

REBUTTAL TESTIMONY

of

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Finance Department

Financial Analysis Division

Illinois Commerce Commission

Northern Illinois Gas Company d/b/a Nicor Gas Company

Proposed General Increase For Gas Rates

Docket No. 04-0779

May 3, 2005

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1

WITNESS IDENTIFICATION

2 **Q. Please state your name and business address.**

3 A. My name is Michael McNally. My business address is 527 East Capitol Avenue,
4 Springfield, IL 62701.

5 **Q. Are you the same Michael McNally who testified previously in this**
6 **proceeding?**

7 A. Yes, I am.

8 **Q. Please state the purpose of your rebuttal testimony.**

9 A. The purpose of my rebuttal testimony is to respond to the rebuttal testimony of
10 Company witnesses Richard L. Hawley (Nicor Gas Exhibit 20A.0), Robert R.
11 Mudra (Nicor Gas Exhibits 20B.0 and 20.1-20.8) and to the rebuttal testimony of
12 Company witness Dr. Jeff D. Makholm (Nicor Gas Exhibits 21.0-21.11).
13 Specifically, I will address Mr. Hawley's and Mr. Mudra's testimony regarding the
14 inclusion of short-term debt in the capital structure, the capital structure
15 measurement period, and the Company's proposed flotation cost adjustment. I
16 will address Dr. Makholm's testimony regarding Nicor Gas' cost of equity.

17 **RESPONSE TO MESSRS. HAWLEY AND MUDRA**

18 **Short-Term Debt**

19 **Q. Please summarize your position on the inclusion of short-term debt in**
20 **Nicor Gas capital structure.**

21 A. Due to the fungibility (i.e., perfect substitutability) of capital, one cannot identify
22 which capital source funds which assets. Thus, the Commission has concluded
23 that it is generally assumed that all assets, including assets in rate base, are
24 financed in proportion to total capital, unless shown otherwise. Since Nicor Gas
25 consistently relies on short-term debt as a source of funds, short-term debt
26 should be included in Nicor Gas' capital structure unless it is shown that short-
27 term debt does not support rate base.

28 Contrary to the Company's implication, I do not claim to be able to trace sources
29 and uses of capital with precision.¹ However, although no one can trace funds
30 definitively from a particular source to a particular use, the data unambiguously
31 demonstrate that the long-term components of Nicor's capital structure cannot be
32 the sole source of funding for its rate base. Therefore, Nicor Gas must be
33 financing rate base, in part, with short-term debt.

¹ Nicor Gas Exhibit 20B.0, pp. 13-14.

34 **Q. Please respond to Mr. Mudra's insinuation that you imputed a capital**
35 **structure for Nicor Gas.²**

36 A. I did not alter Nicor Gas' actual capital structure by including short-term debt.
37 Rather, it was Messrs. Hawley and Mudra who deviated from the Company's
38 actual capital structure to impute a hypothetical capital structure that excludes
39 short-term debt.

40 **Q. Please address the Company's arguments that short-term debt is used to**
41 **fund non-rate base needs³ and that other sources are used to fund rate**
42 **base.⁴**

43 A. Mr. Mudra claims that short-term debt is used for other, non-rate base needs
44 such as OO&M and flowing gas that does not go into storage. He also claim that
45 other sources of capital, such as customer budget payment plan balances, nets
46 customer deposit balances, and advances for construction, are used to fund rate
47 base. However, the he fails to supply legitimate support for those claims. He
48 simply assumes that short-term debt is the first source of funding for non-rate
49 base assets and the last source of funding for rate base assets, thus performing
50 the very tracing of capital of which he accuses me.

51 Mr. Mudra notes that those non-rate base needs easily exceed the balance of
52 short-term debt each month.⁵ While that statement may or may not be true, it is
53 not relevant. The mere fact that these non-rate base cash needs exceed short-
54 term debt does not mean that one should assume that short-term debt is the first

² Nicor Gas Exhibit 20B.0, p. 12.

³ Nicor Gas Exhibit 20B.0, p. 18.

⁴ Nicor Gas Exhibit 20B.0, pp. 27-28.

⁵ Nicor Gas Exhibit 20B.0, p. 18.

55 source of funds used to finance those needs; it only means that short-term debt
56 alone would be insufficient to finance them.

57 **Q. Please respond to the Company's argument that short-term debt cannot all**
58 **be supporting rate base, as the short-term debt balance is greater than the**
59 **gas in storage balance.⁶**

60 A. That argument is in direct contrast to the Company's arguments in its last rate
61 case. In that proceeding, an intervenor witness argued that short-term debt
62 should be included in rate base, noting that the Company's average monthly
63 short-term debt exceeded its test year construction work in progress. In
64 response, the Company argued that there is no need for capital sources to match
65 the value of rate base.⁷ Further, including any particular source of capital,
66 including short-term debt, in a capital structure for rate making purposes does not
67 imply that source is supporting rate base exclusively. Rather, it means that
68 source of capital is supporting rate base in the same proportion as that source of
69 capital is to total capital. For example, a ratemaking capital structure that
70 comprises 50% common equity does not imply that common equity is supporting
71 only rate base. Rather it means that common equity is assumed to support 50%
72 of the amount invested in rate base.

⁶ Nicor Gas Exhibit 20B.0, p. 26.

⁷ Reply Brief of Northern Illinois Gas Company, Docket No. 95-0219, p. 88.

73 **Q. Mr. Mudra disputes your claim that the Company's short-term debt**
74 **balances closely track its monthly Working Gas in Storage.⁸ Please**
75 **comment.**

76 A. The only documentation Mr. Mudra presents to support his position is a graph,
77 presented as Nicor Gas Exhibit 20.3, that purports to refute my claim that Nicor
78 Gas' short-term debt usage closely tracks its gas in storage balances. However,
79 Nicor Gas Exhibit 20.3 does not refute that claim. Schedule 14.3 graphically
80 depicts the very strong relationship between Nicor Gas' net short-term debt and
81 Working Gas balances during the same 2004 and 2005 period used in Nicor Gas
82 Exhibit 20.3.⁹ In addition, a regression of Nicor Gas' net short-term debt and
83 working gas balances over the 2004-2005 period indicates that approximately
84 91% of the variability in Nicor Gas' net short-term debt is explained by the
85 variability in its Working Gas balances.

86 **Q. Please address the Mr. Mudra's claim that the other sources of funds move**
87 **in synch with storage gas levels.¹⁰**

88 A. Curiously, although Mr. Mudra disputes my claim that Nicor Gas' short-term debt
89 usage closely tracks its Working Gas in storage balances, he maintains that
90 other sources of funds also move in synch with storage gas levels. Although
91 there is not a perfect correlation between short-term debt and working gas and
92 the relationship is not necessarily a causal relationship, it is compelling evidence
93 that there is a very strong relationship between the two. Indeed, the relationship

⁸ Nicor Gas Exhibit 20B.0, pp. 26-27.

⁹ The net short-term debt balances were lagged to reflect the approximate delay between the time of the Company's purchase of and payment for natural gas. (Company response to Staff data request MGM 1.03.) The weaker relationship between the sum of customer budget payment plan balances, net customer deposit balances, and advances for construction, which Mr. Mudra categorize as "other" sources of funding, is also depicted.

¹⁰ Nicor Gas Exhibit 20B.0, pp. 27-28.

94 between short-term debt and Working Gas is stronger than the relationship
95 between other sources and Working Gas that Mr. Mudra points to as an
96 alternative explanation for the funding of rate base.

97 **Q. Please address the argument that rate base assets must be funded with**
98 **long-term capital.**¹¹

99 A. The Company states that the assets in Nicor Gas' rate base are long-term
100 assets, implying that Nicor Gas' rate base are strictly long-term in nature.
101 Working Gas is not categorized as a long-term asset. To the contrary, Working
102 Gas is categorized as a current (i.e., short-term) asset. Regardless of the
103 semantics of whether a rate base component is long- or short-term, Nicor Gas'
104 recommended rate base contains a variable component. For example, although
105 the gas in storage asset maintains a significant balance during each month of the
106 capital structure measurement period, the balance varies considerably
107 throughout that period. Given the static nature of Nicor Gas' long-term capital
108 sources, the variable portion of gas in storage must have a variable source of
109 funding. Otherwise, Nicor Gas would experience large cash surpluses that run
110 counter-seasonal to the gas in storage asset (i.e., increases in cash would be
111 accompanied by a decline in rate base assets, such as gas in storage). Such is
112 not the case. Nicor Gas' monthly cash balances demonstrate almost no
113 variability during 2005. Furthermore, Nicor Gas projects temporary cash
114 investment balances for only three months during 2005; those temporary cash

¹¹ Nicor Gas Exhibit 20B.0, pp. 16, 18-19.

115 investment balances correspond to a decline in non-rate base items, rather than
116 a reduction in rate base assets.¹²

117 **Q. Mr. Mudra argues that the cost of short-term debt should reflect the cost of**
118 **commitment fees as well as interest.¹³ Please comment.**

119 A. The cost of short-term debt should reflect the cost of commitment fees related to
120 the Company's short-term debt, if those commitment fees are shown to be
121 reasonably incurred. However, the Company has not even explicitly stated the
122 purpose for the bank commitments, let alone demonstrated that the bank
123 commitment fees are reasonably incurred. The Company needs to demonstrate
124 1) that bank commitments are necessary at all, given Nicor Gas' AA credit rating;
125 2) the reasonableness of the amount of Nicor Gas' bank commitments, given
126 their purpose; and 3) whether it is necessary to retain those bank commitments
127 for each month of the year, as implied by the persistency of the commitment fees
128 presented on Nicor Gas Exhibit 20.4 for 2005, given the zero balances of short-
129 term debt projected for three months of the year. Since the Company failed to
130 demonstrate the reasonableness of those costs, it should not be allowed to
131 recover them through rates.

¹² Company workpaper WP(B-1.1)2.

¹³ Nicor Gas Exhibit 20B.0, pp. 32-33.

Capital Structure Measurement Period

132

133 **Q. Please respond to Messrs. Hawley and Mudra's objection to your choice of**
134 **an average 2005 capital structure measurement date.**¹⁴

135 A. If a December 31, 2005 capital structure measurement period is to be used, I
136 believe that for consistency between each of the capital structure components
137 with respect to measurement period, as required by Illinois Administrative Code,
138 Part 285.4000(b), a twelve-month period centered on December 31, 2005 should
139 be used to measure an average short-term debt balance. However, I could not
140 rely upon the Company's short-term debt projections for the first six months of
141 2006, since, as the Company notes, those projections are "not based on a
142 detailed, budget-oriented process consistent with the 2005 test-year forecast."¹⁵
143 Thus, switching to an average 2005 capital structure measurement period for all
144 of the capital components is warranted.

145 Nevertheless, in the interest of reducing the number of issues and because it
146 makes very little difference to the cost of capital in this proceeding, Staff is willing
147 to adopt a December 31, 2005 measurement date for all of the long-term
148 components of the capital structure while adopting an average 2005 balance for
149 short-term debt (i.e., an average for the year preceding the measurement date of
150 the long-term components).¹⁶ The conversion from average year to end-of-year
151 balances for long-term capital increases long-term debt by approximately \$0.6
152 million and decreases common equity by about \$3.7 million. The net effect of

¹⁴ Nicor Gas Exhibit 20A.0, pp. 33-35 and Nicor Gas Exhibit 20B.0, pp. 33-36.

¹⁵ Company response to Staff data request MGM 3.02.

¹⁶ Staff's willingness to adopt a December 31, 2005 measurement date for the long-term components of the capital structure should not be construed as a concession on the part of Staff that the Company's arguments regarding the capital structure measurement date have any merit whatsoever.

153 this conversion is a reduction in my overall cost of capital recommendation from
154 7.56% to 7.55%, as presented on Schedule 14.1.

155 **Flotation Cost Adjustment**

156 **Q. Has the Company adequately addressed the concerns you noted in your**
157 **direct testimony with regard to their proposed flotation cost adjustment?**

158 A. No. Although the Company has agreed to withdraw the portion of its original
159 flotation cost estimate that was based on a study of electric utilities and now only
160 seeks to recover flotation costs relating to five stock issuances made by Nicor
161 Gas or Nicor, Inc.,¹⁷ it still failed to demonstrate either that the remaining costs it
162 seeks to recover through rates were incurred for the benefit of Nicor Gas utility
163 operations or that those costs remain unrecovered.

164 **Q. Mr. Mudra suggests that the Company's testimony verifies that Nicor Gas**
165 **incurred the flotation costs it seeks to recover through rates for the benefit**
166 **of rate payers.¹⁸ Do you agree?**

167 A. No. The Company presents no evidence, only more unsupported assertions. In
168 my judgment, an assertion is not adequately supported with additional
169 assertions. The Company's support, in its entirety, consists of the following
170 statement:

171 The records reveal that the issuances were made for utility
172 purposes. This is confirmed by the fact that, at the time all of the
173 issuances were made, Nicor Gas had no material non-utility
174 activities. We can therefore also verify, based on our personal

¹⁷ Nicor Gas Exhibit 20B.0, pp. 3 and 39-40.

¹⁸ Nicor Exhibit 20B.0, pp. 39-40.

175 knowledge of Nicor Gas and on its books and records, that the
176 costs were incurred for utility purposes.¹⁹

177 First, if records exist that reveal that the proceeds from the issuances in question
178 were used for the benefit of Nicor Gas' utility operations, the Company should
179 have provided those records. The Company has not, which is precisely my
180 objection. To merely state that such records exist is not sufficient. Second, two
181 of the five issuances were made by Nicor, Inc., not Nicor Gas. Yet the Company
182 provided no documentation to demonstrate that the proceeds from those two
183 issues were used for the benefit of Nicor Gas' utility operations. Third, in my
184 judgment, Mr. Mudra's declaration of Messrs. Hawley's and Mudra's personal
185 knowledge does not constitute sufficient support, especially given that Messrs.
186 Hawley's and Mudra's respective tenures at Nicor Gas each began well after the
187 last common equity issuance for which Nicor Gas seeks flotation cost recovery.²⁰

188 **Q. Mr. Mudra suggests that the Company's testimony verifies that the flotation**
189 **costs the Company seeks to recover through rates remain unrecovered.²¹**
190 **Do you agree?**

191 A. No. The only new documentation the Company provided is copies of excerpts
192 from its annual reports to the Commission that show an allegedly unrecovered
193 \$478,277 of discount on common equity has been carried over on Nicor Gas'
194 annual reports each year since 1973. However, it was not until 1993 that the
195 Uniform System of Accounts ("USoA") was amended to require that only
196 unrecovered common stock expenses were to be recorded in Account 214.
197 Therefore, an entry of stock issuance expenses on a company's books prior to

¹⁹ Nicor Gas Exhibit 20B.0, p. 40.

²⁰ Nicor Gas Exhibit 1.0, p. 3 and Nicor Gas Exhibit 3.0, p. 3.

²¹ Nicor Exhibit 20B.0, pp. 39-40.

198 that time does not confirm that those expenses have not been recovered. Thus,
199 it is not known whether those expenses were recovered prior to 1993.

200 **Q. The Company states that it would be inappropriate accounting to retain a**
201 **\$478,277 entry for discount on common equity if those expenses had been**
202 **previously recovered.²² Do you agree?**

203 A. That is my understanding as well. As explained above, since 1993, the USoA
204 has required that only unrecovered common stock expenses be recorded in
205 Account 214. However, accounting records are not infallible. For example, Nicor
206 Gas was required to restate its financial statements for the years 1999-2001 due
207 to material misstatements. Given that the \$478,277 entry for discount on
208 common equity has been carried over on Nicor Gas' annual reports since prior to
209 the 1993 amendment to the USoA, the Company should have demonstrated that
210 the \$478,277 entry for discount on common equity does, in fact, reflect
211 appropriate accounting.

212 **Q. Has the Commission disallowed an adjustment for common equity flotation**
213 **costs that were recorded in Account 214?**

214 A. Yes. The Commission rejected MEC's proposed flotation cost adjustment in
215 Docket No. 99-0534, although the company had recorded the costs in Account
216 214. Noting that Commission rules did not require utilities to amortize common
217 stock expenses that were recovered through rates until December 31, 1993, the
218 Commission stated that it could not conclude that all of the issuance expense
219 recorded in Account 214 remained unrecovered. The Commission further stated

²² Nicor Gas Exhibit 20B.0, p. 41.

220 that “the existence of this figure in the FERC Form 1 does not necessarily require
221 that it be reflected in rates.”²³

222 **Q. Mr. Mudra notes that the Commission Orders in Nicor Gas’ previous rate**
223 **cases were not silent with regard to the treatment of flotation cost recovery**
224 **and that documentary evidence confirms that Nicor Gas has incurred**
225 **actual equity issuance expenses that have never been recovered.²⁴ Please**
226 **comment.**

227 A. Since the Company failed to present the documents it alleges show that its
228 flotation costs were not recovered, I cannot recommend that those expenses be
229 reflected in utility rates.

230 **Q. If the Commission concludes that Nicor Gas has incurred actual equity**
231 **issuance expenses for the benefit of its utility operations that have never**
232 **been recovered, how should those costs be reflected in rates?**

233 A. Any allowance for flotation costs should be reflected in rates through an
234 adjustment to the cost of equity. The common equity issuance cost adjustment is
235 calculated using the following formula:

236
$$\text{Issuance Cost Adjustment} = \frac{ROE \times \text{Unrecovered Issuance Costs}}{\text{Common Equity Balance}}$$

237 where ROE ≡ the investor-required rate of return on common equity.

²³ Order, Docket No. 99-0534, July 11, 2000, pp. 35-36.

²⁴ Nicor Gas Exhibit 20B.0, p. 42.

238 **Q. Would the above formula include an allowance for issuance cost recovery?**

239 A. No. Any attempt to recover a cost requires the establishment of an amortization
240 period. However, common equity's infinite life-span renders any finite recovery
241 period arbitrary, leading to a failure to match cost recovery with the benefits
242 associated with common equity capital. Therefore, the above formula permits a
243 return on, but not a return of, those costs. Permitting a return on common equity
244 issuance costs without recovery of those costs is consistent with the manner in
245 which issuance costs for perpetual preferred stock are treated for setting rates.

246 **Q. Please explain why Dr. Makholm's methodology for reflecting flotation**
247 **costs in rates should not be used.**

248 A. First, the Company has not verified both that it has incurred the specific amount
249 of flotation costs for which it seeks compensation and that those costs have not
250 been previously recovered through rates. Dr. Makholm's flotation cost
251 adjustment reflects \$4,142,661 of underwriting discounts and commissions as
252 well as \$454,000 of estimated other issuance expenses related to five issuances,
253 totaling \$173,364,332 of proceeds.²⁵ However, the Company has provided no
254 documentation to demonstrate that the \$4,142,661 of underwriting discounts and
255 commissions was incurred for the benefit of Nicor Gas rate payers; it has
256 provided no documentation to demonstrate that the \$454,000 of estimated other
257 issuance expenses were even incurred at all. Furthermore, the Company
258 provided no documentation to demonstrate that either of those costs remain
259 unrecovered, aside from the \$478,277 of discount on common equity recorded in
260 Account 214, which, as discussed previously, is questionable. Second, Dr.
261 Makholm calculates his 2.54% adjustment factor by dividing his \$4,596,661 total

²⁵ Nicor Gas Exhibit 21.8.

262 flotation cost estimate (\$4,142,661 underwriting discounts and commissions +
263 \$454,000 estimated other issuance expenses) by the \$173,364,332 total
264 proceeds for five issuances rather than dividing by the full \$648,156,000 balance
265 of equity in the Company's proposed capital structure. Thus, he would
266 compensate the Company for a higher amount of flotation costs than those he
267 presents on Nicor Exhibit 21.8.²⁶ To illustrate, Dr. Makhholm calculates an
268 average flotation cost adjustment of 0.12%, as presented in Nicor Gas Exhibit
269 21.9. In contrast, inserting his \$4,596,661 total flotation cost estimate into the
270 more appropriate adjustment formula I presented above produces an adjustment
271 of only 0.07%. Thus, Dr. Makhholm's methodology actually produces an
272 adjustment that reflects an even higher level of flotation costs than the
273 \$4,596,661 total flotation costs that form the basis of his adjustment, which the
274 Company has not demonstrated to have been incurred for the benefit of Nicor
275 Gas rate payers and remained unrecovered.

276 **Other**

277 **Q. Mr. Mudra indicates that your long-term debt recommendations do not**
278 **reflect the full unamortized debt expenses for the two 5.9% issues and the**
279 **5.8% issue.²⁷ Please comment.**

280 A. As noted in my direct testimony, my 2004 and 2005 long-term debt schedules are
281 based on my 2003 long-term debt schedule, which reflects information presented
282 in the Company's 2003 annual report to the Commission. The additional debt
283 expenses to which Mr. Mudra refers were incurred during 2004, and were, thus,

²⁶ The inflation is partially mitigated by the fact that he applies his adjustment factor only to the dividend yield portion of his DCF model and not to the growth rate portion.

²⁷ Nicor Gas Exhibit 20B.0, p. 37.

284 not reflected in the Company's 2003 annual report. Since the time of my initial
285 analysis, the Company's 2004 annual report has become available. The
286 Company's 2004 annual report verifies that the Company did incur such
287 additional debt expenses.²⁸ Therefore, I accept the Company's adjustments.
288 The update is shown on Schedule 14.2.

289 **RESPONSE TO DR. MAKHOLM**

290 **Comparable Sample**

291 **Q. Please summarize Dr. Makhholm's objections to your Gas Sample.²⁹**

292 A. Dr. Makhholm raises two objections my Gas Sample. First, he notes that four of
293 the companies in my sample no longer meet my sample selection criteria and
294 concludes that those four companies should be excluded from my analysis. Dr.
295 Makhholm notes that, for 2004, the percent of revenue from regulated natural gas
296 distribution operations for AGL Resources, Laclede Group, Peoples Energy, and
297 South Jersey Industries fell below my selected threshold of 70% to 61%, 69%,
298 66%, and 61%, respectively. Second, he suggests that my Gas Sample should
299 include KeySpan Corporation and Southwest Gas, both of which are categorized
300 as natural gas distribution companies by Value Line.³⁰

²⁸ Unlike equity, once the incurrence of debt issuance costs have been verified, determining the unrecovered balance is simply a matter of applying a standard formula. In contrast, there has been no standard recovery formula for common equity issuance costs.

²⁹ Nicor Gas Exhibit 21.0, pp. 6-7.

³⁰ Both S&P Utility Compustat and the U.S. Securities and Exchange Commission classify Southwest Gas under the 4923 SIC code, Natural Gas Transmission and Distribution. <http://www.sec.gov/cgi-bin/browse-edgar?action=getcompany&SIC=4923&owner=include>. Thus, it does not match my sample selection criteria, which used only companies with an SIC classification of 4924, Natural Gas Distribution, on S&P Utility Compustat.

301 **Q. What does the 70% revenue from regulated natural gas distribution**
302 **operations threshold represent?**

303 A. The purpose of the 70% criterion was to produce a sample of companies whose
304 predominant line of business is gas distribution, which serves as a proxy for
305 operating risk. All else equal, one would generally expect that a sample
306 composed of companies with higher percentages of revenue from regulated
307 natural gas distribution operations to be more similar, in terms of operating risk,
308 to a regulated natural gas distribution company than a sample composed of
309 companies with lower percentages of revenue from regulated natural gas
310 distribution operations. However, such an assumption may not always be
311 correct.

312 **Q. What is the rationale for choosing 70% as the numerical threshold?**

313 A. Ideally, there would be an abundance of 100% gas distribution companies from
314 which to build a sample for Nicor Gas. Unfortunately, there is not. Therefore a
315 compromise is necessary, as Dr. Makhholm seems to acknowledge through his
316 selection criteria. The 70% numerical threshold I used reflects such a
317 compromise. That is, the 70% threshold was selected to balance measurement
318 error due to sample composition against measurement error due to individual
319 company cost of equity estimates (i.e., the sample's similarity to the target, in
320 terms of its operations, versus the sample size). In my judgment, adopting 70%
321 threshold produced a sample that is sufficiently large to minimize measurement
322 error and yet remains composed of companies whose operations are largely gas
323 distribution.

324 **Q. Does the fact that AGL Resources, Laclede Group, Peoples Energy, and**
325 **South Jersey Industries fell below your selected 70% threshold during 2004**
326 **indicate that they are not good proxies for Nicor Gas?**

327 A. No. First, as discussed above, the 70% threshold was selected to balance two
328 distinct types of measurement error. The selection of a specific revenue
329 threshold is certainly not an absolute and rigid requirement. Indeed, the
330 Commission has adopted the results of samples based on various revenue
331 thresholds, as well as samples that did not include a revenue threshold sample
332 selection criterion at all.³¹

333 The general purpose of using a criterion based on percentage of revenue from
334 gas distribution operations is to produce a sample of companies whose
335 predominant line of business is gas distribution. Each of the four companies Dr.
336 Makhholm recommends eliminating from my Gas Sample remains, fundamentally,
337 a gas distribution business and remains appropriate for inclusion in my Gas
338 Sample. Each of those four companies still derives a substantial majority (at
339 least 61%) of its revenue from gas distribution operations. In contrast, the
340 Commission previously accepted the results of a sample that included a
341 company with revenues from gas distribution operations of as low as 42%.³²
342 Indeed, each of those four companies declares gas distribution to be its core
343 operation.³³ In addition, each of those four companies is included in Value Line's

³¹ See Order, Docket No. 00-0802, December 11, 2001, pp. 32-34; Order, Docket No. 01-0444, March 27, 2002, pp. 16-17; Order, Docket No. 01-0423, March 28, 2002, p. 132; Order, Docket Nos. 00-0575/00-0618 (Cons.), June 27, 2001, pp. 7-9; Order, Docket No. 02-0837, October 17, 2003, p. 37; Order, Docket Nos. 03-0676/03-0677 (Cons.), October 6, 2004, pp. 25 and 38.

³² Staff Exhibit 9.0, Docket No. 02-0837, p. 2; Order, Docket No. 02-0837, October 17, 2003, p. 37.

³³ AGL Resources Inc.'s SEC Form 10-K for the fiscal year ended December 31, 2004, p. 7; The Laclede Group, Inc.'s SEC Form 10-K for the fiscal year ended September 30, 2004, p. 17; Peoples Energy Corporation's SEC Form 10-K for the fiscal year ended September 30, 2004, p. 7; and South Jersey Industries, Inc.'s SEC Form 10-K for the fiscal year ended December 31, 2004, p. 4.

344 Natural Gas (Distrib.) industry group and has a Standard Industrial Classification
345 code of 4924, which comprises establishments engaged in the distribution of
346 natural gas for sale. Moreover, although the revenues from gas distribution
347 operations for those companies fell below 70% during 2004, each of those
348 companies report significantly higher percentages from gas distribution
349 operations for other financial statistics that indicate that gas distribution is their
350 predominant component. For example, AGL Resources, Peoples Energy, and
351 South Jersey Industries derived 74%, 82%, and 77% of their respective operating
352 incomes from gas distribution operations.³⁴ Similarly, Laclede Group derived
353 89% of its net income from gas distribution operations. Significantly, relative to
354 revenue, operating income and net income are less influenced by fluctuations in
355 natural gas prices because the cost of gas is passed through, dollar-for-dollar, to
356 rate payers. Furthermore, gas distribution assets represent 78%, 91%, 82%, and
357 81% of the consolidated assets of AGL Resources, Laclede Group, Peoples
358 Energy, and South Jersey Industries, respectively. That is, the vast majority of
359 those companies' capital has been invested in the gas distribution business and
360 investors' future earnings depend predominantly on that business.

361 Second, the use of any sample selection criterion based on revenues is an
362 imperfect proxy for measuring operating risk. Gas distribution revenues can be
363 greatly impacted by variable factors, including weather and natural gas prices.
364 Thus, based on revenues alone, the same company could appear to be
365 appreciably different in terms of operating risk from one year to the next, even
366 though its overall operating risk had not changed. For example, Peoples Energy,

³⁴ This information was not available for Laclede Group, as it does not report operating income by segment.

367 one of the four companies Dr. Makhholm seeks to remove from my Gas Sample,
368 reports that its gas distribution revenues decreased \$18.0 million in 2004
369 compared to fiscal year 2003 “mainly due to a decline in deliveries (\$79.5 million)
370 resulting from weather that was nine percent warmer than the previous period
371 and lower non-weather-related delivery variations (\$26.3 million).”³⁵

372 Furthermore, although the sample selection criteria is designed to produce a
373 proxy sample that is reasonably similar to Nicor Gas in terms of *operating* risk, it
374 does not ensure the sample closely matches Nicor Gas’s *overall* risk level.
375 Revenues do not capture financial risk at all. Therefore, a further review of the
376 relative risks of the proxy sample and the target company should be performed.
377 If the proxy sample does not accurately reflect the risk level of the target
378 company, an adjustment should be made. That is precisely why I made an
379 adjustment to my Gas Sample cost of equity estimate and why Dr. Makhholm
380 should have done so for his sample estimate as well.

381 **Q. Would it be inappropriate to simply remove AGL Resources, Laclede**
382 **Group, Peoples Energy, and South Jersey Industries from your Gas**
383 **Sample?**

384 A. Yes. As noted above, my sample selection process is designed to strike a
385 balance between measurement error due to sample composition and
386 measurement error due to individual company cost of equity estimates.
387 Removing those four companies would produce a sample containing only four
388 companies, which, in my opinion, is too few to sufficiently minimize the potential

³⁵ Peoples Energy Corporation’s SEC Form 10-K for the fiscal year ended September 30, 2004, p. 22.

389 measurement error of the individual company cost of equity estimates. To
390 illustrate, all else equal, any measurement error for a given individual company's
391 cost of equity estimate would have twice the effect on the four-company sample
392 average as it would if all eight companies were included. Therefore, the removal
393 of those four companies would unnecessarily raise the risk of measurement error
394 stemming from individual company cost of equity estimates.

395 **Q. Dr. Makholm suggests that KeySpan and Southwest Gas are more**
396 **representative of Nicor Gas and should be substituted for the four**
397 **companies he proposes to remove. Please comment.**

398 A. Dr. Makholm has not demonstrated that those two companies reflect the overall
399 risk of Nicor Gas any better than the four companies he proposes to remove.
400 The only metric that Dr. Makholm presents to suggest that KeySpan and
401 Southwest Gas may better represent Nicor Gas is the fact that they derive
402 approximately 92% and 85% of their revenues from electric services and utility
403 sources, respectively. However, he has not demonstrated that the electric
404 services and utility sources in which those two companies are engaged reflect
405 the risk of gas distribution operations.

406 In fact, the substitution of KeySpan and Southwest Gas would have very little
407 effect on my Gas Sample's average risk profile. KeySpan maintains an S&P
408 corporate credit rating of A and business profile score of 4, while Southwest Gas
409 has an S&P corporate credit rating of BBB- and business profile score of 3.
410 Thus, with Dr. Makholm's proposed substitution, the average credit rating for my
411 Gas Sample would change from A to a slightly weaker A and the business profile
412 score would change from 2.75 to 2.5.

413 In addition, the substitution proposed by Dr. Makholm would reduce the number
414 of companies in my Gas Sample from eight to six. All else equal, a larger sample
415 better mitigates the potential measurement error of the individual company cost
416 of equity estimates. Thus, it would be inappropriate to reduce the sample size,
417 given the lack of any demonstrated benefits of the proposed substitution.

418 Indeed, the DCF cost of equity results presented in Dr. Makholm's rebuttal
419 testimony belie his own arguments. Dr. Makholm suggests that, based on
420 percentages of revenues from utility operations, the substitution of KeySpan and
421 Southwest Gas for AGL Resources, Laclede Group, Peoples Energy, and South
422 Jersey Industries would create a sample that better reflects the risk of Nicor Gas.
423 If so, the new sample would have to be of lower risk than my Gas Sample, given
424 the lower risk level of Nicor Gas relative to my Gas Sample, as indicated by their
425 respective credit ratings of AA and A. Thus, one would expect a lower resulting
426 cost of equity estimate for the new sample, since investors require a lower return
427 on a lower-risk investment. However, Dr. Makholm observes that the DCF cost
428 of equity estimate resulting from that substitution would be higher than that for
429 the original Gas Sample. Thus, either the new sample is riskier than the Gas
430 Sample, and thus less like Nicor Gas, contrary to Dr. Makholm's claim, or the
431 average DCF estimate reflects a higher degree of measurement error. Either
432 explanation indicates that my Gas Sample better balances between the two
433 types of measurement error than the six-company sample resulting from Dr.
434 Makholm's proposed substitution would.

435 **Q. What would the results of your analysis be if Keyspan and Southwest Gas**
436 **were added to your Gas Sample without removing any other companies?**

437 A. As noted above, Keyspan maintains an S&P corporate credit rating of A and
438 business profile score of 4, while Southwest Gas has an S&P corporate credit
439 rating of BBB– and business profile score of 3. Thus, adding those two
440 companies to my sample would create a sample with an average credit rating
441 and average business profile score of A/A– and 2.9, respectively, as compared to
442 the A and 2.75 for my original Gas Sample. This indicates that the new, 10-
443 company sample would be slightly more risky, and, thus, less like Nicor Gas,
444 than the original 8-company Gas Sample. The DCF and CAPM results
445 corroborate this. The DCF and CAPM estimates for the 10-company sample
446 would be 9.07% and 10.56%, respectively, producing a final estimate for the 10-
447 company sample of 9.82%, as compared to 9.77% for my eight-company Gas
448 Sample. Of course, since the credit rating and business profile score indicate a
449 larger difference between the 10-company sample and Nicor Gas, a larger risk
450 adjustment would be necessary for the 10-company sample estimate than was
451 applied to the eight-company sample estimate. The spread between average of
452 the 30-year yields for A and A– rated utilities and the yield for 30-year AA rated
453 utilities is approximately 32 basis points. This would produce a final cost of
454 equity for Nicor Gas of 9.50%, which is very similar to my original 9.54%
455 estimate.

456

Risk Adjustment

457 **Q. Dr. Makholm states that because of your Gas Sample's lack of**
458 **comparability to Nicor Gas, your 23 basis point adjustment is unsound.**³⁶
459 **Please comment.**

460 A. That argument is illogical. Dr. Makholm's assertion that my Gas Sample is not
461 representative of Nicor Gas does not support the conclusion that my 23 basis
462 point adjustment is unsound. Rather, his assertion, if correct, would support the
463 need for just such an adjustment. Indeed, the less representative the Gas
464 Sample is of Nicor Gas, the greater the need for an adjustment.

465 **Q. Please address Dr. Makholm's comment that the 23 basis point equity risk**
466 **adjustment you made to the results of your Gas Sample was "pulled...out**
467 **of the air."**³⁷

468 A. As explained on pages 29-30 of my direct testimony, due to the difference in risk
469 between Nicor Gas and the Gas Sample, an adjustment is required. To ignore
470 this risk differential and simply use the cost of equity estimate for the Gas
471 Sample, which has an average credit rating of A, would clearly produce an
472 inappropriately high cost of equity estimate for Nicor Gas, which has an AA credit
473 rating. Unfortunately, there is no way to directly measure the cost of the risk
474 differential between Nicor Gas and the Gas Sample. Thus, I used the observable
475 the 23 basis point difference between the cost of AA-rated and A-rated 30-year
476 utility debt as a proxy for the difference between Nicor Gas' and the Gas
477 Sample's costs of equity. My approach is consistent with the approach Staff has

³⁶ Nicor Gas Exhibit 21.0, p. 1.

³⁷ Nicor Gas Exhibit 21.0, p. 9.

478 taken, and the Commission has accepted, under similar circumstances in
479 previous proceedings.³⁸ Although, Dr. Makholm obviously disagrees with the
480 appropriateness of such an approach, to state that it was “pulled...out of the air”
481 is patently false.

482 It is unclear what “care” Dr. Makholm believes I should have taken with my risk
483 adjustment.³⁹ As noted above, to ignore this risk differential and make no
484 adjustment would clearly be inappropriate. Adjustments based on the Hamada
485 or Modigliani and Miller models, as proposed by several company witnesses in
486 previous proceedings, offer possible alternative approaches.⁴⁰ Those proposals
487 produced a relatively large adjustment in each of those proceedings. However,
488 as Staff has noted in each of those proceeding, the proposed application of those
489 models was severely flawed. In fact, to my knowledge, adjustments based on
490 those models have never been accepted by the Commission. In contrast, equity
491 risk adjustments made using the approach I propose have been accepted by the
492 Commission in previous cases.

493 **Q. Please address Dr. Makholm’s comment that average credit rating**
494 **differences “have no conceptual read-across to any possible equity risk**

³⁸ See Order, Docket No. 98-0632, March 24, 1999, pp. 4-5 and Order, Docket Nos. 02-0798/03-0008/03-0009 (Cons.), October 22, 2003, pp. 80 and 89-90.

³⁹ Obviously, Dr. Makholm’s speculation that I took no care in developing my 23 basis point adjustment, “contrary to the care that is generally taken with the theory and application of DCF and CAPM analyses in rate cases,” (Nicor Gas Exhibit 21.0, p. 9) is needlessly inflammatory and does nothing to advance the issue.

⁴⁰ See IAWC Exhibit 7, Docket No. 00-0340, April 17, 2000, pp. 59-60; ComEd Exhibit 8.0, Docket No. 01-0423, June 1, 2001, pp. 9-12 and 15-16; ComEd Exhibit 10.0, Docket No. 01-0423, June 1, 2001, p. 8; IP Exhibit 4.1, Docket No. 01-0432, June 1, 2001, pp. 36-37; IP Exhibit 4.1, Docket No. 04-0476, June 25, 2004, pp. 28-29.

495 **difference” and that your adjustment “has no credible basis from a**
496 **standpoint of financial theory or practice.”⁴¹**

497 A. The risk/return tradeoff (i.e., investors require higher returns to accept greater
498 exposure to risk) is a fundamental principle of finance. That concept forms the
499 basis of my adjustment. While Dr. Makholm is correct that equity investors are
500 only entitled to the residual value of the firm after its creditors have been paid
501 and that credit ratings do not equate to equity risks, to therefore conclude that
502 there is no connection between credit risk and equity risk is incorrect. While the
503 relationship between credit ratings and equity risk is not perfect, credit ratings
504 and equity risk are certainly related. Nobel prize winners Modigliani & Miller
505 conclude that equity costs are effected by debt leverage. S&P credit ratings are
506 also effected by debt leverage. That is, as debt leverage rises, the cost of equity
507 rises and credit ratings fall and vice versa. Thus, there is an inverse relationship
508 between credit ratings and equity costs. This is precisely the relationship I am
509 modeling. As noted above, while there is no way to directly measure that
510 relationship, to ignore the significant risk differential indicated by my Gas
511 Sample’s A rating and Nicor Gas’ AA rating, as Dr. Makholm espouses, would
512 clearly be inappropriate. The approach I have adopted is consistent with the
513 approach Staff has taken, and the Commission has accepted, under similar
514 circumstances in previous proceedings.

⁴¹ Nicor Gas Exhibit 21.0, pp. 9-10.

515 **Q. Dr. Makholm argues that if AGL Resources, Laclede Group, Peoples**
516 **Energy, and South Jersey Industries were removed from your Gas Sample,**
517 **one leg upon which your 23 basis point adjustment stands would be lost.⁴²**
518 **Please respond.**

519 A. As explained previously, the *inclusion* of those four companies in my Gas Sample
520 *is not* inappropriate. In contrast, the *exclusion* of those four companies without
521 similar or better replacements *would be* inappropriate, as the resulting sample
522 would contain too few companies to sufficiently minimize the potential
523 measurement error of any individual company's cost of equity estimate. Dr.
524 Makholm suggests that KeySpan and Southwest Gas should be substituted for
525 AGL Resources, Laclede Group, Peoples Energy, and South Jersey Industries.
526 However, that substitution would create a new sample that, like the original
527 sample, has an average business profile score higher than that of Nicor Gas,
528 which nullifies this argument. Dr. Makholm cannot have it both ways. That is, he
529 must choose between an inappropriately small sample, or a sample that
530 invalidates this argument. Regardless, if either the four- or six-company samples
531 were used, a risk adjustment would still be necessary, since the average credit
532 rating of either sample would still be lower than Nicor Gas' credit rating.

533 **Q. Please address Dr. Makholm's claim that you make "no allowance for**
534 **reasonableness ranges when assessing risk, as S&P always does."⁴³**

535 A. I did not rely on financial ratios to assess the risk of Nicor Gas or my Gas
536 Sample. I relied on the S&P's assessment of the overall risk of the company, as
537 reflected in its credit ratings and business profiles scores. As Dr. Makholm

⁴² Nicor Gas Exhibit 21.0, p. 9.

⁴³ Nicor Gas Exhibit 21.0, p. 9.

538 notes, those metrics already make an allowance for reasonableness ranges with
539 regard to the financial ratios incorporated in those assessments. Thus, there is
540 no additional allowance to be made.

541 **Growth Rate**

542 **Q. Dr. Makholm suggests that your use of a single source for growth rate data**
543 **is inappropriate.⁴⁴ Is he correct?**

544 A. No. First, Zacks investment services, the supplier of the growth rates I
545 employed, averages growth rate estimates from multiple sources to derive its
546 growth rate estimates. Second, although he states that “a credible analysis
547 should use all of the credible sources available,”⁴⁵ Dr. Makholm excluded from
548 his final growth rate estimate the Yahoo! Finance growth rate estimates he
549 included among his workpapers. Significantly, the average of those Yahoo!
550 Finance growth rates for his sample is lower than the average for any of the
551 growth rates employed by Dr. Makholm. Third, it would be inappropriate to
552 include, as Dr. Makholm suggests, growth rates based on the methodology Dr.
553 Makholm used to derive his growth rate estimates from Value Line data since, as
554 explained in my direct testimony, that methodology is flawed and results in
555 growth rates of doubtful quality.

⁴⁴ Nicor Gas Exhibit 21.0, pp. 11-13.

⁴⁵ Nicor Gas Exhibit 21.0, p. 13.

556 **Q. Dr. Makholm criticizes your analysis for omitting growth rates based on**
557 **Value Line data.⁴⁶ Please respond.**

558 A. Dr. Makholm seems to suggest that growth rates derived from Value Line data
559 should be included in any cost of equity analysis because Value Line is perhaps
560 the most popular and credible source of all. Nevertheless, despite his emphasis
561 on the virtues of Value Line, Dr. Makholm declined to use the growth rates
562 published by Value Line in his analysis and criticizes Value Line's normalization
563 methods.⁴⁷ Thus, Dr. Makholm criticizes my analysis for not using a source that
564 he criticizes. Ultimately, Dr. Makholm has presented no evidence to indicate that
565 the published Value Line growth rates, much less the flawed growth rates he
566 developed from Value Line data, are superior reflections of the sustainable, long-
567 term growth rate expectations of the investing public.

568 **Q. Dr. Makholm suggests that your criticism of his mixing of current and**
569 **projected data in his sustainable growth rate estimates was the result of**
570 **your misunderstanding.⁴⁸ Do you agree?**

571 A. No. Regardless of how one may decompose or describe the mathematical
572 formulas Dr. Makholm employed to derive his sustainable growth estimate, his
573 methodology still contains the same flaw: it mismatches data from different time
574 periods, creating a meaningless, overstated growth rate estimate. Contrary to
575 Dr. Makholm's implication, no further explanation can eliminate this problem.
576 The Company response to Staff data request MGM 2.06 states that Dr. Makholm
577 "adjusts the Value Line expected ROE for 2007-2009 based on book values for

⁴⁶ Nicor Gas Exhibit 21.0, pp. 11-12.

⁴⁷ Nicor Gas Exhibit 21.0, p. 22.

⁴⁸ Nicor Gas Exhibit 21.0, pp. 13-14.

578 2003 and 2002 in order to derive an estimate of normalized earnings.”⁴⁹ Thus, in
579 my direct testimony, I explained the flaw in his approach from that perspective.
580 In his rebuttal testimony, however, Dr. Makholm claims that he uses a “*factor*” to
581 express the 2007-2009 projected return as a percentage of mid-year book value
582 of equity. That is, he now describes his adjustment as a conversion of Value
583 Line’s projected 2007-2009 return on *end-of-year* equity, R , into a higher 2007-
584 2009 return on *average* equity, R_{AV} .⁵⁰ That operation can be seen in the formula
585 presented in footnote [2] of Nicor Gas Exhibit 4.10. Such an adjustment would
586 be acceptable, if, thereafter, average data was consistently used. However,
587 despite his claim that he did not mismatch data, in the immediately ensuing
588 calculation Dr. Makholm applies R_{AV} to the end-of-year book value per share, V_e ,
589 as shown in footnote [3] of Nicor Gas Exhibit 4.10. Thus, he combines the higher
590 *average* return with the higher *end-of-year* book value, which produces an
591 overstated earnings estimate that represents neither an average earnings
592 estimate nor an end-of-year earnings estimate. That overstated earnings
593 estimate produces an overstated retention ratio, which, in turn, produces an
594 overstated sustainable growth rate estimate. Ironically, despite the esteem Dr.
595 Makholm implies he holds for Value Line forecasts, he rejected Value Line’s own
596 forecast of earnings per share in favor of his own contrived, biased estimate.⁵¹

⁴⁹ Company response to Staff data request MGM 2.06, attached as Schedule 14.5.

⁵⁰ The calculated return on average book value of equity is higher than the calculated return on end-of-year book value of equity because when the denominator in that ratio, book value of equity, is growing, the end-of-year book value of equity is higher than the average book value of equity.

⁵¹ See Schedule 14.5.

597 **Q. Dr. Makholm claims that it is eminently reasonable to assume that the**
598 **companies in his sample will issue new equity securities for prices**
599 **prevailing in the market.⁵² Please comment.**

600 A. I do not dispute that the companies in his sample may issue new equity
601 securities for prices prevailing in the market. I dispute the assumption that all
602 such securities will be issued at market prices that reflect a 90% premium over
603 book value, as assumed in Dr. Makholm's sustainable growth rate estimates. As
604 noted in my direct testimony, to the degree that any of the new common stock is
605 issued at less than a 90% premium over book value, the SV component of Dr.
606 Makholm's sustainable growth rate estimates is overstated. I provided one, very
607 reasonable explanation as to why the 1.9x average book value to market value
608 ratio assumed for Dr. Makholm's sample and the resulting sustainable growth
609 rate estimates are questionable, at best, if not upwardly biased. Dr. Makholm
610 protests that I provided no evidence to support that claim. Therefore, I have
611 attached, as Schedule 14.4, documentation demonstrating that at least some of
612 the common stock issuances of the companies in Dr. Makholm's sample were, in
613 fact, exercised stock options, which would certainly be issued at a price below
614 the prevailing market price. In contrast, Dr. Makholm has provided no evidence
615 to support his implicit assumption that all new equity securities will be issued at
616 market prices that reflect a 90% premium over book value.

⁵² Nicor Gas Exhibit 21.0, p.

617 **Q. Dr. Makhholm claims that your criticism of his Value Line earnings per share**
618 **(“EPS”) growth rate analysis is erroneous.⁵³ Please respond.**

619 A. Dr. Makhholm notes that five-year growth rates are the industry norm and that I
620 use five-year growth rate estimates in my analysis, and suggests that I have
621 confused the issue. I certainly hope my argument was not confounded by
622 verbiage. To clarify, I do not object to the use of five-year growth rate estimates;
623 I object to Dr. Makhholm’s failure to normalize the base-year 2003 EPS data he
624 used in his “Value Line” growth rate estimates.⁵⁴

625 In illustrating the problem that can arise when attempting to derive growth rate
626 estimates through a geometric average annual change in EPS from a given
627 year’s non-normalized EPS to a fixed forecast of future EPS, I referred to a
628 growth rate based on 2003 EPS data as a “5-year growth rate” merely to
629 distinguish it from a comparable growth rate based on 2002 EPS data (to which I
630 referred as a “6-year growth rate”).⁵⁵ As I had explained earlier in my direct
631 testimony,⁵⁶ for purposes of his calculation, Dr. Makhholm treats the EPS forecast
632 for the 2007-2009 period as a 2008 EPS forecast. Thus, Dr. Makhholm’s “Value
633 Line” growth rates, which use 2003 EPS as the base from which growth is
634 calculated, reflect the implied geometric average annual growth of EPS over a
635 five-year period (2003-2008). In contrast, growth rates based on 2002 EPS data
636 would reflect the implied geometric average annual growth of EPS over a six-
637 year period (2002-2008). However, the period over which the growth is
638 measured is not, and never was, at issue. I did not espouse substituting a

⁵³ Nicor Gas Exhibit 21.0, p. 15.

⁵⁴ Parentheses were added since those growth rates, while derived from Value Line data, do not reflect Value Line’s own forecast of long-term sustainable growth.

⁵⁵ ICC Staff Exhibit 5.0, p. 37.

⁵⁶ ICC Staff Exhibit 5.0, p. 33.

639 seven-, six- or four-year period for a five-year period. My example merely
640 demonstrated that the implied growth rate can change significantly depending on
641 the reported EPS for the base-year selected, underscoring the need for
642 normalization. Indeed, my example showed that the average reported 2003 EPS
643 for all six companies in Dr. Makhholm's sample is significantly lower than that for
644 2001, 2002, or 2004. Thus, by selecting 2003 EPS as the base from which
645 growth is calculated, Dr. Makhholm has inflated the average growth rate for his
646 entire sample due to his failure to normalize the base-year EPS data.

647 Dr. Makhholm also argues that his approach is preferable to the five-year EPS
648 growth rates Value Line publishes, because Value Line's normalization technique
649 is flawed. Staff agrees that Value Line's normalization technique is flawed.
650 However, failure to normalize altogether is not a valid solution to Value Line's
651 flawed normalization and can lead to misstated growth rates, as discussed
652 above.

653 **DCF Model**

654 **Q. Please respond to Dr. Makhholm's assertion that you do not use the correct**
655 **future dividend payments as specified in the quarterly DCF model.⁵⁷**

656 A. Dr. Makhholm states that the correct way to calculate the expected dividend is to
657 multiply each company's four most-recent dividend payments by 1 plus that
658 company's earnings growth rate, without regard to whether a company has
659 already declared its next dividend.⁵⁸ Indeed, Dr. Makhholm criticizes my analysis

⁵⁷ Nicor Gas Exhibit 21.0, pp. 15-17.

⁵⁸ Nicor Gas Exhibit 21.0, p. 16.

660 for utilizing declared dividends, each of which represents a payment the
661 company has committed to make, when they were available. Thus, Dr. Makholm
662 advocates the rejection of the known dividend in favor of an estimate of that
663 dividend. That notion is completely irrational.

664 **Q Dr. Makholm suggests that your utilization of declared dividends is a**
665 **“pick-and-choose” approach that builds subjectivity into an infinite-horizon**
666 **DCF model.⁵⁹ Do you agree?**

667 A. No. I did not pick and choose in any way. I utilized every declared dividend
668 available and estimated the remaining dividends. Nor is my approach in any way
669 subjective. I have no influence over which companies declare dividends or when
670 a company declares its next dividend. I merely used the dividends declared by
671 the boards of directors of the companies in my sample, stock prices set by
672 investors, and growth rates determined by outside analysts. The stock prices
673 and growth rates I used are no more subjective than those used by Dr. Makholm;
674 the declared dividends I used are, in fact, less subjective than the estimated
675 dividends Dr. Makholm used, since declared dividends do not require any
676 estimation whatsoever.

677 **Q. Dr. Makholm claims that reflecting declared dividends biases your results**
678 **downward.⁶⁰ Do you agree?**

679 A. No. First, bias suggests a systematic tendency. My utilization of declared
680 dividends does not systematically increase or decrease the results relative to
681 those produced by estimating the next dividend. Indeed, for the three companies

⁵⁹ Nicor Gas Exhibit 21.0, p. 16.

⁶⁰ Nicor Gas Exhibit 21.0, p. 16.

682 in my sample for which I used a declared dividend, two of them had a lower cost
683 of equity estimate, while one had a higher cost of equity estimate than if I had
684 used an estimated dividend. Second, it is not possible to bias a known quantity.
685 Bias stems from estimation; I did not estimate the declared dividends. In
686 contrast, Dr. Makholm's proposal to substitute estimated dividends for the true,
687 declared dividends increases measurement error.

688 **CAPM**

689 **Q. Dr. Makholm criticizes your regression beta, noting that it is not readily**
690 **visible to the market.⁶¹ Is his criticism valid?**

691 A. No. The validity of Staff's beta estimation methodology is not a function of
692 whether Staff's beta estimates are readily visible to the market. Rather, the
693 validity of the methodology is a function of whether it is generally accepted. The
694 methodology I used to calculate the Gas Sample beta, which Staff has used and
695 the Commission has accepted in numerous proceedings, is based on the
696 methodology used by Merrill Lynch,⁶² which is widely accepted. For example,
697 Zacks, which Dr. Makholm describes as a reputable firm, publishes beta
698 estimates based on the Merrill Lynch methodology. The average of the raw
699 betas published by Zacks for my Gas Sample is 0.16. Applying the adjustment
700 formula presented on page 27 of my direct testimony, the average adjusted
701 Zacks beta for my Gas sample is 0.44. Thus, if Dr. Makholm insists on a "readily
702 visible" standard for betas, I would substitute the readily visible Zacks beta for the

⁶¹ Nicor Gas Exhibit 21.0, p. 18.

⁶² Except for the substitution of the NYSE Composite Index for the S&P500 Index as a proxy for the market return. Using the NYSE Composite Index as a proxy for the market return produced higher betas than using the S&P500 Index.

703 regression beta. When combined with the Value Line beta, the resulting Gas
704 Sample beta would be 0.60 and the CAPM estimate of the Gas Sample's cost of
705 common equity would be 9.86%.

706 **Q. Has the Commission previously accepted the use of Staff's regression beta**
707 **estimates in cost of common equity analysis?**

708 A. Yes. The Commission has accepted the use of Staff regression beta estimates
709 in numerous proceedings,⁶³ most recently in Docket 04-0442.⁶⁴

710 **Q. Dr. Makhholm takes issue with your inclusion of T-bill returns in your**
711 **regression beta calculation and claims that you did not calculate your**
712 **regression beta according to your description.⁶⁵ Please comment.**

713 A. He is incorrect. The use of "excess"⁶⁶ returns is the theoretically correct
714 approach to measuring beta. However, many practitioners use absolute returns
715 rather than excess returns, since the difference in the resulting beta calculations
716 is almost imperceptible. That is, a substitution of absolute returns for excess
717 returns in the regression beta calculation does not account for the difference
718 between the 0.69 beta calculated by Dr. Makhholm and my 0.56 beta calculation.
719 Rather, the difference is wholly due to errors in Dr. Makhholm's own calculation.
720 First, Dr. Makhholm apparently misapplied the adjustment. Dr. Makhholm's
721 workpapers show that his model estimated that the raw beta for my Gas Sample
722 equals 0.43.⁶⁷ Applying the adjustment formula presented on page 27 of my

⁶³ See Order, Docket No. 03-0340, February 15, 2001, p. 25; Order, Docket No. 03-0398, April 7, 2004, pp. 14-16; Order, Docket Nos. 02-0798/03-0008/03-0009 (Cons.), October 22, 2003, p. 85; and Order, Docket No. 03-0403, April 13, 2004, pp. 26-27, 33, and 42.

⁶⁴ Order, Docket No. 04-0442, April 20, 2005, p. 44.

⁶⁵ Nicor Gas Exhibit 21.0, pp. 11 and 18.

⁶⁶ For the purpose of this discussion, "excess" returns refers to the portion of total returns in excess of the risk-free rate.

⁶⁷ Company response to Staff data request MGM 6.16.

723 direct testimony to that 0.43 raw beta would produce an adjusted beta of 0.62
724 rather than the 0.69 Dr. Makholm reports. Second, Dr. Makholm's calculation
725 includes an extra, 61st observation that is not a meaningful average monthly
726 sample return. Rather, the extra observation represents the average percentage
727 difference in price between the last observation for one company in the sample
728 and the first observation of the next company. Those two errors produce an
729 inflated beta estimate. In contrast, as noted previously, the published Zacks beta
730 estimates corroborate my calculation. When that invalid observation is removed,
731 the estimated beta using total price change data rather than excess return data
732 equals 0.34 on a raw basis and 0.56 on an adjusted basis.

733 **Q. Please address Dr. Makholm's general criticisms of the CAPM.⁶⁸**

734 A. Staff believes the CAPM to be useful tool in measuring the investor required
735 return on common equity. However, Staff agrees that, as with any cost of capital
736 model, there are problems with the CAPM, which is why Staff does not rely
737 exclusively on the CAPM. Nonetheless, in the interest of reducing the issues, I
738 am willing to remove the results of my CAPM analysis from my final cost of equity
739 recommendation, should Dr. Makholm's objections persist.

⁶⁸ Nicor Gas Exhibit 21.0, pp. 18-19.

740

Other Allowed ROEs

741 **Q. Dr. Makhholm presents a graphical depiction of the distribution of 20 cost of**
742 **equity decisions for gas distribution utilities for 2004 and notes that your**
743 **recommendation is lower than each decision.⁶⁹ Please comment.**

744 A. Dr. Makhholm's testimony fails to specify many critical factors that influenced the
745 allowed returns in those 20 proceedings. For instance, Dr. Makhholm does not
746 identify the relative risk, as exemplified by credit rating or any other metric, of
747 each of the utilities involved in those return decisions. Nor does he identify the
748 capital structure that was adopted or the amount of the common stock flotation
749 cost adjustment, if any, that was included in each of those decisions. Without
750 such data, any evaluation of the return recommendations in this proceeding via
751 comparison to the returns authorized in the 20 cases Dr. Makhholm cites is
752 useless, since we have no basis on which to assess comparability. In fact, given
753 that every gas distribution utility in the U.S., aside from Nicor Gas and Nicor, Inc.,
754 has a lower S&P credit rating than Nicor Gas' AA rating,⁷⁰ I would expect Nicor
755 Gas' required return on equity to be considerably lower than average. Quite
756 consistently, my 9.54% recommendation falls below the 10.59% average allowed
757 by other regulatory commissions in the U.S. for 2004 that Dr. Makhholm cites. In
758 contrast, the Company's return recommendation of 10.82% is above that
759 average.

⁶⁹ Nicor Gas Exhibit 21.0, pp. 23-25.

⁷⁰ Standard & Poor's, "U.S. Utility and Power Ranking List," February 2, 2005, www.ratingsdirect.com.

760 **Financial Integrity Implications**

761 **Q. Dr. Makhholm suggests that your cost of capital recommendations, if**
762 **adopted by the Commission, may result in a weakened financial picture for**
763 **Nicor Gas and a possible downgrading of the Company's debt securities.⁷¹**
764 **Please comment.**

765 A. My cost of capital analysis was designed to produce the overall return required
766 on capital for Nicor Gas, given its current AA rating and business profile score of
767 2. To illustrate, as noted in my direct testimony, the total debt ratio of 50.27%,
768 upon which I based my cost of capital recommendation, is consistent with an AA
769 rating for a utility with a business profile score of 2, based on S&P benchmarks.⁷²
770 Also, the pre-tax interest coverage ratio of 3.84x implied by my capital structure
771 and component cost estimates is quite generous for an AA rating and a business
772 profile score of 2, based on benchmarks S&P previously employed.⁷³ Thus, my
773 recommendations reflect a reasonable level of financial risk and should allow
774 Nicor Gas to maintain its strong financial condition.

775 **Q. Does this conclude your rebuttal testimony?**

776 A. Yes, it does.

⁷¹ Nicor Gas Exhibit 21.0, p. 29.

⁷² Standard & Poor's, "New Business Profile Scores Assigned for U.S. Utility and Power Companies; Financial Guidelines Revised," June 2, 2004, www.ratingsdirect.com.

⁷³ Standard & Poor's, "Utility Financial Targets Are Revised," June 18, 1999, www.ratingsdirect.com.

Nicor Gas

Weighted Average Cost of Capital

Company Proposal
 December 31, 2005

	<u>Amount</u>	<u>Percent of Total Capital</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long-term Debt	\$500,376,000	43.51%	6.72%	2.92%
Preferred Stock	\$1,401,000	0.12%	4.77%	0.01%
Common Equity	<u>\$648,156,000</u>	<u>56.37%</u>	<u>10.82%</u>	<u>6.10%</u>
Total Capital	\$1,149,933,000	100.00%		
Weighted Average Cost of Capital				9.03%

Source: Nicor Gas Exhibit 20.1.

Staff Proposal
 December 31, 2005

	<u>Amount</u>	<u>Percent of Total Capital</u>	<u>Cost</u>	<u>Weighted Cost</u>
Short-term Debt	\$177,608,285	13.65%	2.58%	0.35%
Long-term Debt	\$478,311,049	36.77%	6.72%	2.47%
Preferred Stock	\$1,386,101	0.11%	4.77%	0.01%
Common Equity	<u>643,607,150</u>	<u>49.47%</u>	<u>9.54%</u>	<u>4.72%</u>
Total Capital	\$1,300,912,585	100.00%		
Weighted Average Cost of Capital				7.55%