throughput on cost causation?

A. The question is how much more the utility must spend in order to meet peak demand than if it delivered only average demand all year. It is difficult to examine the actual system to answer this question, because the system has been constructed to serve both purposes. In addition, some mains would have to be larger than others even to meet average load because they are serving more customers. I believe the best approach is a theoretical analysis, based on the relative cost of different sizes of main.

Q. Have you made an estimate of the effect of demand on cost causation?

A. I have attempted to do that. The starting point is the relationship between average and peak load. The design peak load is 3.37 times the average firm load,[9] so I have assumed that to meet that peak load it is necessary to install pipe that can transport 3.37 times the amount that would be adequate to serve average load. Discovery responses have

[9] QGC Exhibit 4.5. Since, the IS class has no peak day responsibility, the average demand from this class was excluded from consideration.

provided data on the cost of installing different size pipe. I considered using pipe from 6" to 12" in diameter as the base for this comparison. To estimate how much more has to be spent to deliver peak load, I estimated the cost of a theoretical pipe size that would deliver 3.37 times the amount of gas delivered by the base size pipe.[10] (Using actual increments of pipe size would have delivered even larger amounts of gas than needed to deliver peak load.) The incremental cost ratios vary somewhat depending on which size pipe is used as the base. I calculated the ratios with the base ranging from 6" pipe up to 12". Table 3 below shows the incremental cost and demand/energy ratio for pipe from 6" to 12".

TABLE 3

Baseline Pipe Diameter (in)	Larger Pipe Diameter (in)	Baseline Installation Cost ($/ft)	Larger Pipe Installation Cost ($/ft)	Throughput Allocation %	Demand Allocation %
6	11.01	$161	$232	69%	31%
8	14.69	$187	$304	61%	39%
10	18.36	$216	$397	54%	46%
12	22.03	$250	$519	48%	52%

It appears that the Company is currently installing more 8" pipe than 10", so I could have used 8" or even 6" as the base. However, I chose to use 10" pipe as the base in order to be conservative. This produced the result that spending 46% more than the cost of the base will be sufficient to transport peak load – i.e. the demand portion of the allocator should be 46%. This result, shown calculated in DPU Exh. DIR 7.2, is considerably lower than the 60% that is currently in the Company's model.

[10] The theoretical pipe cost is estimated using a trendline provided by Questar in response to DPU 3.29.

Q. Have you reflected this alternative demand proportion in the Feeder Main allocation?

A. Yes, I have modified the model input page to reflect this change, which reallocates feeder mains, associated expenses, and some nonrated revenues.

C. Other Minor Allocation Issues

Q. Have you identified any other problems with cost allocation?

A. Yes. I believe the allocation of certain accounts could be improved, specifically the allocation of Office Supplies and Expenses, Account 921, and Employee Pensions and Benefits, Account 926.

Q. What is the problem with the allocation of Accounts 921 and 926?

Questar allocates Office Supplies and Expenses on the basis of allocated plant. When asked for justification, Questar responded stating: "These costs should follow the labor that incurs with them. Labor costs are allocated based on gross plant. Labor is treated this way because the basic building block of the cost of service study is the distribution plant factor study. This study calculates the meter, service line, and small diameter main costs for each customer on the system. Because the distribution plant factor study calculates costs at such a detailed level, gross plant is often used as the allocator for general and administrative type costs."[11]

[11] Questar Response to DPU 11.4.

First, I note that an internal allocator based on gross plant will reflect plant other than that reflected in the DPF study, but that some cost components have very little plant (e.g. Customer Assistance). If plant were the primary driver, this would be appropriate. Second, I agree that Office Supplies and Expenses are closely related to labor costs, and that labor costs will be the primary driver of Office Supplies and Expenses. However, plant costs are not a very good proxy for labor costs, as this will not reflect labor engaged in customer assistance and sales. While most distribution O&M accounts are allocated based on plant, distribution O&M is only 64% of the sum of O&M in the distribution, customer accounts, and sales cost categories.

The same reasoning applies to Employee Pensions and Benefits, Account 926. It is driven by labor costs and should be allocated on the basis of an allocator that is closely related to labor.

Q. How do you recommend that these accounts, 921 and 926, be allocated?

A. I recommend allocating these accounts on the basis of an indirect allocator, derived from the sum of O&M expenses in distribution, customer accounts, and sales expenses, which have been directly allocated. I have calculated this allocator based on these expense accounts, and label the allocator Direct Expense.

Q. What is the impact of the changes to the allocators described above?

A. The two tables below show the impact to the net cost of service collected in rates and the percent increases to each rate class. Note the allocation adjustments were applied after

the division adjustments to revenue requirement, and so the tables separately show the impacts of these changes. There are more costs allocated to the high energy use classes, particularly to TS and IS, because of the shift in the feeder main allocator.

TABLE 4

Summary of Net Cost of Service Collected in Rates ($'000s)

		Allocations to Rate Classes					
	Utah Jurisdiction DNG Related	GS	FS	IS	TS	FT-1	NGV
Questar Original Filing	$313,651	$285,731	$3,816	$1,172	$16,617	$2,128	$4,186
+ Total Division Adjustments	($15,256)	($13,416)	($229)	($66)	($1,004)	($138)	($403)
After Division Adjustments	**$298,395**	**$272,316**	**$3,587**	**$1,106**	**$15,613**	**$1,990**	**$3,783**
+ Total Allocation Adjustments	$0	($2,949)	($82)	$225	$1,816	$174	$815
After All Allocation Adjustments	**$298,395**	**$269,367**	**$3,505**	**$1,331**	**$17,429**	**$2,164**	**$4,598**

TABLE 5

Summary of Percentage Increases to Each Rate Class[12]

		Allocations to Rate Classes					
	Utah Jurisdiction DNG Related	GS	FS	IS	TS	FT-1	NGV
Questar Original Filing	6.54%	4.50%	4.14%	39.02%	48.20%	33.46%	14.93%
After Division Adjustments	1.36%	-0.41%	-2.11%	31.18%	39.25%	24.78%	3.88%
After All Allocation Adjustments	1.36%	-1.45%	-4.44%	56.45%	54.31%	35.43%	26.22%

The Division Adjustments reflect Exhibit DPU 1.1. The full result of the allocation changes that I have described above are contained in revisions to the Company's model, labeled DPU 7.5 Workpaper.

[12] Includes COS adjustment. These percentage changes reflect change in base rates and zeroing out of feeder tracker

D. Cost Curve Methodology

Q. Please describe the "Cost Curves" produced by Questar.

A. Questar estimates Cost Curves for each class from various allocated cost data, which purports to show the exact cost of serving different size customers (expressed in $ per Dtherm). It graphs these cost curves and overlays the average revenue per Dtherm produced by the different customer sizes on the graphs.

Q. What is the relevance of the Cost Curves?

A. The cost curves are used by Questar as evidence of the relationship between costs and rates, to justify its proposed rate design, and as part of the reason that it is not considering revising its very large and diverse GS class.

Q. Do you think the cost curves depict costs as accurately as Questar seems to claim?

A. No. The cost curves assume that some important customer characteristics within classes do not vary with the size or type of the customer. The data reveals that such characteristics as load factor do vary. Although the characteristics may not vary by much, we do not know what the total impact on costs may be of these variances. While the cost curves should have some value, I believe they should be used with caution.

III. RATE ISSUES

A. BSF GROUPINGS

Q. Please describe the proposed change in the BSF groupings.

A. The Company has proposed to change the meter sizes that are included in four BSF groups. The purpose is to better group meter sizes with similar costs. This was based on analysis that began in the last rate case. The result is that the BSF 1 and BSF 2 categories have both expanded to include slightly larger meters than were previously in this category, while category 3 will have a smaller range of meter sizes.

Q. Do you support this change?

A. Yes. Modifying the groupings so that similar cost meters are together will improve the accuracy of the BSF calculation and should improve cost allocation. QGC Exh. 4.8 p. 2 shows that there is a considerable range of costs within BSF 4, with higher than average costs for the customers with the larger meters. However, the cost curves for the FS rate suggest that the largest customers are not underpaying, so the difference in basic costs appears to be balanced by other cost differences with the BSF group (at least for FS customers).

B. OTHER CUSTOMER CATEGORIZATION ISSUES

Q. Do you have any recommendations regarding how customers are categorized?

A. Yes. I believe that Questar should analyze and examine carefully cost and customer differences between residential and commercial customers who are currently all included

in the GS class. The GS class contains a very wide range of types and sizes of customers. The DPFS identifies customers that are coded as residential and commercial, but the Company has not computed DPF costs by these categories. It is also not clear that all multifamily housing units were counted as residential and appropriately costed. Although Questar claims that the usage patterns of residential and commercial customers are similar, they are not identical. Questar's response to DPU 3.10 shows that residential and commercial customers in the GS class have different load factors. The Company's response to DPU 3.3 states that, "The vast majority of customers on the GS class use natural gas for both space and water heat. This leads to very similar load profiles."

The Company in response to DPU 3.3 indicates that the GS class has not been split because although the issue has been discussed since 2002, the parties have not agreed on the issue. Further, it states that the GS cost curve shows that the GS rate design can "...collect customer related costs from customers with varying use levels."

Q. Has the Company demonstrated that its GS class rate design can price appropriately to all of the different types of customers in the class?

A. No, it has not. It has argued that variations in characteristics are not very large, but it has not put all of the data together and examined whether these differences together have an impact. One issue, for instance, is that large multifamily customers may cost less to serve than commercial customers of the same size because the multifamily units have fewer services per meter. This data is now, I believe, reflected in the DPFS, but because

of the lack of granularity of customer groups, it will be averaged in with all customers with the same size meter.

One result of the size of the BSF class is that flat distribution rates could not charge costs appropriately to very large and very small customers. Thus the size of the rate class is dictating rate design to a large extent.

Q. Are you proposing that the Company should split the GS class into residential and commercial customers or even into more classes.

A. No. I am recommending that in its next rate filing the Company should present an analysis of the costs of serving different groups, reflecting not only differences in distribution plant costs but also in differences in customer usage shapes. This would enable the parties to determine on a factual basis the full panoply of differences and consider whether there might be better ways to reflect these differences in rates.

Most utilities that I am familiar with not only separate residential and commercial customers, but also separate commercial customers by size and sometimes distinguish between residential heating and non-heating customers. This disaggregation means that cost allocation reflects all customer characteristics.

C. BSF COST AND FEES

Q. How has the Company calculated the Basic Service costs?

A. The calculation is intended to reflect the minimum cost necessary to serve average customers in each BSF group, and is the basis for the monthly Basic Service Fee

("BSF"). The Company uses the information from its Distribution Plant Factor Study to estimate the gross investment for meters, service lines, and small mains, for each BSF group and for each class. It then reduces the investment in service line cost to 85% of the total, and reduces the mains cost to 10% of the total. The service plant amount for each category is reduced to 85% "because not all customers have their own service line" (QGC Exh. 4.0 p. 14 lines 369-370), so that charging a full service line cost for each meter would overstate the average cost of the service per meter. The mains calculation is reduced to 10% of the total. There is no analytical basis for this 10% inclusion. Mr. Summers justifies this on the grounds that mains are sized to serve more than individual customers.[13] He does not explain why the BSF fee should be partially determined by mains cost per customer when mains are not allocated on the number of customers.

The resulting plant cost per BSF group is used to calculate the return on the net investment, income tax on the return, depreciation, and property tax. Other included costs include estimated billing cost per meter and an estimate of O&M expenses associated with the calculated plant cost per customer in each BSF category.

Q. How does the Company propose to modify the current Basic Service Fees?

A. The Company proposes to move the Basic Service Fee for the four BSF categories close to its computed basic service fee costs. It calculates the full cost according to its formulation and then rounds this result. The fees increase for all groups except for

[13] QGC Exh. 4.0 p.14

category two. The proposed changes were summarized in QGC Exhibit 4.12, copied below.

TABLE 6

	Current		Proposed	
BSF Category	Meter Capacity	BSF Amount	Meter Capacity	BSF Amount
I	0 - 700	$5.00	0 – 899	$8.00
II	701 - 2,000	$21.00	900 - 6,999	$19.50
III	2,001 - 30,000	$55.00	7,000 - 23,999	$67.00
IV	30,000 +	$244.00	24,000 +	$434.00

Q. Did you find any problems with Questar's calculation of the BSF cost?

A. Yes, I believe that the amount of service plant and main plant that it is using is incorrect. Also, the assumptions about O&M expenses are based on different time periods and need to be corrected.

Q. Please explain these problems and how you corrected them.

A. I agree with the Company that there is a need to reduce the cost of services per customer, since some services are shared among meters. However, the adjustment should reflect the meter/service ratios for each BSF category, which can be determined from the DPFS. These ratios, calculated from DR DPU 12.01, are .765, .863, .825, and .912, for BSF categories 1 to 4. There is no reason to use a blanket adjustment of .85 when the data provides more accurate ratios. I recommend not including any portion of mains cost in the BSF calculation. Mains are not allocated on numbers of customers. They are constructed to move gas, including peak loads. More customers will usually be associated with more load, but it is the projected load that is the cost driver. Accordingly, I eliminated any mains gross investment from the BSF cost calculation.

Since mains plant was excluded, I also modified the O&M expense to plant ratio to reflect elimination of mains related expenses and mains plant.

In addition, I have corrected the calculation of the O&M expense factor which is used to estimate how much O&M expense is related to the plant included in the BSF calculation. The Company calculated this factor by dividing forecasted expense (from this case) by plant values (gross and net) from December 2008. This creates a mismatch between the period in which the plant and the expense is calculated. It overstates the amount of associated expense, since plant costs have increased since 2008. I utilized the net plant by account numbers from this case to create an O&M factor that is applied to net plant. I also reduced the expense in account 874, Mains & Service Expense, to reflect the ratio of service plant to total service and main plant. This recalculation of BSF costs is shown in DPU Exhibit 7.3 DIR.

Q. Does this change the computed BSF costs?

Q. Yes. The cost decreases slightly for each group except BSF 3. I have computed the full cost BSF charges as follows:

TABLE 7

BSF 1	BSF 2	BSF 3	BSF 4
$6.75	**$17.00**	**$59.00**	**$386.00**

The Company rounded its calculated cost for BSF 1 and BSF 2 to the nearest $.50. I rounded the BSF 1 charge to the nearest $0.25, since the $0.50 is a very large percentage of the BSF 1 fee.

D. Transportation Service ("TS") Rate Class and Rate Design

Q. Please describe the Company's proposed change in rate design for the TS class

A. The Company proposes to increase rates for the TS class, so that it is not subsidized by other classes. The total revenue requirement for the TS class has increased due to the increased Company costs and due to growth in the number of small user customers. It also proposes to change the block sizes and increase the charges for each block.

Table 8 below provides a summary comparison of the proposed block sizes and rates to the current TS tariff (combining two tables presented in QGC Exhibit 3.0, Mendenhall Direct Testimony, pp. 23 and 25.)

TABLE 8

Block Size	Block 1 Usage/Month	Block 2 Usage/Month	Block 3 Usage/Month	Block 4 Usage/Month
Current	20,000	Next 80,000	Next 400,000	Over 500,000
Proposed	200	Next 1,800	Next 98,000	Over 100,000

Rates	Block 1	Block 2	Block 3	Block 4
Current	$0.21409	$0.16056	$0.12845	$0.02803
Proposed	$1.01070	$0.66070	$0.27020	$0.10000

In absolute terms, the largest increase in rates is in the first Block, where the rate more than quadruples. These rates are designed to recover an increased total cost to serve the TS class of $16,604,010. (Mendenhall, QGC Exhibit 3.0, p. 24).

Q. What reason does the Company give for changing the existing TS rate design?

A. The Company experienced a large increase in the number of customers receiving service under the TS rate schedule between 2010 and 2012, with the majority of these new TS customers using less than 24,000 Dths per year. The change in number of TS customers

by annual usage is summarized in the table below, taken from Mr. Mendenhall's Direct Testimony, QGC Exhibit 3.0, p. 23.

TABLE 9

	2010	2011	2012	Projected 2013	Projected 2014
Number of Customers	151	176	240	346	346
Customers using under 2,400/Year	1	5	14	17	17
Customers using under 24,000/Year	30	50	110	199	199
Customers using over 24,000/Year	121	126	130	147	147
Average Dth per customer	228,600	188,748	128,257	103,176	104,577

The implications for the TS rate structure are significant because the block sizes and rates currently in effect were designed when the vast majority of TS customers used more than 24,000 Dths per year. The existing TS rate design has first and second blocks sized at 20,000 Dths and 80,000 Dths, respectively. Prior to 2011, the average annual use per TS customer was 228,600 Dths, which means that the Company relied upon collecting more of the overall cost to serve this class from usage under Block 3 and Block 4.

Q. What problem does this shift in the makeup of the TS rate class cause for revenue recovery?

A. There are two problems caused by this shift in the makeup of the TS rate class. First, the existing rate design allowed the Company to recover the total costs when the majority of customers were large users. In other words, the first two blocks' usage and rates were set at a level that would recover only a portion of the cost to serve those usage levels with recovery of the remaining costs billed under Blocks 3 and 4. Now that the

makeup of the TS class has changed such that 50% of TS customers use less than 24,000 Dth per year, most customers' usage does not reach the threshold levels set for these last two blocks. In fact, for the smallest customers most of their usage is captured under Block 1 and the remainder under Block 2, so the Company is unable to collect any costs for these smaller customers under Block 3 and Block 4.

Second, the table above shows that the Company expects this trend toward lower average use per customer to continue through 2014 with the addition of even more customers using less than 24,000 Dths per year, further exacerbating the under-recovery of costs to serve the TS rate class. The table shows that the total number of customers served under the TS rate class is expected to grow by nearly 50% through 2013/2014, at which time customers using less than 24,000 Dths per year will account for more than half of total customers, and 89 out of 106 of all new TS customers. By 2013/2014 average annual Dth per customer is expected to be about 104,000 Dths, less than half of what it was in 2010.

Q. How does the Company propose to remedy the under recovery of costs for the TS rate class?

A. The Company's proposed rate design decreases the block sizes for the first two blocks while simultaneously requiring higher rates for those blocks. This is intended to ensure that all the costs to serve smaller customers are collected from these customers.

Q. Do you have any comments on the proposed change in rates for the TS rate class?

A. My first concern with this change in rate design is the bill impact for TS customers. The Company presented in QGC Exhibit 3.33 a bill comparison including the cost of gas supply. On average, the Company expects the total TS class will experience a 4% increase in their annual gas bill. For the smaller customers using 100,000 Dth per year or less the total bill impact would be 7% and for the smallest customers using 30,000 Dth/year or less the average bill impact would be 13%. When commodity costs are removed, the bill impacts appear large. For example, when asked to provide a revised QGC Exhibit 3.33 excluding commodity costs, the results showed that smaller customers — those using less than 30,000 Dths per year — will receive an average distribution bill impact of 63%. (See response to DPU 15.01)

However, while this revised exhibit is informative, it is more appropriate to look at the bill impact on the total bill, for two reasons. First, the Company states that the majority of new small user TS customers migrated from the GS and FS rate classes (Mendenhall, QGC Exhibit 3.0, p. 25 at 630), so a comparison including commodity costs is a more accurate reflection of the bill impact for these customers. Second, the other cost components shown on the bill, including the monthly administrative charge, are so large that they dominate the bill, so even the four-fold increase in the first block rate from $0.21409 to $1.0107 does not have a very large impact on the total bill.

My other concern is with the way the Company's model calculates the individual block rates to achieve the desired rate design. Mr. Mendenhall's aim of achieving parity with the cost under the FS rate structure is predicated upon the revised cost to serve the TS class. However, the model-derived rates are based on total revenue requirement. In

the event that the revenue requirement changes, the FS rate will be affected, with a follow-through impact on the TS rate design.

Q. Do you have any comments regarding the proposed TS rate schedule?

A. Yes, I have reviewed the general terms and conditions of the TS rate schedule and find that under the Balancing provisions it offers "nominating parties" the opportunity to trade imbalances prior to the Company determining whether penalties for over- or under- takes should be applied. Noting that the increase in small usage customers dominates the growth in the TS class, I asked through discovery for information on the frequency with which imbalance penalties were imposed for both total customers and small usage customers. The response, provided in the requested table format, is shown below and yields an interesting result, which is that the number of small usage customers do not account for the majority of customers incurring an imbalance that remains uncured and therefore subject to penalty.

TABLE 10
D.P.U. 20.07

		2009	2010	2011	2012	2013 YTD if available
All TS Customers	No. of Customers	1	0	11	24	29
	Total Penalty $	585	0	44,036	18,379	95,795
TS Customers Using < 25,000 Dth/yr	No. of Customers	1	0	1	8	12
	Total Penalty $	585	0	699	7,032	4,779

I subsequently asked how many small user TS customers had daily imbalances outside the imbalance tolerance of +/- 5% that were resolved by aggregating or exchanging these imbalances at the direction of a "nominating party" acting as an "agent"

for the end-user – i.e., a marketer who has an agreement to manage the gas supply requirements of multiple end-users. The Company's response to this question is shown below:

> "a. The following are the number of customers with annual usage of less than 25,000 Dth that had daily imbalances outside of the daily imbalance tolerance of +/- 5%, that were resolved through exchange or aggregation of imbalances:
>
> 2011 15 customers
> 2012 49 customers
>
> b. All of the customers that had the monthly imbalances referenced in part (a) above were resolved by the customers' agents."

The response to DPU 20.08 yields an interesting observation when compared to the response to DPU 20.07 above, which is that the addition of many new small end-usage customers does not necessarily increase the burden to the Company with respect to managing their daily usage requirements and, further, those end-users whose requirements are communicated to the Company by an agent may actually reduce the gas usage management requirement. Therefore, the Company should have this observation in mind when designing its proposed TS rate to be sure not to build into the rate end-user incentives to end users remain on the FS rate that are not cost justified. Ideally the rate design should be structured so that the Company is indifferent whether the small usage chooses to be on the FS or the TS rate.

Q. Please describe the Company's proposed change to the FT-1 rate schedule

A. As Mr. Summers states in his direct testimony on p. 16, the original intent of the FT-1 rate schedule was to offer a load retention rate to those large volume users whose

facilities were located in close proximity to interstate pipelines. Mr. Summers' assumption is that a large volume customer who can construct and operate its own direct connection to the interstate pipeline for less than the cost of taking service from the local distribution system qualifies as a by-pass risk. The current criteria call for an annual usage threshold of at least 100,000 Dth per year and a location within five miles of the interstate pipeline. (Summers Direct Testimony, QGC Exhibit 4.0, pp 16-17.)

To evaluate whether the existing criteria are too liberal, Mr. Summers created a matrix of updated project costs for different pipe diameters and facilities costs correlated to distance from an interstate pipeline. (Summers QGC Exhibit 4.10.) The matrix produces a breakeven point where the customer would be indifferent to building a direct connect versus remaining on the local distribution system that shows the minimum threshold should be 600,000 Dth per year, and increase by an additional 225,000 Dth for every mile away from the interstate pipeline.

Q. Do you have any concern with the proposed change in FT-1 qualifications?

A. No, I do not. In my opinion, customers are best served when the FT-1 rate design for load retention is designed to provide a benefit to all customers while minimizing the stranded costs to be recovered from other customers. A rate design that would allow customers to qualify for this rate at the existing lower annual usage threshold, even though they would not find it economical to by-pass, risks shifting more stranded costs than necessary to other rate classes. Therefore, the effort by the Company to update the costs and revise the criteria is to be commended. The result of applying the proposed

criteria will result in six of nine customers currently on the FT-1 rate being disqualified and thus moved to the TS rate schedule. When compared to the proposed TS rate design, these six customers will experience an increase of 2.52% in their total bill, including commodity costs, which is close to the increase projected for existing large use TS customers, as shown in QGC Exhibit 3.33 Bill Comparison.

Further, the Company has proposed that the FT-1 rate include a demand charge because the overall rate is designed to collect less than full cost of service. The addition of a demand charge will 1) offer consistency with the TS rate schedule, and 2) ensure that a minimum amount of costs are recovered in years when an otherwise qualified customer's process requirements fluctuate to the downside.

Q. Has the Company proposed changes to the IS rate?

A. Yes. The Company has proposed, similar to the changes proposed for the TS rate class, to increase the rate charged in the first block and significantly lower the rates charged in the remaining two IS blocks. Unlike the TS rate changes, however, the Company has kept the block sizes the same. As can be seen from the table below, taken from Mr. Mendenhall's Direct Testimony at the top of page 27, the proposed rate change more than doubles the rate for the first block, while reducing the rate for Block 2 by more than half and decreasing the rate for Block 3 by about 80%:

TABLE 11

	First 2,000	Next 18,000	All Over 20,000
Current	$0.25120	$0.23110	$0.21262
Proposed	$0.56740	$0.10330	$0.04150

Q. What is the bill impact of these proposed changes to the IS rate?

A. Based on Exhibit 3.36 IS Bill Comparison, cited in Mr. Mendenhall's direct testimony on p. 27 at 680-682, it appears that, while these appear to be significant rate changes, the average IS customer will receive a bill increase of only 3%. The same exhibit shows that the highest individual increase is expected to be no more than 14%, for a customer taking between 4,000 and 25,000 Dths per year, while this usage category as a whole will receive an average increase of 8%. Exhibit 3.34 to Mr. Mendenhall's direct testimony presents the IS Cost Study for 82 customers receiving service under the IS rate schedule, which shows that most customers use less than 80,000 Dths per year. Assuming most of these customers have a largely ratable demand to meet process requirements for at least the part of the year, their usage is unlikely to fall into the third block where they can benefit from the revised lower rate. As a result, IS customers will see a modest rate increase on average.

Q. Do you have any comments with regard these proposed changes to the IS rate?

A. Yes. With regard to the Block 1 rate, an increase in this rate would ensure that more of the cost to serve this customer class was recovered in years when process demand fluctuates downward. Additionally, the IS tariff schedule provides for interruption of service under section 3.02 of the Utah tariff and further specifies that "Resumption of service will not occur until the Company, at its discretion, can fulfill the demand of its firm service customers."[14] During periods when the likelihood of being curtailed is

[14] Questar Gas Company, Utah Natural GasTariff, PSCU 400, page 3-2, paragraph 3.02.

relatively low, which may be of long duration, keeping the first IS block rate at the existing level would place it well below that for the proposed TS rate schedule and thus may have the effect of providing the equivalent of a firm service at a lower rate than would be paid for firm service.

It is not clear what the basis was for the extreme reduction in the tailblock rate. Moreover, since the revised cost allocation that I have recommended results in more costs allocated on the basis of energy, the tailblock rate should be higher than that proposed. I make specific modifications to the IS rate in Section F below.

F. SPECIFIC RATE DESIGN RECOMMENDATIONS

Q. Have you considered whether changing the BSF fee, based on these cost-based BSF values, will create problems in terms of bill impacts of the proposed change in basic service fee a concern?

A. Yes I have considered this issue. The proposed customer charge increase is only potentially significant for BSF 1. Although the percentage change for BSF 4 is actually much larger, the BSF charge is a small portion of the total bill for that BSF category. The Company's proposal would have increased the BSF1 charge by 60%. An increase to the $6.75, which is my calculated cost, would be a percentage increase of 35% to the BSF 1 charge. This is still a large increase to this charge, but the real question is how much of an increase is it to the total bill of small customers. For customers with flat usage of 1 Dth/month, the increase would be less than 10%, assuming the $6.75 monthly charge. For usage of only 0.5 Dth/month, the increase would be about 16%. There are a

significant number of small customers. In the winter, about 2% of GS customers use 1 Dth or less, but in the summer about 20% of customers use this little gas. This includes zero use bills.

The other consideration is how this increase to the smallest customers compares to the average class increase. As discussed in Section II, the result of the Division Revenue Requirement and the modifications to cost allocation that I have made result in a decrease to the GS class as a whole. As a result, I recommend that the increase to BSF 1 be held to an increase of $1.25, for a BSF charge of $6.25.

Q. Have you designed rates to collect the class revenue requirements, including the COS adjustment for the FT1 rate?

A. Yes, I have. It is worth noting that the percentage changes to the base rates differ from the percentage deficiencies resulting from and shown in the total cost summary. A major reason is that the base rates are increasing because base rates will not include feeder tracker costs that have previously been collected in the revenue tracker.

The BSF charges were modified as discussed above. For the most part, I utilized the Company's model to change volumetric rates to achieve the target revenues. I modified only a few relationships, as discussed below. One concern that has affected my recommendations is that very dramatic changes in different block rates and block sizes may have large impacts on some individual customers, even though this may not be evident in summary bill impacts.

For the GS class, I observed that the Company's rules produced a decrease in the first block rate and a very large increase in the second block charge. Since I have recommended that the BSF charges generally be reduced from the Company's values, the result was that the small rate increase was somewhat skewed toward the larger customers. The cost curve also suggested that the larger customers paid more than costs. I modified the rate by increasing the differential between the first and the second blocks, so that the second block rate did not increase as much.

For the FS rate, the Company's model applied to the Division revenue requirements produced a tailblock rate that was lower than the tailblock on the TS rate. There seemed to be no cost explanation as to why it would cost more to serve a transportation customer than a firm customer. Also, the revised cost of service allocated more on the basis of throughput, suggesting that the tailblock should be higher. I addressed these issues by decreasing the differential between the second and third blocks, which had the result of increasing the third block rate.

For the IS rate, the Company has dramatically increased the first block rate and decreased the second and third block rates. Since my revised cost allocation increases the amount of costs that are allocated on throughput, this did not seem appropriate, so I decreased the second and third blocks by a lower amount than the Company had.

For the TS rate, the Company's model utilized the average of winter and summer FS rate charges for the first and second block rates, fixed the tailblock at a low rate, and the third block was the residual, i.e. it collected all remaining revenue. Although the 1st and 2nd block rate increases were high, the third block seemed to have the biggest bill

impact on small and medium small customers. Since the Division's revenue requirement results in the FS rate receiving a much smaller increase than the Company's and the TS rate receiving a slightly higher increase, continuing to use the Company's rate relationships seems inappropriate. I set the first block and second block rates at the average of the FS block rates, and set the tailblock rate (for usage over 100,000) at the current third block (for usage from 200,000 to 500,000). The rationale for these changes was to moderate the increase to the medium customers, and also not to provide a very large decrease for use from 300,000 to 500,000 Dths.

All of these rates are shown in DPU Exhibit 7.4 DIR, which is a modification of the Rate Design tab of the cost of service model. The previously identified DPU 7.5 workpaper contains the backup to this exhibit.

Q. Does this conclude your testimony?

A. Yes, it does.