

**STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION**

**Liberty Utilities (Midstates Natural
Gas) Corp. d/b/a Liberty Utilities** :
:
:
Proposed General Increase : Docket No. 16-_____
In Gas Rates :

DIRECT TESTIMONY OF

KEITH MAGEE

SCOTTMADDEN, INC.

SUBMITTED ON BEHALF OF

LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. D/B/A LIBERTY UTILITIES

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8 **Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities**

9

10 **I. INTRODUCTION**

11 **Q. Please state your name, affiliation and business address.**

12 A. My name is Keith Magee. I am a Director at ScottMadden, Inc. (ScottMadden).
13 My business address is 1900 West Park Drive, Suite 250, Westborough, MA
14 01581.

15 **Q. On whose behalf are you testifying?**

16 A. I am testifying on behalf of Liberty Utilities (Midstates Natural Gas) Corp. d/b/a
17 Liberty Utilities which I refer to in my testimony as “Liberty Midstates” or the
18 “Company”, an indirect wholly owned subsidiary of Algonquin Power & Utilities
19 Corp.

20 **Q. Please describe your educational background.**

21 A. I hold a Bachelor’s degree in Economics from Whitman College, and an MBA
22 with a concentration in Finance from the F.W. Olin Graduate School of Business
23 at Babson College. I also hold the Chartered Financial Analyst designation.

24 **Q. Please describe your experience in the energy and utility industries.**

25 A. I have been a consultant in the utility and energy industry since 2010, providing
26 consulting services to utility and energy clients on a range of financial and
27 economic issues including areas such as rate case activities (e.g., cost of service
28 and rate design) and policy and strategy issues (e.g., capital structure, cost of
29 capital and capital investment related activities). Many of my engagements have
30 included developing return on equity (which I sometimes refer to as “ROE” or
31 cost of equity) analyses and testimony. A summary of my professional and
32 educational background is included in Attachment A to my Direct Testimony.

33 **II. PURPOSE AND OVERVIEW OF TESTIMONY**

34 **Q. What is the purpose of your Direct Testimony?**

35 A. The purpose of my Direct Testimony is to present evidence and provide a
36 recommendation regarding the Company’s return on equity and capital structure,
37 and to assess the reasonableness of the Company’s cost of debt. My analyses
38 and conclusions are supported by the data presented in Schedule 3.0.1 through
39 Schedule 3.0.15, which have been prepared by me or under my direction. In
40 addition, I sponsor Schedule D-1, capital structure and cost of capital.

41 **Q. What are your conclusions regarding the appropriate cost of equity, capital
42 structure and cost of debt for the Company?**

43 A. My analyses indicate that the Company’s cost of equity currently is in the range
44 of 10.00 percent to 10.50 percent. Based on the quantitative and qualitative
45 analyses discussed throughout my Direct Testimony, I recommend that the
46 Commission authorize the Company the opportunity to earn an ROE of 10.25

47 percent.

48 As to the Company's capital structure, I propose a capital structure which
49 includes 54.00 percent common equity and 46.00 percent long-term debt. That
50 capital structure includes an equity ratio that is below Liberty Utilities Co.'s equity
51 ratio, but is consistent with those in place at comparable natural gas companies
52 and falls within Moody's benchmark equity ratio range for Baa-rated utilities. In
53 light of the importance of maintaining access to capital, and seeing that it is
54 consistent with similarly situated utility companies, I conclude that a 54.00
55 percent equity ratio is reasonable and appropriate.

56 Lastly, I note that the Company's 4.83 percent cost of debt is consistent
57 with, although lower than, the average debt cost rates authorized for natural gas
58 utilities during the twelve months ended February 12, 2016. As such, I conclude
59 that the Company's cost of debt is reasonable and appropriate.

60 **Q. Please provide a brief overview of the analyses that led to your ROE**
61 **recommendation.**

62 A. Because all models are subject to various assumptions and constraints, equity
63 analysts and investors tend to use multiple methods to develop their return
64 requirements.¹ My ROE recommendation in this proceeding relies on the results
65 of the constant growth discounted cash flow (or "DCF") model and the capital
66 asset pricing model (or "CAPM"), and my application of those models reflect
67 certain methodological preferences expressed by the Commission in Docket No.

¹ See, e.g., Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed., 1994, at 341, and Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd ed., 2000, at 214.

68 11-0282, Docket No. 13-0192 and Docket No. 14-0371.² To assess the
69 reasonableness of the results of those models, and to help inform the selection of
70 my recommended ROE within the range of results produced by those models, I
71 also reviewed the results of several additional alternative benchmark
72 methodologies including a modified application of the CAPM, a bond yield plus
73 risk premium (or “risk premium”) analysis, and an expected earnings analysis.

74 My recommendation also takes into consideration the Company’s risk and
75 cost profile, in particular (1) its relatively small size; (2) the regulatory
76 environment in which the Company operates; (3) the direct costs associated with
77 equity issuances; and (4) Liberty Midstates’ proposed Volume Balancing
78 Adjustment or “VBA” rider, which is designed to help mitigate the Company’s
79 relatively large exposure to revenue variability from weather. Although I did not
80 make explicit adjustments to my ROE estimates for those factors, I did take them
81 into consideration in determining the range in which the Company’s cost of equity
82 likely falls.

83 **Q. Have you considered the Commission’s decisions in Dockets 13-0192 and**
84 **14-0371 in developing your ROE analyses?**

85 A. I have considered the Commission’s decisions in Dockets 13-0192 and 14-0371
86 in developing my ROE analyses. In particular (and as discussed in more detail in
87 Section VI of my prefiled direct testimony), I performed a set of CAPM analyses

² See Illinois Commerce Commission Order, Docket No. 11-0282, January 10, 2012, at 126-127. See also Illinois Commerce Commission Order, Docket No. 13-0192, December 18, 2013, at 162-165. See Illinois Commerce Commission Order, Docket No. 14-0371, February 11, 2015, at 65-67.

88 that reflect the Commission's observations in those dockets regarding the beta
89 coefficient, risk-free rate and market risk premium components of the model.

90 **Q. How is the remainder of your Direct Testimony organized?**

91 A. The remainder of my Direct Testimony is organized as follows:

92 Section III – Provides a summary of my primary conclusions and
93 recommendations;

94 Section IV – Discusses the regulatory guidelines and financial considerations
95 pertinent to the development of the cost of capital;

96 Section V – Explains my selection of the proxy group of natural gas utilities
97 used to develop my analytical results;

98 Section VI – Explains my analyses and the analytical bases for my ROE
99 recommendation;

100 Section VII – Provides the results of additional benchmark analyses used to
101 provide a check on the reasonableness of the results of the ROE
102 models used to develop my ROE recommendation;

103 Section VIII – Provides a discussion of specific business risks and other
104 considerations that have a direct bearing on the Company's cost
105 of equity;

106 Section IX – Highlights the current capital market conditions and their effect on
107 the Company's cost of equity;

108 Section X – Explains my recommendation for the Company's capital structure;

109 Section XI – Briefly discusses the Company's cost of debt; and

110 Section XII – Summarizes my conclusions and recommendations.

111 **III. SUMMARY OF CONCLUSIONS**

112 **Q. What are the key factors considered in your analyses and upon which you**
113 **base your recommended ROE?**

114 A. My analyses and recommendations considered the following:

- 115 • The *Bluefield* and *Hope* decisions³ that established the following standards
116 for determining a fair and reasonable allowed ROE: (1) consistency of the
117 allowed return with other businesses having similar risk; (2) adequacy of the
118 return to provide access to capital and support credit quality; and (3) that the
119 end result must lead to just and reasonable rates;
- 120 • Section 9-230 of the Public Utilities Act (220 ILCS 5), which prohibits the rate
121 of return from including incremental risk or increased cost of capital from
122 affiliation with nonutility or unregulated companies;
- 123 • The Company's business risks relative to the proxy group of comparable
124 companies (set forth in Table 3.0.2 to my prefiled direct testimony) and the
125 implications of those risks in arriving at the appropriate ROE from within the
126 range of results established by the Discounted Cash Flow and CAPM
127 methods; and
- 128 • The effect of the current capital market conditions on investors' return
129 requirements.

130 **Q. What are the results of your analyses?**

131 A. The results of my analyses are summarized in Tables 3.0.1a and 1b, below.

³ *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) ("*Bluefield*"); *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("*Hope*").

132

Table 3.0.1a: Summary of Analytical ROE Results

Constant Growth DCF			
	<i>Proxy Group Mean Low</i>	<i>Proxy Group Mean</i>	<i>Proxy Group Mean High</i>
30-day Stock Prices	8.14%	9.32%	10.96%
CAPM			
	<i>Bloomberg MRP (DCF S&P 500 Div. Payers)</i>	<i>Value Line MRP (DCF S&P 500 Div. Payers)</i>	
Value Line Beta, Current Risk-Free Rate (2.79%)	10.13%	9.73%	
Bloomberg 5-year Beta, Current Risk-Free Rate (2.79%)	9.69%	9.31%	

133

134

Table 3.0.1b: Summary of Additional Benchmark ROE Analysis

Alternate CAPM			
	<i>Bloomberg MRP (DCF S&P 500)</i>	<i>Value Line MRP (DCF S&P 500)</i>	
Value Line Beta, Current 30-Year Treasury (2.79%)	10.86%	10.40%	
Value Line Beta, Projected Risk-Free Rate (3.35%)	10.99%	10.54%	
Bloomberg 5-year Beta, Current Risk-Free Rate (2.79%)	10.38%	9.95%	
Bloomberg 5-year Beta, Projected Risk-Free Rate (3.35%)	10.54%	10.11%	
Bond Yield Plus Risk Premium Analysis			
	<i>Low</i>	<i>Mean</i>	<i>High</i>
Current and Projected Baa Utility Bond Yields	10.00%	10.13%	10.60%
Expected Earnings Analysis			
	<i>Low</i>	<i>Mean</i>	<i>High</i>
Value Line Projected Return on Book Equity	8.84%	11.32%	12.91%

135

136

137

138

Table 3.0.1a presents the results of the DCF and CAPM analyses used to develop my ROE recommendation. I recognize that in recent decisions the Commission has been inclined to consider both the DCF model and the CAPM

139 approach, and have therefore based my ROE recommendation in this
140 proceeding on the results of those methods.⁴ Based on the results of those
141 methods, I believe that a reasonable range of results is from 10.00 percent to
142 10.50 percent. As shown in Table 3.0.1b, the results of additional benchmark
143 analyses confirm the reasonableness of my recommended ROE range.
144 Considering the capital market environment, the Company's regulatory and
145 business risks relative to the proxy group, and the Commission's preference for
146 certain methodological approaches, it is my view that an ROE of 10.25 percent is
147 reasonable.

148 **IV. REGULATORY GUIDELINES AND FINANCIAL CONSIDERATIONS**

149 **Q. Please provide a brief summary of the guidelines established by the United**
150 **States Supreme Court for the purpose of determining the ROE.**

151 A. The United States Supreme Court established the guiding principles for
152 establishing a fair return for capital in two cases: (1) *Bluefield*; and (2) *Hope*. In
153 those cases, the court recognized that the fair rate of return on equity should be
154 (1) comparable to returns investors expect to earn on other investments of similar
155 risk; (2) sufficient to assure confidence in the company's financial integrity; and
156 (3) adequate to maintain and support the company's credit and to attract capital.

157 **Q. Does Illinois precedent provide similar guidance?**

158 A. Illinois precedent provides similar guidance. The Commission has acknowledged

⁴ See Illinois Commerce Commission Order, Docket No. 12-0511/12-0512 (Cons.), June 18, 2013, at 205-207. See also Illinois Commerce Commission Order, Docket No. 13-0192, December 18, 2013, at 166. See also Illinois Commerce Commission Order, Docket No. 14-0371, February 11, 2015, at 65-67.

159 the guiding principles of the *Bluefield* and *Hope* cases, noting that:

160 [Cost of capital] standards are effectively mandated by the
161 landmark U.S. Supreme Court decisions *Bluefield Water Works*
162 *& Improvement Co. v. Public Service Commission of West*
163 *Virginia*, 262 U.S. 679 (1923) ("*Bluefield*") and *Federal Power*
164 *Commission v. Hope Natural Gas Company*, 320 U.S. 391
165 (1944) ("*Hope*"). Meeting these requirements is necessary in
166 order for a company to effectively meet the utility services
167 requirements of its customers and provide an adequate and
168 reasonable return to its investors, debt holders and equity
169 holders, alike.⁵

170 Further, Section 9-230 of Illinois' Public Utilities Act (220 ILCS 5/9-230)
171 specifically addresses financial involvement with nonutility or unregulated
172 companies:

173 In determining a reasonable rate of return upon investment for
174 any public utility in any proceeding to establish rates or charges,
175 the Commission shall not include any (i) incremental risk, (ii)
176 increased cost of capital [...] which is the direct or indirect result
177 of the public utility's affiliation with unregulated or nonutility
178 companies.⁶

179 Based on those standards, the authorized ROE should provide the
180 Company with the opportunity to earn a fair and reasonable return on its
181 regulated utility operations and should enable efficient access to external capital
182 under a variety of market conditions.

183 **Q. Why is it important for a utility to be allowed the opportunity to earn a**
184 **return adequate to attract equity capital and maintain financial integrity?**

185 A. Investors have many options available to them and will only invest in a firm if the
186 expected return justifies the risks taken on in making that investment. Customers

⁵ Illinois Commerce Commission Order, Docket No. 13-0192, December 18, 2013, at 100.

⁶ 220 ILCS 5, Public Utilities Act, Section 9-230.

187 have an interest in safe, reliable, and efficient service, which depends on
188 investors' willingness to commit the capital needed to maintain and improve the
189 utility system. In that important sense, investors and customers have a common
190 interest in a financially strong utility that is able to access capital on reasonable
191 terms when and as needed. A return that is adequate to attract capital and
192 maintain financial integrity enables a utility to access capital markets at
193 reasonable terms and continue to make needed investments. To the extent
194 Liberty Midstates is provided a reasonable opportunity to earn its market-based
195 cost of equity, neither customers nor shareholders should be disadvantaged.

196 **V. PROXY GROUP SELECTION**

197 **Q. As a preliminary matter, why is it necessary to select a group of proxy**
198 **companies to determine the cost of equity for Liberty Midstates?**

199 A. Since the ROE is a market-based concept and Liberty Midstates is not a publicly
200 traded entity, it is necessary to establish a group of comparable publicly-traded
201 companies to serve as its "proxy."

202 Even if Liberty Midstates were a publicly traded entity, short-term events
203 could bias its market value during a given period of time. A significant benefit of
204 using a proxy group is that it serves to moderate the effects of anomalous,
205 temporary events associated with any one company. In addition, the use of a
206 proxy group is consistent with the *Bluefield* and *Hope* standards that require the
207 allowed return to be commensurate with the returns available to other
208 investments with comparable risks.

209 **Q. Does the selection of a risk comparable proxy group suggest that**
210 **analytical results will be tightly clustered around average (i.e., mean)**
211 **results?**

212 A. The selection of a risk comparable proxy group does not suggest that analytical
213 results will be tightly clustered around average (i.e., mean) results. For example,
214 the DCF approach calculates the cost of equity using the expected dividend yield
215 and projected growth. Despite the care taken to ensure risk comparability,
216 investor expectations with respect to future risks and growth opportunities will
217 vary from company to company. Even when looking at a single company, growth
218 projections can vary significantly. Therefore, even within a group of similarly
219 situated companies, it is common for analytical results to reflect a seemingly wide
220 range. Consequently, at issue is how to estimate a Company's ROE from within
221 that range. That determination necessarily must consider a wide range of both
222 empirical and qualitative information.

223 **Q. Please provide a summary profile of Liberty Midstates.**

224 A. Liberty Midstates is a subsidiary of Liberty Utilities Co. (referred to as "LUCo"),
225 which in turn is an indirect wholly owned subsidiary of Algonquin Power & Utilities
226 Corp., referred to as "APUC". Liberty Midstates provides natural gas distribution
227 service to approximately 23,600 customers in Illinois.⁷ APUC and LUCo
228 currently have long-term issuer ratings of BBB from Standard & Poor's.

229 **Q. How did you select the companies included in your proxy group?**

230 A. I began with the universe of eleven domestic U.S. companies that The Value

⁷ See Algonquin Power & Utilities Corporation, Annual Information Form, March 30, 2015, at 43.

231 Line Investment Survey (“Value Line”) classifies as natural gas utilities, and
232 applied the following screening criteria:

- 233 • Because certain of the models used in my analyses assume that earnings
234 and dividends grow over time, I excluded companies that do not have positive
235 earnings growth estimates or pay consistent quarterly cash dividends;
- 236 • To ensure that my analyses are based on consensus growth expectations, I
237 excluded companies that were not covered by at least two utility industry
238 equity analysts;
- 239 • To select a proxy group with financial characteristics similar to Liberty
240 Midstates, I excluded companies that have below investment grade corporate
241 credit ratings and/or senior unsecured bond ratings from Standard & Poor’s
242 (or “S&P”) or Moody’s;
- 243 • To select companies whose principal business activity consists of regulated
244 natural gas distribution, I excluded companies with less than 60.00 percent of
245 consolidated net operating income derived from regulated natural gas utility
246 operations; and
- 247 • To ensure the data used in my ROE analyses are not skewed by temporary
248 corporate actions, I eliminated companies that are known to be party to a
249 merger or other significant transaction.

250 **Q. What companies met those screening criteria?**

251 A. The criteria discussed above resulted in a proxy group of the following seven
252 companies:

253

Table 3.0.2: Proxy Group Screening Results

<i>Company</i>	<i>Ticker</i>
Atmos Energy	ATO
Laclede Group	LG
New Jersey Resources	NJR
Northwest Natural Gas	NWN
South Jersey Industries	SJI
Southwest Gas	SWX
Washington Gas Light	WGL

254

255 **Q. Do you believe that a proxy group of seven companies is sufficiently large?**

256 A. A proxy group of seven companies is sufficiently large. The analyses performed
257 in estimating the ROE are more likely to be representative of the subject utility's
258 cost of equity to the extent that the chosen proxy companies are fundamentally
259 comparable to the subject utility. Because all analysts use some form of
260 screening process to arrive at a proxy group, the group, by definition, is not
261 randomly drawn from a larger population. Consequently, there is no reason to
262 place more reliance on the quantitative results of a larger proxy group simply by
263 virtue of the resulting larger number of observations. In my view, including
264 companies whose fundamental comparability is tenuous at best, simply for the
265 purpose of expanding the number of observations, does not add relevant
266 information to the analysis.

267 I also note that in Liberty Midstates' most recent rate case (Docket 14-
268 0371) Staff relied on a proxy group developed using similar proxy group
269 screening criteria. The only differences between my proxy group in this
270 proceeding and the group used by Staff in Docket 14-0371 is the exclusion of

271 AGL Resources and Piedmont Natural Gas due to recent mergers.⁸

272 **VI. COST OF EQUITY ESTIMATION**

273 **Q. Please briefly discuss the ROE in the context of the regulated rate of**
274 **return.**

275 A. Regulated utilities primarily use common stock and long-term debt to finance
276 their capital investments. The overall allowed rate of return weighs the costs of
277 the individual sources of capital by their respective book values. While the cost
278 of debt can be directly observed, the cost of equity is market-based and,
279 therefore, must be estimated based on observable market information.

280 **Q. How is the required ROE determined?**

281 A. The required ROE is estimated using quantitative models that rely on market
282 data to quantify investor expectations regarding the range of expected equity
283 returns. The use of different models, and the use of varying investor
284 assumptions within each model, produces a range of results from which the
285 market required ROE must be estimated. As discussed throughout my Direct
286 Testimony, that estimation must be based on a comprehensive review of relevant
287 data and information, and does not necessarily lend itself to a strict mathematical
288 solution. Consequently, the key consideration in determining the ROE is to
289 ensure that the overall analysis reasonably reflects investors' view of the financial
290 markets in general and the subject company (in the context of the proxy
291 companies) in particular.

⁸ Southern Company's acquisition of AGL Resources was announced August 24, 2015. Duke Energy's acquisition of Piedmont Natural Gas Company was announced October 26, 2015.

292 **Q. What methods did you use to determine the Company's ROE?**

293 A. To determine my recommended ROE, I have relied on the constant growth DCF
294 model and a version of the CAPM that adheres to certain Commission
295 preferences stated in its decisions in Docket Nos. 13-0192 and 14-0371. I also
296 have used the risk premium model, expected earnings approach and an alternate
297 form of the CAPM as corroborating methodologies in arriving at my ROE
298 recommendation.⁹

299 **Q. Why do you believe it is important to use more than one analytical**
300 **approach?**

301 A. Although we cannot directly observe the cost of equity, we can observe the
302 methods frequently used by analysts to arrive at their return requirements and
303 expectations. While investors and analysts tend to use multiple approaches in
304 developing their estimate of return requirements, each methodology requires
305 certain judgment with respect to the reasonableness of assumptions and the
306 validity of proxies in its application. In essence, analysts and academics
307 understand that ROE models are tools to be used in the ROE estimation process
308 and that strict adherence to any single approach, or the specific results of any
309 single approach, can lead to flawed and irrelevant conclusions. That position is
310 consistent with the *Bluefield* and *Hope* finding that it is the analytical result, as
311 opposed to the methodology, that is controlling in arriving at ROE determinations.
312 A reasonable ROE estimate therefore considers alternative methodologies,

⁹ See Illinois Commerce Commission, Order, Docket No. 13-0192, December 18, 2013, at 162-165. See Illinois Commerce Commission Order, Docket No. 14-0371, February 11, 2015, at 65-67.

313 observable market data, and the reasonableness of their individual and collective
314 results.

315 In my view, therefore, it is both prudent and appropriate to use multiple
316 methodologies in order to mitigate the effects of assumptions and inputs
317 associated with relying exclusively on any single approach. Such use, however,
318 must be tempered with due caution as to the results generated by each individual
319 approach. Therefore, in light of capital market conditions that I plan to discuss
320 later, I have relied on the constant growth DCF model and the CAPM to
321 determine my recommended ROE, while using several alternative methodologies
322 as a check on the reasonableness of those results.

323 ***Constant Growth DCF Model***

324 **Q. Is the DCF methodology widely used in regulatory proceedings?**

325 A. Yes. In my experience, the DCF methodology is widely recognized in regulatory
326 proceedings, as well as in financial literature. Nonetheless, neither the DCF nor
327 any other model should be applied without considerable judgment in the
328 selection of data and the interpretation of results.

329 **Q. Please describe the DCF approach.**

330 A. The DCF approach is based on the theory that a given stock's current price
331 represents the present value of its expected future cash flows. A common
332 formulation of the DCF approach, also known as the dividend discount model,
333 can be expressed as follows:

334
$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_{\infty}}{(1+k)^{\infty}}$$
 Equation [1]

335 where P represents the current stock price, $D_1 \dots D_\infty$ represent expected future
336 dividends, and k is the discount rate, or required ROE. Under the assumption
337 that cash flows will grow at a constant rate, Equation [1] is a standard present
338 value calculation that can be simplified and rearranged into the familiar form:

$$k = \frac{D_0 (1 + g)}{P} + g \quad \text{Equation [2]}$$

339
340 Equation [2] often is referred to as the “constant growth DCF” model, in which the
341 first term is the expected dividend yield and the second term is the expected
342 long-term annual growth rate.

343 That is, in its simplest form, the DCF model expresses the cost of equity
344 as the sum of the expected dividend yield and long-term growth rate. In
345 essence, the DCF model assumes that the total return received by investors
346 includes the dividend yield and the rate of growth. As I will explain later, under
347 the model’s assumptions, the rate of growth equals the rate of capital
348 appreciation. That is, the model assumes that the investor’s return is the sum of
349 the dividend yield and the increase in the stock price.

350 **Q. What assumptions are required for the constant growth DCF model?**

351 A. The constant growth DCF model requires the following assumptions: (1) a
352 constant average growth rate for earnings and dividends; (2) a stable dividend
353 payout ratio; (3) a constant price-to-earnings multiple; and (4) a discount rate
354 greater than the expected growth rate. In addition, the constant growth DCF
355 model assumes that the same return will be required every year, in perpetuity
356 (see Equation [1], above).

357 **Q. What market data did you use to calculate the dividend yield component of**
358 **your DCF model?**

359 A. The dividend yield is based on the proxy companies' current annualized dividend,
360 and average closing stock price over the 30-trading day period as of February
361 12, 2016.

362 **Q. Why did you use a 30-trading day period to calculate an average stock**
363 **price?**

364 A. While I believe it would be reasonable to consider a wider range of recent stock
365 prices (*i.e.*, 30-day, 90-day and 180-day average stock prices), I understand that
366 Staff generally relies on spot stock prices, and that the Commission has indicated
367 its preference for more recent data in that calculation.¹⁰ That averaging period is
368 consistent with the stock price methodology used by the Company's ROE
369 witness in the Company's last rate case, which was adopted by Staff.¹¹

370 **Q. Do you have specific concerns with the use of spot stock prices when**
371 **estimating the Cost of Equity using DCF analyses?**

372 A. Yes, I do. Stock prices tend to fluctuate from day-to-day based on changes not
373 only in investors' assessments of fundamental factors such as earnings growth
374 and projected interest rates, but also due to anomalous events that may affect
375 stock prices on any given trading day. Consequently, I believe it is appropriate to
376 use an averaging period that is reasonably representative of prevailing capital

¹⁰ See, for example, Illinois Commerce Commission Order, Docket No. 11-0282, January 10, 2012, at 123. See *also*, Direct Testimony of Rochelle M. Phipps, Docket No. 13-0192, June 11, 2013, at 20.

¹¹ See Direct Testimony of Rochelle M. Phipps, Docket No. 14-0371, at 16.

377 market conditions, and will not be skewed (one way or the other) by anomalous
378 events.

379 **Q. Did you make any adjustments to the dividend yield to account for periodic**
380 **growth in dividends?**

381 A. Yes, I did. Since utility companies tend to increase their quarterly dividends at
382 different times throughout the year, it is reasonable to assume that dividend
383 increases will be evenly distributed over calendar quarters. Given that
384 assumption, it is appropriate to calculate the expected dividend yield by applying
385 one-half of the long-term growth rate to the current dividend yield.¹² That
386 adjustment ensures that the expected dividend yield is, on average,
387 representative of the coming twelve-month period, and does not overstate the
388 dividends to be paid during that time.

389 **Q. Is it important to select appropriate measures of long-term growth in**
390 **applying the DCF model?**

391 A. Yes. In its constant growth form, the DCF model (*i.e.*, as presented in Equation
392 [2] above) assumes a single growth estimate in perpetuity. In order to reduce the
393 long-term growth rate to a single measure, one must assume a constant payout
394 ratio, and that earnings per share, dividends per share and book value per share
395 all grow at the same constant rate. Over the long term, however, dividend
396 growth can only be sustained by earnings growth. Consequently, it is important
397 to incorporate a variety of measures of long-term earnings growth into the
398 constant growth DCF model.

¹² See Schedule 3.0.1.

399 **Q. Is it common in practice to rely on analysts' forecasts as the basis of**
400 **growth rate projections?**

401 A. Yes. The cost of equity is a forward-looking concept that focuses on investor
402 expectations regarding future returns. The estimation of such returns, therefore,
403 should be based on forward-looking or projected data. Indeed, substantial
404 academic research has demonstrated the relationship between analysts'
405 forecasts and investor expectations.¹³ In my view, therefore, Value Line, First
406 Call and Zacks (the latter two of which are consensus earnings forecast
407 estimates) provide appropriate sources of earnings growth forecasts.

408 **Q. Please explain how you applied the constant growth DCF model.**

409 A. I applied the DCF model to the proxy group of natural gas utility companies using
410 the following inputs for the price and dividend terms:

- 411 1. The average daily closing prices for the 30-trading day ended February
412 12, 2016, for the term P_0 ; and
- 413 2. The annualized dividend per share as of February 12, 2016, for the
414 term D_0 .

415 I then calculated my DCF results using each of the following growth terms:

- 416 1. The Zacks consensus long-term earnings growth estimates;
- 417 2. The First Call consensus long-term earnings growth estimates; and
- 418 3. The Value Line long-term earnings growth estimates;

¹³ See, for example, Roger A. Morin, *New Regulatory Finance*, Public Utility Reports, Inc., 2006, at 298-303; Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts Growth Forecasts*, *Financial Management*, 21 (Summer 1992); Charles F. Phillips, Jr., *The Economics of Regulation*, Revised Edition, 1969, Richard D. Irwin, Inc., at 285.

419 4. An estimate of Retention Growth.

420 **Q. Please describe the Retention Growth estimate as applied in your constant**
421 **growth DCF model.**

422 A. The Retention Growth model, which is a generally recognized and widely taught
423 method of estimating long-term growth, is an alternative approach to the use of
424 analysts' earnings growth estimates. In essence, the model is premised on the
425 proposition that a firm's growth is a function of its expected earnings, and the
426 extent to which it retains earnings to invest in the enterprise. In its simplest form,
427 the model represents long-term growth as the product of the retention ratio (*i.e.*,
428 the percentage of earnings not paid out as dividends (referred to below as "b")
429 and the expected return on book equity (referred to below as "r")). Thus, the
430 simple "b x r" form of the model projects growth as a function of internally
431 generated funds. That form of the model is limiting, however, in that it does not
432 provide for growth funded from external equity.

433 The "br + sv" form of the Retention Growth estimate used in my DCF
434 analysis is meant to reflect growth from both internally generated funds (*i.e.*, the
435 "br" term) and from issuances of equity (*i.e.*, the "sv" term). The first term, which
436 is the product of the retention ratio (*i.e.*, "b", or the percentage of net income not
437 paid to shareholders as dividends) and the expected Return on Equity (*i.e.*, "r")
438 represents the portion of net income that is "plowed back" into the Company as a
439 means of funding growth. The "sv" term is represented as:

440
$$\left(\frac{m}{b} - 1\right) \times \text{Growth rate in Common Shares} \quad \text{Equation [3]}$$

441 where $\frac{m}{b}$ is the Market-to-Book ratio.

442 In this form, the “sv” term reflects an element of growth as the product of
 443 (a) the expected growth in shares outstanding, and (b) that portion of the market-
 444 to-book ratio that exceeds unity. Growth in external financing is an important
 445 consideration for the five out of seven proxy companies that Value Line expects
 446 to issue equity. As shown in Schedule 3.0.2, all of the components of the
 447 Retention Growth model have been derived from data provided by Value Line.

448 **Q. How did you calculate the high and low DCF results?**

449 A. I calculated the proxy group mean high DCF result using the highest of the EPS
 450 growth rate estimates (*i.e.*, the Value Line, Zacks, and First Call growth rates and
 451 the Retention Growth estimate) for each proxy group company. The proxy group
 452 mean high result then reflects the average of the maximum DCF result for each
 453 proxy company. I used a similar approach to calculate the proxy group mean low
 454 results, using instead the lowest of the growth estimates for each proxy group
 455 company.

456 **Q. What are the results of your DCF analysis?**

457 A. My constant growth DCF results are summarized in Table 3.0.3, below (see also
 458 Schedule 3.0.1).

459 **Table 3.0.3: Constant Growth DCF Model Results¹⁴**

	<i>Mean Low</i>	<i>Mean</i>	<i>Mean High</i>
30-Day Average Stock Price	8.14%	9.32%	10.96%

460

¹⁴ DCF results presented in Table 3.0.3 are unadjusted (*i.e.*, prior to any adjustment for flotation costs).

461 **Q. Did you undertake any additional analyses to develop your**
462 **recommendation?**

463 A. Yes. As noted earlier, I also applied the CAPM approach.

464 ***CAPM Analysis***

465 **Q. Please briefly describe the general form of the CAPM analysis.**

466 A. The CAPM analysis is a risk premium method that estimates the cost of equity
467 for a given security as a function of a risk-free return plus a risk premium (to
468 compensate investors for the non-diversifiable or “systematic” risk of that
469 security). As shown in Equation [4], the CAPM is defined by four components,
470 each of which theoretically must be a forward-looking estimate:

471
$$k = r_f + \beta(r_m - r_f) \quad \text{Equation [4]}$$

472 where:

473 k = the required market ROE for a security;

474 β = the beta coefficient of that security;

475 r_f = the risk-free rate of return; and

476 r_m = the required return on the market as a whole.

477 In Equation [4], the term $(r_m - r_f)$ represents the market risk premium.¹⁵

478 According to the theory underlying the CAPM, since unsystematic risk can be
479 diversified away by adding securities to their investment portfolio, investors
480 should be concerned only with systematic or non-diversifiable risk. Non-
481 diversifiable risk is measured by the beta coefficient, which is defined as:

¹⁵ The market risk premium is defined as the incremental return of the market over the risk-free rate.

$$\beta_j = \frac{\sigma_j}{\sigma_m} \times \rho_{j,m}$$

Equation [5]

482

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488

Where σ_j is the standard deviation of returns for company “j,” σ_m is the standard deviation of returns for the broad market (as measured, for example, by the S&P 500 Index), and $\rho_{j,m}$ is the correlation of returns in between company j and the broad market. The beta coefficient therefore represents both relative volatility (*i.e.*, the standard deviation) of returns, and the correlation in returns between the subject company and the overall market.

489

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492

Intuitively, higher beta coefficients indicate that the subject company’s returns have been relatively volatile, and are responsive to the movements of the overall market. If a company has a beta coefficient of 1.00, it is considered as risky as the market and its required return equals the expected market return.

493

Q. Has the Commission stated a preference for certain assumptions in the application of the CAPM?

494

495

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501

A. Yes, it has. For example, in Docket No. 13-0192, the Commission stated its preference for (1) beta coefficients calculated over five years; and (2) the exclusion of non-dividend paying companies from the DCF analysis when calculating the required market return (which is used to estimate the MRP).¹⁶ In Docket No. 14-0371 the Commission also concluded that, for the purposes of that proceeding, it was inappropriate to rely on near-term projected interest rates.¹⁷ Consequently, I performed CAPM analyses reflecting these

¹⁶ See Illinois Commerce Commission Order, Docket No. 13-0192, December 18, 2013, at 164-165.

¹⁷ See Illinois Commerce Commission Order, Docket No. 14-0371, February 11, 2015, at 66.

502 assumptions.

503 **Q. What risk-free rate assumption did you include in your CAPM analysis?**

504 A. Since utility assets represent long-term investments, I used the 30-day average
505 yield on 30-year Treasury bonds as my estimate of the risk-free rate (2.79
506 percent as of February 12, 2016).

507 **Q. Why have you relied upon the 30-year Treasury yield for your CAPM
508 analysis?**

509 A. In determining the security most relevant to the application of the CAPM, it is
510 important to select the term (or maturity) that best matches the life of the
511 underlying investment. Natural gas utilities typically are long-duration
512 investments and as such, the 30-year Treasury yield is more suitable for the
513 purpose of calculating the cost of equity.

514 **Q. What beta coefficients did you use in your CAPM model?**

515 A. With respect to the beta coefficient, I considered two methods of calculation. My
516 first approach simply employs the average reported beta coefficient from Value
517 Line for each of the proxy group companies (Value Line calculates beta
518 coefficients over a five-year period). For the second beta coefficient estimate I
519 relied on the beta calculation tool provided by Bloomberg and specified a five
520 year calculation period (rather than Bloomberg's standard two year calculation.)
521 Both of those services adjust their calculated (or "raw") beta coefficients to reflect
522 the tendency of the beta coefficient to regress to the market mean of 1.00.¹⁸ The

¹⁸ See, e.g., Blume, Marshall E., *On the Assessment of Risk*, The Journal of Finance, Vol. 26, No. 1, March 1971, at 1-10).

523 Value Line and Bloomberg proxy group average beta coefficients are 0.76 and
524 0.71, respectively.¹⁹

525 **Q. Please describe your *ex-ante* approach to estimating the market risk**
526 **premium.**

527 A. The approach is based on the market required return, less the current 30-year
528 Treasury bond yield. To estimate the market required return, I calculated the
529 market capitalization weighted average ROE using the constant growth DCF
530 model. To do so, I relied on data from two sources: (1) Bloomberg and (2) Value
531 Line. For both Bloomberg and Value Line, I calculated the market capitalization
532 weighted expected dividend yield (using the same one-half growth rate
533 assumption described earlier), and combined that amount with the market
534 capitalization weighted projected earnings growth rate to arrive at the average
535 DCF result. I performed that calculation using each of the dividend paying
536 companies in the S&P 500 Index for which Bloomberg and Value Line provided
537 both dividend yields and consensus growth rates. I then subtracted the current
538 30-year Treasury yield from that amount to arrive at the market DCF-derived *ex-*
539 *ante* market risk premium estimate. The results of those two calculations are
540 provided in Schedule 3.0.3.

541 **Q. What are the results of your CAPM analysis?**

542 A. The results of my CAPM analysis are summarized in Table 3.0.4, below (see
543 also Schedule 3.0.5).

¹⁹ See Schedule 3.0.4.

544

Table 3.0.4: Summary of CAPM Results

	Bloomberg MRP <i>(DCF S&P 500 Div. Payers)</i>	Value Line MRP <i>(DCF S&P 500 Div. Payers)</i>
Value Line Beta, Current Risk-Free Rate (2.79%)	10.13%	9.73%
Bloomberg 5-year Beta, Current Risk-Free Rate (2.79%)	9.69%	9.31%

545

546 **VII. ADDITIONAL ROE BENCHMARK ANALYSIS**

547 **Q. Have you performed any alternate ROE analyses?**

548 A. Yes, I have considered the results of several additional analyses as benchmarks
549 with which to assess the range of results produced by the DCF and CAPM
550 analyses described above. The results of those analyses suggest the required
551 ROE is likely at the higher end of the range of results produced by the primary
552 DCF and CAPM analyses discussed above.

553 ***Alternate CAPM Analysis***

554 **Q. Please briefly describe your alternate CAPM analyses.**

555 A. I performed an alternate set of CAPM analyses that (1) included a near-term
556 projection of the risk-free rate; and (2) relied on market risk premiums derived
557 using market returns that included both dividend paying and non-dividend paying
558 companies.²⁰

559 **Q. Why have you considered a forward-looking risk free rate?**

560 A. In general, the cost of capital is a forward-looking concept. The relevant

²⁰ See Schedule 3.0.6 and Schedule 3.0.7.

561 analytical issue in the application of the CAPM is to ensure that all three
562 components of the model (*i.e.*, the risk-free rate, beta, and the MRP) are
563 consistent with current market conditions and investor perceptions.

564 Since the purpose of this proceeding is to establish the cost of equity for
565 Liberty Midstates' gas distribution operations on a going-forward basis, it is
566 important to develop a CAPM analysis that reflects investor expectations
567 concerning the risk-free rate.

568 **Q. Why have you included non-dividend paying companies when estimating**
569 **the expected market return component of the market risk premium?**

570 A. A fundamental assumption of the CAPM is that required return is proportional to
571 the risk of the investment. As discussed above, the beta coefficient is the
572 measure of risk in the CAPM and is calculated by comparing the subject
573 security's returns to the overall market returns. Since the measure of risk is
574 calculated in relation to the overall market, which includes both dividend paying
575 and non-dividend paying companies, it is important that the incremental return
576 associated with that risk reflect the expected return of the overall market. As
577 such, I believe it is more appropriate to combine beta coefficients calculated
578 relative to the entire market with a market risk premium calculated using the
579 entire market rather than a subset (*i.e.*, dividend paying companies).

580 **Q. Please summarize the results of your alternate CAPM analyses.**

581 A. The results of my alternate CAPM analyses are summarized in Table 3.0.5,
582 below (see also Schedule 3.0.7).

583

Table 3.0.5: Summary of CAPM Results

Alternate CAPM		
	Bloomberg MRP <i>(DCF S&P 500)</i>	Value Line MRP <i>(DCF S&P 500)</i>
Value Line Beta, Current 30-Year Treasury (2.79%)	10.86%	10.40%
Value Line Beta, Projected Risk-Free Rate (3.35%)	10.99%	10.54%
Bloomberg 5-year Beta, Current Risk-Free Rate (2.79%)	10.38%	9.95%
Bloomberg 5-year Beta, Projected Risk-Free Rate (3.35%)	10.54%	10.11%

584

585 ***Bond Yield Plus Risk Premium Analysis***

586 **Q. Please generally describe the bond yield plus risk premium analysis.**

587 A. This approach is based on the basic financial tenet that equity investors bear the
588 residual risk associated with ownership and therefore require a premium over the
589 return they would have earned as a bondholder. That is, since returns to equity
590 holders are more risky than returns to bondholders, equity investors must be
591 compensated for bearing that risk. Risk premium approaches, therefore,
592 estimate the cost of equity as the sum of the equity risk premium and the yield on
593 a particular class of bonds. As noted in my discussion of the CAPM, since the
594 equity risk premium is not directly observable, it typically is estimated using a
595 variety of approaches, some of which incorporate *ex-ante*, or forward-looking
596 estimates of the cost of equity, and others that consider historical, or *ex-post*,
597 estimates. An alternative approach is to use actual authorized returns for natural
598 gas utilities to estimate the equity risk premium.

599 **Q. Please explain how you performed your bond yield plus risk premium**
600 **analysis.**

601 A. I first defined the equity risk premium as the difference between the authorized
602 ROE and the then-prevailing level of long-term interest rates. I then gathered
603 data from 516 natural gas rate proceedings between the fourth quarter of 1992
604 and February 12, 2016 and calculated the average authorized ROE for each
605 calendar quarter.²¹ Using that data, I calculated the observed risk premium in
606 each quarter as the difference between the average authorized ROE and the
607 average utility Baa bond yield reported by Moody's.

608 Relative to the long-term historical average, the analytical period includes
609 interest rates and authorized ROEs that are relatively high during one period (*i.e.*,
610 the early 1990s) and that are quite low during another (*i.e.*, the post-Lehman
611 bankruptcy period). To account for the well-documented inverse relationship
612 between interest rates and the risk premium,²² I conducted a regression analysis
613 in which the observed equity risk premium is the dependent variable, and the
614 average utility Baa bond yield is the independent variable. The form of the
615 equation for the regression analysis was:

616
$$RP = \alpha + \beta(T) \quad \text{Equation [6]}$$

617 where "RP" is the risk premium (*i.e.*, average authorized ROE less average utility

²¹ The period for which data was available. The data covers a number of economic cycles; see National Bureau of Economic Research, *U.S. Business Cycle Expansion and Contractions*.

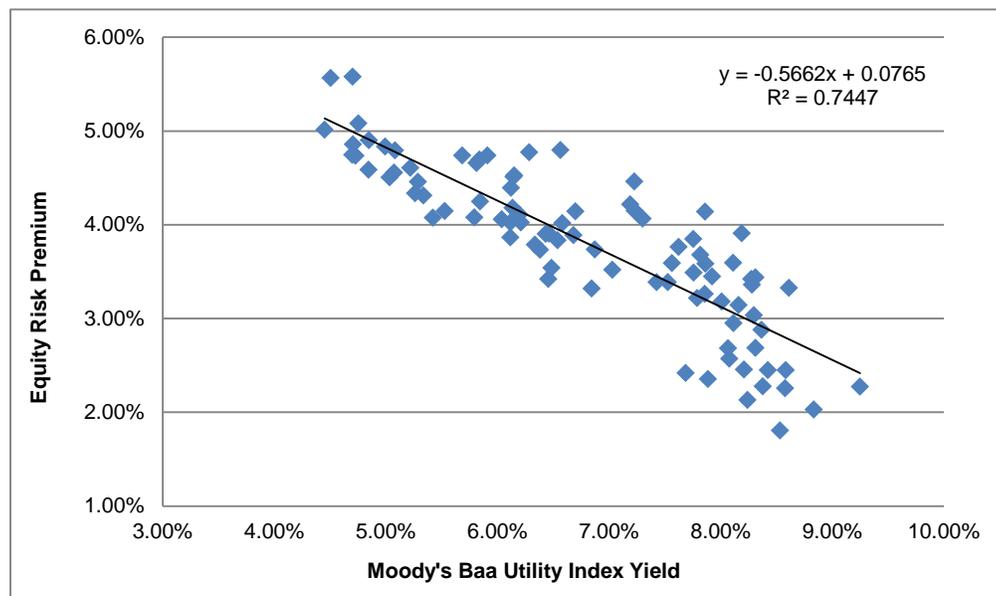
²² See, e.g., Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, *Financial Management*, Summer 1992, at 63-70; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, *Financial Management*, Spring 1985, at 33-45; and Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, *Financial Management*, Autumn 1995, at 89-95.

618 Baa bond yield), “ α ” is the intercept term, “ β ” is the slope term and “T” is the
619 average yield on Baa-rated utility bonds.

620 **Q. What were the results of your bond yield plus risk premium analysis?**

621 A. As Chart 1 illustrates, over time there has been a statistically significant, negative
622 relationship between Baa-rated utility bond yields and the equity risk premium.

623 **Chart 1: Equity Risk Premium²³**



624
625 Consequently, simply applying the long-term average equity risk premium
626 of 3.80 percent would significantly understate the cost of equity and produce
627 results well below any reasonable estimate. Based on the regression coefficients
628 in Chart 1, however, the implied ROE is between 10.00 percent and 10.60
629 percent (see Liberty Schedule 3.0.8 and Table 3.0.6, below).

²³ Source: SNL Financial and Bloomberg Professional.

630

Table 3.0.6: Bond Yield Plus Risk Premium Results²⁴

<i>Treasury Yield</i>	<i>Return on Equity</i>
Current Baa Utility Bond Yield (5.43%)	10.00%
Near Term Projected Utility Bond Yield (5.72%)	10.13%
Long Term Projected Utility Bond Yield (6.81%)	10.60%

631

632 **Q. Has the Commission recognized authorized ROEs in other jurisdictions are**
633 **a relevant consideration when determining the appropriate authorized ROE**
634 **for a utility?**

635 **A. Yes, it has. For example, in Docket No. 12-0511 the Commission stated:**

636 While we adhere to the position that the Commission does not
637 base utility returns on those approved for other utilities, the
638 Commission will consider general market conditions and trends
639 to be apprised of current market conditions, but only to the
640 extent such data are verifiable and unbiased.

641 ***

642 Based on the record, the Commission recognizes that the
643 average of recent ROEs authorized for natural gas utilities is
644 9.94%...The Commission also notes that A-rated utility equity
645 risk premiums have recently increased significantly as interest
646 rates remain at historic lows...These general market data
647 provide relevant comparative information as we assess the
648 parties' various ROE provisions.²⁵

649

²⁴ Projected Baa utility bond yields calculated as current yield plus Blue Chip Financial Forecast's projected increase in corporate Baa bond yields. See, Blue Chip Financial Forecasts, Vol. 35, No. 2, Feb. 1, 2016, at 2; and, Blue Chip Financial Forecasts, Vol. 34, No. 12, Dec. 1, 2015, at 14.

²⁵ See Illinois Commerce Commission Order, Docket No. 12-0511, June 18, 2013, at 205. [citations omitted]

650 ***Expected Earnings Analysis***651 **Q. Please briefly describe your expected earnings analysis.**

652 A. The expected earnings analysis calculates the projected returns on book value
653 for the gas industry group as a whole and for the specific firms in the proxy group
654 individually. To implement the model, I used the projected return on common
655 equity for the period 2018-2020 provided in the latest Value Line gas utility
656 reports. I then adjusted those returns to account for the fact that they show ROE
657 on the basis of common shares outstanding at the end of the period, as opposed
658 to ROE on average shares outstanding.

659 In reviewing the results, I first considered the expected returns for all
660 Value Line gas utilities (note that mergers do not affect book returns on equity as
661 they do the DCF returns on market value) for which the mean and median
662 expected returns were 11.32 percent and 11.86 percent. I then reviewed the
663 mean and median proxy group returns, which were 11.30 percent and 11.42
664 percent, respectively (see Schedule 3.0.9).

665 **Q. What are the advantages of using an expected earnings model?**

666 A. Whereas other cost of equity analyses calculate investors required return on the
667 market value of their investment, the expected earnings model is uniquely suited
668 to the task of determining an appropriate return on book value of equity. For
669 example, as noted above, the DCF model depends on market data. The
670 dividend yield, a principal component of the DCF analysis, is a market-derived
671 parameter. Since the DCF model calculates the discount rate that equates the
672 future stream of cash flows to the current market price, it calculates the required

673 return on the market value of the utility's stock (rather than the book value of
674 equity). Similarly, the CAPM also calculates a required return on market price
675 (e.g., risk is based on movements in stock prices, and required risk
676 compensation is based on expected returns on a market index). In practice,
677 those returns are applied to the book value of the utility's equity to determine the
678 revenue requirement. The market value, except under very rare circumstances,
679 is not equal to the book value. Given this mismatch, it is useful to consider a
680 direct measure of the expected return on the book value, versus market value, of
681 utility stocks.

682 **VIII. BUSINESS RISKS AND OTHER CONSIDERATIONS**

683 **Q. What additional information did you consider in assessing the analytical**
684 **results noted above?**

685 A. Because the analytical methods discussed above provide a range of estimates,
686 there are several additional factors that should be taken into consideration when
687 establishing a reasonable range for the Company's cost of equity. Those factors
688 include (1) the Company's relatively small size; (2) the regulatory environment in
689 which the Company operates; (3) flotation costs associated with equity
690 issuances; and (4) the weather risk the Company would face absent its proposed
691 Volume Balancing Adjustment rider.

692 ***Small Size***

693 **Q. Please explain the risk associated with small size.**

694 A. Both the financial and academic communities have long accepted the proposition

695 that the cost of equity for small firms is subject to a “size effect.”²⁶ While
696 empirical evidence of the size effect often is based on studies of industries
697 beyond regulated utilities, utility analysts also have noted the risks associated
698 with small market capitalizations. Specifically, Ibbotson Associates noted: “For
699 small utilities, investors face additional obstacles, such as a smaller customer
700 base, limited financial resources, and a lack of diversification across customers,
701 energy sources, and geography. These obstacles imply a higher investor
702 return.”²⁷

703 **Q. How does Liberty Midstates compare in size to the proxy companies?**

704 A. Liberty Midstates is significantly smaller than the proxy group, both in terms of
705 number of customers and annual revenues. Schedule 3.0.10 estimates the
706 implied market capitalization for Liberty Midstates (*i.e.*, the implied market
707 capitalization if Liberty Midstates were a stand-alone, publicly traded entity).
708 That is, because Liberty Midstates is not a separately traded entity, an estimated
709 stand-alone market capitalization for Liberty Midstates must be calculated. The
710 implied market capitalization of Liberty Midstates is calculated by applying the
711 median market-to-book ratio for the proxy group of 1.85 to the Company’s
712 implied total common equity of approximately \$24 million. The implied market
713 capitalization based on that calculation is \$45 million, which is less than 2.00
714 percent of the proxy group median of \$2.72 billion.

²⁶ See Mario Levis, *The record on small companies: A review of the evidence*, Journal of Asset Management, March 2002, at 368-397, for a review of literature relating to the size effect.

²⁷ Michael Annin, *Equity and the Small-Stock Effect*, Public Utilities Fortnightly, October 15, 1995.

715 **Q. Have you also considered Liberty Midstates' comparatively small size in**
716 **your estimated cost of equity?**

717 A. Yes. While I have quantified the small size effect, rather than proposing a
718 specific premium, I have considered the small size of Liberty Midstates in my
719 assessment of business risks in order to determine where, within a reasonable
720 range of returns, Liberty Midstates' required ROE appropriately falls.

721 **Q. How did you estimate the size premium for Liberty Midstates?**

722 A. In its *2015 Ibbotson SBBI Market Report*, Morningstar, Inc. ("Morningstar")
723 presents its calculation of the size premium for deciles of market capitalizations
724 relative to the S&P 500 Index.²⁸ An additional estimate of the size premium
725 associated with Liberty Midstates, therefore, is the difference in the Morningstar
726 size risk premiums for the proxy group median market capitalization relative to
727 the implied market capitalization for Liberty Midstates.

728 As shown on Schedule 3.0.10, based on recent market data, the median
729 market capitalization of the proxy group was approximately \$2.72 billion, which
730 corresponds to the fifth decile of Morningstar's market capitalization data. Based
731 on the Morningstar analysis, that decile has a size premium of 1.65 percent (or
732 165 basis points). The implied market capitalization for Liberty Midstates is
733 approximately \$45 million, which falls within the tenth decile and corresponds to
734 a size premium of 5.72 percent (or 572 basis points). The difference between
735 those size premiums is 407 basis points (4.07 percent).

²⁸ See Morningstar, Inc., 2015 Ibbotson SBBI Market Report, at 16.

736 **Regulatory Risks**

737 **Q. How does the regulatory environment in which a utility operates affect its**
738 **access to and cost of capital?**

739 A. The regulatory environment in which a utility operates can significantly affect both
740 the access to, and the cost of capital in several ways. The proportion and cost of
741 debt capital available to utility companies are influenced by the rating agencies'
742 assessment of the regulatory environment. One element of this assessment
743 includes evaluating a company's ability to recover costs. Moody's, for example,
744 considers the nature of regulation, including its effect on cost recovery and cash
745 flow generation, to be of such consequence that it represents one-half of the
746 factors analyzed in arriving at credit ratings.²⁹ As to the overall regulatory
747 environment, Moody's notes that the regulatory "framework in which a regulated
748 utility operates is typically one of its most significant credit considerations. The
749 regulatory structure and its general framework is a primary consideration that
750 differentiates the industry from most other corporate sectors."³⁰ Moody's further
751 explains:

752 As the revenues set by the regulator are a primary component
753 of a utility's cash flow, the utility's ability to obtain predictable
754 and supportive treatment within its regulatory framework is one
755 of the most significant factors in assessing a utility's credit
756 quality. The regulatory framework generally provides more
757 certainty around a utility's cash flow and typically allows the
758 company to operate with significantly less cushion in its cash
759 flow metrics than comparably rated companies in other

²⁹ See Moody's Investors Service, *Rating Methodology: Regulated Electric and Gas Utilities*, December 23, 2013, at 6.

³⁰ See Moody's Investors Service, *Special Comment: Regulatory Frameworks – Ratings and Credit Quality for Investor-Owned Utilities*, June 18, 2010, at 1.

760 industrial sectors. In situations where the regulatory framework
761 is less supportive, or is more contentious, a utility's credit quality
762 can deteriorate rapidly.³¹

763 Regulatory mechanisms also have a significant effect on utilities' ability to
764 generate adequate cash flows. Those cash flows, in turn, inform credit rating
765 agencies' assessments of the utilities. In that regard, Moody's notes that timely
766 cost recovery is an important determinant of credit quality, noting that the "ability
767 to recover prudently incurred costs on a timely basis and to attract debt and
768 equity capital are crucial credit considerations."³² Moody's further notes "[i]n a
769 sector that is typically free cash flow negative (due to large capital expenditures
770 and dividends) and that routinely needs to refinance very large maturities of long-
771 term debt, investor concerns about a lack of timely cost recovery or the
772 sufficiency of rates can, in an extreme scenario, strain access to capital markets
773 and potentially lead to insolvency of the utility."³³ Similarly, Fitch notes that in the
774 current environment of rising costs, utilities will require more frequent rate
775 increases to maintain financial results, resulting in further exposure to regulatory
776 risks.³⁴

777 In addition, it is important to recognize that regulatory decisions regarding
778 the authorized ROE and capital structure have direct consequences for the
779 subject utility's internal cash flow generation (sometimes referred to as "Funds
780 from Operations", or FFO). Since credit ratings are intended to reflect the ability

³¹ *Ibid.*, at 2.

³² Moody's Investors Service, *Rating Methodology: Regulated Electric and Gas Utilities*, December 23, 2013, at 15.

³³ *Ibid.*

³⁴ See FitchRatings, *U.S. Utilities, Power, and Gas 2010 Outlook*, December 4, 2009, at 1.

781 to meet financial obligations as they come due, the ability to generate the cash
782 flows required to meet those obligations (and to provide an additional amount for
783 unexpected events) is of critical importance to debt investors. Two of the most
784 important metrics used to assess that ability are the ratios of FFO to debt, and
785 FFO to interest expense, both of which are directly affected by regulatory
786 decisions regarding the appropriate rate of return, and capital structure.

787 **Q. Have you performed any analyses of investor’s perceptions of the**
788 **regulatory environment in which Liberty Midstates operates relative to the**
789 **proxy group companies?**

790 A. Yes, I have. In order to assess investors’ relative view of the Company’s
791 regulatory environment, I considered the jurisdictional rankings developed by
792 Regulatory Research Associates (“RRA”).³⁵ RRA rates regulatory jurisdictions
793 from the perspective of investors, and assigns ratings of “Above Average,”
794 “Average,” or “Below Average.” RRA further distinguishes jurisdictions within
795 those respective categories by applying ratings of 1, 2 or 3, with a rating of “1”
796 being the strongest. In describing its ranking system, RRA notes that:

797 The evaluations are assigned from an investor perspective and
798 indicate the relative regulatory risk associated with the
799 ownership of securities issued by each jurisdiction’s electric and
800 gas utilities. Each evaluation is based upon our consideration of
801 the numerous factors affecting the regulatory process in the
802 state, and is changed as major events occur that cause us to
803 modify our view of the regulatory risk accruing to the ownership
804 of utility securities in that individual jurisdiction.³⁶

805 Illinois was upgraded to “Below Average 1” from “Below Average 2” (the

³⁵ See Regulatory Research Associates, *State Regulatory Evaluations*, July 31, 2015, at 2.
³⁶ *Ibid.*, at 1.

806 lowest rating assigned to any jurisdiction) in October 2014. Regarding Illinois'
807 regulatory environment, RRA has noted "Illinois regulation is relatively restrictive
808 from an investor perspective," and that the returns on equity returns authorized in
809 several recent gas base rate proceedings "warrant some concern."³⁷ However,
810 RRA also notes that they believe "the Illinois jurisdiction has made some
811 progress over the past couple of years" by reducing regulatory lag for utilities.³⁸

812 To compare Liberty Midstates' regulatory environment to the proxy group,
813 I used a numerical approach that ranks jurisdictions from 9 to 1, with Regulatory
814 Research Associate's ranking convention. Under that approach, higher values
815 indicate a more credit supportive jurisdiction. I applied that ranking system to the
816 proxy group companies by regulatory jurisdiction. For each proxy group
817 company that operates in multiple jurisdictions, I considered the ranking for each
818 regulatory jurisdiction in which they operate. As shown in Schedule 3.0.11, the
819 simple average of the RRA ranking for each of the proxy group companies, in all
820 jurisdictions, is 5.29 (*i.e.*, generally Average/2). The Company's Illinois
821 operations have a ranking of 3.00 (*i.e.*, Below Average/1).

822 **Q. What is your conclusion regarding the effect of the Company's regulatory**
823 **risk on its ROE?**

824 A. Rankings such as those provided by RRA are observable and meaningful
825 indicators of the financial community's view of the regulatory risks faced by
826 utilities. Based on my analysis, using the RRA ranking structure, the financial

³⁷ *Ibid.*

³⁸ *Ibid.*

827 community appears to attribute somewhat higher regulatory risk to the Company
828 than to the proxy group (on average). This would support an ROE for the
829 Company toward the upper end of the range of results.

830 **Flotation Costs**

831 **Q. What are flotation costs?**

832 A. Flotation costs are the costs associated with the sale of new issues of common
833 stock. These include out-of-pocket expenditures for preparation and filing, as
834 well as underwriting and other costs of issuance.

835 **Q. Are flotation costs part of the utility's invested costs or part of the utility's
836 expenses?**

837 A. Flotation costs are part of capital costs, which are properly reflected on the
838 balance sheet under "paid in capital" rather than current expenses on the income
839 statement. Flotation costs are incurred over time, just as investments in rate
840 base or debt issuance costs. As a result, the great majority of flotation costs are
841 incurred prior to the test year, but remain part of the cost structure during the test
842 year and beyond.

843 **Q. How did you calculate the flotation cost recovery adjustment?**

844 A. I modified the constant growth DCF calculation to provide a dividend yield that
845 would reimburse investors for issuance costs. My flotation cost adjustment
846 recognizes the costs of issuing equity that were incurred by APUC and the proxy
847 group companies in their most recent two issuances. As shown in Schedule
848 3.0.12, an adjustment of 0.13 percent (*i.e.*, 13 basis points) reasonably
849 represents flotation costs for the Company.

850 **Q. Are you proposing to adjust your recommended ROE by 13 basis points to**
851 **reflect the effect of flotation costs on the Company's ROE?**

852 A. No. Rather, I have considered the effect of flotation costs, in addition to the
853 Company's other business risks, in determining where the Company's ROE falls
854 within the range of results.

855 ***Volume Balancing Adjustment Rider***

856 **Q. Have you considered the Company's proposed Volume Balancing**
857 **Adjustment ("VBA") rider when determining your recommended ROE?**

858 A. Yes, I have. My recommendation assumes the Company's proposed VBA rider,
859 which is intended to help mitigate the severity of sales and revenue fluctuations
860 associated with weather variations, will be approved. As discussed below,
861 absent the VBA rider Liberty Midstates is exposed to more severe weather risk
862 than the proxy group companies. If the rider is not approved it would increase
863 the risk faced by shareholders and, therefore, increase the Company's required
864 ROE.

865 **Q. Please summarize the risk posed by yearly weather variations.**

866 A. Weather risk leads to cash flow and earnings variability from season to season
867 and year to year due to variability in temperatures. Since the demand for natural
868 gas is strongly correlated to heating degree days (*i.e.*, colder temperatures result
869 in greater demand), gas utility revenues and cash flows are highly dependent on
870 weather.

871 **Q. Do investors recognize the risks associated with weather?**

872 A. Yes, investors are aware of the relationship between seasonal weather, heating

873 degree days and natural gas distributor operations. For example, in a survey of
874 the natural gas industry, Value Line stated:

875 Weather is a factor that affects the demand for natural gas,
876 particularly from small commercial businesses and consumers.
877 Not surprisingly, earnings for utilities are susceptible to seasonal
878 temperature patterns, with consumption normally at its highest
879 level during the winter heating months. Unseasonably warm or
880 cold weather can create substantial volatility in quarterly
881 operating results. But some companies strive to counteract this
882 exposure through temperature-adjusted rate mechanisms,
883 which are available in a number of states. Therefore, investors
884 interested in utilities with more-stable profits from year to year
885 are advised to look for companies that hedge this risk.³⁹

886 **Q. Under its current rate structure, how does Liberty Midstates' weather risk**
887 **compare to the proxy group companies?**

888 A. Under its current rate structure, the effect of weather risk for Liberty Midstates is
889 more severe than most of the comparable companies because the Company
890 does not currently have a weather normalization clause or other form of rate
891 protection against extreme weather variation. To the extent the Company
892 experiences a warmer than normal winter heating season, it faces the risk of
893 significant under-recovery of its fixed costs since a substantial portion of those
894 costs continue to be recovered through volumetric charges. Many gas
895 distribution companies have existing or pending revenue stabilization
896 mechanisms in place to manage the fluctuations in sales volume due to weather.
897 According to reviews undertaken by RRA, and consistent with my review of
898 annual SEC Form 10-K filings, all of the proxy group companies have some form
899 of revenue stabilization mechanism to mitigate volumetric uncertainty due to

³⁹

Value Line Investment Survey, Natural Gas Utility, September 7, 2012.

900 weather (see Schedule 3.0.13).⁴⁰

901 As compared to the proxy companies, a significant portion of the
902 Company's fixed costs remain vulnerable to under-recovery from volumetric
903 uncertainty due to weather. As shown in Schedule 3.0.13, most of the proxy
904 companies are able to mitigate weather risks for the vast majority of their
905 customers.⁴¹ Moreover, weather normalization mechanisms enable full cost
906 recovery for the majority of the proxy companies.

907 **Q. What are your conclusions regarding the effect of the weather uncertainty**
908 **on the Company's risk profile relative to the proxy group?**

909 A. Relative to the proxy companies, Liberty Midstates' current rate structure causes
910 the Company to be at greater risk of under-recovering its fixed distribution costs
911 due to decreased sales attributable to abnormal weather. With respect to
912 weather risk, therefore, the Company is exposed to greater risk of not earning its
913 required return. Consequently, if the VBA rider is not approved investors would
914 require a higher return as compensation for the higher level of cash flow and
915 earnings variability. Absent the VBA rider, I believe that incremental risk and
916 required return would suggest a higher cost of equity than I recommend in my
917 testimony.

⁴⁰ Regulatory Research Associates, *Adjustment Clauses and Rate Riders*, October 2, 2015; most recent company SEC Form 10-K filing as of January 15, 2016.

⁴¹ The weather normalization adjustment coverage for AGL Resources Inc. is approximately 48.00 percent because Northern Illinois Gas Company, the largest subsidiary of AGL Resources Inc., operates in Illinois and does not have a weather normalization clause.

918 **IX. CAPITAL MARKET ENVIRONMENT**

919 **Q. Do economic conditions influence the required cost of capital and required**
920 **return on common equity?**

921 A. Yes. The required cost of capital, including the ROE, is a function of prevailing
922 and expected economic and capital market conditions. As discussed in Section
923 VI, the models used to estimate the cost of equity are meant to reflect, and
924 therefore are influenced by, current and expected capital market conditions.
925 However, it is important to recognize that all analytical models used to estimate
926 the required ROE are based on simplifying assumptions that may not hold true
927 under specific market circumstances. When market data used in the ROE
928 models reflect unusual market conditions that investors may not expect to persist
929 (such as current interest rates), it is important to assess the reasonableness of
930 the results in the context of other observable market data. To the extent that
931 certain ROE estimates are incompatible with such data or inconsistent with basic
932 financial principles, it is appropriate to consider whether alternative estimation
933 techniques are likely to provide more meaningful and reliable results.

934 **Q. Are there any market factors that call in to question routine application of**
935 **the DCF or CAPM analyses at the current time?**

936 A. Yes, there are. In particular, as I will discuss in more detail later, the Federal
937 Reserve's unprecedented actions after the recent financial crisis have continued
938 to have a significant influence on capital markets. It is clear, for example, those
939 actions have led to historically low long-term yields (which can skew the results
940 of risk premium models such as the CAPM) and unusually high utility stock

941 valuations (which can suppress DCF-based market results). Consequently, I
942 believe it is reasonable to give more weight to the upper end of the range of DCF
943 model results at the current time and to give particular consideration to investors'
944 expectations for future interest rate levels when performing risk premium based
945 analyses.

946 ***Federal Reserve Actions***

947 **Q. Please summarize the effect of recent Federal Reserve policies on interest**
948 **rates and the cost of capital.**

949 A. Starting in the summer of 2007, the Federal Reserve took a number of steps to
950 respond to the emerging financial crisis. Among other actions, the Federal
951 Reserve lowered the Federal Funds rate from 5.25 percent in September 2007 to
952 0.00 - 0.25 percent by December 2008.⁴² Beginning in 2008, the Federal
953 Reserve also proceeded on a steady path of "quantitative easing" (QE) initiatives
954 intended to lower long-term Treasury yields.⁴³ QE was "designed to put
955 downward pressure on longer-term interest rates by having the Federal Reserve
956 take onto its balance sheet some of the duration and prepayment risks that would
957 otherwise have been borne by private investors."⁴⁴ While the Federal Reserve
958 completed its final round of QE in October 2014, it has continued to reinvest
959 principal repayments from its holdings of agency debt and mortgage-backed

⁴² See <http://www.federalreserve.gov/monetarypolicy/openmarket.htm>

⁴³ See Federal Reserve Press Release dated June 19, 2013.

⁴⁴ Federal Reserve Bank of New York, *Domestic Open Market Operations During 2012*, April 2013, at 29.

960 securities.⁴⁵ Under that policy, “Securities held outright” on the Federal Reserve’s
961 balance sheet increased from approximately \$489 billion at the beginning of
962 October 2008 to \$4.24 trillion by mid-February 2016.⁴⁶ To put that increase in
963 context, the securities held by the Federal Reserve represented approximately
964 3.29 percent of Gross Domestic Product (“GDP”) at the end of September 2008,
965 and had risen to approximately 23.37 percent of GDP in February 2016.⁴⁷ As of
966 the end of 2014, the Federal Reserve held approximately 45.00 percent of the
967 outstanding supply of long-term Treasury Securities with ten to thirty years
968 remaining until maturity.⁴⁸ As such, the Federal Reserve policy actions have
969 represented a significant source of liquidity, and have had a substantial effect on
970 capital markets.

971 In December 2015 the Federal Reserve raised the Federal Funds rate for
972 the first time in nine years, and began the process of rate normalization.⁴⁹ There
973 remains significant uncertainty, however, surrounding the timing of the Federal
974 Reserve’s future policy decisions, including the unwinding of stimulus programs.
975 That uncertainty represents a risk to investors that, in my view, should be
976 reflected in the Company’s authorized ROE.

⁴⁵ http://www.federalreserve.gov/monetarypolicy/bst_openmarketops.htm

⁴⁶ Source: Federal Reserve Schedule H.4.1. “Securities held outright” include U.S. Treasury securities, Federal agency debt securities, and mortgage-backed securities.

⁴⁷ Sources: Federal Reserve Schedule H.4.1; Bureau of Economic Analysis, GDP data as of the fourth calendar quarter of 2013.

⁴⁸ Federal Reserve Bank of New York, *Domestic Open Market Operations During 2014*, April 2015 at 17.

⁴⁹ *Federal Reserve Press Release* dated December 16, 2015.

977 **Q. Has the Federal Reserve's quantitative easing policy been associated with**
978 **changes in the proxy companies' trading levels?**

979 A. Yes. From January 2000 through the end of August 2012 (that is, immediately
980 prior to the third round of QE), the proxy group's average P/E ratio traded at a
981 9.00 percent *discount* to the market, as measured by the S&P 500 Index. From
982 September 2012 through October 2014 (during the third round of QE) the proxy
983 group traded at a 12.00 percent *premium* to the market. Following the end of QE
984 through December 2015, the proxy group's average P/E ratio fell to
985 approximately 102.00 percent of the market P/E (*i.e.*, a 2.00 percent premium),
986 closer to the long-term relationship. Given the convergence in the proxy group
987 and market average P/E ratios during that period, it may be that investors saw
988 the gas utility sector as somewhat over-valued relative to the market, and bid
989 prices down in response. Since the beginning of the year, however, the premium
990 has increased to 14.00 percent.

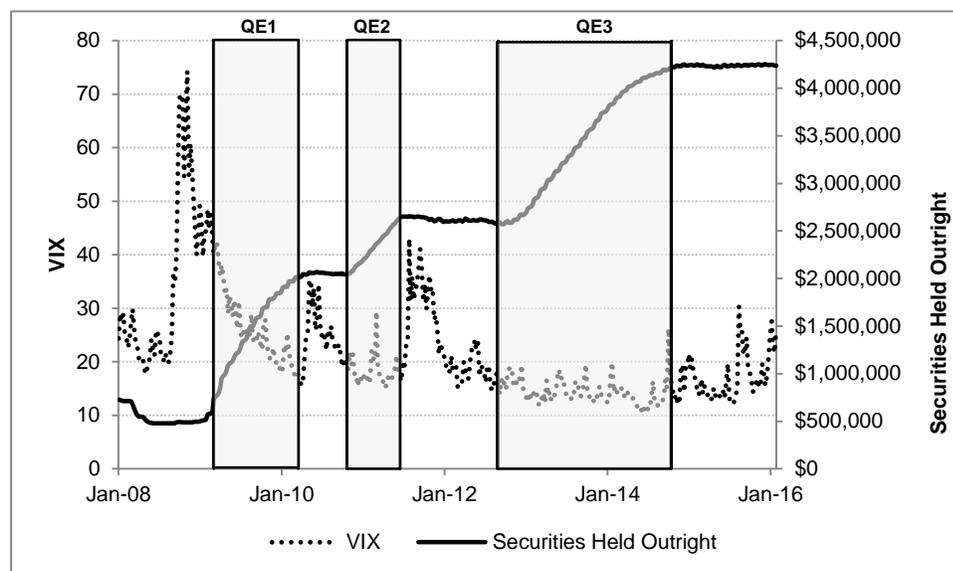
991 The sustainability of recent utility company valuations is a significant
992 analytical issue. Because DCF-based methods depend on recent stock prices as
993 a principal input, and because the constant growth model assumes that P/E
994 ratios and the cost of equity will remain constant in perpetuity, the lingering
995 effects of Federal Reserve intervention may be weighing on DCF results.

996 **Q. Have the Federal Reserve's actions had other significant effects on the**
997 **stock market?**

998 A. Yes. Aside from reducing interest rates, it also has had the effect of reducing
999 market volatility. As shown in Figure 2 (below), each time the Federal Reserve

1000 began to purchase bonds (as evidenced by the increase in “Securities Held
 1001 Outright” on its balance sheet), volatility subsequently declined. In fact, in
 1002 September 2012, when the Federal Reserve began to purchase long-term
 1003 securities at a pace of \$85 billion per month, volatility (as measured by the CBOE
 1004 Volatility Index, known as the “VIX”) fell, and through October 2014 (the end of
 1005 the final round of QE) remained in a relatively narrow range. The reason is quite
 1006 straight-forward: Investors became confident that the Federal Reserve would
 1007 intervene if markets were to become unstable.

1008 **Chart 2: VIX and Federal Reserve Asset Purchases⁵⁰**



1009
 1010 The important analytical issue is whether we can infer from the level of
 1011 Government bond yields that risk aversion among investors is at a historically low
 1012 level, implying a correspondingly low cost of equity. Given the negative
 1013 correlation between the expansion of the Federal Reserve’s balance sheet and

⁵⁰ Source: Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis; Federal Reserve Statistical Release H.4.1, Factors Affecting Reserve Balances.

1014 the VIX, and in light of the fact that volatility is now considerably above its prior
1015 levels (as discussed below), it is difficult to conclude that fundamental risk
1016 aversion and investor return requirements have fallen. If it were the case that
1017 investors believe that volatility will remain at low levels (that is, that market risk
1018 and uncertainty will remain low), it is not clear why they would decrease their
1019 return requirements for defensive sectors such as utilities. In that respect,
1020 current utility DCF results may express a high level of risk aversion in the market,
1021 even as the Federal Reserve's market actions have created contradictory market
1022 signals.

1023 ***Equity Market Volatility***

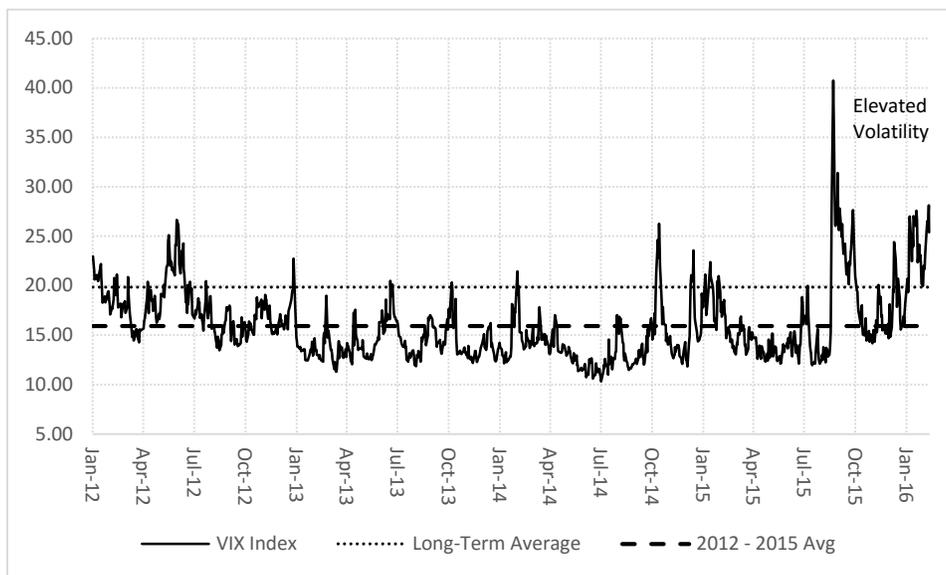
1024 **Q. Please discuss recent changes in equity market volatility.**

1025 A. As noted above, one measure of the expected volatility, or risk, of the stock
1026 market is the VIX. VIX is a highly visible, and often-reported barometer of
1027 investor risk sentiments which measures market expectations of near-term
1028 volatility of the stock market implied by near- and next-term options on the S&P
1029 500 Index. Although the VIX is not presented as a percentage, it should be
1030 understood as such. That is, if the VIX stood at 17.00, it would be interpreted as
1031 an expected standard deviation in annual returns on the market index of 17.00
1032 percent over the coming 30 trading days. The VIX has averaged approximately
1033 19.84 since 1990, which is quite close to the long-term standard deviation of
1034 annual returns on the S&P 500, which has been 20.55 percent.

1035 As shown in Chart 3, VIX was at relatively low levels from 2012 – 2015
1036 (which, as discussed above, appears to be an outcome of Federal Reserve

1037 monetary policy). The average VIX over the last six months of 2012 was
1038 approximately 16.48, nearly 17.00 percent lower than its long-term average. The
1039 average in 2014 was 14.18. Beginning in the latter portion of 2015, however,
1040 volatility returned in both markets and year-to-date the VIX has averaged 23.86.
1041 From that broad perspective, equity risk currently is elevated relative to historical
1042 levels.

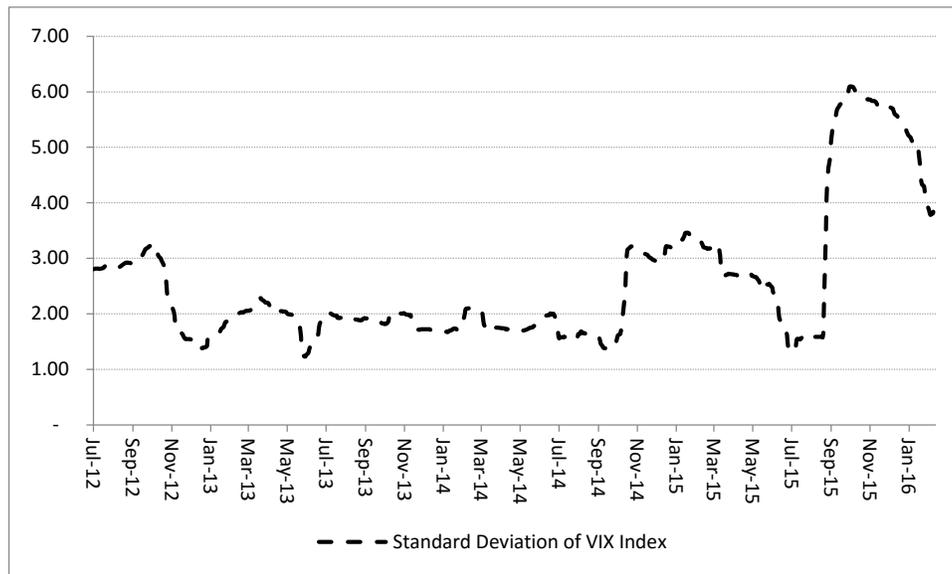
1043 **Chart 3: VIX Daily Levels and Long-Term Average**



1044 A further measure of market uncertainty is the volatility of the VIX itself.
1045 That is, we can look to the volatility of volatility, as measured by the standard
1046 deviation of the VIX. As Chart 4 (below) notes, the volatility of the VIX moved in
1047 a relatively narrow range since mid-2012, but noticeably increased at the end of
1048 2015. Such volatility indicates that, although interest rates are still near historical
1049 lows in the U.S. capital markets, there remains significant, if not greater,
1050 uncertainty in today's equity markets, with investors requiring greater returns to
1051 bear that risk.
1052

1053

Chart 4: Standard Deviation (100 days) of VIX



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Those findings are consistent with the VVIX, which is a traded index of the expected volatility of the VIX. Over the long-term, the VVIX has averaged approximately 86.80. In 2015, the VVIX increased to (on average) 94.82, and to date in 2016, has averaged 104.47; the 2015-2016 average has been 95.81. Just as the backward-looking standard deviation of the VIX indicates that observed volatility increased considerably in 2015 and 2016, the VVIX indicates that expected volatility also has been well above long-term average levels.

1062

Interest Rate Expectations

1063

Q. Does your recommendation also consider the interest rate environment?

1064

A. Yes, it does. From an analytical perspective, it is important that the inputs and assumptions used to arrive at an ROE recommendation, including assessments of capital market conditions, are consistent with the recommendation itself. Although I appreciate that all analyses require an element of judgment, the

1065

1066

1067

1068 application of that judgment must be made in the context of the quantitative and
1069 qualitative information available to the analyst and the capital market
1070 environment in which the analyses were undertaken.

1071 The low interest rate environment associated with central bank
1072 intervention may lead some analysts to conclude that current capital costs,
1073 including the cost of equity, are low and will remain as such. Putting aside the
1074 increases in volatility discussed above, that conclusion only holds true under the
1075 hypothesis of Perfectly Competitive Capital Markets (“PCCM”) and the classical
1076 valuation framework which, under normal economic and capital market
1077 conditions, underpin the traditional cost of equity models. Perfectly Competitive
1078 Capital Markets are those in which no single trader, or “market-mover”, would
1079 have the power to change the prices of goods or services, including bond and
1080 common stock securities. In other words, under the PCCM hypothesis, no single
1081 trader would have a significant effect on market prices.

1082 Classic valuation theory assumes that investors trade securities rationally,
1083 with prices reflecting their perceptions of value. Although central banks have the
1084 ability to set benchmark interest rates, they have been maintaining below normal
1085 rates to stimulate continued economic and capital market recovery. It therefore
1086 is reasonable to conclude that the Federal Reserve and other central banks have
1087 been acting as market-movers, thereby having a significant effect on the market
1088 prices of both bonds and stocks. The presence of market-movers, such as the
1089 Federal Reserve, runs counter to the PCCM hypothesis, which underlies
1090 traditional cost of equity models. Consequently, the results of those models

1091 should be considered in the context of both quantitative and qualitative
1092 information.

1093 **Q. Please briefly describe the current interest rate environment.**

1094 A. As noted above, as part of its QE initiatives the Federal Reserve significantly
1095 reduced the supply of long-term Treasuries in the market to intentionally lower
1096 the long-end of the yield curve. Following the end of the third round of QE, the
1097 Federal Reserve has continued a policy of reinvesting principal repayments in
1098 order to maintain an accommodative financial conditions. Consequently, 10-year
1099 Treasury yields have remained at historical lows. For perspective, the 10-year
1100 Treasury yield ranged from 2.29 percent to 15.32 percent from 1954 to 2008,⁵¹
1101 while it was 1.74 percent on February 12, 2016. At the same time, treasury
1102 yields have recently been susceptible to unusually volatile swings given their
1103 relatively low levels.⁵² The 10-year Treasury yield ranged from 1.63 percent to
1104 2.50 percent over the past twelve months.

1105 While Treasury yields have fluctuated, utility bond yields have shown a
1106 more steady increase as they have risen from 4.50 percent to 5.26 percent over
1107 the past twelve months (ranging from 4.38 percent to 5.63 percent).

1108 **Q. Are interest rates expected to increase going forward?**

1109 A. Yes, they are. Consensus projections gathered by *Blue Chip Financial Forecasts*

⁵¹ Monthly data. See <http://www.federalreserve.gov/releases/h15/data.htm>.

⁵² See also, 2014 Annual Report, JPMorgan and Chase Company, at 31. JPMorgan notes "Treasury markets were quite turbulent in the spring and summer of 2013, when the Fed hinted that it soon would slow its asset purchases. Then on one day, October 15, 2014, Treasury securities moved 40 basis points, statistically 7 to 8 standard deviations – an unprecedented move[...]"

1110 suggest a 30-year Treasury yield of 4.00 percent by 2017.⁵³ Those projections
1111 are supported by the fact that investors currently are willing to pay about one and
1112 a half times the premium for the option to sell long-term Government bonds in
1113 January 2018 (with an exercise price equal to the current price) than they are will
1114 to pay for the option to buy those bonds.⁵⁴ Because the prices of bonds move
1115 inversely to interest rates,⁵⁵ those option prices indicate that investors believe it
1116 is considerably more likely that interest rates will increase over the coming year,
1117 than it is likely that they will decrease.

1118 Given that: (1) Federal monetary policy is likely moving toward a process
1119 of “normalization”; and (2) economists and market data indicate expectations for
1120 increasing interest rates into 2017 and beyond, I believe that my 10.25 percent
1121 ROE recommendation properly reflects the prevailing and expected interest rate
1122 environment.

1123 **Q. What other indicators suggest investor risk aversion has increased?**

1124 A. “Credit spreads”, which are the incremental return required by debt investors to
1125 take on the default risk associated with securities of differing credit quality, have
1126 increased significantly over the past year even as interest rates remain near
1127 historical lows. As chart 5 (below) demonstrates, the estimated credit spread (on
1128 both a spot and 30-day moving average basis) has widened, such that it currently
1129 well exceeds the levels seen from 2011 through 2014. By way of example, since
1130 the order in Liberty Midstate’s last rate case (February 11, 2015), the 30-day

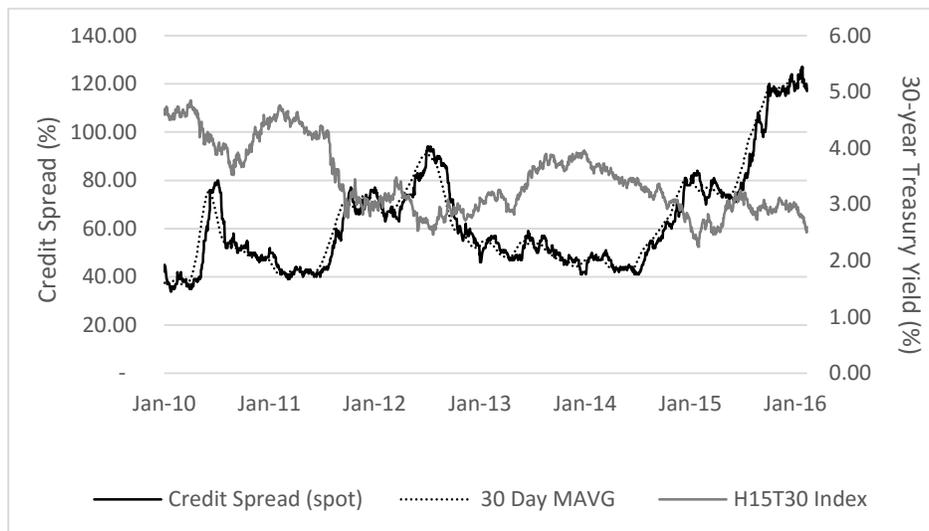
⁵³ See, Blue Chip Financial Forecast, Vol. 34 No. 12, December 1, 2015, at 14.

⁵⁴ Source: <http://www.nasdaq.com/symbol/lti/option-chain?dateindex=7>

⁵⁵ That is, as interest rates move up (down), bond prices move down (up).

1131 average spread increased by approximately 42 basis points, or by 55.33 percent.

1132 **Chart 5: 30-Year Treasury Yields and Utility Bond Index Baa-A Credit Spreads**⁵⁶



1133

1134 To the extent that credit spreads have increased, it is an observable

1135 measure of the capital markets' increased risk aversion; increased risk aversion

1136 by investors leads to an increased cost of equity. In addition, there is a clear and

1137 well-established inverse relationship between the level of interest rates and the

1138 equity risk premium.⁵⁷ Consequently, lower Treasury yields do not necessarily

1139 imply a correspondingly lower cost of equity, particularly considering the current

1140 level of credit spreads is significantly higher than seen over the past five years.

1141 **Q. Are potential interest rate increases seen as a risk for utility investors?**

1142 A. Yes, they are. For example, in December 2014 (near the recent peak in utility

1143 valuations) a report by Value Line warned investors of the negative effect from

1144 expected increases in interest rates:

⁵⁶ Source: Bloomberg Professional.
⁵⁷ See Chart 1.

1145 It is highly unlikely that investors will see a repeat of the run-ups
1146 that most stocks in this industry experienced in 2014. These
1147 advances accelerated late in the year. As the new year began,
1148 interest rates continued to decline, but we note that our Quarterly
1149 Economic Review estimates that interest rates will be higher this
1150 year. If so, that would probably hurt these stocks, all else equal.

1151 [...]

1152 Our long-term economic projections are for interest rates to be
1153 significantly above today's level. As mentioned, higher interest
1154 rates are normally a negative factor for utility equities.⁵⁸

1155 Value Line continues to foresee potential valuation pressures on utilities,
1156 forecasting a decline in the P/E ratio for all seven of the companies in my proxy
1157 group over the coming three to five years.⁵⁹

1158 **Q. What conclusions do you draw from your analyses of capital market**
1159 **conditions?**

1160 A. The data discussed above clearly demonstrate that the current capital market
1161 has been affected by Federal Reserve policy and is experiencing increasing
1162 levels of risk aversion, volatility and instability. Because the estimation of the
1163 cost of equity can be affected by those factors, it is important to use judgment
1164 when applying the different ROE models and interpreting their results. For
1165 example, the elevated gas utility P/E ratios associated with the Federal
1166 Reserve's QE initiatives suggest current DCF results may be unduly low and
1167 should be viewed with considerable caution. In addition, investor expectations
1168 for increased Treasury yields suggest forward-looking interest rates should be
1169 considered when employing the CAPM and bond yield plus risk premium model.

⁵⁸ Value Line, December 2014.

⁵⁹ Source: Value Line.

1170 Given that: (1) Federal monetary policy has begun its process of
1171 “normalization”; (2) equity market volatility has increased and is expected to
1172 remain elevated; (3) market data indicate expectations for increasing interest
1173 rates into 2017 and beyond; and (4) credit spreads have widened, I believe it is
1174 appropriate to give somewhat less weight to the low end of the DCF result and to
1175 consider forward-looking CAPM and bond yield plus risk premium results when
1176 determining where the required ROE falls within the range of analytical results.
1177 In that light, I believe my 10.25 percent ROE recommendation properly reflects
1178 the current capital market.

1179 **X. CAPITAL STRUCTURE**

1180 **Q. What capital structure are you proposing for Liberty Midstates?**

1181 A. I am proposing an authorized capital structure consisting of 54.00 percent
1182 common equity and 46.00 percent long-term debt. A 54.00 percent equity ratio is
1183 between APUC’s equity ratio (53.74 percent) and LUCo’s equity ratio (see
1184 Confidential Schedule 3.0.15) as of December 31, 2015.⁶⁰ While the proposed
1185 capital structure contains less equity than Liberty Midstates’ currently uses to
1186 finance its assets, it is consistent with the proxy group average capital structure
1187 (discussed in more detail below) and Moody’s benchmark equity capitalization

⁶⁰ Data for APUC is from quarterly SEC filings through fourth quarter 2015 as reported by SNL Financial. Data for LUCo is 12-month average as of December 31, 2015, as calculated from data provided by the Company.

1188 range for Baa rated utilities.⁶¹

1189 **Q. How does the capital structure affect the cost of equity?**

1190 A. The capital structure relates to a company's financial risk, which represents the
1191 risk that a company may not have adequate cash flows to meet its financial
1192 obligations, and is a function of the percentage of debt (or financial leverage) in
1193 its capital structure. In that regard, as the percentage of debt in the capital
1194 structure increases, so do the fixed obligations for the repayment of that debt. To
1195 the extent earnings and cash flows become less certain, the ability to meet those
1196 fixed obligations also becomes less certain. That is, as the degree of financial
1197 leverage increases, the risk of financial distress (i.e., financial risk) also
1198 increases; it is for that reason that (in general) credit quality deteriorates and the
1199 cost of debt increases with higher levels of debt in the capital structure.

1200 From the perspective of equity investors, who do not have the contractual
1201 claim on cash flows given to bondholders, increased levels of debt tend to
1202 concentrate the uncertainty of the cash flows remaining after debt payments are
1203 made. Because their risk is increased, equity investors also require higher
1204 returns as the use of debt increases. Since the capital structure can affect the
1205 subject company's overall level of risk,⁶² it is an important consideration in
1206 establishing a just and reasonable rate of return.

⁶¹ See Moody's Investor Service, *Rating Methodology: Regulated Electric and Gas Utilities*, December 23, 2013 at 24. The benchmark Debt/Capitalization range for a Baa rating is 45%-55%, implying an equity ratio range of 45% to 55%. Note, Moody's Baa rating is the equivalent of S&P's BBB rating.

⁶² See Roger A. Morin, *New Regulatory Finance*, Public Utility Reports, Inc., 2006, at 45-46.

1207 **Q. Will the capital structure and ROE authorized in this proceeding affect the**
1208 **Company's ability to maintain access to capital at reasonable rates?**

1209 A. I believe the capital structure and ROE authorized in this proceeding will affect
1210 the Company's ability to maintain access to capital at reasonable rates. The
1211 level of earnings authorized by the Commission directly affects the Company's
1212 ability to finance its operations with internally-generated funds. Internally-
1213 generated funds are a very important source of investment funding for all utilities,
1214 including the Company. For that reason, credit rating agencies and investors
1215 expect the Company to be able to generate a substantial portion of its investment
1216 funding from operating cash flow in order to maintain adequate financial strength.

1217 Similarly, it also is important to realize that because a utility's investment
1218 horizon is very long, investors require the assurance of a sufficiently high ROE to
1219 satisfy the long-run financing requirements of the assets the Company places
1220 into service. Those assurances, which often are measured by the relationship
1221 between internally-generated cash flows and debt (or interest expense), depend
1222 quite heavily on the capital structure. As a consequence, both the ROE and
1223 capital structure are very important to both debt and equity investors.

1224 **Q. Is there support for the proposition that the capital structure is a key**
1225 **consideration in establishing an appropriate return on equity?**

1226 A. There is strong support for the proposition that the capital structure is a key
1227 consideration in establishing an appropriate return on equity. The United States
1228 Supreme Court and various utility commissions have long recognized the role of
1229 capital structure in the development of a just and reasonable rate of return for a

1230 regulated utility. In particular, a utility's leverage, or debt ratio, has been explicitly
1231 recognized as an important element in determining a just and reasonable rate of
1232 return:

1233 Although the determination of whether bonds or stocks should be
1234 issued is for management, the matter of debt ratio is not exclusively
1235 within its province. Debt ratio substantially affects the manner and
1236 cost of obtaining new capital. It is therefore an important factor in
1237 the rate of return and must necessarily be considered by and come
1238 within the authority of the body charged by law with the duty of
1239 fixing a just and reasonable rate of return.⁶³

1240 Perhaps the ultimate authority for balancing the issues of cost and
1241 financial integrity is the Supreme Court's decision in *Hope* that was cited and
1242 applied by the U.S. Court of Appeals (D.C. Circuit) in 1977:

1243 The rate-making process under the Act, i.e., the fixing of "just and
1244 reasonable" rates, involves a balancing of the investor and the
1245 consumer interests." 320 U.S. at 603, 64 S. Ct. at 288. The equity
1246 investor's stake is made less secure as the company's debt rises,
1247 but the consumer rate-payer's burden is alleviated.⁶⁴

1248 Consequently, the principles of fairness and reasonableness with respect
1249 to the allowed rate of return and capital structure are considered at both the
1250 federal and state levels.

1251 **Q. Please discuss your analysis of the capital structures of the proxy group**
1252 **companies.**

1253 A. I calculated the average capital structure for each of the proxy group companies
1254 over the past eight calendar quarters. As shown in Table 3.0.7 (below), the
1255 mean of the proxy group actual capital structures is 54.05 percent common

⁶³ *New England Telephone & Telegraph Co. v. State*, 98 N.H. 211, 220, 97 A.2d 213, 220 (1953),
citing *New England Tel. & Tel. Co. v. Department of Pub. Util.*, (Mass.) 327 Mass. 81, 97 N.E. 2d
509, 514; *Petitions of New England Tel. & Tel. Co.* 116 Vt. 480, 80 A2d 671.

⁶⁴ *Communications Satellite Corp. v. FCC*, 198 U.S. App. D.C. 60, 611 F.2d 883.

1256 equity and 45.95 percent long-term debt. The common equity ratios for the proxy
 1257 group range from 49.33 percent to 60.04 percent. Based on that review, it is
 1258 apparent that my proposed capital structure, with a 54.00 percent equity ratio, is
 1259 generally consistent with the capital structures of the proxy group companies.

1260 **Table 3.0.7: Proxy Group Average Capital Structure 2014 – 2015⁶⁵**

		Common Equity Ratio	Long-Term Debt Ratio
Atmos Energy Corp.	ATO	56.22%	43.78%
Laclede Group, Inc.	LG	49.33%	50.67%
New Jersey Resources Corp.	NJR	59.23%	40.77%
Northwest Natural Gas Co.	NWN	53.87%	46.13%
South Jersey Industries, Inc.	SJI	49.47%	50.53%
Southwest Gas Corp.	SWX	50.17%	49.83%
WGL Holdings	WGL	60.04%	39.96%
Average		54.05%	45.95%
Median		53.87%	46.13%

1261 **Q. What is the basis for using average capital components rather than a point-**
 1262 **in-time measurement?**

1263 A. Measuring the capital components at a particular point in time can skew the
 1264 capital structure by the specific circumstances of a particular period. Therefore, it
 1265 is more appropriate to normalize the relative relationship between the capital
 1266 components over a period of time.

⁶⁵

See Schedule 3.0.14.

1267 **Q. What is your conclusion regarding an appropriate capital structure for**
1268 **Liberty Midstates?**

1269 A. At the current time, Liberty Midstates' actual equity ratio is toward the upper end
1270 of the range of equity ratios employed by the proxy companies. Considering the
1271 range of capital structures in place at APUC, LUCo and Liberty Midstates and the
1272 average of the capital structures employed by the proxy group companies, I
1273 believe a 54.00 percent equity ratio is reasonable and appropriate.

1274 **XI. COST OF DEBT**

1275 **Q. What is the Company's cost of debt?**

1276 A. As shown in Schedule D-3, the cost of debt for the \$55.00 million in debt
1277 issuances used to finance the purchase of the Midstates assets is 4.94 percent.
1278 I understand, however, that Staff's preferred approach in Docket No. 14-0371
1279 was to use LUCo's consolidated cost of debt (4.83 percent) as the Company's
1280 cost of debt.⁶⁶ Consequently, I have assumed a 4.83 percent cost of debt for the
1281 Company.

1282 **Q. Have you assessed the Company's cost of debt relative to other natural**
1283 **gas utilities?**

1284 A. Yes, I calculated the embedded cost of debt in authorized natural gas returns
1285 from February 12, 2015 to February 12, 2016. The mean embedded cost of debt
1286 over that period was 5.25 percent and the median was 5.42 percent.⁶⁷ Based on

⁶⁶ See Schedule D-3.

⁶⁷ Data from SNL Financial. Analysis excludes Michigan Gas Utilities due to difference in method of calculating the reported overall rate of return.

1287 that review, I believe LUCo's 4.83 percent cost of debt is reasonable and
1288 appropriate.

1289 **XII. CONCLUSIONS AND RECOMMENDATION**

1290 **Q. What is your conclusion regarding the Company's cost of equity?**

1291 A. As discussed earlier in my Direct Testimony, I have performed several analyses
1292 to estimate the Company's cost of equity, and have considered several market-
1293 wide and Company-specific issues. I also appreciate that, in recent proceedings,
1294 the Commission has been inclined to attribute certain weight to the DCF model
1295 and the CAPM model. In light of those considerations, I believe that a rate of
1296 return on common equity in the range of 10.00 percent to 10.50 percent
1297 represents the range of equity investors' required rate of return for investment in
1298 natural gas utilities similar to Liberty Midstates in today's capital markets. Within
1299 that range, it is my view that an ROE of 10.25 percent is reasonable and
1300 appropriate.

1301 As discussed earlier in my testimony, my recommendation reflects
1302 analytical results based on a proxy group of natural gas utilities. My
1303 recommendation also considers a variety of factors such as the financial
1304 environment and the Company's risk profile, including: (1) its relative small size;
1305 (2) the regulatory environment in which the Company operates; and (3) the
1306 Company's proposed VBA rider. My recommendation also considers the direct
1307 costs associated with equity issuances, although I do not make a specific
1308 adjustment for those costs.

1309 I also conclude that a capital structure consisting of 54.00 percent

1310 common equity and 46.00 percent long-term debt is consistent with industry
 1311 practice and, therefore, is reasonable and appropriate. Lastly, I conclude that the
 1312 Company's 4.83 percent cost of debt, which is consistent with (albeit lower than)
 1313 the cost of debt reflected in the overall rate of return for gas utilities over the past
 1314 twelve months, also is reasonable and appropriate.

Table 3.0.8a: Summary of Analytical Results

Multi-Stage DCF			
	<i>Proxy Group Low</i>	<i>Proxy Group Mean</i>	<i>Proxy Group High</i>
30-day Stock Prices	8.14%	9.32%	10.96%
CAPM			
	<i>Bloomberg MRP</i> <i>(DCF S&P 500 Div. Payers)</i>	<i>Value Line MRP</i> <i>(DCF S&P 500 Div. Payers)</i>	
Value Line Beta, Current Risk-Free Rate (2.79%)	10.13%	9.73%	
Bloomberg 5-year Beta, Current Risk-Free Rate (2.79%)	9.69%	9.31%	

1316

Table 3.0.8b: Summary of Additional Benchmark ROE Analyses

Alternate CAPM		
	<i>Bloomberg MRP</i> <i>(DCF S&P 500)</i>	<i>Value Line MRP</i> <i>(DCF S&P 500)</i>
Value Line Beta, Current 30-Year Treasury (2.96%)	10.86%	10.40%
Value Line Beta, Projected Risk-Free Rate (3.45%)	10.99%	10.54%
Bloomberg 5-year Beta, Current Risk-Free Rate (2.96%)	10.38%	9.95%
Bloomberg 5-year Beta, Projected Risk-Free Rate (3.45%)	10.54%	10.11%

1317

Bond Yield Plus Risk Premium Analysis			
	<i>Low</i>	<i>Mean</i>	<i>High</i>
Current and Projected Baa Utility Bond Yields	10.00%	10.13%	10.60%
Expected Earnings Analysis			
	<i>Low</i>	<i>Mean</i>	<i>High</i>
Value Line Projected Return on Book Equity	8.84%	11.32%	12.91%

1318

1319 **Q. Does this conclude your Direct Testimony?**

1320 **A.** Yes, it does.



Summary

Mr. Magee provides management and economic consulting to energy industry clients, advising utilities and other market participants on a range of financial and economic issues such as rate case activities (e.g., cost of service and rate design) and policy and strategy (e.g., capital structure, cost of capital and capital investment related activities). His engagements have involved financial and economic analysis, operational and financial benchmarking and regulatory policy analysis related to cost of capital, capital structure, rate design, corporate investments and strategic planning. Prior to joining ScottMadden, Keith was a Principal at Sussex Economic Advisors, LLC and prior to that he was a Consultant with Concentric Energy Advisors. Mr. Magee holds an M.B.A. from the F.W. Olin Graduate School of Business at Babson College and a B.A. in Economics from Whitman College. Keith also holds the Chartered Financial Analyst designation.

Areas of Specialization

- Regulation and Rates
- Utilities
- Mergers and Acquisitions
- Regulatory Strategy and Rate Case Support
- Capital Project Planning
- Strategic and Business Planning

Recent Assignments

- Development of cost of capital and capital structure testimony and analysis for electric and gas utility clients in states such as: Colorado, Delaware, Illinois, Maryland, Minnesota, Missouri, Nevada, New Mexico, New York, North Carolina, Oklahoma, South Carolina and Texas. Project work has included state and company specific regulatory research and analysis, financial modeling using discounted cash flow and risk premium approaches, analysis of capital market conditions, company specific financial and business risk assessment, risk-comparable peer group development and comparative benchmarking.
- Assisted the buy-side transaction team of a utility holding company with due diligence evaluation of a gas distribution utility, including preparation of a board-level summary assessment of strategy and financial issues.
- Prepared an analysis of distributed energy resource investment opportunities for a Northeast electric utility, and provided guidance on developing an internal project selection/evaluation process.
- Performed an in-depth financial assessment of a Massachusetts solar investment proposal for a private equity investor, including a review of risks associated with proposed project terms.
- Provided capital market research and comparable transaction analysis to a district thermal energy provider exploring strategic opportunities.
- Contributed to the development of a gas expansion model filed with the Maine Public Utilities Commission in support of a targeted area buildout of the client's gas distribution infrastructure into dense markets utilizing a zonal rate surcharge mechanism.
- Supported the development of a cost of service study, rate design proposal and bill impact analysis for a Maryland gas distribution utility, including rate reclassification and introduction of a block break rate design.
- Benchmarked natural gas utility operational costs, and analyzed the relative operational and financial performance of a Massachusetts gas utility.
- Prepared a report on dividend policy issues and earnings payout ratio trends for the board of directors of a Northeast diversified utility company.