BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE APPLICATION OF QUESTAR GAS COMPANY TO INCREASE DISTRIBUTION NON-GAS RATES AND CHARGES AND MAKE TARIFF MODIFICATIONS	))))	DOCKET NO. 07-057-13 DPU EXHIBIT 3.0R

PRE-FILED REBUTTAL TESTIMONY

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ON BEHALF OF THE

DIVISION OF PUBLIC UTILITIES

April 28, 2008

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2 ARTIE POWELL, PHD
3 DIVISION OF PUBLIC UTILITIES
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5 **Q: Will you state your name, business address, employer, and title or**
6 **position for the record.**

7 A: My name is Dr. William (Artie) Powell. My address is 160 E 300 S, Salt Lake
8 City, Utah 84114. I am employed by the Division of Public Utilities
9 ("Division"). Currently, I am the manager of the Energy Section.

10 **Q: Are you the same Dr. Powell that submitted direct testimony in this**
11 **docket on behalf of the Division?**

12 A: Yes, I am. On March 31, 2008, I submitted testimony - DPU Exhibit 3.0 - in
13 this docket addressing some general remarks on the cost of equity capital.

14 **Q: What is the purpose of your rebuttal testimony?**

15 A: The purpose of my rebuttal testimony is to address some limited comments
16 on the direct testimony filed by Utah Association of Energy Users Intervention
17 Group ("UAE") witness Mr. Robert H. McKenna.

18 **Q: Would you summarize your testimony?**

19 A: Yes. In his direct testimony, Mr. McKenna describes an approach or analysis
20 to "assess the appropriate allowed ROE for the company."[1] I have two
21 concerns with Mr. McKenna's analysis. First, his analysis, which I refer to as

[1] "Prefiled Direct Testimony of Robert H. McKenna," Docket No. 07-057-13, UAE Exhibit ROE 2, March 31, 2008, p. 2, line 14.

22 a hedging model, is a stand-alone analysis, which is inconsistent with the
23 guidelines set forth by the United States Supreme Court in the seminal cost of
24 equity cases of *Hope* and *Bluefield*. Second, some of the data Mr. McKenna
25 employs appears to be inconsistent. For these two reasons, I would
26 recommend that the Commission not give much weight to Mr. McKenna's
27 analysis.

28 **Q: Would you please explain why you believe Mr. McKenna's analysis is**
29 **inconsistent with the guidelines established by the United States**
30 **Supreme Court in the *Hope* and *Bluefield* cases?**

31 A: To reiterate what I explain in direct testimony, according to Dr. Phillips,

> 32 The relevant economic criteria enunciated by the
> 33 Court are three: … (1) to maintain the financial integrity of
> 34 enterprise, (2) to enable the utility to attract the new
> 35 capital it needs to serve the public, and (3) to provide a
> 36 return on common equity that is commensurate with
> 37 returns on investments in other enterprises of
> 38 corresponding risk.[2]

39 Mr. McKenna's hedging analysis looks at the cost of equity capital for
40 the Company in isolation and, thus, ignores the last of the three criteria set
41 out in the *Bluefield* and *Hope* cases. In other words, Mr. McKenna's hedging
42 model would seem to lead the Commission to reduce a cost of equity capital

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[2] Charles F. Phillips, Jr., *The Regulation of Public Utilities*, [Public Utilities Reports, Inc.: Arlington, Virginia, 1993], p. 381.

43 ruled to be just and reasonable regardless of the returns of other utilities with
44 similar risk profiles. In contrast, the analysis performed by other witnesses in
45 this case explicitly compares the estimated returns of other utilities of similar
46 risk in arriving at a recommended cost of equity capital.

47 **Q: What rate does Mr. McKenna recommend as the cost of equity capital?**

48 A: Mr. McKenna does not make a specific recommendation on a specific cost of
49 equity capital. Instead, he offers his hedging analysis as information to assist
50 the Commission in setting an allowed rate of return. Specifically, Mr.
51 McKenna states, "this information should be factored into the Commission's
52 decision on where within the range of reasonable returns QGC's return on
53 equity should be set."[3] Mr. McKenna's hedging model suggests reducing the
54 allowed return by about 35 basis points.[4]

55 **Q: Do you agree that the allowed return should be reduced by 35 basis**
56 **points?**

57 A: For at least three reasons, I do not believe Mr. McKenna's analysis supports
58 an adjustment. First, as I previously explained, Mr. McKenna's analysis is a
59 stand-alone analysis and, therefore, inconsistent with the *Bluefield* and *Hope*
60 decisions.

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[3] McKenna, p. 10, lines 13-15.

[4] In direct testimony Mr. McKenna refers to a reduction of 37 basis points. See McKenna p. 10, line 6 and UAE Exhibit ROE 2.10. However, in response to a Division data request, DPU 1.1, Mr. McKenna amended the number to 35 basis points.

61 Second, as I explained in direct testimony, what constitutes a fair
62 return is, in reality, a range of reasonableness.[5] Once the Commission
63 determines what it believes to be a reasonable range, it can set the allowed
64 return at a level within that range it determines is fair. Given that the set of
65 proxy companies used by other cost of equity witnesses in this case includes
66 companies with revenue stabilization mechanisms, additional ad hoc
67 adjustments for the CET are unwarranted.

68 Third, I believe there are several inconsistencies in Mr. McKenna's
69 hedging model.

70 **Q: What inconsistencies do you see in Mr. McKenna's hedging model?**
71 A: It appears that some of the data Mr. McKenna uses in his model are
72 inconsistent. For example, in direct testimony Mr. McKenna indicates that he
73 is using the Company's original cost of service study filed in this case utilizing
74 a June 2009 test year. Since Mr. McKenna is not recommending a specific
75 return on equity in this case, using data for the June 2009 test year is a minor
76 discrepancy. Other apparent discrepancies in Mr. McKenna's model do not
77 appear to be so minor.

78 For example, on page 4 of his direct testimony, Mr. McKenna states,
79 "that all the historical annual variations in usage per customer are equally
80 likely as representations for potential future variations in usage per

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[5] See Phillips, pp. 375-382.

81 customer."[6] However, a simple box-plot analysis of the data shows that the
82 values are far from equally likely or uniformly distributed.
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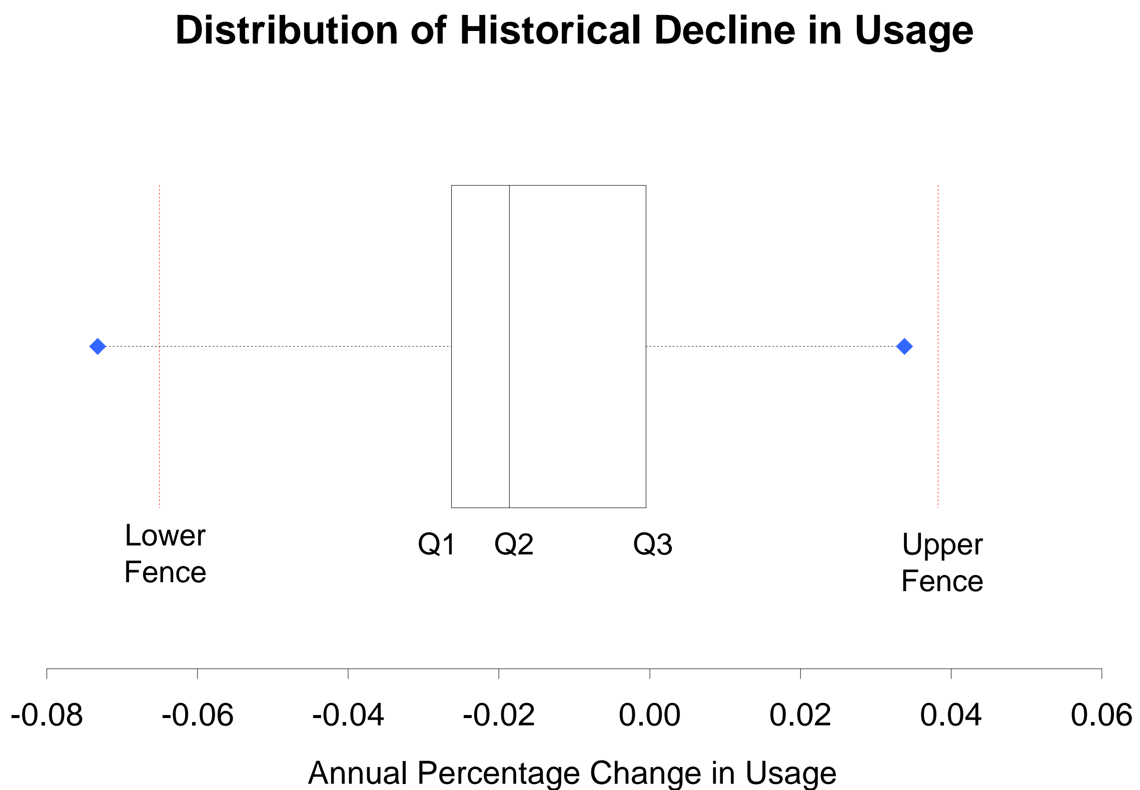
84 **Figure 1: Historical Usage – 1982 to 2006**



85
86
87 Figure 1 contains the results of the analysis in the form of a box-plot
88 graph. The graph reveals the presence of an outlier – a value below the

[6] Mr. McKenna, P. 4, lines 16-18.

89 lower fence of the graph – and that the median, Q2, is closer to the first
90 quartile, Q1, than it is to the third quartile, Q3. Both of these conditions
91 suggest the data are not uniformly distributed. A histogram of the data
92 supports this conclusion as well.

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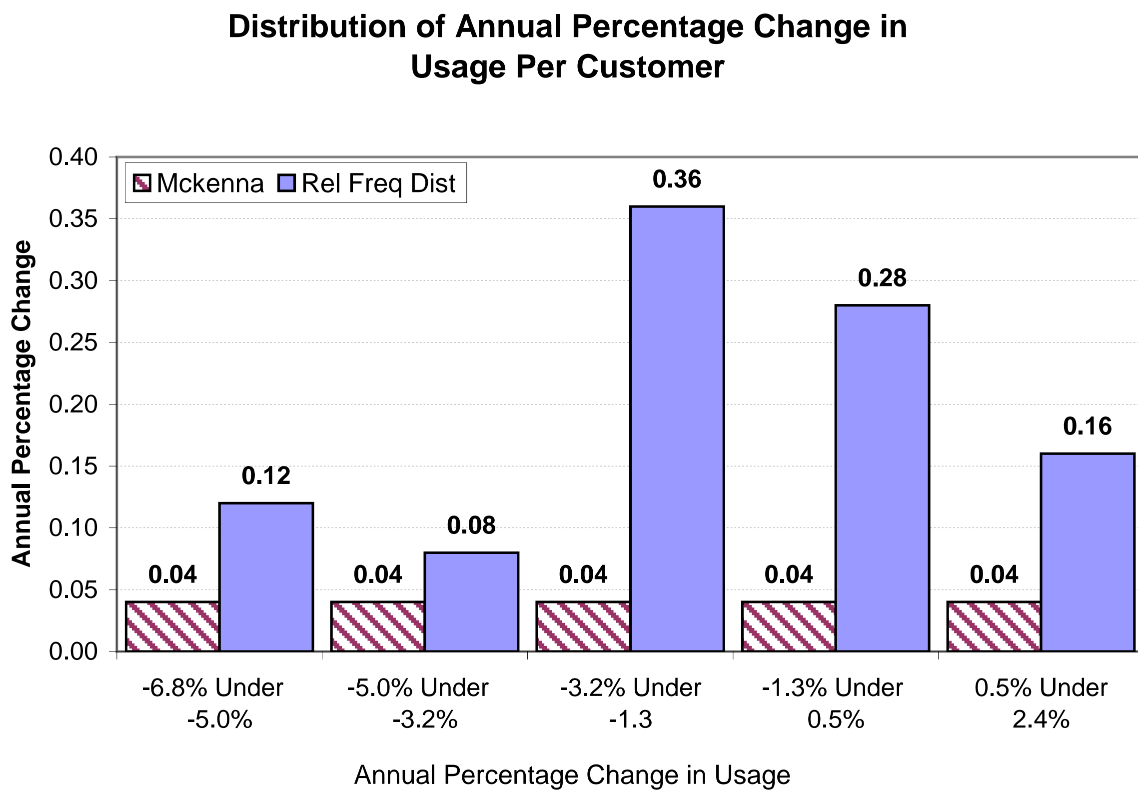
94 **Figure 2: Histogram of Historical Usage**



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97 Figure 2 represents the distribution assuming an equally likely outcome
98 for each value (Mr. McKenna's assumption), and the distribution from the

99 actual data.[7] Figure 2 clearly shows that the historical data for decline in
100 usage is not uniformly distributed. For example, for the range -3.2% to -1.3%,
101 the histogram shows a probability of 0.36 – 36% or 9 out of 25 of the
102 observations fall within this range. Under Mr. McKenna's assumption that
103 each of the values is equally likely, the values in this range would only receive
104 a 4% probability, which is only one out of 25 values.

105 **Q: Did you determine what the outcome of Mr. McKenna's analysis would**
106 **be if you used the probability values from your histogram as opposed to**
107 **his equally likely assumption?**

108 A: Yes, I did. If you substitute the probabilities from the histogram into Mr.
109 McKenna's hedging model, the model suggests a reduction in the allowed
110 ROE of approximately 204 basis points. However, there is at least one other
111 change that needs to be added to Mr. McKenna's model.

112 On page 4 of his direct testimony, Mr. McKenna states, "According to
113 this [Questar Gas'] model, QGC is projecting a NOI of 67,593,225 to achieve
114 an 'allowed' ROE of 11.25% for this test period. This projected NOI assumes
115 that QGC receives $145,894,067 of DNG Volumetric Charges from GS1
116 customers (Exhibit UAE ROE 2.3)." The problem is the $145,894,067 in DNG

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[7] There are twenty-five observations in the data set. Mr. McKenna's probability for each observation is simply 0.04 (1/25). The 0.04 above each corresponding bar should not be interpreted as the probability of a value falling into that corresponding range. Rather, the 0.04 should be interpreted as applying to each value within the range. For example, in the middle range, -3.2% to -1.3%, there are 9 observations. According to Mr. McKenna's assumption, each of the 9 observations has a 4% chance of occurring. In contrast, the 0.36 above the opposing bar implies that there is a 36% chance of a value being between the two endpoints, -3.2% and -1.3%.

117 Volumetric Charges does not support the NOI of $67.6 million or the 11.25%
118 return in Questar Gas' model. The $145 million only supports a NOI of $51
119 million and a return of 7.01%.

120 There are two possible solutions. First, you could substitute the prices
121 from the Company's model that support the 11.25 % return as opposed to the
122 current prices used by Mr. McKenna. If this substitution is made then,
123 combined with the probability substitution previously discussed, Mr.
124 McKenna's model suggests a reduction in the allowed ROE of 221 basis
125 points.

126 Second, as an alternative, the NOI of $51 million and the ROE of
127 7.01% can be substituted into Mr. McKenna's model. This substitution, along
128 with the probability substitution, suggests a reduction in the allowed ROE of
129 205 basis points. However, this reduction is from the 7.01% earned ROE. A
130 205 basis point reduction from this earned return would be less than 5%.
131 Apparently, Mr. McKenna's model is not robust enough to distinguish
132 between starting points – whether you are adjusting from an 11.25% or 7.01%
133 return.

134 **Q: Do you have any other concerns with Mr. McKenna's hedging model?**
135 A: Yes. Mr. McKenna uses the annual percentage change in usage from 1982
136 to 2006 in his hedging model. These were the data previously described that
137 he assumes to be uniformly distributed and which I show to be something

138 other than uniformly distributed. However, the Company's model already
139 assumes an approximate 1.6% decline in usage for the test year. Therefore,
140 arguably Mr. McKenna's model should employ the net change in usage. For
141 example, the annual decline in usage for 1998 was -7.326%. The net decline
142 in usage would be -5.717% (-7.326% + 1.609%). Using the net usage for
143 each of the twenty-five years in Mr. McKenna's hedging model, along with the
144 probability and price substitutions discussed above, Mr. McKenna's model
145 actually suggests a 22 basis point increase over an allowed return of 11.25%.

146 **Q: What do you conclude from your analysis of Mr. McKenna's hedging**
147 **model?**

148 A: As I previously argued, Mr. McKenna's hedging model is a stand-alone
149 analysis and, therefore, violates the guidelines from the *Bluefield* and *Hope*
150 cases. My analysis of his hedging model – the substitutions of various
151 variables into his model – suggests that the model is not robust enough to
152 provide any meaningful information for the Commission to determine if a
153 reduction in the Company's allowed ROE is warranted.

154 **Q: Does this conclude your rebuttal testimony?**

155 A: Yes it does.